

## **Electromagnetic Borehole Flowmeter (EBF) Testing at the Southwest Plume Test Pad (U)**

Westinghouse Savannah River Company  
Savannah River Site  
Aiken, SC 29808

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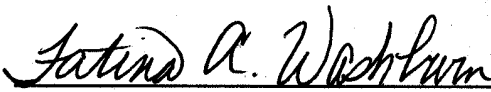


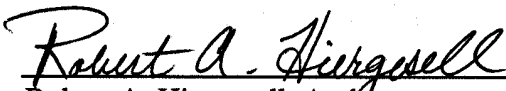
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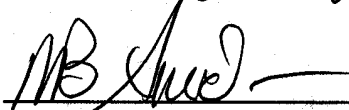
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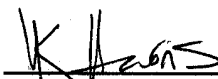
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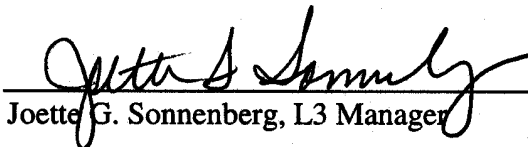
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## EXECUTIVE SUMMARY

Multiple-well aquifer tests were recently conducted at the Southwest Plume Test Pad near the Burial Ground Complex (BGC) in accordance with the BGC Field Investigation Plan (WSRC, 1999). The pumping tests were performed in the Upper Three Runs and Gordon aquifers in February and March of 1999. The tests provide reliable estimates of horizontal conductivity averaged over aquifer thickness, and a relatively large horizontal zone of influence. Table 1 summarizes the results of WSRC (1999). To complement these results, Electromagnetic Borehole Flowmeter (EBF) testing using the 1" ID EBF was performed to determine the vertical variation of horizontal conductivity for SWP-300A, SWP-200C and SWP-100D.

EBF testing indicates significant heterogeneity over the tested screen zones (Figures 8, 10 and 12). At SWP-300A in the Gordon aquifer, two high conductivity zones separated by a low conductivity interval are observed in the lower half of the screen. Conductivity is relatively low in the upper half of the screen. At SWP-200C in the lower Upper Three Runs Aquifer (UTRA), two high conductivity zones separated by a low conductivity interval are observed in the middle of the screen zone. At SWP-100D in the upper UTRA, conductivity generally increases from top to bottom of the screen.

Regarding future deployments of the technology, experience at the Southwest Plume Test Pad (SPTP) confirms that the 1" ID EBF is preferred over the 1/2" ID EBF for dynamic testing. The 1" EBF has more than adequate sensitivity and practically eliminates bypass flow through the filter pack. Testing at the SPTP also revealed that the EBF packer cannot achieve a good seal against a wire wrap screen, which leads to flow bypassing the flowmeter between the casing and packer bellows. The raw EBF flow data were corrected for internal bypass flow by comparing the flow measured at screen joints, where a good seal was achieved, to adjacent flows. Other considerations being equal, slotted screen is preferred over wire wrap screen because a good seal can be achieved and bypass flow corrections avoided. Equipment failures and design deficiencies with the current EBF system continue to be a problem. A more reliable EBF system is needed for future deployments to be efficient.

Single-well aquifer testing performed concurrently with EBF testing was investigated as an possible alternative to reliance on prior multiple-well estimates of average horizontal conductivity or well efficiency. Single-well testing refers to conventional estimates of screen-average conductivity and estimates of subinterval conductivity using Cooper-Jacob analysis. As with all single-well testing, either approach depends on an uncertain estimate of well efficiency in the absence of prior multiple-well testing. Concurrent single-well aquifer testing was determined to be feasible in the field. Based on EBF testing in R-area and at the Southwest Plume Test Pad, conductivity estimates based on single-well testing alone have an uncertainty of roughly plus or minus a factor of 2. A prior multiple-well estimate of average conductivity is technically preferred, but concurrent single-well testing may be preferred overall considering the cost of multiple-well aquifer testing.

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## Contents

|   |      |
|---|------|
| Executive summary .....   | iii  |
| Tables .....  | vi   |
| Figures .....   | vii  |
| Appendices .....  | viii |
| Introduction .....  | 1    |
| Borehole flowmeter instrument.....                                  | 1    |
| Borehole flowmeter testing .....                                    | 1    |
| Borehole flowmeter analysis .....                                   | 2    |
| Pre-test design .....   | 5    |
| Time to reach quasi-steady flow.....                                | 5    |
| Bypass flow estimates .....   | 6    |
| Field experience at the Southwest Plume Test Pad.....               | 7    |
| Conductivity distribution results .....                             | 7    |
| SWP-300A .....  | 7    |
| SWP-200C.....   | 9    |
| SWP-100D .....  | 9    |
| Average conductivity estimates.....                                 | 10   |
| Prior multiple-well testing.....                                    | 10   |
| Single-well testing concurrent with EBF testing.....                | 10   |
| Alternative conductivity estimates using Cooper-Jacob analysis..... | 11   |
| Considerations and recommendations for future EBF deployment .....  | 12   |
| 1" versus 1/2" EBF for dynamic testing .....                        | 12   |
| Slotted versus wire wrap screen .....                               | 12   |
| Equipment issues.....   | 13   |
| Feasibility of concurrent single-well aquifer testing .....         | 13   |
| References .....  | 14   |

## Tables

|          |   |    |
|----------|---|----|
| Table 1  | SPTP well information.....  | 16 |
| Table 2  | Calibration data for the ½” ID EBF.....                                       | 17 |
| Table 3  | Calibration data for the 1” ID EBF.....                                       | 18 |
| Table 4  | Pre-test design calculations for SWP-300A .....                               | 19 |
| Table 5  | Pre-test design calculations for SWP-200C .....                               | 20 |
| Table 6  | Pre-test design calculations for SWP-100D .....                               | 21 |
| Table 7  | Field data for SWP-300A .....   | 22 |
| Table 8  | Hydraulic conductivity calculations for SWP-300A at 1 ft<br>increments .....  | 23 |
| Table 9  | Hydraulic conductivity calculations for SWP-300A at 2 ft<br>increments .....  | 24 |
| Table 10 | Hydraulic conductivity calculations for SWP-300A at 5 ft<br>increments .....  | 25 |
| Table 11 | Hydraulic conductivity calculations for SWP-300A at 10 ft<br>increments ..... | 26 |
| Table 12 | Field data for SWP-200C .....   | 27 |
| Table 13 | Hydraulic conductivity calculations for SWP-200C at 2 ft<br>increments .....  | 28 |
| Table 14 | Hydraulic conductivity calculations for SWP-200C at 6 ft<br>increments .....  | 29 |
| Table 15 | Field data for SWP-100D .....   | 30 |
| Table 16 | Hydraulic conductivity calculations for SWP-100D at 1 ft<br>increments .....  | 31 |
| Table 17 | Hydraulic conductivity calculations for SWP-100D at 3 ft<br>increments .....  | 32 |
| Table 18 | Hydraulic conductivity calculations for SWP-100D at 7 ft<br>increments .....  | 33 |
| Table 19 | Comparison of average conductivity estimates .....                            | 34 |



## Figures

|           |   |    |
|-----------|---|----|
| Figure 1  | Schematic diagram of the Electromagnetic Borehole Flowmeter; reproduced from Molz and Young (1993) .....                        | 35 |
| Figure 2  | Electromagnetic Borehole Flowmeter (EBF) application of Faraday's Law of Induction; reproduced from Molz and Young (1993) ..... | 36 |
| Figure 3  | Calibration data and curve for the ½" ID EBF.....   | 37 |
| Figure 4  | Calibration data and curve for the 1" ID EBF.....   | 37 |
| Figure 5  | Schematic illustration of borehole flowmeter testing; reproduced from Molz and Young (1993) .....                               | 38 |
| Figure 6  | Basic geometry and analysis of borehole flowmeter data; reproduced from Molz and Young (1993) .....                             | 39 |
| Figure 7  | Ambient flow measurements for SWP-300A.....   | 40 |
| Figure 8  | Estimated relative hydraulic conductivity profile for SWP-300A at 1, 2, 5 and 10 ft resolutions .....                           | 40 |
| Figure 9  | Ambient flow measurements for SWP-200C.....   | 41 |
| Figure 10 | Estimated relative hydraulic conductivity profile for SWP-200C at 2 and 6 ft resolutions .....                                  | 41 |
| Figure 11 | Ambient flow measurements for SWP-100D.....   | 42 |
| Figure 12 | Estimated relative hydraulic conductivity profile for SWP-100D at 1, 3 and 7 ft resolutions .....                               | 42 |
| Figure 13 | Comparison of EBF relative conductivity profiles to natural gamma log .....   | 43 |
| Figure 14 | Time-drawdown data and single-well conductivity estimates for SWP-300A .....  | 44 |
| Figure 15 | Time-drawdown data and single-well conductivity estimates for SWP-200C.....   | 45 |
| Figure 16 | Time-drawdown data and single-well conductivity estimates for SWP-100D .....  | 46 |
| Figure 17 | Unaltered and smoothed water level transducer data for SWP-300A.....  | 47 |
| Figure 18 | Unaltered and smoothed water level transducer data for SWP-200C .....   | 47 |
| Figure 19 | Unaltered and smoothed water level transducer data for SWP-100D.....  | 48 |

## **Appendices**

|            |                                       |     |
|------------|---------------------------------------|-----|
| Appendix A | Time-drawdown data for SWP-300A ..... | A-1 |
| Appendix B | Time-drawdown data for SWP-200C.....  | B-1 |
| Appendix C | Time-drawdown data for SWP-100D ..... | C-1 |

## Introduction

Multiple-well aquifer tests were recently conducted at the Southwest Plume Test Pad (SPTP) near the Burial Ground Complex (BGC) in accordance with the BGC Field Investigation Plan (WSRC, 1999). The pumping tests were performed in the Upper Three Runs and Gordon aquifers in February and March of 1999. The tests provide reliable estimates of horizontal conductivity averaged over aquifer thickness, and a relatively large horizontal zone of influence. Table 1 summarizes the results of WSRC (1999). To complement these results, Electromagnetic Borehole Flowmeter (EBF) testing was performed to determine the vertical variation of horizontal conductivity about the average determined from the conventional aquifer testing. This report introduces the borehole flowmeter concept and EBF instrument, summarizes field and calculation procedures, presents EBF test results for 3 SPTP wells, and provides recommendations for future application of the technology.

## Borehole flowmeter instrument

The term “borehole flowmeter” in this report refers to any instrument that measures the *vertical* flow inside a well casing. Various types of borehole flowmeters have been used in field applications, including heat pulse, tracer release and impeller (spinner) designs. Researchers at the Tennessee Valley Authority (TVA) developed, patented and commercialized a robust, highly-sensitive, borehole flowmeter based on electromagnetic principles. The Electromagnetic Borehole Flowmeter operates according to Faraday’s Law of Induction, which states that the voltage induced by a conductor moving at right angles through a magnetic field is directly proportional to the velocity of the moving conductor (Waldrop, 1995). Schematic diagrams of the EBF are shown in Figures 1 and 2 (Molz and Young, 1993). Groundwater acts as the moving conductor, an electromagnet generates the magnetic field, and electrodes measure the induced voltage. The ½” ID EBF has a threshold flowrate of about 5 mL/min, which is 1000 times more sensitive than the typical impeller flowmeter. Flowrates up about 10 L/min can be measured, giving the ½” ID EBF outstanding range. The 1” ID EBF can measure flows from about 40 mL/min to 40 L/min (Waldrop, 1995). Both the ½” and 1” EBF instruments were used for aquifer testing at the SPTP site. Calibration data for both EBF instruments are provided in Tables 2 and 3 and Figures 3 and 4. The calibration curves are developed in Flach and others (2000).

## Borehole flowmeter testing

The idea behind borehole flowmeter testing is to relate horizontal conductivity as a function of elevation,  $K(z)$ , to borehole discharge as a function of elevation  $Q(z)$ . The field procedure is schematically illustrated in Figure 5 (Molz and Young, 1993). Under quasi-steady pumping conditions, borehole discharge ( $Q$ ) from the bottom of the screen up to the current flowmeter position is measured as a function of elevation ( $z$ ). As shown in Figure 6, the difference ( $\Delta Q$ ) in borehole discharge  $Q(z)$  between at any two locations is the flowrate of groundwater entering the well casing over that interval. This differential flowrate, minus any ambient flow effects, is proportional to the horizontal

conductivity of the aquifer over that interval. Ambient flow refers to horizontal flow through the well screen and vertical flow in the casing under natural, undisturbed conditions. In order to rigorously account for potential ambient flow effects, the standard borehole flowmeter test procedure actually involves two series of measurements:

- 1) under ambient conditions, measure the vertical flowrate inside the well screen at 1 to 2 ft intervals,
- 2) pump (or inject) at a constant rate above the screen zone and borehole flowmeter,
- 3) pause until the drawdown becomes quasi-steady-state,
- 4) under these quasi-steady-state pumping conditions, again measure the vertical flowrate inside the well screen at 1 to 2 ft intervals.

The quasi-steady conditions referred to in step 3) typically occur within 15 to 30 minutes in confined aquifers, and a couple of hours in unconfined aquifers (Flach and others, 2000). The ambient flow data is also useful by itself for determining the direction(s) of vertical head gradients in the surrounding aquifer, which has contaminant monitoring implications discussed by Flach and others (2000).

### **Borehole flowmeter analysis**

Molz and others (1989) and Molz and Young (1993) present two methods for estimating the vertical variation of horizontal conductivity from field measurements of borehole discharge as a function of depth, such as those provided by the EBF (see also Rehfeldt and others (1989)). Both methods assume a fully-penetrating well in a confined aquifer. The first method applies the Cooper-Jacob (1946) method to individual sub-intervals of the well screen to estimate conductivity as a function of vertical position. Alternatively, the relative variation of horizontal conductivity about vertically-averaged  $K$  can be directly related to the EBF measurements of borehole discharge as a function of depth. If the vertical average is known or can be estimated by other means (e.g. pumping test), then the conductivity profile can be determined. The first method produces conductivity estimates from EBF test data alone, but involves a number of uncertain parameters. The second method is simpler and more precise, but requires an independent estimate of average conductivity. At the Southwest Plume Test Pad, a conventional pumping test result is available for each EBF tested well. Therefore, the second approach presented by Molz and Young (1993) is preferred for the present application. Nevertheless, both methods are presented in order to later compare methods.

As discussed previously, the field procedure involves measuring the vertical flowrate within the well casing at regular intervals, typically every 1 to 2 ft, first under ambient conditions and then under pumping conditions. The difference between any two readings is the flow entering the well between the two corresponding elevations. A negative value implies that flow is leaving the well. To develop the first method, the Cooper-Jacob equation is applied to each layer as

$$\Delta h_i(r_w, t) = \frac{(\Delta Q_i - \Delta q_i)}{2\pi K_i \Delta z_i} \ln \left( \frac{1.5}{r_w} \sqrt{\frac{K_i \Delta z_i t}{S_{si} \Delta z_i}} \right) \quad (1)$$

where

$\Delta h_i \equiv$  drawdown

$\Delta Q_i - \Delta q_i \equiv$  net differential flow

$\Delta Q_i \equiv$  difference in EBF flow at the top and bottom of the  $i^{\text{th}}$  interval under *pumping* conditions

$\Delta q_i \equiv$  difference in EBF flow at the top and bottom of the  $i^{\text{th}}$  interval under *ambient* conditions

$K_i \equiv$  horizontal conductivity of  $i^{\text{th}}$  layer

$\Delta z_i \equiv$  thickness of  $i^{\text{th}}$  layer

$r_w \equiv$  well bore radius

$t \equiv$  elapsed time

$S_{si} \equiv$  specific storage of  $i^{\text{th}}$  layer

Assuming negligible borehole flowmeter losses under low flow conditions, each layer experiences the same measured drawdown,  $\Delta h$ . The numerical simulations of Javandel and Witherspoon (1969) indicate that the transient drawdown responses of layers in a heterogeneous aquifer quickly merge into a common response described by the Theis solution using averaged aquifer properties. This observation suggests that each layer effectively behaves as if it has the hydraulic diffusivity of the entire aquifer:

$$\frac{K_i \Delta z_i}{S_{si} \Delta z_i} = \frac{T}{S} = v \quad (2)$$

In this expression

$v \equiv$  hydraulic diffusivity of the entire aquifer

$T \equiv$  transmissivity of the entire aquifer

$S \equiv$  storage coefficient (storativity) of the entire aquifer

With this assumption, one of two proposed by Molz and others (1989), equation (1) becomes after solving for  $K_i$

$$K_i = \frac{(\Delta Q_i - \Delta q_i)}{2\pi\Delta z_i\Delta h} \ln\left(\frac{1.5}{r_w} \sqrt{\frac{Tt}{S}}\right) \quad (3)$$

With a prior estimate of aquifer diffusivity ( $T/S$ ), equation (3) provides a direct estimate of horizontal conductivity for the  $i^{\text{th}}$  layer. Fortunately, the Cooper-Jacob estimate is not highly sensitive to the assumed value of  $T/S$  for large times, because diffusivity appears within a square-root and logarithm. However, well inefficiencies introduce significant uncertainty in the drawdown experienced by the formation,  $\Delta h$ .

The data analysis procedure for the second method presented by Molz and Young (1993) is summarized by

$$\frac{K_i}{\bar{K}} = \frac{(\Delta Q_i - \Delta q_i)/\Delta z_i}{\sum_i (\Delta Q_i - \Delta q_i) / \sum_i \Delta z_i} \quad (4)$$

where

$K_i \equiv$  horizontal conductivity of the  $i^{\text{th}}$  interval

$\bar{K} \equiv$  vertically-averaged conductivity

$\Delta Q_i \equiv$  difference in EBF flow at the top and bottom of the  $i^{\text{th}}$  interval under *pumping* conditions

$\Delta q_i \equiv$  difference in EBF flow at the top and bottom of the  $i^{\text{th}}$  interval under *ambient* conditions

$\Delta z_i \equiv$  height of the  $i^{\text{th}}$  interval.

In equation (4),  $(\Delta Q_i - \Delta q_i)$  is the net flowrate induced by pumping and accounts for ambient flow effects. Note that the relative conductivity distribution is equal to the relative distribution of net flow entering the well, which is assumed to occur after the initial transient passes and quasi-steady conditions develop. The basis for this assumption is considered in detail by Flach and others (2000).

Both methods, summarized by equations (3) and (4), assume that flow approaching the well is horizontal and driven by a vertically-uniform radial head gradient. Any deviations from this assumption in the flow field will introduce systematic biases in the relative conductivity profile computed from either equation. Therefore, pre-testing consideration should be given to identifying, and minimizing if possible, any conditions that will violate the above assumption. For example, non-horizontal flow will occur in an unconfined aquifer if the drawdown is significant, but can be minimized by pumping at a small rate. A partially-penetrating well screen would also create vertical flows. More subtle sources of vertical flow leading to systematic errors are 1) transient effects in the

presence of aquifer heterogeneity, 2) a high conductivity filter pack, and 3) head losses across the EBF. Flach and others (2000) further discuss each type of systematic error.

### Pre-test design

Pre-test design calculations were performed to ensure quasi-steady flow conditions would be achieved before EBF testing started, and to minimize systematic errors related to head losses across the EBF, such as bypass flow.

Time to reach quasi-steady flow: Conductivity profiles estimated from equations (3) or (4) depend on the flow having reached quasi-steady conditions. Four possible criteria for defining the elapsed time required after pumping to achieve quasi-steady conditions have been identified by Flach and others (2000, eqns. (10), (13), (14) and (15)). They are summarized by

$$t_D = \frac{4Tt}{Sr_w^2} = \frac{4vt}{r_w^2} > 4 \times 10^2 \text{ to } 4 \times 10^3 \quad (5)$$

$$t_D > 1000 \frac{1 + v_2 / v_1}{2} \quad (6)$$

$$t_D > 10^2 \left( \frac{r_i}{r_w} \right)^2 \quad (7)$$

$$t_D > 10^6 \quad (8)$$

where

$t \equiv$  elapsed time

$T \equiv$  transmissivity of the entire aquifer

$S \equiv$  storage coefficient (storativity) of the entire aquifer

$v \equiv$  hydraulic diffusivity (T/S)

$r_w \equiv$  well bore radius

$r_i \equiv$  influence radius

and the subscripts 1 and 2 refer to the least and most hydraulically diffusive intervals ( $v_2 / v_1 > 1$ ). The latter three estimates tend to be more conservative. The safest strategy to minimize systematic errors due to transient effects is to wait as long as practical after pumping starts before taking borehole flow measurements. Dr. Fred Molz recommends waiting at least 30 minutes after pumping before starting borehole flowmeter testing (Molz, 2000).

Tables 4 through 6 evaluate the four criteria for SWP-300A, SWP-200C and SWP-100D. In these tables, the "Ruud and Kabala (1996)" criterion refers to equation (6), "Molz and others (1989)" to equation (7), "Rehfeldt and others (1989)" to equation (5), and "Flach" refers to equation (8). Among these, criterion (6) based on Ruud and Kabala (1996) is preferred because it has a more rigorous basis than equations (5) and (7) and avoids the probable over-conservatism of equation (8). A reasonable assumption for diffusivity contrast is 100:1, considering that flows associated with intervals with conductivity lower than 1/100 of the most permeable layer cannot be accurately measured. In evaluating hydraulic diffusivity (T/S), the transmissivity (T) and storage coefficient (S) estimates are based on the pumping tests of WSRC (1999, Table 5-1). Storage coefficients from pumping tests are more uncertain than transmissivity estimates for a heterogeneous aquifer (Meier and others, 1998; Sanchez-Vila and others, 1999). Therefore, the diffusivity estimates have similar uncertainty as the storage coefficient estimates.

The pre-test analysis indicates that quasi-steady flow conditions will conservatively occur within a minute or two for SWP-300A (Table 4), and within 30 minutes for SWP-200C (Table 5). These wells are in confined aquifer zones that have a high hydraulic diffusivity compared to unconfined aquifers (Table 1). SWP-100D is in the unconfined upper UTRA, which has low hydraulic diffusivity. Therefore, significantly longer times are required to reach quasi-steady conditions, as shown in Table 6. Assuming less conservative values for diffusivity contrast (e.g. 10:1), influence radius (e.g. 2 ft) and/or non-dimensional time ( $t_D = 4000$ ) than for SWP-300A and SWP-200C produces an elapsed time under 2 hours for SWP-100D. This elapsed time is feasible for a single day test.

**Bypass flow estimates:** Head losses across the EBF during pumping can introduce significant errors in the hydraulic conductivity profile calculated from equations (3) or (4). Head loss causes some flow to bypass the EBF by through the formation and filter pack, and reduces the drawdown experienced by the formation below the EBF.

Bypass flow is undesirable because the EBF measures only a fraction of the flow leaving the aquifer below the instrument position, generally leading to an under-estimate of the actual conductivity. The exception occurs at the uppermost screen interval, when the EBF passes the top of the screen. Lacking screen above the EBF, bypass flow suddenly ceases and all flow must now pass through the meter. The sudden increase in differential flow for the top interval produces an anomalous high K estimate.

Reduced drawdown below the EBF are undesirable because equations (3) and (4) assume that the aquifer is exposed to the same drawdown over the entire well screen length. When the head loss caused by flow through the EBF is significant compared to the imposed drawdown, significant biases are introduced in the calculated relative conductivity profile. Dinwiddie and others (1999) demonstrated for a well without a filter pack that the lower three-quarters of the computed K profile is biased low while the upper quarter is biased high by a greater amount. They termed the phenomenon "head-loss-induced flow redistribution" and showed that the bias increases with increasing aquifer conductivity for the same pumping rate.



Bypass flow calculations for the 1/2" and 1" EBF and various flowrates are included in the pre-test calculations shown in Tables 4 through 6. The basis for the calculations is discussed in Flach and others (2000). Head losses can be practically eliminated by using the 1" ID EBF, or the 1/2" ID EBF at much lower flowrates. The estimated bypass flowrate using the 1" EBF is 1% of total flow at the top of the screen for pumping rates of 20, 15 and 15 L/min for SWP-300A, SWP-200C and SWP-100D respectively. Head losses for the 1/2" EBF can be made small at practical pumping rates, but remain significant. For example, bypass flow is 5% of total flow using the 1/2" EBF and a pumping rate of 4 L/min for SWP-200C. These pre-test calculations suggest that EBF testing be conducted using the 1" EBF and at pumping rates below 15-20 L/min (4-5 gpm).

### **Field experience at the Southwest Plume Test Pad**

In addition to deploying the EBF, a conventional single-well pumping test was concurrently performed by using a pressure transducer and data logger to monitor drawdown before and during EBF testing. The time-drawdown data from pumping wells can be used to estimate average hydraulic conductivity independent of the prior multiple-well testing (WSRC, 1999). The purpose was to explore the feasibility of concurrent EBF and single-well pumping tests as a way to avoid the need for a prior estimate of average conductivity.

Prior EBF testing in D-area and R-area involved slotted well screens. The SWP wells have wire wrap screens with longitudinal ribs inside the screen. These internal ribs prevented a tight seal with the EBF packer and resulted in unanticipated and significant bypass flow inside the well casing. This bypass flow is in addition to flow bypassing the EBF outside the screen as discussed previously. Modifications to the normal calculation procedure were necessary to compensate, as discussed later in the report. Differential pressure between the packer and groundwater was held constant to ensure that bypass flow would be proportionally the same at all elevations.

Ambient flow testing was performed using the 1/2" EBF for greater sensitivity, and the 1" EBF was generally used for dynamic testing to minimize head loss. An electrical failure occurred with the 1" EBF during dynamic testing at SWP-200C. Testing with the 1" EBF was abandoned and restarted the next day with the 1/2" EBF at a lower flowrate. Unfortunately, head losses across the 1/2" EBF were significantly larger than for the 1" EBF, even at the lower pumping rate. The increased head loss caused large bypass flow between the packer bellows and the wire wrap screen.

### **Conductivity distribution results**

Relative hydraulic conductivity profiles can be estimated from EBF ambient and dynamic flow data using equation (4). These results and interpretation of the ambient flow data are presented for each SWP well below.

SWP-300A: SWP-300A is a 4 inch well with a fully-penetrating 40 ft screen in the Gordon aquifer. The EBF field data for SWP-300A are presented in Table 7. Ambient

and dynamic testing were performed at 1 ft intervals. Dynamic testing began 32 minutes after pumping, which easily exceeds the pre-test criteria for quasi-steady flow of 2 minutes (Table 4). The occurrence of bypass flow between the packer bellows and wire wrap screen is evident in both the ambient and dynamic testing results from measurements taken near joints between screen sections. At the joint between two screen sections, a good seal was apparently achieved with the EBF packer. Significantly higher flows were recorded during dynamic testing at 10 ft intervals corresponding to screen section joints. Comparing measured flow at a joint to the average of flows just above and below the joint indicate that the EBF measured approximately 70% of total discharge and 30% bypassed the EBF.

The field data are analyzed at 1, 2, 5 and 10 ft resolutions in Tables 8 through 11. Analysis of the data at intervals greater than 1 ft reduces noise/uncertainty in the relative conductivity profile, at the expense of resolution. The calculations at a 10 ft interval have the added benefit of eliminating the need to correct for internal bypass flow, because only measurements at screen joints are involved.

Column (4) in Tables 8 through 11 lists flow inside the well casing under ambient conditions, measured as a function position with the EBF. A positive value indicates upward flow, and a negative value corresponds to downward flow. The ambient flow data have not been adjusted to account for internal bypass flow because conductivity characterization is the main objective of this study and the ambient flows are insignificant compared to dynamic flows. Fortunately, the data at 10 ft intervals require no correction and can be interpreted at face value. Overall the ambient data at 10 ft increments indicate downward flow through the casing due to a downward head gradient in the aquifer (column (4) of Table 11). Column (5) lists differential ambient flow, computed as the difference between adjacent EBF measurements. In this column, a positive value means groundwater is entering the casing (leaving the aquifer) while a negative value means water is flowing out the screen (entering the aquifer). These data are plotted in Figure 7. For SWP-300A, groundwater is observed to enter the casing over the upper three-quarters of the screen and leave over the bottom quarter.

The non-dimensional or relative hydraulic conductivity distribution,  $K_i/K$ , based on EBF data alone is shown in column (15) (column (13) in Table 11). The negative values observed at 1 and 2 ft analysis resolution are not physically possible of course. Negative values of  $K_i/K$ , are generally the result of measurement errors and non-ideal test conditions. Expanding on the latter, any artificial reduction in EBF flow when the instrument is passing by a low permeability interval can cause a negative differential net flow in column (11) (column (9) in Table 11). Examples include a reduction in pump flowrate, which is assumed to be constant in the analysis, and increased flow bypassing the EBF internally or through the filter pack, which also reduces EBF measured flow. These reductions in EBF measured flow are typically small, but can overwhelm the true differential net flow from the aquifer over an interval if the permeability is low. Therefore, negative values should simply be interpreted as a low permeability zone, and/or an artifact of varying internal bypass flow. At the coarser 5 and 10 ft resolutions,

conductivities are all positive. The amount of flow bypassing the EBF through the filter pack is estimated to be negligible.

The relative conductivity profile for SWP-300A is plotted in Figure 8 for 1, 2, 5 and 10 ft intervals. Values greater than 1 correspond to greater than average conductivity, and vice versa. Two high conductivity zones separated by a low conductivity interval are observed in the lower half of the screen. Conductivity is relatively low in the upper half of the screen.

SWP-200C: SWP-200C is a 6 inch well with a fully-penetrating 60 ft screen in the lower UTRA. The EBF field data for SWP-200C are presented in Table 12. Ambient testing was performed at 1 ft intervals using the 1/2" EBF. Subsequent dynamic testing was performed at 2 ft intervals to save time, also using the 1/2" EBF due to equipment failure with the 1" EBF. Dynamic testing began 37 minutes after pumping, which exceeds the pre-test criteria for quasi-steady flow of 30 minutes (Table 5). Apparently none of the test elevations aligned with a joint between screens, as intermediate high flows were not observed as with SWP-300A. However, measured flow increased abruptly as the EBF passed the top of screen in going from a depth of 92.5 to 90.5 ft. At this point the measured EBF flow was only 11% of the total, compared to about 70% for SWP-300A. The increased internal bypass flow is a result of greater head loss associated with the 1/2" EBF.

The field data are analyzed at 2 and 6 ft resolutions in Tables 13 and 14. Analysis of the data at 6 ft intervals reduces noise/uncertainty in the relative conductivity profile, at the expense of resolution. The ambient flow data have not been adjusted to account for internal bypass flow because conductivity characterization is the main objective of this study and the ambient flows are insignificant compared to dynamic flows. Nevertheless, differential ambient flow at a 6 ft resolution is plotted in Figure 9. Roughly speaking, flow enters the upper portion of the screen and exits the lower portion, consistent with a downward head gradient. The non-dimensional or relative hydraulic conductivity distribution,  $K_i/K$ , based on EBF data alone is shown in column (15) of both tables. The presence of significant negative conductivities in the upper portion of the screen suggests significant measurement errors along that portion of the screen. The relative conductivity profile for SWP-200C is plotted in Figure 10 for 2 and 6 ft intervals. Values greater than 1 correspond to greater than average conductivity, and vice versa. Two high conductivity zones separated by a low conductivity interval are observed in the middle of the screen zone. Bypass flow through the filter pack is non-negligible, as shown by column (20) in the tables.

SWP-100D: SWP-100D is a 6 inch well with a fully-penetrating 30 ft screen in the upper UTRA. The EBF field data for SWP-100D are presented in Table 15. Ambient testing was performed at 1 ft intervals using the 1/2" EBF. Dynamic testing was performed at 1 ft intervals using the 1" EBF. Dynamic testing was performed between 76 and 145 minutes after pumping, which is generally shorter than the pre-test objective 2 hours (Table 6). Therefore some bias due to transient effects is probable. At a TOC depth of 67.8 ft, the EBF apparently aligned with a joint between screens, as measured flow

increased abruptly compared to the test stations immediately above and below. At this point the measured EBF flow was estimated to be 48% of the total.

The field data are analyzed at 1, 3 and 7 ft resolutions in Tables 16 through 18. As before the ambient flow data have not been adjusted to account for internal bypass flow. Nevertheless, differential ambient flow at a 7 ft resolution is plotted in Figure 11. The result appears to be non-physical in that flow is only shown entering the screen. Under steady conditions, this is impossible. Measurement error, or possibly a rising water table, are probably the cause. The non-dimensional or relative hydraulic conductivity distribution,  $K_i/K$ , based on EBF data alone is shown in column (15) of the tables. Some negative values of conductivity are observed at a 1 ft resolution, but not the coarser resolutions. The relative conductivity profile for SWP-100D is plotted in Figure 12 for 1, 3 and 7 ft intervals. Values greater than 1 correspond to greater than average conductivity, and vice versa. Conductivity generally increases from top to bottom of the screen. Bypass flow through the filter pack is negligible, as shown by column (20) in the tables.

Comparison to natural gamma log: Figure 13 compares the relative hydraulic conductivity profiles derived from EBF testing to a natural gamma log from nearby borehole SWP01SB. Intervals of low gamma response tend to correlate with intervals of high hydraulic conductivity, consistent with the presence of sandy sediment. However, reproducing in detail the conductivity variation inferred from EBF testing is not feasible. The comparison illustrates the value of EBF testing when accurate knowledge of conductivity variations is needed.

### **Average conductivity estimates**

Dimensional conductivity profiles can be obtained by multiplying the relative conductivity profile from EBF testing (e.g. Figures 8, 10 and 12) by an independent estimate of average conductivity over the screen zone. The SWP wells are fully-penetrating, so the screen-average conductivity is synonymous with formation-average conductivity. Conductivity averaged over formation thickness can be estimated from multiple- or single-well aquifer testing.

Prior multiple-well testing: The results of prior multiple-well aquifer testing at the Southwest Plume Test Pad are presented by WSRC (1999) and summarized in Tables 1 and 19. These conductivity estimates are more reliable than single-well aquifer test results because well losses in the pumping well do not affect drawdowns in the observation wells. Tables 8-11, 13-14 and 16-18 incorporate these average conductivity estimates in the dimensional conductivity profiles.

Single-well testing concurrent with EBF testing: Single-well aquifer testing was performed concurrently with EBF testing to assess the feasibility of estimating average conductivity in this manner at sites where prior estimates are not available. Appendices A, B and C contain the water level transducer and barometric pressure data and plots for SWP-300A, 200C and 100D, respectively. Although well efficiencies are known from prior multiple-well testing (Table 1), these estimates are ignored in the present analysis so

that estimates independent of prior testing can be developed. Instead, the efficiency of each well is assumed to be 50%, a value judged to be representative of average conditions. Figures 14 through 16 illustrate time-drawdown data for each well, after applying the assumed well efficiency of 50%. The average transmissivity values listed in these figures were estimated using AQTESOLV using the type curve denoted in each figure. Only the early time data before EBF testing began are analyzed in these figures. Hence these single-well pumping tests were of short duration. Emphasis was placed on accurately fitting the longer times in each set of drawdown data to reduce the effects of well bore storage. The corresponding conductivity estimates, based on saturated formation thickness from Table 1, are compared to the prior multiple-well results in Table 19. Significant differences are observed between the multiple- and single-well test results, largely because the assumed well efficiency of 50% is inaccurate. This exercise illustrates the well-known difficulty in predicting conductivity from single-well aquifer tests.

### **Alternative conductivity estimates using Cooper-Jacob analysis**

Horizontal conductivity can be estimated directly for individual screen intervals, provided the pumping rate is held constant (or is the superposition of constant pumping rates) and time-drawdown data are recorded in addition to EBF flowrates. Under these conditions, a Cooper-Jacob analysis can be applied to each screen interval as summarized by equation (3). Well losses can be introduced by modifying equation (3) as

$$K_i = \frac{(\Delta Q_i - \Delta q_i)}{2\pi\Delta z_i \Delta h E} \ln \left( \frac{1.5}{r_w} \sqrt{\frac{Tt}{S}} \right) \quad (9)$$

where E is well efficiency, defined to be the theoretical drawdown divided by actual drawdown ( $\Delta h$ ). If barometric pressure variations are significant, further adjustments to measured drawdown are needed. This approach replaces the need for a prior screen-average conductivity estimate, ideally from a separate multiple-well pumping test, with single-well pump testing conducted concurrently with EBF flow measurements. Being a form of single-well aquifer testing, the Cooper-Jacob analysis requires prior estimates for hydraulic diffusivity ( $T/S$ ) and well efficiency ( $E$ ). Transmissivity ( $T$ ) can be determined iteratively from the layer estimates of conductivity ( $K_i$ ). Therefore, storage coefficient ( $S$ ) and well efficiency ( $E$ ) are fundamentally required. Both are difficult to estimate with accuracy. However, the Cooper-Jacob estimate is not highly sensitive to the assumed value of storage coefficient for large times, because  $S$  appears within a square-root and logarithm in equation (9). Unfortunately, the same cannot be said for well efficiency because conductivity is inversely proportional to  $E$ . Therefore, EBF conductivity estimates from equation (9) have a level of uncertainty similar to conventional single-well pumping test estimates.

The conditions required for Cooper-Jacob analysis were satisfied during EBF testing at all 3 SWP wells. Barometric pressure was monitored, but did not vary substantially over the course of a 2 hour EBF test. Therefore, no barometric corrections to the time-drawdown data were made. Prior to EBF testing, water level changed smoothly with time. During

EBF testing, packer inflation and deflation, and movement of the EBF, caused artificial fluctuations in water level. Unlike the conventional single-well analysis discussed above, the Cooper-Jacob analysis is applied during EBF testing. Therefore the water level transducer data must be smoothed to remove these artifacts from the time-drawdown data. Figures 17 through 19 plot the water level transducer response in the unaltered and smoothed forms. At SWP-200C the flowrate was increased from about 4 L/min to about 7 L/min after 2 hours of pumping, creating an abrupt change in transducer pressure at that time. Borehole flowrates near the bottom of SWP-200C at a pumping rate of 4 L/min were too small to be resolved by the 1" EBF, so the pumping rate was increased. At SWP-100D the transducer was raised 2 ft near the end of EBF testing so that the pump and EBF could be raised as close as possible to the water level. The offset is accounted for by raising the smoothed tail of the unaltered transducer response by 2 ft. Tables 8-11, 13-14 and 16-18 use the smoothed drawdown data to compute dimensional conductivity profiles using the Cooper-Jacob analysis. For these calculations, well efficiency was assumed to be 50% as with conventional single-well testing. Specific storage coefficient were assumed to be  $10^{-5}$  ft<sup>-1</sup> for confined aquifers and  $10^{-2}$  ft<sup>-1</sup> for unconfined aquifers.

The Cooper-Jacob conductivity estimates are shown in the second half of the calculation tables. The ratio of the Cooper-Jacob estimate to the estimate based on prior multiple-well aquifer testing is shown in each table. The ratio varies little, which means that the relative conductivity variation is the practically the same between the two calculation methods. Similarly, the Cooper-Jacob estimates are averaged over the screen zone and compared to the prior multiple-well test result. The average Cooper-Jacob estimates are included in Table 19 for comparison to the prior multiple-well and conventional single-well aquifer test results. Significant differences are observed between the multiple-well and average Cooper-Jacob results, largely because the assumed well efficiency of 50% is inaccurate. When well efficiency and specific storage are based on the prior multiple-well aquifer tests (WSRC, 1999), the agreement is much improved.

### **Considerations and recommendations for future EBF deployment**

Based on the experience gained at the Southwest Plume Test Pad, the following recommendations and considerations for future EBF deployments are stated.

1" versus 1/2" EBF for dynamic testing: As suggested by Flach and others (2000), the 1" EBF is clearly preferred over the 1/2" EBF for dynamic testing. The 1" EBF has more than adequate sensitivity and practically eliminates bypass flow through the filter pack.

Slotted versus wire wrap screen: The EBF packer cannot achieve a good seal against a wire wrap screen, which leads to undesirable internal bypass flow, even with the 1" EBF. The measured EBF flow can be corrected if measurements are taken at screen section joints and above the top of screen. At these locations a good seal is achieved and the measured flow provides a good reference for corrections to the surrounding data. Because of variations in the packer seal against a wire wrap screen, the corrections are imperfect and introduce noticeable noise in the relative conductivity profiles. The noise can be reduced by analyzing the data at a coarser resolution, but at the expense of also

smoothing out real conductivity variations. Other considerations being equal, slotted screen is preferred over wire wrap screen for the purpose of measuring flowrates with the EBF. If single-well aquifer testing is to be performed concurrently with EBF testing, a wire wrap screen might be more desirable from the standpoint of increased well efficiency however.

Equipment issues: The present EBF system has a number of shortcomings that should ideally be remedied before extensive, routine application of the technology at the SRS. Several deficiencies have been identified in Flach and others (2000) in reference to R-area EBF testing. At the Southwest Plume Test Pad, the 1" EBF failed electrically causing lost time and poorer quality results as a result of subsequently having to use the 1/2" EBF. A more reliable EBF system is needed.

Feasibility of concurrent single-well aquifer testing: Single-well aquifer testing performed concurrently with EBF testing was investigated as an possible alternative to reliance on prior multiple-well estimates of average horizontal conductivity or well efficiency. Single-well testing refers to conventional estimates of screen-average conductivity and estimates of subinterval conductivity using Cooper-Jacob analysis. As with all single-well testing, either approach depends on an uncertain estimate of well efficiency in the absence of prior multiple-well testing. Concurrent single-well aquifer testing was determined to be feasible in the field. Based on EBF testing in R-area and at the Southwest Plume Test Pad, conductivity estimates based on single-well testing alone have an uncertainty of roughly plus or minus a factor of 2. A prior multiple-well estimate of average conductivity is technically preferred, but concurrent single-well testing may be preferred overall considering the cost of multiple-well aquifer testing.

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Table 1 SPTP well information.

| Well     | SRS N<br>(ft) | SRS E<br>(ft) | Pad<br>Elevation<br>(ft msl) | TOC<br>Elev<br>(ft msl) | Top of<br>Screen<br>(ft msl) | Bottom of<br>Screen<br>(ft msl) | Screen<br>Length<br>(ft) | Borehole<br>Diameter<br>(in) | Casing<br>Diameter<br>(in) | Filter<br>Pack | Hydro-<br>stratigraphic<br>unit | Unit<br>Thickness<br>(ft) | Average<br>Trans-<br>missivity<br>(ft <sup>2</sup> /d) | Average<br>Storativity<br>(unitless) | Average<br>Diffusivity<br>(T/S)<br>(ft <sup>2</sup> /d) | Average<br>Conductivity<br>(ft/d) | Well<br>efficiency<br>(%) |
|----------|---------------|---------------|------------------------------|-------------------------|------------------------------|---------------------------------|--------------------------|------------------------------|----------------------------|----------------|---------------------------------|---------------------------|--|--------------------------------------|---|-----------------------------------|---------------------------|
| SWP-300A | 75,133        | 52,936        | 268.69                       | 271.19                  | 105.69                       | 65.68                           | 40.01                    | 8                            | 4                          | FX-50          | Gordon                          | 43                        | 2260   | 9.30E-04                             | 2.4E+06   | 52.6                              | 27                        |
| SWP-200C | 75,129        | 52,947        | 268.87                       | 270.82                  | 179.42                       | 119.43                          | 59.99                    | 10                           | 6                          | FX-50          | lower UTRA                      | 65                        | 96   | 6.82E-04                             | 1.4E+05   | 1.48                              | 76                        |
| SWP-100D | 75,125        | 52,955        | 268.41                       | 270.77                  | 222.02                       | 192.02                          | 30.00                    | 10                           | 6                          | FX-50          | upper UTRA                      | 28.5                      | 835  | 2.50E-01                             | 3.3E+03   | 29.3                              | 10                        |

Sources: WSRC-RP-99-4069 and WSRC-RP-99-4073

Table 2 Calibration data for the 1/2" ID EBF.

| Calibration Data    |                |                    |                     | Calculated Data     |                         |                        |                            | y = 0.0024x2 + 0.7838x |         |                            |                  |         |
|---------------------|----------------|--------------------|---------------------|---------------------|-------------------------|------------------------|----------------------------|------------------------|---------|----------------------------|------------------|---------|
| Instrument Response | Water Temp (C) | Water Weight (lbs) | Time Duration (min) | Mass Flow (lbs/min) | Water Density (lb/ft^3) | Volume Flow (ft^3/min) | Volume Flow (Actual) (LPM) | Act-Inst Resp          | % Error | Calibrated Meter Flow Rate | Act-Cal Mtr Flow | % Error |
| 0.00                |                |                    |                     |                     |                         |                        | 0                          | 0.000                  |         | 0.000                      | 0.000            |         |
| 0.029               | 21.5           | 0.685              | 10.00533            | 0.0685              | 62.2877                 | 0.0011                 | 0.0311                     | 0.002                  | 6.89    | 0.023                      | 0.008            | 27.01   |
| 0.036               | 21.9           | 0.670              | 10.0065             | 0.0670              | 62.2826                 | 0.0011                 | 0.0304                     | -0.006                 | 18.25   | 0.028                      | 0.002            | 7.30    |
| 0.073               | 22.0           | 0.667              | 5.004333            | 0.1332              | 62.2813                 | 0.0021                 | 0.0606                     | -0.012                 | 20.51   | 0.057                      | 0.003            | 5.52    |
| 0.089               | 21.8           | 0.814              | 5.0035              | 0.1627              | 62.2839                 | 0.0026                 | 0.0740                     | -0.015                 | 20.32   | 0.070                      | 0.004            | 5.67    |
| 0.506               | 19.4           | 4.510              | 5.009167            | 0.9003              | 62.3135                 | 0.0144                 | 0.4091                     | -0.097                 | 23.68   | 0.397                      | 0.012            | 2.91    |
| 0.506               | 19.5           | 4.500              | 5.008333            | 0.8985              | 62.3123                 | 0.0144                 | 0.4083                     | -0.098                 | 23.93   | 0.397                      | 0.011            | 2.71    |
| 0.552               | 22.2           | 2.935              | 3.006833            | 0.9761              | 62.2787                 | 0.0157                 | 0.4438                     | -0.108                 | 24.38   | 0.433                      | 0.010            | 2.35    |
| 1.007               | 19.0           | 17.830             | 10.01183            | 1.7809              | 62.3181                 | 0.0286                 | 0.8092                     | -0.198                 | 24.44   | 0.792                      | 0.017            | 2.16    |
| 1.019               | 20.5           | 18.020             | 10.00867            | 1.8004              | 62.3003                 | 0.0289                 | 0.8183                     | -0.201                 | 24.52   | 0.801                      | 0.017            | 2.09    |
| 4.010               | 20.8           | 35.100             | 5.0065              | 7.0109              | 62.2966                 | 0.1125                 | 3.1867                     | -0.823                 | 25.84   | 3.182                      | 0.005            | 0.16    |
| 4.030               | 19.6           | 35.260             | 5.0085              | 7.0400              | 62.3111                 | 0.1130                 | 3.1992                     | -0.831                 | 25.97   | 3.198                      | 0.002            | 0.05    |
| 6.955               | 21.2           | 60.990             | 5.008333            | 12.1777             | 62.2916                 | 0.1955                 | 5.5357                     | -1.419                 | 25.64   | 5.567                      | -0.032           | 0.57    |
| 9.860               | 21.2           | 52.470             | 3.0105              | 17.4290             | 62.2916                 | 0.2798                 | 7.9227                     | -1.937                 | 24.45   | 7.962                      | -0.039           | 0.49    |
| 9.875               | 20.5           | 53.070             | 3.004667            | 17.6625             | 62.3003                 | 0.2835                 | 8.0278                     | -1.847                 | 23.01   | 7.974                      | 0.054            | 0.67    |
| 10.015              | 21.4           | 53.480             | 3.005833            | 17.7921             | 62.2890                 | 0.2856                 | 8.0881                     | -1.927                 | 23.82   | 8.090                      | -0.002           | 0.03    |

Table 3 Calibration data for the 1" ID EBF.

| Instrument Response | Calibration Data |                    |                     | Calculated Data     |                                     |                                    |                            |               | Calibrated Meter Flow |                                    |                          |         |
|---------------------|------------------|--------------------|---------------------|---------------------|-------------------------------------|------------------------------------|----------------------------|---------------|-----------------------|------------------------------------|--------------------------|---------|
|                     | Water Temp (C)   | Water Weight (lbs) | Time Duration (min) | Mass Flow (lbs/min) | Water Density (lb/ft <sup>3</sup> ) | Volume Flow (ft <sup>3</sup> /min) | Volume Flow (Actual) (LPM) | Act-Inst Resp | % Error               | Calibrated Meter Flow Rate (L/min) | Act-Cal Mtr Flow (L/min) | % Error |
| 0.00                |                  |                    |                     |                     |                                     |                                    | 0                          | 0.00          |                       | 0.110                              | -0.110                   |         |
| 0.10                | 19.0             | 2.070              | 5.0065              | 0.4135              | 62.3181                             | 0.0066                             | 0.1879                     | 0.09          | 46.77                 | 0.208                              | -0.020                   | 10.5    |
| 0.10                | 18.8             | 2.070              | 5.006               | 0.4135              | 62.3204                             | 0.0066                             | 0.1879                     | 0.09          | 46.77                 | 0.208                              | -0.020                   | 10.5    |
| 0.10                | 19.0             | 2.075              | 5.0075              | 0.4144              | 62.3181                             | 0.0066                             | 0.1883                     | 0.09          | 46.89                 | 0.208                              | -0.019                   | 10.3    |
| 1.00                | 22.2             | 7.255              | 3.0075              | 2.4123              | 62.2787                             | 0.0387                             | 1.0968                     | 0.10          | 8.83                  | 1.089                              | 0.007                    | 0.7     |
| 1.00                | 22.2             | 7.280              | 3.011               | 2.4178              | 62.2787                             | 0.0388                             | 1.0993                     | 0.10          | 9.03                  | 1.089                              | 0.010                    | 0.9     |
| 1.00                | 22.40            | 7.260              | 3.006667            | 2.4146              | 62.2760                             | 0.0388                             | 1.0979                     | 0.10          | 8.92                  | 1.089                              | 0.009                    | 0.8     |
| 10.02               | 19.2             | 66.290             | 3.0035              | 22.0709             | 62.3158                             | 0.3542                             | 10.0289                    | 0.01          | 0.09                  | 9.926                              | 0.103                    | 1.0     |
| 10.23               | 19.6             | 68.090             | 3.0035              | 22.6702             | 62.3111                             | 0.3638                             | 10.3020                    | 0.07          | 0.70                  | 10.132                             | 0.170                    | 1.7     |
| 10.40               | 19.8             | 68.800             | 3.005               | 22.8952             | 62.3087                             | 0.3674                             | 10.4047                    | 0.00          | 0.04                  | 10.299                             | 0.106                    | 1.0     |
| 20.12               | 19.2             | 130.060            | 3.004667            | 43.2860             | 62.3158                             | 0.6946                             | 19.6690                    | -0.45         | 2.29                  | 19.821                             | -0.152                   | 0.8     |
| 20.15               | 19.6             | 131.500            | 3.008333            | 43.7119             | 62.3111                             | 0.7015                             | 19.8640                    | -0.29         | 1.44                  | 19.851                             | 0.013                    | 0.1     |
| 20.51               | 19.8             | 134.010            | 3.0075              | 44.5586             | 62.3087                             | 0.7151                             | 20.2495                    | -0.26         | 1.29                  | 20.203                             | 0.046                    | 0.2     |
| 30.00               | 19.6             | 161.780            | 2.509               | 64.4799             | 62.3111                             | 1.0348                             | 29.3016                    | -0.70         | 2.38                  | 29.501                             | -0.199                   | 0.7     |
| 30.15               | 19.8             | 162.290            | 2.505667            | 64.7692             | 62.3087                             | 1.0395                             | 29.4342                    | -0.72         | 2.43                  | 29.648                             | -0.213                   | 0.7     |
| 30.30               | 20.0             | 163.240            | 2.5075              | 65.1007             | 62.3063                             | 1.0448                             | 29.5860                    | -0.71         | 2.41                  | 29.795                             | -0.209                   | 0.7     |
| 35.00               | 20.0             | 150.470            | 2.004167            | 75.0786             | 62.3063                             | 1.2050                             | 34.1206                    | -0.88         | 2.58                  | 34.399                             | -0.279                   | 0.8     |
| 35.00               | 19.8             | 150.510            | 2.005167            | 75.0611             | 62.3087                             | 1.2047                             | 34.1113                    | -0.89         | 2.61                  | 34.399                             | -0.288                   | 0.8     |
| 35.00               | 20.0             | 156.560            | 2.007833            | 77.9746             | 62.3063                             | 1.2515                             | 35.4367                    | 0.44          | 1.23                  | 34.399                             | 1.038                    | 2.9     |

Table 4 Pre-test design calculations for SWP-300A.

**Pretest criteria for valid EBF application (pseudo-steady state & minimal bypass flow)**

|  |         |  |                             |                |               |                |               |
|--|---------|--|-----------------------------|----------------|---------------|----------------|---------------|
| <b>Site</b>                                |         | SWP-300A   |                             |                |               |                |               |
| <b>Formation properties</b>                |         | <b>Ruud and Kabala (1996) pseudo-steady criterion</b>          |                             |                |               |                |               |
| estimated K (ft/d)                         | 52.6    | 1.0E+03  | Non-dimensional time, $t_D$ |                |               |                |               |
|  |         | Diffusivity contrast   | Time, t (d)                 | Time, t (hr)   | Time, t (min) | Time, t (s)    |               |
| estimated $S_s$ (1/ft)                     | 2.2E-05 | 1:1  | 0.0                         | 0.0            | 0.0           | 1.0            |               |
| thickness b (ft)                           | 43      | 10:1   | 0.0                         | 0.0            | 0.1           | 5.4            |               |
| estimated T (ft <sup>2</sup> /d)           | 2261.8  | 100:1  | 0.0                         | 0.0            | 0.8           | 50.0           |               |
| estimated S                                | 9.3E-04 | 1000:1   | 0.0                         | 0.1            | 8.3           | 495.6          |               |
| diffusivity $v = T/S$ (ft <sup>2</sup> /d) | 2.4E+06 |  |                             |                |               |                |               |
| <b>Well properties</b>                     |         | <b>Molz and others (1989) pseudo-steady criterion</b>          |                             |                |               |                |               |
| borehole diameter (in)                     | 8       | <i>(but using assumed influence radius per personal comm.)</i> |                             |                |               |                |               |
| Casing diameter (in)                       | 4       | 1.0E+02  | Non-dimensional time, $t_D$ |                |               |                |               |
|  |         | Influence radius, r (ft)                                       | Time, t (d)                 | Time, t (hr)   | Time, t (min) | Time, t (s)    |               |
| Borehole radius (in)                       | 4       | 1  | 0.0                         | 0.0            | 0.0           | 0.9            |               |
| Casing radius (in)                         | 2       | 2  | 0.0                         | 0.0            | 0.1           | 3.6            |               |
| Borehole radius (m)                        | 0.1016  | 5  | 0.0                         | 0.0            | 0.4           | 22.3           |               |
| Casing radius (m)                          | 0.0508  | 10   | 0.0                         | 0.0            | 1.5           | 89.1           |               |
| Annulus area (m <sup>2</sup> )             | 0.024   | 20   | 0.0                         | 0.1            | 5.9           | 356.4          |               |
| Annulus thickness (cm)                     | 5.08    |  |                             |                |               |                |               |
| Filter pack conductivity (m/d)             | 100     |  |                             |                |               |                |               |
| <b>EBF properties</b>                      |         | <b>Rehfeldt and others (1989) and Flach criteria</b>           |                             |                |               |                |               |
|  |         | Non-dimensional time, $t_D$                                    | Time, t (d)                 | Time, t (hr)   | Time, t (min) | Time, t (s)    |               |
| $L_{EBF}$ (m)                              | 0.178   | 4.0E+02  | 0.0                         | 0.0            | 0.0           | 0.4            | 10:1          |
|  |         | 4.0E+03  | 0.0                         | 0.0            | 0.1           | 4.0            | 100:1         |
|  |         | 4.0E+04  | 0.0                         | 0.0            | 0.7           | 39.6           | $r/b < 0.125$ |
|  |         | 1.0E+06  | 0.0                         | 0.3            | 16.5          | 990.1          | long time     |
| <b>Bypass properties</b>                   |         | <b>Bypass flow estimate</b>                                    |                             |                |               |                |               |
|  |         | <b>1/2" EBF</b>  |                             | <b>1" EBF</b>  |               |                |               |
|  |         | Pumping rate, QP (L/min)                                       | Pumping rate, QP (gal/min)  | Bypass (L/min) | Ratio         | Bypass (L/min) | Ratio         |
|  |         | 0.2  | 0.05                        | 0.00           | 0.8%          | 0.00           | 0.1%          |
|  |         | 0.5  | 0.13                        | 0.01           | 1.1%          | 0.00           | 0.1%          |
|  |         | 1  | 0.26                        | 0.01           | 1.4%          | 0.00           | 0.1%          |
|  |         | 2  | 0.53                        | 0.04           | 2.2%          | 0.00           | 0.1%          |
|  |         | 5  | 1.32                        | 0.23           | 4.6%          | 0.01           | 0.3%          |
|  |         | 10   | 2.64                        | 0.86           | 8.6%          | 0.05           | 0.5%          |
|  |         | 20   | 5.28                        | 3.29           | 16.4%         | 0.21           | 1.0%          |
|  |         | 20   | 5.28                        | 3.29           | 16.4%         | 0.21           | 1.0%          |

Table 5 Pre-test design calculations for SWP-200C.

**Pretest criteria for valid EBF application (pseudo-steady state & minimal bypass flow)**

|  |         |  |                             |              |                |             |               |
|--|---------|--|-----------------------------|--------------|----------------|-------------|---------------|
| <b>Site</b>                                |         | SWP-200C   |                             |              |                |             |               |
| <b>Formation properties</b>                |         | <b>Ruud and Kabala (1996) pseudo-steady criterion</b>          |                             |              |                |             |               |
| estimated K (ft/d)                         | 1.48    | 1.0E+03  | Non-dimensional time, $t_D$ |              |                |             |               |
| estimated $S_s$ (1/ft)                     | 1.0E-05 | Diffusivity contrast   | Time, t (d)                 | Time, t (hr) | Time, t (min)  | Time, t (s) |               |
| thickness b (ft)                           | 65      | 1:1  | 0.0                         | 0.0          | 0.4            | 26.4        |               |
| estimated T (ft <sup>2</sup> /d)           | 96.2    | 10:1   | 0.0                         | 0.0          | 2.4            | 144.9       |               |
| estimated S                                | 6.8E-04 | 100:1  | 0.0                         | 0.4          | 22.2           | 1330.7      |               |
| diffusivity $v = T/S$ (ft <sup>2</sup> /d) | 1.4E+05 | 1000:1   | 0.2                         | 3.7          | 219.8          | 13188.9     |               |
| <b>Well properties</b>                     |         | <b>Molz and others (1989) pseudo-steady criterion</b>          |                             |              |                |             |               |
| borehole diameter (in)                     | 10      | <i>(but using assumed influence radius per personal comm.)</i> |                             |              |                |             |               |
| Casing diameter (in)                       | 6       | 1.0E+02  | Non-dimensional time, $t_D$ |              |                |             |               |
| Borehole radius (in)                       | 5       | Influence radius, r (ft)                                       | Time, t (d)                 | Time, t (hr) | Time, t (min)  | Time, t (s) |               |
| Casing radius (in)                         | 3       | 1  | 0.0                         | 0.0          | 0.3            | 15.2        |               |
| Borehole radius (m)                        | 0.1270  | 2  | 0.0                         | 0.0          | 1.0            | 60.7        |               |
| Casing radius (m)                          | 0.0762  | 5  | 0.0                         | 0.1          | 6.3            | 379.5       |               |
| Annulus area (m <sup>2</sup> )             | 0.032   | 10   | 0.0                         | 0.4          | 25.3           | 1517.8      |               |
| Annulus thickness (cm)                     | 5.08    | 20   | 0.1                         | 1.7          | 101.2          | 6071.4      |               |
| Filter pack conductivity (m/d)             | 100     | <b>Rehfeldt and others (1989) and Flach criteria</b>           |                             |              |                |             |               |
| <b>EBF properties</b>                      |         | Non-dimensional time, $t_D$                                    | Time, t (d)                 | Time, t (hr) | Time, t (min)  | Time, t (s) |               |
| $L_{EBF}$ (m)                              | 0.178   | 4.0E+02  | 0.0                         | 0.0          | 0.2            | 10.5        | 10:1          |
| <b>Bypass properties</b>                   |         | 4.0E+03  | 0.0                         | 0.0          | 1.8            | 105.4       | 100:1         |
| $\Delta L$ (m)                             | 0.079   | 4.0E+04  | 0.0                         | 0.3          | 17.6           | 1054.1      | $r/b < 0.125$ |
| L (m)                                      | 0.257   | 1.0E+06  | 0.3                         | 7.3          | 439.2          | 26351.4     | long time     |
| <b>Bypass flow estimate</b>                |         | <b>1/2" EBF</b>  |                             |              |                |             |               |
| Pumping rate, QP (L/min)                   |         | Pumping rate, QP (gal/min)                                     | Bypass (L/min)              | Ratio        | Bypass (L/min) | Ratio       |               |
| 0.2  |         | 0.05   | 0.00                        | 1.1%         | 0.00           | 0.1%        |               |
| 0.5  |         | 0.13   | 0.01                        | 1.4%         | 0.00           | 0.1%        |               |
| 1  |         | 0.26   | 0.02                        | 1.9%         | 0.00           | 0.1%        |               |
| 2  |         | 0.53   | 0.06                        | 3.0%         | 0.00           | 0.2%        |               |
| 5  |         | 1.32   | 0.31                        | 6.1%         | 0.02           | 0.4%        |               |
| 10   |         | 2.64   | 1.14                        | 11.4%        | 0.07           | 0.7%        |               |
| 20   |         | 5.28   | 4.38                        | 21.9%        | 0.27           | 1.4%        |               |
| 15   |         | 3.96   | 2.50                        | 16.7%        | 0.16           | 1.0%        |               |
| 4  |         | 1.06   | 0.20                        | 5.1%         | 0.01           | 0.3%        |               |

Table 6 Pre-test design calculations for SWP-100D.

