

Final Report: Phase III Targeted Investigation, Everest, Kansas

prepared by
Environmental Research Division
Argonne National Laboratory



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**Final Report:
Phase III Targeted Investigation,
Everest, Kansas**

by
Applied Geosciences and Environmental Management Section
Environmental Research Division, Argonne National Laboratory

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Notation

AGEM	Applied Geosciences and Environmental Management
AMSL	above mean sea level
APHA	American Public Health Association
ASTM	American Society for Testing and Materials
BGL	below ground level
°C	degree(s) Celsius
CAS	Corrective Action Study
CCC	Commodity Credit Corporation
CD	compact disk
CI	Comprehensive Investigation
CLP	Contract Laboratory Program
COC	chain of custody
ECPT	electronic cone penetrometer
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
g	gram(s)
gal	gallon(s)
GC-MS	gas chromatograph-mass spectrometer
gpm	gallon(s) per minute
hr	hour(s)
ICP	inductively coupled plasma
in.	inch(es)
KDHE	Kansas Department of Health and Environment
KGS	Kansas Geological Survey
lb	pound(s)
µg/kg	microgram(s) per kilogram
µg/L	microgram(s) per liter
µS/cm	microsiemen(s) per centimeter
MCL	maximum contaminant level
mg/L	milligram(s) per liter
mi	mile(s)
min	minute(s)
mL	milliliter(s)
mV	millivolt(s)
NAD	North American Datum

NAVD	North American Vertical Datum
ORP	oxidation-reduction potential
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RPD	relative percent difference
SDG	sample delivery group
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VOC	volatile organic compound

Final Report: Phase III Targeted Investigation, Everest, Kansas

Executive Summary

The Environmental Research Division of Argonne National Laboratory has performed a targeted Phase III investigation at Everest, Kansas, on behalf of the Commodity Credit Corporation of the U.S. Department of Agriculture (CCC/USDA). The primary goal of this investigative phase was to generate specific technical information required, in conjunction with the results of the Phase I and Phase II studies, to satisfy the primary objectives of a Kansas Department of Health and Environment (KDHE) Comprehensive Investigation and to serve as the basis for a Corrective Action Study. The general goals of this targeted investigation were to accomplish the following:

- Delineate vadose zone soil contamination at the former Everest CCC/USDA grain storage facility.
- Determine aquifer properties that affect the migration and fate of carbon tetrachloride in groundwater.
- Establish a groundwater monitoring system to track future plume migration.

The targeted investigation at Everest was performed in three main field mobilizations, on September 29–October 2, 2003; November 10–24, 2003; and February 16–20, 2004. Data generated during this investigative phase were reviewed, together with the results from the Phase I and Phase II studies, to develop preliminary lists of potential remedial objectives and corrective action alternatives.

Delineation of the vadose zone contamination at the former CCC/USDA facility was completed through the coring and sampling of four vadose zone borings. Soil samples were collected at 5-ft intervals from 8 ft to 38 ft BGL (the approximate top of the saturated zone). Collected samples were prepared and analyzed for volatile organic compounds, including carbon tetrachloride, by using U.S. Environmental Protection Agency Methods 5030B and 8260B.

The highest concentrations of carbon tetrachloride, ranging from 47 $\mu\text{g}/\text{kg}$ to 57 $\mu\text{g}/\text{kg}$, were found at the base of the sampled intervals (33–38 ft below ground level) at locations along

the approximate axis of two former rows of grain bins near the center of the former facility. These concentrations represent the highest contaminant levels detected in unsaturated soils at the former CCC/USDA facility. Concentrations of carbon tetrachloride and chloroform in both near-surface and subsurface vadose zone soils are below risk-based screening levels presented in the manual *Risk Based Standards for Kansas* published by the KDHE.

Aquifer properties that affect the migration and fate of carbon tetrachloride in groundwater were determined by collecting and analyzing aquifer core material and through aquifer testing. Bulk density, porosity, and total organic carbon data from the soil analyses were used to estimate retardation factors for sediments of the aquifer unit. Hydraulic conductivity estimates were obtained through slug testing at 15 piezometer locations across the Everest investigation area and through an extended pumping test at well MW1 at the former CCC/USDA facility.

The results from core analyses suggest that retardation values of approximately 2.4–3.3 affect carbon tetrachloride migration rates in the sands and sandy to gravelly clay till deposits of the Everest aquifer unit.

Estimated hydraulic conductivity values derived from slug tests varied across the study area. Higher values, on the order of 2–5 ft/day, were found at and southwest of the former CCC/USDA facility. The hydraulic conductivity values for sediments northwest of the former facility, particularly near the Nigh property, were consistently lower, ranging from < 0.1 ft/day to approximately 1 ft/day. West of the Nigh property, estimated hydraulic conductivity values increased slightly to approximately 1–2 ft/day.