**Pretest criteria for valid EBF application (pseudo-steady state & minimal bypass flow)**

|  |         |  |                             |                |                |             |               |
|--|---------|--|-----------------------------|----------------|----------------|-------------|---------------|
| <b>Site</b>                                |         | SWP-100D   |                             |                |                |             |               |
| <b>Formation properties</b>                |         | <b>Ruud and Kabala (1996) pseudo-steady criterion</b>          |                             |                |                |             |               |
| estimated K (ft/d)                         | 29.3    | 1.0E+03  | Non-dimensional time, $t_D$ |                |                |             |               |
|  |         | Diffusivity contrast   | Time, t (d)                 | Time, t (hr)   | Time, t (min)  | Time, t (s) |               |
| estimated $S_s$ (1/ft)                     | 8.8E-03 | 1:1  | 0.0                         | 0.3            | 18.7           | 1119.9      |               |
| thickness b (ft)                           | 28.5    | 10:1   | 0.1                         | 1.7            | 102.7          | 6159.3      |               |
| estimated T (ft <sup>2</sup> /d)           | 835     | 100:1  | 0.7                         | 15.7           | 942.6          | 56554.0     |               |
| estimated S                                | 2.5E-01 | 1000:1   | 6.5                         | 155.7          | 9341.7         | #####       |               |
| diffusivity $v = T/S$ (ft <sup>2</sup> /d) | 3.3E+03 |  |                             |                |                |             |               |
| <b>Well properties</b>                     |         | <b>Molz and others (1989) pseudo-steady criterion</b>          |                             |                |                |             |               |
| borehole diameter (in)                     | 10      | <i>(but using assumed influence radius per personal comm.)</i> |                             |                |                |             |               |
| Casing diameter (in)                       | 6       | 1.0E+02  | Non-dimensional time, $t_D$ |                |                |             |               |
|  |         | Influence radius, r (ft)                                       | Time, t (d)                 | Time, t (hr)   | Time, t (min)  | Time, t (s) |               |
| Borehole radius (in)                       | 5       | 1  | 0.0                         | 0.2            | 10.8           | 645.1       |               |
| Casing radius (in)                         | 3       | 2  | 0.0                         | 0.7            | 43.0           | 2580.2      |               |
| Borehole radius (m)                        | 0.1270  | 5  | 0.2                         | 4.5            | 268.8          | 16126.3     |               |
| Casing radius (m)                          | 0.0762  | 10   | 0.7                         | 17.9           | 1075.1         | 64505.1     |               |
| Annulus area (m <sup>2</sup> )             | 0.032   | 20   | 3.0                         | 71.7           | 4300.3         | #####       |               |
| Annulus thickness (cm)                     | 5.08    |  |                             |                |                |             |               |
| Filter pack conductivity (m/d)             | 100     |  |                             |                |                |             |               |
| <b>EBF properties</b>                      |         | <b>Rehfeldt and others (1989) and Flach criteria</b>           |                             |                |                |             |               |
|  |         | Non-dimensional time, $t_D$                                    | Time, t (d)                 | Time, t (hr)   | Time, t (min)  | Time, t (s) |               |
| $L_{EBF}$ (m)                              | 0.178   | 4.0E+02  | 0.0                         | 0.1            | 7.5            | 448.0       | 10:1          |
|  |         | 4.0E+03  | 0.1                         | 1.2            | 74.7           | 4479.5      | 100:1         |
|  |         | 4.0E+04  | 0.5                         | 12.4           | 746.6          | 44795.2     | $r/b < 0.125$ |
|  |         | 1.0E+06  | 13.0                        | 311.1          | 18664.7        | #####       | long time     |
| <b>Bypass properties</b>                   |         | <b>Bypass flow estimate</b>                                    |                             |                |                |             |               |
|  |         | <b>1/2" EBF</b>  |                             |                | <b>1" EBF</b>  |             |               |
|  |         | Pumping rate, QP (L/min)                                       | Pumping rate, QP (gal/min)  | Bypass (L/min) | Bypass (L/min) | Ratio       |               |
|  |         | 0.2  | 0.05                        | 0.00           | 0.00           | 0.1%        |               |
|  |         | 0.5  | 0.13                        | 0.01           | 0.00           | 0.1%        |               |
|  |         | 1  | 0.26                        | 0.02           | 0.00           | 0.1%        |               |
|  |         | 2  | 0.53                        | 0.06           | 0.00           | 0.2%        |               |
|  |         | 5  | 1.32                        | 0.31           | 0.02           | 0.4%        |               |
|  |         | 10   | 2.64                        | 1.14           | 0.07           | 0.7%        |               |
|  |         | 20   | 5.28                        | 4.38           | 0.27           | 1.4%        |               |
|  |         | 15   | 3.96                        | 2.50           | 0.16           | 1.0%        |               |

Table 7 Field data for SWP-300A.

| Well ID  | Top of Screen From Grade (ft) | Bottom of Screen From Grade (ft) | Screen Length (ft) | Casing Diameter (inch) | Approx. Water Level From TOC (ft) | Survey Elev. TOC (ft-msl) | Survey Elev. Conc Pad (ft-msl) | TOC to Conc Pad (ft) | Pad Thickness (ft) | Top of Screen From TOC (ft) | Bottom of Screen From TOC (ft) | Top of Screen Elevation (ft-msl) | Bottom of Screen Elevation (ft-msl) |
|----------|-------------------------------|----------------------------------|--------------------|------------------------|-----------------------------------|---------------------------|--------------------------------|----------------------|--------------------|-----------------------------|--------------------------------|----------------------------------|-------------------------------------|
| SWP-300A | 162.19                        | 202.2                            | 40.01              | 4                      | 114.75                            | 271.19                    | 268.69                         | 2.5                  | 0.33               | 165.02                      | 205.03                         | 106.17                           | 66.16                               |

| Dynamic Corrected for "0" |                      |       |                                     |  |                |            |   |  |  |
|---------------------------|----------------------|-------|-------------------------------------|--|----------------|------------|---|--|--|
| Probe Date                | .5" 7/24/00          |       | 1.0" 7/25/00                        |  | 1.0" 7/25/00   |            | .5" 3/29/00                                   |  | 1.0" 3/31/00   |
| Station                   | Depth Below TOC (ft) | Time  | Ambient Instrument Response (L/min) | Dynamic Flow Instrument Response (L/min) | Delta Time min | Delta (ml) | Dynamic Instrument Response Corrected for "0" | y = 0.0024x2 + 0.7838x Ambient Calibrated Flow (L/min) | y = 0.9797x + 0.1097 Dynamic Calibrated Flow (L/min) |
| 48                        | 157.0                | 14:10 | -0.002                              |  |                |            |   | -0.0016  |  |
| 42                        | 163.0                | 14:06 | -0.004                              |  |                |            |   | -0.0031  |  |
| 41                        | 164.0                | 14:02 | -0.004                              |  |                |            |   | -0.0031  |  |
| 40                        | 165.0                | 14:00 | -0.004                              |  |                |            |   | -0.0031  |  |
| 39                        | 166.0                | 13:58 | 0.025                               |  |                |            |   | 0.0195   |  |
| 38                        | 167.0                | 13:55 | 0.021                               |  |                |            |   | 0.0165   |  |
| 37                        | 168.0                | 13:53 | 0.021                               |  |                |            |   | 0.0165   |  |
| 36                        | 169.0                | 13:50 | 0.022                               |  |                |            |   | 0.0172   |  |
| 35                        | 170.0                | 13:48 | 0.023                               |  |                |            |   | 0.0180   |  |
| 34                        | 171.0                | 13:46 | 0.016                               |  |                |            |   | 0.0125   |  |
| 33                        | 172.0                | 13:44 | 0.016                               |  |                |            |   | 0.0125   |  |
| 32                        | 173.0                | 13:42 | 0.015                               |  |                |            |   | 0.0118   |  |
| 31                        | 174.0                | 13:38 | 0.009                               |  |                |            |   | 0.0071   |  |
| 30                        | 175.0                | 13:35 | -0.093                              |  |                |            |   | -0.0729  |  |
| 29                        | 176.0                | 13:33 | 0.011                               |  |                |            |   | 0.0086   |  |
| 28                        | 177.0                | 13:29 | 0.006                               |  |                |            |   | 0.0047   |  |
| 27                        | 178.0                | 13:22 | 0.000                               |  |                |            |   | 0.0000   |  |
| 26                        | 179.0                | 13:15 | -0.100                              |  |                |            |   | -0.0784  |  |
| 25                        | 180.0                | 13:13 | -0.115                              |  |                |            |   | -0.0901  |  |
| 24                        | 181.0                | 13:11 | -0.125                              |  |                |            |   | -0.0979  |  |
| 23                        | 182.0                | 13:09 | -0.130                              |  |                |            |   | -0.1019  |  |
| 22                        | 183.0                | 13:07 | -0.136                              |  |                |            |   | -0.1066  |  |
| 21                        | 184.0                | 13:05 | -0.142                              |  |                |            |   | -0.1113  |  |
| 20                        | 185.0                | 13:03 | -0.262                              |  |                |            |   | -0.2052  |  |
| 19                        | 186.0                | 13:00 | -0.178                              |  |                |            |   | -0.1394  |  |
| 18                        | 187.0                | 12:58 | -0.179                              |  |                |            |   | -0.1402  |  |
| 17                        | 188.0                | 12:55 | -0.195                              |  |                |            |   | -0.1527  |  |
| 16                        | 189.0                | 12:50 | -0.195                              |  |                |            |   | -0.1527  |  |
| 15                        | 190.0                | 12:48 | -0.210                              |  |                |            |   | -0.1645  |  |
| 14                        | 191.0                | 12:47 | -0.210                              |  |                |            |   | -0.1645  |  |
| 13                        | 192.0                | 12:45 | -0.243                              |  |                |            |   | -0.1903  |  |
| 12                        | 193.0                | 12:44 | -0.285                              |  |                |            |   | -0.2075  |  |
| 11                        | 194.0                | 12:42 | -0.262                              |  |                |            |   | -0.2052  |  |
| 10                        | 195.0                | 12:40 | -0.444                              |  |                |            |   | -0.3475  |  |
| 9                         | 196.0                | 12:39 | -0.280                              |  |                |            |   | -0.2193  |  |
| 8                         | 197.0                | 12:37 | -0.287                              |  |                |            |   | -0.2248  |  |
| 7                         | 198.0                | 12:35 | -0.266                              |  |                |            |   | -0.2083  |  |
| 6                         | 199.0                | 12:33 | -0.255                              |  |                |            |   | -0.1997  |  |
| 5                         | 200.0                | 12:32 | -0.237                              |  |                |            |   | -0.1856  |  |
| 4                         | 201.0                | 12:30 | -0.176                              |  |                |            |   | -0.1379  |  |
| 3                         | 202.3                | 12:28 | 0.000                               |  |                |            |   | 0.0000   |  |
| 2                         |                      |       |                                     |  |                |            |   |  |  |
| 1                         |                      |       |                                     |  |                |            |   |  |  |
| 0                         |                      |       |                                     |  |                |            |   |  |  |

Note: Meter at bottom of well at 202.3'

|         |  |
|---------|--|
| 7/24/00 | Ambient  |
|         | Probe moved from testing of 200C to 300A. Warm up in 300A from 11:38 to 12:15  |
|         | Initial reading at -.014. Set to 0.00 and stable for full duration of warm up. |
|         | Last reading at 14:10 -.002  |
|         | Reading check 195 @ 12:53 -.047  |
|         | Reading check 179 @ 13:24 -.0095   |
| 7/25/00 | Dynamic  |
|         | Warm up 7.45 to 8.45   |
|         | Reading at 12:10 after pumping stopped and well had fully recovered -.02       |
|         | Correction per min = -.00019   |
|         | Reading check 195 @ 10:35 +7.78  |
|         | Reading check 175 @ 11:33 +12.98   |
|         | Reading check 163 @ 11:54 +13.52   |
|         | Reading @ 201 varied from +4.5-5.5   |

| 7/24/00 |                  |                                 |                             |  |
|---------|------------------|---------------------------------|-----------------------------|--|
| Time    | Water Level (ft) | Time to Fill Bucket 16.8L (sec) | Field Measured Flow (L/min) | Panametric Flow Reading Ref Only (L/min) |
| 14:15   | 53.2             | N/A                             | N/A                         | N/A                                      |

| 7/25/00 |                 |    |       |       |
|---------|-----------------|----|-------|-------|
| 9:37    | See Data Logger | 76 | 13.26 |       |
| 9:42    |                 | 76 | 13.26 |       |
| 9:59    |                 | 76 | 13.26 |       |
| 10:02   |                 |    |       | 13.21 |
| 10:17   |                 |    |       | 13.29 |
| 10:18   |                 | 76 | 13.26 |       |
| 10:23   |                 |    |       | 13.10 |
| 10:25   |                 |    |       | 13.21 |
| 10:27   |                 |    |       | 13.25 |
| 10:29   |                 |    |       | 13.28 |
| 10:32   |                 | 76 | 13.26 |       |
| 10:39   |                 |    |       | 13.29 |
| 10:44   |                 |    |       | 13.34 |
| 10:54   |                 |    |       | 13.28 |
| 10:56   |                 |    |       | 13.34 |
| 11:01   |                 | 75 | 13.44 | 13.36 |
| 11:07   |                 |    |       | 13.30 |
| 11:10   |                 |    |       | 13.42 |
| 11:19   |                 | 75 | 13.44 |       |
| 11:28   |                 |    |       | 13.34 |
| 11:32   |                 |    |       | 13.51 |
| 11:35   |                 |    |       | 13.51 |
| 11:37   |                 | 75 | 13.44 |       |
| 11:40   |                 |    |       | 13.44 |
| 11:47   |                 |    |       | 13.43 |
| 11:50   |                 |    |       | 13.46 |
| 11:53   |                 | 73 | 13.81 |       |



Table 8 Hydraulic conductivity calculations for SWP-300A at 1 ft increments

| (1)                     | (2)                   | (3)                        | (4)  | (5)                            | (6)                                    | (7)                      | (8)                                     | (9)                                       | (10)   | (11)   | (12)  | (13)                          | (14)                           | (15)                                       | (16)                                      | (17)                               | (18)                              | (19)             | (20)                           | (21)  | (22)                  | (23)                | (24)    | (25)                                      | (26)                                | (27)             |          |
|-------------------------|-----------------------|----------------------------|--|--------------------------------|--|--------------------------|---|---|--|--|---|-------------------------------|--------------------------------|--|---|------------------------------------|-----------------------------------|------------------|--------------------------------|---|-----------------------|---------------------|---------|---|-------------------------------------|------------------|----------|
| Depth Below<br>TOC (ft) | Elevation<br>(ft=msl) | Ambient<br>Flow<br>(L/min) | Ambient<br>Flow, Q<br>(ft <sup>3</sup> /min) | Ambient<br>Flow, Aq<br>(L/min) | Recorded<br>Induced<br>Flow<br>(L/min) | Bypass<br>Flow<br>factor | Corrected<br>Induced<br>Flow<br>(L/min) | Pump<br>Flow, Q<br>(ft <sup>3</sup> /min) | Net Pumping<br>Flow, Q - q<br>(ft <sup>3</sup> /min) | Differential<br>Flow, ΔQ - q<br>(ft <sup>3</sup> /min) | Adjusted?<br>ΔQ - q<br>(ft <sup>3</sup> /min) | Layer<br>Thickness<br>Δz (ft) | Mid-point<br>Elevation<br>(ft) | K <sub>avg</sub><br>(ft <sup>2</sup> /day) | K <sub>avg</sub><br>(m <sup>2</sup> /day) | Net Flow<br>(ft <sup>3</sup> /day) | K <sub>i</sub> (m/s) <sup>2</sup> | Check<br>(L/min) | Estimated<br>bypass<br>(L/min) | Estimated<br>bypass<br>(ft <sup>3</sup> /day) | Elapsed<br>Time (min) | Water<br>Level (ft) | ch (ft) | Cooper-<br>Jacob K <sub>i</sub><br>(ft/d) | Ratio                               | K <sub>avg</sub> |          |
| 165.02                  | 106.17                | -0.0314                    | -0.0011                                      | -0.0080                        | 13.33                                  | 0.681                    | 13.33                                   | 0.7094                                    | 0.7095   | 0.0016   | -0.0016                                       | 0.68                          | 105.69                         | 0.17                                       | -0.9                                      | -3.7E-03                           | 1.689E-01                         | 0.09             | 0.007                          | 11.46   | 121                   | 8.671               | 1.55    | 4.6                                       | 0.51                                | 4.48             |          |
| 166                     | 105.19                | 0.0190                     | 0.0069                                       | 0.0011                         | 9.08                                   | 0.683                    | 9.33                                    | 0.4698                                    | 0.4699   | -0.0024  | -0.0024                                       | 1.00                          | 104.69                         | -0.21                                      | -10.9                                     | 1.84E-03                           | 2.069E-01                         | 0.09             | 0.007                          | 11.46   | 127                   | 8.678               | 1.54    | 5.6                                       | 0.51                                | 4.56             |          |
| 167                     | 104.19                | 0.0164                     | 0.0058                                       | 0.0000                         | 9.15                                   | 0.684                    | 13.37                                   | 0.4720                                    | 0.4712   | -0.0030  | -0.0030                                       | 1.00                          | 103.69                         | -0.03                                      | -1.3                                      | 4.88E-04                           | 2.523E-02                         | 0.09             | 0.007                          | 11.39   | 124                   | 8.663               | 1.53    | -0.7                                      | 0.51                                | -0.68            |          |
| 168                     | 103.19                | 0.0164                     | 0.0058                                       | -0.0003                        | 9.18                                   | 0.686                    | 13.37                                   | 0.4720                                    | 0.4712   | 0.0025   | 0.0025  | 1.00                          | 102.69                         | 0.28                                       | 14.5                                      | 1.52E-03                           | 2.793E-01                         | 0.09             | 0.007                          | 11.39   | 124                   | 8.663               | 1.53    | 7.4                                       | 0.51                                | 7.45             |          |
| 169                     | 102.19                | 0.0174                     | 0.0061                                       | -0.0003                        | 9.14                                   | 0.688                    | 13.38                                   | 0.4698                                    | 0.4687   | 0.0022   | 0.0022  | 1.00                          | 101.69                         | 0.02                                       | 1.0                                       | 3.42E-04                           | 1.843E-02                         | 0.09             | 0.007                          | 11.33   | 118                   | 8.669               | 1.53    | 0.5                                       | 0.51                                | 0.50             |          |
| 170                     | 101.19                | 0.0183                     | 0.0064                                       | 0.0019                         | 9.16                                   | 0.690                    | 13.28                                   | 0.4689                                    | 0.4685   | 0.0010   | 0.0010  | 1.00                          | 100.69                         | 0.09                                       | 4.5                                       | 1.58E-03                           | 5.895E-02                         | 0.09             | 0.007                          | 11.31   | 118                   | 8.661               | 1.53    | 2.3                                       | 0.51                                | 2.30             |          |
| 171                     | 100.19                | 0.0154                     | 0.0044                                       | 0.0000                         | 9.16                                   | 0.691                    | 13.25                                   | 0.4679                                    | 0.4675   | 0.0069   | 0.0069  | 1.00                          | 99.69                          | 0.57                                       | 29.9                                      | 1.06E-03                           | 5.695E-01                         | 0.09             | 0.007                          | 11.28   | 118                   | 8.663               | 1.53    | 15.3                                      | 0.51                                | 15.32            |          |
| 172                     | 99.19                 | 0.0125                     | 0.0044                                       | 0.0003                         | 9.05                                   | 0.693                    | 13.06                                   | 0.4610                                    | 0.4605   | 0.0064   | 0.0064  | 1.00                          | 98.69                          | 0.58                                       | 2.8                                       | 1.06E-03                           | 5.430E-02                         | 0.09             | 0.007                          | 11.24   | 109                   | 8.661               | 1.53    | 1.5                                       | 0.51                                | 1.46             |          |
| 173                     | 98.19                 | 0.0105                     | 0.0044                                       | 0.0000                         | 9.05                                   | 0.694                    | 13.06                                   | 0.4610                                    | 0.4605   | 0.0064   | 0.0064  | 1.00                          | 97.69                          | 0.58                                       | 2.8                                       | 1.06E-03                           | 5.430E-02                         | 0.09             | 0.007                          | 11.24   | 109                   | 8.661               | 1.53    | 1.5                                       | 0.51                                | 1.46             |          |
| 174                     | 97.19                 | 0.0070                     | 0.0025                                       | 0.0000                         | 9.05                                   | 0.697                    | 13.12                                   | 0.4553                                    | 0.4547   | 0.0077   | 0.0077  | 1.00                          | 96.69                          | 0.25                                       | 12.3                                      | 4.92E-03                           | 2.389E-01                         | 0.09             | 0.007                          | 11.19   | 107                   | 8.666               | 1.53    | 6.8                                       | 0.51                                | 6.87             |          |
| 175                     | 96.19                 | 0.0025                     | 0.0002                                       | 0.0000                         | 9.05                                   | 0.697                    | 13.12                                   | 0.4553                                    | 0.4547   | 0.0077   | 0.0077  | 1.00                          | 96.69                          | 0.25                                       | 12.3                                      | 4.92E-03                           | 2.389E-01                         | 0.09             | 0.007                          | 11.19   | 107                   | 8.666               | 1.53    | 6.8                                       | 0.51                                | 6.87             |          |
| 176                     | 95.19                 | 0.0062                     | 0.0003                                       | 0.0014                         | 8.96                                   | 0.702                    | 12.96                                   | 0.4571                                    | 0.4608   | 0.0087   | 0.0087  | 1.00                          | 95.69                          | 0.74                                       | 38.8                                      | 1.37E-02                           | 7.397E-01                         | 0.09             | 0.007                          | 11.17   | 102                   | 8.684               | 1.53    | 19.7                                      | 0.51                                | 19.66            |          |
| 177                     | 94.19                 | 0.0047                     | 0.0017                                       | 0.0017                         | 8.91                                   | 0.702                    | 12.54                                   | 0.4569                                    | 0.45138  | 0.00859  | 0.00859                                       | 1.00                          | 94.69                          | 0.73                                       | 38.4                                      | 1.35E-02                           | 7.298E-01                         | 0.09             | 0.007                          | 11.13   | 96                    | 8.687               | 1.53    | 5.9                                       | 0.51                                | 5.93             |          |
| 178                     | 93.19                 | 0.0000                     | 0.0000                                       | 0.0027                         | 8.81                                   | 0.704                    | 12.47                                   | 0.44016                                   | 0.44016  | 0.00343  | 0.00343                                       | 1.00                          | 93.69                          | 0.29                                       | 15.3                                      | 5.40E-03                           | 2.914E-01                         | 0.08             | 0.006                          | 11.08   | 93                    | 8.692               | 1.53    | 7.7                                       | 0.51                                | 7.75             |          |
| 179                     | 92.19                 | -0.07835                   | -0.00277                                     | 0.0041                         | 8.68                                   | 0.707                    | 12.29                                   | 0.43397                                   | 0.43673  | -0.00109   | -0.00109                                      | 1.00                          | 91.69                          | -0.09                                      | 4.9                                       | -1.72E-03                          | 0.254E-02                         | 0.08             | 0.006                          | 11.06   | 91                    | 8.694               | 1.52    | -2.5                                      | 0.51                                | -2.46            |          |
| 180                     | 91.19                 | -0.09011                   | -0.00318                                     | 0.0028                         | 8.72                                   | 0.709                    | 12.31                                   | 0.43464                                   | 0.43782  | 0.00441  | 0.00441                                       | 1.00                          | 90.69                          | 0.37                                       | 19.7                                      | 6.94E-03                           | 3.745E-01                         | 0.08             | 0.006                          | 11.04   | 89                    | 8.696               | 1.52    | 10.0                                      | 0.51                                | 9.96             |          |
| 181                     | 90.19                 | -0.09794                   | -0.00346                                     | 0.0014                         | 8.85                                   | 0.711                    | 12.18                                   | 0.42996                                   | 0.43342  | 0.00605  | 0.00605                                       | 1.00                          | 89.69                          | 0.50                                       | 29.9                                      | 1.02E-03                           | 3.450E-01                         | 0.08             | 0.006                          | 11.02   | 87                    | 8.698               | 1.52    | 1.5                                       | 0.51                                | 1.46             |          |
| 182                     | 89.19                 | -0.10360                   | -0.00360                                     | 0.0017                         | 8.86                                   | 0.712                    | 12.15                                   | 0.42917                                   | 0.43277  | 0.00398  | 0.00398                                       | 1.00                          | 88.69                          | 0.43                                       | 16.5                                      | 5.74E-04                           | 3.305E-02                         | 0.08             | 0.006                          | 10.99   | 84                    | 8.702               | 1.52    | -0.8                                      | 0.51                                | -0.82            |          |
| 183                     | 88.19                 | -0.11195                   | -0.00380                                     | 0.0017                         | 8.87                                   | 0.713                    | 12.15                                   | 0.42917                                   | 0.43277  | 0.00398  | 0.00398                                       | 1.00                          | 87.69                          | 0.43                                       | 16.5                                      | 5.74E-04                           | 3.305E-02                         | 0.08             | 0.006                          | 10.99   | 84                    | 8.702               | 1.52    | -0.8                                      | 0.51                                | -0.82            |          |
| 184                     | 87.19                 | -0.11235                   | -0.00383                                     | 0.0032                         | 8.89                                   | 0.717                    | 11.95                                   | 0.42378                                   | 0.42771  | -0.00160   | -0.00160                                      | 1.00                          | 86.69                          | -0.14                                      | -7.2                                      | -2.92E-03                          | 1.339E-01                         | 0.08             | 0.006                          | 10.95   | 80                    | 8.705               | 1.51    | -3.6                                      | 0.51                                | -3.61            |          |
| 185                     | 86.19                 | -0.20519                   | -0.00725                                     | 0.00232                        | 11.95                                  | 0.719                    | 11.95                                   | 0.42206                                   | 0.42631  | 0.00497  | 0.00497                                       | 1.00                          | 85.69                          | 0.42                                       | 22.2                                      | 7.88E-03                           | 4.227E-01                         | 0.08             | 0.006                          | 10.53   | 78                    | 8.705               | 1.51    | 11.2                                      | 0.50                                | 11.19            |          |
| 186                     | 85.19                 | -0.13944                   | -0.00492                                     | 0.00033                        | 8.58                                   | 0.723                    | 11.88                                   | 0.41942                                   | 0.42434  | 0.00783  | 0.00783                                       | 1.00                          | 84.69                          | 0.66                                       | 35.0                                      | 1.23E-02                           | 6.605E-01                         | 0.07             | 0.006                          | 10.50   | 75                    | 8.706               | 1.51    | 17.6                                      | 0.50                                | 17.59            |          |
| 187                     | 84.19                 | -0.14022                   | -0.00495                                     | 0.00044                        | 8.46                                   | 0.726                    | 11.68                                   | 0.41156                                   | 0.41651  | 0.00591  | 0.00591                                       | 1.00                          | 83.69                          | 0.50                                       | 28.4                                      | 9.31E-03                           | 5.023E-01                         | 0.07             | 0.006                          | 10.48   | 73                    | 8.708               | 1.51    | 13.3                                      | 0.50                                | 13.28            |          |
| 188                     | 83.19                 | -0.15275                   | -0.00539                                     | 0.00000                        | 8.38                                   | 0.730                    | 11.48                                   | 0.40521                                   | 0.41060  | 0.00723  | 0.00723                                       | 1.00                          | 82.69                          | 0.61                                       | 32.3                                      | 1.14E-02                           | 6.148E-01                         | 0.07             | 0.006                          | 10.46   | 71                    | 8.710               | 1.51    | 16.2                                      | 0.50                                | 16.24            |          |
| 189                     | 82.19                 | -0.16449                   | -0.00581                                     | 0.00041                        | 8.27                                   | 0.734                    | 11.27                                   | 0.39797                                   | 0.40337  | 0.00605  | 0.00605                                       | 1.00                          | 81.69                          | 0.55                                       | 29.8                                      | 1.02E-03                           | 5.081E-02                         | 0.07             | 0.006                          | 10.44   | 69                    | 8.712               | 1.51    | 1.5                                       | 0.50                                | 1.45             |          |
| 190                     | 81.19                 | -0.15275                   | -0.00581                                     | 0.00091                        | 8.29                                   | 0.737                    | 11.24                                   | 0.39691                                   | 0.40272  | 0.01572  | 0.01572                                       | 1.00                          | 80.69                          | 1.08                                       | 56.8                                      | 2.00E-02                           | 1.048E-02                         | 0.07             | 0.006                          | 10.42   | 67                    | 8.715               | 1.50    | 28.5                                      | 0.50                                | 28.54            |          |
| 191                     | 80.19                 | -0.16449                   | -0.00581                                     | 0.00091                        | 8.06                                   | 0.741                    | 10.88                                   | 0.38419                                   | 0.38999  | 0.04639  | 0.04639                                       | 1.00                          | 79.69                          | 4.11                                       | 216.1                                     | 7.62E-02                           | 4.111E+00                         | 0.06             | 0.006                          | 10.40   | 65                    | 8.718               | 1.50    | 108.5                                     | 0.50                                | 108.52           |          |
| 192                     | 79.19                 | -0.19032                   | -0.00712                                     | 0.0061                         | 7.06                                   | 0.745                    | 9.48                                    | 0.34386                                   | 0.34160  | 0.05101  | 0.05101                                       | 1.00                          | 78.69                          | 4.33                                       | 227.8                                     | 8.08E-02                           | 7.534E+00                         | 0.05             | 0.006                          | 10.38   | 63                    | 8.721               | 1.50    | 114.4                                     | 0.50                                | 114.41           |          |
| 193                     | 78.19                 | -0.20519                   | -0.00725                                     | 0.0061                         | 6.85                                   | 0.748                    | 9.05                                    | 0.33697                                   | 0.33469  | 0.05678  | 0.05678                                       | 1.00                          | 77.69                          | 4.33                                       | 227.8                                     | 8.08E-02                           | 7.534E+00                         | 0.05             | 0.006                          | 10.36   | 61                    | 8.723               | 1.50    | 114.4                                     | 0.50                                | 114.41           |          |
| 194                     | 77.19                 | -0.20519                   | -0.00725                                     | 0.00503                        | 5.85                                   | 0.752                    | 7.77                                    | 0.27450                                   | 0.28142  | 0.00687  | 0.00687                                       | 1.00                          | 76.69                          | 0.31                                       | 16.4                                      | 5.78E-03                           | 3.118E-01                         | 0.03             | 0.004                          | 10.31   | 56                    | 8.726               | 1.49    | 4.2                                       | 0.50                                | 4.21             |          |
| 195                     | 76.19                 | -0.34753                   | -0.01227                                     | 0.00463                        | 7.74                                   | 0.756                    | 7.74                                    | 0.27315                                   | 0.28042  | 0.00587  | 0.00587                                       | 1.00                          | 75.69                          | 0.50                                       | 26.2                                      | 9.25E-03                           | 4.988E-01                         | 0.03             | 0.004                          | 10.28   | 53                    | 8.731               | 1.49    | 13.1                                      | 0.50                                | 13.10            |          |
| 196                     | 75.19                 | -0.21928                   | -0.00774                                     | 0.00019                        | 5.84                                   | 0.759                    | 7.70                                    | 0.27180                                   | 0.27965  | 0.00612  | 0.00612                                       | 1.00                          | 74.69                          | 0.52                                       | 27.3                                      | 9.43E-03                           | 5.199E-01                         | 0.03             | 0.004                          | 10.26   | 51                    | 8.733               | 1.49    | 13.6                                      | 0.50                                | 13.64            |          |
| 197                     | 74.19                 | -0.22475                   | -0.00794                                     | 0.00058                        | 5.74                                   | 0.763                    | 7.52                                    | 0.26549                                   | 0.27343  | 0.01541  | 0.01541                                       | 1.00                          | 73.69                          | 1.31                                       | 68.8                                      | 2.43E-02                           | 1.330E+00                         | 0.03             | 0.004                          | 10.24   | 49                    | 8.735               | 1.48    | 34.3                                      | 0.50                                | 34.28            |          |
| 198                     | 73.19                 | -0.20832                   | -0.00796                                     | 0.00050                        | 5.44                                   | 0.767                    | 7.10                                    | 0.25068                                   | 0.25802  | 0.01454  | 0.01454                                       | 1.00                          | 72.69                          | 1.24                                       | 64.9                                      | 2.29E-02                           | 1.235E+00                         | 0.03             | 0.004                          | 10.22   | 47                    | 8.737               | 1.48    | 32.3                                      | 0.50                                | 32.30            |          |
| 199                     | 72.19                 | -0.19971                   | -0.00795                                     | -0.00050                       | 5.16                                   | 0.770                    | 6.70                                    | 0.23843                                   | 0.24348  | 0.00636  | 0.00636                                       | 1.00                          | 71.69                          | 0.71                                       | 37.3                                      | 1.32E-02                           | 7.100E-01                         | 0.02             | 0.004                          | 10.20   | 45                    | 8.739               | 1.48    | 18.5                                      | 0.50                                | 18.53            |          |
| 200                     | 71.19                 | -0.18563                   | -0.00695                                     | -0.00049                       | 5.01                                   | 0.774                    | 6.47                                    | 0.22887                                   | 0.23512  | 0.00591  | 0.00591                                       | 1.00                          | 70.69                          | 5.04                                       | 248.0                                     | 9.94E-02                           | 5.039E+00                         | 0.02             | 0.004                          | 10.16   | 41                    | 8.742               | 1.48    | 130.9                                     | 0.49                                | 130.94           |          |
| 201                     | 70.19                 | -0.13787                   | -0.00487                                     | -0.00487                       | 3.76                                   | 0.778                    | 4.44                                    | 0.21795                                   | 0.17582  | 0.12577  | 0.12577                                       | 1.30                          | 69.64                          | 8.22                                       | 432.0                                     | 1.52E-01                           | 1.068E+01                         | 0.01             | 0.003                          | 10.11   | 36                    | 8.749               | 1.47    | 212.8                                     | 0.49                                | 212.81           |          |
| 202.3                   | 68.19                 | 0.00000                    | 0.00000                                      | 0.00000                        | 1.11                                   | 0.782                    | 1.42                                    | 0.05005                                   | 0.05005  | 0.05005  | 0.05005                                       | 2.73                          | 67.52                          | 1.56                                       | 81.8                                      | 2.88E-02                           | 4.232E+00                         | 0.00             | 0.001                          | 10.07   | 100                   | 8.756               | 1.46    | 40.1                                      | 0.49                                | 108.63           |          |
| 203.63                  | 66.19                 | 0.00000                    | 0.00000                                      | 0.00000                        | 0.00                                   | 0.782                    | 0.00                                    | 0.00000                                   | 0.00000  | 0.00000  | 0.00000                                       |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   |                                     |                  |          |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | Avg Cooper-Jacob K <sub>i</sub>     |                  | 26.14    |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | Ratio                               |                  | 0.50     |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | Avg K <sub>avg</sub>                |                  | 1.00000  |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | (Should be exactly 1)               |                  |          |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | r <sub>c</sub> (in)                 |                  | 4        |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | b (ft)                              |                  | 43       |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | K (ft/d)                            |                  | 26       |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | S <sub>i</sub> (%)                  |                  | 0.6E-05  |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | T <sub>i</sub> (ft <sup>2</sup> /d) |                  | 1118     |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | S (unitless)                        |                  | 4.3E-04  |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | TTS (ft <sup>2</sup> /d)            |                  | 2.60E+06 |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | Start of pumping                    |                  | 9.35     |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | Initial transducer level (ft)       |                  | 10.218   |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | Well efficiency                     |                  | 50%      |
|                         |                       |                            |  |                                |  |                          |   |   |  |  |   |                               |                                |  |   |                                    |                                   |                  |                                |   |                       |                     |         |   | 27%                                 |                  |          |



Table 10 Hydraulic conductivity calculations for SWP-300A at 5 ft increments

| (1)                     | (2)                                  | (3)                        | (4)  | (5)  | (6)  | (7)                      | (8)   | (9)  | (10)   | (11)  | (12)   | (13)                          | (14)                           | (15)  | (16)         | (17)         | (18)                                | (19)                                   | (20)  | (21)          | (22)                  | (23)                | (24)    | (25)                             | (26)               | (27)           |
|-------------------------|--------------------------------------|----------------------------|--|--|--|--------------------------|---|--|--|---|--|-------------------------------|--------------------------------|---|--------------|--------------|-------------------------------------|--|---|---------------|-----------------------|---------------------|---------|----------------------------------|--------------------|----------------|
| Depth Below<br>TOC (ft) | Elevation<br>(ft-msl)                | Ambient<br>Flow<br>(L/min) | Ambient<br>Flow, q<br>(ft <sup>3</sup> /min) | Differential<br>Flow, Δq<br>(ft <sup>3</sup> /min) | Recorded<br>Pump<br>Induced<br>Flow<br>(L/min) | Bypass<br>flow<br>factor | Corrected<br>Pump<br>Induced<br>Flow<br>(L/min) | Pump<br>Induced<br>Flow, Q<br>(ft <sup>3</sup> /min) | Net Pumping<br>Flow, Q - q<br>(ft <sup>3</sup> /min) | Differential<br>Net Flow,<br>Δ(Q - q)<br>(ft <sup>3</sup> /min) | Adjusted?<br>Differential<br>Net Flow,<br>Δ(Q - q)<br>(ft <sup>3</sup> /min) | Layer<br>Thickness<br>Δz (ft) | Mid-point<br>Elevation<br>(ft) | $K_i(K_{avg})$<br>$b(\Delta Q, \Delta q)$<br>(ft/d) | $K_i$ (ft/d) | $K_i$ (ms/s) | Check<br>$\Delta z^2 K_i / K_{avg}$ | Estimated<br>bypass<br>flow<br>(L/min) | Estimated<br>bypass<br>flow ratio<br>( $Q_{bypass} / Q_{total}$ ) | Clock<br>Time | Elapsed<br>Time (min) | Water<br>Level (ft) | dh (ft) | Cooper-<br>Jacob $K_i$<br>(ft/d) | Ratio              | K <sub>z</sub> |
| 165.02                  | 106.17                               | -0.00314                   | -0.00011                                     | -0.00075   | 13.33  | 0.681                    | 13.33   | 0.47084  | 0.47095  | 0.00270   | 0.00270  | 4.98                          | 103.68                         | 0.05  | 2.4          | 8.55E-04     | 2.295E-01                           | 0.09                                   | 0.007   | 11:48         | 131                   | 8.671               | 1.55    | 1.2                              | 0.51               | 6.15           |
| 170                     | 101.19                               | 0.01803                    | 0.00064                                      | 0.00321  | 9.16   | 0.690                    | 13.28   | 0.46889  | 0.46825  | 0.00817   | 0.00817  | 5.00                          | 98.69                          | 0.14  | 7.3          | 2.57E-03     | 6.944E-01                           | 0.09                                   | 0.007   | 11:31         | 116                   | 8.691               | 1.53    | 3.7                              | 0.51               | 18.72          |
| 175                     | 96.19                                | -0.07287                   | -0.00257                                     | 0.00681  | 12.96  | 0.698                    | 12.96   | 0.45751  | 0.46008  | 0.02225   | 0.02225  | 5.00                          | 93.69                          | 0.38  | 19.9         | 7.07E-03     | 1.891E-01                           | 0.09                                   | 0.007   | 11:17         | 102                   | 8.684               | 1.52    | 10.1                             | 0.51               | 50.32          |
| 180                     | 91.19                                | -0.09011                   | -0.00318                                     | 0.00406  | 8.72   | 0.709                    | 12.31   | 0.43464  | 0.43782  | 0.00852   | 0.00852  | 5.00                          | 88.69                          | 0.14  | 7.6          | 2.68E-03     | 7.235E-01                           | 0.08                                   | 0.006   | 11:04         | 89                    | 8.686               | 1.52    | 3.8                              | 0.51               | 19.24          |
| 185                     | 86.19                                | -0.20519                   | -0.00725                                     | -0.00144   | 11.95  | 0.716                    | 11.95   | 0.42206  | 0.42931  | 0.02659   | 0.02659  | 5.00                          | 83.69                          | 0.46  | 23.7         | 9.38E-03     | 2.239E-01                           | 0.08                                   | 0.006   | 10:53         | 78                    | 8.705               | 1.51    | 12.0                             | 0.50               | 59.68          |
| 190                     | 81.19                                | -0.02453                   | -0.00084                                     | 0.00064  | 8.74   | 0.723                    | 8.74  | 0.41944  | 0.42669  | 0.02659   | 0.02659  | 5.00                          | 78.69                          | 0.46  | 23.7         | 9.38E-03     | 2.239E-01                           | 0.08                                   | 0.006   | 10:42         | 67                    | 8.723               | 1.49    | 15.0                             | 0.50               | 70.72          |
| 195                     | 76.19                                | -0.34753                   | -0.01227                                     | -0.00572   | 7.74   | 0.758                    | 7.74  | 0.27315  | 0.28542  | 0.05030   | 0.05030  | 5.00                          | 73.69                          | 0.85  | 44.9         | 1.58E-02     | 4.277E-01                           | 0.03                                   | 0.004   | 10:28         | 53                    | 8.731               | 1.49    | 22.5                             | 0.50               | 112.25         |
| 200                     | 71.19                                | -0.18653                   | -0.00555                                     | -0.00655   | 5.01   | 0.774                    | 5.01  | 0.22857  | 0.23512  | 0.23512   | 0.23512  | 5.03                          | 68.67                          | 3.97  | 208.6        | 7.36E-02     | 1.997E-01                           | 0.02                                   | 0.004   | 10:16         | 41                    | 8.742               | 1.48    | 103.1                            | 0.49               | 519.12         |
| 205.03                  | 66.16                                | 0.00000                    | 0.00000                                      | 0.00000  | 0.00   | 0.00000                  | 0.00  | 0.00000  | 0.00000  | 40.01 b (ft)  |  |                               |                                |   |              |              |                                     |  |   |               |                       |                     |         |                                  |                    |                |
| 165.02                  | Top of Screen Depth from TOC (ft)    |                            |  |  |  | Filter pack:             |   | QP (ft <sup>3</sup> /min) 0.47095                    |  |   |  |                               |                                |   |              |              |                                     | $r_w$ (in)                             | 4   |               |                       |                     |         |                                  | Avg Cooper-Jacob K | 28.21          |
| 205.03                  | Bottom of Screen Depth from TOC (ft) |                            |  |  |  | Do (m)                   |   | QP (L/min) 13.34                                     |  |   |  |                               |                                |   |              |              |                                     | b (ft)                                 | 43  |               |                       |                     |         |                                  | Ratio              | 0.50           |
| 40.01                   | Screen Length (ft)                   |                            |  |  |  | Di (m)                   |   | uncon QP 13.34                                       |  |   |  |                               |                                |   |              |              |                                     | K (ft/d)                               | 26  |               |                       |                     |         |                                  |                    |                |
| 271.19                  | TOC Elevation (ft)                   |                            |  |  |  | Area (m <sup>2</sup> )   |   |  |  |   |  |                               |                                |   |              |              |                                     | $S_1$ (ft)                             | 0.0E+00   | 26            |                       |                     |         |                                  |                    |                |
| 2260                    | T pump (ft <sup>3</sup> /d)          |                            |  |  |  | Thickness (cm)           |   |  |  |   |  |                               |                                |   |              |              |                                     | T (ft <sup>3</sup> /d)                 | 1118  |               |                       |                     |         |                                  |                    |                |
| 43                      | Formation thickness (ft)             |                            |  |  |  | Conductivity, $K_{sp}$   |   |  |  |   |  |                               |                                |   |              |              |                                     | S (unitless)                           | 4.3E-04   |               |                       |                     |         |                                  |                    |                |
| 52.6                    | K pump (ft/d)                        |                            |  |  |  | EBF:                     |   |  |  |   |  |                               |                                |   |              |              |                                     | T/S (ft <sup>3</sup> /d)               | 2.60E+06  |               |                       |                     |         |                                  |                    |                |
| 1.85E-02                | K pump (cm/s)                        |                            |  |  |  | $L_{app}$ (m)            |   |  |  |   |  |                               |                                |   |              |              |                                     | Start of pumping                       | 935   |               |                       |                     |         |                                  |                    |                |
|                         |                                      |                            |  |  |  | Bypass flow:             |   |  |  |   |  |                               |                                |   |              |              |                                     | Initial transducer level (ft)          | 10.218  |               |                       |                     |         |                                  |                    |                |
|                         |                                      |                            |  |  |  | ΔL (m)                   |   |  |  |   |  |                               |                                |   |              |              |                                     | Well efficiency                        | 50%   |               |                       |                     |         |                                  |                    |                |
|                         |                                      |                            |  |  |  | L (m)                    |   |  |  |   |  |                               |                                |   |              |              |                                     |  | 50%   |               |                       |                     |         |                                  |                    |                |

Table 11 Hydraulic conductivity calculations for SWP-300A at 10 ft increments

| (1)                     | (2)                                  | (3)                     | (4)  | (5)  | (6)                             | (7)  | (8)  | (9)   | (10)  | (11)                           | (12)                           | (13)  | (14)                  | (15)                  | (16)   | (17)                                | (18)  | (19)                          | (20)                     | (21)                | (22)    | (23)                                      | (24)               | (25)            |
|-------------------------|--------------------------------------|-------------------------|--|--|---------------------------------|--|--|---|---|--------------------------------|--------------------------------|---|-----------------------|-----------------------|--|-------------------------------------|---|-------------------------------|--------------------------|---------------------|---------|---|--------------------|-----------------|
| Depth Below<br>TOC (ft) | Elevation<br>(ft-msl)                | Ambient<br>Flow (L/min) | Ambient<br>Flow, q<br>(ft <sup>3</sup> /min) | Differential<br>Flow, Δq<br>(ft <sup>3</sup> /min) | Pump<br>Induced<br>Flow (L/min) | Pump<br>Induced<br>Flow, Q<br>(ft <sup>3</sup> /min) | Net Pumping<br>Flow, Q - q<br>(ft <sup>3</sup> /min) | Differential<br>Net Flow,<br>Δ(Q - q)<br>(ft <sup>3</sup> /min) | Agulstea,<br>Net Flow<br>Δ(Q - q)<br>(ft <sup>3</sup> /min) | Layer<br>Thickness<br>Δz, (ft) | Mid-point<br>Elevation<br>(ft) | K <sub>i</sub> /K <sub>sur</sub><br>b(ΔQ-Δq)/<br>(Q <sub>Δz</sub> ) | K <sub>i</sub> (ft/d) | K <sub>i</sub> (cm/s) | Check<br>Δz*K <sub>i</sub> /K <sub>sur</sub> | Estimated<br>bypass flow<br>(L/min) | Estimated<br>bypass flow<br>ratio<br>(Q <sub>bp</sub> /Q <sub>EBF</sub> ) | Clock<br>Time                 | Elapsed<br>Time<br>(min) | Water<br>Level (ft) | dh (ft) | Cooper-<br>Jacob K <sub>i</sub><br>(ft/d) | Ratio              | K <sub>Δz</sub> |
| 165.02                  | 106.17                               | -0.00314                | -0.00011                                     | 0.00246  | 13.33                           | 0.47084  | 0.47095  | 0.01087   | 0.01087   | 9.98                           | 101.18                         | 0.09  | 4.9                   | 1.72E-03              | 9.238E-01                                    | 0.09                                | 0.007   | 11:46                         | 131                      | 8.671               | 1.55    | 2.5                                       | 0.51               | 24.78           |
| 175                     | 96.19                                | -0.07287                | -0.00257                                     | 0.00467  | 12.96                           | 0.45751  | 0.46008  | 0.03077   | 0.03077   | 10.00                          | 91.19                          | 0.26  | 13.7                  | 4.88E-03              | 2.614E+00                                    | 0.09                                | 0.007   | 11:17                         | 102                      | 8.68                | 1.53    | 7.0                                       | 0.51               | 69.56           |
| 185                     | 86.19                                | -0.20519                | -0.00725                                     | 0.00503  | 11.95                           | 0.42206  | 0.42931  | 0.14389   | 0.14389   | 10.00                          | 81.19                          | 1.22  | 64.2                  | 2.27E-02              | 1.222E+01                                    | 0.08                                | 0.006   | 10:53                         | 78                       | 8.71                | 1.51    | 32.4                                      | 0.50               | 323.96          |
| 195                     | 76.19                                | -0.34753                | -0.01227                                     | -0.01227   | 7.74                            | 0.27315  | 0.28542  | 0.28542   | 0.28542   | 10.03                          | 71.17                          | 2.42  | 127.0                 | 4.48E-02              | 2.425E+01                                    | 0.03                                | 0.004   | 10:28                         | 53                       | 8.73                | 1.49    | 63.5                                      | 0.50               | 636.85          |
| 205.03                  | 66.16                                | 0.00000                 | 0.00000                                      | 0.00000  | 0.00                            | 0.00000  | 0.00000  | 0.00000   | 0.00000   |                                |                                |   |                       |                       |  |                                     |   |                               |                          |                     |         |   |                    |                 |
| 165.02                  | Top of Screen Depth from TOC (ft)    |                         |  |  |                                 | Filter pack:   |  | QP (ft <sup>3</sup> /min)                                       | 0.47095   | 40.01                          | b (ft)                         |   |                       |                       | Avg K <sub>i</sub> /K <sub>sur</sub>         | 1.000000                            |   | t <sub>w</sub> (in)           | 4                        |                     |         |   | Avg Cooper-Jacob K | 26.37           |
| 205.03                  | Bottom of Screen Depth from TOC (ft) |                         |  |  |                                 | Do (m)   | 0.203  | QP (L/min)  | 13.34   |                                |                                |   |                       |                       | (Should be exactly 1)                        |                                     |   | b (ft)                        | 43                       |                     |         |   | Ratio              | 0.50            |
| 40.01                   | Screen Length (ft)                   |                         |  |  |                                 | Di (m)   | 0.102  | uncorr QP   | 13.34   |                                |                                |   |                       |                       |  |                                     |   | K (ft/d)                      | 26                       | 26                  | 48      |   |                    |                 |
| 271.19                  | TOC Elevation (ft)                   |                         |  |  |                                 | Area (m <sup>2</sup> )                               | 0.024  |   |   |                                |                                |   |                       |                       |  |                                     |   | S <sub>1</sub> (ft)           | 1.0E-05                  | 1.0E-05             | 2.1E-05 |   |                    |                 |
| 2060                    | T pump (ft <sup>2</sup> /d)          |                         |  |  |                                 | Thickness (cm)                                       | 5.08   |   |   |                                |                                |   |                       |                       |  |                                     |   | T (ft <sup>2</sup> /d)        | 11.6                     |                     |         |   |                    |                 |
| 43                      | Formation thickness (ft)             |                         |  |  |                                 | EBF:   |  |   |   |                                |                                |   |                       |                       |  |                                     |   | S (unitless)                  | 4.3E-04                  |                     |         |   |                    |                 |
| 52.6                    | K pump (ft/d)                        |                         |  |  |                                 | L <sub>EBF</sub> (m)                                 | 0.178  |   |   |                                |                                |   |                       |                       |  |                                     |   | T/S (ft <sup>2</sup> /d)      | 2.60E+06                 |                     |         |   |                    |                 |
| 1.85E-02                | K pump (cm/s)                        |                         |  |  |                                 | Bypass flow:   |  |   |   |                                |                                |   |                       |                       |  |                                     |   | Start of pumping              | 9.35                     |                     |         |   |                    |                 |
|                         |                                      |                         |  |  |                                 | ΔL (m)   | 0.079  |   |   |                                |                                |   |                       |                       |  |                                     |   | Initial transducer level (ft) | 10.218                   |                     |         |   |                    |                 |
|                         |                                      |                         |  |  |                                 | L (m)  | 0.257  |   |   |                                |                                |   |                       |                       |  |                                     |   | Well efficiency               | 50%                      | 50%                 | 27%     |   |                    |                 |
|                         |                                      |                         |  |  |                                 |  |  |   |   |                                |                                |   |                       |                       |  |                                     |   |                               | 50%                      | 0.50                | 0.92    |   |                    |                 |

Table 12 Field data for SWP-200C.

|          | Top of Screen From Grade (ft) | Bottom of Screen From Grade (ft) | Screen Length (ft) | Casing Diameter (inch) | Approx. Water Level From TOC (ft) | Survey Elev. TOC (ft-msl) | Survey Elev. Conc Pad (ft-msl) | TOC to Conc Pad (ft) | Pad Thickness (in) | Top of Screen From TOC (ft) | Bottom of Screen From TOC (ft) | Top of Screen Elevation (ft-msl) | Bottom of Screen Elevation (ft-msl) |
|----------|-------------------------------|----------------------------------|--------------------|------------------------|-----------------------------------|---------------------------|--------------------------------|----------------------|--------------------|-----------------------------|--------------------------------|----------------------------------|-------------------------------------|
| SWP-200C | 88.27                         | 148.26                           | 59.99              | 6                      | 59.48                             | 270.82                    | 268.87                         | 1.95                 | 0.33               | 90.6                        | 150.5                          | 180.27                           | 120.28                              |

Probe Date

7/24/00

5'

7/24/00

5'

7/27/00

5'

7/27/00

5'

7/27/00

Station

52

62

61

60

59

58

57

56

55

54

53

52

51

50

49

48

47

46

45

44

43

42

41

40

39

38

37

36

35

34

33

32

31

30

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28

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26

25

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

Depth Below TOC (ft)

78.5

88.5

89.5

90.5

91.5

92.5

93.5

94.5

95.5

96.5

97.5

98.5

99.5

100.5

101.5

102.5

103.5

104.5

105.5

106.5

107.5

108.5

109.5

110.5

111.5

112.5

113.5

114.5

115.5

116.5

117.5

118.5

119.5

120.5

121.5

122.5

123.5

124.5

125.5

126.5

127.5

128.5

129.5

130.5

131.5

132.5

133.5

134.5

135.5

136.5

137.5

138.5

139.5

140.5

141.5

142.5

143.5

144.5

145.5

146.5

147.5

148.5

149.5

150.2

Time

11:32

11:25

11:20

11:14

11:09

11:07

11:05

11:03

11:01

10:59

10:57

10:55

10:54

10:52

10:50

10:48

10:38

10:37

10:35

10:34

10:32

10:30

10:28

10:25

10:24

10:21

10:19

10:15

10:13

10:08

10:06

10:03

10:00

9:58

9:56

9:54

9:52

9:50

9:49

9:48

9:46

9:45

9:44

9:42

9:40

9:38

9:37

9:35

9:34

9:33

9:32

9:30

9:29

9:27

9:24

9:22

9:20

9:19

9:17

9:15

9:14

9:12

9:05

9:01

8:56

Ambient Instrument Response (L/min)

-0.024

-0.024

-0.026

-0.023

0.016

0.037

0.034

0.039

0.032

0.031

0.036

0.034

0.033

0.031

0.018

0.04

0.041

0.049

0.036

0.041

0.038

0.036

0.036

0.032

0.014

-0.388

-0.003

-0.003

-0.01

-0.017

0.004

-0.022

-0.123

-0.174

-0.152

-0.481

-0.136

-0.163

-0.191

-0.191

-0.188

-0.201

-0.218

-0.177

-0.155

-1.022

-0.151

-0.168

-0.159

-0.136

-0.137

-0.162

-0.171

-0.171

-0.153

-0.843

-0.148

-0.135

-0.069

-0.093

-0.104

0.005

0.010

0.061

-0.010

Delta Time min

156

149

144

138

133

131

129

127

125

123

119

118

116

114

102

99

98

96

94

92

89

88

85

83

79

77

72

70

67

64

62

60

58

56

54

53

52

50

49

48

46

44

42

41

39

38

37

36

34

33

31

28

26

24

23

21

19

18

16

9

5

0

Delta (ml)

0.0140

0.0134

0.0129

0.0124

0.0119

0.0118

0.0116

0.0114

0.0112

0.0110

0.0109

0.0107

0.0106

0.0104

0.0102

0.0092

0.0091

0.0089

0.0088

0.0086

0.0084

0.0083

0.0080

0.0079

0.0076

0.0074

0.0071

0.0069

0.0065

0.0063

0.0060

0.0057

0.0056

0.0054

0.0052

0.0050

0.0048

0.0048

0.0047

0.0045

0.0044

0.0043

0.0041

0.0039

0.0038

0.0037

0.0032

0.0031

0.0030

0.0028

0.0025

0.0023

0.0022

0.0021

0.0019

0.0017

0.0016

0.0014

0.0008

0.0004

0.0000

Time

12:18

12:12

12:05

12:03

11:58

11:54

11:49

11:46

11:43

11:38

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11:29

11:26

11:26

11:23

11:20

11:17

11:14

11:11

11:08

11:05

11:01

10:57

10:54

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Table 13 Hydraulic conductivity calculations for SWP-200C at 2 ft increments

| (1)                  | (2)    | (3)      | (4)      | (5)      | (6)  | (7)   | (8)  | (9)     | (10)    | (11)     | (12)     | (13) | (14)   | (15)  | (16)  | (17)      | (18)       | (19) | (20)  | (21)  | (22) | (23) | (24)  | (25) | (26)  | (27) | (28) | (29) | (30) | (31) | (32)   |
|----------------------|--------|----------|----------|----------|------|-------|------|---------|---------|----------|----------|------|--------|-------|-------|-----------|------------|------|-------|-------|------|------|-------|------|-------|------|------|------|------|------|--------|
| Depth Below TOC (ft) | Flow   | Flow     | Flow     | Flow     | Flow | Flow  | Flow | Flow    | Flow    | Flow     | Flow     | Flow | Flow   | Flow  | Flow  | Flow      | Flow       | Flow | Flow  | Flow  | Flow | Flow | Flow  | Flow | Flow  | Flow | Flow | Flow | Flow | Flow | Flow   |
| 80.55                | 180.27 | -0.00322 | -0.00058 | -0.00164 | 6.93 | 1.000 | 6.93 | 0.24488 | 0.24416 | 0.00317  | 0.00317  | 1.95 | 179.29 | 0.40  | 0.59  | 2.08E-04  | 7.765E-01  | 0.57 | 0.002 | 12.12 | 255  | 142  | 8.788 | 3.50 | 1.38  | 2.10 | 1.50 | 3.50 | 0.00 | 2.35 | 2.71   |
| 82.50                | 176.32 | 0.03822  | 0.00135  | -0.00005 | 0.79 | 0.115 | 6.88 | 0.24533 | 0.24169 | 0.02126  | 0.02126  | 2.00 | 177.32 | 2.61  | 3.88  | 1.95E-03  | 5.224E-00  | 0.55 | 0.081 | 12.05 | 258  | 135  | 8.882 | 3.50 | 0.93  | 2.04 | 1.46 | 3.50 | 0.00 | 2.42 | 18.66  |
| 84.50                | 176.32 | 0.03822  | 0.00135  | -0.00005 | 0.79 | 0.115 | 6.88 | 0.24533 | 0.24169 | 0.02126  | 0.02126  | 2.00 | 177.32 | 2.61  | 3.88  | 1.95E-03  | 5.224E-00  | 0.55 | 0.081 | 12.05 | 258  | 135  | 8.882 | 3.50 | 0.93  | 2.04 | 1.46 | 3.50 | 0.00 | 2.42 | 18.66  |
| 86.50                | 172.32 | 0.03822  | 0.00135  | -0.00005 | 0.79 | 0.115 | 6.70 | 0.24585 | 0.23694 | 0.02126  | 0.02126  | 2.00 | 171.32 | -1.60 | -2.20 | 7.76E-04  | 2.986E-00  | 0.53 | 0.070 | 11.84 | 247  | 124  | 8.954 | 3.44 | -5.40 | 2.01 | 1.43 | 3.44 | 0.00 | 2.45 | -10.80 |
| 88.50                | 170.32 | 0.03822  | 0.00135  | -0.00005 | 0.79 | 0.115 | 6.70 | 0.24585 | 0.23694 | 0.02126  | 0.02126  | 2.00 | 169.32 | -0.46 | -0.68 | 2.93E-04  | 4.958E-01  | 0.58 | 0.083 | 11.49 | 242  | 119  | 8.953 | 3.43 | -1.92 | 2.01 | 1.43 | 3.43 | 0.00 | 2.45 | -3.24  |
| 90.50                | 168.32 | 0.03822  | 0.00135  | -0.00005 | 0.82 | 0.115 | 7.15 | 0.24585 | 0.24169 | 0.00380  | 0.00380  | 2.00 | 167.32 | 0.48  | 0.70  | 2.48E-04  | 6.532E-01  | 0.60 | 0.084 | 11.46 | 239  | 116  | 8.953 | 3.43 | 1.73  | 2.00 | 1.42 | 3.43 | 0.00 | 2.45 | 3.45   |
| 92.50                | 166.32 | 0.03822  | 0.00135  | -0.00005 | 0.82 | 0.115 | 7.15 | 0.24585 | 0.24169 | 0.00380  | 0.00380  | 2.00 | 165.32 | 0.48  | 0.70  | 2.48E-04  | 6.532E-01  | 0.60 | 0.084 | 11.46 | 239  | 116  | 8.953 | 3.43 | 1.73  | 2.00 | 1.42 | 3.43 | 0.00 | 2.45 | 3.45   |
| 94.50                | 164.32 | 0.03822  | 0.00135  | -0.00005 | 0.76 | 0.115 | 6.51 | 0.24541 | 0.23694 | 0.01857  | 0.01857  | 2.00 | 163.32 | 2.32  | 3.43  | 1.21E-03  | 4.942E-00  | 0.52 | 0.079 | 11.38 | 231  | 103  | 8.974 | 3.42 | 8.98  | 2.00 | 1.42 | 3.42 | 0.00 | 2.45 | 13.50  |
| 96.50                | 162.32 | 0.03822  | 0.00135  | -0.00005 | 0.76 | 0.115 | 6.51 | 0.24541 | 0.23694 | 0.01857  | 0.01857  | 2.00 | 161.32 | 2.32  | 3.43  | 1.21E-03  | 4.942E-00  | 0.52 | 0.079 | 11.38 | 231  | 103  | 8.974 | 3.42 | 8.98  | 2.00 | 1.42 | 3.42 | 0.00 | 2.45 | 13.50  |
| 98.50                | 160.32 | 0.03822  | 0.00135  | -0.00005 | 0.76 | 0.115 | 6.51 | 0.24541 | 0.23694 | 0.01857  | 0.01857  | 2.00 | 159.32 | 2.32  | 3.43  | 1.21E-03  | 4.942E-00  | 0.52 | 0.079 | 11.38 | 231  | 103  | 8.974 | 3.42 | 8.98  | 2.00 | 1.42 | 3.42 | 0.00 | 2.45 | 13.50  |
| 100.50               | 158.32 | 0.03822  | 0.00135  | -0.00005 | 0.48 | 0.115 | 4.14 | 0.14511 | 0.14590 | 0.02625  | 0.02625  | 2.00 | 157.32 | 3.46  | 5.11  | 1.81E-03  | 6.815E-00  | 0.22 | 0.092 | 11.31 | 224  | 101  | 8.975 | 3.42 | 12.46 | 2.00 | 1.41 | 3.42 | 0.00 | 2.44 | 24.81  |
| 102.50               | 156.32 | 0.03822  | 0.00135  | -0.00005 | 0.37 | 0.115 | 3.28 | 0.11738 | 0.11725 | 0.00221  | 0.00221  | 2.00 | 155.32 | 0.27  | 0.40  | 4.14E-04  | 5.398E-01  | 0.15 | 0.044 | 11.29 | 222  | 99   | 8.980 | 3.42 | 0.87  | 2.00 | 1.41 | 3.42 | 0.00 | 2.44 | 1.84   |
| 104.50               | 154.32 | 0.03822  | 0.00135  | -0.00005 | 0.37 | 0.115 | 3.28 | 0.11738 | 0.11725 | 0.00221  | 0.00221  | 2.00 | 153.32 | 0.27  | 0.40  | 4.14E-04  | 5.398E-01  | 0.15 | 0.044 | 11.29 | 222  | 99   | 8.980 | 3.42 | 0.87  | 2.00 | 1.41 | 3.42 | 0.00 | 2.44 | 1.84   |
| 106.50               | 152.32 | 0.03822  | 0.00135  | -0.00005 | 0.35 | 0.115 | 3.05 | 0.10772 | 0.10744 | -0.00208 | -0.00208 | 2.00 | 151.32 | -0.25 | -0.38 | -1.35E-04 | -5.091E-01 | 0.12 | 0.041 | 11.23 | 216  | 83   | 8.984 | 3.40 | -0.92 | 2.00 | 1.40 | 3.40 | 0.00 | 2.44 | -1.84  |
| 108.50               | 150.32 | 0.03822  | 0.00135  | -0.00005 | 0.35 | 0.115 | 3.05 | 0.10772 | 0.10744 | -0.00208 | -0.00208 | 2.00 | 149.32 | -0.25 | -0.38 | -1.35E-04 | -5.091E-01 | 0.12 | 0.041 | 11.23 | 216  | 83   | 8.984 | 3.40 | -0.92 | 2.00 | 1.40 | 3.40 | 0.00 | 2.44 | -1.84  |
| 110.50               | 148.32 | 0.03822  | 0.00135  | -0.00005 | 0.33 | 0.115 | 2.87 | 0.10121 | 0.10126 | 0.00272  | 0.00272  | 2.00 | 147.32 | 0.27  | 0.43  | 7.01E-03  | 6.539E-00  | 0.11 | 0.039 | 11.17 | 210  | 87   | 8.977 | 3.39 | 11.80 | 1.88 | 1.40 | 3.39 | 0.00 | 2.44 | 20.59  |
| 112.50               | 146.32 | 0.03822  | 0.00135  | -0.00005 | 0.24 | 0.115 | 2.12 | 0.07482 | 0.07484 | 0.00280  | 0.00280  | 2.00 | 145.32 | 0.27  | 0.43  | 7.01E-03  | 6.539E-00  | 0.11 | 0.039 | 11.17 | 210  | 87   | 8.977 | 3.39 | 11.80 | 1.88 | 1.40 | 3.39 | 0.00 | 2.44 | 20.59  |
| 114.50               | 144.32 | 0.03822  | 0.00135  | -0.00005 | 0.03 | 0.115 | 0.22 | 0.07394 | 0.07394 | 0.00035  | 0.00035  | 2.00 | 143.32 | -0.04 | -0.06 | -2.25E-05 | -8.638E-02 | 0.00 | 0.011 | 11.08 | 201  | 78   | 8.978 | 3.38 | -0.16 | 1.88 | 1.38 | 3.38 | 0.00 | 2.44 | -0.31  |
| 116.50               | 142.32 | 0.03822  | 0.00135  | -0.00005 | 0.02 | 0.115 | 0.21 | 0.07394 | 0.07394 | 0.00035  | 0.00035  | 2.00 | 141.32 | -0.04 | -0.06 | -2.25E-05 | -8.638E-02 | 0.00 | 0.011 | 11.08 | 201  | 78   | 8.978 | 3.38 | -0.16 | 1.88 | 1.38 | 3.38 | 0.00 | 2.44 | -0.31  |
| 118.50               | 140.32 | 0.03822  | 0.00135  | -0.00005 | 0.01 | 0.115 | 0.10 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 139.32 | -0.03 | 0.05  | 1.81E-05  | 6.184E-02  | 0.00 | 0.010 | 10.57 | 180  | 67   | 8.965 | 3.35 | 0.11  | 1.88 | 1.37 | 3.35 | 0.00 | 2.44 | 0.22   |
| 120.50               | 138.32 | 0.03822  | 0.00135  | -0.00005 | 0.01 | 0.115 | 0.09 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 137.32 | -0.19 | -0.26 | -9.86E-05 | -3.824E-01 | 0.00 | 0.010 | 10.57 | 180  | 67   | 8.965 | 3.35 | 0.11  | 1.88 | 1.37 | 3.35 | 0.00 | 2.44 | 0.22   |
| 122.50               | 136.32 | 0.03822  | 0.00135  | -0.00005 | 0.02 | 0.115 | 0.15 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 135.32 | -0.17 | -0.26 | -9.86E-05 | -3.824E-01 | 0.00 | 0.010 | 10.57 | 180  | 67   | 8.965 | 3.35 | 0.11  | 1.88 | 1.37 | 3.35 | 0.00 | 2.44 | 0.22   |
| 124.50               | 134.32 | 0.03822  | 0.00135  | -0.00005 | 0.02 | 0.115 | 0.15 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 133.32 | -0.17 | -0.26 | -9.86E-05 | -3.824E-01 | 0.00 | 0.010 | 10.57 | 180  | 67   | 8.965 | 3.35 | 0.11  | 1.88 | 1.37 | 3.35 | 0.00 | 2.44 | 0.22   |
| 126.50               | 132.32 | 0.03822  | 0.00135  | -0.00005 | 0.02 | 0.115 | 0.15 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 131.32 | -0.24 | 0.35  | 1.25E-04  | 4.721E-01  | 0.00 | 0.010 | 10.46 | 179  | 55   | 8.979 | 3.32 | 0.85  | 1.97 | 1.35 | 3.32 | 0.00 | 2.44 | -1.26  |
| 128.50               | 130.32 | 0.03822  | 0.00135  | -0.00005 | 0.01 | 0.115 | 0.08 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 129.32 | -0.16 | 0.24  | 8.18E-05  | 3.679E-01  | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 130.50               | 128.32 | 0.03822  | 0.00135  | -0.00005 | 0.01 | 0.115 | 0.08 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 127.32 | -0.16 | 0.24  | 8.18E-05  | 3.679E-01  | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 132.50               | 126.32 | 0.03822  | 0.00135  | -0.00005 | 0.01 | 0.115 | 0.08 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 125.32 | -0.05 | -0.08 | -2.86E-05 | -1.033E-01 | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 134.50               | 124.32 | 0.03822  | 0.00135  | -0.00005 | 0.01 | 0.115 | 0.08 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 123.32 | 0.12  | 0.17  | 6.18E-05  | 2.353E-01  | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 136.50               | 122.32 | 0.03822  | 0.00135  | -0.00005 | 0.02 | 0.115 | 0.08 | 0.05931 | 0.05931 | 0.00025  | 0.00025  | 2.00 | 121.32 | 0.60  | 0.88  | 3.12E-04  | 1.222E-01  | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 138.50               | 120.32 | 0.03822  | 0.00135  | -0.00005 | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 119.32 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 140.50               | 118.32 | 0.03822  | 0.00135  | -0.00005 | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 117.32 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 142.50               | 116.32 | 0.03822  | 0.00135  | -0.00005 | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 115.32 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 144.50               | 114.32 | 0.03822  | 0.00135  | -0.00005 | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 113.32 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 146.50               | 112.32 | 0.03822  | 0.00135  | -0.00005 | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 111.32 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 148.50               | 110.32 | 0.03822  | 0.00135  | -0.00005 | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 109.32 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0.00 | 0.010 | 10.26 | 169  | 46   | 8.954 | 3.31 | 0.72  | 1.85 | 1.34 | 3.31 | 0.00 | 2.44 | -1.70  |
| 150.54               | 108.28 | 0.00000  | 0.00000  | 0.00000  | 0.00 | 0.115 | 0.00 | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 2.00 | 107.28 | 0.00  | 0.00  | 0.00000   | 0.00000    | 0    |       |       |      |      |       |      |       |      |      |      |      |      |        |



Table 15 Field data for SWP-100D.

| Well ID  | Top of Screen From Grade (ft) | Bottom of Screen From Grade (ft) | Screen Length (ft) | Casing Diameter (inch) | Approx. Water Level From TOC (ft) | Survey Elev. TOC (ft-msl) | Survey Elev. Conc Pad (ft-msl) | TOC to Conc Pad (ft) | Pad Thickness (ft) | Top of Screen From TOC (ft) | Bottom of Screen From TOC (ft) | Top of Screen Elevation (ft) | Bottom of Screen Elevation (ft) |
|----------|-------------------------------|----------------------------------|--------------------|------------------------|-----------------------------------|---------------------------|--------------------------------|----------------------|--------------------|-----------------------------|--------------------------------|------------------------------|---------------------------------|
| SWP-100D | 45.18                         | 75.14                            | 29.96              | 6                      | 53.45                             | 270.77                    | 268.41                         | 2.36                 | 0.33               | 47.87                       | 77.8                           | 222.90                       | 192.94                          |

| Station | Depth Below TOC (ft) | Time  | Ambient Instrument Response (L/min) | Time  | Dynamic Instrument Response (L/min) | y = 0.0024x2 + 0.7838x<br>Ambient Calibrated Flow (L/min) | y = 0.9797x + 0.1097<br>Dynamic Calibrated Flow (L/min) |
|---------|----------------------|-------|-------------------------------------|-------|-------------------------------------|---|---|
|         |                      |       |                                     |       |                                     |   |   |
| 31      | 46.8                 |       |                                     |       |                                     |   |   |
| 30      | 47.8                 |       |                                     |       |                                     |   |   |
| 29      | 48.8                 |       |                                     |       |                                     |   |   |
| 28      | 49.8                 |       |                                     |       |                                     |   |   |
| 27      | 50.8                 |       |                                     |       |                                     |   |   |
| 26      | 51.8                 |       |                                     |       |                                     |   |   |
| 25      | 52.8                 |       |                                     |       |                                     |   |   |
| 24      | 53.8                 | 15:54 | 0.056                               |       |                                     | 0.044   |   |
| 23      | 54.8                 | 15:52 | 0.056                               |       |                                     | 0.044   |   |
| 22      | 55.8                 | 15:50 | 0.052                               |       |                                     | 0.041   |   |
| 21      | 56.8                 | 15:48 | 0.056                               |       |                                     | 0.044   |   |
| 20      | 57.8                 | 15:46 | -0.005                              |       |                                     | -0.004  |   |
| 19      | 58.8                 | 15:40 | 0.052                               |       |                                     | 0.041   |   |
| 18      | 59.8                 | 15:38 | 0.053                               | 16:27 | 3.20                                | 0.042   | 3.24  |
| 17      | 60.8                 | 15:36 | 0.050                               | 16:15 | 3.42                                | 0.039   | 3.46  |
| 16      | 61.8                 | 15:35 | 0.054                               | 16:06 | 3.14                                | 0.042   | 3.19  |
| 15      | 62.8                 | 15:33 | 0.054                               | 16:04 | 2.97                                | 0.042   | 3.02  |
| 14      | 63.8                 | 15:31 | 0.052                               | 16:01 | 3.10                                | 0.041   | 3.15  |
| 13      | 64.8                 | 15:24 | 0.047                               | 15:58 | 3.12                                | 0.037   | 3.17  |
| 12      | 65.8                 | 15:21 | 0.052                               | 15:52 | 2.94                                | 0.041   | 2.99  |
| 11      | 66.8                 | 15:19 | 0.047                               | 15:49 | 2.66                                | 0.037   | 2.72  |
| 10      | 67.8                 | 15:16 | -0.018                              | 15:47 | 5.42                                | -0.014  | 5.42  |
| 9       | 68.8                 | 15:12 | 0.050                               | 15:40 | 2.46                                | 0.039   | 2.52  |
| 8       | 69.8                 | 15:10 | 0.046                               | 15:36 | 2.24                                | 0.036   | 2.30  |
| 7       | 70.8                 | 15:09 | 0.044                               | 15:33 | 2.13                                | 0.034   | 2.20  |
| 6       | 71.8                 | 15:07 | 0.044                               | 15:31 | 2.09                                | 0.034   | 2.16  |
| 5       | 72.8                 | 15:06 | 0.043                               | 15:29 | 1.90                                | 0.034   | 1.97  |
| 4       | 73.8                 | 15:05 | 0.047                               | 15:26 | 1.56                                | 0.037   | 1.64  |
| 3       | 74.8                 | 15:04 | 0.045                               | 15:24 | 1.39                                | 0.035   | 1.47  |
| 2       | 75.8                 | 15:02 | 0.042                               | 15:21 | 0.95                                | 0.033   | 1.04  |
| 1       | 76.8                 | 15:00 | 0.017                               | 15:18 | 0.66                                | 0.013   | 0.76  |
| 0       | 77.8                 | 14:57 | 0.000                               | 15:09 | 0.00                                | 0.000   | 0.11  |

| 7/24/00 |                  |                                 |                             |  |
|---------|------------------|---------------------------------|-----------------------------|--|
| Time    | Water Level (ft) | Time to Fill Bucket 16.8L (sec) | Field Measured Flow (L/min) | Panametric Flow Reading Ref Only (L/min) |
| 14:15   | 53.2             | N/A                             | N/A                         | N/A                                      |

| 7/25/00 |                 |                                 |                             |  |
|---------|-----------------|---------------------------------|-----------------------------|--|
| Time    | See Data Logger | Time to Fill Bucket 16.8L (sec) | Field Measured Flow (L/min) | Panametric Flow Reading Ref Only (L/min) |
| 14:05   |                 | 134                             | 7.52                        |  |
| 14:06   |                 |                                 |                             | 7.57                                     |
| 14:20   |                 |                                 |                             | 7.54                                     |
| 14:25   |                 | 136                             | 7.41                        | 7.57                                     |
| 14:45   |                 | 136                             | 7.41                        | 7.49                                     |
| 15:07   |                 |                                 |                             | 7.53                                     |
| 15:11   |                 | 140                             | 7.20                        |  |
| 15:28   |                 |                                 |                             | 7.47                                     |
| 15:42   |                 |                                 |                             | 7.5                                      |
| 15:45   |                 | 137                             | 7.36                        |  |
| 15:57   |                 |                                 |                             | 7.45                                     |
| 16:04   |                 |                                 |                             | 7.43                                     |
| 16:07   |                 | 137                             | 7.36                        |  |
| 16:30   |                 |                                 |                             | 7.45                                     |

bypass ratio  
0.483

average 7.50

Correction for "0"

Start Time - Stop Time = 180 min

Total Delta "0" = -.032

Delta/min = .032/180 = 0.000178

## 7/24/00 Ambient

Probe moved from testing of 300A to 100D Warm up in 100D from 14:17 to 14:47.

Initial reading at -.005. Set to 0.00 and stable for full duration of warm up.

Reading check 67.8 @ 15:29 -0.010

Reading check 77.8 @ 15:57 0.000

## 7/25/00 Dynamic

Warm up 14:00 to 14:58

16:17 Transducer raised up 2'

Reading check 67.8 @ 15:55 +5.36

Reading check 62.8 @ 16:11 +3.20









Table 19 Comparison of average conductivity estimates.

| <b>Aquifer test</b>   | <b>Horizontal conductivity (ft/d)</b> |                                |                                |
|---|---------------------------------------|--------------------------------|--------------------------------|
|   | <i>Gordon<br/>SWP-300A</i>            | <i>lower UTRA<br/>SWP-200C</i> | <i>upper UTRA<br/>SWP-100D</i> |
| Multiple-well<br>(WSRC, 1999)   | 52.6                                  | 1.48                           | 29.3                           |
| Single-well concurrent with EBF testing   | 23                                    | 2.3                            | 12                             |
| Cooper-Jacob analysis applied to<br>individual screen intervals -<br>assumed well efficiency and specific<br>storage          | 26                                    | 3.6                            | 4.8                            |
| Cooper-Jacob analysis applied to<br>individual screen intervals -<br>well efficiency and specific storage from<br>WSRC (1999) | 48                                    | 2.3                            | 31                             |

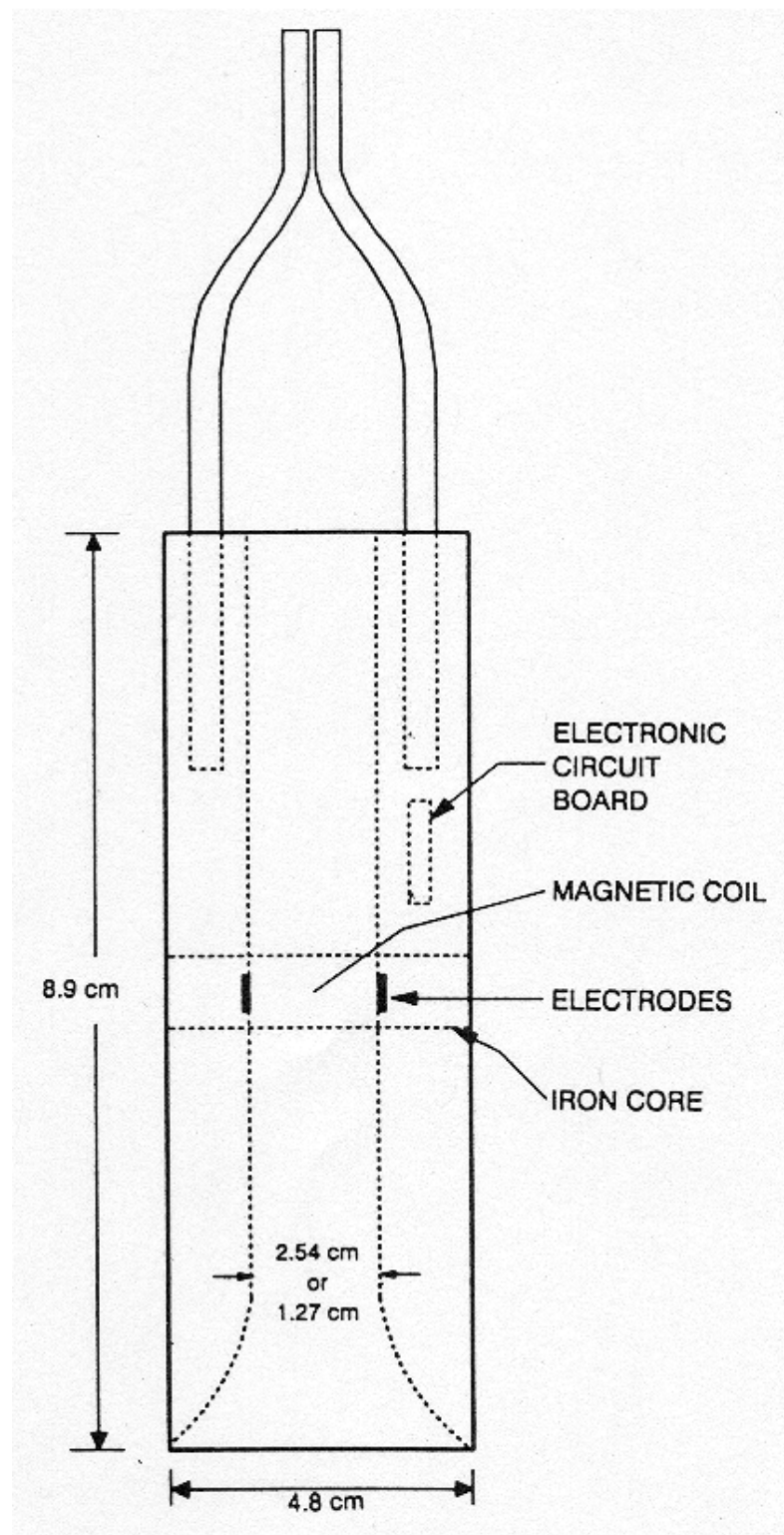


Figure 1 Schematic diagram of the Electromagnetic Borehole Flowmeter; reproduced from Molz and Young (1993).

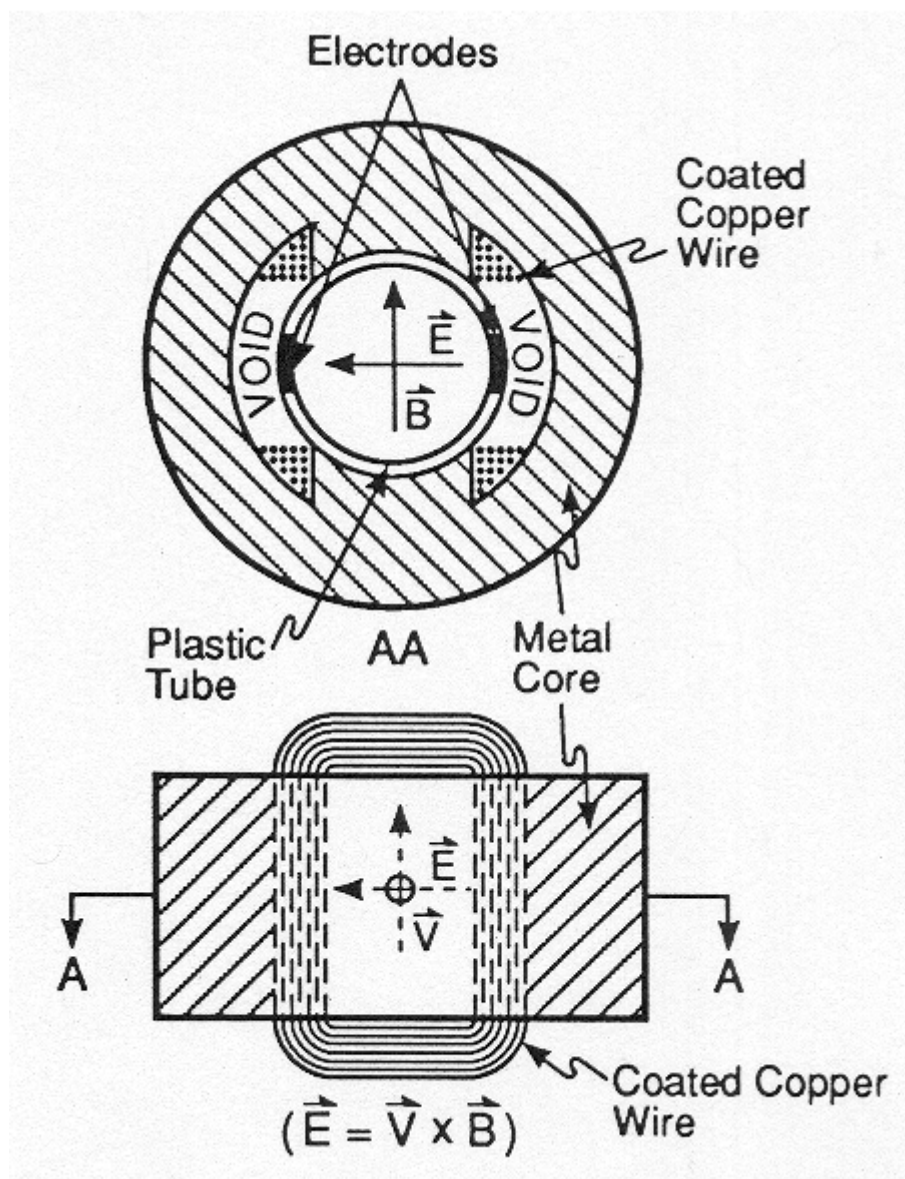


Figure 2 Electromagnetic Borehole Flowmeter (EBF) application of Faraday's Law of Induction; reproduced from Molz and Young (1993).

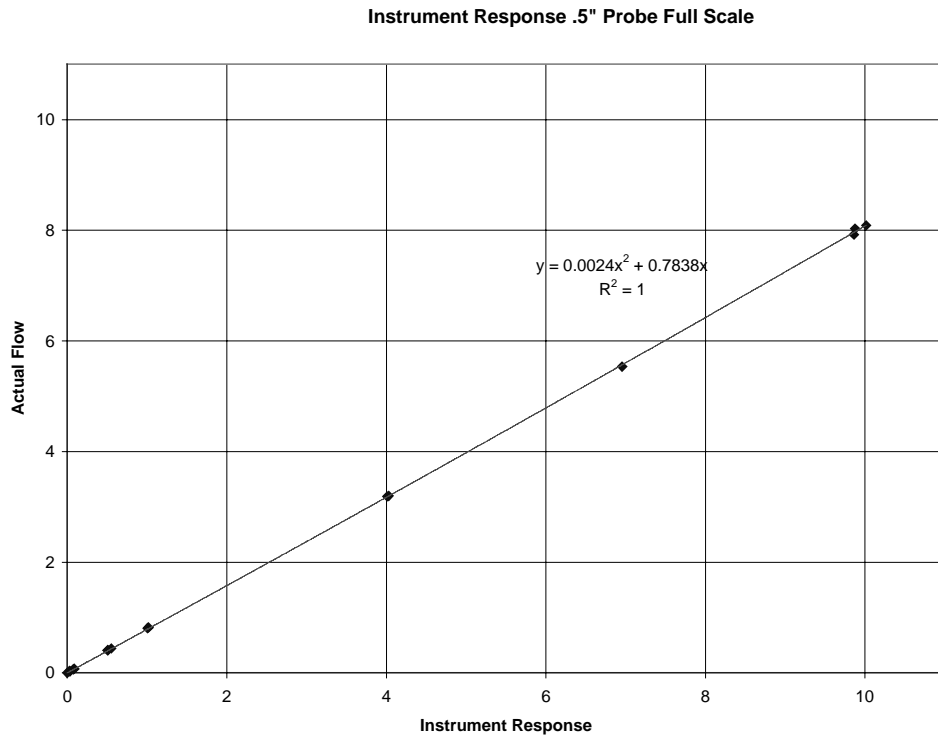


Figure 3 Calibration data and curve for the 1/2" ID EBF.

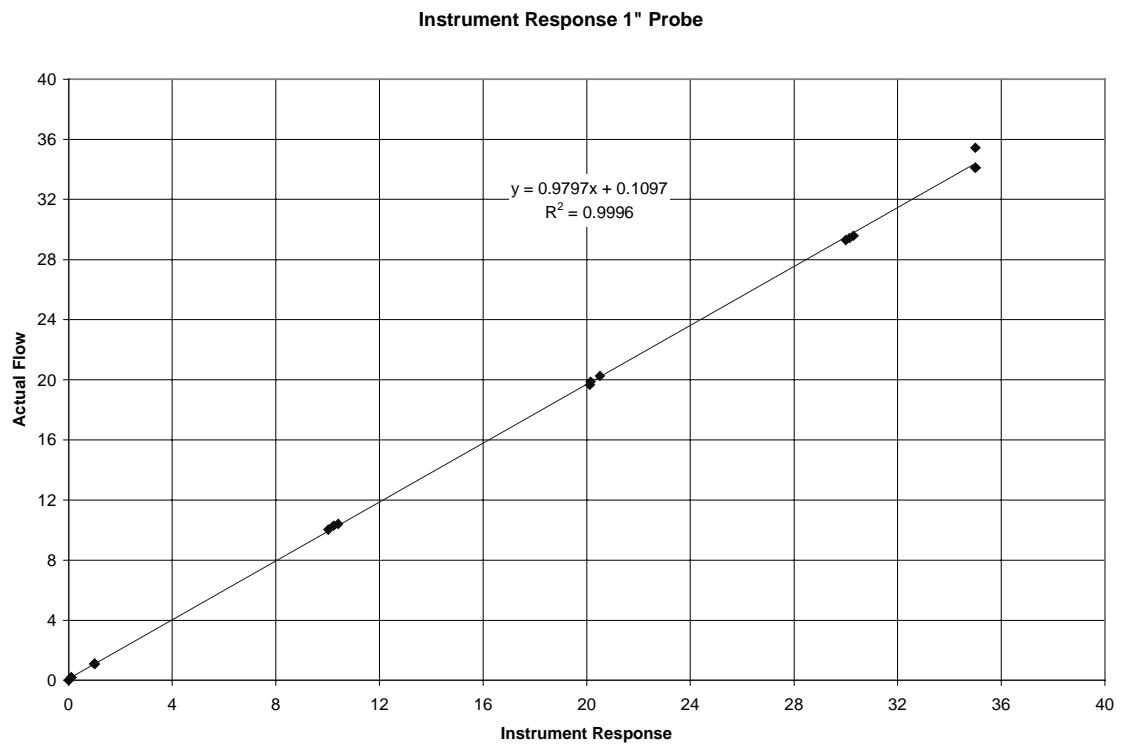


Figure 4 Calibration data and curve for the 1" ID EBF.

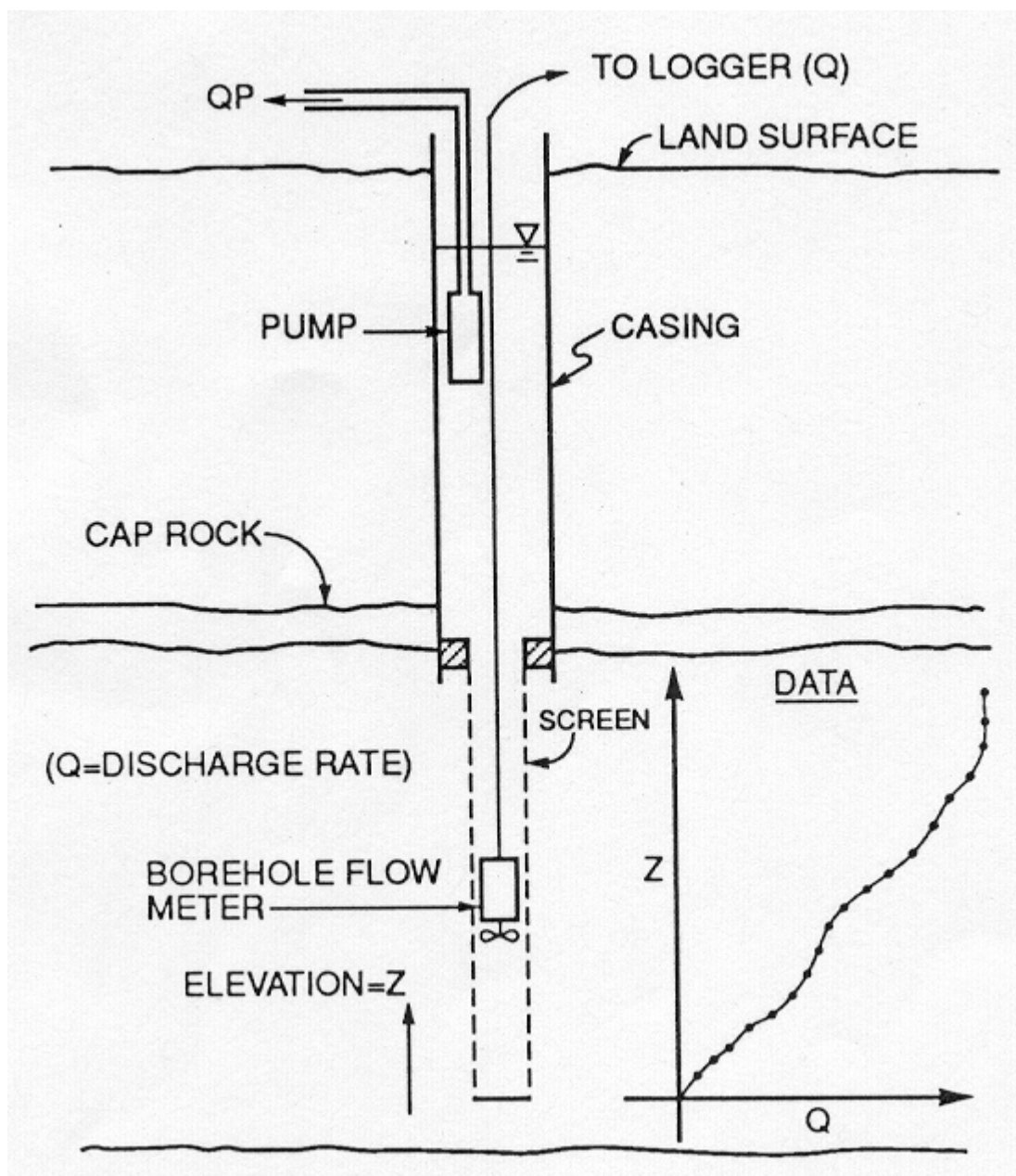


Figure 5 Schematic illustration of borehole flowmeter testing; reproduced from Molz and Young (1993).



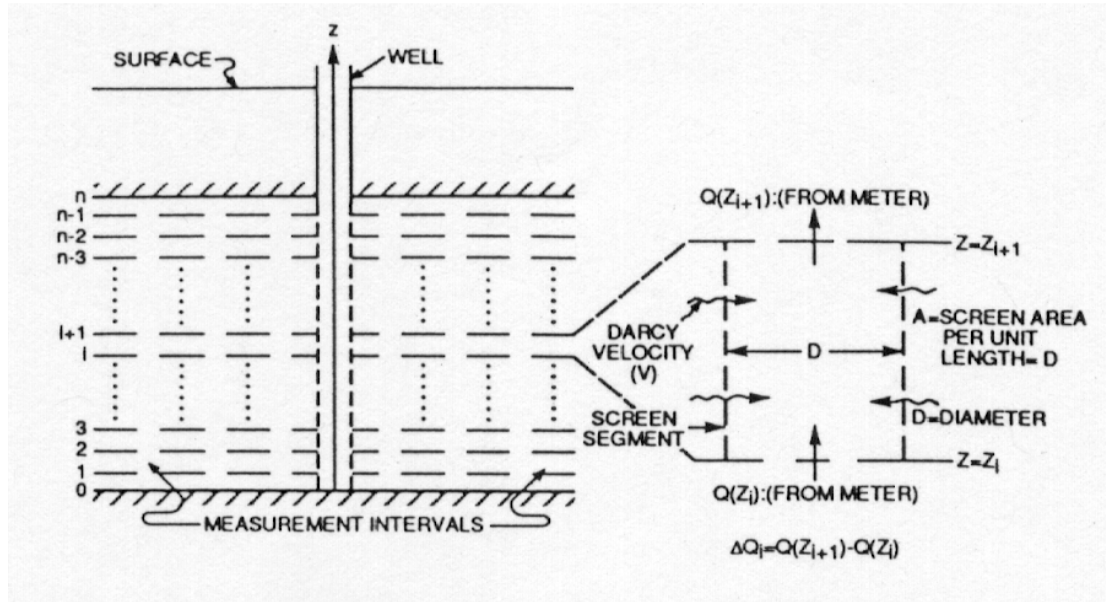


Figure 6 Basic geometry and analysis of borehole flowmeter data; reproduced from Molz and Young (1993).

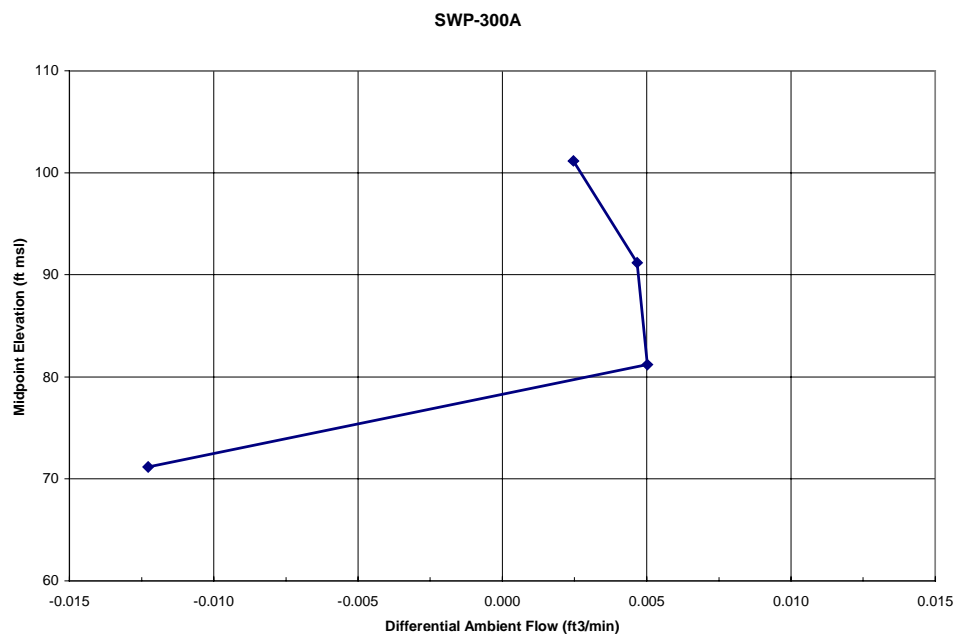


Figure 7 Ambient flow measurements for SWP-300A.

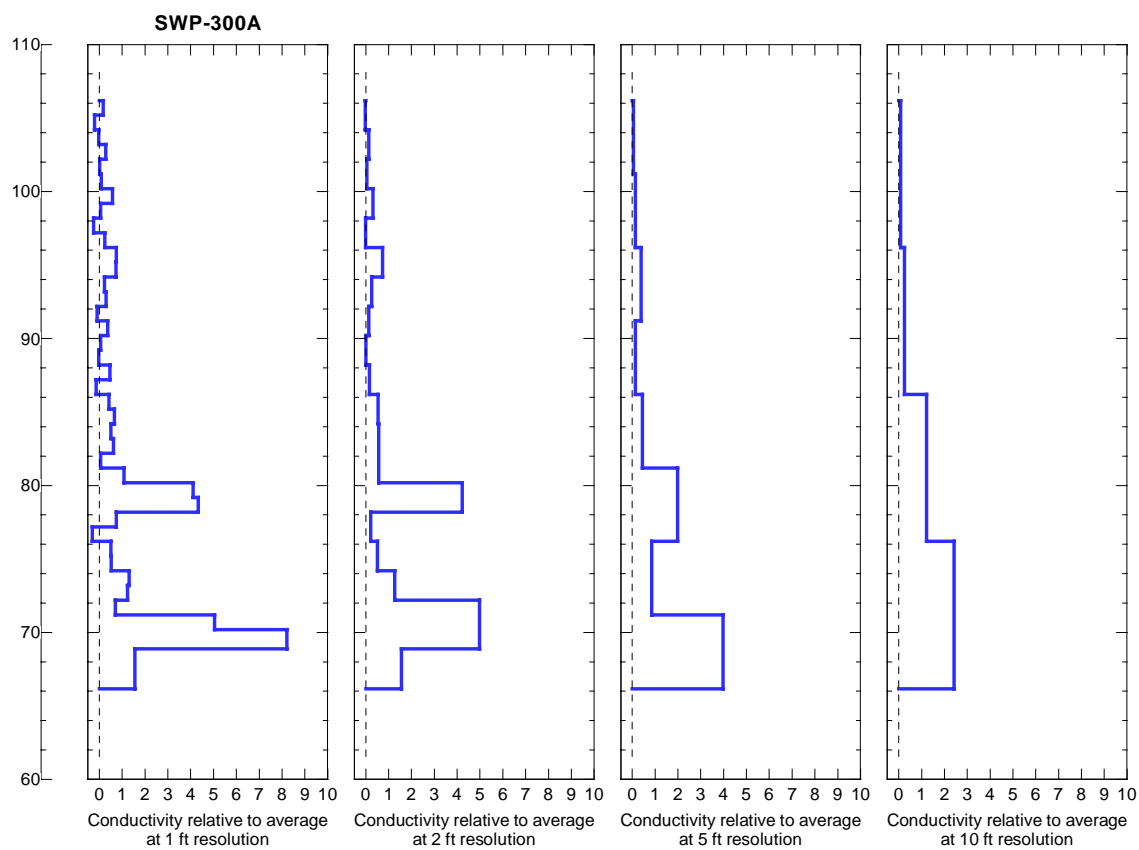


Figure 8 Estimated relative hydraulic conductivity profile for SWP-300A at 1, 2, 5 and 10 ft resolutions.

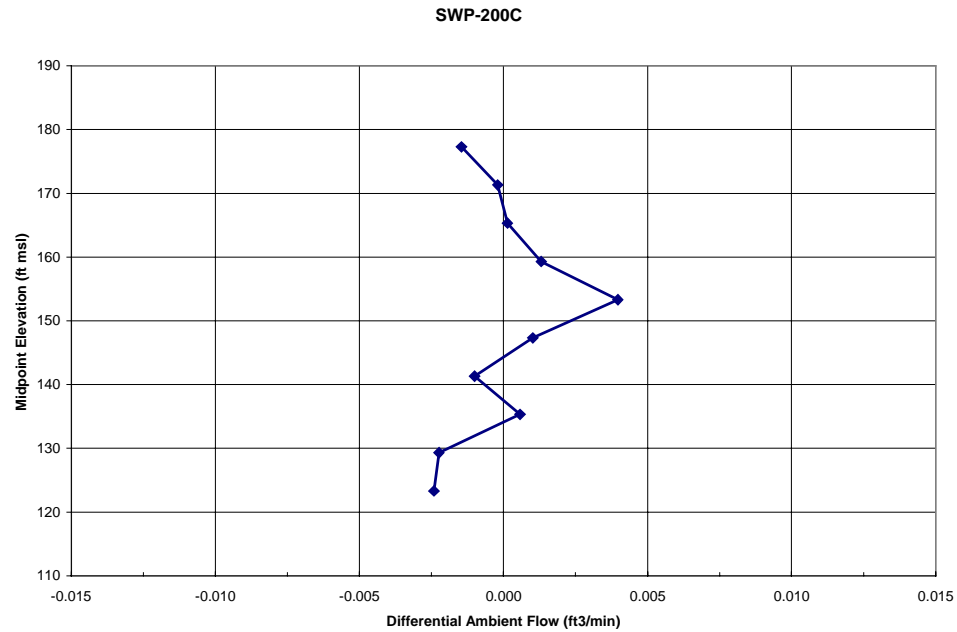


Figure 9 Ambient flow measurements for SWP-200C.

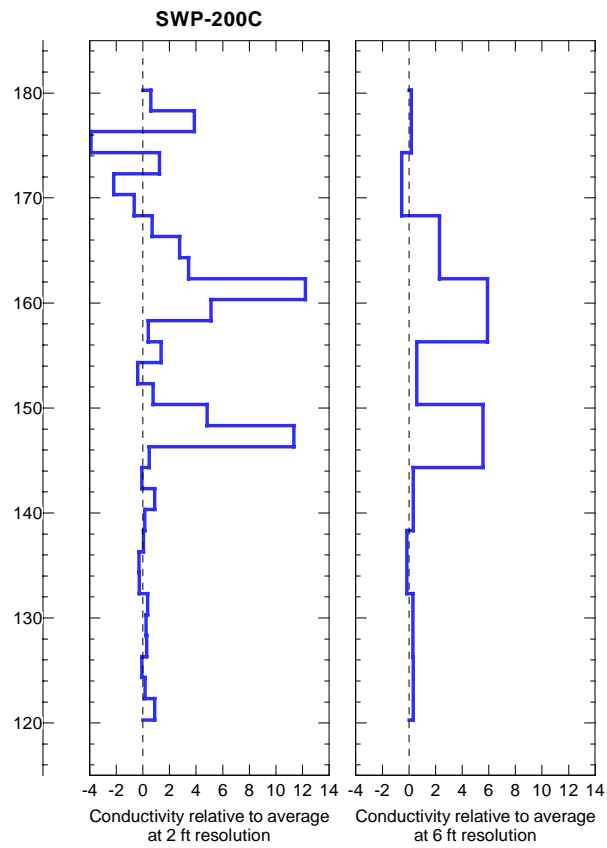


Figure 10 Estimated relative hydraulic conductivity profile for SWP-200C at 2 and 6 ft resolutions.

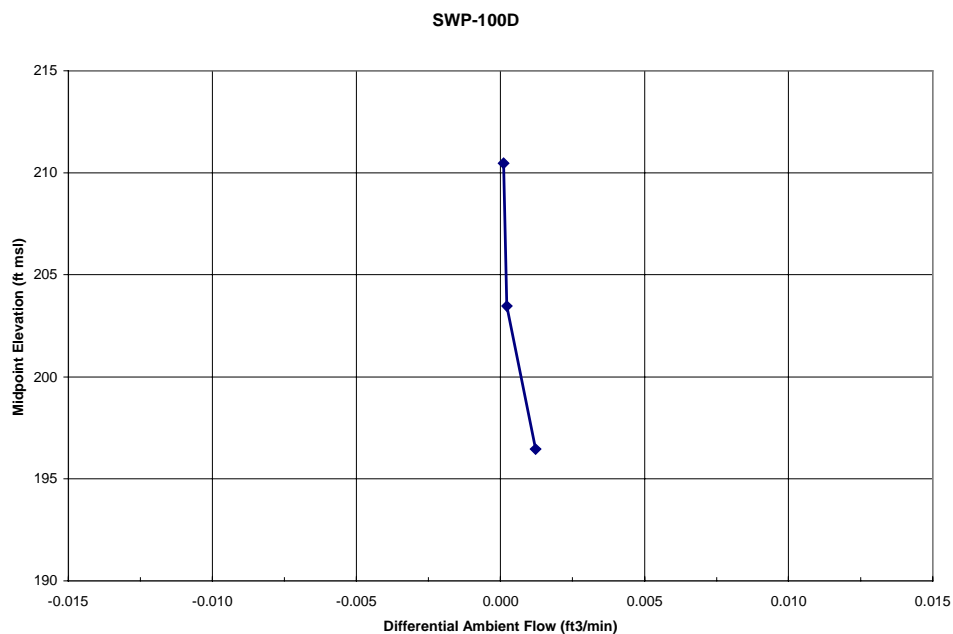


Figure 11 Ambient flow measurements for SWP-100D.

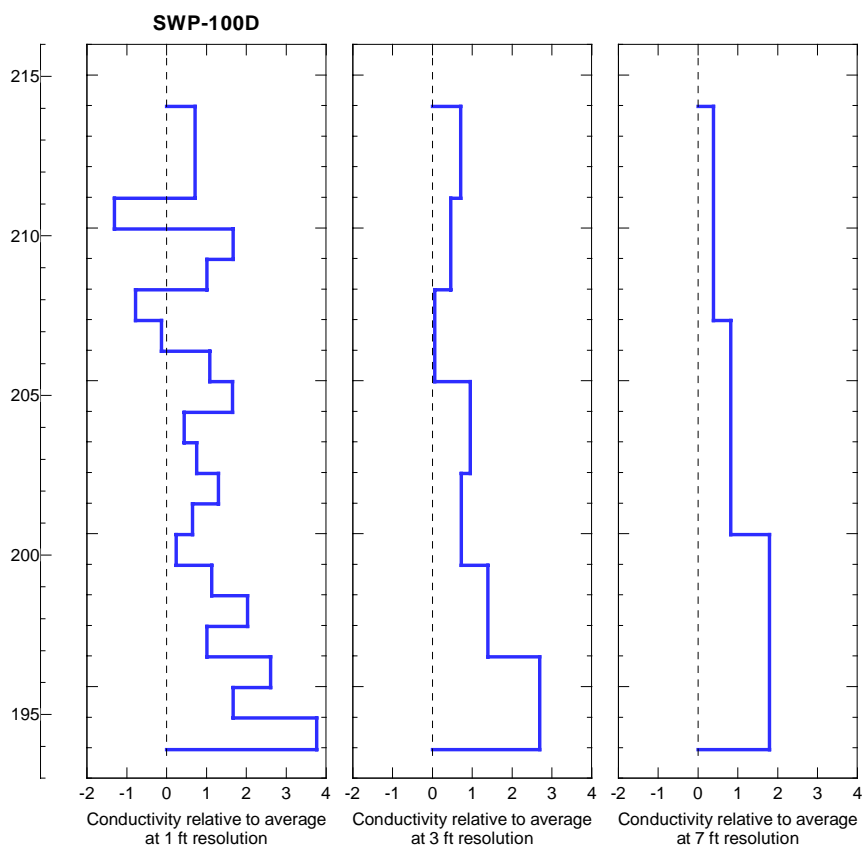


Figure 12 Estimated relative hydraulic conductivity profile for SWP-100D at 1, 3 and 7 ft resolutions.

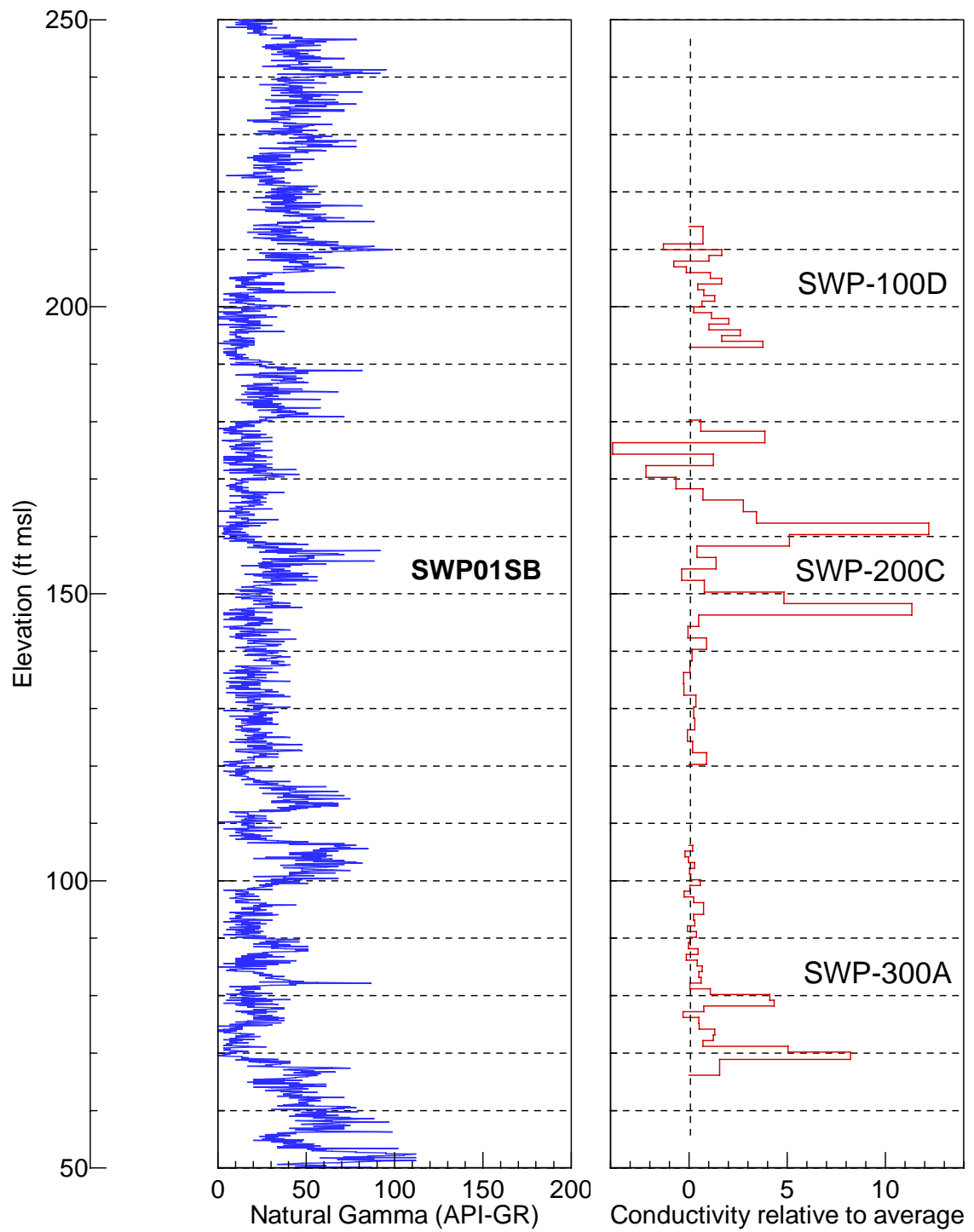
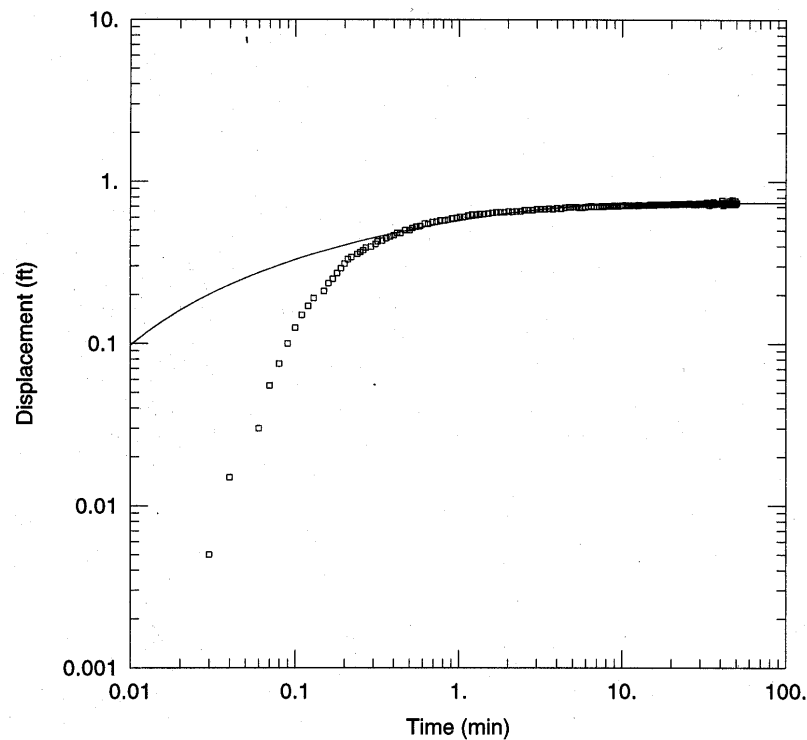
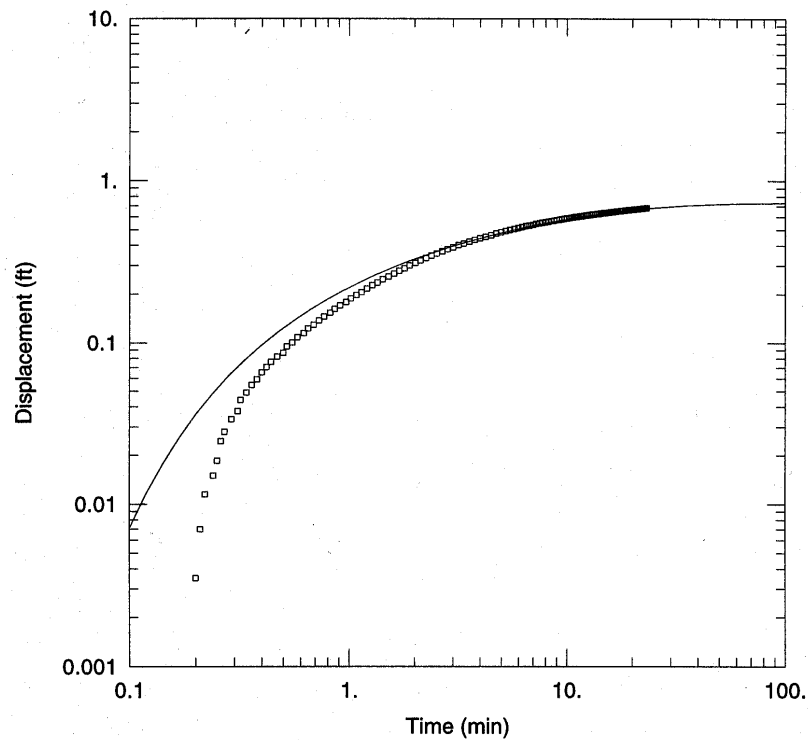


Figure 13 Comparison of EBF relative conductivity profiles to natural gamma log.



| WELL TEST ANALYSIS   |        |        |                                |        |        |
|--|--------|--------|--------------------------------|--------|--------|
| Data Set: C:\1BobworkC\BoreholeFlow\Logged Data\SWP300_compensated.aqt |        |        |                                |        |        |
| Date: 10/26/00   |        |        | Time: 14:54:30                 |        |        |
| AQUIFER DATA   |        |        |                                |        |        |
| Saturated Thickness: 43. ft  |        |        | Anisotropy Ratio (Kz/Kr): 0.1  |        |        |
| WELL DATA  |        |        |                                |        |        |
| Pumping Wells  |        |        | Observation Wells              |        |        |
| Well Name  | X (ft) | Y (ft) | Well Name                      | X (ft) | Y (ft) |
| SWP-300A   | 0      | 0      | OW 1                           | 0      | 0.67   |
| SOLUTION   |        |        |                                |        |        |
| Aquifer Model: Leaky   |        |        | Solution Method: Hantush-Jacob |        |        |
| T = 0.6989 ft <sup>2</sup> /min  |        |        | S = 0.02                       |        |        |
| r/B = 0.04387  |        |        |                                |        |        |

Figure 14 Time-drawdown data and single-well conductivity estimates for SWP-300A.