After extensive development, test pumping of well MW1 demonstrated groundwater withdrawal from the sediments at this location at a sustainable (24-hr) rate of approximately 1.1 gpm. Hydraulic conductivity estimates (1.4–1.5 ft/day) determined from the water level response at MW1 were similar to values obtained in slug testing of two piezometers (SB01 and SB34), located within approximately 300 ft of well MW1. Hydraulic conductivity values approximated from the small water level responses to the pumping of MW1 — observed at SB01 and SB34 — were 32–36 ft/day. Development pumping of well MW2 indicated that even low groundwater withdrawal rates (< 1 gpm) could not be sustained in the vicinity of the Nigh property.

Three monitoring wells, MW1–MW3, were installed to supplement the 13 existing permanent piezometers (sand point wells) and establish a monitoring network. These monitoring points will be used to track future migration of the plume.

Results of sampling conducted during this targeted investigation indicate that the lateral and downgradient limits of the plume have remained relatively unchanged since the Phase II sampling activities in November 2002. The data confirm that no groundwater contaminated with carbon tetrachloride has reached the vicinity of the intermittent creek west of the former CCC/USDA facility, and they further substantiate the westward diversion of the plume migration pathway previously observed near the Nigh property.

Integration of these results with known hydrogeologic data indicated that the migration pathway of the contaminant plume will be diverted to the southwest in the vicinity of the intermittent stream. The plume will ultimately be discharged to the lower reaches of this stream, limiting the potential for further westward migration of contaminated groundwater.

On the basis of the combined findings of the Phase I, Phase II, and targeted Phase III investigations, the following preliminary specific remedial action objectives were identified for the groundwater contamination at Everest:

- Prevent or mitigate any impacts to the surface waters of the intermittent stream west of the Nigh property.
- Invoke environmental use controls to prevent the installation of domestic drinking water wells within the areal extent of the plume.
- Reduce the volume or mass of carbon tetrachloride in the groundwater, and restore the groundwater to full beneficial use wherever practicable.

To satisfy these specific remedial objectives, the following individual corrective action alternatives — and combinations thereof — are recommended for evaluation in the Corrective Action Study (CAS) for the Everest site:

- No action

- Groundwater monitoring with environmental use controls
- Groundwater extraction with surface treatment

In the absence of intervention, the plume is expected to continue its migration and ultimately to be discharged into the intermittent stream. The following additional alternatives should be considered to mitigate future impacts to the stream:

- A permeable reactive barrier to be installed near the stream to treat groundwater prior to discharge.
- Phytoremediation, involving the planting of suitable vegetation near the stream discharge area to treat groundwater.

The Everest investigation results suggest that a source of carbon tetrachloride contamination to the groundwater might be associated with the site of private grain storage bins formerly located on the Nigh property. Although these bins were unrelated to former CCC/USDA grain storage activities, any continuing groundwater contamination arising from a migration pathway associated with such a source could directly affect the viability of corrective action alternatives for the Everest site. As part of the CAS effort, vertical-profile soil sampling on the Nigh property is proposed to determine the present levels of subsurface carbon tetrachloride contamination at this location. If remediation of these soils proves necessary, treatment options will be evaluated in conjunction with the alternatives outlined above.

1 Introduction

The Commodity Credit Corporation (CCC), an agency of the U.S. Department of Agriculture (USDA), formerly operated grain storage facilities at two different locations at Everest, Kansas (Figure 1.1). One facility (referred to in this report as the Everest facility) was at the western edge of the city. The second facility (referred to in this report as Everest East) was about 0.5 mi northeast of the town. The CCC/USDA operated these facilities from the early 1950s until the early 1970s, at a time when commercial fumigants containing carbon tetrachloride were in common use by the CCC/USDA and private industry for the preservation of grain in storage.

In 1997 the Kansas Department of Health and Environment (KDHE) sampled several domestic drinking water and non-drinking water wells in the Everest area as part of the CCC/USDA Private Well Sampling Program. All of the sampled wells were outside the Everest city limits. Carbon tetrachloride contamination was identified at a single domestic drinking water well (the Nigh well, DW06; Figure 1.1) approximately 3/8 mi northwest of the former Everest CCC/USDA grain storage facility. Subsequent KDHE investigations suggested that the contamination in DW06 could be linked to the former use of grain fumigants at the CCC/USDA facility.

For this reason, the CCC/USDA is conducting a phased environmental study to determine the source and extent of the carbon tetrachloride contamination at Everest and to identify potential remedial options. The studies are being performed by the Environmental Research Division of Argonne National Laboratory. Two phases of investigation were completed previously; this report presents the findings of the targeted Phase III investigation at Everest.

1.1 Previous Investigative Phases

Phase I of the investigation at Everest was performed in May–June 2000 (Argonne 2001). This phase examined the fundamental geologic, hydrogeologic, and geochemical characteristics of the Everest site that together define the local groundwater system and hence influence the fate and transport of carbon tetrachloride contamination in the subsurface. Because no groundwater was found beneath the Everest East facility during the Phase I investigation and the only previously reported detection of groundwater contamination at this location (KDHE 1998) could

not be confirmed (Argonne 2001), the Everest East facility was eliminated from further study by the KDHE.