SWP-200C

Data Set: C:\1BobworkC\BoreholeFlow\Logged Data\SWP200C\_compensated.aqt

Date: 10/26/00

Time: 15:12:34

AQUIFER DATA

Saturated Thickness: 65. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

| Pumping Wells |        |        | Observation Wells |        |        |
|---------------|--------|--------|-------------------|--------|--------|
| Well Name     | X (ft) | Y (ft) | Well Name         | X (ft) | Y (ft) |
| SWP-200C      | 0      | 0      | OW 1              | 0      | 0.833  |

SOLUTION

Aquifer Model: Leaky

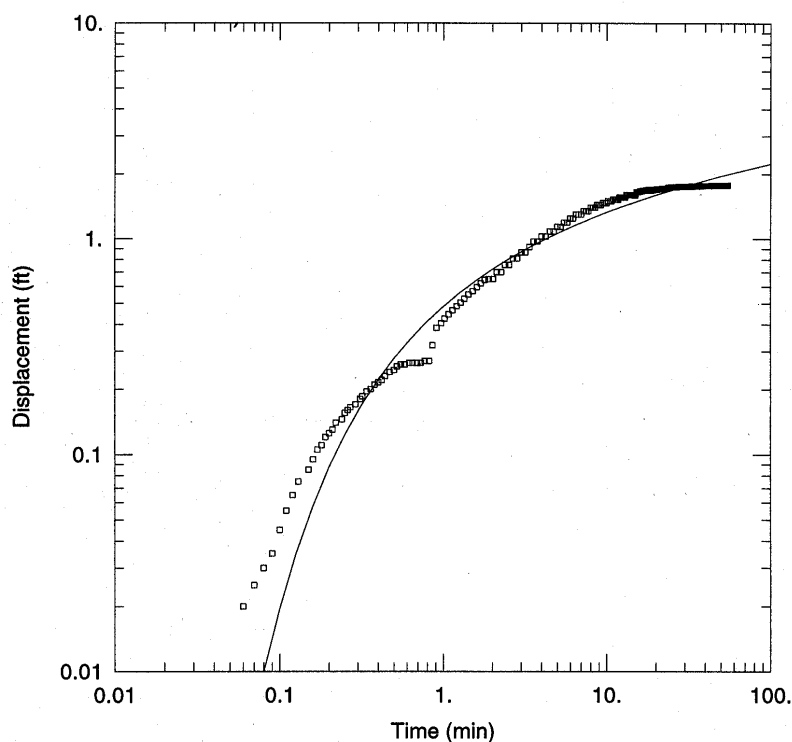
Solution Method: Hantush-Jacob

T = 0.1018 ft<sup>2</sup>/min

S = 0.13

r/B = 0.1761

Figure 15 Time-drawdown data and single-well conductivity estimates for SWP-200C.



|   |               |               |                                      |               |               |
|---|---------------|---------------|--------------------------------------|---------------|---------------|
| <u>SWP-100D</u>   |               |               |                                      |               |               |
| Data Set: C:\1BobworkC\BoreholeFlow\Logged Data\SWP100D_compensated.aqt |               |               |                                      |               |               |
| Date: <u>10/26/00</u>   |               |               | Time: <u>15:29:04</u>                |               |               |
| <u>AQUIFER DATA</u>   |               |               |                                      |               |               |
| Saturated Thickness: <u>24.3</u> ft                                     |               |               |                                      |               |               |
| <u>WELL DATA</u>  |               |               |                                      |               |               |
| <u>Pumping Wells</u>  |               |               | <u>Observation Wells</u>             |               |               |
| <u>Well Name</u>  | <u>X (ft)</u> | <u>Y (ft)</u> | <u>Well Name</u>                     | <u>X (ft)</u> | <u>Y (ft)</u> |
| SWP-100D  | 0             | 0             | OW 1                                 | 0             | 0.833         |
| <u>SOLUTION</u>   |               |               |                                      |               |               |
| Aquifer Model: <u>Unconfined</u>  |               |               | Solution Method: <u>Quick Neuman</u> |               |               |
| T = 0.2014 ft <sup>2</sup> /min   |               |               | S = <u>0.2311</u>                    |               |               |
| Sy = <u>0.001</u>   |               |               | β = <u>0.001</u>                     |               |               |

Figure 16 Time-drawdown data and single-well conductivity estimates for SWP-100D.



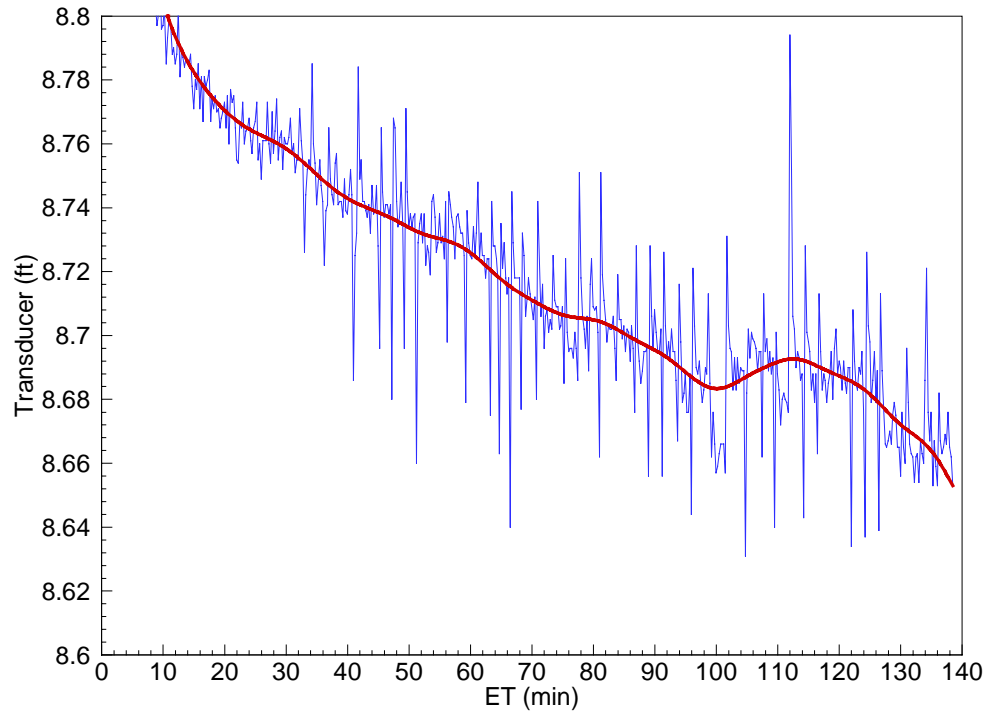


Figure 17 Unaltered and smoothed water level transducer data for SWP-300A.

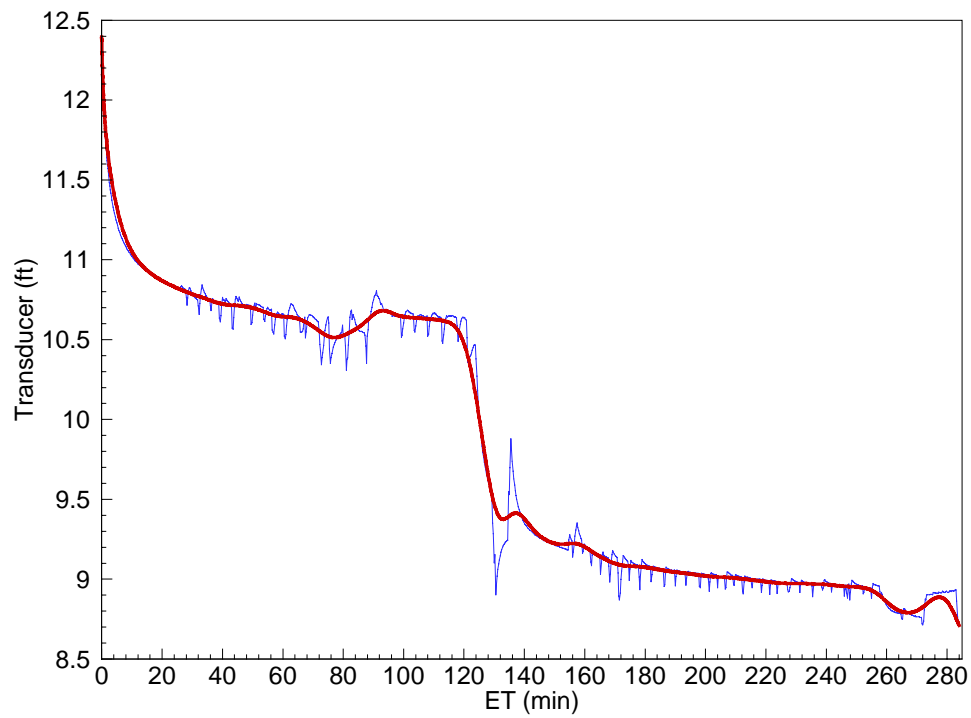


Figure 18 Unaltered and smoothed water level transducer data for SWP-200C.

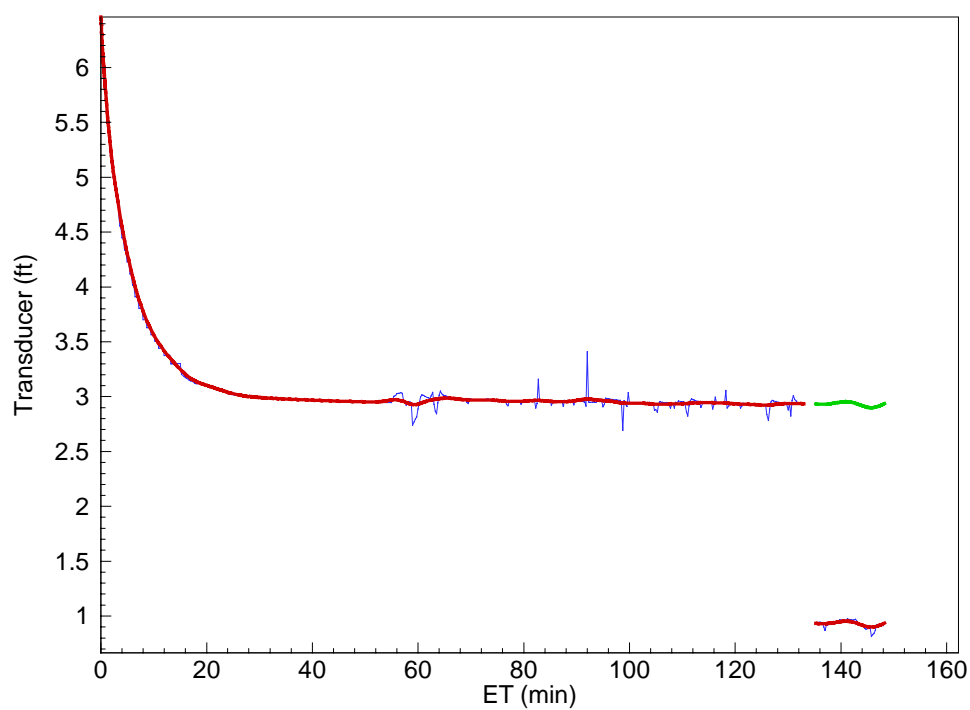
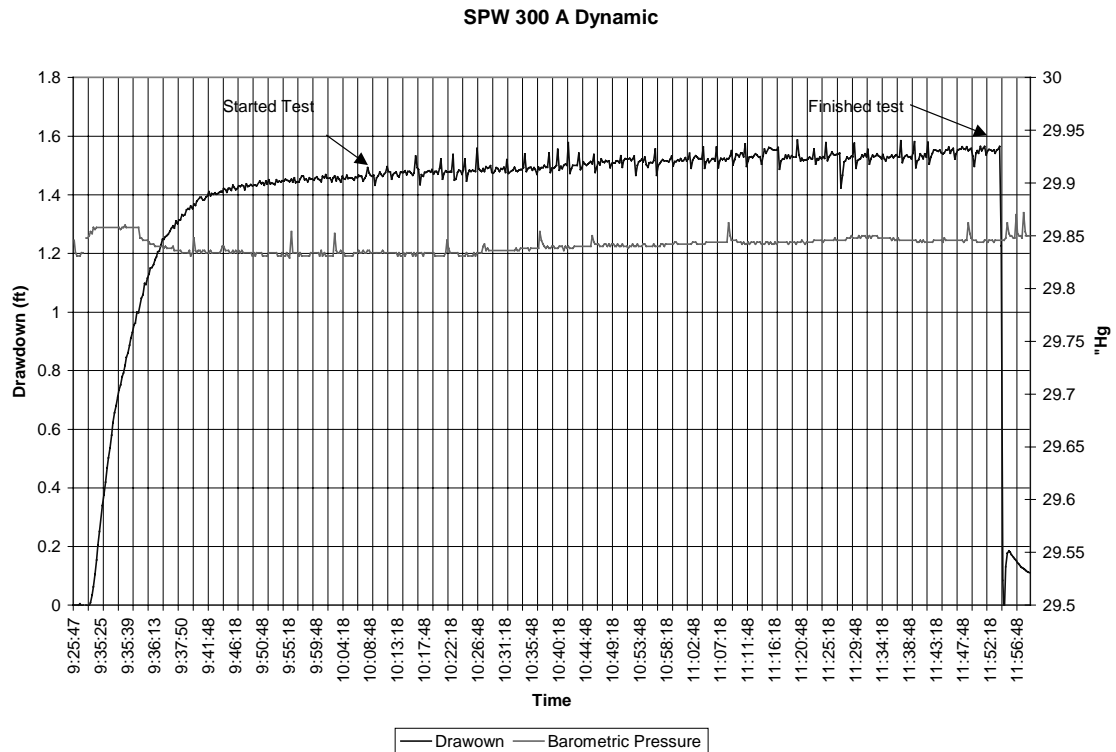


Figure 19 Unaltered and smoothed water level transducer data for SWP-100D.

## Appendix A – Time-drawdown data for SWP-300A



|            | Date     | Time    | ET (min) | Feet H2O | Inches Hg | Drawdown<br>ft |
|------------|----------|---------|----------|----------|-----------|----------------|
| Background | 07/25/00 | 9:25:47 | 0        | 10.218   | 29.846    | 0              |
|            | 07/25/00 | 9:26:47 | 1        | 10.218   | 29.834    | 0              |
|            | 07/25/00 | 9:27:47 | 2        | 10.218   | 29.831    | 0              |
|            | 07/25/00 | 9:28:47 | 3        | 10.218   | 29.831    | 0              |
|            | 07/25/00 | 9:29:47 | 4        | 10.213   | 29.831    | 0.005          |
|            | 07/25/00 | 9:30:47 | 5        | 10.22    | 29.834    | -0.002         |
|            | 07/25/00 | 9:31:47 | 6        | 10.218   | 29.834    | 0              |
| Pumping    | 07/25/00 | 9:35:19 | 0        | 10.218   | 29.848    | 0              |
|            | 07/25/00 | 9:35:19 | 0.0112   | 10.22    | 29.848    | -0.002         |
|            | 07/25/00 | 9:35:20 | 0.0223   | 10.22    | 29.85     | -0.002         |
|            | 07/25/00 | 9:35:21 | 0.0335   | 10.208   | 29.854    | 0.01           |
|            | 07/25/00 | 9:35:21 | 0.0447   | 10.184   | 29.852    | 0.034          |
|            | 07/25/00 | 9:35:22 | 0.0558   | 10.155   | 29.858    | 0.063          |
|            | 07/25/00 | 9:35:23 | 0.067    | 10.113   | 29.856    | 0.105          |
|            | 07/25/00 | 9:35:23 | 0.0782   | 10.064   | 29.858    | 0.154          |
|            | 07/25/00 | 9:35:24 | 0.0893   | 10.014   | 29.858    | 0.204          |
|            | 07/25/00 | 9:35:25 | 0.1005   | 9.966    | 29.858    | 0.252          |
|            | 07/25/00 | 9:35:25 | 0.1117   | 9.917    | 29.858    | 0.301          |
|            | 07/25/00 | 9:35:26 | 0.1228   | 9.878    | 29.858    | 0.34           |
|            | 07/25/00 | 9:35:27 | 0.134    | 9.841    | 29.858    | 0.377          |

**Appendix A (continued)**

|          |         |        |       |        |       |
|----------|---------|--------|-------|--------|-------|
| 07/25/00 | 9:35:27 | 0.1452 | 9.798 | 29.858 | 0.42  |
| 07/25/00 | 9:35:28 | 0.1563 | 9.749 | 29.858 | 0.469 |
| 07/25/00 | 9:35:29 | 0.1675 | 9.716 | 29.858 | 0.502 |
| 07/25/00 | 9:35:29 | 0.1787 | 9.681 | 29.858 | 0.537 |
| 07/25/00 | 9:35:30 | 0.1898 | 9.638 | 29.858 | 0.58  |
| 07/25/00 | 9:35:31 | 0.201  | 9.595 | 29.858 | 0.623 |
| 07/25/00 | 9:35:31 | 0.2122 | 9.562 | 29.858 | 0.656 |
| 07/25/00 | 9:35:32 | 0.2233 | 9.537 | 29.858 | 0.681 |
| 07/25/00 | 9:35:33 | 0.235  | 9.507 | 29.858 | 0.711 |
| 07/25/00 | 9:35:33 | 0.2475 | 9.484 | 29.858 | 0.734 |
| 07/25/00 | 9:35:34 | 0.2607 | 9.467 | 29.856 | 0.751 |
| 07/25/00 | 9:35:35 | 0.2747 | 9.438 | 29.858 | 0.78  |
| 07/25/00 | 9:35:36 | 0.2895 | 9.426 | 29.858 | 0.792 |
| 07/25/00 | 9:35:37 | 0.3052 | 9.4   | 29.86  | 0.818 |
| 07/25/00 | 9:35:38 | 0.3218 | 9.372 | 29.858 | 0.846 |
| 07/25/00 | 9:35:39 | 0.3395 | 9.357 | 29.858 | 0.861 |
| 07/25/00 | 9:35:40 | 0.3582 | 9.331 | 29.858 | 0.887 |
| 07/25/00 | 9:35:41 | 0.378  | 9.307 | 29.858 | 0.911 |
| 07/25/00 | 9:35:42 | 0.399  | 9.287 | 29.858 | 0.931 |
| 07/25/00 | 9:35:44 | 0.4212 | 9.262 | 29.858 | 0.956 |
| 07/25/00 | 9:35:45 | 0.4447 | 9.256 | 29.858 | 0.962 |
| 07/25/00 | 9:35:47 | 0.4695 | 9.219 | 29.858 | 0.999 |
| 07/25/00 | 9:35:48 | 0.4958 | 9.22  | 29.858 | 0.998 |
| 07/25/00 | 9:35:50 | 0.5238 | 9.192 | 29.848 | 1.026 |
| 07/25/00 | 9:35:52 | 0.5535 | 9.171 | 29.848 | 1.047 |
| 07/25/00 | 9:35:54 | 0.5848 | 9.158 | 29.846 | 1.06  |
| 07/25/00 | 9:35:56 | 0.618  | 9.121 | 29.846 | 1.097 |
| 07/25/00 | 9:35:58 | 0.6532 | 9.124 | 29.846 | 1.094 |
| 07/25/00 | 9:36:00 | 0.6905 | 9.102 | 29.846 | 1.116 |
| 07/25/00 | 9:36:02 | 0.73   | 9.088 | 29.844 | 1.13  |
| 07/25/00 | 9:36:05 | 0.7718 | 9.068 | 29.842 | 1.15  |
| 07/25/00 | 9:36:07 | 0.8162 | 9.066 | 29.842 | 1.152 |
| 07/25/00 | 9:36:10 | 0.8632 | 9.056 | 29.842 | 1.162 |
| 07/25/00 | 9:36:13 | 0.913  | 9.039 | 29.84  | 1.179 |
| 07/25/00 | 9:36:16 | 0.9657 | 9.03  | 29.84  | 1.188 |
| 07/25/00 | 9:36:20 | 1.0215 | 9.013 | 29.84  | 1.205 |
| 07/25/00 | 9:36:23 | 1.0807 | 9.01  | 29.84  | 1.208 |
| 07/25/00 | 9:36:27 | 1.1433 | 8.989 | 29.84  | 1.229 |
| 07/25/00 | 9:36:31 | 1.2097 | 8.97  | 29.84  | 1.248 |
| 07/25/00 | 9:36:35 | 1.28   | 8.97  | 29.838 | 1.248 |
| 07/25/00 | 9:36:40 | 1.3545 | 8.961 | 29.84  | 1.257 |
| 07/25/00 | 9:36:45 | 1.4335 | 8.957 | 29.838 | 1.261 |
| 07/25/00 | 9:36:50 | 1.5172 | 8.953 | 29.838 | 1.265 |
| 07/25/00 | 9:36:55 | 1.6057 | 8.942 | 29.838 | 1.276 |
| 07/25/00 | 9:37:00 | 1.6995 | 8.931 | 29.838 | 1.287 |
| 07/25/00 | 9:37:06 | 1.7988 | 8.924 | 29.84  | 1.294 |
| 07/25/00 | 9:37:13 | 1.9042 | 8.931 | 29.836 | 1.287 |
| 07/25/00 | 9:37:19 | 2.0157 | 8.908 | 29.836 | 1.31  |
| 07/25/00 | 9:37:27 | 2.1338 | 8.917 | 29.836 | 1.301 |
| 07/25/00 | 9:37:34 | 2.259  | 8.904 | 29.836 | 1.314 |
| 07/25/00 | 9:37:42 | 2.3915 | 8.904 | 29.836 | 1.314 |

**Appendix A (continued)**

|          |         |         |       |        |       |
|----------|---------|---------|-------|--------|-------|
| 07/25/00 | 9:37:50 | 2.532   | 8.886 | 29.834 | 1.332 |
| 07/25/00 | 9:37:59 | 2.6808  | 8.889 | 29.834 | 1.329 |
| 07/25/00 | 9:38:09 | 2.8383  | 8.886 | 29.834 | 1.332 |
| 07/25/00 | 9:38:19 | 3.0052  | 8.87  | 29.834 | 1.348 |
| 07/25/00 | 9:38:29 | 3.182   | 8.865 | 29.834 | 1.353 |
| 07/25/00 | 9:38:41 | 3.3693  | 8.868 | 29.836 | 1.35  |
| 07/25/00 | 9:38:53 | 3.5677  | 8.856 | 29.831 | 1.362 |
| 07/25/00 | 9:39:05 | 3.7778  | 8.865 | 29.834 | 1.353 |
| 07/25/00 | 9:39:19 | 4.0005  | 8.85  | 29.848 | 1.368 |
| 07/25/00 | 9:39:33 | 4.2363  | 8.855 | 29.836 | 1.363 |
| 07/25/00 | 9:39:48 | 4.4862  | 8.84  | 29.834 | 1.378 |
| 07/25/00 | 9:40:03 | 4.7362  | 8.833 | 29.836 | 1.385 |
| 07/25/00 | 9:40:18 | 4.9862  | 8.827 | 29.836 | 1.391 |
| 07/25/00 | 9:40:33 | 5.2362  | 8.827 | 29.834 | 1.391 |
| 07/25/00 | 9:40:48 | 5.4862  | 8.836 | 29.836 | 1.382 |
| 07/25/00 | 9:41:03 | 5.7362  | 8.834 | 29.836 | 1.384 |
| 07/25/00 | 9:41:18 | 5.9862  | 8.826 | 29.834 | 1.392 |
| 07/25/00 | 9:41:33 | 6.2362  | 8.823 | 29.834 | 1.395 |
| 07/25/00 | 9:41:48 | 6.4862  | 8.807 | 29.834 | 1.411 |
| 07/25/00 | 9:42:03 | 6.7362  | 8.821 | 29.836 | 1.397 |
| 07/25/00 | 9:42:18 | 6.9862  | 8.814 | 29.834 | 1.404 |
| 07/25/00 | 9:42:33 | 7.2362  | 8.816 | 29.834 | 1.402 |
| 07/25/00 | 9:42:48 | 7.4862  | 8.811 | 29.834 | 1.407 |
| 07/25/00 | 9:43:03 | 7.7362  | 8.816 | 29.834 | 1.402 |
| 07/25/00 | 9:43:18 | 7.9862  | 8.813 | 29.834 | 1.405 |
| 07/25/00 | 9:43:33 | 8.2362  | 8.809 | 29.834 | 1.409 |
| 07/25/00 | 9:43:48 | 8.4862  | 8.806 | 29.836 | 1.412 |
| 07/25/00 | 9:44:03 | 8.7362  | 8.81  | 29.84  | 1.408 |
| 07/25/00 | 9:44:18 | 8.9862  | 8.797 | 29.84  | 1.421 |
| 07/25/00 | 9:44:33 | 9.2362  | 8.8   | 29.836 | 1.418 |
| 07/25/00 | 9:44:48 | 9.4862  | 8.81  | 29.836 | 1.408 |
| 07/25/00 | 9:45:03 | 9.7362  | 8.796 | 29.836 | 1.422 |
| 07/25/00 | 9:45:18 | 9.9862  | 8.797 | 29.834 | 1.421 |
| 07/25/00 | 9:45:33 | 10.2362 | 8.803 | 29.834 | 1.415 |
| 07/25/00 | 9:45:48 | 10.4862 | 8.785 | 29.836 | 1.433 |
| 07/25/00 | 9:46:03 | 10.7362 | 8.793 | 29.834 | 1.425 |
| 07/25/00 | 9:46:18 | 10.9862 | 8.8   | 29.836 | 1.418 |
| 07/25/00 | 9:46:33 | 11.2362 | 8.797 | 29.834 | 1.421 |
| 07/25/00 | 9:46:48 | 11.4862 | 8.788 | 29.836 | 1.43  |
| 07/25/00 | 9:47:03 | 11.7362 | 8.79  | 29.834 | 1.428 |
| 07/25/00 | 9:47:18 | 11.9862 | 8.785 | 29.836 | 1.433 |
| 07/25/00 | 9:47:33 | 12.2362 | 8.788 | 29.834 | 1.43  |
| 07/25/00 | 9:47:48 | 12.4862 | 8.801 | 29.834 | 1.417 |
| 07/25/00 | 9:48:03 | 12.7362 | 8.781 | 29.834 | 1.437 |
| 07/25/00 | 9:48:18 | 12.9862 | 8.79  | 29.834 | 1.428 |
| 07/25/00 | 9:48:33 | 13.2362 | 8.787 | 29.834 | 1.431 |
| 07/25/00 | 9:48:48 | 13.4862 | 8.784 | 29.834 | 1.434 |
| 07/25/00 | 9:49:03 | 13.7362 | 8.787 | 29.831 | 1.431 |
| 07/25/00 | 9:49:18 | 13.9862 | 8.785 | 29.834 | 1.433 |
| 07/25/00 | 9:49:33 | 14.2362 | 8.785 | 29.831 | 1.433 |
| 07/25/00 | 9:49:48 | 14.4862 | 8.788 | 29.834 | 1.43  |

**Appendix A (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 9:50:03  | 14.7362 | 8.778 | 29.834 | 1.44  |
| 07/25/00 | 9:50:18  | 14.9862 | 8.771 | 29.834 | 1.447 |
| 07/25/00 | 9:50:33  | 15.2362 | 8.78  | 29.834 | 1.438 |
| 07/25/00 | 9:50:48  | 15.4862 | 8.777 | 29.831 | 1.441 |
| 07/25/00 | 9:51:03  | 15.7362 | 8.785 | 29.831 | 1.433 |
| 07/25/00 | 9:51:18  | 15.9862 | 8.771 | 29.831 | 1.447 |
| 07/25/00 | 9:51:33  | 16.2362 | 8.781 | 29.831 | 1.437 |
| 07/25/00 | 9:51:48  | 16.4862 | 8.767 | 29.834 | 1.451 |
| 07/25/00 | 9:52:03  | 16.7362 | 8.781 | 29.834 | 1.437 |
| 07/25/00 | 9:52:18  | 16.9862 | 8.778 | 29.834 | 1.44  |
| 07/25/00 | 9:52:33  | 17.2362 | 8.78  | 29.834 | 1.438 |
| 07/25/00 | 9:52:48  | 17.4862 | 8.783 | 29.834 | 1.435 |
| 07/25/00 | 9:53:03  | 17.7362 | 8.767 | 29.834 | 1.451 |
| 07/25/00 | 9:53:18  | 17.9862 | 8.774 | 29.831 | 1.444 |
| 07/25/00 | 9:53:33  | 18.2362 | 8.771 | 29.831 | 1.447 |
| 07/25/00 | 9:53:48  | 18.4862 | 8.775 | 29.831 | 1.443 |
| 07/25/00 | 9:54:03  | 18.7362 | 8.77  | 29.834 | 1.448 |
| 07/25/00 | 9:54:18  | 18.9862 | 8.771 | 29.831 | 1.447 |
| 07/25/00 | 9:54:33  | 19.2362 | 8.765 | 29.831 | 1.453 |
| 07/25/00 | 9:54:48  | 19.4862 | 8.768 | 29.834 | 1.45  |
| 07/25/00 | 9:55:03  | 19.7362 | 8.77  | 29.831 | 1.448 |
| 07/25/00 | 9:55:18  | 19.9862 | 8.773 | 29.829 | 1.445 |
| 07/25/00 | 9:55:33  | 20.2362 | 8.765 | 29.854 | 1.453 |
| 07/25/00 | 9:55:48  | 20.4862 | 8.775 | 29.834 | 1.443 |
| 07/25/00 | 9:56:03  | 20.7362 | 8.76  | 29.834 | 1.458 |
| 07/25/00 | 9:56:18  | 20.9862 | 8.777 | 29.834 | 1.441 |
| 07/25/00 | 9:56:33  | 21.2362 | 8.773 | 29.834 | 1.445 |
| 07/25/00 | 9:56:48  | 21.4862 | 8.775 | 29.831 | 1.443 |
| 07/25/00 | 9:57:03  | 21.7362 | 8.765 | 29.834 | 1.453 |
| 07/25/00 | 9:57:18  | 21.9862 | 8.755 | 29.831 | 1.463 |
| 07/25/00 | 9:57:33  | 22.2362 | 8.754 | 29.831 | 1.464 |
| 07/25/00 | 9:57:48  | 22.4862 | 8.767 | 29.831 | 1.451 |
| 07/25/00 | 9:58:03  | 22.7362 | 8.765 | 29.831 | 1.453 |
| 07/25/00 | 9:58:18  | 22.9862 | 8.773 | 29.831 | 1.445 |
| 07/25/00 | 9:58:33  | 23.2362 | 8.76  | 29.831 | 1.458 |
| 07/25/00 | 9:58:48  | 23.4862 | 8.764 | 29.834 | 1.454 |
| 07/25/00 | 9:59:03  | 23.7362 | 8.765 | 29.834 | 1.453 |
| 07/25/00 | 9:59:18  | 23.9862 | 8.768 | 29.834 | 1.45  |
| 07/25/00 | 9:59:33  | 24.2362 | 8.761 | 29.834 | 1.457 |
| 07/25/00 | 9:59:48  | 24.4862 | 8.757 | 29.834 | 1.461 |
| 07/25/00 | 10:00:03 | 24.7362 | 8.765 | 29.834 | 1.453 |
| 07/25/00 | 10:00:18 | 24.9862 | 8.767 | 29.831 | 1.451 |
| 07/25/00 | 10:00:33 | 25.2362 | 8.773 | 29.836 | 1.445 |
| 07/25/00 | 10:00:48 | 25.4862 | 8.755 | 29.831 | 1.463 |
| 07/25/00 | 10:01:03 | 25.7362 | 8.76  | 29.834 | 1.458 |
| 07/25/00 | 10:01:18 | 25.9862 | 8.749 | 29.831 | 1.469 |
| 07/25/00 | 10:01:33 | 26.2362 | 8.761 | 29.831 | 1.457 |
| 07/25/00 | 10:01:48 | 26.4862 | 8.761 | 29.831 | 1.457 |
| 07/25/00 | 10:02:03 | 26.7362 | 8.761 | 29.831 | 1.457 |
| 07/25/00 | 10:02:18 | 26.9862 | 8.773 | 29.831 | 1.445 |
| 07/25/00 | 10:02:33 | 27.2362 | 8.76  | 29.831 | 1.458 |

**Appendix A (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 10:02:48 | 27.4862 | 8.754 | 29.852 | 1.464 |
| 07/25/00 | 10:03:03 | 27.7362 | 8.77  | 29.836 | 1.448 |
| 07/25/00 | 10:03:18 | 27.9862 | 8.757 | 29.834 | 1.461 |
| 07/25/00 | 10:03:33 | 28.2362 | 8.764 | 29.834 | 1.454 |
| 07/25/00 | 10:03:48 | 28.4862 | 8.774 | 29.836 | 1.444 |
| 07/25/00 | 10:04:03 | 28.7362 | 8.755 | 29.834 | 1.463 |
| 07/25/00 | 10:04:18 | 28.9862 | 8.762 | 29.834 | 1.456 |
| 07/25/00 | 10:04:33 | 29.2362 | 8.764 | 29.831 | 1.454 |
| 07/25/00 | 10:04:48 | 29.4862 | 8.752 | 29.831 | 1.466 |
| 07/25/00 | 10:05:03 | 29.7362 | 8.762 | 29.831 | 1.456 |
| 07/25/00 | 10:05:18 | 29.9862 | 8.76  | 29.831 | 1.458 |
| 07/25/00 | 10:05:33 | 30.2362 | 8.76  | 29.831 | 1.458 |
| 07/25/00 | 10:05:48 | 30.4862 | 8.762 | 29.831 | 1.456 |
| 07/25/00 | 10:06:03 | 30.7362 | 8.768 | 29.834 | 1.45  |
| 07/25/00 | 10:06:18 | 30.9862 | 8.757 | 29.834 | 1.461 |
| 07/25/00 | 10:06:33 | 31.2362 | 8.76  | 29.834 | 1.458 |
| 07/25/00 | 10:06:48 | 31.4862 | 8.751 | 29.836 | 1.467 |
| 07/25/00 | 10:07:03 | 31.7362 | 8.755 | 29.834 | 1.463 |
| 07/25/00 | 10:07:18 | 31.9862 | 8.755 | 29.834 | 1.463 |
| 07/25/00 | 10:07:33 | 32.2362 | 8.771 | 29.836 | 1.447 |
| 07/25/00 | 10:07:48 | 32.4862 | 8.761 | 29.834 | 1.457 |
| 07/25/00 | 10:08:03 | 32.7362 | 8.754 | 29.834 | 1.464 |
| 07/25/00 | 10:08:18 | 32.9862 | 8.726 | 29.836 | 1.492 |
| 07/25/00 | 10:08:33 | 33.2362 | 8.744 | 29.836 | 1.474 |
| 07/25/00 | 10:08:48 | 33.4862 | 8.752 | 29.834 | 1.466 |
| 07/25/00 | 10:09:03 | 33.7362 | 8.755 | 29.834 | 1.463 |
| 07/25/00 | 10:09:18 | 33.9862 | 8.752 | 29.834 | 1.466 |
| 07/25/00 | 10:09:33 | 34.2362 | 8.785 | 29.834 | 1.433 |
| 07/25/00 | 10:09:48 | 34.4862 | 8.76  | 29.834 | 1.458 |
| 07/25/00 | 10:10:03 | 34.7362 | 8.754 | 29.834 | 1.464 |
| 07/25/00 | 10:10:18 | 34.9862 | 8.741 | 29.834 | 1.477 |
| 07/25/00 | 10:10:33 | 35.2362 | 8.748 | 29.834 | 1.47  |
| 07/25/00 | 10:10:48 | 35.4862 | 8.755 | 29.836 | 1.463 |
| 07/25/00 | 10:11:03 | 35.7362 | 8.747 | 29.834 | 1.471 |
| 07/25/00 | 10:11:18 | 35.9862 | 8.742 | 29.834 | 1.476 |
| 07/25/00 | 10:11:33 | 36.2362 | 8.722 | 29.834 | 1.496 |
| 07/25/00 | 10:11:48 | 36.4862 | 8.739 | 29.834 | 1.479 |
| 07/25/00 | 10:12:03 | 36.7362 | 8.741 | 29.834 | 1.477 |
| 07/25/00 | 10:12:18 | 36.9862 | 8.765 | 29.834 | 1.453 |
| 07/25/00 | 10:12:33 | 37.2362 | 8.749 | 29.834 | 1.469 |
| 07/25/00 | 10:12:48 | 37.4862 | 8.744 | 29.834 | 1.474 |
| 07/25/00 | 10:13:03 | 37.7362 | 8.741 | 29.834 | 1.477 |
| 07/25/00 | 10:13:18 | 37.9862 | 8.754 | 29.831 | 1.464 |
| 07/25/00 | 10:13:33 | 38.2362 | 8.757 | 29.834 | 1.461 |
| 07/25/00 | 10:13:48 | 38.4862 | 8.741 | 29.831 | 1.477 |
| 07/25/00 | 10:14:03 | 38.7362 | 8.742 | 29.831 | 1.476 |
| 07/25/00 | 10:14:18 | 38.9862 | 8.742 | 29.834 | 1.476 |
| 07/25/00 | 10:14:33 | 39.2362 | 8.737 | 29.831 | 1.481 |
| 07/25/00 | 10:14:48 | 39.4862 | 8.749 | 29.834 | 1.469 |
| 07/25/00 | 10:15:03 | 39.7362 | 8.739 | 29.834 | 1.479 |
| 07/25/00 | 10:15:18 | 39.9862 | 8.738 | 29.834 | 1.48  |

**Appendix A (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 10:15:33 | 40.2362 | 8.744 | 29.834 | 1.474 |
| 07/25/00 | 10:15:48 | 40.4862 | 8.752 | 29.831 | 1.466 |
| 07/25/00 | 10:16:03 | 40.7362 | 8.744 | 29.834 | 1.474 |
| 07/25/00 | 10:16:18 | 40.9862 | 8.686 | 29.831 | 1.532 |
| 07/25/00 | 10:16:33 | 41.2362 | 8.725 | 29.834 | 1.493 |
| 07/25/00 | 10:16:48 | 41.4862 | 8.732 | 29.834 | 1.486 |
| 07/25/00 | 10:17:03 | 41.7362 | 8.784 | 29.834 | 1.434 |
| 07/25/00 | 10:17:18 | 41.9862 | 8.749 | 29.834 | 1.469 |
| 07/25/00 | 10:17:33 | 42.2362 | 8.755 | 29.831 | 1.463 |
| 07/25/00 | 10:17:48 | 42.4862 | 8.742 | 29.834 | 1.476 |
| 07/25/00 | 10:18:03 | 42.7362 | 8.742 | 29.834 | 1.476 |
| 07/25/00 | 10:18:18 | 42.9862 | 8.739 | 29.834 | 1.479 |
| 07/25/00 | 10:18:33 | 43.2362 | 8.737 | 29.834 | 1.481 |
| 07/25/00 | 10:18:48 | 43.4862 | 8.741 | 29.834 | 1.477 |
| 07/25/00 | 10:19:03 | 43.7362 | 8.732 | 29.834 | 1.486 |
| 07/25/00 | 10:19:18 | 43.9862 | 8.747 | 29.834 | 1.471 |
| 07/25/00 | 10:19:33 | 44.2362 | 8.738 | 29.831 | 1.48  |
| 07/25/00 | 10:19:48 | 44.4862 | 8.739 | 29.831 | 1.479 |
| 07/25/00 | 10:20:03 | 44.7362 | 8.747 | 29.831 | 1.471 |
| 07/25/00 | 10:20:18 | 44.9862 | 8.728 | 29.831 | 1.49  |
| 07/25/00 | 10:20:33 | 45.2362 | 8.696 | 29.831 | 1.522 |
| 07/25/00 | 10:20:48 | 45.4862 | 8.765 | 29.831 | 1.453 |
| 07/25/00 | 10:21:03 | 45.7362 | 8.745 | 29.831 | 1.473 |
| 07/25/00 | 10:21:18 | 45.9862 | 8.737 | 29.834 | 1.481 |
| 07/25/00 | 10:21:33 | 46.2362 | 8.741 | 29.846 | 1.477 |
| 07/25/00 | 10:21:48 | 46.4862 | 8.741 | 29.838 | 1.477 |
| 07/25/00 | 10:22:03 | 46.7362 | 8.738 | 29.834 | 1.48  |
| 07/25/00 | 10:22:18 | 46.9862 | 8.741 | 29.834 | 1.477 |
| 07/25/00 | 10:22:33 | 47.2362 | 8.68  | 29.834 | 1.538 |
| 07/25/00 | 10:22:48 | 47.4862 | 8.768 | 29.834 | 1.45  |
| 07/25/00 | 10:23:03 | 47.7362 | 8.765 | 29.834 | 1.453 |
| 07/25/00 | 10:23:18 | 47.9862 | 8.742 | 29.834 | 1.476 |
| 07/25/00 | 10:23:33 | 48.2362 | 8.734 | 29.831 | 1.484 |
| 07/25/00 | 10:23:48 | 48.4862 | 8.737 | 29.831 | 1.481 |
| 07/25/00 | 10:24:03 | 48.7362 | 8.748 | 29.831 | 1.47  |
| 07/25/00 | 10:24:18 | 48.9862 | 8.735 | 29.831 | 1.483 |
| 07/25/00 | 10:24:33 | 49.2362 | 8.696 | 29.831 | 1.522 |
| 07/25/00 | 10:24:48 | 49.4862 | 8.771 | 29.834 | 1.447 |
| 07/25/00 | 10:25:03 | 49.7362 | 8.745 | 29.831 | 1.473 |
| 07/25/00 | 10:25:18 | 49.9862 | 8.734 | 29.831 | 1.484 |
| 07/25/00 | 10:25:33 | 50.2362 | 8.738 | 29.831 | 1.48  |
| 07/25/00 | 10:25:48 | 50.4862 | 8.734 | 29.831 | 1.484 |
| 07/25/00 | 10:26:03 | 50.7362 | 8.737 | 29.834 | 1.481 |
| 07/25/00 | 10:26:18 | 50.9862 | 8.738 | 29.831 | 1.48  |
| 07/25/00 | 10:26:33 | 51.2362 | 8.66  | 29.834 | 1.558 |
| 07/25/00 | 10:26:48 | 51.4862 | 8.729 | 29.834 | 1.489 |
| 07/25/00 | 10:27:03 | 51.7362 | 8.735 | 29.834 | 1.483 |
| 07/25/00 | 10:27:18 | 51.9862 | 8.738 | 29.834 | 1.48  |
| 07/25/00 | 10:27:33 | 52.2362 | 8.729 | 29.84  | 1.489 |
| 07/25/00 | 10:27:48 | 52.4862 | 8.738 | 29.842 | 1.48  |
| 07/25/00 | 10:28:03 | 52.7362 | 8.722 | 29.836 | 1.496 |



**Appendix A (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 10:28:18 | 52.9862 | 8.728 | 29.838 | 1.49  |
| 07/25/00 | 10:28:33 | 53.2362 | 8.726 | 29.836 | 1.492 |
| 07/25/00 | 10:28:48 | 53.4862 | 8.719 | 29.836 | 1.499 |
| 07/25/00 | 10:29:03 | 53.7362 | 8.742 | 29.836 | 1.476 |
| 07/25/00 | 10:29:18 | 53.9862 | 8.744 | 29.836 | 1.474 |
| 07/25/00 | 10:29:33 | 54.2362 | 8.737 | 29.836 | 1.481 |
| 07/25/00 | 10:29:48 | 54.4862 | 8.726 | 29.836 | 1.492 |
| 07/25/00 | 10:30:03 | 54.7362 | 8.729 | 29.836 | 1.489 |
| 07/25/00 | 10:30:18 | 54.9862 | 8.738 | 29.836 | 1.48  |
| 07/25/00 | 10:30:33 | 55.2362 | 8.729 | 29.836 | 1.489 |
| 07/25/00 | 10:30:48 | 55.4862 | 8.731 | 29.836 | 1.487 |
| 07/25/00 | 10:31:03 | 55.7362 | 8.724 | 29.836 | 1.494 |
| 07/25/00 | 10:31:18 | 55.9862 | 8.742 | 29.836 | 1.476 |
| 07/25/00 | 10:31:33 | 56.2362 | 8.698 | 29.836 | 1.52  |
| 07/25/00 | 10:31:48 | 56.4862 | 8.745 | 29.836 | 1.473 |
| 07/25/00 | 10:32:03 | 56.7362 | 8.741 | 29.836 | 1.477 |
| 07/25/00 | 10:32:18 | 56.9862 | 8.737 | 29.836 | 1.481 |
| 07/25/00 | 10:32:33 | 57.2362 | 8.734 | 29.836 | 1.484 |
| 07/25/00 | 10:32:48 | 57.4862 | 8.724 | 29.836 | 1.494 |
| 07/25/00 | 10:33:03 | 57.7362 | 8.737 | 29.838 | 1.481 |
| 07/25/00 | 10:33:18 | 57.9862 | 8.738 | 29.836 | 1.48  |
| 07/25/00 | 10:33:33 | 58.2362 | 8.734 | 29.836 | 1.484 |
| 07/25/00 | 10:33:48 | 58.4862 | 8.732 | 29.838 | 1.486 |
| 07/25/00 | 10:34:03 | 58.7362 | 8.732 | 29.838 | 1.486 |
| 07/25/00 | 10:34:18 | 58.9862 | 8.725 | 29.838 | 1.493 |
| 07/25/00 | 10:34:33 | 59.2362 | 8.679 | 29.838 | 1.539 |
| 07/25/00 | 10:34:48 | 59.4862 | 8.739 | 29.838 | 1.479 |
| 07/25/00 | 10:35:03 | 59.7362 | 8.729 | 29.838 | 1.489 |
| 07/25/00 | 10:35:18 | 59.9862 | 8.725 | 29.836 | 1.493 |
| 07/25/00 | 10:35:33 | 60.2362 | 8.724 | 29.838 | 1.494 |
| 07/25/00 | 10:35:48 | 60.4862 | 8.734 | 29.838 | 1.484 |
| 07/25/00 | 10:36:03 | 60.7362 | 8.725 | 29.838 | 1.493 |
| 07/25/00 | 10:36:18 | 60.9862 | 8.732 | 29.838 | 1.486 |
| 07/25/00 | 10:36:33 | 61.2362 | 8.748 | 29.838 | 1.47  |
| 07/25/00 | 10:36:48 | 61.4862 | 8.724 | 29.838 | 1.494 |
| 07/25/00 | 10:37:03 | 61.7362 | 8.732 | 29.854 | 1.486 |
| 07/25/00 | 10:37:18 | 61.9862 | 8.725 | 29.846 | 1.493 |
| 07/25/00 | 10:37:33 | 62.2362 | 8.725 | 29.842 | 1.493 |
| 07/25/00 | 10:37:48 | 62.4862 | 8.718 | 29.84  | 1.5   |
| 07/25/00 | 10:38:03 | 62.7362 | 8.724 | 29.838 | 1.494 |
| 07/25/00 | 10:38:18 | 62.9862 | 8.724 | 29.84  | 1.494 |
| 07/25/00 | 10:38:33 | 63.2362 | 8.675 | 29.838 | 1.543 |
| 07/25/00 | 10:38:48 | 63.4862 | 8.742 | 29.838 | 1.476 |
| 07/25/00 | 10:39:03 | 63.7362 | 8.728 | 29.84  | 1.49  |
| 07/25/00 | 10:39:18 | 63.9862 | 8.728 | 29.84  | 1.49  |
| 07/25/00 | 10:39:33 | 64.2362 | 8.724 | 29.838 | 1.494 |
| 07/25/00 | 10:39:48 | 64.4862 | 8.718 | 29.838 | 1.5   |
| 07/25/00 | 10:40:03 | 64.7362 | 8.663 | 29.838 | 1.555 |
| 07/25/00 | 10:40:18 | 64.9862 | 8.735 | 29.84  | 1.483 |
| 07/25/00 | 10:40:33 | 65.2362 | 8.721 | 29.84  | 1.497 |
| 07/25/00 | 10:40:48 | 65.4862 | 8.729 | 29.84  | 1.489 |

**Appendix A (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 10:41:03 | 65.7362 | 8.718 | 29.836 | 1.5   |
| 07/25/00 | 10:41:18 | 65.9862 | 8.713 | 29.84  | 1.505 |
| 07/25/00 | 10:41:33 | 66.2362 | 8.718 | 29.838 | 1.5   |
| 07/25/00 | 10:41:48 | 66.4862 | 8.64  | 29.84  | 1.578 |
| 07/25/00 | 10:42:03 | 66.7362 | 8.745 | 29.838 | 1.473 |
| 07/25/00 | 10:42:18 | 66.9862 | 8.729 | 29.838 | 1.489 |
| 07/25/00 | 10:42:33 | 67.2362 | 8.718 | 29.838 | 1.5   |
| 07/25/00 | 10:42:48 | 67.4862 | 8.718 | 29.84  | 1.5   |
| 07/25/00 | 10:43:03 | 67.7362 | 8.718 | 29.84  | 1.5   |
| 07/25/00 | 10:43:18 | 67.9862 | 8.718 | 29.84  | 1.5   |
| 07/25/00 | 10:43:33 | 68.2362 | 8.677 | 29.84  | 1.541 |
| 07/25/00 | 10:43:48 | 68.4862 | 8.732 | 29.84  | 1.486 |
| 07/25/00 | 10:44:03 | 68.7362 | 8.725 | 29.84  | 1.493 |
| 07/25/00 | 10:44:18 | 68.9862 | 8.706 | 29.84  | 1.512 |
| 07/25/00 | 10:44:33 | 69.2362 | 8.712 | 29.84  | 1.506 |
| 07/25/00 | 10:44:48 | 69.4862 | 8.718 | 29.84  | 1.5   |
| 07/25/00 | 10:45:03 | 69.7362 | 8.713 | 29.84  | 1.505 |
| 07/25/00 | 10:45:18 | 69.9862 | 8.709 | 29.84  | 1.509 |
| 07/25/00 | 10:45:33 | 70.2362 | 8.705 | 29.84  | 1.513 |
| 07/25/00 | 10:45:48 | 70.4862 | 8.712 | 29.85  | 1.506 |
| 07/25/00 | 10:46:03 | 70.7362 | 8.68  | 29.844 | 1.538 |
| 07/25/00 | 10:46:18 | 70.9862 | 8.742 | 29.842 | 1.476 |
| 07/25/00 | 10:46:33 | 71.2362 | 8.724 | 29.842 | 1.494 |
| 07/25/00 | 10:46:48 | 71.4862 | 8.706 | 29.842 | 1.512 |
| 07/25/00 | 10:47:03 | 71.7362 | 8.716 | 29.84  | 1.502 |
| 07/25/00 | 10:47:18 | 71.9862 | 8.696 | 29.84  | 1.522 |
| 07/25/00 | 10:47:33 | 72.2362 | 8.706 | 29.84  | 1.512 |
| 07/25/00 | 10:47:48 | 72.4862 | 8.708 | 29.842 | 1.51  |
| 07/25/00 | 10:48:03 | 72.7362 | 8.701 | 29.842 | 1.517 |
| 07/25/00 | 10:48:18 | 72.9862 | 8.705 | 29.84  | 1.513 |
| 07/25/00 | 10:48:33 | 73.2362 | 8.702 | 29.842 | 1.516 |
| 07/25/00 | 10:48:48 | 73.4862 | 8.725 | 29.84  | 1.493 |
| 07/25/00 | 10:49:03 | 73.7362 | 8.711 | 29.842 | 1.507 |
| 07/25/00 | 10:49:18 | 73.9862 | 8.709 | 29.842 | 1.509 |
| 07/25/00 | 10:49:33 | 74.2362 | 8.709 | 29.84  | 1.509 |
| 07/25/00 | 10:49:48 | 74.4862 | 8.702 | 29.84  | 1.516 |
| 07/25/00 | 10:50:03 | 74.7362 | 8.703 | 29.842 | 1.515 |
| 07/25/00 | 10:50:18 | 74.9862 | 8.709 | 29.84  | 1.509 |
| 07/25/00 | 10:50:33 | 75.2362 | 8.685 | 29.84  | 1.533 |
| 07/25/00 | 10:50:48 | 75.4862 | 8.724 | 29.842 | 1.494 |
| 07/25/00 | 10:51:03 | 75.7362 | 8.701 | 29.84  | 1.517 |
| 07/25/00 | 10:51:18 | 75.9862 | 8.695 | 29.84  | 1.523 |
| 07/25/00 | 10:51:33 | 76.2362 | 8.696 | 29.84  | 1.522 |
| 07/25/00 | 10:51:48 | 76.4862 | 8.696 | 29.838 | 1.522 |
| 07/25/00 | 10:52:03 | 76.7362 | 8.693 | 29.84  | 1.525 |
| 07/25/00 | 10:52:18 | 76.9862 | 8.701 | 29.84  | 1.517 |
| 07/25/00 | 10:52:33 | 77.2362 | 8.696 | 29.842 | 1.522 |
| 07/25/00 | 10:52:48 | 77.4862 | 8.686 | 29.84  | 1.532 |
| 07/25/00 | 10:53:03 | 77.7362 | 8.751 | 29.84  | 1.467 |
| 07/25/00 | 10:53:18 | 77.9862 | 8.718 | 29.842 | 1.5   |
| 07/25/00 | 10:53:33 | 78.2362 | 8.706 | 29.84  | 1.512 |

**Appendix A (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 10:53:48 | 78.4862 | 8.702 | 29.84  | 1.516 |
| 07/25/00 | 10:54:03 | 78.7362 | 8.696 | 29.84  | 1.522 |
| 07/25/00 | 10:54:18 | 78.9862 | 8.706 | 29.842 | 1.512 |
| 07/25/00 | 10:54:33 | 79.2362 | 8.689 | 29.842 | 1.529 |
| 07/25/00 | 10:54:48 | 79.4862 | 8.716 | 29.84  | 1.502 |
| 07/25/00 | 10:55:03 | 79.7362 | 8.724 | 29.84  | 1.494 |
| 07/25/00 | 10:55:18 | 79.9862 | 8.709 | 29.84  | 1.509 |
| 07/25/00 | 10:55:33 | 80.2362 | 8.708 | 29.84  | 1.51  |
| 07/25/00 | 10:55:48 | 80.4862 | 8.709 | 29.84  | 1.509 |
| 07/25/00 | 10:56:03 | 80.7362 | 8.701 | 29.842 | 1.517 |
| 07/25/00 | 10:56:18 | 80.9862 | 8.662 | 29.84  | 1.556 |
| 07/25/00 | 10:56:33 | 81.2362 | 8.751 | 29.84  | 1.467 |
| 07/25/00 | 10:56:48 | 81.4862 | 8.719 | 29.84  | 1.499 |
| 07/25/00 | 10:57:03 | 81.7362 | 8.711 | 29.84  | 1.507 |
| 07/25/00 | 10:57:18 | 81.9862 | 8.705 | 29.842 | 1.513 |
| 07/25/00 | 10:57:33 | 82.2362 | 8.698 | 29.842 | 1.52  |
| 07/25/00 | 10:57:48 | 82.4862 | 8.703 | 29.84  | 1.515 |
| 07/25/00 | 10:58:03 | 82.7362 | 8.702 | 29.842 | 1.516 |
| 07/25/00 | 10:58:18 | 82.9862 | 8.702 | 29.842 | 1.516 |
| 07/25/00 | 10:58:33 | 83.2362 | 8.706 | 29.842 | 1.512 |
| 07/25/00 | 10:58:48 | 83.4862 | 8.696 | 29.842 | 1.522 |
| 07/25/00 | 10:59:03 | 83.7362 | 8.686 | 29.842 | 1.532 |
| 07/25/00 | 10:59:18 | 83.9862 | 8.719 | 29.842 | 1.499 |
| 07/25/00 | 10:59:33 | 84.2362 | 8.705 | 29.844 | 1.513 |
| 07/25/00 | 10:59:48 | 84.4862 | 8.705 | 29.844 | 1.513 |
| 07/25/00 | 11:00:03 | 84.7362 | 8.699 | 29.842 | 1.519 |
| 07/25/00 | 11:00:18 | 84.9862 | 8.703 | 29.842 | 1.515 |
| 07/25/00 | 11:00:33 | 85.2362 | 8.695 | 29.842 | 1.523 |
| 07/25/00 | 11:00:48 | 85.4862 | 8.702 | 29.842 | 1.516 |
| 07/25/00 | 11:01:03 | 85.7362 | 8.701 | 29.842 | 1.517 |
| 07/25/00 | 11:01:18 | 85.9862 | 8.692 | 29.842 | 1.526 |
| 07/25/00 | 11:01:33 | 86.2362 | 8.703 | 29.842 | 1.515 |
| 07/25/00 | 11:01:48 | 86.4862 | 8.696 | 29.842 | 1.522 |
| 07/25/00 | 11:02:03 | 86.7362 | 8.676 | 29.842 | 1.542 |
| 07/25/00 | 11:02:18 | 86.9862 | 8.728 | 29.842 | 1.49  |
| 07/25/00 | 11:02:33 | 87.2362 | 8.699 | 29.844 | 1.519 |
| 07/25/00 | 11:02:48 | 87.4862 | 8.692 | 29.844 | 1.526 |
| 07/25/00 | 11:03:03 | 87.7362 | 8.685 | 29.844 | 1.533 |
| 07/25/00 | 11:03:18 | 87.9862 | 8.689 | 29.842 | 1.529 |
| 07/25/00 | 11:03:33 | 88.2362 | 8.695 | 29.842 | 1.523 |
| 07/25/00 | 11:03:48 | 88.4862 | 8.695 | 29.842 | 1.523 |
| 07/25/00 | 11:04:03 | 88.7362 | 8.696 | 29.842 | 1.522 |
| 07/25/00 | 11:04:18 | 88.9862 | 8.656 | 29.842 | 1.562 |
| 07/25/00 | 11:04:33 | 89.2362 | 8.728 | 29.842 | 1.49  |
| 07/25/00 | 11:04:48 | 89.4862 | 8.706 | 29.844 | 1.512 |
| 07/25/00 | 11:05:03 | 89.7362 | 8.696 | 29.844 | 1.522 |
| 07/25/00 | 11:05:18 | 89.9862 | 8.708 | 29.844 | 1.51  |
| 07/25/00 | 11:05:33 | 90.2362 | 8.701 | 29.844 | 1.517 |
| 07/25/00 | 11:05:48 | 90.4862 | 8.695 | 29.844 | 1.523 |
| 07/25/00 | 11:06:03 | 90.7362 | 8.695 | 29.844 | 1.523 |
| 07/25/00 | 11:06:18 | 90.9862 | 8.702 | 29.844 | 1.516 |

**Appendix A (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 11:06:33 | 91.2362  | 8.656 | 29.844 | 1.562 |
| 07/25/00 | 11:06:48 | 91.4862  | 8.726 | 29.844 | 1.492 |
| 07/25/00 | 11:07:03 | 91.7362  | 8.703 | 29.844 | 1.515 |
| 07/25/00 | 11:07:18 | 91.9862  | 8.693 | 29.844 | 1.525 |
| 07/25/00 | 11:07:33 | 92.2362  | 8.698 | 29.844 | 1.52  |
| 07/25/00 | 11:07:48 | 92.4862  | 8.693 | 29.844 | 1.525 |
| 07/25/00 | 11:08:03 | 92.7362  | 8.702 | 29.844 | 1.516 |
| 07/25/00 | 11:08:18 | 92.9862  | 8.695 | 29.844 | 1.523 |
| 07/25/00 | 11:08:33 | 93.2362  | 8.695 | 29.862 | 1.523 |
| 07/25/00 | 11:08:48 | 93.4862  | 8.686 | 29.85  | 1.532 |
| 07/25/00 | 11:09:03 | 93.7362  | 8.667 | 29.846 | 1.551 |
| 07/25/00 | 11:09:18 | 93.9862  | 8.716 | 29.846 | 1.502 |
| 07/25/00 | 11:09:33 | 94.2362  | 8.698 | 29.846 | 1.52  |
| 07/25/00 | 11:09:48 | 94.4862  | 8.679 | 29.846 | 1.539 |
| 07/25/00 | 11:10:03 | 94.7362  | 8.682 | 29.844 | 1.536 |
| 07/25/00 | 11:10:18 | 94.9862  | 8.688 | 29.844 | 1.53  |
| 07/25/00 | 11:10:33 | 95.2362  | 8.676 | 29.844 | 1.542 |
| 07/25/00 | 11:10:48 | 95.4862  | 8.676 | 29.842 | 1.542 |
| 07/25/00 | 11:11:03 | 95.7362  | 8.688 | 29.844 | 1.53  |
| 07/25/00 | 11:11:18 | 95.9862  | 8.644 | 29.842 | 1.574 |
| 07/25/00 | 11:11:33 | 96.2362  | 8.721 | 29.842 | 1.497 |
| 07/25/00 | 11:11:48 | 96.4862  | 8.703 | 29.844 | 1.515 |
| 07/25/00 | 11:12:03 | 96.7362  | 8.69  | 29.842 | 1.528 |
| 07/25/00 | 11:12:18 | 96.9862  | 8.688 | 29.844 | 1.53  |
| 07/25/00 | 11:12:33 | 97.2362  | 8.692 | 29.844 | 1.526 |
| 07/25/00 | 11:12:48 | 97.4862  | 8.685 | 29.844 | 1.533 |
| 07/25/00 | 11:13:03 | 97.7362  | 8.679 | 29.842 | 1.539 |
| 07/25/00 | 11:13:18 | 97.9862  | 8.683 | 29.844 | 1.535 |
| 07/25/00 | 11:13:33 | 98.2362  | 8.69  | 29.844 | 1.528 |
| 07/25/00 | 11:13:48 | 98.4862  | 8.688 | 29.844 | 1.53  |
| 07/25/00 | 11:14:03 | 98.7362  | 8.713 | 29.842 | 1.505 |
| 07/25/00 | 11:14:18 | 98.9862  | 8.685 | 29.842 | 1.533 |
| 07/25/00 | 11:14:33 | 99.2362  | 8.662 | 29.842 | 1.556 |
| 07/25/00 | 11:14:48 | 99.4862  | 8.676 | 29.844 | 1.542 |
| 07/25/00 | 11:15:03 | 99.7362  | 8.666 | 29.844 | 1.552 |
| 07/25/00 | 11:15:18 | 99.9862  | 8.657 | 29.842 | 1.561 |
| 07/25/00 | 11:15:33 | 100.2362 | 8.659 | 29.844 | 1.559 |
| 07/25/00 | 11:15:48 | 100.4862 | 8.663 | 29.842 | 1.555 |
| 07/25/00 | 11:16:03 | 100.7362 | 8.666 | 29.842 | 1.552 |
| 07/25/00 | 11:16:18 | 100.9862 | 8.666 | 29.844 | 1.552 |
| 07/25/00 | 11:16:33 | 101.2362 | 8.666 | 29.842 | 1.552 |
| 07/25/00 | 11:16:48 | 101.4862 | 8.657 | 29.844 | 1.561 |
| 07/25/00 | 11:17:03 | 101.7362 | 8.731 | 29.844 | 1.487 |
| 07/25/00 | 11:17:18 | 101.9862 | 8.703 | 29.844 | 1.515 |
| 07/25/00 | 11:17:33 | 102.2362 | 8.696 | 29.844 | 1.522 |
| 07/25/00 | 11:17:48 | 102.4862 | 8.695 | 29.844 | 1.523 |
| 07/25/00 | 11:18:03 | 102.7362 | 8.683 | 29.844 | 1.535 |
| 07/25/00 | 11:18:18 | 102.9862 | 8.693 | 29.844 | 1.525 |
| 07/25/00 | 11:18:33 | 103.2362 | 8.683 | 29.842 | 1.535 |
| 07/25/00 | 11:18:48 | 103.4862 | 8.693 | 29.844 | 1.525 |
| 07/25/00 | 11:19:03 | 103.7362 | 8.685 | 29.844 | 1.533 |

**Appendix A (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 11:19:18 | 103.9862 | 8.69  | 29.844 | 1.528 |
| 07/25/00 | 11:19:33 | 104.2362 | 8.689 | 29.844 | 1.529 |
| 07/25/00 | 11:19:48 | 104.4862 | 8.689 | 29.842 | 1.529 |
| 07/25/00 | 11:20:03 | 104.7362 | 8.631 | 29.844 | 1.587 |
| 07/25/00 | 11:20:18 | 104.9862 | 8.682 | 29.844 | 1.536 |
| 07/25/00 | 11:20:33 | 105.2362 | 8.702 | 29.844 | 1.516 |
| 07/25/00 | 11:20:48 | 105.4862 | 8.693 | 29.846 | 1.525 |
| 07/25/00 | 11:21:03 | 105.7362 | 8.701 | 29.844 | 1.517 |
| 07/25/00 | 11:21:18 | 105.9862 | 8.699 | 29.842 | 1.519 |
| 07/25/00 | 11:21:33 | 106.2362 | 8.698 | 29.844 | 1.52  |
| 07/25/00 | 11:21:48 | 106.4862 | 8.696 | 29.844 | 1.522 |
| 07/25/00 | 11:22:03 | 106.7362 | 8.689 | 29.844 | 1.529 |
| 07/25/00 | 11:22:18 | 106.9862 | 8.695 | 29.844 | 1.523 |
| 07/25/00 | 11:22:33 | 107.2362 | 8.695 | 29.844 | 1.523 |
| 07/25/00 | 11:22:48 | 107.4862 | 8.662 | 29.846 | 1.556 |
| 07/25/00 | 11:23:03 | 107.7362 | 8.713 | 29.846 | 1.505 |
| 07/25/00 | 11:23:18 | 107.9862 | 8.695 | 29.846 | 1.523 |
| 07/25/00 | 11:23:33 | 108.2362 | 8.699 | 29.846 | 1.519 |
| 07/25/00 | 11:23:48 | 108.4862 | 8.689 | 29.846 | 1.529 |
| 07/25/00 | 11:24:03 | 108.7362 | 8.695 | 29.846 | 1.523 |
| 07/25/00 | 11:24:18 | 108.9862 | 8.688 | 29.844 | 1.53  |
| 07/25/00 | 11:24:33 | 109.2362 | 8.693 | 29.846 | 1.525 |
| 07/25/00 | 11:24:48 | 109.4862 | 8.64  | 29.846 | 1.578 |
| 07/25/00 | 11:25:03 | 109.7362 | 8.701 | 29.846 | 1.517 |
| 07/25/00 | 11:25:18 | 109.9862 | 8.688 | 29.846 | 1.53  |
| 07/25/00 | 11:25:33 | 110.2362 | 8.683 | 29.846 | 1.535 |
| 07/25/00 | 11:25:48 | 110.4862 | 8.672 | 29.846 | 1.546 |
| 07/25/00 | 11:26:03 | 110.7362 | 8.68  | 29.846 | 1.538 |
| 07/25/00 | 11:26:18 | 110.9862 | 8.682 | 29.848 | 1.536 |
| 07/25/00 | 11:26:33 | 111.2362 | 8.68  | 29.846 | 1.538 |
| 07/25/00 | 11:26:48 | 111.4862 | 8.679 | 29.846 | 1.539 |
| 07/25/00 | 11:27:03 | 111.7362 | 8.676 | 29.846 | 1.542 |
| 07/25/00 | 11:27:18 | 111.9862 | 8.794 | 29.846 | 1.424 |
| 07/25/00 | 11:27:33 | 112.2362 | 8.752 | 29.846 | 1.466 |
| 07/25/00 | 11:27:48 | 112.4862 | 8.706 | 29.846 | 1.512 |
| 07/25/00 | 11:28:03 | 112.7362 | 8.702 | 29.846 | 1.516 |
| 07/25/00 | 11:28:18 | 112.9862 | 8.69  | 29.848 | 1.528 |
| 07/25/00 | 11:28:33 | 113.2362 | 8.695 | 29.848 | 1.523 |
| 07/25/00 | 11:28:48 | 113.4862 | 8.693 | 29.848 | 1.525 |
| 07/25/00 | 11:29:03 | 113.7362 | 8.686 | 29.85  | 1.532 |
| 07/25/00 | 11:29:18 | 113.9862 | 8.688 | 29.848 | 1.53  |
| 07/25/00 | 11:29:33 | 114.2362 | 8.643 | 29.848 | 1.575 |
| 07/25/00 | 11:29:48 | 114.4862 | 8.728 | 29.848 | 1.49  |
| 07/25/00 | 11:30:03 | 114.7362 | 8.701 | 29.848 | 1.517 |
| 07/25/00 | 11:30:18 | 114.9862 | 8.698 | 29.85  | 1.52  |
| 07/25/00 | 11:30:33 | 115.2362 | 8.695 | 29.848 | 1.523 |
| 07/25/00 | 11:30:48 | 115.4862 | 8.683 | 29.85  | 1.535 |
| 07/25/00 | 11:31:03 | 115.7362 | 8.688 | 29.85  | 1.53  |
| 07/25/00 | 11:31:18 | 115.9862 | 8.679 | 29.85  | 1.539 |
| 07/25/00 | 11:31:33 | 116.2362 | 8.688 | 29.848 | 1.53  |
| 07/25/00 | 11:31:48 | 116.4862 | 8.663 | 29.848 | 1.555 |

**Appendix A (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 11:32:03 | 116.7362 | 8.713 | 29.85  | 1.505 |
| 07/25/00 | 11:32:18 | 116.9862 | 8.695 | 29.848 | 1.523 |
| 07/25/00 | 11:32:33 | 117.2362 | 8.683 | 29.85  | 1.535 |
| 07/25/00 | 11:32:48 | 117.4862 | 8.688 | 29.85  | 1.53  |
| 07/25/00 | 11:33:03 | 117.7362 | 8.686 | 29.85  | 1.532 |
| 07/25/00 | 11:33:18 | 117.9862 | 8.679 | 29.85  | 1.539 |
| 07/25/00 | 11:33:33 | 118.2362 | 8.685 | 29.848 | 1.533 |
| 07/25/00 | 11:33:48 | 118.4862 | 8.688 | 29.848 | 1.53  |
| 07/25/00 | 11:34:03 | 118.7362 | 8.695 | 29.848 | 1.523 |
| 07/25/00 | 11:34:18 | 118.9862 | 8.68  | 29.848 | 1.538 |
| 07/25/00 | 11:34:33 | 119.2362 | 8.696 | 29.848 | 1.522 |
| 07/25/00 | 11:34:48 | 119.4862 | 8.702 | 29.848 | 1.516 |
| 07/25/00 | 11:35:03 | 119.7362 | 8.688 | 29.848 | 1.53  |
| 07/25/00 | 11:35:18 | 119.9862 | 8.692 | 29.848 | 1.526 |
| 07/25/00 | 11:35:33 | 120.2362 | 8.69  | 29.848 | 1.528 |
| 07/25/00 | 11:35:48 | 120.4862 | 8.683 | 29.846 | 1.535 |
| 07/25/00 | 11:36:03 | 120.7362 | 8.692 | 29.848 | 1.526 |
| 07/25/00 | 11:36:18 | 120.9862 | 8.685 | 29.846 | 1.533 |
| 07/25/00 | 11:36:33 | 121.2362 | 8.682 | 29.846 | 1.536 |
| 07/25/00 | 11:36:48 | 121.4862 | 8.69  | 29.848 | 1.528 |
| 07/25/00 | 11:37:03 | 121.7362 | 8.69  | 29.846 | 1.528 |
| 07/25/00 | 11:37:18 | 121.9862 | 8.634 | 29.846 | 1.584 |
| 07/25/00 | 11:37:33 | 122.2362 | 8.708 | 29.846 | 1.51  |
| 07/25/00 | 11:37:48 | 122.4862 | 8.692 | 29.846 | 1.526 |
| 07/25/00 | 11:38:03 | 122.7362 | 8.685 | 29.846 | 1.533 |
| 07/25/00 | 11:38:18 | 122.9862 | 8.683 | 29.846 | 1.535 |
| 07/25/00 | 11:38:33 | 123.2362 | 8.69  | 29.846 | 1.528 |
| 07/25/00 | 11:38:48 | 123.4862 | 8.688 | 29.846 | 1.53  |
| 07/25/00 | 11:39:03 | 123.7362 | 8.695 | 29.846 | 1.523 |
| 07/25/00 | 11:39:18 | 123.9862 | 8.677 | 29.846 | 1.541 |
| 07/25/00 | 11:39:33 | 124.2362 | 8.637 | 29.846 | 1.581 |
| 07/25/00 | 11:39:48 | 124.4862 | 8.726 | 29.846 | 1.492 |
| 07/25/00 | 11:40:03 | 124.7362 | 8.703 | 29.844 | 1.515 |
| 07/25/00 | 11:40:18 | 124.9862 | 8.698 | 29.844 | 1.52  |
| 07/25/00 | 11:40:33 | 125.2362 | 8.679 | 29.846 | 1.539 |
| 07/25/00 | 11:40:48 | 125.4862 | 8.686 | 29.844 | 1.532 |
| 07/25/00 | 11:41:03 | 125.7362 | 8.695 | 29.846 | 1.523 |
| 07/25/00 | 11:41:18 | 125.9862 | 8.679 | 29.844 | 1.539 |
| 07/25/00 | 11:41:33 | 126.2362 | 8.689 | 29.844 | 1.529 |
| 07/25/00 | 11:41:48 | 126.4862 | 8.639 | 29.844 | 1.579 |
| 07/25/00 | 11:42:03 | 126.7362 | 8.713 | 29.844 | 1.505 |
| 07/25/00 | 11:42:18 | 126.9862 | 8.689 | 29.844 | 1.529 |
| 07/25/00 | 11:42:33 | 127.2362 | 8.677 | 29.844 | 1.541 |
| 07/25/00 | 11:42:48 | 127.4862 | 8.666 | 29.846 | 1.552 |
| 07/25/00 | 11:43:03 | 127.7362 | 8.665 | 29.846 | 1.553 |
| 07/25/00 | 11:43:18 | 127.9862 | 8.667 | 29.846 | 1.551 |
| 07/25/00 | 11:43:33 | 128.2362 | 8.67  | 29.846 | 1.548 |
| 07/25/00 | 11:43:48 | 128.4862 | 8.666 | 29.846 | 1.552 |
| 07/25/00 | 11:44:03 | 128.7362 | 8.675 | 29.846 | 1.543 |
| 07/25/00 | 11:44:18 | 128.9862 | 8.679 | 29.844 | 1.539 |
| 07/25/00 | 11:44:33 | 129.2362 | 8.675 | 29.848 | 1.543 |

**Appendix A (continued)**

|          |          |          |        |        |        |
|----------|----------|----------|--------|--------|--------|
| 07/25/00 | 11:44:48 | 129.4862 | 8.665  | 29.846 | 1.553  |
| 07/25/00 | 11:45:03 | 129.7362 | 8.665  | 29.846 | 1.553  |
| 07/25/00 | 11:45:18 | 129.9862 | 8.656  | 29.846 | 1.562  |
| 07/25/00 | 11:45:33 | 130.2362 | 8.676  | 29.846 | 1.542  |
| 07/25/00 | 11:45:48 | 130.4862 | 8.665  | 29.846 | 1.553  |
| 07/25/00 | 11:46:03 | 130.7362 | 8.66   | 29.846 | 1.558  |
| 07/25/00 | 11:46:18 | 130.9862 | 8.696  | 29.846 | 1.522  |
| 07/25/00 | 11:46:33 | 131.2362 | 8.679  | 29.846 | 1.539  |
| 07/25/00 | 11:46:48 | 131.4862 | 8.666  | 29.846 | 1.552  |
| 07/25/00 | 11:47:03 | 131.7362 | 8.663  | 29.846 | 1.555  |
| 07/25/00 | 11:47:18 | 131.9862 | 8.662  | 29.846 | 1.556  |
| 07/25/00 | 11:47:33 | 132.2362 | 8.654  | 29.846 | 1.564  |
| 07/25/00 | 11:47:48 | 132.4862 | 8.662  | 29.844 | 1.556  |
| 07/25/00 | 11:48:03 | 132.7362 | 8.663  | 29.846 | 1.555  |
| 07/25/00 | 11:48:18 | 132.9862 | 8.654  | 29.846 | 1.564  |
| 07/25/00 | 11:48:33 | 133.2362 | 8.667  | 29.862 | 1.551  |
| 07/25/00 | 11:48:48 | 133.4862 | 8.663  | 29.852 | 1.555  |
| 07/25/00 | 11:49:03 | 133.7362 | 8.66   | 29.848 | 1.558  |
| 07/25/00 | 11:49:18 | 133.9862 | 8.686  | 29.846 | 1.532  |
| 07/25/00 | 11:49:33 | 134.2362 | 8.721  | 29.846 | 1.497  |
| 07/25/00 | 11:49:48 | 134.4862 | 8.676  | 29.846 | 1.542  |
| 07/25/00 | 11:50:03 | 134.7362 | 8.667  | 29.844 | 1.551  |
| 07/25/00 | 11:50:18 | 134.9862 | 8.676  | 29.844 | 1.542  |
| 07/25/00 | 11:50:33 | 135.2362 | 8.653  | 29.844 | 1.565  |
| 07/25/00 | 11:50:48 | 135.4862 | 8.667  | 29.844 | 1.551  |
| 07/25/00 | 11:51:03 | 135.7362 | 8.659  | 29.844 | 1.559  |
| 07/25/00 | 11:51:18 | 135.9862 | 8.653  | 29.846 | 1.565  |
| 07/25/00 | 11:51:33 | 136.2362 | 8.682  | 29.846 | 1.536  |
| 07/25/00 | 11:51:48 | 136.4862 | 8.667  | 29.844 | 1.551  |
| 07/25/00 | 11:52:03 | 136.7362 | 8.663  | 29.846 | 1.555  |
| 07/25/00 | 11:52:18 | 136.9862 | 8.665  | 29.846 | 1.553  |
| 07/25/00 | 11:52:33 | 137.2362 | 8.669  | 29.846 | 1.549  |
| 07/25/00 | 11:52:48 | 137.4862 | 8.666  | 29.844 | 1.552  |
| 07/25/00 | 11:53:03 | 137.7362 | 8.676  | 29.846 | 1.542  |
| 07/25/00 | 11:53:18 | 137.9862 | 8.665  | 29.846 | 1.553  |
| 07/25/00 | 11:53:33 | 138.2362 | 8.662  | 29.846 | 1.556  |
| 07/25/00 | 11:53:48 | 138.4862 | 8.653  | 29.846 | 1.565  |
| 07/25/00 | 11:54:03 | 138.7362 | 8.991  | 29.846 | 1.227  |
| 07/25/00 | 11:54:18 | 138.9862 | 10.133 | 29.846 | 0.085  |
| 07/25/00 | 11:54:33 | 139.2362 | 10.267 | 29.846 | -0.049 |
| 07/25/00 | 11:54:48 | 139.4862 | 10.086 | 29.848 | 0.132  |
| 07/25/00 | 11:55:03 | 139.7362 | 10.041 | 29.862 | 0.177  |
| 07/25/00 | 11:55:18 | 139.9862 | 10.033 | 29.852 | 0.185  |
| 07/25/00 | 11:55:33 | 140.2362 | 10.037 | 29.85  | 0.181  |
| 07/25/00 | 11:55:48 | 140.4862 | 10.046 | 29.85  | 0.172  |
| 07/25/00 | 11:56:03 | 140.7362 | 10.054 | 29.848 | 0.164  |
| 07/25/00 | 11:56:18 | 140.9862 | 10.06  | 29.848 | 0.158  |
| 07/25/00 | 11:56:33 | 141.2362 | 10.066 | 29.87  | 0.152  |
| 07/25/00 | 11:56:48 | 141.4862 | 10.073 | 29.852 | 0.145  |
| 07/25/00 | 11:57:03 | 141.7362 | 10.079 | 29.85  | 0.139  |
| 07/25/00 | 11:57:18 | 141.9862 | 10.086 | 29.85  | 0.132  |

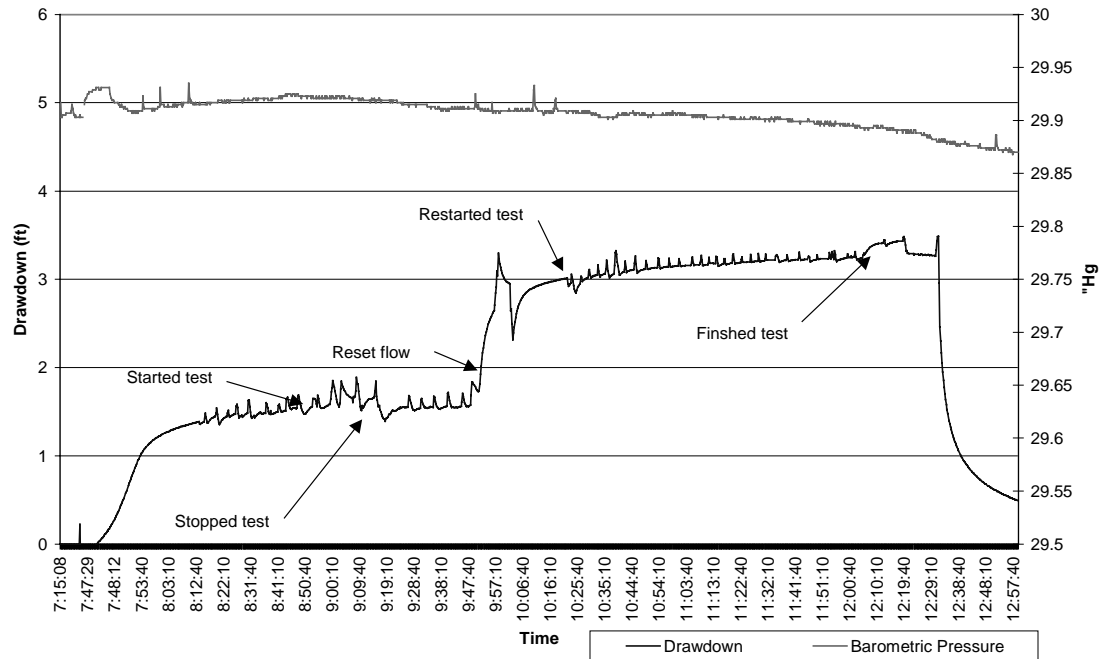
**Appendix A (continued)**

|          |          |          |        |        |       |
|----------|----------|----------|--------|--------|-------|
| 07/25/00 | 11:57:33 | 142.2362 | 10.09  | 29.848 | 0.128 |
| 07/25/00 | 11:57:48 | 142.4862 | 10.093 | 29.872 | 0.125 |
| 07/25/00 | 11:58:03 | 142.7362 | 10.097 | 29.854 | 0.121 |
| 07/25/00 | 11:58:18 | 142.9862 | 10.102 | 29.85  | 0.116 |
| 07/25/00 | 11:58:33 | 143.2362 | 10.105 | 29.85  | 0.113 |
| 07/25/00 | 11:58:48 | 143.4862 | 10.107 | 29.85  | 0.111 |



## Appendix B – Time-drawdown data for SWP-200C

SPW 200 C Dynamic 7/27



SPW 200 C 7/27

|            | Date     | Time    | ET (min) | Feet H2O | Inches Hg | Drawdown<br>ft |
|------------|----------|---------|----------|----------|-----------|----------------|
| Background | 07/27/00 | 7:15:08 | 0        | 12.196   | 29.917    | 0              |
|            | 07/27/00 | 7:16:08 | 1        | 12.199   | 29.903    | -0.003         |
|            | 07/27/00 | 7:17:08 | 2        | 12.199   | 29.903    | -0.003         |
|            | 07/27/00 | 7:18:08 | 3        | 12.199   | 29.905    | -0.003         |
|            | 07/27/00 | 7:19:08 | 4        | 12.199   | 29.905    | -0.003         |
|            | 07/27/00 | 7:20:08 | 5        | 12.199   | 29.905    | -0.003         |
|            | 07/27/00 | 7:21:08 | 6        | 12.199   | 29.905    | -0.003         |
|            | 07/27/00 | 7:22:08 | 7        | 12.199   | 29.905    | -0.003         |
|            | 07/27/00 | 7:23:08 | 8        | 12.199   | 29.907    | -0.003         |
|            | 07/27/00 | 7:24:08 | 9        | 12.199   | 29.907    | -0.003         |
|            | 07/27/00 | 7:25:08 | 10       | 12.198   | 29.907    | -0.002         |
|            | 07/27/00 | 7:26:08 | 11       | 12.198   | 29.907    | -0.002         |
|            | 07/27/00 | 7:27:08 | 12       | 12.196   | 29.907    | 0              |
|            | 07/27/00 | 7:28:08 | 13       | 12.196   | 29.907    | 0              |
|            | 07/27/00 | 7:29:08 | 14       | 12.196   | 29.907    | 0              |
|            | 07/27/00 | 7:30:08 | 15       | 12.196   | 29.909    | 0              |
|            | 07/27/00 | 7:31:08 | 16       | 12.195   | 29.915    | 0.001          |
|            | 07/27/00 | 7:32:08 | 17       | 12.195   | 29.911    | 0.001          |
|            | 07/27/00 | 7:33:08 | 18       | 12.195   | 29.907    | 0.001          |
|            | 07/27/00 | 7:34:08 | 19       | 12.196   | 29.905    | 0              |

**Appendix B (continued)**

|         |          |         |        |        |        |        |
|---------|----------|---------|--------|--------|--------|--------|
|         | 07/27/00 | 7:35:08 | 20     | 12.195 | 29.903 | 0.001  |
|         | 07/27/00 | 7:36:08 | 21     | 12.195 | 29.905 | 0.001  |
|         | 07/27/00 | 7:37:08 | 22     | 12.195 | 29.903 | 0.001  |
|         | 07/27/00 | 7:38:08 | 23     | 12.196 | 29.903 | 0      |
|         | 07/27/00 | 7:39:08 | 24     | 12.196 | 29.903 | 0      |
|         | 07/27/00 | 7:40:08 | 25     | 12.195 | 29.903 | 0.001  |
|         | 07/27/00 | 7:41:08 | 26     | 12.196 | 29.903 | 0      |
|         | 07/27/00 | 7:42:08 | 27     | 11.973 | 29.905 | 0.223  |
|         | 07/27/00 | 7:43:08 | 28     | 12.391 | 29.903 | -0.195 |
|         | 07/27/00 | 7:44:08 | 29     | 12.623 | 29.903 | -0.427 |
|         | 07/27/00 | 7:45:08 | 30     | 12.427 | 29.903 | -0.231 |
|         | 07/27/00 | 7:46:08 | 31     | 12.453 | 29.903 | -0.257 |
| Pumping | 07/27/00 | 7:47:26 | 0      | 12.395 | 29.915 | -0.199 |
|         | 07/27/00 | 7:47:26 | 0.0112 | 12.395 | 29.919 | -0.199 |
|         | 07/27/00 | 7:47:27 | 0.0223 | 12.394 | 29.921 | -0.198 |
|         | 07/27/00 | 7:47:28 | 0.0335 | 12.394 | 29.921 | -0.198 |
|         | 07/27/00 | 7:47:28 | 0.0447 | 12.386 | 29.923 | -0.19  |
|         | 07/27/00 | 7:47:29 | 0.0558 | 12.382 | 29.925 | -0.186 |
|         | 07/27/00 | 7:47:30 | 0.067  | 12.371 | 29.925 | -0.175 |
|         | 07/27/00 | 7:47:30 | 0.0782 | 12.35  | 29.927 | -0.154 |
|         | 07/27/00 | 7:47:31 | 0.0893 | 12.329 | 29.927 | -0.133 |
|         | 07/27/00 | 7:47:32 | 0.1005 | 12.304 | 29.927 | -0.108 |
|         | 07/27/00 | 7:47:32 | 0.1117 | 12.287 | 29.927 | -0.091 |
|         | 07/27/00 | 7:47:33 | 0.1228 | 12.267 | 29.927 | -0.071 |
|         | 07/27/00 | 7:47:34 | 0.134  | 12.254 | 29.929 | -0.058 |
|         | 07/27/00 | 7:47:34 | 0.1452 | 12.244 | 29.929 | -0.048 |
|         | 07/27/00 | 7:47:35 | 0.1563 | 12.235 | 29.929 | -0.039 |
|         | 07/27/00 | 7:47:36 | 0.1675 | 12.219 | 29.929 | -0.023 |
|         | 07/27/00 | 7:47:36 | 0.1787 | 12.209 | 29.929 | -0.013 |
|         | 07/27/00 | 7:47:37 | 0.1898 | 12.201 | 29.931 | -0.005 |
|         | 07/27/00 | 7:47:38 | 0.201  | 12.189 | 29.931 | 0.007  |
|         | 07/27/00 | 7:47:38 | 0.2122 | 12.182 | 29.931 | 0.014  |
|         | 07/27/00 | 7:47:39 | 0.2233 | 12.173 | 29.931 | 0.023  |
|         | 07/27/00 | 7:47:40 | 0.235  | 12.166 | 29.929 | 0.03   |
|         | 07/27/00 | 7:47:40 | 0.2475 | 12.159 | 29.929 | 0.037  |
|         | 07/27/00 | 7:47:41 | 0.2607 | 12.147 | 29.929 | 0.049  |
|         | 07/27/00 | 7:47:42 | 0.2747 | 12.14  | 29.931 | 0.056  |
|         | 07/27/00 | 7:47:43 | 0.2895 | 12.129 | 29.931 | 0.067  |
|         | 07/27/00 | 7:47:44 | 0.3052 | 12.121 | 29.931 | 0.075  |
|         | 07/27/00 | 7:47:45 | 0.3218 | 12.108 | 29.931 | 0.088  |
|         | 07/27/00 | 7:47:46 | 0.3395 | 12.098 | 29.931 | 0.098  |
|         | 07/27/00 | 7:47:47 | 0.3582 | 12.087 | 29.931 | 0.109  |
|         | 07/27/00 | 7:47:48 | 0.378  | 12.078 | 29.931 | 0.118  |
|         | 07/27/00 | 7:47:49 | 0.399  | 12.065 | 29.931 | 0.131  |
|         | 07/27/00 | 7:47:51 | 0.4212 | 12.055 | 29.931 | 0.141  |
|         | 07/27/00 | 7:47:52 | 0.4447 | 12.044 | 29.931 | 0.152  |
|         | 07/27/00 | 7:47:54 | 0.4695 | 12.032 | 29.931 | 0.164  |
|         | 07/27/00 | 7:47:55 | 0.4958 | 12.023 | 29.931 | 0.173  |
|         | 07/27/00 | 7:47:57 | 0.5238 | 12.006 | 29.925 | 0.19   |
|         | 07/27/00 | 7:47:59 | 0.5535 | 11.995 | 29.923 | 0.201  |

**Appendix B (continued)**

|          |         |        |        |        |       |
|----------|---------|--------|--------|--------|-------|
| 07/27/00 | 7:48:01 | 0.5848 | 11.979 | 29.921 | 0.217 |
| 07/27/00 | 7:48:03 | 0.618  | 11.966 | 29.919 | 0.23  |
| 07/27/00 | 7:48:05 | 0.6532 | 11.95  | 29.919 | 0.246 |
| 07/27/00 | 7:48:07 | 0.6905 | 11.937 | 29.919 | 0.259 |
| 07/27/00 | 7:48:09 | 0.73   | 11.921 | 29.917 | 0.275 |
| 07/27/00 | 7:48:12 | 0.7718 | 11.905 | 29.917 | 0.291 |
| 07/27/00 | 7:48:14 | 0.8162 | 11.889 | 29.917 | 0.307 |
| 07/27/00 | 7:48:17 | 0.8632 | 11.872 | 29.917 | 0.324 |
| 07/27/00 | 7:48:20 | 0.913  | 11.855 | 29.917 | 0.341 |
| 07/27/00 | 7:48:23 | 0.9657 | 11.838 | 29.917 | 0.358 |
| 07/27/00 | 7:48:27 | 1.0215 | 11.819 | 29.915 | 0.377 |
| 07/27/00 | 7:48:30 | 1.0807 | 11.801 | 29.915 | 0.395 |
| 07/27/00 | 7:48:34 | 1.1433 | 11.784 | 29.913 | 0.412 |
| 07/27/00 | 7:48:38 | 1.2097 | 11.763 | 29.913 | 0.433 |
| 07/27/00 | 7:48:42 | 1.28   | 11.742 | 29.915 | 0.454 |
| 07/27/00 | 7:48:47 | 1.3545 | 11.724 | 29.913 | 0.472 |
| 07/27/00 | 7:48:52 | 1.4335 | 11.702 | 29.913 | 0.494 |
| 07/27/00 | 7:48:57 | 1.5172 | 11.682 | 29.911 | 0.514 |
| 07/27/00 | 7:49:02 | 1.6057 | 11.66  | 29.913 | 0.536 |
| 07/27/00 | 7:49:07 | 1.6995 | 11.639 | 29.913 | 0.557 |
| 07/27/00 | 7:49:13 | 1.7988 | 11.619 | 29.911 | 0.577 |
| 07/27/00 | 7:49:20 | 1.9042 | 11.595 | 29.911 | 0.601 |
| 07/27/00 | 7:49:26 | 2.0157 | 11.572 | 29.911 | 0.624 |
| 07/27/00 | 7:49:34 | 2.1338 | 11.551 | 29.909 | 0.645 |
| 07/27/00 | 7:49:41 | 2.259  | 11.528 | 29.909 | 0.668 |
| 07/27/00 | 7:49:49 | 2.3915 | 11.506 | 29.909 | 0.69  |
| 07/27/00 | 7:49:57 | 2.532  | 11.483 | 29.909 | 0.713 |
| 07/27/00 | 7:50:06 | 2.6808 | 11.461 | 29.909 | 0.735 |
| 07/27/00 | 7:50:16 | 2.8383 | 11.438 | 29.909 | 0.758 |
| 07/27/00 | 7:50:26 | 3.0052 | 11.417 | 29.907 | 0.779 |
| 07/27/00 | 7:50:36 | 3.182  | 11.394 | 29.909 | 0.802 |
| 07/27/00 | 7:50:48 | 3.3693 | 11.374 | 29.907 | 0.822 |
| 07/27/00 | 7:51:00 | 3.5677 | 11.352 | 29.909 | 0.844 |
| 07/27/00 | 7:51:12 | 3.7778 | 11.33  | 29.909 | 0.866 |
| 07/27/00 | 7:51:26 | 4.0005 | 11.31  | 29.907 | 0.886 |
| 07/27/00 | 7:51:40 | 4.2363 | 11.29  | 29.907 | 0.906 |
| 07/27/00 | 7:51:55 | 4.4862 | 11.268 | 29.909 | 0.928 |
| 07/27/00 | 7:52:10 | 4.7362 | 11.248 | 29.907 | 0.948 |
| 07/27/00 | 7:52:25 | 4.9862 | 11.231 | 29.909 | 0.965 |
| 07/27/00 | 7:52:40 | 5.2362 | 11.214 | 29.909 | 0.982 |
| 07/27/00 | 7:52:55 | 5.4862 | 11.196 | 29.909 | 1     |
| 07/27/00 | 7:53:10 | 5.7362 | 11.183 | 29.909 | 1.013 |
| 07/27/00 | 7:53:25 | 5.9862 | 11.17  | 29.909 | 1.026 |
| 07/27/00 | 7:53:40 | 6.2362 | 11.155 | 29.909 | 1.041 |
| 07/27/00 | 7:53:55 | 6.4862 | 11.142 | 29.923 | 1.054 |
| 07/27/00 | 7:54:10 | 6.7362 | 11.133 | 29.913 | 1.063 |
| 07/27/00 | 7:54:25 | 6.9862 | 11.122 | 29.911 | 1.074 |
| 07/27/00 | 7:54:40 | 7.2362 | 11.109 | 29.911 | 1.087 |
| 07/27/00 | 7:54:55 | 7.4862 | 11.1   | 29.911 | 1.096 |
| 07/27/00 | 7:55:10 | 7.7362 | 11.091 | 29.911 | 1.105 |
| 07/27/00 | 7:55:25 | 7.9862 | 11.083 | 29.911 | 1.113 |

**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 7:55:40 | 8.2362  | 11.073 | 29.911 | 1.123 |
| 07/27/00 | 7:55:55 | 8.4862  | 11.064 | 29.911 | 1.132 |
| 07/27/00 | 7:56:10 | 8.7362  | 11.057 | 29.911 | 1.139 |
| 07/27/00 | 7:56:25 | 8.9862  | 11.049 | 29.911 | 1.147 |
| 07/27/00 | 7:56:40 | 9.2362  | 11.044 | 29.911 | 1.152 |
| 07/27/00 | 7:56:55 | 9.4862  | 11.034 | 29.911 | 1.162 |
| 07/27/00 | 7:57:10 | 9.7362  | 11.028 | 29.909 | 1.168 |
| 07/27/00 | 7:57:25 | 9.9862  | 11.021 | 29.911 | 1.175 |
| 07/27/00 | 7:57:40 | 10.2362 | 11.015 | 29.911 | 1.181 |
| 07/27/00 | 7:57:55 | 10.4862 | 11.008 | 29.909 | 1.188 |
| 07/27/00 | 7:58:10 | 10.7362 | 11.003 | 29.911 | 1.193 |
| 07/27/00 | 7:58:25 | 10.9862 | 10.995 | 29.911 | 1.201 |
| 07/27/00 | 7:58:40 | 11.2362 | 10.99  | 29.911 | 1.206 |
| 07/27/00 | 7:58:55 | 11.4862 | 10.986 | 29.911 | 1.21  |
| 07/27/00 | 7:59:10 | 11.7362 | 10.982 | 29.913 | 1.214 |
| 07/27/00 | 7:59:25 | 11.9862 | 10.975 | 29.913 | 1.221 |
| 07/27/00 | 7:59:40 | 12.2362 | 10.972 | 29.913 | 1.224 |
| 07/27/00 | 7:59:55 | 12.4862 | 10.967 | 29.931 | 1.229 |
| 07/27/00 | 8:00:10 | 12.7362 | 10.962 | 29.915 | 1.234 |
| 07/27/00 | 8:00:25 | 12.9862 | 10.959 | 29.915 | 1.237 |
| 07/27/00 | 8:00:40 | 13.2362 | 10.952 | 29.915 | 1.244 |
| 07/27/00 | 8:00:55 | 13.4862 | 10.947 | 29.915 | 1.249 |
| 07/27/00 | 8:01:10 | 13.7362 | 10.944 | 29.915 | 1.252 |
| 07/27/00 | 8:01:25 | 13.9862 | 10.94  | 29.913 | 1.256 |
| 07/27/00 | 8:01:40 | 14.2362 | 10.936 | 29.913 | 1.26  |
| 07/27/00 | 8:01:55 | 14.4862 | 10.933 | 29.913 | 1.263 |
| 07/27/00 | 8:02:10 | 14.7362 | 10.928 | 29.913 | 1.268 |
| 07/27/00 | 8:02:25 | 14.9862 | 10.926 | 29.913 | 1.27  |
| 07/27/00 | 8:02:40 | 15.2362 | 10.923 | 29.915 | 1.273 |
| 07/27/00 | 8:02:55 | 15.4862 | 10.92  | 29.913 | 1.276 |
| 07/27/00 | 8:03:10 | 15.7362 | 10.917 | 29.913 | 1.279 |
| 07/27/00 | 8:03:25 | 15.9862 | 10.91  | 29.913 | 1.286 |
| 07/27/00 | 8:03:40 | 16.2362 | 10.908 | 29.913 | 1.288 |
| 07/27/00 | 8:03:55 | 16.4862 | 10.904 | 29.913 | 1.292 |
| 07/27/00 | 8:04:10 | 16.7362 | 10.901 | 29.913 | 1.295 |
| 07/27/00 | 8:04:25 | 16.9862 | 10.898 | 29.915 | 1.298 |
| 07/27/00 | 8:04:40 | 17.2362 | 10.894 | 29.915 | 1.302 |
| 07/27/00 | 8:04:55 | 17.4862 | 10.891 | 29.913 | 1.305 |
| 07/27/00 | 8:05:10 | 17.7362 | 10.888 | 29.915 | 1.308 |
| 07/27/00 | 8:05:25 | 17.9862 | 10.885 | 29.915 | 1.311 |
| 07/27/00 | 8:05:40 | 18.2362 | 10.882 | 29.913 | 1.314 |
| 07/27/00 | 8:05:55 | 18.4862 | 10.88  | 29.913 | 1.316 |
| 07/27/00 | 8:06:10 | 18.7362 | 10.878 | 29.915 | 1.318 |
| 07/27/00 | 8:06:25 | 18.9862 | 10.875 | 29.915 | 1.321 |
| 07/27/00 | 8:06:40 | 19.2362 | 10.871 | 29.915 | 1.325 |
| 07/27/00 | 8:06:55 | 19.4862 | 10.869 | 29.915 | 1.327 |
| 07/27/00 | 8:07:10 | 19.7362 | 10.865 | 29.915 | 1.331 |
| 07/27/00 | 8:07:25 | 19.9862 | 10.864 | 29.917 | 1.332 |
| 07/27/00 | 8:07:40 | 20.2362 | 10.862 | 29.913 | 1.334 |
| 07/27/00 | 8:07:55 | 20.4862 | 10.859 | 29.915 | 1.337 |
| 07/27/00 | 8:08:10 | 20.7362 | 10.856 | 29.917 | 1.34  |

**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 8:08:25 | 20.9862 | 10.855 | 29.917 | 1.341 |
| 07/27/00 | 8:08:40 | 21.2362 | 10.852 | 29.917 | 1.344 |
| 07/27/00 | 8:08:55 | 21.4862 | 10.851 | 29.917 | 1.345 |
| 07/27/00 | 8:09:10 | 21.7362 | 10.848 | 29.917 | 1.348 |
| 07/27/00 | 8:09:25 | 21.9862 | 10.845 | 29.917 | 1.351 |
| 07/27/00 | 8:09:40 | 22.2362 | 10.844 | 29.917 | 1.352 |
| 07/27/00 | 8:09:55 | 22.4862 | 10.842 | 29.935 | 1.354 |
| 07/27/00 | 8:10:10 | 22.7362 | 10.838 | 29.921 | 1.358 |
| 07/27/00 | 8:10:25 | 22.9862 | 10.836 | 29.917 | 1.36  |
| 07/27/00 | 8:10:40 | 23.2362 | 10.833 | 29.919 | 1.363 |
| 07/27/00 | 8:10:55 | 23.4862 | 10.832 | 29.917 | 1.364 |
| 07/27/00 | 8:11:10 | 23.7362 | 10.828 | 29.917 | 1.368 |
| 07/27/00 | 8:11:25 | 23.9862 | 10.826 | 29.915 | 1.37  |
| 07/27/00 | 8:11:40 | 24.2362 | 10.825 | 29.915 | 1.371 |
| 07/27/00 | 8:11:55 | 24.4862 | 10.823 | 29.915 | 1.373 |
| 07/27/00 | 8:12:10 | 24.7362 | 10.82  | 29.917 | 1.376 |
| 07/27/00 | 8:12:25 | 24.9862 | 10.818 | 29.915 | 1.378 |
| 07/27/00 | 8:12:40 | 25.2362 | 10.816 | 29.915 | 1.38  |
| 07/27/00 | 8:12:55 | 25.4862 | 10.815 | 29.915 | 1.381 |
| 07/27/00 | 8:13:10 | 25.7362 | 10.813 | 29.915 | 1.383 |
| 07/27/00 | 8:13:25 | 25.9862 | 10.81  | 29.915 | 1.386 |
| 07/27/00 | 8:13:40 | 26.2362 | 10.833 | 29.917 | 1.363 |
| 07/27/00 | 8:13:55 | 26.4862 | 10.836 | 29.915 | 1.36  |
| 07/27/00 | 8:14:10 | 26.7362 | 10.829 | 29.915 | 1.367 |
| 07/27/00 | 8:14:25 | 26.9862 | 10.823 | 29.915 | 1.373 |
| 07/27/00 | 8:14:40 | 27.2362 | 10.82  | 29.915 | 1.376 |
| 07/27/00 | 8:14:55 | 27.4862 | 10.816 | 29.915 | 1.38  |
| 07/27/00 | 8:15:10 | 27.7362 | 10.813 | 29.915 | 1.383 |
| 07/27/00 | 8:15:25 | 27.9862 | 10.764 | 29.915 | 1.432 |
| 07/27/00 | 8:15:40 | 28.2362 | 10.715 | 29.915 | 1.481 |
| 07/27/00 | 8:15:55 | 28.4862 | 10.761 | 29.915 | 1.435 |
| 07/27/00 | 8:16:10 | 28.7362 | 10.806 | 29.917 | 1.39  |
| 07/27/00 | 8:16:25 | 28.9862 | 10.823 | 29.915 | 1.373 |
| 07/27/00 | 8:16:40 | 29.2362 | 10.822 | 29.917 | 1.374 |
| 07/27/00 | 8:16:55 | 29.4862 | 10.807 | 29.917 | 1.389 |
| 07/27/00 | 8:17:10 | 29.7362 | 10.797 | 29.917 | 1.399 |
| 07/27/00 | 8:17:25 | 29.9862 | 10.786 | 29.915 | 1.41  |
| 07/27/00 | 8:17:40 | 30.2362 | 10.777 | 29.917 | 1.419 |
| 07/27/00 | 8:17:55 | 30.4862 | 10.77  | 29.917 | 1.426 |
| 07/27/00 | 8:18:10 | 30.7362 | 10.767 | 29.917 | 1.429 |
| 07/27/00 | 8:18:25 | 30.9862 | 10.761 | 29.917 | 1.435 |
| 07/27/00 | 8:18:40 | 31.2362 | 10.757 | 29.917 | 1.439 |
| 07/27/00 | 8:18:55 | 31.4862 | 10.753 | 29.917 | 1.443 |
| 07/27/00 | 8:19:10 | 31.7362 | 10.75  | 29.917 | 1.446 |
| 07/27/00 | 8:19:25 | 31.9862 | 10.712 | 29.917 | 1.484 |
| 07/27/00 | 8:19:40 | 32.2362 | 10.658 | 29.917 | 1.538 |
| 07/27/00 | 8:19:55 | 32.4862 | 10.725 | 29.917 | 1.471 |
| 07/27/00 | 8:20:10 | 32.7362 | 10.777 | 29.919 | 1.419 |
| 07/27/00 | 8:20:25 | 32.9862 | 10.819 | 29.919 | 1.377 |
| 07/27/00 | 8:20:40 | 33.2362 | 10.842 | 29.919 | 1.354 |
| 07/27/00 | 8:20:55 | 33.4862 | 10.823 | 29.919 | 1.373 |

**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 8:21:10 | 33.7362 | 10.809 | 29.919 | 1.387 |
| 07/27/00 | 8:21:25 | 33.9862 | 10.796 | 29.919 | 1.4   |
| 07/27/00 | 8:21:40 | 34.2362 | 10.786 | 29.917 | 1.41  |
| 07/27/00 | 8:21:55 | 34.4862 | 10.777 | 29.917 | 1.419 |
| 07/27/00 | 8:22:10 | 34.7362 | 10.77  | 29.917 | 1.426 |
| 07/27/00 | 8:22:25 | 34.9862 | 10.763 | 29.919 | 1.433 |
| 07/27/00 | 8:22:40 | 35.2362 | 10.757 | 29.917 | 1.439 |
| 07/27/00 | 8:22:55 | 35.4862 | 10.753 | 29.917 | 1.443 |
| 07/27/00 | 8:23:10 | 35.7362 | 10.75  | 29.919 | 1.446 |
| 07/27/00 | 8:23:25 | 35.9862 | 10.712 | 29.919 | 1.484 |
| 07/27/00 | 8:23:40 | 36.2362 | 10.681 | 29.919 | 1.515 |
| 07/27/00 | 8:23:55 | 36.4862 | 10.738 | 29.917 | 1.458 |
| 07/27/00 | 8:24:10 | 36.7362 | 10.756 | 29.917 | 1.44  |
| 07/27/00 | 8:24:25 | 36.9862 | 10.75  | 29.919 | 1.446 |
| 07/27/00 | 8:24:40 | 37.2362 | 10.743 | 29.919 | 1.453 |
| 07/27/00 | 8:24:55 | 37.4862 | 10.738 | 29.919 | 1.458 |
| 07/27/00 | 8:25:10 | 37.7362 | 10.734 | 29.919 | 1.462 |
| 07/27/00 | 8:25:25 | 37.9862 | 10.731 | 29.919 | 1.465 |
| 07/27/00 | 8:25:40 | 38.2362 | 10.727 | 29.919 | 1.469 |
| 07/27/00 | 8:25:55 | 38.4862 | 10.724 | 29.919 | 1.472 |
| 07/27/00 | 8:26:10 | 38.7362 | 10.723 | 29.919 | 1.473 |
| 07/27/00 | 8:26:25 | 38.9862 | 10.633 | 29.919 | 1.563 |
| 07/27/00 | 8:26:40 | 39.2362 | 10.612 | 29.919 | 1.584 |
| 07/27/00 | 8:26:55 | 39.4862 | 10.65  | 29.919 | 1.546 |
| 07/27/00 | 8:27:10 | 39.7362 | 10.718 | 29.919 | 1.478 |
| 07/27/00 | 8:27:25 | 39.9862 | 10.764 | 29.919 | 1.432 |
| 07/27/00 | 8:27:40 | 40.2362 | 10.747 | 29.919 | 1.449 |
| 07/27/00 | 8:27:55 | 40.4862 | 10.751 | 29.919 | 1.445 |
| 07/27/00 | 8:28:10 | 40.7362 | 10.743 | 29.919 | 1.453 |
| 07/27/00 | 8:28:25 | 40.9862 | 10.737 | 29.919 | 1.459 |
| 07/27/00 | 8:28:40 | 41.2362 | 10.756 | 29.917 | 1.44  |
| 07/27/00 | 8:28:55 | 41.4862 | 10.746 | 29.919 | 1.45  |
| 07/27/00 | 8:29:10 | 41.7362 | 10.741 | 29.921 | 1.455 |
| 07/27/00 | 8:29:25 | 41.9862 | 10.734 | 29.919 | 1.462 |
| 07/27/00 | 8:29:40 | 42.2362 | 10.728 | 29.919 | 1.468 |
| 07/27/00 | 8:29:55 | 42.4862 | 10.721 | 29.919 | 1.475 |
| 07/27/00 | 8:30:10 | 42.7362 | 10.715 | 29.919 | 1.481 |
| 07/27/00 | 8:30:25 | 42.9862 | 10.711 | 29.919 | 1.485 |
| 07/27/00 | 8:30:40 | 43.2362 | 10.571 | 29.921 | 1.625 |
| 07/27/00 | 8:30:55 | 43.4862 | 10.566 | 29.919 | 1.63  |
| 07/27/00 | 8:31:10 | 43.7362 | 10.638 | 29.919 | 1.558 |
| 07/27/00 | 8:31:25 | 43.9862 | 10.701 | 29.919 | 1.495 |
| 07/27/00 | 8:31:40 | 44.2362 | 10.753 | 29.919 | 1.443 |
| 07/27/00 | 8:31:55 | 44.4862 | 10.769 | 29.919 | 1.427 |
| 07/27/00 | 8:32:10 | 44.7362 | 10.757 | 29.919 | 1.439 |
| 07/27/00 | 8:32:25 | 44.9862 | 10.746 | 29.921 | 1.45  |
| 07/27/00 | 8:32:40 | 45.2362 | 10.74  | 29.921 | 1.456 |
| 07/27/00 | 8:32:55 | 45.4862 | 10.766 | 29.921 | 1.43  |
| 07/27/00 | 8:33:10 | 45.7362 | 10.753 | 29.921 | 1.443 |
| 07/27/00 | 8:33:25 | 45.9862 | 10.743 | 29.919 | 1.453 |
| 07/27/00 | 8:33:40 | 46.2362 | 10.734 | 29.921 | 1.462 |

**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 8:33:55 | 46.4862 | 10.724 | 29.919 | 1.472 |
| 07/27/00 | 8:34:10 | 46.7362 | 10.72  | 29.921 | 1.476 |
| 07/27/00 | 8:34:25 | 46.9862 | 10.712 | 29.921 | 1.484 |
| 07/27/00 | 8:34:40 | 47.2362 | 10.708 | 29.921 | 1.488 |
| 07/27/00 | 8:34:55 | 47.4862 | 10.699 | 29.921 | 1.497 |
| 07/27/00 | 8:35:10 | 47.7362 | 10.717 | 29.921 | 1.479 |
| 07/27/00 | 8:35:25 | 47.9862 | 10.72  | 29.921 | 1.476 |
| 07/27/00 | 8:35:40 | 48.2362 | 10.717 | 29.921 | 1.479 |
| 07/27/00 | 8:35:55 | 48.4862 | 10.717 | 29.921 | 1.479 |
| 07/27/00 | 8:36:10 | 48.7362 | 10.715 | 29.919 | 1.481 |
| 07/27/00 | 8:36:25 | 48.9862 | 10.714 | 29.921 | 1.482 |
| 07/27/00 | 8:36:40 | 49.2362 | 10.714 | 29.921 | 1.482 |
| 07/27/00 | 8:36:55 | 49.4862 | 10.597 | 29.921 | 1.599 |
| 07/27/00 | 8:37:10 | 49.7362 | 10.607 | 29.921 | 1.589 |
| 07/27/00 | 8:37:25 | 49.9862 | 10.653 | 29.921 | 1.543 |
| 07/27/00 | 8:37:40 | 50.2362 | 10.695 | 29.919 | 1.501 |
| 07/27/00 | 8:37:55 | 50.4862 | 10.717 | 29.919 | 1.479 |
| 07/27/00 | 8:38:10 | 50.7362 | 10.728 | 29.919 | 1.468 |
| 07/27/00 | 8:38:25 | 50.9862 | 10.686 | 29.919 | 1.51  |
| 07/27/00 | 8:38:40 | 51.2362 | 10.725 | 29.921 | 1.471 |
| 07/27/00 | 8:38:55 | 51.4862 | 10.721 | 29.919 | 1.475 |
| 07/27/00 | 8:39:10 | 51.7362 | 10.72  | 29.921 | 1.476 |
| 07/27/00 | 8:39:25 | 51.9862 | 10.718 | 29.921 | 1.478 |
| 07/27/00 | 8:39:40 | 52.2362 | 10.715 | 29.921 | 1.481 |
| 07/27/00 | 8:39:55 | 52.4862 | 10.714 | 29.921 | 1.482 |
| 07/27/00 | 8:40:10 | 52.7362 | 10.708 | 29.921 | 1.488 |
| 07/27/00 | 8:40:25 | 52.9862 | 10.705 | 29.921 | 1.491 |
| 07/27/00 | 8:40:40 | 53.2362 | 10.702 | 29.921 | 1.494 |
| 07/27/00 | 8:40:55 | 53.4862 | 10.702 | 29.921 | 1.494 |
| 07/27/00 | 8:41:10 | 53.7362 | 10.629 | 29.921 | 1.567 |
| 07/27/00 | 8:41:25 | 53.9862 | 10.613 | 29.923 | 1.583 |
| 07/27/00 | 8:41:40 | 54.2362 | 10.649 | 29.923 | 1.547 |
| 07/27/00 | 8:41:55 | 54.4862 | 10.678 | 29.921 | 1.518 |
| 07/27/00 | 8:42:10 | 54.7362 | 10.694 | 29.923 | 1.502 |
| 07/27/00 | 8:42:25 | 54.9862 | 10.701 | 29.921 | 1.495 |
| 07/27/00 | 8:42:40 | 55.2362 | 10.695 | 29.923 | 1.501 |
| 07/27/00 | 8:42:55 | 55.4862 | 10.688 | 29.923 | 1.508 |
| 07/27/00 | 8:43:10 | 55.7362 | 10.685 | 29.923 | 1.511 |
| 07/27/00 | 8:43:25 | 55.9862 | 10.686 | 29.923 | 1.51  |
| 07/27/00 | 8:43:40 | 56.2362 | 10.689 | 29.925 | 1.507 |
| 07/27/00 | 8:43:55 | 56.4862 | 10.56  | 29.925 | 1.636 |
| 07/27/00 | 8:44:10 | 56.7362 | 10.545 | 29.923 | 1.651 |
| 07/27/00 | 8:44:25 | 56.9862 | 10.535 | 29.925 | 1.661 |
| 07/27/00 | 8:44:40 | 57.2362 | 10.591 | 29.925 | 1.605 |
| 07/27/00 | 8:44:55 | 57.4862 | 10.629 | 29.925 | 1.567 |
| 07/27/00 | 8:45:10 | 57.7362 | 10.649 | 29.925 | 1.547 |
| 07/27/00 | 8:45:25 | 57.9862 | 10.663 | 29.925 | 1.533 |
| 07/27/00 | 8:45:40 | 58.2362 | 10.672 | 29.923 | 1.524 |
| 07/27/00 | 8:45:55 | 58.4862 | 10.666 | 29.923 | 1.53  |
| 07/27/00 | 8:46:10 | 58.7362 | 10.659 | 29.925 | 1.537 |
| 07/27/00 | 8:46:25 | 58.9862 | 10.653 | 29.925 | 1.543 |

**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 8:46:40 | 59.2362 | 10.653 | 29.925 | 1.543 |
| 07/27/00 | 8:46:55 | 59.4862 | 10.659 | 29.923 | 1.537 |
| 07/27/00 | 8:47:10 | 59.7362 | 10.658 | 29.923 | 1.538 |
| 07/27/00 | 8:47:25 | 59.9862 | 10.663 | 29.925 | 1.533 |
| 07/27/00 | 8:47:40 | 60.2362 | 10.658 | 29.925 | 1.538 |
| 07/27/00 | 8:47:55 | 60.4862 | 10.521 | 29.925 | 1.675 |
| 07/27/00 | 8:48:10 | 60.7362 | 10.506 | 29.923 | 1.69  |
| 07/27/00 | 8:48:25 | 60.9862 | 10.532 | 29.923 | 1.664 |
| 07/27/00 | 8:48:40 | 61.2362 | 10.587 | 29.923 | 1.609 |
| 07/27/00 | 8:48:55 | 61.4862 | 10.626 | 29.923 | 1.57  |
| 07/27/00 | 8:49:10 | 61.7362 | 10.655 | 29.921 | 1.541 |
| 07/27/00 | 8:49:25 | 61.9862 | 10.682 | 29.923 | 1.514 |
| 07/27/00 | 8:49:40 | 62.2362 | 10.699 | 29.923 | 1.497 |
| 07/27/00 | 8:49:55 | 62.4862 | 10.714 | 29.923 | 1.482 |
| 07/27/00 | 8:50:10 | 62.7362 | 10.723 | 29.923 | 1.473 |
| 07/27/00 | 8:50:25 | 62.9862 | 10.72  | 29.923 | 1.476 |
| 07/27/00 | 8:50:40 | 63.2362 | 10.718 | 29.923 | 1.478 |
| 07/27/00 | 8:50:55 | 63.4862 | 10.712 | 29.923 | 1.484 |
| 07/27/00 | 8:51:10 | 63.7362 | 10.697 | 29.921 | 1.499 |
| 07/27/00 | 8:51:25 | 63.9862 | 10.686 | 29.923 | 1.51  |
| 07/27/00 | 8:51:40 | 64.2362 | 10.679 | 29.923 | 1.517 |
| 07/27/00 | 8:51:55 | 64.4862 | 10.669 | 29.923 | 1.527 |
| 07/27/00 | 8:52:10 | 64.7362 | 10.656 | 29.923 | 1.54  |
| 07/27/00 | 8:52:25 | 64.9862 | 10.649 | 29.923 | 1.547 |
| 07/27/00 | 8:52:40 | 65.2362 | 10.645 | 29.921 | 1.551 |
| 07/27/00 | 8:52:55 | 65.4862 | 10.64  | 29.923 | 1.556 |
| 07/27/00 | 8:53:10 | 65.7362 | 10.548 | 29.923 | 1.648 |
| 07/27/00 | 8:53:25 | 65.9862 | 10.547 | 29.921 | 1.649 |
| 07/27/00 | 8:53:40 | 66.2362 | 10.545 | 29.921 | 1.651 |
| 07/27/00 | 8:53:55 | 66.4862 | 10.553 | 29.921 | 1.643 |
| 07/27/00 | 8:54:10 | 66.7362 | 10.568 | 29.921 | 1.628 |
| 07/27/00 | 8:54:25 | 66.9862 | 10.61  | 29.923 | 1.586 |
| 07/27/00 | 8:54:40 | 67.2362 | 10.64  | 29.921 | 1.556 |
| 07/27/00 | 8:54:55 | 67.4862 | 10.511 | 29.921 | 1.685 |
| 07/27/00 | 8:55:10 | 67.7362 | 10.548 | 29.921 | 1.648 |
| 07/27/00 | 8:55:25 | 67.9862 | 10.597 | 29.923 | 1.599 |
| 07/27/00 | 8:55:40 | 68.2362 | 10.635 | 29.921 | 1.561 |
| 07/27/00 | 8:55:55 | 68.4862 | 10.648 | 29.921 | 1.548 |
| 07/27/00 | 8:56:10 | 68.7362 | 10.656 | 29.921 | 1.54  |
| 07/27/00 | 8:56:25 | 68.9862 | 10.655 | 29.923 | 1.541 |
| 07/27/00 | 8:56:40 | 69.2362 | 10.653 | 29.921 | 1.543 |
| 07/27/00 | 8:56:55 | 69.4862 | 10.652 | 29.921 | 1.544 |
| 07/27/00 | 8:57:10 | 69.7362 | 10.649 | 29.921 | 1.547 |
| 07/27/00 | 8:57:25 | 69.9862 | 10.643 | 29.923 | 1.553 |
| 07/27/00 | 8:57:40 | 70.2362 | 10.639 | 29.921 | 1.557 |
| 07/27/00 | 8:57:55 | 70.4862 | 10.633 | 29.923 | 1.563 |
| 07/27/00 | 8:58:10 | 70.7362 | 10.629 | 29.921 | 1.567 |
| 07/27/00 | 8:58:25 | 70.9862 | 10.625 | 29.921 | 1.571 |
| 07/27/00 | 8:58:40 | 71.2362 | 10.619 | 29.921 | 1.577 |
| 07/27/00 | 8:58:55 | 71.4862 | 10.613 | 29.921 | 1.583 |
| 07/27/00 | 8:59:10 | 71.7362 | 10.612 | 29.923 | 1.584 |



**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 8:59:25 | 71.9862 | 10.553 | 29.921 | 1.643 |
| 07/27/00 | 8:59:40 | 72.2362 | 10.47  | 29.921 | 1.726 |
| 07/27/00 | 8:59:55 | 72.4862 | 10.429 | 29.923 | 1.767 |
| 07/27/00 | 9:00:10 | 72.7362 | 10.344 | 29.923 | 1.852 |
| 07/27/00 | 9:00:25 | 72.9862 | 10.387 | 29.921 | 1.809 |
| 07/27/00 | 9:00:40 | 73.2362 | 10.417 | 29.921 | 1.779 |
| 07/27/00 | 9:00:55 | 73.4862 | 10.463 | 29.921 | 1.733 |
| 07/27/00 | 9:01:10 | 73.7362 | 10.517 | 29.923 | 1.679 |
| 07/27/00 | 9:01:25 | 73.9862 | 10.557 | 29.921 | 1.639 |
| 07/27/00 | 9:01:40 | 74.2362 | 10.591 | 29.923 | 1.605 |
| 07/27/00 | 9:01:55 | 74.4862 | 10.614 | 29.923 | 1.582 |
| 07/27/00 | 9:02:10 | 74.7362 | 10.635 | 29.923 | 1.561 |
| 07/27/00 | 9:02:25 | 74.9862 | 10.642 | 29.923 | 1.554 |
| 07/27/00 | 9:02:40 | 75.2362 | 10.603 | 29.921 | 1.593 |
| 07/27/00 | 9:02:55 | 75.4862 | 10.439 | 29.921 | 1.757 |
| 07/27/00 | 9:03:10 | 75.7362 | 10.352 | 29.923 | 1.844 |
| 07/27/00 | 9:03:25 | 75.9862 | 10.387 | 29.923 | 1.809 |
| 07/27/00 | 9:03:40 | 76.2362 | 10.413 | 29.923 | 1.783 |
| 07/27/00 | 9:03:55 | 76.4862 | 10.434 | 29.921 | 1.762 |
| 07/27/00 | 9:04:10 | 76.7362 | 10.453 | 29.923 | 1.743 |
| 07/27/00 | 9:04:25 | 76.9862 | 10.469 | 29.921 | 1.727 |
| 07/27/00 | 9:04:40 | 77.2362 | 10.482 | 29.921 | 1.714 |
| 07/27/00 | 9:04:55 | 77.4862 | 10.495 | 29.921 | 1.701 |
| 07/27/00 | 9:05:10 | 77.7362 | 10.505 | 29.921 | 1.691 |
| 07/27/00 | 9:05:25 | 77.9862 | 10.512 | 29.921 | 1.684 |
| 07/27/00 | 9:05:40 | 78.2362 | 10.519 | 29.921 | 1.677 |
| 07/27/00 | 9:05:55 | 78.4862 | 10.525 | 29.923 | 1.671 |
| 07/27/00 | 9:06:10 | 78.7362 | 10.529 | 29.921 | 1.667 |
| 07/27/00 | 9:06:25 | 78.9862 | 10.535 | 29.921 | 1.661 |
| 07/27/00 | 9:06:40 | 79.2362 | 10.541 | 29.921 | 1.655 |
| 07/27/00 | 9:06:55 | 79.4862 | 10.544 | 29.919 | 1.652 |
| 07/27/00 | 9:07:10 | 79.7362 | 10.59  | 29.921 | 1.606 |
| 07/27/00 | 9:07:25 | 79.9862 | 10.528 | 29.921 | 1.668 |
| 07/27/00 | 9:07:40 | 80.2362 | 10.531 | 29.921 | 1.665 |
| 07/27/00 | 9:07:55 | 80.4862 | 10.521 | 29.921 | 1.675 |
| 07/27/00 | 9:08:10 | 80.7362 | 10.462 | 29.921 | 1.734 |
| 07/27/00 | 9:08:25 | 80.9862 | 10.309 | 29.921 | 1.887 |
| 07/27/00 | 9:08:40 | 81.2362 | 10.377 | 29.921 | 1.819 |
| 07/27/00 | 9:08:55 | 81.4862 | 10.385 | 29.921 | 1.811 |
| 07/27/00 | 9:09:10 | 81.7362 | 10.466 | 29.919 | 1.73  |
| 07/27/00 | 9:09:25 | 81.9862 | 10.555 | 29.921 | 1.641 |
| 07/27/00 | 9:09:40 | 82.2362 | 10.64  | 29.919 | 1.556 |
| 07/27/00 | 9:09:55 | 82.4862 | 10.678 | 29.919 | 1.518 |
| 07/27/00 | 9:10:10 | 82.7362 | 10.684 | 29.919 | 1.512 |
| 07/27/00 | 9:10:25 | 82.9862 | 10.625 | 29.921 | 1.571 |
| 07/27/00 | 9:10:40 | 83.2362 | 10.656 | 29.921 | 1.54  |
| 07/27/00 | 9:10:55 | 83.4862 | 10.642 | 29.919 | 1.554 |
| 07/27/00 | 9:11:10 | 83.7362 | 10.625 | 29.919 | 1.571 |
| 07/27/00 | 9:11:25 | 83.9862 | 10.607 | 29.919 | 1.589 |
| 07/27/00 | 9:11:40 | 84.2362 | 10.594 | 29.919 | 1.602 |
| 07/27/00 | 9:11:55 | 84.4862 | 10.583 | 29.919 | 1.613 |

**Appendix B (continued)**

|          |         |         |        |        |       |
|----------|---------|---------|--------|--------|-------|
| 07/27/00 | 9:12:10 | 84.7362 | 10.573 | 29.919 | 1.623 |
| 07/27/00 | 9:12:25 | 84.9862 | 10.563 | 29.919 | 1.633 |
| 07/27/00 | 9:12:40 | 85.2362 | 10.555 | 29.919 | 1.641 |
| 07/27/00 | 9:12:55 | 85.4862 | 10.551 | 29.919 | 1.645 |
| 07/27/00 | 9:13:10 | 85.7362 | 10.551 | 29.917 | 1.645 |
| 07/27/00 | 9:13:25 | 85.9862 | 10.551 | 29.919 | 1.645 |
| 07/27/00 | 9:13:40 | 86.2362 | 10.55  | 29.921 | 1.646 |
| 07/27/00 | 9:13:55 | 86.4862 | 10.545 | 29.919 | 1.651 |
| 07/27/00 | 9:14:10 | 86.7362 | 10.544 | 29.919 | 1.652 |
| 07/27/00 | 9:14:25 | 86.9862 | 10.541 | 29.919 | 1.655 |
| 07/27/00 | 9:14:40 | 87.2362 | 10.528 | 29.921 | 1.668 |
| 07/27/00 | 9:14:55 | 87.4862 | 10.46  | 29.919 | 1.736 |
| 07/27/00 | 9:15:10 | 87.7362 | 10.352 | 29.917 | 1.844 |
| 07/27/00 | 9:15:25 | 87.9862 | 10.522 | 29.919 | 1.674 |
| 07/27/00 | 9:15:40 | 88.2362 | 10.561 | 29.919 | 1.635 |
| 07/27/00 | 9:15:55 | 88.4862 | 10.64  | 29.919 | 1.556 |
| 07/27/00 | 9:16:10 | 88.7362 | 10.629 | 29.921 | 1.567 |
| 07/27/00 | 9:16:25 | 88.9862 | 10.627 | 29.921 | 1.569 |
| 07/27/00 | 9:16:40 | 89.2362 | 10.676 | 29.919 | 1.52  |
| 07/27/00 | 9:16:55 | 89.4862 | 10.701 | 29.917 | 1.495 |
| 07/27/00 | 9:17:10 | 89.7362 | 10.73  | 29.919 | 1.466 |
| 07/27/00 | 9:17:25 | 89.9862 | 10.751 | 29.919 | 1.445 |
| 07/27/00 | 9:17:40 | 90.2362 | 10.767 | 29.919 | 1.429 |
| 07/27/00 | 9:17:55 | 90.4862 | 10.776 | 29.919 | 1.42  |
| 07/27/00 | 9:18:10 | 90.7362 | 10.783 | 29.919 | 1.413 |
| 07/27/00 | 9:18:25 | 90.9862 | 10.806 | 29.919 | 1.39  |
| 07/27/00 | 9:18:40 | 91.2362 | 10.777 | 29.919 | 1.419 |
| 07/27/00 | 9:18:55 | 91.4862 | 10.769 | 29.919 | 1.427 |
| 07/27/00 | 9:19:10 | 91.7362 | 10.761 | 29.919 | 1.435 |
| 07/27/00 | 9:19:25 | 91.9862 | 10.756 | 29.919 | 1.44  |
| 07/27/00 | 9:19:40 | 92.2362 | 10.733 | 29.919 | 1.463 |
| 07/27/00 | 9:19:55 | 92.4862 | 10.72  | 29.919 | 1.476 |
| 07/27/00 | 9:20:10 | 92.7362 | 10.727 | 29.917 | 1.469 |
| 07/27/00 | 9:20:25 | 92.9862 | 10.708 | 29.919 | 1.488 |
| 07/27/00 | 9:20:40 | 93.2362 | 10.695 | 29.919 | 1.501 |
| 07/27/00 | 9:20:55 | 93.4862 | 10.679 | 29.917 | 1.517 |
| 07/27/00 | 9:21:10 | 93.7362 | 10.685 | 29.919 | 1.511 |
| 07/27/00 | 9:21:25 | 93.9862 | 10.686 | 29.919 | 1.51  |
| 07/27/00 | 9:21:40 | 94.2362 | 10.689 | 29.919 | 1.507 |
| 07/27/00 | 9:21:55 | 94.4862 | 10.686 | 29.919 | 1.51  |
| 07/27/00 | 9:22:10 | 94.7362 | 10.686 | 29.919 | 1.51  |
| 07/27/00 | 9:22:25 | 94.9862 | 10.678 | 29.919 | 1.518 |
| 07/27/00 | 9:22:40 | 95.2362 | 10.671 | 29.917 | 1.525 |
| 07/27/00 | 9:22:55 | 95.4862 | 10.665 | 29.917 | 1.531 |
| 07/27/00 | 9:23:10 | 95.7362 | 10.661 | 29.917 | 1.535 |
| 07/27/00 | 9:23:25 | 95.9862 | 10.663 | 29.917 | 1.533 |
| 07/27/00 | 9:23:40 | 96.2362 | 10.645 | 29.917 | 1.551 |
| 07/27/00 | 9:23:55 | 96.4862 | 10.652 | 29.917 | 1.544 |
| 07/27/00 | 9:24:10 | 96.7362 | 10.649 | 29.915 | 1.547 |
| 07/27/00 | 9:24:25 | 96.9862 | 10.646 | 29.915 | 1.55  |
| 07/27/00 | 9:24:40 | 97.2362 | 10.646 | 29.917 | 1.55  |

**Appendix B (continued)**

|          |         |          |        |        |       |
|----------|---------|----------|--------|--------|-------|
| 07/27/00 | 9:24:55 | 97.4862  | 10.646 | 29.915 | 1.55  |
| 07/27/00 | 9:25:10 | 97.7362  | 10.65  | 29.915 | 1.546 |
| 07/27/00 | 9:25:25 | 97.9862  | 10.646 | 29.915 | 1.55  |
| 07/27/00 | 9:25:40 | 98.2362  | 10.649 | 29.915 | 1.547 |
| 07/27/00 | 9:25:55 | 98.4862  | 10.643 | 29.915 | 1.553 |
| 07/27/00 | 9:26:10 | 98.7362  | 10.645 | 29.915 | 1.551 |
| 07/27/00 | 9:26:25 | 98.9862  | 10.645 | 29.915 | 1.551 |
| 07/27/00 | 9:26:40 | 99.2362  | 10.515 | 29.913 | 1.681 |
| 07/27/00 | 9:26:55 | 99.4862  | 10.528 | 29.915 | 1.668 |
| 07/27/00 | 9:27:10 | 99.7362  | 10.567 | 29.915 | 1.629 |
| 07/27/00 | 9:27:25 | 99.9862  | 10.604 | 29.915 | 1.592 |
| 07/27/00 | 9:27:40 | 100.2362 | 10.636 | 29.915 | 1.56  |
| 07/27/00 | 9:27:55 | 100.4862 | 10.656 | 29.915 | 1.54  |
| 07/27/00 | 9:28:10 | 100.7362 | 10.675 | 29.915 | 1.521 |
| 07/27/00 | 9:28:25 | 100.9862 | 10.678 | 29.915 | 1.518 |
| 07/27/00 | 9:28:40 | 101.2362 | 10.685 | 29.915 | 1.511 |
| 07/27/00 | 9:28:55 | 101.4862 | 10.679 | 29.915 | 1.517 |
| 07/27/00 | 9:29:10 | 101.7362 | 10.674 | 29.913 | 1.522 |
| 07/27/00 | 9:29:25 | 101.9862 | 10.672 | 29.915 | 1.524 |
| 07/27/00 | 9:29:40 | 102.2362 | 10.665 | 29.915 | 1.531 |
| 07/27/00 | 9:29:55 | 102.4862 | 10.666 | 29.915 | 1.53  |
| 07/27/00 | 9:30:10 | 102.7362 | 10.661 | 29.915 | 1.535 |
| 07/27/00 | 9:30:25 | 102.9862 | 10.662 | 29.915 | 1.534 |
| 07/27/00 | 9:30:40 | 103.2362 | 10.659 | 29.915 | 1.537 |
| 07/27/00 | 9:30:55 | 103.4862 | 10.558 | 29.915 | 1.638 |
| 07/27/00 | 9:31:10 | 103.7362 | 10.547 | 29.915 | 1.649 |
| 07/27/00 | 9:31:25 | 103.9862 | 10.587 | 29.915 | 1.609 |
| 07/27/00 | 9:31:40 | 104.2362 | 10.617 | 29.915 | 1.579 |
| 07/27/00 | 9:31:55 | 104.4862 | 10.636 | 29.915 | 1.56  |
| 07/27/00 | 9:32:10 | 104.7362 | 10.648 | 29.915 | 1.548 |
| 07/27/00 | 9:32:25 | 104.9862 | 10.646 | 29.915 | 1.55  |
| 07/27/00 | 9:32:40 | 105.2362 | 10.652 | 29.915 | 1.544 |
| 07/27/00 | 9:32:55 | 105.4862 | 10.655 | 29.915 | 1.541 |
| 07/27/00 | 9:33:10 | 105.7362 | 10.655 | 29.913 | 1.541 |
| 07/27/00 | 9:33:25 | 105.9862 | 10.65  | 29.913 | 1.546 |
| 07/27/00 | 9:33:40 | 106.2362 | 10.65  | 29.913 | 1.546 |
| 07/27/00 | 9:33:55 | 106.4862 | 10.649 | 29.913 | 1.547 |
| 07/27/00 | 9:34:10 | 106.7362 | 10.638 | 29.913 | 1.558 |
| 07/27/00 | 9:34:25 | 106.9862 | 10.642 | 29.911 | 1.554 |
| 07/27/00 | 9:34:40 | 107.2362 | 10.643 | 29.913 | 1.553 |
| 07/27/00 | 9:34:55 | 107.4862 | 10.643 | 29.913 | 1.553 |
| 07/27/00 | 9:35:10 | 107.7362 | 10.648 | 29.913 | 1.548 |
| 07/27/00 | 9:35:25 | 107.9862 | 10.522 | 29.913 | 1.674 |
| 07/27/00 | 9:35:40 | 108.2362 | 10.534 | 29.913 | 1.662 |
| 07/27/00 | 9:35:55 | 108.4862 | 10.584 | 29.911 | 1.612 |
| 07/27/00 | 9:36:10 | 108.7362 | 10.613 | 29.911 | 1.583 |
| 07/27/00 | 9:36:25 | 108.9862 | 10.636 | 29.911 | 1.56  |
| 07/27/00 | 9:36:40 | 109.2362 | 10.648 | 29.911 | 1.548 |
| 07/27/00 | 9:36:55 | 109.4862 | 10.655 | 29.913 | 1.541 |
| 07/27/00 | 9:37:10 | 109.7362 | 10.666 | 29.913 | 1.53  |
| 07/27/00 | 9:37:25 | 109.9862 | 10.663 | 29.911 | 1.533 |

**Appendix B (continued)**

|          |         |          |        |        |       |
|----------|---------|----------|--------|--------|-------|
| 07/27/00 | 9:37:40 | 110.2362 | 10.668 | 29.911 | 1.528 |
| 07/27/00 | 9:37:55 | 110.4862 | 10.658 | 29.909 | 1.538 |
| 07/27/00 | 9:38:10 | 110.7362 | 10.659 | 29.911 | 1.537 |
| 07/27/00 | 9:38:25 | 110.9862 | 10.653 | 29.911 | 1.543 |
| 07/27/00 | 9:38:40 | 111.2362 | 10.648 | 29.909 | 1.548 |
| 07/27/00 | 9:38:55 | 111.4862 | 10.643 | 29.911 | 1.553 |
| 07/27/00 | 9:39:10 | 111.7362 | 10.642 | 29.911 | 1.554 |
| 07/27/00 | 9:39:25 | 111.9862 | 10.639 | 29.911 | 1.557 |
| 07/27/00 | 9:39:40 | 112.2362 | 10.639 | 29.909 | 1.557 |
| 07/27/00 | 9:39:55 | 112.4862 | 10.633 | 29.909 | 1.563 |
| 07/27/00 | 9:40:10 | 112.7362 | 10.492 | 29.911 | 1.704 |
| 07/27/00 | 9:40:25 | 112.9862 | 10.478 | 29.911 | 1.718 |
| 07/27/00 | 9:40:40 | 113.2362 | 10.529 | 29.909 | 1.667 |
| 07/27/00 | 9:40:55 | 113.4862 | 10.568 | 29.911 | 1.628 |
| 07/27/00 | 9:41:10 | 113.7362 | 10.609 | 29.911 | 1.587 |
| 07/27/00 | 9:41:25 | 113.9862 | 10.633 | 29.911 | 1.563 |
| 07/27/00 | 9:41:40 | 114.2362 | 10.65  | 29.913 | 1.546 |
| 07/27/00 | 9:41:55 | 114.4862 | 10.642 | 29.911 | 1.554 |
| 07/27/00 | 9:42:10 | 114.7362 | 10.645 | 29.911 | 1.551 |
| 07/27/00 | 9:42:25 | 114.9862 | 10.648 | 29.911 | 1.548 |
| 07/27/00 | 9:42:40 | 115.2362 | 10.648 | 29.913 | 1.548 |
| 07/27/00 | 9:42:55 | 115.4862 | 10.649 | 29.911 | 1.547 |
| 07/27/00 | 9:43:10 | 115.7362 | 10.646 | 29.911 | 1.55  |
| 07/27/00 | 9:43:25 | 115.9862 | 10.649 | 29.911 | 1.547 |
| 07/27/00 | 9:43:40 | 116.2362 | 10.649 | 29.913 | 1.547 |
| 07/27/00 | 9:43:55 | 116.4862 | 10.645 | 29.911 | 1.551 |
| 07/27/00 | 9:44:10 | 116.7362 | 10.643 | 29.911 | 1.553 |
| 07/27/00 | 9:44:25 | 116.9862 | 10.64  | 29.911 | 1.556 |
| 07/27/00 | 9:44:40 | 117.2362 | 10.642 | 29.913 | 1.554 |
| 07/27/00 | 9:44:55 | 117.4862 | 10.635 | 29.911 | 1.561 |
| 07/27/00 | 9:45:10 | 117.7362 | 10.587 | 29.911 | 1.609 |
| 07/27/00 | 9:45:25 | 117.9862 | 10.489 | 29.913 | 1.707 |
| 07/27/00 | 9:45:40 | 118.2362 | 10.519 | 29.911 | 1.677 |
| 07/27/00 | 9:45:55 | 118.4862 | 10.56  | 29.913 | 1.636 |
| 07/27/00 | 9:46:10 | 118.7362 | 10.596 | 29.911 | 1.6   |
| 07/27/00 | 9:46:25 | 118.9862 | 10.616 | 29.911 | 1.58  |
| 07/27/00 | 9:46:40 | 119.2362 | 10.632 | 29.911 | 1.564 |
| 07/27/00 | 9:46:55 | 119.4862 | 10.639 | 29.911 | 1.557 |
| 07/27/00 | 9:47:10 | 119.7362 | 10.636 | 29.911 | 1.56  |
| 07/27/00 | 9:47:25 | 119.9862 | 10.64  | 29.913 | 1.556 |
| 07/27/00 | 9:47:40 | 120.2362 | 10.635 | 29.911 | 1.561 |
| 07/27/00 | 9:47:55 | 120.4862 | 10.625 | 29.911 | 1.571 |
| 07/27/00 | 9:48:10 | 120.7362 | 10.622 | 29.911 | 1.574 |
| 07/27/00 | 9:48:25 | 120.9862 | 10.512 | 29.911 | 1.684 |
| 07/27/00 | 9:48:40 | 121.2362 | 10.36  | 29.911 | 1.836 |
| 07/27/00 | 9:48:55 | 121.4862 | 10.362 | 29.911 | 1.834 |
| 07/27/00 | 9:49:10 | 121.7362 | 10.383 | 29.911 | 1.813 |
| 07/27/00 | 9:49:25 | 121.9862 | 10.393 | 29.911 | 1.803 |
| 07/27/00 | 9:49:40 | 122.2362 | 10.403 | 29.913 | 1.793 |
| 07/27/00 | 9:49:55 | 122.4862 | 10.416 | 29.925 | 1.78  |
| 07/27/00 | 9:50:10 | 122.7362 | 10.434 | 29.915 | 1.762 |

**Appendix B (continued)**

|          |          |          |        |        |       |
|----------|----------|----------|--------|--------|-------|
| 07/27/00 | 9:50:25  | 122.9862 | 10.449 | 29.913 | 1.747 |
| 07/27/00 | 9:50:40  | 123.2362 | 10.463 | 29.911 | 1.733 |
| 07/27/00 | 9:50:55  | 123.4862 | 10.468 | 29.915 | 1.728 |
| 07/27/00 | 9:51:10  | 123.7362 | 10.466 | 29.911 | 1.73  |
| 07/27/00 | 9:51:25  | 123.9862 | 10.38  | 29.911 | 1.816 |
| 07/27/00 | 9:51:40  | 124.2362 | 10.272 | 29.909 | 1.924 |
| 07/27/00 | 9:51:55  | 124.4862 | 10.182 | 29.911 | 2.014 |
| 07/27/00 | 9:52:10  | 124.7362 | 10.102 | 29.911 | 2.094 |
| 07/27/00 | 9:52:25  | 124.9862 | 10.031 | 29.911 | 2.165 |
| 07/27/00 | 9:52:40  | 125.2362 | 9.974  | 29.909 | 2.222 |
| 07/27/00 | 9:52:55  | 125.4862 | 9.92   | 29.909 | 2.276 |
| 07/27/00 | 9:53:10  | 125.7362 | 9.876  | 29.909 | 2.32  |
| 07/27/00 | 9:53:25  | 125.9862 | 9.832  | 29.911 | 2.364 |
| 07/27/00 | 9:53:40  | 126.2362 | 9.795  | 29.909 | 2.401 |
| 07/27/00 | 9:53:55  | 126.4862 | 9.762  | 29.909 | 2.434 |
| 07/27/00 | 9:54:10  | 126.7362 | 9.732  | 29.909 | 2.464 |
| 07/27/00 | 9:54:25  | 126.9862 | 9.703  | 29.911 | 2.493 |
| 07/27/00 | 9:54:40  | 127.2362 | 9.678  | 29.909 | 2.518 |
| 07/27/00 | 9:54:55  | 127.4862 | 9.655  | 29.909 | 2.541 |
| 07/27/00 | 9:55:10  | 127.7362 | 9.635  | 29.909 | 2.561 |
| 07/27/00 | 9:55:25  | 127.9862 | 9.615  | 29.909 | 2.581 |
| 07/27/00 | 9:55:40  | 128.2362 | 9.599  | 29.917 | 2.597 |
| 07/27/00 | 9:55:55  | 128.4862 | 9.582  | 29.907 | 2.614 |
| 07/27/00 | 9:56:10  | 128.7362 | 9.566  | 29.909 | 2.63  |
| 07/27/00 | 9:56:25  | 128.9862 | 9.552  | 29.909 | 2.644 |
| 07/27/00 | 9:56:40  | 129.2362 | 9.49   | 29.909 | 2.706 |
| 07/27/00 | 9:56:55  | 129.4862 | 9.349  | 29.907 | 2.847 |
| 07/27/00 | 9:57:10  | 129.7362 | 9.285  | 29.909 | 2.911 |
| 07/27/00 | 9:57:25  | 129.9862 | 9.104  | 29.909 | 3.092 |
| 07/27/00 | 9:57:40  | 130.2362 | 9.154  | 29.909 | 3.042 |
| 07/27/00 | 9:57:55  | 130.4862 | 8.902  | 29.909 | 3.294 |
| 07/27/00 | 9:58:10  | 130.7362 | 8.968  | 29.907 | 3.228 |
| 07/27/00 | 9:58:25  | 130.9862 | 9.019  | 29.907 | 3.177 |
| 07/27/00 | 9:58:40  | 131.2362 | 9.061  | 29.909 | 3.135 |
| 07/27/00 | 9:58:55  | 131.4862 | 9.095  | 29.909 | 3.101 |
| 07/27/00 | 9:59:10  | 131.7362 | 9.122  | 29.909 | 3.074 |
| 07/27/00 | 9:59:25  | 131.9862 | 9.148  | 29.909 | 3.048 |
| 07/27/00 | 9:59:40  | 132.2362 | 9.169  | 29.909 | 3.027 |
| 07/27/00 | 9:59:55  | 132.4862 | 9.184  | 29.909 | 3.012 |
| 07/27/00 | 10:00:10 | 132.7362 | 9.199  | 29.909 | 2.997 |
| 07/27/00 | 10:00:25 | 132.9862 | 9.21   | 29.909 | 2.986 |
| 07/27/00 | 10:00:40 | 133.2362 | 9.219  | 29.909 | 2.977 |
| 07/27/00 | 10:00:55 | 133.4862 | 9.226  | 29.909 | 2.97  |
| 07/27/00 | 10:01:10 | 133.7362 | 9.233  | 29.909 | 2.963 |
| 07/27/00 | 10:01:25 | 133.9862 | 9.236  | 29.909 | 2.96  |
| 07/27/00 | 10:01:40 | 134.2362 | 9.241  | 29.911 | 2.955 |
| 07/27/00 | 10:01:55 | 134.4862 | 9.243  | 29.909 | 2.953 |
| 07/27/00 | 10:02:10 | 134.7362 | 9.549  | 29.909 | 2.647 |
| 07/27/00 | 10:02:25 | 134.9862 | 9.531  | 29.909 | 2.665 |
| 07/27/00 | 10:02:40 | 135.2362 | 9.698  | 29.909 | 2.498 |
| 07/27/00 | 10:02:55 | 135.4862 | 9.878  | 29.909 | 2.318 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 10:03:10 | 135.7362 | 9.806 | 29.909 | 2.39  |
| 07/27/00 | 10:03:25 | 135.9862 | 9.739 | 29.909 | 2.457 |
| 07/27/00 | 10:03:40 | 136.2362 | 9.677 | 29.911 | 2.519 |
| 07/27/00 | 10:03:55 | 136.4862 | 9.629 | 29.911 | 2.567 |
| 07/27/00 | 10:04:10 | 136.7362 | 9.589 | 29.909 | 2.607 |
| 07/27/00 | 10:04:25 | 136.9862 | 9.554 | 29.909 | 2.642 |
| 07/27/00 | 10:04:40 | 137.2362 | 9.524 | 29.911 | 2.672 |
| 07/27/00 | 10:04:55 | 137.4862 | 9.5   | 29.909 | 2.696 |
| 07/27/00 | 10:05:10 | 137.7362 | 9.475 | 29.909 | 2.721 |
| 07/27/00 | 10:05:25 | 137.9862 | 9.454 | 29.909 | 2.742 |
| 07/27/00 | 10:05:40 | 138.2362 | 9.436 | 29.909 | 2.76  |
| 07/27/00 | 10:05:55 | 138.4862 | 9.422 | 29.911 | 2.774 |
| 07/27/00 | 10:06:10 | 138.7362 | 9.405 | 29.911 | 2.791 |
| 07/27/00 | 10:06:25 | 138.9862 | 9.393 | 29.909 | 2.803 |
| 07/27/00 | 10:06:40 | 139.2362 | 9.382 | 29.909 | 2.814 |
| 07/27/00 | 10:06:55 | 139.4862 | 9.369 | 29.909 | 2.827 |
| 07/27/00 | 10:07:10 | 139.7362 | 9.36  | 29.909 | 2.836 |
| 07/27/00 | 10:07:25 | 139.9862 | 9.351 | 29.909 | 2.845 |
| 07/27/00 | 10:07:40 | 140.2362 | 9.344 | 29.911 | 2.852 |
| 07/27/00 | 10:07:55 | 140.4862 | 9.337 | 29.911 | 2.859 |
| 07/27/00 | 10:08:10 | 140.7362 | 9.331 | 29.909 | 2.865 |
| 07/27/00 | 10:08:25 | 140.9862 | 9.323 | 29.911 | 2.873 |
| 07/27/00 | 10:08:40 | 141.2362 | 9.318 | 29.911 | 2.878 |
| 07/27/00 | 10:08:55 | 141.4862 | 9.314 | 29.909 | 2.882 |
| 07/27/00 | 10:09:10 | 141.7362 | 9.308 | 29.909 | 2.888 |
| 07/27/00 | 10:09:25 | 141.9862 | 9.305 | 29.909 | 2.891 |
| 07/27/00 | 10:09:40 | 142.2362 | 9.301 | 29.911 | 2.895 |
| 07/27/00 | 10:09:55 | 142.4862 | 9.295 | 29.909 | 2.901 |
| 07/27/00 | 10:10:10 | 142.7362 | 9.291 | 29.929 | 2.905 |
| 07/27/00 | 10:10:25 | 142.9862 | 9.287 | 29.933 | 2.909 |
| 07/27/00 | 10:10:40 | 143.2362 | 9.282 | 29.915 | 2.914 |
| 07/27/00 | 10:10:55 | 143.4862 | 9.278 | 29.913 | 2.918 |
| 07/27/00 | 10:11:10 | 143.7362 | 9.275 | 29.911 | 2.921 |
| 07/27/00 | 10:11:25 | 143.9862 | 9.274 | 29.911 | 2.922 |
| 07/27/00 | 10:11:40 | 144.2362 | 9.269 | 29.909 | 2.927 |
| 07/27/00 | 10:11:55 | 144.4862 | 9.266 | 29.909 | 2.93  |
| 07/27/00 | 10:12:10 | 144.7362 | 9.262 | 29.909 | 2.934 |
| 07/27/00 | 10:12:25 | 144.9862 | 9.261 | 29.909 | 2.935 |
| 07/27/00 | 10:12:40 | 145.2362 | 9.256 | 29.909 | 2.94  |
| 07/27/00 | 10:12:55 | 145.4862 | 9.255 | 29.909 | 2.941 |
| 07/27/00 | 10:13:10 | 145.7362 | 9.253 | 29.909 | 2.943 |
| 07/27/00 | 10:13:25 | 145.9862 | 9.251 | 29.907 | 2.945 |
| 07/27/00 | 10:13:40 | 146.2362 | 9.245 | 29.905 | 2.951 |
| 07/27/00 | 10:13:55 | 146.4862 | 9.242 | 29.907 | 2.954 |
| 07/27/00 | 10:14:10 | 146.7362 | 9.241 | 29.909 | 2.955 |
| 07/27/00 | 10:14:25 | 146.9862 | 9.239 | 29.907 | 2.957 |
| 07/27/00 | 10:14:40 | 147.2362 | 9.236 | 29.907 | 2.96  |
| 07/27/00 | 10:14:55 | 147.4862 | 9.235 | 29.909 | 2.961 |
| 07/27/00 | 10:15:10 | 147.7362 | 9.23  | 29.909 | 2.966 |
| 07/27/00 | 10:15:25 | 147.9862 | 9.23  | 29.909 | 2.966 |
| 07/27/00 | 10:15:40 | 148.2362 | 9.228 | 29.907 | 2.968 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 10:15:55 | 148.4862 | 9.225 | 29.909 | 2.971 |
| 07/27/00 | 10:16:10 | 148.7362 | 9.223 | 29.907 | 2.973 |
| 07/27/00 | 10:16:25 | 148.9862 | 9.222 | 29.909 | 2.974 |
| 07/27/00 | 10:16:40 | 149.2362 | 9.219 | 29.907 | 2.977 |
| 07/27/00 | 10:16:55 | 149.4862 | 9.219 | 29.907 | 2.977 |
| 07/27/00 | 10:17:10 | 149.7362 | 9.217 | 29.911 | 2.979 |
| 07/27/00 | 10:17:25 | 149.9862 | 9.213 | 29.909 | 2.983 |
| 07/27/00 | 10:17:40 | 150.2362 | 9.212 | 29.919 | 2.984 |
| 07/27/00 | 10:17:55 | 150.4862 | 9.21  | 29.921 | 2.986 |
| 07/27/00 | 10:18:10 | 150.7362 | 9.209 | 29.911 | 2.987 |
| 07/27/00 | 10:18:25 | 150.9862 | 9.207 | 29.911 | 2.989 |
| 07/27/00 | 10:18:40 | 151.2362 | 9.206 | 29.909 | 2.99  |
| 07/27/00 | 10:18:55 | 151.4862 | 9.205 | 29.909 | 2.991 |
| 07/27/00 | 10:19:10 | 151.7362 | 9.2   | 29.909 | 2.996 |
| 07/27/00 | 10:19:25 | 151.9862 | 9.2   | 29.909 | 2.996 |
| 07/27/00 | 10:19:40 | 152.2362 | 9.199 | 29.909 | 2.997 |
| 07/27/00 | 10:19:55 | 152.4862 | 9.196 | 29.909 | 3     |
| 07/27/00 | 10:20:10 | 152.7362 | 9.194 | 29.909 | 3.002 |
| 07/27/00 | 10:20:25 | 152.9862 | 9.193 | 29.909 | 3.003 |
| 07/27/00 | 10:20:40 | 153.2362 | 9.192 | 29.909 | 3.004 |
| 07/27/00 | 10:20:55 | 153.4862 | 9.19  | 29.909 | 3.006 |
| 07/27/00 | 10:21:10 | 153.7362 | 9.189 | 29.909 | 3.007 |
| 07/27/00 | 10:21:25 | 153.9862 | 9.186 | 29.909 | 3.01  |
| 07/27/00 | 10:21:40 | 154.2362 | 9.184 | 29.907 | 3.012 |
| 07/27/00 | 10:21:55 | 154.4862 | 9.183 | 29.907 | 3.013 |
| 07/27/00 | 10:22:10 | 154.7362 | 9.246 | 29.907 | 2.95  |
| 07/27/00 | 10:22:25 | 154.9862 | 9.277 | 29.909 | 2.919 |
| 07/27/00 | 10:22:40 | 155.2362 | 9.261 | 29.909 | 2.935 |
| 07/27/00 | 10:22:55 | 155.4862 | 9.251 | 29.909 | 2.945 |
| 07/27/00 | 10:23:10 | 155.7362 | 9.239 | 29.909 | 2.957 |
| 07/27/00 | 10:23:25 | 155.9862 | 9.14  | 29.909 | 3.056 |
| 07/27/00 | 10:23:40 | 156.2362 | 9.169 | 29.909 | 3.027 |
| 07/27/00 | 10:23:55 | 156.4862 | 9.222 | 29.907 | 2.974 |
| 07/27/00 | 10:24:10 | 156.7362 | 9.269 | 29.909 | 2.927 |
| 07/27/00 | 10:24:25 | 156.9862 | 9.307 | 29.909 | 2.889 |
| 07/27/00 | 10:24:40 | 157.2362 | 9.334 | 29.909 | 2.862 |
| 07/27/00 | 10:24:55 | 157.4862 | 9.351 | 29.907 | 2.845 |
| 07/27/00 | 10:25:10 | 157.7362 | 9.324 | 29.907 | 2.872 |
| 07/27/00 | 10:25:25 | 157.9862 | 9.304 | 29.909 | 2.892 |
| 07/27/00 | 10:25:40 | 158.2362 | 9.284 | 29.909 | 2.912 |
| 07/27/00 | 10:25:55 | 158.4862 | 9.269 | 29.907 | 2.927 |
| 07/27/00 | 10:26:10 | 158.7362 | 9.256 | 29.907 | 2.94  |
| 07/27/00 | 10:26:25 | 158.9862 | 9.245 | 29.907 | 2.951 |
| 07/27/00 | 10:26:40 | 159.2362 | 9.163 | 29.907 | 3.033 |
| 07/27/00 | 10:26:55 | 159.4862 | 9.173 | 29.907 | 3.023 |
| 07/27/00 | 10:27:10 | 159.7362 | 9.22  | 29.909 | 2.976 |
| 07/27/00 | 10:27:25 | 159.9862 | 9.215 | 29.909 | 2.981 |
| 07/27/00 | 10:27:40 | 160.2362 | 9.207 | 29.907 | 2.989 |
| 07/27/00 | 10:27:55 | 160.4862 | 9.199 | 29.907 | 2.997 |
| 07/27/00 | 10:28:10 | 160.7362 | 9.194 | 29.909 | 3.002 |
| 07/27/00 | 10:28:25 | 160.9862 | 9.19  | 29.907 | 3.006 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 10:28:40 | 161.2362 | 9.186 | 29.909 | 3.01  |
| 07/27/00 | 10:28:55 | 161.4862 | 9.18  | 29.909 | 3.016 |
| 07/27/00 | 10:29:10 | 161.7362 | 9.177 | 29.907 | 3.019 |
| 07/27/00 | 10:29:25 | 161.9862 | 9.107 | 29.909 | 3.089 |
| 07/27/00 | 10:29:40 | 162.2362 | 9.085 | 29.909 | 3.111 |
| 07/27/00 | 10:29:55 | 162.4862 | 9.151 | 29.907 | 3.045 |
| 07/27/00 | 10:30:10 | 162.7362 | 9.18  | 29.907 | 3.016 |
| 07/27/00 | 10:30:25 | 162.9862 | 9.171 | 29.905 | 3.025 |
| 07/27/00 | 10:30:40 | 163.2362 | 9.167 | 29.905 | 3.029 |
| 07/27/00 | 10:30:55 | 163.4862 | 9.163 | 29.907 | 3.033 |
| 07/27/00 | 10:31:10 | 163.7362 | 9.158 | 29.907 | 3.038 |
| 07/27/00 | 10:31:25 | 163.9862 | 9.156 | 29.905 | 3.04  |
| 07/27/00 | 10:31:40 | 164.2362 | 9.153 | 29.905 | 3.043 |
| 07/27/00 | 10:31:55 | 164.4862 | 9.15  | 29.907 | 3.046 |
| 07/27/00 | 10:32:10 | 164.7362 | 9.147 | 29.905 | 3.049 |
| 07/27/00 | 10:32:25 | 164.9862 | 9.145 | 29.905 | 3.051 |
| 07/27/00 | 10:32:40 | 165.2362 | 9.032 | 29.905 | 3.164 |
| 07/27/00 | 10:32:55 | 165.4862 | 9.099 | 29.903 | 3.097 |
| 07/27/00 | 10:33:10 | 165.7362 | 9.151 | 29.905 | 3.045 |
| 07/27/00 | 10:33:25 | 165.9862 | 9.17  | 29.903 | 3.026 |
| 07/27/00 | 10:33:40 | 166.2362 | 9.151 | 29.903 | 3.045 |
| 07/27/00 | 10:33:55 | 166.4862 | 9.148 | 29.903 | 3.048 |
| 07/27/00 | 10:34:10 | 166.7362 | 9.144 | 29.903 | 3.052 |
| 07/27/00 | 10:34:25 | 166.9862 | 9.141 | 29.903 | 3.055 |
| 07/27/00 | 10:34:40 | 167.2362 | 9.137 | 29.903 | 3.059 |
| 07/27/00 | 10:34:55 | 167.4862 | 9.135 | 29.903 | 3.061 |
| 07/27/00 | 10:35:10 | 167.7362 | 9.133 | 29.903 | 3.063 |
| 07/27/00 | 10:35:25 | 167.9862 | 9.082 | 29.903 | 3.114 |
| 07/27/00 | 10:35:40 | 168.2362 | 8.983 | 29.903 | 3.213 |
| 07/27/00 | 10:35:55 | 168.4862 | 9.032 | 29.903 | 3.164 |
| 07/27/00 | 10:36:10 | 168.7362 | 9.099 | 29.901 | 3.097 |
| 07/27/00 | 10:36:25 | 168.9862 | 9.153 | 29.903 | 3.043 |
| 07/27/00 | 10:36:40 | 169.2362 | 9.179 | 29.903 | 3.017 |
| 07/27/00 | 10:36:55 | 169.4862 | 9.17  | 29.903 | 3.026 |
| 07/27/00 | 10:37:10 | 169.7362 | 9.157 | 29.903 | 3.039 |
| 07/27/00 | 10:37:25 | 169.9862 | 9.151 | 29.903 | 3.045 |
| 07/27/00 | 10:37:40 | 170.2362 | 9.145 | 29.903 | 3.051 |
| 07/27/00 | 10:37:55 | 170.4862 | 9.141 | 29.901 | 3.055 |
| 07/27/00 | 10:38:10 | 170.7362 | 9.135 | 29.903 | 3.061 |
| 07/27/00 | 10:38:25 | 170.9862 | 9.039 | 29.903 | 3.157 |
| 07/27/00 | 10:38:40 | 171.2362 | 8.896 | 29.903 | 3.3   |
| 07/27/00 | 10:38:55 | 171.4862 | 8.872 | 29.903 | 3.324 |
| 07/27/00 | 10:39:10 | 171.7362 | 8.912 | 29.905 | 3.284 |
| 07/27/00 | 10:39:25 | 171.9862 | 8.999 | 29.903 | 3.197 |
| 07/27/00 | 10:39:40 | 172.2362 | 9.05  | 29.907 | 3.146 |
| 07/27/00 | 10:39:55 | 172.4862 | 9.108 | 29.905 | 3.088 |
| 07/27/00 | 10:40:10 | 172.7362 | 9.148 | 29.905 | 3.048 |
| 07/27/00 | 10:40:25 | 172.9862 | 9.144 | 29.905 | 3.052 |
| 07/27/00 | 10:40:40 | 173.2362 | 9.134 | 29.905 | 3.062 |
| 07/27/00 | 10:40:55 | 173.4862 | 9.127 | 29.905 | 3.069 |
| 07/27/00 | 10:41:10 | 173.7362 | 9.121 | 29.907 | 3.075 |



**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 10:41:25 | 173.9862 | 9.115 | 29.907 | 3.081 |
| 07/27/00 | 10:41:40 | 174.2362 | 9.111 | 29.905 | 3.085 |
| 07/27/00 | 10:41:55 | 174.4862 | 9.081 | 29.907 | 3.115 |
| 07/27/00 | 10:42:10 | 174.7362 | 8.993 | 29.907 | 3.203 |
| 07/27/00 | 10:42:25 | 174.9862 | 9.063 | 29.905 | 3.133 |
| 07/27/00 | 10:42:40 | 175.2362 | 9.118 | 29.907 | 3.078 |
| 07/27/00 | 10:42:55 | 175.4862 | 9.109 | 29.905 | 3.087 |
| 07/27/00 | 10:43:10 | 175.7362 | 9.105 | 29.905 | 3.091 |
| 07/27/00 | 10:43:25 | 175.9862 | 9.102 | 29.905 | 3.094 |
| 07/27/00 | 10:43:40 | 176.2362 | 9.098 | 29.907 | 3.098 |
| 07/27/00 | 10:43:55 | 176.4862 | 9.095 | 29.907 | 3.101 |
| 07/27/00 | 10:44:10 | 176.7362 | 9.094 | 29.907 | 3.102 |
| 07/27/00 | 10:44:25 | 176.9862 | 9.092 | 29.907 | 3.104 |
| 07/27/00 | 10:44:40 | 177.2362 | 9.091 | 29.907 | 3.105 |
| 07/27/00 | 10:44:55 | 177.4862 | 9.088 | 29.909 | 3.108 |
| 07/27/00 | 10:45:10 | 177.7362 | 9.086 | 29.907 | 3.11  |
| 07/27/00 | 10:45:25 | 177.9862 | 9.012 | 29.905 | 3.184 |
| 07/27/00 | 10:45:40 | 178.2362 | 8.935 | 29.907 | 3.261 |
| 07/27/00 | 10:45:55 | 178.4862 | 9.026 | 29.905 | 3.17  |
| 07/27/00 | 10:46:10 | 178.7362 | 9.092 | 29.907 | 3.104 |
| 07/27/00 | 10:46:25 | 178.9862 | 9.124 | 29.907 | 3.072 |
| 07/27/00 | 10:46:40 | 179.2362 | 9.114 | 29.907 | 3.082 |
| 07/27/00 | 10:46:55 | 179.4862 | 9.108 | 29.907 | 3.088 |
| 07/27/00 | 10:47:10 | 179.7362 | 9.102 | 29.905 | 3.094 |
| 07/27/00 | 10:47:25 | 179.9862 | 9.097 | 29.905 | 3.099 |
| 07/27/00 | 10:47:40 | 180.2362 | 9.094 | 29.905 | 3.102 |
| 07/27/00 | 10:47:55 | 180.4862 | 9.091 | 29.907 | 3.105 |
| 07/27/00 | 10:48:10 | 180.7362 | 9.088 | 29.905 | 3.108 |
| 07/27/00 | 10:48:25 | 180.9862 | 9.086 | 29.907 | 3.11  |
| 07/27/00 | 10:48:40 | 181.2362 | 9.084 | 29.905 | 3.112 |
| 07/27/00 | 10:48:55 | 181.4862 | 9.081 | 29.907 | 3.115 |
| 07/27/00 | 10:49:10 | 181.7362 | 9.079 | 29.905 | 3.117 |
| 07/27/00 | 10:49:25 | 181.9862 | 8.986 | 29.905 | 3.21  |
| 07/27/00 | 10:49:40 | 182.2362 | 9.03  | 29.905 | 3.166 |
| 07/27/00 | 10:49:55 | 182.4862 | 9.078 | 29.905 | 3.118 |
| 07/27/00 | 10:50:10 | 182.7362 | 9.081 | 29.903 | 3.115 |
| 07/27/00 | 10:50:25 | 182.9862 | 9.079 | 29.905 | 3.117 |
| 07/27/00 | 10:50:40 | 183.2362 | 9.076 | 29.905 | 3.12  |
| 07/27/00 | 10:50:55 | 183.4862 | 9.075 | 29.905 | 3.121 |
| 07/27/00 | 10:51:10 | 183.7362 | 9.072 | 29.903 | 3.124 |
| 07/27/00 | 10:51:25 | 183.9862 | 9.069 | 29.905 | 3.127 |
| 07/27/00 | 10:51:40 | 184.2362 | 9.069 | 29.905 | 3.127 |
| 07/27/00 | 10:51:55 | 184.4862 | 9.069 | 29.907 | 3.127 |
| 07/27/00 | 10:52:10 | 184.7362 | 9.069 | 29.905 | 3.127 |
| 07/27/00 | 10:52:25 | 184.9862 | 9.065 | 29.905 | 3.131 |
| 07/27/00 | 10:52:40 | 185.2362 | 9.063 | 29.905 | 3.133 |
| 07/27/00 | 10:52:55 | 185.4862 | 9.062 | 29.905 | 3.134 |
| 07/27/00 | 10:53:10 | 185.7362 | 9.063 | 29.905 | 3.133 |
| 07/27/00 | 10:53:25 | 185.9862 | 9.061 | 29.905 | 3.135 |
| 07/27/00 | 10:53:40 | 186.2362 | 8.955 | 29.905 | 3.241 |
| 07/27/00 | 10:53:55 | 186.4862 | 8.965 | 29.905 | 3.231 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 10:54:10 | 186.7362 | 9.035 | 29.905 | 3.161 |
| 07/27/00 | 10:54:25 | 186.9862 | 9.076 | 29.905 | 3.12  |
| 07/27/00 | 10:54:40 | 187.2362 | 9.069 | 29.905 | 3.127 |
| 07/27/00 | 10:54:55 | 187.4862 | 9.065 | 29.905 | 3.131 |
| 07/27/00 | 10:55:10 | 187.7362 | 9.063 | 29.907 | 3.133 |
| 07/27/00 | 10:55:25 | 187.9862 | 9.061 | 29.905 | 3.135 |
| 07/27/00 | 10:55:40 | 188.2362 | 9.058 | 29.905 | 3.138 |
| 07/27/00 | 10:55:55 | 188.4862 | 9.058 | 29.905 | 3.138 |
| 07/27/00 | 10:56:10 | 188.7362 | 9.056 | 29.905 | 3.14  |
| 07/27/00 | 10:56:25 | 188.9862 | 9.055 | 29.907 | 3.141 |
| 07/27/00 | 10:56:40 | 189.2362 | 9.055 | 29.907 | 3.141 |
| 07/27/00 | 10:56:55 | 189.4862 | 9.055 | 29.905 | 3.141 |
| 07/27/00 | 10:57:10 | 189.7362 | 9.056 | 29.907 | 3.14  |
| 07/27/00 | 10:57:25 | 189.9862 | 8.96  | 29.907 | 3.236 |
| 07/27/00 | 10:57:40 | 190.2362 | 9.017 | 29.905 | 3.179 |
| 07/27/00 | 10:57:55 | 190.4862 | 9.056 | 29.907 | 3.14  |
| 07/27/00 | 10:58:10 | 190.7362 | 9.055 | 29.905 | 3.141 |
| 07/27/00 | 10:58:25 | 190.9862 | 9.053 | 29.905 | 3.143 |
| 07/27/00 | 10:58:40 | 191.2362 | 9.052 | 29.909 | 3.144 |
| 07/27/00 | 10:58:55 | 191.4862 | 9.05  | 29.905 | 3.146 |
| 07/27/00 | 10:59:10 | 191.7362 | 9.05  | 29.907 | 3.146 |
| 07/27/00 | 10:59:25 | 191.9862 | 9.048 | 29.907 | 3.148 |
| 07/27/00 | 10:59:40 | 192.2362 | 9.046 | 29.907 | 3.15  |
| 07/27/00 | 10:59:55 | 192.4862 | 9.046 | 29.905 | 3.15  |
| 07/27/00 | 11:00:10 | 192.7362 | 9.045 | 29.905 | 3.151 |
| 07/27/00 | 11:00:25 | 192.9862 | 9.043 | 29.907 | 3.153 |
| 07/27/00 | 11:00:40 | 193.2362 | 9.043 | 29.907 | 3.153 |
| 07/27/00 | 11:00:55 | 193.4862 | 8.963 | 29.907 | 3.233 |
| 07/27/00 | 11:01:10 | 193.7362 | 9.006 | 29.905 | 3.19  |
| 07/27/00 | 11:01:25 | 193.9862 | 9.045 | 29.907 | 3.151 |
| 07/27/00 | 11:01:40 | 194.2362 | 9.049 | 29.905 | 3.147 |
| 07/27/00 | 11:01:55 | 194.4862 | 9.046 | 29.905 | 3.15  |
| 07/27/00 | 11:02:10 | 194.7362 | 9.043 | 29.907 | 3.153 |
| 07/27/00 | 11:02:25 | 194.9862 | 9.043 | 29.905 | 3.153 |
| 07/27/00 | 11:02:40 | 195.2362 | 9.042 | 29.905 | 3.154 |
| 07/27/00 | 11:02:55 | 195.4862 | 9.042 | 29.907 | 3.154 |
| 07/27/00 | 11:03:10 | 195.7362 | 9.04  | 29.905 | 3.156 |
| 07/27/00 | 11:03:25 | 195.9862 | 9.039 | 29.905 | 3.157 |
| 07/27/00 | 11:03:40 | 196.2362 | 9.039 | 29.905 | 3.157 |
| 07/27/00 | 11:03:55 | 196.4862 | 9.039 | 29.905 | 3.157 |
| 07/27/00 | 11:04:10 | 196.7362 | 9.037 | 29.905 | 3.159 |
| 07/27/00 | 11:04:25 | 196.9862 | 9.037 | 29.905 | 3.159 |
| 07/27/00 | 11:04:40 | 197.2362 | 9.037 | 29.905 | 3.159 |
| 07/27/00 | 11:04:55 | 197.4862 | 9.037 | 29.905 | 3.159 |
| 07/27/00 | 11:05:10 | 197.7362 | 9.036 | 29.905 | 3.16  |
| 07/27/00 | 11:05:25 | 197.9862 | 8.955 | 29.905 | 3.241 |
| 07/27/00 | 11:05:40 | 198.2362 | 8.947 | 29.903 | 3.249 |
| 07/27/00 | 11:05:55 | 198.4862 | 9.013 | 29.903 | 3.183 |
| 07/27/00 | 11:06:10 | 198.7362 | 9.037 | 29.905 | 3.159 |
| 07/27/00 | 11:06:25 | 198.9862 | 9.033 | 29.905 | 3.163 |
| 07/27/00 | 11:06:40 | 199.2362 | 9.033 | 29.903 | 3.163 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 11:06:55 | 199.4862 | 9.032 | 29.905 | 3.164 |
| 07/27/00 | 11:07:10 | 199.7362 | 9.032 | 29.905 | 3.164 |
| 07/27/00 | 11:07:25 | 199.9862 | 9.03  | 29.903 | 3.166 |
| 07/27/00 | 11:07:40 | 200.2362 | 9.03  | 29.905 | 3.166 |
| 07/27/00 | 11:07:55 | 200.4862 | 9.03  | 29.905 | 3.166 |
| 07/27/00 | 11:08:10 | 200.7362 | 9.027 | 29.905 | 3.169 |
| 07/27/00 | 11:08:25 | 200.9862 | 9.003 | 29.903 | 3.193 |
| 07/27/00 | 11:08:40 | 201.2362 | 8.925 | 29.905 | 3.271 |
| 07/27/00 | 11:08:55 | 201.4862 | 8.983 | 29.905 | 3.213 |
| 07/27/00 | 11:09:10 | 201.7362 | 9.037 | 29.903 | 3.159 |
| 07/27/00 | 11:09:25 | 201.9862 | 9.039 | 29.905 | 3.157 |
| 07/27/00 | 11:09:40 | 202.2362 | 9.035 | 29.901 | 3.161 |
| 07/27/00 | 11:09:55 | 202.4862 | 9.032 | 29.905 | 3.164 |
| 07/27/00 | 11:10:10 | 202.7362 | 9.032 | 29.905 | 3.164 |
| 07/27/00 | 11:10:25 | 202.9862 | 9.03  | 29.905 | 3.166 |
| 07/27/00 | 11:10:40 | 203.2362 | 9.03  | 29.903 | 3.166 |
| 07/27/00 | 11:10:55 | 203.4862 | 9.03  | 29.903 | 3.166 |
| 07/27/00 | 11:11:10 | 203.7362 | 9.016 | 29.903 | 3.18  |
| 07/27/00 | 11:11:25 | 203.9862 | 8.948 | 29.903 | 3.248 |
| 07/27/00 | 11:11:40 | 204.2362 | 9.009 | 29.903 | 3.187 |
| 07/27/00 | 11:11:55 | 204.4862 | 9.016 | 29.903 | 3.18  |
| 07/27/00 | 11:12:10 | 204.7362 | 9.016 | 29.903 | 3.18  |
| 07/27/00 | 11:12:25 | 204.9862 | 9.016 | 29.903 | 3.18  |
| 07/27/00 | 11:12:40 | 205.2362 | 9.016 | 29.903 | 3.18  |
| 07/27/00 | 11:12:55 | 205.4862 | 9.017 | 29.903 | 3.179 |
| 07/27/00 | 11:13:10 | 205.7362 | 9.017 | 29.903 | 3.179 |
| 07/27/00 | 11:13:25 | 205.9862 | 9.017 | 29.903 | 3.179 |
| 07/27/00 | 11:13:40 | 206.2362 | 9.017 | 29.903 | 3.179 |
| 07/27/00 | 11:13:55 | 206.4862 | 8.94  | 29.903 | 3.256 |
| 07/27/00 | 11:14:10 | 206.7362 | 8.947 | 29.903 | 3.249 |
| 07/27/00 | 11:14:25 | 206.9862 | 9.012 | 29.903 | 3.184 |
| 07/27/00 | 11:14:40 | 207.2362 | 9.046 | 29.901 | 3.15  |
| 07/27/00 | 11:14:55 | 207.4862 | 9.043 | 29.903 | 3.153 |
| 07/27/00 | 11:15:10 | 207.7362 | 9.039 | 29.903 | 3.157 |
| 07/27/00 | 11:15:25 | 207.9862 | 9.035 | 29.903 | 3.161 |
| 07/27/00 | 11:15:40 | 208.2362 | 9.03  | 29.903 | 3.166 |
| 07/27/00 | 11:15:55 | 208.4862 | 9.026 | 29.903 | 3.17  |
| 07/27/00 | 11:16:10 | 208.7362 | 9.025 | 29.903 | 3.171 |
| 07/27/00 | 11:16:25 | 208.9862 | 9.023 | 29.905 | 3.173 |
| 07/27/00 | 11:16:40 | 209.2362 | 8.965 | 29.903 | 3.231 |
| 07/27/00 | 11:16:55 | 209.4862 | 8.963 | 29.903 | 3.233 |
| 07/27/00 | 11:17:10 | 209.7362 | 9.014 | 29.903 | 3.182 |
| 07/27/00 | 11:17:25 | 209.9862 | 9.03  | 29.903 | 3.166 |
| 07/27/00 | 11:17:40 | 210.2362 | 9.025 | 29.903 | 3.171 |
| 07/27/00 | 11:17:55 | 210.4862 | 9.022 | 29.903 | 3.174 |
| 07/27/00 | 11:18:10 | 210.7362 | 9.019 | 29.903 | 3.177 |
| 07/27/00 | 11:18:25 | 210.9862 | 9.019 | 29.903 | 3.177 |
| 07/27/00 | 11:18:40 | 211.2362 | 9.017 | 29.903 | 3.179 |
| 07/27/00 | 11:18:55 | 211.4862 | 9.016 | 29.901 | 3.18  |
| 07/27/00 | 11:19:10 | 211.7362 | 9.014 | 29.903 | 3.182 |
| 07/27/00 | 11:19:25 | 211.9862 | 9.013 | 29.901 | 3.183 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 11:19:40 | 212.2362 | 8.925 | 29.903 | 3.271 |
| 07/27/00 | 11:19:55 | 212.4862 | 8.909 | 29.903 | 3.287 |
| 07/27/00 | 11:20:10 | 212.7362 | 8.983 | 29.901 | 3.213 |
| 07/27/00 | 11:20:25 | 212.9862 | 9.02  | 29.903 | 3.176 |
| 07/27/00 | 11:20:40 | 213.2362 | 9.017 | 29.901 | 3.179 |
| 07/27/00 | 11:20:55 | 213.4862 | 9.014 | 29.901 | 3.182 |
| 07/27/00 | 11:21:10 | 213.7362 | 9.013 | 29.901 | 3.183 |
| 07/27/00 | 11:21:25 | 213.9862 | 9.012 | 29.901 | 3.184 |
| 07/27/00 | 11:21:40 | 214.2362 | 9.01  | 29.901 | 3.186 |
| 07/27/00 | 11:21:55 | 214.4862 | 9.01  | 29.901 | 3.186 |
| 07/27/00 | 11:22:10 | 214.7362 | 9.009 | 29.901 | 3.187 |
| 07/27/00 | 11:22:25 | 214.9862 | 9.006 | 29.903 | 3.19  |
| 07/27/00 | 11:22:40 | 215.2362 | 8.968 | 29.901 | 3.228 |
| 07/27/00 | 11:22:55 | 215.4862 | 8.947 | 29.901 | 3.249 |
| 07/27/00 | 11:23:10 | 215.7362 | 9     | 29.901 | 3.196 |
| 07/27/00 | 11:23:25 | 215.9862 | 9.003 | 29.901 | 3.193 |
| 07/27/00 | 11:23:40 | 216.2362 | 9.003 | 29.903 | 3.193 |
| 07/27/00 | 11:23:55 | 216.4862 | 9.001 | 29.901 | 3.195 |
| 07/27/00 | 11:24:10 | 216.7362 | 9.001 | 29.901 | 3.195 |
| 07/27/00 | 11:24:25 | 216.9862 | 9.001 | 29.901 | 3.195 |
| 07/27/00 | 11:24:40 | 217.2362 | 9     | 29.901 | 3.196 |
| 07/27/00 | 11:24:55 | 217.4862 | 9     | 29.901 | 3.196 |
| 07/27/00 | 11:25:10 | 217.7362 | 9     | 29.901 | 3.196 |
| 07/27/00 | 11:25:25 | 217.9862 | 8.999 | 29.901 | 3.197 |
| 07/27/00 | 11:25:40 | 218.2362 | 8.999 | 29.901 | 3.197 |
| 07/27/00 | 11:25:55 | 218.4862 | 8.917 | 29.903 | 3.279 |
| 07/27/00 | 11:26:10 | 218.7362 | 8.961 | 29.903 | 3.235 |
| 07/27/00 | 11:26:25 | 218.9862 | 9.001 | 29.903 | 3.195 |
| 07/27/00 | 11:26:40 | 219.2362 | 8.999 | 29.901 | 3.197 |
| 07/27/00 | 11:26:55 | 219.4862 | 8.996 | 29.901 | 3.2   |
| 07/27/00 | 11:27:10 | 219.7362 | 8.994 | 29.903 | 3.202 |
| 07/27/00 | 11:27:25 | 219.9862 | 8.993 | 29.903 | 3.203 |
| 07/27/00 | 11:27:40 | 220.2362 | 8.993 | 29.903 | 3.203 |
| 07/27/00 | 11:27:55 | 220.4862 | 8.991 | 29.901 | 3.205 |
| 07/27/00 | 11:28:10 | 220.7362 | 8.991 | 29.901 | 3.205 |
| 07/27/00 | 11:28:25 | 220.9862 | 8.99  | 29.901 | 3.206 |
| 07/27/00 | 11:28:40 | 221.2362 | 8.906 | 29.901 | 3.29  |
| 07/27/00 | 11:28:55 | 221.4862 | 8.961 | 29.903 | 3.235 |
| 07/27/00 | 11:29:10 | 221.7362 | 8.996 | 29.901 | 3.2   |
| 07/27/00 | 11:29:25 | 221.9862 | 8.994 | 29.901 | 3.202 |
| 07/27/00 | 11:29:40 | 222.2362 | 8.991 | 29.901 | 3.205 |
| 07/27/00 | 11:29:55 | 222.4862 | 8.99  | 29.901 | 3.206 |
| 07/27/00 | 11:30:10 | 222.7362 | 8.989 | 29.901 | 3.207 |
| 07/27/00 | 11:30:25 | 222.9862 | 8.989 | 29.901 | 3.207 |
| 07/27/00 | 11:30:40 | 223.2362 | 8.987 | 29.901 | 3.209 |
| 07/27/00 | 11:30:55 | 223.4862 | 8.971 | 29.899 | 3.225 |
| 07/27/00 | 11:31:10 | 223.7362 | 8.911 | 29.901 | 3.285 |
| 07/27/00 | 11:31:25 | 223.9862 | 8.968 | 29.901 | 3.228 |
| 07/27/00 | 11:31:40 | 224.2362 | 8.978 | 29.901 | 3.218 |
| 07/27/00 | 11:31:55 | 224.4862 | 8.978 | 29.901 | 3.218 |
| 07/27/00 | 11:32:10 | 224.7362 | 8.978 | 29.901 | 3.218 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 11:32:25 | 224.9862 | 8.978 | 29.899 | 3.218 |
| 07/27/00 | 11:32:40 | 225.2362 | 8.978 | 29.901 | 3.218 |
| 07/27/00 | 11:32:55 | 225.4862 | 8.978 | 29.901 | 3.218 |
| 07/27/00 | 11:33:10 | 225.7362 | 8.977 | 29.903 | 3.219 |
| 07/27/00 | 11:33:25 | 225.9862 | 8.978 | 29.901 | 3.218 |
| 07/27/00 | 11:33:40 | 226.2362 | 8.977 | 29.901 | 3.219 |
| 07/27/00 | 11:33:55 | 226.4862 | 8.977 | 29.901 | 3.219 |
| 07/27/00 | 11:34:10 | 226.7362 | 8.977 | 29.899 | 3.219 |
| 07/27/00 | 11:34:25 | 226.9862 | 8.977 | 29.903 | 3.219 |
| 07/27/00 | 11:34:40 | 227.2362 | 8.934 | 29.901 | 3.262 |
| 07/27/00 | 11:34:55 | 227.4862 | 8.921 | 29.901 | 3.275 |
| 07/27/00 | 11:35:10 | 227.7362 | 8.925 | 29.903 | 3.271 |
| 07/27/00 | 11:35:25 | 227.9862 | 8.947 | 29.903 | 3.249 |
| 07/27/00 | 11:35:40 | 228.2362 | 8.98  | 29.901 | 3.216 |
| 07/27/00 | 11:35:55 | 228.4862 | 9.004 | 29.901 | 3.192 |
| 07/27/00 | 11:36:10 | 228.7362 | 9     | 29.903 | 3.196 |
| 07/27/00 | 11:36:25 | 228.9862 | 8.996 | 29.901 | 3.2   |
| 07/27/00 | 11:36:40 | 229.2362 | 8.993 | 29.901 | 3.203 |
| 07/27/00 | 11:36:55 | 229.4862 | 8.989 | 29.901 | 3.207 |
| 07/27/00 | 11:37:10 | 229.7362 | 8.987 | 29.901 | 3.209 |
| 07/27/00 | 11:37:25 | 229.9862 | 8.986 | 29.901 | 3.21  |
| 07/27/00 | 11:37:40 | 230.2362 | 8.984 | 29.901 | 3.212 |
| 07/27/00 | 11:37:55 | 230.4862 | 8.981 | 29.901 | 3.215 |
| 07/27/00 | 11:38:10 | 230.7362 | 8.98  | 29.901 | 3.216 |
| 07/27/00 | 11:38:25 | 230.9862 | 8.974 | 29.901 | 3.222 |
| 07/27/00 | 11:38:40 | 231.2362 | 8.918 | 29.901 | 3.278 |
| 07/27/00 | 11:38:55 | 231.4862 | 8.964 | 29.899 | 3.232 |
| 07/27/00 | 11:39:10 | 231.7362 | 8.993 | 29.901 | 3.203 |
| 07/27/00 | 11:39:25 | 231.9862 | 8.989 | 29.899 | 3.207 |
| 07/27/00 | 11:39:40 | 232.2362 | 8.987 | 29.901 | 3.209 |
| 07/27/00 | 11:39:55 | 232.4862 | 8.981 | 29.899 | 3.215 |
| 07/27/00 | 11:40:10 | 232.7362 | 8.981 | 29.899 | 3.215 |
| 07/27/00 | 11:40:25 | 232.9862 | 8.98  | 29.901 | 3.216 |
| 07/27/00 | 11:40:40 | 233.2362 | 8.978 | 29.899 | 3.218 |
| 07/27/00 | 11:40:55 | 233.4862 | 8.976 | 29.899 | 3.22  |
| 07/27/00 | 11:41:10 | 233.7362 | 8.976 | 29.899 | 3.22  |
| 07/27/00 | 11:41:25 | 233.9862 | 8.974 | 29.899 | 3.222 |
| 07/27/00 | 11:41:40 | 234.2362 | 8.973 | 29.899 | 3.223 |
| 07/27/00 | 11:41:55 | 234.4862 | 8.973 | 29.899 | 3.223 |
| 07/27/00 | 11:42:10 | 234.7362 | 8.974 | 29.899 | 3.222 |
| 07/27/00 | 11:42:25 | 234.9862 | 8.973 | 29.899 | 3.223 |
| 07/27/00 | 11:42:40 | 235.2362 | 8.957 | 29.899 | 3.239 |
| 07/27/00 | 11:42:55 | 235.4862 | 8.891 | 29.899 | 3.305 |
| 07/27/00 | 11:43:10 | 235.7362 | 8.958 | 29.897 | 3.238 |
| 07/27/00 | 11:43:25 | 235.9862 | 8.98  | 29.899 | 3.216 |
| 07/27/00 | 11:43:40 | 236.2362 | 8.977 | 29.899 | 3.219 |
| 07/27/00 | 11:43:55 | 236.4862 | 8.976 | 29.899 | 3.22  |
| 07/27/00 | 11:44:10 | 236.7362 | 8.974 | 29.899 | 3.222 |
| 07/27/00 | 11:44:25 | 236.9862 | 8.973 | 29.899 | 3.223 |
| 07/27/00 | 11:44:40 | 237.2362 | 8.971 | 29.899 | 3.225 |
| 07/27/00 | 11:44:55 | 237.4862 | 8.971 | 29.899 | 3.225 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 11:45:10 | 237.7362 | 8.971 | 29.899 | 3.225 |
| 07/27/00 | 11:45:25 | 237.9862 | 8.971 | 29.899 | 3.225 |
| 07/27/00 | 11:45:40 | 238.2362 | 8.971 | 29.899 | 3.225 |
| 07/27/00 | 11:45:55 | 238.4862 | 8.954 | 29.901 | 3.242 |
| 07/27/00 | 11:46:10 | 238.7362 | 8.932 | 29.901 | 3.264 |
| 07/27/00 | 11:46:25 | 238.9862 | 8.944 | 29.899 | 3.252 |
| 07/27/00 | 11:46:40 | 239.2362 | 8.994 | 29.899 | 3.202 |
| 07/27/00 | 11:46:55 | 239.4862 | 8.997 | 29.899 | 3.199 |
| 07/27/00 | 11:47:10 | 239.7362 | 8.99  | 29.899 | 3.206 |
| 07/27/00 | 11:47:25 | 239.9862 | 8.986 | 29.899 | 3.21  |
| 07/27/00 | 11:47:40 | 240.2362 | 8.983 | 29.899 | 3.213 |
| 07/27/00 | 11:47:55 | 240.4862 | 8.978 | 29.899 | 3.218 |
| 07/27/00 | 11:48:10 | 240.7362 | 8.977 | 29.897 | 3.219 |
| 07/27/00 | 11:48:25 | 240.9862 | 8.976 | 29.897 | 3.22  |
| 07/27/00 | 11:48:40 | 241.2362 | 8.974 | 29.897 | 3.222 |
| 07/27/00 | 11:48:55 | 241.4862 | 8.97  | 29.897 | 3.226 |
| 07/27/00 | 11:49:10 | 241.7362 | 8.921 | 29.899 | 3.275 |
| 07/27/00 | 11:49:25 | 241.9862 | 8.967 | 29.897 | 3.229 |
| 07/27/00 | 11:49:40 | 242.2362 | 8.968 | 29.899 | 3.228 |
| 07/27/00 | 11:49:55 | 242.4862 | 8.967 | 29.897 | 3.229 |
| 07/27/00 | 11:50:10 | 242.7362 | 8.965 | 29.895 | 3.231 |
| 07/27/00 | 11:50:25 | 242.9862 | 8.964 | 29.899 | 3.232 |
| 07/27/00 | 11:50:40 | 243.2362 | 8.964 | 29.897 | 3.232 |
| 07/27/00 | 11:50:55 | 243.4862 | 8.963 | 29.897 | 3.233 |
| 07/27/00 | 11:51:10 | 243.7362 | 8.963 | 29.897 | 3.233 |
| 07/27/00 | 11:51:25 | 243.9862 | 8.963 | 29.897 | 3.233 |
| 07/27/00 | 11:51:40 | 244.2362 | 8.963 | 29.895 | 3.233 |
| 07/27/00 | 11:51:55 | 244.4862 | 8.963 | 29.899 | 3.233 |
| 07/27/00 | 11:52:10 | 244.7362 | 8.964 | 29.897 | 3.232 |
| 07/27/00 | 11:52:25 | 244.9862 | 8.963 | 29.897 | 3.233 |
| 07/27/00 | 11:52:40 | 245.2362 | 8.963 | 29.899 | 3.233 |
| 07/27/00 | 11:52:55 | 245.4862 | 8.963 | 29.897 | 3.233 |
| 07/27/00 | 11:53:10 | 245.7362 | 8.961 | 29.897 | 3.235 |
| 07/27/00 | 11:53:25 | 245.9862 | 8.895 | 29.895 | 3.301 |
| 07/27/00 | 11:53:40 | 246.2362 | 8.934 | 29.899 | 3.262 |
| 07/27/00 | 11:53:55 | 246.4862 | 8.964 | 29.897 | 3.232 |
| 07/27/00 | 11:54:10 | 246.7362 | 8.914 | 29.895 | 3.282 |
| 07/27/00 | 11:54:25 | 246.9862 | 8.883 | 29.897 | 3.313 |
| 07/27/00 | 11:54:40 | 247.2362 | 8.945 | 29.897 | 3.251 |
| 07/27/00 | 11:54:55 | 247.4862 | 8.97  | 29.895 | 3.226 |
| 07/27/00 | 11:55:10 | 247.7362 | 8.872 | 29.895 | 3.324 |
| 07/27/00 | 11:55:25 | 247.9862 | 8.917 | 29.899 | 3.279 |
| 07/27/00 | 11:55:40 | 248.2362 | 8.971 | 29.897 | 3.225 |
| 07/27/00 | 11:55:55 | 248.4862 | 8.994 | 29.897 | 3.202 |
| 07/27/00 | 11:56:10 | 248.7362 | 8.99  | 29.897 | 3.206 |
| 07/27/00 | 11:56:25 | 248.9862 | 8.984 | 29.897 | 3.212 |
| 07/27/00 | 11:56:40 | 249.2362 | 8.978 | 29.897 | 3.218 |
| 07/27/00 | 11:56:55 | 249.4862 | 8.976 | 29.897 | 3.22  |
| 07/27/00 | 11:57:10 | 249.7362 | 8.971 | 29.895 | 3.225 |
| 07/27/00 | 11:57:25 | 249.9862 | 8.968 | 29.897 | 3.228 |
| 07/27/00 | 11:57:40 | 250.2362 | 8.967 | 29.897 | 3.229 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 11:57:55 | 250.4862 | 8.965 | 29.897 | 3.231 |
| 07/27/00 | 11:58:10 | 250.7362 | 8.963 | 29.895 | 3.233 |
| 07/27/00 | 11:58:25 | 250.9862 | 8.961 | 29.897 | 3.235 |
| 07/27/00 | 11:58:40 | 251.2362 | 8.96  | 29.895 | 3.236 |
| 07/27/00 | 11:58:55 | 251.4862 | 8.958 | 29.897 | 3.238 |
| 07/27/00 | 11:59:10 | 251.7362 | 8.958 | 29.895 | 3.238 |
| 07/27/00 | 11:59:25 | 251.9862 | 8.958 | 29.895 | 3.238 |
| 07/27/00 | 11:59:40 | 252.2362 | 8.909 | 29.895 | 3.287 |
| 07/27/00 | 11:59:55 | 252.4862 | 8.918 | 29.897 | 3.278 |
| 07/27/00 | 12:00:10 | 252.7362 | 8.948 | 29.897 | 3.248 |
| 07/27/00 | 12:00:25 | 252.9862 | 8.948 | 29.895 | 3.248 |
| 07/27/00 | 12:00:40 | 253.2362 | 8.948 | 29.895 | 3.248 |
| 07/27/00 | 12:00:55 | 253.4862 | 8.935 | 29.895 | 3.261 |
| 07/27/00 | 12:01:10 | 253.7362 | 8.948 | 29.895 | 3.248 |
| 07/27/00 | 12:01:25 | 253.9862 | 8.948 | 29.895 | 3.248 |
| 07/27/00 | 12:01:40 | 254.2362 | 8.947 | 29.897 | 3.249 |
| 07/27/00 | 12:01:55 | 254.4862 | 8.947 | 29.895 | 3.249 |
| 07/27/00 | 12:02:10 | 254.7362 | 8.922 | 29.895 | 3.274 |
| 07/27/00 | 12:02:25 | 254.9862 | 8.882 | 29.893 | 3.314 |
| 07/27/00 | 12:02:40 | 255.2362 | 8.945 | 29.895 | 3.251 |
| 07/27/00 | 12:02:55 | 255.4862 | 8.973 | 29.895 | 3.223 |
| 07/27/00 | 12:03:10 | 255.7362 | 8.965 | 29.893 | 3.231 |
| 07/27/00 | 12:03:25 | 255.9862 | 8.967 | 29.895 | 3.229 |
| 07/27/00 | 12:03:40 | 256.2362 | 8.964 | 29.895 | 3.232 |
| 07/27/00 | 12:03:55 | 256.4862 | 8.963 | 29.895 | 3.233 |
| 07/27/00 | 12:04:10 | 256.7362 | 8.961 | 29.893 | 3.235 |
| 07/27/00 | 12:04:25 | 256.9862 | 8.96  | 29.893 | 3.236 |
| 07/27/00 | 12:04:40 | 257.2362 | 8.958 | 29.893 | 3.238 |
| 07/27/00 | 12:04:55 | 257.4862 | 8.957 | 29.893 | 3.239 |
| 07/27/00 | 12:05:10 | 257.7362 | 8.922 | 29.893 | 3.274 |
| 07/27/00 | 12:05:25 | 257.9862 | 8.901 | 29.893 | 3.295 |
| 07/27/00 | 12:05:40 | 258.2362 | 8.917 | 29.891 | 3.279 |
| 07/27/00 | 12:05:55 | 258.4862 | 8.906 | 29.893 | 3.29  |
| 07/27/00 | 12:06:10 | 258.7362 | 8.888 | 29.893 | 3.308 |
| 07/27/00 | 12:06:25 | 258.9862 | 8.876 | 29.893 | 3.32  |
| 07/27/00 | 12:06:40 | 259.2362 | 8.865 | 29.893 | 3.331 |
| 07/27/00 | 12:06:55 | 259.4862 | 8.855 | 29.891 | 3.341 |
| 07/27/00 | 12:07:10 | 259.7362 | 8.845 | 29.893 | 3.351 |
| 07/27/00 | 12:07:25 | 259.9862 | 8.837 | 29.893 | 3.359 |
| 07/27/00 | 12:07:40 | 260.2362 | 8.829 | 29.893 | 3.367 |
| 07/27/00 | 12:07:55 | 260.4862 | 8.824 | 29.893 | 3.372 |
| 07/27/00 | 12:08:10 | 260.7362 | 8.819 | 29.893 | 3.377 |
| 07/27/00 | 12:08:25 | 260.9862 | 8.814 | 29.893 | 3.382 |
| 07/27/00 | 12:08:40 | 261.2362 | 8.81  | 29.893 | 3.386 |
| 07/27/00 | 12:08:55 | 261.4862 | 8.806 | 29.895 | 3.39  |
| 07/27/00 | 12:09:10 | 261.7362 | 8.801 | 29.895 | 3.395 |
| 07/27/00 | 12:09:25 | 261.9862 | 8.8   | 29.895 | 3.396 |
| 07/27/00 | 12:09:40 | 262.2362 | 8.797 | 29.895 | 3.399 |
| 07/27/00 | 12:09:55 | 262.4862 | 8.796 | 29.893 | 3.4   |
| 07/27/00 | 12:10:10 | 262.7362 | 8.794 | 29.895 | 3.402 |
| 07/27/00 | 12:10:25 | 262.9862 | 8.791 | 29.893 | 3.405 |

**Appendix B (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/27/00 | 12:10:40 | 263.2362 | 8.79  | 29.893 | 3.406 |
| 07/27/00 | 12:10:55 | 263.4862 | 8.788 | 29.893 | 3.408 |
| 07/27/00 | 12:11:10 | 263.7362 | 8.788 | 29.893 | 3.408 |
| 07/27/00 | 12:11:25 | 263.9862 | 8.787 | 29.895 | 3.409 |
| 07/27/00 | 12:11:40 | 264.2362 | 8.787 | 29.895 | 3.409 |
| 07/27/00 | 12:11:55 | 264.4862 | 8.785 | 29.895 | 3.411 |
| 07/27/00 | 12:12:10 | 264.7362 | 8.783 | 29.893 | 3.413 |
| 07/27/00 | 12:12:25 | 264.9862 | 8.752 | 29.893 | 3.444 |
| 07/27/00 | 12:12:40 | 265.2362 | 8.751 | 29.893 | 3.445 |
| 07/27/00 | 12:12:55 | 265.4862 | 8.796 | 29.893 | 3.4   |
| 07/27/00 | 12:13:10 | 265.7362 | 8.814 | 29.893 | 3.382 |
| 07/27/00 | 12:13:25 | 265.9862 | 8.813 | 29.891 | 3.383 |
| 07/27/00 | 12:13:40 | 266.2362 | 8.804 | 29.893 | 3.392 |
| 07/27/00 | 12:13:55 | 266.4862 | 8.798 | 29.891 | 3.398 |
| 07/27/00 | 12:14:10 | 266.7362 | 8.794 | 29.891 | 3.402 |
| 07/27/00 | 12:14:25 | 266.9862 | 8.79  | 29.891 | 3.406 |
| 07/27/00 | 12:14:40 | 267.2362 | 8.785 | 29.893 | 3.411 |
| 07/27/00 | 12:14:55 | 267.4862 | 8.784 | 29.893 | 3.412 |
| 07/27/00 | 12:15:10 | 267.7362 | 8.781 | 29.893 | 3.415 |
| 07/27/00 | 12:15:25 | 267.9862 | 8.778 | 29.891 | 3.418 |
| 07/27/00 | 12:15:40 | 268.2362 | 8.775 | 29.893 | 3.421 |
| 07/27/00 | 12:15:55 | 268.4862 | 8.775 | 29.891 | 3.421 |
| 07/27/00 | 12:16:10 | 268.7362 | 8.773 | 29.891 | 3.423 |
| 07/27/00 | 12:16:25 | 268.9862 | 8.771 | 29.891 | 3.425 |
| 07/27/00 | 12:16:40 | 269.2362 | 8.767 | 29.891 | 3.429 |
| 07/27/00 | 12:16:55 | 269.4862 | 8.77  | 29.888 | 3.426 |
| 07/27/00 | 12:17:10 | 269.7362 | 8.765 | 29.891 | 3.431 |
| 07/27/00 | 12:17:25 | 269.9862 | 8.765 | 29.891 | 3.431 |
| 07/27/00 | 12:17:40 | 270.2362 | 8.764 | 29.891 | 3.432 |
| 07/27/00 | 12:17:55 | 270.4862 | 8.764 | 29.891 | 3.432 |
| 07/27/00 | 12:18:10 | 270.7362 | 8.764 | 29.891 | 3.432 |
| 07/27/00 | 12:18:25 | 270.9862 | 8.762 | 29.891 | 3.434 |
| 07/27/00 | 12:18:40 | 271.2362 | 8.762 | 29.891 | 3.434 |
| 07/27/00 | 12:18:55 | 271.4862 | 8.762 | 29.888 | 3.434 |
| 07/27/00 | 12:19:10 | 271.7362 | 8.721 | 29.891 | 3.475 |
| 07/27/00 | 12:19:25 | 271.9862 | 8.715 | 29.891 | 3.481 |
| 07/27/00 | 12:19:40 | 272.2362 | 8.737 | 29.891 | 3.459 |
| 07/27/00 | 12:19:55 | 272.4862 | 8.809 | 29.891 | 3.387 |
| 07/27/00 | 12:20:10 | 272.7362 | 8.875 | 29.888 | 3.321 |
| 07/27/00 | 12:20:25 | 272.9862 | 8.872 | 29.891 | 3.324 |
| 07/27/00 | 12:20:40 | 273.2362 | 8.901 | 29.888 | 3.295 |
| 07/27/00 | 12:20:55 | 273.4862 | 8.902 | 29.891 | 3.294 |
| 07/27/00 | 12:21:10 | 273.7362 | 8.904 | 29.888 | 3.292 |
| 07/27/00 | 12:21:25 | 273.9862 | 8.904 | 29.888 | 3.292 |
| 07/27/00 | 12:21:40 | 274.2362 | 8.904 | 29.891 | 3.292 |
| 07/27/00 | 12:21:55 | 274.4862 | 8.905 | 29.891 | 3.291 |
| 07/27/00 | 12:22:10 | 274.7362 | 8.905 | 29.888 | 3.291 |
| 07/27/00 | 12:22:25 | 274.9862 | 8.905 | 29.888 | 3.291 |
| 07/27/00 | 12:22:40 | 275.2362 | 8.904 | 29.888 | 3.292 |
| 07/27/00 | 12:22:55 | 275.4862 | 8.918 | 29.891 | 3.278 |
| 07/27/00 | 12:23:10 | 275.7362 | 8.915 | 29.891 | 3.281 |



**Appendix B (continued)**

|          |          |          |        |        |       |
|----------|----------|----------|--------|--------|-------|
| 07/27/00 | 12:23:25 | 275.9862 | 8.914  | 29.891 | 3.282 |
| 07/27/00 | 12:23:40 | 276.2362 | 8.912  | 29.888 | 3.284 |
| 07/27/00 | 12:23:55 | 276.4862 | 8.912  | 29.888 | 3.284 |
| 07/27/00 | 12:24:10 | 276.7362 | 8.912  | 29.888 | 3.284 |
| 07/27/00 | 12:24:25 | 276.9862 | 8.911  | 29.888 | 3.285 |
| 07/27/00 | 12:24:40 | 277.2362 | 8.919  | 29.888 | 3.277 |
| 07/27/00 | 12:24:55 | 277.4862 | 8.918  | 29.888 | 3.278 |
| 07/27/00 | 12:25:10 | 277.7362 | 8.915  | 29.888 | 3.281 |
| 07/27/00 | 12:25:25 | 277.9862 | 8.915  | 29.888 | 3.281 |
| 07/27/00 | 12:25:40 | 278.2362 | 8.914  | 29.886 | 3.282 |
| 07/27/00 | 12:25:55 | 278.4862 | 8.924  | 29.886 | 3.272 |
| 07/27/00 | 12:26:10 | 278.7362 | 8.921  | 29.886 | 3.275 |
| 07/27/00 | 12:26:25 | 278.9862 | 8.918  | 29.888 | 3.278 |
| 07/27/00 | 12:26:40 | 279.2362 | 8.917  | 29.886 | 3.279 |
| 07/27/00 | 12:26:55 | 279.4862 | 8.921  | 29.886 | 3.275 |
| 07/27/00 | 12:27:10 | 279.7362 | 8.924  | 29.886 | 3.272 |
| 07/27/00 | 12:27:25 | 279.9862 | 8.921  | 29.884 | 3.275 |
| 07/27/00 | 12:27:40 | 280.2362 | 8.918  | 29.886 | 3.278 |
| 07/27/00 | 12:27:55 | 280.4862 | 8.917  | 29.884 | 3.279 |
| 07/27/00 | 12:28:10 | 280.7362 | 8.922  | 29.884 | 3.274 |
| 07/27/00 | 12:28:25 | 280.9862 | 8.927  | 29.886 | 3.269 |
| 07/27/00 | 12:28:40 | 281.2362 | 8.924  | 29.884 | 3.272 |
| 07/27/00 | 12:28:55 | 281.4862 | 8.922  | 29.884 | 3.274 |
| 07/27/00 | 12:29:10 | 281.7362 | 8.929  | 29.882 | 3.267 |
| 07/27/00 | 12:29:25 | 281.9862 | 8.928  | 29.882 | 3.268 |
| 07/27/00 | 12:29:40 | 282.2362 | 8.925  | 29.882 | 3.271 |
| 07/27/00 | 12:29:55 | 282.4862 | 8.929  | 29.882 | 3.267 |
| 07/27/00 | 12:30:10 | 282.7362 | 8.934  | 29.882 | 3.262 |
| 07/27/00 | 12:30:25 | 282.9862 | 8.932  | 29.882 | 3.264 |
| 07/27/00 | 12:30:40 | 283.2362 | 8.863  | 29.882 | 3.333 |
| 07/27/00 | 12:30:55 | 283.4862 | 8.765  | 29.88  | 3.431 |
| 07/27/00 | 12:31:10 | 283.7362 | 8.715  | 29.88  | 3.481 |
| 07/27/00 | 12:31:25 | 283.9862 | 8.711  | 29.88  | 3.485 |
| 07/27/00 | 12:31:40 | 284.2362 | 9.235  | 29.882 | 2.961 |
| 07/27/00 | 12:31:55 | 284.4862 | 9.734  | 29.88  | 2.462 |
| 07/27/00 | 12:32:10 | 284.7362 | 9.896  | 29.88  | 2.3   |
| 07/27/00 | 12:32:25 | 284.9862 | 10.03  | 29.882 | 2.166 |
| 07/27/00 | 12:32:40 | 285.2362 | 10.145 | 29.882 | 2.051 |
| 07/27/00 | 12:32:55 | 285.4862 | 10.249 | 29.88  | 1.947 |
| 07/27/00 | 12:33:10 | 285.7362 | 10.341 | 29.882 | 1.855 |
| 07/27/00 | 12:33:25 | 285.9862 | 10.42  | 29.88  | 1.776 |
| 07/27/00 | 12:33:40 | 286.2362 | 10.493 | 29.882 | 1.703 |
| 07/27/00 | 12:33:55 | 286.4862 | 10.557 | 29.88  | 1.639 |
| 07/27/00 | 12:34:10 | 286.7362 | 10.616 | 29.88  | 1.58  |
| 07/27/00 | 12:34:25 | 286.9862 | 10.669 | 29.878 | 1.527 |
| 07/27/00 | 12:34:40 | 287.2362 | 10.717 | 29.88  | 1.479 |
| 07/27/00 | 12:34:55 | 287.4862 | 10.76  | 29.88  | 1.436 |
| 07/27/00 | 12:35:10 | 287.7362 | 10.799 | 29.88  | 1.397 |
| 07/27/00 | 12:35:25 | 287.9862 | 10.836 | 29.878 | 1.36  |
| 07/27/00 | 12:35:40 | 288.2362 | 10.871 | 29.88  | 1.325 |
| 07/27/00 | 12:35:55 | 288.4862 | 10.901 | 29.878 | 1.295 |

**Appendix B (continued)**

|          |          |          |        |        |       |
|----------|----------|----------|--------|--------|-------|
| 07/27/00 | 12:36:10 | 288.7362 | 10.931 | 29.878 | 1.265 |
| 07/27/00 | 12:36:25 | 288.9862 | 10.962 | 29.88  | 1.234 |
| 07/27/00 | 12:36:40 | 289.2362 | 10.988 | 29.88  | 1.208 |
| 07/27/00 | 12:36:55 | 289.4862 | 11.012 | 29.878 | 1.184 |
| 07/27/00 | 12:37:10 | 289.7362 | 11.037 | 29.88  | 1.159 |
| 07/27/00 | 12:37:25 | 289.9862 | 11.058 | 29.878 | 1.138 |
| 07/27/00 | 12:37:40 | 290.2362 | 11.08  | 29.876 | 1.116 |
| 07/27/00 | 12:37:55 | 290.4862 | 11.098 | 29.876 | 1.098 |
| 07/27/00 | 12:38:10 | 290.7362 | 11.119 | 29.878 | 1.077 |
| 07/27/00 | 12:38:25 | 290.9862 | 11.136 | 29.878 | 1.06  |
| 07/27/00 | 12:38:40 | 291.2362 | 11.155 | 29.876 | 1.041 |
| 07/27/00 | 12:38:55 | 291.4862 | 11.172 | 29.876 | 1.024 |
| 07/27/00 | 12:39:10 | 291.7362 | 11.186 | 29.878 | 1.01  |
| 07/27/00 | 12:39:25 | 291.9862 | 11.204 | 29.878 | 0.992 |
| 07/27/00 | 12:39:40 | 292.2362 | 11.217 | 29.878 | 0.979 |
| 07/27/00 | 12:39:55 | 292.4862 | 11.231 | 29.878 | 0.965 |
| 07/27/00 | 12:40:10 | 292.7362 | 11.247 | 29.878 | 0.949 |
| 07/27/00 | 12:40:25 | 292.9862 | 11.258 | 29.878 | 0.938 |
| 07/27/00 | 12:40:40 | 293.2362 | 11.27  | 29.88  | 0.926 |
| 07/27/00 | 12:40:55 | 293.4862 | 11.284 | 29.878 | 0.912 |
| 07/27/00 | 12:41:10 | 293.7362 | 11.294 | 29.878 | 0.902 |
| 07/27/00 | 12:41:25 | 293.9862 | 11.306 | 29.876 | 0.89  |
| 07/27/00 | 12:41:40 | 294.2362 | 11.317 | 29.878 | 0.879 |
| 07/27/00 | 12:41:55 | 294.4862 | 11.329 | 29.878 | 0.867 |
| 07/27/00 | 12:42:10 | 294.7362 | 11.339 | 29.876 | 0.857 |
| 07/27/00 | 12:42:25 | 294.9862 | 11.349 | 29.876 | 0.847 |
| 07/27/00 | 12:42:40 | 295.2362 | 11.358 | 29.876 | 0.838 |
| 07/27/00 | 12:42:55 | 295.4862 | 11.369 | 29.876 | 0.827 |
| 07/27/00 | 12:43:10 | 295.7362 | 11.378 | 29.876 | 0.818 |
| 07/27/00 | 12:43:25 | 295.9862 | 11.387 | 29.876 | 0.809 |
| 07/27/00 | 12:43:40 | 296.2362 | 11.394 | 29.876 | 0.802 |
| 07/27/00 | 12:43:55 | 296.4862 | 11.404 | 29.876 | 0.792 |
| 07/27/00 | 12:44:10 | 296.7362 | 11.413 | 29.876 | 0.783 |
| 07/27/00 | 12:44:25 | 296.9862 | 11.42  | 29.876 | 0.776 |
| 07/27/00 | 12:44:40 | 297.2362 | 11.427 | 29.876 | 0.769 |
| 07/27/00 | 12:44:55 | 297.4862 | 11.434 | 29.876 | 0.762 |
| 07/27/00 | 12:45:10 | 297.7362 | 11.441 | 29.876 | 0.755 |
| 07/27/00 | 12:45:25 | 297.9862 | 11.45  | 29.874 | 0.746 |
| 07/27/00 | 12:45:40 | 298.2362 | 11.457 | 29.876 | 0.739 |
| 07/27/00 | 12:45:55 | 298.4862 | 11.464 | 29.878 | 0.732 |
| 07/27/00 | 12:46:10 | 298.7362 | 11.472 | 29.874 | 0.724 |
| 07/27/00 | 12:46:25 | 298.9862 | 11.479 | 29.874 | 0.717 |
| 07/27/00 | 12:46:40 | 299.2362 | 11.485 | 29.874 | 0.711 |
| 07/27/00 | 12:46:55 | 299.4862 | 11.493 | 29.874 | 0.703 |
| 07/27/00 | 12:47:10 | 299.7362 | 11.499 | 29.874 | 0.697 |
| 07/27/00 | 12:47:25 | 299.9862 | 11.505 | 29.874 | 0.691 |
| 07/27/00 | 12:47:40 | 300.2362 | 11.51  | 29.874 | 0.686 |
| 07/27/00 | 12:47:55 | 300.4862 | 11.516 | 29.874 | 0.68  |
| 07/27/00 | 12:48:10 | 300.7362 | 11.522 | 29.872 | 0.674 |
| 07/27/00 | 12:48:25 | 300.9862 | 11.528 | 29.874 | 0.668 |
| 07/27/00 | 12:48:40 | 301.2362 | 11.535 | 29.874 | 0.661 |

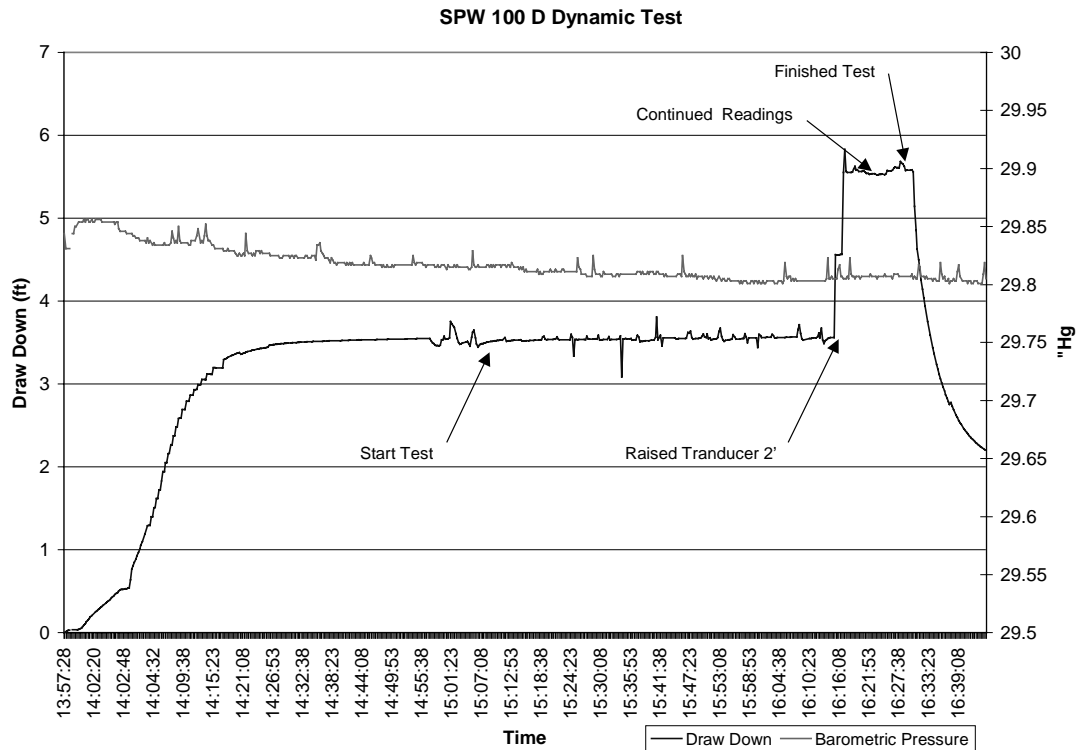
**Appendix B (continued)**

|          |          |          |        |        |       |
|----------|----------|----------|--------|--------|-------|
| 07/27/00 | 12:48:55 | 301.4862 | 11.539 | 29.874 | 0.657 |
| 07/27/00 | 12:49:10 | 301.7362 | 11.545 | 29.872 | 0.651 |
| 07/27/00 | 12:49:25 | 301.9862 | 11.551 | 29.874 | 0.645 |
| 07/27/00 | 12:49:40 | 302.2362 | 11.555 | 29.874 | 0.641 |
| 07/27/00 | 12:49:55 | 302.4862 | 11.559 | 29.872 | 0.637 |
| 07/27/00 | 12:50:10 | 302.7362 | 11.565 | 29.874 | 0.631 |
| 07/27/00 | 12:50:25 | 302.9862 | 11.57  | 29.874 | 0.626 |
| 07/27/00 | 12:50:40 | 303.2362 | 11.575 | 29.874 | 0.621 |
| 07/27/00 | 12:50:55 | 303.4862 | 11.58  | 29.872 | 0.616 |
| 07/27/00 | 12:51:10 | 303.7362 | 11.584 | 29.872 | 0.612 |
| 07/27/00 | 12:51:25 | 303.9862 | 11.585 | 29.886 | 0.611 |
| 07/27/00 | 12:51:40 | 304.2362 | 11.59  | 29.886 | 0.606 |
| 07/27/00 | 12:51:55 | 304.4862 | 11.597 | 29.876 | 0.599 |
| 07/27/00 | 12:52:10 | 304.7362 | 11.601 | 29.874 | 0.595 |
| 07/27/00 | 12:52:25 | 304.9862 | 11.606 | 29.872 | 0.59  |
| 07/27/00 | 12:52:40 | 305.2362 | 11.61  | 29.872 | 0.586 |
| 07/27/00 | 12:52:55 | 305.4862 | 11.613 | 29.872 | 0.583 |
| 07/27/00 | 12:53:10 | 305.7362 | 11.619 | 29.872 | 0.577 |
| 07/27/00 | 12:53:25 | 305.9862 | 11.624 | 29.872 | 0.572 |
| 07/27/00 | 12:53:40 | 306.2362 | 11.627 | 29.872 | 0.569 |
| 07/27/00 | 12:53:55 | 306.4862 | 11.631 | 29.87  | 0.565 |
| 07/27/00 | 12:54:10 | 306.7362 | 11.634 | 29.872 | 0.562 |
| 07/27/00 | 12:54:25 | 306.9862 | 11.639 | 29.872 | 0.557 |
| 07/27/00 | 12:54:40 | 307.2362 | 11.643 | 29.872 | 0.553 |
| 07/27/00 | 12:54:55 | 307.4862 | 11.644 | 29.874 | 0.552 |
| 07/27/00 | 12:55:10 | 307.7362 | 11.649 | 29.872 | 0.547 |
| 07/27/00 | 12:55:25 | 307.9862 | 11.653 | 29.872 | 0.543 |
| 07/27/00 | 12:55:40 | 308.2362 | 11.656 | 29.872 | 0.54  |
| 07/27/00 | 12:55:55 | 308.4862 | 11.662 | 29.87  | 0.534 |
| 07/27/00 | 12:56:10 | 308.7362 | 11.666 | 29.874 | 0.53  |
| 07/27/00 | 12:56:25 | 308.9862 | 11.668 | 29.872 | 0.528 |
| 07/27/00 | 12:56:40 | 309.2362 | 11.672 | 29.87  | 0.524 |
| 07/27/00 | 12:56:55 | 309.4862 | 11.675 | 29.872 | 0.521 |
| 07/27/00 | 12:57:10 | 309.7362 | 11.678 | 29.87  | 0.518 |
| 07/27/00 | 12:57:25 | 309.9862 | 11.682 | 29.868 | 0.514 |
| 07/27/00 | 12:57:40 | 310.2362 | 11.685 | 29.87  | 0.511 |
| 07/27/00 | 12:57:55 | 310.4862 | 11.688 | 29.87  | 0.508 |
| 07/27/00 | 12:58:10 | 310.7362 | 11.691 | 29.87  | 0.505 |
| 07/27/00 | 12:58:25 | 310.9862 | 11.693 | 29.87  | 0.503 |
| 07/27/00 | 12:58:40 | 311.2362 | 11.696 | 29.87  | 0.5   |
| 07/27/00 | 12:58:55 | 311.4862 | 11.701 | 29.87  | 0.495 |
| 07/27/00 | 12:59:10 | 311.7362 | 11.704 | 29.87  | 0.492 |

**Appendix B (continued)**

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## Appendix C – Time-drawdown data for SWP-100D



### Back Ground

| Date     | Time     | ET (min) | Feet H2O | Inches Hg | FT Drawdown |
|----------|----------|----------|----------|-----------|-------------|
| 07/25/00 | 13:57:28 | 0        | 6.496    | 29.844    | 0           |
| 07/25/00 | 13:58:28 | 1        | 6.485    | 29.831    | 0.011       |
| 07/25/00 | 13:59:28 | 2        | 6.476    | 29.831    | 0.02        |
| 07/25/00 | 14:00:28 | 3        | 6.469    | 29.831    | 0.027       |
| 07/25/00 | 14:01:28 | 4        | 6.463    | 29.831    | 0.033       |

### Pumping

|          |          |        |       |        |       |
|----------|----------|--------|-------|--------|-------|
| 07/25/00 | 14:02:09 | 0      | 6.46  | 29.844 | 0.036 |
| 07/25/00 | 14:02:09 | 0.0112 | 6.46  | 29.844 | 0.036 |
| 07/25/00 | 14:02:10 | 0.0223 | 6.46  | 29.85  | 0.036 |
| 07/25/00 | 14:02:11 | 0.0335 | 6.459 | 29.85  | 0.037 |
| 07/25/00 | 14:02:11 | 0.0447 | 6.459 | 29.852 | 0.037 |
| 07/25/00 | 14:02:12 | 0.0558 | 6.456 | 29.854 | 0.04  |
| 07/25/00 | 14:02:13 | 0.067  | 6.449 | 29.854 | 0.047 |
| 07/25/00 | 14:02:13 | 0.0782 | 6.439 | 29.854 | 0.057 |
| 07/25/00 | 14:02:14 | 0.0893 | 6.425 | 29.854 | 0.071 |
| 07/25/00 | 14:02:15 | 0.1005 | 6.406 | 29.856 | 0.09  |
| 07/25/00 | 14:02:15 | 0.1117 | 6.387 | 29.854 | 0.109 |
| 07/25/00 | 14:02:16 | 0.1228 | 6.364 | 29.856 | 0.132 |
| 07/25/00 | 14:02:17 | 0.134  | 6.344 | 29.856 | 0.152 |
| 07/25/00 | 14:02:17 | 0.1452 | 6.324 | 29.854 | 0.172 |

**Appendix C (continued)**

|          |          |        |       |        |       |
|----------|----------|--------|-------|--------|-------|
| 07/25/00 | 14:02:18 | 0.1563 | 6.306 | 29.854 | 0.19  |
| 07/25/00 | 14:02:19 | 0.1675 | 6.289 | 29.856 | 0.207 |
| 07/25/00 | 14:02:19 | 0.1787 | 6.275 | 29.854 | 0.221 |
| 07/25/00 | 14:02:20 | 0.1898 | 6.26  | 29.854 | 0.236 |
| 07/25/00 | 14:02:21 | 0.201  | 6.245 | 29.856 | 0.251 |
| 07/25/00 | 14:02:21 | 0.2122 | 6.232 | 29.856 | 0.264 |
| 07/25/00 | 14:02:22 | 0.2233 | 6.219 | 29.856 | 0.277 |
| 07/25/00 | 14:02:23 | 0.235  | 6.204 | 29.856 | 0.292 |
| 07/25/00 | 14:02:23 | 0.2475 | 6.191 | 29.856 | 0.305 |
| 07/25/00 | 14:02:24 | 0.2607 | 6.18  | 29.854 | 0.316 |
| 07/25/00 | 14:02:25 | 0.2747 | 6.164 | 29.854 | 0.332 |
| 07/25/00 | 14:02:26 | 0.2895 | 6.152 | 29.854 | 0.344 |
| 07/25/00 | 14:02:27 | 0.3052 | 6.14  | 29.854 | 0.356 |
| 07/25/00 | 14:02:28 | 0.3218 | 6.125 | 29.854 | 0.371 |
| 07/25/00 | 14:02:29 | 0.3395 | 6.111 | 29.854 | 0.385 |
| 07/25/00 | 14:02:30 | 0.3582 | 6.096 | 29.854 | 0.4   |
| 07/25/00 | 14:02:31 | 0.378  | 6.081 | 29.854 | 0.415 |
| 07/25/00 | 14:02:32 | 0.399  | 6.066 | 29.854 | 0.43  |
| 07/25/00 | 14:02:34 | 0.4212 | 6.052 | 29.854 | 0.444 |
| 07/25/00 | 14:02:35 | 0.4447 | 6.034 | 29.852 | 0.462 |
| 07/25/00 | 14:02:37 | 0.4695 | 6.019 | 29.854 | 0.477 |
| 07/25/00 | 14:02:38 | 0.4958 | 6.011 | 29.854 | 0.485 |
| 07/25/00 | 14:02:40 | 0.5238 | 5.99  | 29.848 | 0.506 |
| 07/25/00 | 14:02:42 | 0.5535 | 5.978 | 29.846 | 0.518 |
| 07/25/00 | 14:02:44 | 0.5848 | 5.974 | 29.846 | 0.522 |
| 07/25/00 | 14:02:46 | 0.618  | 5.971 | 29.846 | 0.525 |
| 07/25/00 | 14:02:48 | 0.6532 | 5.97  | 29.846 | 0.526 |
| 07/25/00 | 14:02:50 | 0.6905 | 5.964 | 29.846 | 0.532 |
| 07/25/00 | 14:02:52 | 0.73   | 5.963 | 29.844 | 0.533 |
| 07/25/00 | 14:02:55 | 0.7718 | 5.96  | 29.844 | 0.536 |
| 07/25/00 | 14:02:57 | 0.8162 | 5.955 | 29.844 | 0.541 |
| 07/25/00 | 14:03:00 | 0.8632 | 5.856 | 29.844 | 0.64  |
| 07/25/00 | 14:03:03 | 0.913  | 5.724 | 29.844 | 0.772 |
| 07/25/00 | 14:03:06 | 0.9657 | 5.685 | 29.842 | 0.811 |
| 07/25/00 | 14:03:10 | 1.0215 | 5.646 | 29.842 | 0.85  |
| 07/25/00 | 14:03:13 | 1.0807 | 5.608 | 29.84  | 0.888 |
| 07/25/00 | 14:03:17 | 1.1433 | 5.568 | 29.84  | 0.928 |
| 07/25/00 | 14:03:21 | 1.2097 | 5.528 | 29.84  | 0.968 |
| 07/25/00 | 14:03:25 | 1.28   | 5.486 | 29.838 | 1.01  |
| 07/25/00 | 14:03:30 | 1.3545 | 5.443 | 29.838 | 1.053 |
| 07/25/00 | 14:03:35 | 1.4335 | 5.398 | 29.838 | 1.098 |
| 07/25/00 | 14:03:40 | 1.5172 | 5.352 | 29.838 | 1.144 |
| 07/25/00 | 14:03:45 | 1.6057 | 5.306 | 29.838 | 1.19  |
| 07/25/00 | 14:03:50 | 1.6995 | 5.256 | 29.836 | 1.24  |
| 07/25/00 | 14:03:56 | 1.7988 | 5.206 | 29.84  | 1.29  |
| 07/25/00 | 14:04:03 | 1.9042 | 5.201 | 29.836 | 1.295 |
| 07/25/00 | 14:04:09 | 2.0157 | 5.2   | 29.838 | 1.296 |
| 07/25/00 | 14:04:17 | 2.1338 | 5.095 | 29.836 | 1.401 |
| 07/25/00 | 14:04:24 | 2.259  | 5.095 | 29.834 | 1.401 |
| 07/25/00 | 14:04:32 | 2.3915 | 4.987 | 29.836 | 1.509 |
| 07/25/00 | 14:04:40 | 2.532  | 4.985 | 29.834 | 1.511 |

**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 14:04:49 | 2.6808  | 4.879 | 29.834 | 1.617 |
| 07/25/00 | 14:04:59 | 2.8383  | 4.877 | 29.834 | 1.619 |
| 07/25/00 | 14:05:09 | 3.0052  | 4.771 | 29.834 | 1.725 |
| 07/25/00 | 14:05:19 | 3.182   | 4.771 | 29.834 | 1.725 |
| 07/25/00 | 14:05:31 | 3.3693  | 4.663 | 29.834 | 1.833 |
| 07/25/00 | 14:05:43 | 3.5677  | 4.555 | 29.834 | 1.941 |
| 07/25/00 | 14:05:55 | 3.7778  | 4.554 | 29.836 | 1.942 |
| 07/25/00 | 14:06:09 | 4.0005  | 4.446 | 29.834 | 2.05  |
| 07/25/00 | 14:06:23 | 4.2363  | 4.444 | 29.834 | 2.052 |
| 07/25/00 | 14:06:38 | 4.4862  | 4.336 | 29.834 | 2.16  |
| 07/25/00 | 14:06:53 | 4.7362  | 4.335 | 29.834 | 2.161 |
| 07/25/00 | 14:07:08 | 4.9862  | 4.229 | 29.836 | 2.267 |
| 07/25/00 | 14:07:23 | 5.2362  | 4.227 | 29.846 | 2.269 |
| 07/25/00 | 14:07:38 | 5.4862  | 4.119 | 29.84  | 2.377 |
| 07/25/00 | 14:07:53 | 5.7362  | 4.119 | 29.836 | 2.377 |
| 07/25/00 | 14:08:08 | 5.9862  | 4.016 | 29.838 | 2.48  |
| 07/25/00 | 14:08:23 | 6.2362  | 4.014 | 29.836 | 2.482 |
| 07/25/00 | 14:08:38 | 6.4862  | 3.911 | 29.85  | 2.585 |
| 07/25/00 | 14:08:53 | 6.7362  | 3.909 | 29.838 | 2.587 |
| 07/25/00 | 14:09:08 | 6.9862  | 3.908 | 29.836 | 2.588 |
| 07/25/00 | 14:09:23 | 7.2362  | 3.806 | 29.836 | 2.69  |
| 07/25/00 | 14:09:38 | 7.4862  | 3.803 | 29.836 | 2.693 |
| 07/25/00 | 14:09:53 | 7.7362  | 3.803 | 29.836 | 2.693 |
| 07/25/00 | 14:10:08 | 7.9862  | 3.702 | 29.836 | 2.794 |
| 07/25/00 | 14:10:23 | 8.2362  | 3.702 | 29.836 | 2.794 |
| 07/25/00 | 14:10:38 | 8.4862  | 3.702 | 29.834 | 2.794 |
| 07/25/00 | 14:10:53 | 8.7362  | 3.629 | 29.834 | 2.867 |
| 07/25/00 | 14:11:08 | 8.9862  | 3.629 | 29.838 | 2.867 |
| 07/25/00 | 14:11:23 | 9.2362  | 3.629 | 29.838 | 2.867 |
| 07/25/00 | 14:11:38 | 9.4862  | 3.564 | 29.838 | 2.932 |
| 07/25/00 | 14:11:53 | 9.7362  | 3.564 | 29.838 | 2.932 |
| 07/25/00 | 14:12:08 | 9.9862  | 3.562 | 29.842 | 2.934 |
| 07/25/00 | 14:12:23 | 10.2362 | 3.505 | 29.848 | 2.991 |
| 07/25/00 | 14:12:38 | 10.4862 | 3.508 | 29.842 | 2.988 |
| 07/25/00 | 14:12:53 | 10.7362 | 3.505 | 29.836 | 2.991 |
| 07/25/00 | 14:13:08 | 10.9862 | 3.442 | 29.838 | 3.054 |
| 07/25/00 | 14:13:23 | 11.2362 | 3.442 | 29.836 | 3.054 |
| 07/25/00 | 14:13:38 | 11.4862 | 3.442 | 29.842 | 3.054 |
| 07/25/00 | 14:13:53 | 11.7362 | 3.446 | 29.852 | 3.05  |
| 07/25/00 | 14:14:08 | 11.9862 | 3.375 | 29.842 | 3.121 |
| 07/25/00 | 14:14:23 | 12.2362 | 3.375 | 29.838 | 3.121 |
| 07/25/00 | 14:14:38 | 12.4862 | 3.375 | 29.838 | 3.121 |
| 07/25/00 | 14:14:53 | 12.7362 | 3.377 | 29.836 | 3.119 |
| 07/25/00 | 14:15:08 | 12.9862 | 3.377 | 29.834 | 3.119 |
| 07/25/00 | 14:15:23 | 13.2362 | 3.299 | 29.834 | 3.197 |
| 07/25/00 | 14:15:38 | 13.4862 | 3.299 | 29.831 | 3.197 |
| 07/25/00 | 14:15:53 | 13.7362 | 3.301 | 29.831 | 3.195 |
| 07/25/00 | 14:16:08 | 13.9862 | 3.301 | 29.831 | 3.195 |
| 07/25/00 | 14:16:23 | 14.2362 | 3.301 | 29.831 | 3.195 |
| 07/25/00 | 14:16:38 | 14.4862 | 3.301 | 29.831 | 3.195 |
| 07/25/00 | 14:16:53 | 14.7362 | 3.302 | 29.831 | 3.194 |

**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 14:17:08 | 14.9862 | 3.302 | 29.831 | 3.194 |
| 07/25/00 | 14:17:23 | 15.2362 | 3.201 | 29.829 | 3.295 |
| 07/25/00 | 14:17:38 | 15.4862 | 3.193 | 29.829 | 3.303 |
| 07/25/00 | 14:17:53 | 15.7362 | 3.184 | 29.829 | 3.312 |
| 07/25/00 | 14:18:08 | 15.9862 | 3.174 | 29.831 | 3.322 |
| 07/25/00 | 14:18:23 | 16.2362 | 3.167 | 29.829 | 3.329 |
| 07/25/00 | 14:18:38 | 16.4862 | 3.158 | 29.829 | 3.338 |
| 07/25/00 | 14:18:53 | 16.7362 | 3.151 | 29.829 | 3.345 |
| 07/25/00 | 14:19:08 | 16.9862 | 3.145 | 29.829 | 3.351 |
| 07/25/00 | 14:19:23 | 17.2362 | 3.14  | 29.829 | 3.356 |
| 07/25/00 | 14:19:38 | 17.4862 | 3.131 | 29.827 | 3.365 |
| 07/25/00 | 14:19:53 | 17.7362 | 3.125 | 29.825 | 3.371 |
| 07/25/00 | 14:20:08 | 17.9862 | 3.119 | 29.825 | 3.377 |
| 07/25/00 | 14:20:23 | 18.2362 | 3.117 | 29.827 | 3.379 |
| 07/25/00 | 14:20:38 | 18.4862 | 3.137 | 29.825 | 3.359 |
| 07/25/00 | 14:20:53 | 18.7362 | 3.132 | 29.825 | 3.364 |
| 07/25/00 | 14:21:08 | 18.9862 | 3.125 | 29.827 | 3.371 |
| 07/25/00 | 14:21:23 | 19.2362 | 3.118 | 29.825 | 3.378 |
| 07/25/00 | 14:21:38 | 19.4862 | 3.115 | 29.844 | 3.381 |
| 07/25/00 | 14:21:53 | 19.7362 | 3.106 | 29.829 | 3.39  |
| 07/25/00 | 14:22:08 | 19.9862 | 3.102 | 29.827 | 3.394 |
| 07/25/00 | 14:22:23 | 20.2362 | 3.098 | 29.827 | 3.398 |
| 07/25/00 | 14:22:38 | 20.4862 | 3.092 | 29.827 | 3.404 |
| 07/25/00 | 14:22:53 | 20.7362 | 3.088 | 29.825 | 3.408 |
| 07/25/00 | 14:23:08 | 20.9862 | 3.086 | 29.827 | 3.41  |
| 07/25/00 | 14:23:23 | 21.2362 | 3.082 | 29.825 | 3.414 |
| 07/25/00 | 14:23:38 | 21.4862 | 3.078 | 29.829 | 3.418 |
| 07/25/00 | 14:23:53 | 21.7362 | 3.075 | 29.829 | 3.421 |
| 07/25/00 | 14:24:08 | 21.9862 | 3.072 | 29.829 | 3.424 |
| 07/25/00 | 14:24:23 | 22.2362 | 3.069 | 29.827 | 3.427 |
| 07/25/00 | 14:24:38 | 22.4862 | 3.066 | 29.829 | 3.43  |
| 07/25/00 | 14:24:53 | 22.7362 | 3.063 | 29.827 | 3.433 |
| 07/25/00 | 14:25:08 | 22.9862 | 3.06  | 29.827 | 3.436 |
| 07/25/00 | 14:25:23 | 23.2362 | 3.058 | 29.827 | 3.438 |
| 07/25/00 | 14:25:38 | 23.4862 | 3.053 | 29.827 | 3.443 |
| 07/25/00 | 14:25:53 | 23.7362 | 3.05  | 29.827 | 3.446 |
| 07/25/00 | 14:26:08 | 23.9862 | 3.027 | 29.827 | 3.469 |
| 07/25/00 | 14:26:23 | 24.2362 | 3.026 | 29.825 | 3.47  |
| 07/25/00 | 14:26:38 | 24.4862 | 3.023 | 29.825 | 3.473 |
| 07/25/00 | 14:26:53 | 24.7362 | 3.02  | 29.825 | 3.476 |
| 07/25/00 | 14:27:08 | 24.9862 | 3.019 | 29.825 | 3.477 |
| 07/25/00 | 14:27:23 | 25.2362 | 3.017 | 29.825 | 3.479 |
| 07/25/00 | 14:27:38 | 25.4862 | 3.016 | 29.825 | 3.48  |
| 07/25/00 | 14:27:53 | 25.7362 | 3.014 | 29.825 | 3.482 |
| 07/25/00 | 14:28:08 | 25.9862 | 3.012 | 29.823 | 3.484 |
| 07/25/00 | 14:28:23 | 26.2362 | 3.01  | 29.823 | 3.486 |
| 07/25/00 | 14:28:38 | 26.4862 | 3.007 | 29.823 | 3.489 |
| 07/25/00 | 14:28:53 | 26.7362 | 3.006 | 29.825 | 3.49  |
| 07/25/00 | 14:29:08 | 26.9862 | 3.004 | 29.825 | 3.492 |
| 07/25/00 | 14:29:23 | 27.2362 | 3.004 | 29.825 | 3.492 |
| 07/25/00 | 14:29:38 | 27.4862 | 3.001 | 29.825 | 3.495 |



**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 14:29:53 | 27.7362 | 3.001 | 29.825 | 3.495 |
| 07/25/00 | 14:30:08 | 27.9862 | 3     | 29.823 | 3.496 |
| 07/25/00 | 14:30:23 | 28.2362 | 2.999 | 29.825 | 3.497 |
| 07/25/00 | 14:30:38 | 28.4862 | 2.997 | 29.825 | 3.499 |
| 07/25/00 | 14:30:53 | 28.7362 | 2.996 | 29.823 | 3.5   |
| 07/25/00 | 14:31:08 | 28.9862 | 2.996 | 29.825 | 3.5   |
| 07/25/00 | 14:31:23 | 29.2362 | 2.996 | 29.825 | 3.5   |
| 07/25/00 | 14:31:38 | 29.4862 | 2.994 | 29.823 | 3.502 |
| 07/25/00 | 14:31:53 | 29.7362 | 2.993 | 29.823 | 3.503 |
| 07/25/00 | 14:32:08 | 29.9862 | 2.991 | 29.823 | 3.505 |
| 07/25/00 | 14:32:23 | 30.2362 | 2.991 | 29.823 | 3.505 |
| 07/25/00 | 14:32:38 | 30.4862 | 2.99  | 29.823 | 3.506 |
| 07/25/00 | 14:32:53 | 30.7362 | 2.99  | 29.823 | 3.506 |
| 07/25/00 | 14:33:08 | 30.9862 | 2.989 | 29.825 | 3.507 |
| 07/25/00 | 14:33:23 | 31.2362 | 2.987 | 29.825 | 3.509 |
| 07/25/00 | 14:33:38 | 31.4862 | 2.987 | 29.823 | 3.509 |
| 07/25/00 | 14:33:53 | 31.7362 | 2.986 | 29.823 | 3.51  |
| 07/25/00 | 14:34:08 | 31.9862 | 2.984 | 29.823 | 3.512 |
| 07/25/00 | 14:34:23 | 32.2362 | 2.984 | 29.825 | 3.512 |
| 07/25/00 | 14:34:38 | 32.4862 | 2.983 | 29.825 | 3.513 |
| 07/25/00 | 14:34:53 | 32.7362 | 2.981 | 29.825 | 3.515 |
| 07/25/00 | 14:35:08 | 32.9862 | 2.983 | 29.821 | 3.513 |
| 07/25/00 | 14:35:23 | 33.2362 | 2.981 | 29.834 | 3.515 |
| 07/25/00 | 14:35:38 | 33.4862 | 2.98  | 29.834 | 3.516 |
| 07/25/00 | 14:35:53 | 33.7362 | 2.98  | 29.836 | 3.516 |
| 07/25/00 | 14:36:08 | 33.9862 | 2.98  | 29.829 | 3.516 |
| 07/25/00 | 14:36:23 | 34.2362 | 2.98  | 29.827 | 3.516 |
| 07/25/00 | 14:36:38 | 34.4862 | 2.978 | 29.825 | 3.518 |
| 07/25/00 | 14:36:53 | 34.7362 | 2.978 | 29.823 | 3.518 |
| 07/25/00 | 14:37:08 | 34.9862 | 2.978 | 29.823 | 3.518 |
| 07/25/00 | 14:37:23 | 35.2362 | 2.977 | 29.823 | 3.519 |
| 07/25/00 | 14:37:38 | 35.4862 | 2.976 | 29.821 | 3.52  |
| 07/25/00 | 14:37:53 | 35.7362 | 2.976 | 29.819 | 3.52  |
| 07/25/00 | 14:38:08 | 35.9862 | 2.976 | 29.823 | 3.52  |
| 07/25/00 | 14:38:23 | 36.2362 | 2.976 | 29.821 | 3.52  |
| 07/25/00 | 14:38:38 | 36.4862 | 2.976 | 29.819 | 3.52  |
| 07/25/00 | 14:38:53 | 36.7362 | 2.974 | 29.819 | 3.522 |
| 07/25/00 | 14:39:08 | 36.9862 | 2.976 | 29.817 | 3.52  |
| 07/25/00 | 14:39:23 | 37.2362 | 2.974 | 29.819 | 3.522 |
| 07/25/00 | 14:39:38 | 37.4862 | 2.973 | 29.819 | 3.523 |
| 07/25/00 | 14:39:53 | 37.7362 | 2.973 | 29.819 | 3.523 |
| 07/25/00 | 14:40:08 | 37.9862 | 2.971 | 29.819 | 3.525 |
| 07/25/00 | 14:40:23 | 38.2362 | 2.971 | 29.819 | 3.525 |
| 07/25/00 | 14:40:38 | 38.4862 | 2.971 | 29.819 | 3.525 |
| 07/25/00 | 14:40:53 | 38.7362 | 2.971 | 29.817 | 3.525 |
| 07/25/00 | 14:41:08 | 38.9862 | 2.97  | 29.819 | 3.526 |
| 07/25/00 | 14:41:23 | 39.2362 | 2.97  | 29.817 | 3.526 |
| 07/25/00 | 14:41:38 | 39.4862 | 2.968 | 29.819 | 3.528 |
| 07/25/00 | 14:41:53 | 39.7362 | 2.968 | 29.817 | 3.528 |
| 07/25/00 | 14:42:08 | 39.9862 | 2.968 | 29.819 | 3.528 |
| 07/25/00 | 14:42:23 | 40.2362 | 2.968 | 29.817 | 3.528 |

**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 14:42:38 | 40.4862 | 2.965 | 29.817 | 3.531 |
| 07/25/00 | 14:42:53 | 40.7362 | 2.965 | 29.817 | 3.531 |
| 07/25/00 | 14:43:08 | 40.9862 | 2.965 | 29.817 | 3.531 |
| 07/25/00 | 14:43:23 | 41.2362 | 2.964 | 29.817 | 3.532 |
| 07/25/00 | 14:43:38 | 41.4862 | 2.965 | 29.817 | 3.531 |
| 07/25/00 | 14:43:53 | 41.7362 | 2.964 | 29.817 | 3.532 |
| 07/25/00 | 14:44:08 | 41.9862 | 2.964 | 29.817 | 3.532 |
| 07/25/00 | 14:44:23 | 42.2362 | 2.964 | 29.819 | 3.532 |
| 07/25/00 | 14:44:38 | 42.4862 | 2.964 | 29.817 | 3.532 |
| 07/25/00 | 14:44:53 | 42.7362 | 2.963 | 29.817 | 3.533 |
| 07/25/00 | 14:45:08 | 42.9862 | 2.963 | 29.817 | 3.533 |
| 07/25/00 | 14:45:23 | 43.2362 | 2.963 | 29.817 | 3.533 |
| 07/25/00 | 14:45:38 | 43.4862 | 2.961 | 29.825 | 3.535 |
| 07/25/00 | 14:45:53 | 43.7362 | 2.961 | 29.823 | 3.535 |
| 07/25/00 | 14:46:08 | 43.9862 | 2.961 | 29.819 | 3.535 |
| 07/25/00 | 14:46:23 | 44.2362 | 2.96  | 29.819 | 3.536 |
| 07/25/00 | 14:46:38 | 44.4862 | 2.96  | 29.817 | 3.536 |
| 07/25/00 | 14:46:53 | 44.7362 | 2.958 | 29.817 | 3.538 |
| 07/25/00 | 14:47:08 | 44.9862 | 2.958 | 29.817 | 3.538 |
| 07/25/00 | 14:47:23 | 45.2362 | 2.958 | 29.817 | 3.538 |
| 07/25/00 | 14:47:38 | 45.4862 | 2.958 | 29.817 | 3.538 |
| 07/25/00 | 14:47:53 | 45.7362 | 2.958 | 29.815 | 3.538 |
| 07/25/00 | 14:48:08 | 45.9862 | 2.957 | 29.817 | 3.539 |
| 07/25/00 | 14:48:23 | 46.2362 | 2.957 | 29.815 | 3.539 |
| 07/25/00 | 14:48:38 | 46.4862 | 2.957 | 29.815 | 3.539 |
| 07/25/00 | 14:48:53 | 46.7362 | 2.957 | 29.817 | 3.539 |
| 07/25/00 | 14:49:08 | 46.9862 | 2.955 | 29.815 | 3.541 |
| 07/25/00 | 14:49:23 | 47.2362 | 2.955 | 29.815 | 3.541 |
| 07/25/00 | 14:49:38 | 47.4862 | 2.955 | 29.815 | 3.541 |
| 07/25/00 | 14:49:53 | 47.7362 | 2.955 | 29.817 | 3.541 |
| 07/25/00 | 14:50:08 | 47.9862 | 2.954 | 29.815 | 3.542 |
| 07/25/00 | 14:50:23 | 48.2362 | 2.955 | 29.817 | 3.541 |
| 07/25/00 | 14:50:38 | 48.4862 | 2.954 | 29.817 | 3.542 |
| 07/25/00 | 14:50:53 | 48.7362 | 2.954 | 29.817 | 3.542 |
| 07/25/00 | 14:51:08 | 48.9862 | 2.954 | 29.817 | 3.542 |
| 07/25/00 | 14:51:23 | 49.2362 | 2.953 | 29.817 | 3.543 |
| 07/25/00 | 14:51:38 | 49.4862 | 2.953 | 29.817 | 3.543 |
| 07/25/00 | 14:51:53 | 49.7362 | 2.953 | 29.817 | 3.543 |
| 07/25/00 | 14:52:08 | 49.9862 | 2.953 | 29.817 | 3.543 |
| 07/25/00 | 14:52:23 | 50.2362 | 2.953 | 29.817 | 3.543 |
| 07/25/00 | 14:52:38 | 50.4862 | 2.951 | 29.817 | 3.545 |
| 07/25/00 | 14:52:53 | 50.7362 | 2.951 | 29.817 | 3.545 |
| 07/25/00 | 14:53:08 | 50.9862 | 2.951 | 29.817 | 3.545 |
| 07/25/00 | 14:53:23 | 51.2362 | 2.95  | 29.817 | 3.546 |
| 07/25/00 | 14:53:38 | 51.4862 | 2.95  | 29.817 | 3.546 |
| 07/25/00 | 14:53:53 | 51.7362 | 2.95  | 29.825 | 3.546 |
| 07/25/00 | 14:54:08 | 51.9862 | 2.95  | 29.819 | 3.546 |
| 07/25/00 | 14:54:23 | 52.2362 | 2.95  | 29.817 | 3.546 |
| 07/25/00 | 14:54:38 | 52.4862 | 2.948 | 29.819 | 3.548 |
| 07/25/00 | 14:54:53 | 52.7362 | 2.948 | 29.819 | 3.548 |
| 07/25/00 | 14:55:08 | 52.9862 | 2.948 | 29.819 | 3.548 |

**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 14:55:23 | 53.2362 | 2.948 | 29.819 | 3.548 |
| 07/25/00 | 14:55:38 | 53.4862 | 2.948 | 29.819 | 3.548 |
| 07/25/00 | 14:55:53 | 53.7362 | 2.947 | 29.817 | 3.549 |
| 07/25/00 | 14:56:08 | 53.9862 | 2.947 | 29.817 | 3.549 |
| 07/25/00 | 14:56:23 | 54.2362 | 2.945 | 29.815 | 3.551 |
| 07/25/00 | 14:56:38 | 54.4862 | 2.945 | 29.817 | 3.551 |
| 07/25/00 | 14:56:53 | 54.7362 | 2.945 | 29.817 | 3.551 |
| 07/25/00 | 14:57:08 | 54.9862 | 2.945 | 29.817 | 3.551 |
| 07/25/00 | 14:57:23 | 55.2362 | 2.977 | 29.817 | 3.519 |
| 07/25/00 | 14:57:38 | 55.4862 | 3.003 | 29.817 | 3.493 |
| 07/25/00 | 14:57:53 | 55.7362 | 3.009 | 29.817 | 3.487 |
| 07/25/00 | 14:58:08 | 55.9862 | 3.026 | 29.815 | 3.47  |
| 07/25/00 | 14:58:23 | 56.2362 | 3.032 | 29.815 | 3.464 |
| 07/25/00 | 14:58:38 | 56.4862 | 3.032 | 29.817 | 3.464 |
| 07/25/00 | 14:58:53 | 56.7362 | 3.036 | 29.815 | 3.46  |
| 07/25/00 | 14:59:08 | 56.9862 | 3.029 | 29.815 | 3.467 |
| 07/25/00 | 14:59:23 | 57.2362 | 2.961 | 29.817 | 3.535 |
| 07/25/00 | 14:59:38 | 57.4862 | 2.96  | 29.817 | 3.536 |
| 07/25/00 | 14:59:53 | 57.7362 | 2.921 | 29.817 | 3.575 |
| 07/25/00 | 15:00:08 | 57.9862 | 2.953 | 29.815 | 3.543 |
| 07/25/00 | 15:00:23 | 58.2362 | 2.951 | 29.813 | 3.545 |
| 07/25/00 | 15:00:38 | 58.4862 | 2.951 | 29.817 | 3.545 |
| 07/25/00 | 15:00:53 | 58.7362 | 2.938 | 29.815 | 3.558 |
| 07/25/00 | 15:01:08 | 58.9862 | 2.74  | 29.815 | 3.756 |
| 07/25/00 | 15:01:23 | 59.2362 | 2.77  | 29.815 | 3.726 |
| 07/25/00 | 15:01:38 | 59.4862 | 2.796 | 29.815 | 3.7   |
| 07/25/00 | 15:01:53 | 59.7362 | 2.814 | 29.817 | 3.682 |
| 07/25/00 | 15:02:08 | 59.9862 | 2.888 | 29.815 | 3.608 |
| 07/25/00 | 15:02:23 | 60.2362 | 2.945 | 29.817 | 3.551 |
| 07/25/00 | 15:02:38 | 60.4862 | 2.994 | 29.815 | 3.502 |
| 07/25/00 | 15:02:53 | 60.7362 | 3.016 | 29.815 | 3.48  |
| 07/25/00 | 15:03:08 | 60.9862 | 3.012 | 29.815 | 3.484 |
| 07/25/00 | 15:03:23 | 61.2362 | 3.003 | 29.815 | 3.493 |
| 07/25/00 | 15:03:38 | 61.4862 | 2.997 | 29.815 | 3.499 |
| 07/25/00 | 15:03:53 | 61.7362 | 2.993 | 29.815 | 3.503 |
| 07/25/00 | 15:04:08 | 61.9862 | 2.989 | 29.815 | 3.507 |
| 07/25/00 | 15:04:23 | 62.2362 | 2.981 | 29.815 | 3.515 |
| 07/25/00 | 15:04:38 | 62.4862 | 3.007 | 29.813 | 3.489 |
| 07/25/00 | 15:04:53 | 62.7362 | 3.04  | 29.813 | 3.456 |
| 07/25/00 | 15:05:08 | 62.9862 | 2.932 | 29.815 | 3.564 |
| 07/25/00 | 15:05:23 | 63.2362 | 2.868 | 29.829 | 3.628 |
| 07/25/00 | 15:05:38 | 63.4862 | 2.845 | 29.817 | 3.651 |
| 07/25/00 | 15:05:53 | 63.7362 | 2.942 | 29.815 | 3.554 |
| 07/25/00 | 15:06:08 | 63.9862 | 3.012 | 29.815 | 3.484 |
| 07/25/00 | 15:06:23 | 64.2362 | 3.05  | 29.817 | 3.446 |
| 07/25/00 | 15:06:38 | 64.4862 | 3.026 | 29.815 | 3.47  |
| 07/25/00 | 15:06:53 | 64.7362 | 3.017 | 29.815 | 3.479 |
| 07/25/00 | 15:07:08 | 64.9862 | 3.01  | 29.815 | 3.486 |
| 07/25/00 | 15:07:23 | 65.2362 | 3.006 | 29.815 | 3.49  |
| 07/25/00 | 15:07:38 | 65.4862 | 3     | 29.815 | 3.496 |
| 07/25/00 | 15:07:53 | 65.7362 | 2.996 | 29.815 | 3.5   |

**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 15:08:08 | 65.9862 | 2.991 | 29.817 | 3.505 |
| 07/25/00 | 15:08:23 | 66.2362 | 2.989 | 29.817 | 3.507 |
| 07/25/00 | 15:08:38 | 66.4862 | 2.986 | 29.815 | 3.51  |
| 07/25/00 | 15:08:53 | 66.7362 | 2.983 | 29.817 | 3.513 |
| 07/25/00 | 15:09:08 | 66.9862 | 2.98  | 29.815 | 3.516 |
| 07/25/00 | 15:09:23 | 67.2362 | 2.977 | 29.817 | 3.519 |
| 07/25/00 | 15:09:38 | 67.4862 | 2.976 | 29.815 | 3.52  |
| 07/25/00 | 15:09:53 | 67.7362 | 2.973 | 29.817 | 3.523 |
| 07/25/00 | 15:10:08 | 67.9862 | 2.971 | 29.817 | 3.525 |
| 07/25/00 | 15:10:23 | 68.2362 | 2.97  | 29.817 | 3.526 |
| 07/25/00 | 15:10:38 | 68.4862 | 2.967 | 29.817 | 3.529 |
| 07/25/00 | 15:10:53 | 68.7362 | 2.965 | 29.815 | 3.531 |
| 07/25/00 | 15:11:08 | 68.9862 | 2.965 | 29.817 | 3.531 |
| 07/25/00 | 15:11:23 | 69.2362 | 2.948 | 29.817 | 3.548 |
| 07/25/00 | 15:11:38 | 69.4862 | 2.937 | 29.817 | 3.559 |
| 07/25/00 | 15:11:53 | 69.7362 | 2.98  | 29.815 | 3.516 |
| 07/25/00 | 15:12:08 | 69.9862 | 2.977 | 29.817 | 3.519 |
| 07/25/00 | 15:12:23 | 70.2362 | 2.976 | 29.817 | 3.52  |
| 07/25/00 | 15:12:38 | 70.4862 | 2.973 | 29.815 | 3.523 |
| 07/25/00 | 15:12:53 | 70.7362 | 2.971 | 29.819 | 3.525 |
| 07/25/00 | 15:13:08 | 70.9862 | 2.97  | 29.817 | 3.526 |
| 07/25/00 | 15:13:23 | 71.2362 | 2.968 | 29.815 | 3.528 |
| 07/25/00 | 15:13:38 | 71.4862 | 2.968 | 29.815 | 3.528 |
| 07/25/00 | 15:13:53 | 71.7362 | 2.967 | 29.815 | 3.529 |
| 07/25/00 | 15:14:08 | 71.9862 | 2.965 | 29.815 | 3.531 |
| 07/25/00 | 15:14:23 | 72.2362 | 2.965 | 29.813 | 3.531 |
| 07/25/00 | 15:14:38 | 72.4862 | 2.964 | 29.815 | 3.532 |
| 07/25/00 | 15:14:53 | 72.7362 | 2.976 | 29.813 | 3.52  |
| 07/25/00 | 15:15:08 | 72.9862 | 2.978 | 29.815 | 3.518 |
| 07/25/00 | 15:15:23 | 73.2362 | 2.977 | 29.811 | 3.519 |
| 07/25/00 | 15:15:38 | 73.4862 | 2.976 | 29.813 | 3.52  |
| 07/25/00 | 15:15:53 | 73.7362 | 2.974 | 29.811 | 3.522 |
| 07/25/00 | 15:16:08 | 73.9862 | 2.973 | 29.811 | 3.523 |
| 07/25/00 | 15:16:23 | 74.2362 | 2.971 | 29.811 | 3.525 |
| 07/25/00 | 15:16:38 | 74.4862 | 2.971 | 29.811 | 3.525 |
| 07/25/00 | 15:16:53 | 74.7362 | 2.971 | 29.811 | 3.525 |
| 07/25/00 | 15:17:08 | 74.9862 | 2.97  | 29.811 | 3.526 |
| 07/25/00 | 15:17:23 | 75.2362 | 2.968 | 29.811 | 3.528 |
| 07/25/00 | 15:17:38 | 75.4862 | 2.967 | 29.811 | 3.529 |
| 07/25/00 | 15:17:53 | 75.7362 | 2.967 | 29.813 | 3.529 |
| 07/25/00 | 15:18:08 | 75.9862 | 2.965 | 29.809 | 3.531 |
| 07/25/00 | 15:18:23 | 76.2362 | 2.964 | 29.811 | 3.532 |
| 07/25/00 | 15:18:38 | 76.4862 | 2.964 | 29.809 | 3.532 |
| 07/25/00 | 15:18:53 | 76.7362 | 2.927 | 29.809 | 3.569 |
| 07/25/00 | 15:19:08 | 76.9862 | 2.918 | 29.811 | 3.578 |
| 07/25/00 | 15:19:23 | 77.2362 | 2.955 | 29.811 | 3.541 |
| 07/25/00 | 15:19:38 | 77.4862 | 2.96  | 29.811 | 3.536 |
| 07/25/00 | 15:19:53 | 77.7362 | 2.958 | 29.811 | 3.538 |
| 07/25/00 | 15:20:08 | 77.9862 | 2.958 | 29.811 | 3.538 |
| 07/25/00 | 15:20:23 | 78.2362 | 2.958 | 29.813 | 3.538 |
| 07/25/00 | 15:20:38 | 78.4862 | 2.957 | 29.811 | 3.539 |

**Appendix C (continued)**

|          |          |         |       |        |       |
|----------|----------|---------|-------|--------|-------|
| 07/25/00 | 15:20:53 | 78.7362 | 2.957 | 29.811 | 3.539 |
| 07/25/00 | 15:21:08 | 78.9862 | 2.955 | 29.811 | 3.541 |
| 07/25/00 | 15:21:23 | 79.2362 | 2.955 | 29.813 | 3.541 |
| 07/25/00 | 15:21:38 | 79.4862 | 2.93  | 29.811 | 3.566 |
| 07/25/00 | 15:21:53 | 79.7362 | 2.955 | 29.811 | 3.541 |
| 07/25/00 | 15:22:08 | 79.9862 | 2.964 | 29.811 | 3.532 |
| 07/25/00 | 15:22:23 | 80.2362 | 2.964 | 29.811 | 3.532 |
| 07/25/00 | 15:22:38 | 80.4862 | 2.963 | 29.813 | 3.533 |
| 07/25/00 | 15:22:53 | 80.7362 | 2.963 | 29.813 | 3.533 |
| 07/25/00 | 15:23:08 | 80.9862 | 2.963 | 29.811 | 3.533 |
| 07/25/00 | 15:23:23 | 81.2362 | 2.963 | 29.811 | 3.533 |
| 07/25/00 | 15:23:38 | 81.4862 | 2.963 | 29.811 | 3.533 |
| 07/25/00 | 15:23:53 | 81.7362 | 2.963 | 29.811 | 3.533 |
| 07/25/00 | 15:24:08 | 81.9862 | 2.963 | 29.811 | 3.533 |
| 07/25/00 | 15:24:23 | 82.2362 | 2.896 | 29.811 | 3.6   |
| 07/25/00 | 15:24:38 | 82.4862 | 2.937 | 29.811 | 3.559 |
| 07/25/00 | 15:24:53 | 82.7362 | 3.158 | 29.811 | 3.338 |
| 07/25/00 | 15:25:08 | 82.9862 | 2.958 | 29.811 | 3.538 |
| 07/25/00 | 15:25:23 | 83.2362 | 2.958 | 29.811 | 3.538 |
| 07/25/00 | 15:25:38 | 83.4862 | 2.963 | 29.823 | 3.533 |
| 07/25/00 | 15:25:53 | 83.7362 | 2.958 | 29.815 | 3.538 |
| 07/25/00 | 15:26:08 | 83.9862 | 2.958 | 29.813 | 3.538 |
| 07/25/00 | 15:26:23 | 84.2362 | 2.958 | 29.809 | 3.538 |
| 07/25/00 | 15:26:38 | 84.4862 | 2.957 | 29.809 | 3.539 |
| 07/25/00 | 15:26:53 | 84.7362 | 2.958 | 29.809 | 3.538 |
| 07/25/00 | 15:27:08 | 84.9862 | 2.963 | 29.809 | 3.533 |
| 07/25/00 | 15:27:23 | 85.2362 | 2.919 | 29.807 | 3.577 |
| 07/25/00 | 15:27:38 | 85.4862 | 2.951 | 29.807 | 3.545 |
| 07/25/00 | 15:27:53 | 85.7362 | 2.953 | 29.807 | 3.543 |
| 07/25/00 | 15:28:08 | 85.9862 | 2.953 | 29.807 | 3.543 |
| 07/25/00 | 15:28:23 | 86.2362 | 2.953 | 29.807 | 3.543 |
| 07/25/00 | 15:28:38 | 86.4862 | 2.955 | 29.825 | 3.541 |
| 07/25/00 | 15:28:53 | 86.7362 | 2.951 | 29.813 | 3.545 |
| 07/25/00 | 15:29:08 | 86.9862 | 2.951 | 29.809 | 3.545 |
| 07/25/00 | 15:29:23 | 87.2362 | 2.954 | 29.809 | 3.542 |
| 07/25/00 | 15:29:38 | 87.4862 | 2.909 | 29.809 | 3.587 |
| 07/25/00 | 15:29:53 | 87.7362 | 2.965 | 29.809 | 3.531 |
| 07/25/00 | 15:30:08 | 87.9862 | 2.963 | 29.807 | 3.533 |
| 07/25/00 | 15:30:23 | 88.2362 | 2.963 | 29.807 | 3.533 |
| 07/25/00 | 15:30:38 | 88.4862 | 2.958 | 29.811 | 3.538 |
| 07/25/00 | 15:30:53 | 88.7362 | 2.957 | 29.809 | 3.539 |
| 07/25/00 | 15:31:08 | 88.9862 | 2.958 | 29.809 | 3.538 |
| 07/25/00 | 15:31:23 | 89.2362 | 2.958 | 29.809 | 3.538 |
| 07/25/00 | 15:31:38 | 89.4862 | 2.924 | 29.809 | 3.572 |
| 07/25/00 | 15:31:53 | 89.7362 | 2.961 | 29.809 | 3.535 |
| 07/25/00 | 15:32:08 | 89.9862 | 2.958 | 29.809 | 3.538 |
| 07/25/00 | 15:32:23 | 90.2362 | 2.958 | 29.807 | 3.538 |
| 07/25/00 | 15:32:38 | 90.4862 | 2.957 | 29.807 | 3.539 |
| 07/25/00 | 15:32:53 | 90.7362 | 2.957 | 29.807 | 3.539 |
| 07/25/00 | 15:33:08 | 90.9862 | 2.957 | 29.809 | 3.539 |
| 07/25/00 | 15:33:23 | 91.2362 | 2.955 | 29.809 | 3.541 |

**Appendix C (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 15:33:38 | 91.4862  | 2.951 | 29.807 | 3.545 |
| 07/25/00 | 15:33:53 | 91.7362  | 2.915 | 29.809 | 3.581 |
| 07/25/00 | 15:34:08 | 91.9862  | 3.41  | 29.809 | 3.086 |
| 07/25/00 | 15:34:23 | 92.2362  | 2.951 | 29.809 | 3.545 |
| 07/25/00 | 15:34:38 | 92.4862  | 2.95  | 29.809 | 3.546 |
| 07/25/00 | 15:34:53 | 92.7362  | 2.948 | 29.809 | 3.548 |
| 07/25/00 | 15:35:08 | 92.9862  | 2.95  | 29.809 | 3.546 |
| 07/25/00 | 15:35:23 | 93.2362  | 2.951 | 29.809 | 3.545 |
| 07/25/00 | 15:35:38 | 93.4862  | 2.95  | 29.809 | 3.546 |
| 07/25/00 | 15:35:53 | 93.7362  | 2.948 | 29.809 | 3.548 |
| 07/25/00 | 15:36:08 | 93.9862  | 2.965 | 29.809 | 3.531 |
| 07/25/00 | 15:36:23 | 94.2362  | 2.963 | 29.809 | 3.533 |
| 07/25/00 | 15:36:38 | 94.4862  | 2.963 | 29.809 | 3.533 |
| 07/25/00 | 15:36:53 | 94.7362  | 2.963 | 29.809 | 3.533 |
| 07/25/00 | 15:37:08 | 94.9862  | 2.908 | 29.811 | 3.588 |
| 07/25/00 | 15:37:23 | 95.2362  | 2.927 | 29.811 | 3.569 |
| 07/25/00 | 15:37:38 | 95.4862  | 2.987 | 29.811 | 3.509 |
| 07/25/00 | 15:37:53 | 95.7362  | 2.981 | 29.809 | 3.515 |
| 07/25/00 | 15:38:08 | 95.9862  | 2.98  | 29.811 | 3.516 |
| 07/25/00 | 15:38:23 | 96.2362  | 2.977 | 29.809 | 3.519 |
| 07/25/00 | 15:38:38 | 96.4862  | 2.976 | 29.809 | 3.52  |
| 07/25/00 | 15:38:53 | 96.7362  | 2.974 | 29.809 | 3.522 |
| 07/25/00 | 15:39:08 | 96.9862  | 2.973 | 29.811 | 3.523 |
| 07/25/00 | 15:39:23 | 97.2362  | 2.973 | 29.809 | 3.523 |
| 07/25/00 | 15:39:38 | 97.4862  | 2.971 | 29.811 | 3.525 |
| 07/25/00 | 15:39:53 | 97.7362  | 2.968 | 29.811 | 3.528 |
| 07/25/00 | 15:40:08 | 97.9862  | 2.967 | 29.811 | 3.529 |
| 07/25/00 | 15:40:23 | 98.2362  | 2.967 | 29.809 | 3.529 |
| 07/25/00 | 15:40:38 | 98.4862  | 2.931 | 29.809 | 3.565 |
| 07/25/00 | 15:40:53 | 98.7362  | 2.691 | 29.811 | 3.805 |
| 07/25/00 | 15:41:08 | 98.9862  | 2.963 | 29.811 | 3.533 |
| 07/25/00 | 15:41:23 | 99.2362  | 2.932 | 29.809 | 3.564 |
| 07/25/00 | 15:41:38 | 99.4862  | 2.909 | 29.809 | 3.587 |
| 07/25/00 | 15:41:53 | 99.7362  | 3.037 | 29.809 | 3.459 |
| 07/25/00 | 15:42:08 | 99.9862  | 2.942 | 29.809 | 3.554 |
| 07/25/00 | 15:42:23 | 100.2362 | 2.941 | 29.807 | 3.555 |
| 07/25/00 | 15:42:38 | 100.4862 | 2.941 | 29.809 | 3.555 |
| 07/25/00 | 15:42:53 | 100.7362 | 2.941 | 29.807 | 3.555 |
| 07/25/00 | 15:43:08 | 100.9862 | 2.941 | 29.807 | 3.555 |
| 07/25/00 | 15:43:23 | 101.2362 | 2.94  | 29.807 | 3.556 |
| 07/25/00 | 15:43:38 | 101.4862 | 2.94  | 29.807 | 3.556 |
| 07/25/00 | 15:43:53 | 101.7362 | 2.94  | 29.807 | 3.556 |
| 07/25/00 | 15:44:08 | 101.9862 | 2.94  | 29.807 | 3.556 |
| 07/25/00 | 15:44:23 | 102.2362 | 2.94  | 29.807 | 3.556 |
| 07/25/00 | 15:44:38 | 102.4862 | 2.95  | 29.807 | 3.546 |
| 07/25/00 | 15:44:53 | 102.7362 | 2.95  | 29.809 | 3.546 |
| 07/25/00 | 15:45:08 | 102.9862 | 2.948 | 29.809 | 3.548 |
| 07/25/00 | 15:45:23 | 103.2362 | 2.947 | 29.809 | 3.549 |
| 07/25/00 | 15:45:38 | 103.4862 | 2.947 | 29.807 | 3.549 |
| 07/25/00 | 15:45:53 | 103.7362 | 2.948 | 29.825 | 3.548 |
| 07/25/00 | 15:46:08 | 103.9862 | 2.945 | 29.811 | 3.551 |

**Appendix C (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 15:46:23 | 104.2362 | 2.945 | 29.809 | 3.551 |
| 07/25/00 | 15:46:38 | 104.4862 | 2.944 | 29.807 | 3.552 |
| 07/25/00 | 15:46:53 | 104.7362 | 2.876 | 29.807 | 3.62  |
| 07/25/00 | 15:47:08 | 104.9862 | 2.881 | 29.809 | 3.615 |
| 07/25/00 | 15:47:23 | 105.2362 | 2.859 | 29.807 | 3.637 |
| 07/25/00 | 15:47:38 | 105.4862 | 2.937 | 29.809 | 3.559 |
| 07/25/00 | 15:47:53 | 105.7362 | 2.953 | 29.807 | 3.543 |
| 07/25/00 | 15:48:08 | 105.9862 | 2.95  | 29.807 | 3.546 |
| 07/25/00 | 15:48:23 | 106.2362 | 2.948 | 29.809 | 3.548 |
| 07/25/00 | 15:48:38 | 106.4862 | 2.947 | 29.805 | 3.549 |
| 07/25/00 | 15:48:53 | 106.7362 | 2.945 | 29.807 | 3.551 |
| 07/25/00 | 15:49:08 | 106.9862 | 2.944 | 29.807 | 3.552 |
| 07/25/00 | 15:49:23 | 107.2362 | 2.942 | 29.807 | 3.554 |
| 07/25/00 | 15:49:38 | 107.4862 | 2.921 | 29.807 | 3.575 |
| 07/25/00 | 15:49:53 | 107.7362 | 2.894 | 29.805 | 3.602 |
| 07/25/00 | 15:50:08 | 107.9862 | 2.93  | 29.807 | 3.566 |
| 07/25/00 | 15:50:23 | 108.2362 | 2.935 | 29.807 | 3.561 |
| 07/25/00 | 15:50:38 | 108.4862 | 2.895 | 29.807 | 3.601 |
| 07/25/00 | 15:50:53 | 108.7362 | 2.95  | 29.805 | 3.546 |
| 07/25/00 | 15:51:08 | 108.9862 | 2.942 | 29.807 | 3.554 |
| 07/25/00 | 15:51:23 | 109.2362 | 2.961 | 29.807 | 3.535 |
| 07/25/00 | 15:51:38 | 109.4862 | 2.958 | 29.805 | 3.538 |
| 07/25/00 | 15:51:53 | 109.7362 | 2.955 | 29.807 | 3.541 |
| 07/25/00 | 15:52:08 | 109.9862 | 2.953 | 29.805 | 3.543 |
| 07/25/00 | 15:52:23 | 110.2362 | 2.951 | 29.803 | 3.545 |
| 07/25/00 | 15:52:38 | 110.4862 | 2.937 | 29.805 | 3.559 |
| 07/25/00 | 15:52:53 | 110.7362 | 2.86  | 29.807 | 3.636 |
| 07/25/00 | 15:53:08 | 110.9862 | 2.822 | 29.805 | 3.674 |
| 07/25/00 | 15:53:23 | 111.2362 | 2.918 | 29.803 | 3.578 |
| 07/25/00 | 15:53:38 | 111.4862 | 2.964 | 29.805 | 3.532 |
| 07/25/00 | 15:53:53 | 111.7362 | 2.98  | 29.805 | 3.516 |
| 07/25/00 | 15:54:08 | 111.9862 | 2.971 | 29.803 | 3.525 |
| 07/25/00 | 15:54:23 | 112.2362 | 2.968 | 29.803 | 3.528 |
| 07/25/00 | 15:54:38 | 112.4862 | 2.964 | 29.805 | 3.532 |
| 07/25/00 | 15:54:53 | 112.7362 | 2.961 | 29.805 | 3.535 |
| 07/25/00 | 15:55:08 | 112.9862 | 2.958 | 29.803 | 3.538 |
| 07/25/00 | 15:55:23 | 113.2362 | 2.955 | 29.803 | 3.541 |
| 07/25/00 | 15:55:38 | 113.4862 | 2.902 | 29.803 | 3.594 |
| 07/25/00 | 15:55:53 | 113.7362 | 2.927 | 29.803 | 3.569 |
| 07/25/00 | 15:56:08 | 113.9862 | 2.954 | 29.803 | 3.542 |
| 07/25/00 | 15:56:23 | 114.2362 | 2.955 | 29.803 | 3.541 |
| 07/25/00 | 15:56:38 | 114.4862 | 2.954 | 29.803 | 3.542 |
| 07/25/00 | 15:56:53 | 114.7362 | 2.953 | 29.801 | 3.543 |
| 07/25/00 | 15:57:08 | 114.9862 | 2.95  | 29.803 | 3.546 |
| 07/25/00 | 15:57:23 | 115.2362 | 2.948 | 29.801 | 3.548 |
| 07/25/00 | 15:57:38 | 115.4862 | 2.948 | 29.803 | 3.548 |
| 07/25/00 | 15:57:53 | 115.7362 | 2.888 | 29.803 | 3.608 |
| 07/25/00 | 15:58:08 | 115.9862 | 2.928 | 29.803 | 3.568 |
| 07/25/00 | 15:58:23 | 116.2362 | 2.996 | 29.801 | 3.5   |
| 07/25/00 | 15:58:38 | 116.4862 | 2.942 | 29.801 | 3.554 |
| 07/25/00 | 15:58:53 | 116.7362 | 2.942 | 29.801 | 3.554 |

**Appendix C (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 15:59:08 | 116.9862 | 2.941 | 29.803 | 3.555 |
| 07/25/00 | 15:59:23 | 117.2362 | 2.941 | 29.803 | 3.555 |
| 07/25/00 | 15:59:38 | 117.4862 | 2.94  | 29.801 | 3.556 |
| 07/25/00 | 15:59:53 | 117.7362 | 2.94  | 29.803 | 3.556 |
| 07/25/00 | 16:00:08 | 117.9862 | 2.94  | 29.803 | 3.556 |
| 07/25/00 | 16:00:23 | 118.2362 | 3.055 | 29.801 | 3.441 |
| 07/25/00 | 16:00:38 | 118.4862 | 2.896 | 29.803 | 3.6   |
| 07/25/00 | 16:00:53 | 118.7362 | 2.912 | 29.801 | 3.584 |
| 07/25/00 | 16:01:08 | 118.9862 | 2.935 | 29.801 | 3.561 |
| 07/25/00 | 16:01:23 | 119.2362 | 2.935 | 29.803 | 3.561 |
| 07/25/00 | 16:01:38 | 119.4862 | 2.934 | 29.801 | 3.562 |
| 07/25/00 | 16:01:53 | 119.7362 | 2.934 | 29.801 | 3.562 |
| 07/25/00 | 16:02:08 | 119.9862 | 2.932 | 29.803 | 3.564 |
| 07/25/00 | 16:02:23 | 120.2362 | 2.932 | 29.803 | 3.564 |
| 07/25/00 | 16:02:38 | 120.4862 | 2.931 | 29.803 | 3.565 |
| 07/25/00 | 16:02:53 | 120.7362 | 2.931 | 29.803 | 3.565 |
| 07/25/00 | 16:03:08 | 120.9862 | 2.896 | 29.803 | 3.6   |
| 07/25/00 | 16:03:23 | 121.2362 | 2.912 | 29.803 | 3.584 |
| 07/25/00 | 16:03:38 | 121.4862 | 2.94  | 29.801 | 3.556 |
| 07/25/00 | 16:03:53 | 121.7362 | 2.938 | 29.801 | 3.558 |
| 07/25/00 | 16:04:08 | 121.9862 | 2.937 | 29.801 | 3.559 |
| 07/25/00 | 16:04:23 | 122.2362 | 2.937 | 29.803 | 3.559 |
| 07/25/00 | 16:04:38 | 122.4862 | 2.935 | 29.803 | 3.561 |
| 07/25/00 | 16:04:53 | 122.7362 | 2.935 | 29.803 | 3.561 |
| 07/25/00 | 16:05:08 | 122.9862 | 2.935 | 29.801 | 3.561 |
| 07/25/00 | 16:05:23 | 123.2362 | 2.934 | 29.803 | 3.562 |
| 07/25/00 | 16:05:38 | 123.4862 | 2.937 | 29.819 | 3.559 |
| 07/25/00 | 16:05:53 | 123.7362 | 2.932 | 29.807 | 3.564 |
| 07/25/00 | 16:06:08 | 123.9862 | 2.931 | 29.805 | 3.565 |
| 07/25/00 | 16:06:23 | 124.2362 | 2.931 | 29.807 | 3.565 |
| 07/25/00 | 16:06:38 | 124.4862 | 2.931 | 29.807 | 3.565 |
| 07/25/00 | 16:06:53 | 124.7362 | 2.93  | 29.803 | 3.566 |
| 07/25/00 | 16:07:08 | 124.9862 | 2.928 | 29.805 | 3.568 |
| 07/25/00 | 16:07:23 | 125.2362 | 2.927 | 29.803 | 3.569 |
| 07/25/00 | 16:07:38 | 125.4862 | 2.927 | 29.805 | 3.569 |
| 07/25/00 | 16:07:53 | 125.7362 | 2.928 | 29.803 | 3.568 |
| 07/25/00 | 16:08:08 | 125.9862 | 2.839 | 29.803 | 3.657 |
| 07/25/00 | 16:08:23 | 126.2362 | 2.783 | 29.803 | 3.713 |
| 07/25/00 | 16:08:38 | 126.4862 | 2.886 | 29.803 | 3.61  |
| 07/25/00 | 16:08:53 | 126.7362 | 2.951 | 29.803 | 3.545 |
| 07/25/00 | 16:09:08 | 126.9862 | 2.967 | 29.803 | 3.529 |
| 07/25/00 | 16:09:23 | 127.2362 | 2.961 | 29.803 | 3.535 |
| 07/25/00 | 16:09:38 | 127.4862 | 2.957 | 29.803 | 3.539 |
| 07/25/00 | 16:09:53 | 127.7362 | 2.953 | 29.803 | 3.543 |
| 07/25/00 | 16:10:08 | 127.9862 | 2.95  | 29.803 | 3.546 |
| 07/25/00 | 16:10:23 | 128.2362 | 2.948 | 29.803 | 3.548 |
| 07/25/00 | 16:10:38 | 128.4862 | 2.947 | 29.803 | 3.549 |
| 07/25/00 | 16:10:53 | 128.7362 | 2.944 | 29.803 | 3.552 |
| 07/25/00 | 16:11:08 | 128.9862 | 2.942 | 29.803 | 3.554 |
| 07/25/00 | 16:11:23 | 129.2362 | 2.94  | 29.803 | 3.556 |
| 07/25/00 | 16:11:38 | 129.4862 | 2.938 | 29.803 | 3.558 |



**Appendix C (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 16:11:53 | 129.7362 | 2.93  | 29.803 | 3.566 |
| 07/25/00 | 16:12:08 | 129.9862 | 2.879 | 29.803 | 3.617 |
| 07/25/00 | 16:12:23 | 130.2362 | 2.938 | 29.803 | 3.558 |
| 07/25/00 | 16:12:38 | 130.4862 | 2.823 | 29.803 | 3.673 |
| 07/25/00 | 16:12:53 | 130.7362 | 2.965 | 29.803 | 3.531 |
| 07/25/00 | 16:13:08 | 130.9862 | 3.01  | 29.803 | 3.486 |
| 07/25/00 | 16:13:23 | 131.2362 | 2.976 | 29.803 | 3.52  |
| 07/25/00 | 16:13:38 | 131.4862 | 2.963 | 29.805 | 3.533 |
| 07/25/00 | 16:13:53 | 131.7362 | 2.948 | 29.823 | 3.548 |
| 07/25/00 | 16:14:08 | 131.9862 | 2.944 | 29.805 | 3.552 |
| 07/25/00 | 16:14:23 | 132.2362 | 2.937 | 29.805 | 3.559 |
| 07/25/00 | 16:14:38 | 132.4862 | 2.937 | 29.807 | 3.559 |
| 07/25/00 | 16:14:53 | 132.7362 | 2.934 | 29.805 | 3.562 |
| 07/25/00 | 16:15:08 | 132.9862 | 2.934 | 29.805 | 3.562 |
| 07/25/00 | 16:15:23 | 133.2362 | 1.936 | 29.805 | 4.56  |
| 07/25/00 | 16:15:38 | 133.4862 | 1.939 | 29.805 | 4.557 |
| 07/25/00 | 16:15:53 | 133.7362 | 1.939 | 29.813 | 4.557 |
| 07/25/00 | 16:16:08 | 133.9862 | 1.936 | 29.817 | 4.56  |
| 07/25/00 | 16:16:23 | 134.2362 | 1.934 | 29.807 | 4.562 |
| 07/25/00 | 16:16:38 | 134.4862 | 1.934 | 29.807 | 4.562 |
| 07/25/00 | 16:16:53 | 134.7362 | 0.943 | 29.805 | 5.553 |
| 07/25/00 | 16:17:08 | 134.9862 | 0.666 | 29.805 | 5.83  |
| 07/25/00 | 16:17:23 | 135.2362 | 0.933 | 29.805 | 5.563 |
| 07/25/00 | 16:17:38 | 135.4862 | 0.942 | 29.807 | 5.554 |
| 07/25/00 | 16:17:53 | 135.7362 | 0.943 | 29.805 | 5.553 |
| 07/25/00 | 16:18:08 | 135.9862 | 0.945 | 29.823 | 5.551 |
| 07/25/00 | 16:18:23 | 136.2362 | 0.942 | 29.809 | 5.554 |
| 07/25/00 | 16:18:38 | 136.4862 | 0.941 | 29.807 | 5.555 |
| 07/25/00 | 16:18:53 | 136.7362 | 0.902 | 29.807 | 5.594 |
| 07/25/00 | 16:19:08 | 136.9862 | 0.869 | 29.805 | 5.627 |
| 07/25/00 | 16:19:23 | 137.2362 | 0.915 | 29.807 | 5.581 |
| 07/25/00 | 16:19:38 | 137.4862 | 0.915 | 29.807 | 5.581 |
| 07/25/00 | 16:19:53 | 137.7362 | 0.931 | 29.807 | 5.565 |
| 07/25/00 | 16:20:08 | 137.9862 | 0.931 | 29.805 | 5.565 |
| 07/25/00 | 16:20:23 | 138.2362 | 0.931 | 29.807 | 5.565 |
| 07/25/00 | 16:20:38 | 138.4862 | 0.929 | 29.807 | 5.567 |
| 07/25/00 | 16:20:53 | 138.7362 | 0.929 | 29.807 | 5.567 |
| 07/25/00 | 16:21:08 | 138.9862 | 0.946 | 29.807 | 5.55  |
| 07/25/00 | 16:21:23 | 139.2362 | 0.956 | 29.807 | 5.54  |
| 07/25/00 | 16:21:38 | 139.4862 | 0.956 | 29.807 | 5.54  |
| 07/25/00 | 16:21:53 | 139.7362 | 0.966 | 29.807 | 5.53  |
| 07/25/00 | 16:22:08 | 139.9862 | 0.962 | 29.809 | 5.534 |
| 07/25/00 | 16:22:23 | 140.2362 | 0.961 | 29.807 | 5.535 |
| 07/25/00 | 16:22:38 | 140.4862 | 0.958 | 29.807 | 5.538 |
| 07/25/00 | 16:22:53 | 140.7362 | 0.959 | 29.807 | 5.537 |
| 07/25/00 | 16:23:08 | 140.9862 | 0.965 | 29.807 | 5.531 |
| 07/25/00 | 16:23:23 | 141.2362 | 0.975 | 29.805 | 5.521 |
| 07/25/00 | 16:23:38 | 141.4862 | 0.971 | 29.807 | 5.525 |
| 07/25/00 | 16:23:53 | 141.7362 | 0.968 | 29.807 | 5.528 |
| 07/25/00 | 16:24:08 | 141.9862 | 0.965 | 29.807 | 5.531 |
| 07/25/00 | 16:24:23 | 142.2362 | 0.962 | 29.807 | 5.534 |

**Appendix C (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 16:24:38 | 142.4862 | 0.966 | 29.807 | 5.53  |
| 07/25/00 | 16:24:53 | 142.7362 | 0.971 | 29.809 | 5.525 |
| 07/25/00 | 16:25:08 | 142.9862 | 0.958 | 29.807 | 5.538 |
| 07/25/00 | 16:25:23 | 143.2362 | 0.922 | 29.807 | 5.574 |
| 07/25/00 | 16:25:38 | 143.4862 | 0.923 | 29.807 | 5.573 |
| 07/25/00 | 16:25:53 | 143.7362 | 0.925 | 29.807 | 5.571 |
| 07/25/00 | 16:26:08 | 143.9862 | 0.923 | 29.807 | 5.573 |
| 07/25/00 | 16:26:23 | 144.2362 | 0.919 | 29.805 | 5.577 |
| 07/25/00 | 16:26:38 | 144.4862 | 0.89  | 29.809 | 5.606 |
| 07/25/00 | 16:26:53 | 144.7362 | 0.88  | 29.809 | 5.616 |
| 07/25/00 | 16:27:08 | 144.9862 | 0.885 | 29.809 | 5.611 |
| 07/25/00 | 16:27:23 | 145.2362 | 0.886 | 29.809 | 5.61  |
| 07/25/00 | 16:27:38 | 145.4862 | 0.889 | 29.807 | 5.607 |
| 07/25/00 | 16:27:53 | 145.7362 | 0.814 | 29.807 | 5.682 |
| 07/25/00 | 16:28:08 | 145.9862 | 0.83  | 29.807 | 5.666 |
| 07/25/00 | 16:28:23 | 146.2362 | 0.843 | 29.807 | 5.653 |
| 07/25/00 | 16:28:38 | 146.4862 | 0.869 | 29.807 | 5.627 |
| 07/25/00 | 16:28:53 | 146.7362 | 0.922 | 29.807 | 5.574 |
| 07/25/00 | 16:29:08 | 146.9862 | 0.919 | 29.807 | 5.577 |
| 07/25/00 | 16:29:23 | 147.2362 | 0.916 | 29.807 | 5.58  |
| 07/25/00 | 16:29:38 | 147.4862 | 0.916 | 29.807 | 5.58  |
| 07/25/00 | 16:29:53 | 147.7362 | 0.916 | 29.807 | 5.58  |
| 07/25/00 | 16:30:08 | 147.9862 | 0.913 | 29.809 | 5.583 |
| 07/25/00 | 16:30:23 | 148.2362 | 0.936 | 29.805 | 5.56  |
| 07/25/00 | 16:30:38 | 148.4862 | 1.352 | 29.807 | 5.144 |
| 07/25/00 | 16:30:53 | 148.7362 | 1.644 | 29.805 | 4.852 |
| 07/25/00 | 16:31:08 | 148.9862 | 1.865 | 29.805 | 4.631 |
| 07/25/00 | 16:31:23 | 149.2362 | 1.999 | 29.817 | 4.497 |
| 07/25/00 | 16:31:38 | 149.4862 | 2.121 | 29.815 | 4.375 |
| 07/25/00 | 16:31:53 | 149.7362 | 2.238 | 29.807 | 4.258 |
| 07/25/00 | 16:32:08 | 149.9862 | 2.35  | 29.807 | 4.146 |
| 07/25/00 | 16:32:23 | 150.2362 | 2.456 | 29.807 | 4.04  |
| 07/25/00 | 16:32:38 | 150.4862 | 2.556 | 29.805 | 3.94  |
| 07/25/00 | 16:32:53 | 150.7362 | 2.649 | 29.807 | 3.847 |
| 07/25/00 | 16:33:08 | 150.9862 | 2.74  | 29.805 | 3.756 |
| 07/25/00 | 16:33:23 | 151.2362 | 2.825 | 29.805 | 3.671 |
| 07/25/00 | 16:33:38 | 151.4862 | 2.905 | 29.805 | 3.591 |
| 07/25/00 | 16:33:53 | 151.7362 | 2.983 | 29.805 | 3.513 |
| 07/25/00 | 16:34:08 | 151.9862 | 3.058 | 29.803 | 3.438 |
| 07/25/00 | 16:34:23 | 152.2362 | 3.128 | 29.805 | 3.368 |
| 07/25/00 | 16:34:38 | 152.4862 | 3.194 | 29.805 | 3.302 |
| 07/25/00 | 16:34:53 | 152.7362 | 3.259 | 29.803 | 3.237 |
| 07/25/00 | 16:35:08 | 152.9862 | 3.318 | 29.803 | 3.178 |
| 07/25/00 | 16:35:23 | 153.2362 | 3.378 | 29.803 | 3.118 |
| 07/25/00 | 16:35:38 | 153.4862 | 3.434 | 29.819 | 3.062 |
| 07/25/00 | 16:35:53 | 153.7362 | 3.485 | 29.809 | 3.011 |
| 07/25/00 | 16:36:08 | 153.9862 | 3.532 | 29.805 | 2.964 |
| 07/25/00 | 16:36:23 | 154.2362 | 3.581 | 29.807 | 2.915 |
| 07/25/00 | 16:36:38 | 154.4862 | 3.626 | 29.803 | 2.87  |
| 07/25/00 | 16:36:53 | 154.7362 | 3.669 | 29.803 | 2.827 |
| 07/25/00 | 16:37:08 | 154.9862 | 3.709 | 29.805 | 2.787 |

**Appendix C (continued)**

|          |          |          |       |        |       |
|----------|----------|----------|-------|--------|-------|
| 07/25/00 | 16:37:23 | 155.2362 | 3.745 | 29.801 | 2.751 |
| 07/25/00 | 16:37:38 | 155.4862 | 3.719 | 29.803 | 2.777 |
| 07/25/00 | 16:37:53 | 155.7362 | 3.765 | 29.803 | 2.731 |
| 07/25/00 | 16:38:08 | 155.9862 | 3.804 | 29.805 | 2.692 |
| 07/25/00 | 16:38:23 | 156.2362 | 3.839 | 29.803 | 2.657 |
| 07/25/00 | 16:38:38 | 156.4862 | 3.872 | 29.803 | 2.624 |
| 07/25/00 | 16:38:53 | 156.7362 | 3.901 | 29.811 | 2.595 |
| 07/25/00 | 16:39:08 | 156.9862 | 3.934 | 29.817 | 2.562 |
| 07/25/00 | 16:39:23 | 157.2362 | 3.96  | 29.807 | 2.536 |
| 07/25/00 | 16:39:38 | 157.4862 | 3.984 | 29.805 | 2.512 |
| 07/25/00 | 16:39:53 | 157.7362 | 4.01  | 29.803 | 2.486 |
| 07/25/00 | 16:40:08 | 157.9862 | 4.034 | 29.803 | 2.462 |
| 07/25/00 | 16:40:23 | 158.2362 | 4.056 | 29.803 | 2.44  |
| 07/25/00 | 16:40:38 | 158.4862 | 4.077 | 29.803 | 2.419 |
| 07/25/00 | 16:40:53 | 158.7362 | 4.096 | 29.801 | 2.4   |
| 07/25/00 | 16:41:08 | 158.9862 | 4.116 | 29.803 | 2.38  |
| 07/25/00 | 16:41:23 | 159.2362 | 4.135 | 29.803 | 2.361 |
| 07/25/00 | 16:41:38 | 159.4862 | 4.152 | 29.801 | 2.344 |
| 07/25/00 | 16:41:53 | 159.7362 | 4.168 | 29.801 | 2.328 |
| 07/25/00 | 16:42:08 | 159.9862 | 4.184 | 29.803 | 2.312 |
| 07/25/00 | 16:42:23 | 160.2362 | 4.2   | 29.803 | 2.296 |
| 07/25/00 | 16:42:38 | 160.4862 | 4.213 | 29.803 | 2.283 |
| 07/25/00 | 16:42:53 | 160.7362 | 4.227 | 29.801 | 2.269 |
| 07/25/00 | 16:43:08 | 160.9862 | 4.239 | 29.801 | 2.257 |
| 07/25/00 | 16:43:23 | 161.2362 | 4.254 | 29.801 | 2.242 |
| 07/25/00 | 16:43:38 | 161.4862 | 4.263 | 29.801 | 2.233 |
| 07/25/00 | 16:43:53 | 161.7362 | 4.273 | 29.809 | 2.223 |
| 07/25/00 | 16:44:08 | 161.9862 | 4.288 | 29.819 | 2.208 |
| 07/25/00 | 16:44:23 | 162.2362 | 4.295 | 29.805 | 2.201 |

**Appendix C (continued)**

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