The Phase II investigation therefore focused on the Everest facility on the western edge of town and had the primary goal of further delineating and understanding the distribution of carbon tetrachloride contamination in the subsurface and the potential source area(s) that might have contributed to this contamination. Phase II was conducted in three field mobilizations: October 2000, March–April 2001, and November 2002 (Argonne 2003). The principal combined findings of Phase I and Phase II are as follows:

- **Geologic and Hydrogeologic Setting**

- The stratigraphic sequence at Everest consists primarily of Holocene and Pleistocene loess, silts, and clays that overlie sands and sandy to gravelly clay till, which in turn rest on silty clays or Cretaceous limestone bedrock.

- The only water-bearing unit of significance identified at Everest is a variably saturated, 4- to 20-ft-thick interval of sands and sandy to gravelly clay till (designated as unit 3b by Argonne) (Figures 1.2 and 1.3).

- The lithology of the aquifer unit is heterogeneous. Relatively thick sandy and gravelly channel deposits and lenses are present in the till in the vicinity of the former Everest facility. Coarser-grained deposits are limited to thinner, more discontinuous lenses and stringers in the till to the west and northwest of the former CCC/USDA facility.

- Groundwater level relationships indicated that the more permeable intervals of the aquifer unit form a complex but hydraulically continuous network within the till. Semiradial groundwater flow was identified toward the southwest, west, and northwest, from an apparent recharge area near (and east of) the former Everest CCC/USDA facility.

- Variations observed in the patterns of hydraulic gradients, groundwater geochemical characteristics, and the distribution of carbon tetrachloride in groundwater across the site were interpreted to reflect the heterogeneous

distribution of more permeable and less permeable migration pathways within the aquifer unit.

- **Groundwater Contamination and Migration**

- The lateral and vertical extent of a carbon tetrachloride plume at Everest has been delineated. A continuous plume extends downgradient to the north-northwest from the former CCC/USDA facility, passes beneath and to the north of the contaminated Nigh property, and continues downgradient approximately 800 ft to the west of the Nigh property. Maximum carbon tetrachloride and chloroform concentrations of 727 $\mu\text{g/L}$ and 34 $\mu\text{g/L}$, respectively, were identified in groundwater at the top of the aquifer beneath the northwest corner of the former Everest CCC/USDA facility (Figure 1.4).
- Groundwater and contaminant migration within the aquifer unit occur via the complex network of generally saturated, discontinuous sandy channels, stringers, and lenses enclosed within less permeable and variably saturated sandy clay till. Groundwater movement within these sediments is driven by recharge in the area southeast of the former Everest CCC/USDA facility and by inferred discharge to the intermittent stream west of the former facility and the Nigh property. Groundwater flow and contaminant migration occur at relatively low rates near the Nigh farmstead because of a zone of dry till of low permeability identified upgradient of the property and a general reduction in the frequency and thickness of permeable intervals in the aquifer unit in that area.

- **Potential Source Areas**

- An association of carbon tetrachloride contamination with the soils at the former Everest CCC/USDA facility was confirmed by analyses of soil samples. Low levels of carbon tetrachloride (maximum 10–23 $\mu\text{g/kg}$) were detected in vadose zone soils at two locations beneath the former facility.
- Carbon tetrachloride was also detected in vegetation and near-surface soils associated with the site of private grain storage bins formerly located on the

Nigh property, suggesting a possible local source contribution to the carbon tetrachloride contamination previously identified in the domestic well (DW06) at this location and in groundwater downgradient from the Nigh property.

1.2 Targeted Phase III Investigation

The Phase I and Phase II investigations demonstrated that the groundwater plume originating from the former CCC/USDA grain storage facility contains carbon tetrachloride concentrations exceeding the maximum contaminant level (MCL) of 5 µg/L for this compound. No private wells currently being used for drinking water supply are affected by the existing contamination; the Nigh residence has been connected to city water, and the well is no longer being used for drinking water. Argonne's interpretation of the hydrogeologic regime at Everest suggests that continued downgradient migration of the plume could ultimately result in discharge of contaminated groundwater to the intermittent stream west of the city. On the basis of these observations, the CCC/USDA directed Argonne to proceed with a quantitative assessment of potential remedial action objectives and corrective action alternatives for this site. This assessment is to be carried out in accordance with the KDHE (2001a) *Scope of Work for a Comprehensive Investigation (CI)/Corrective Action Study (CAS)*.

To address this goal, Argonne recommended a targeted third phase of investigation to generate specific technical information required (in conjunction with the results of the Phase I and Phase II studies) to satisfy the primary objectives of a KDHE CI and serve as the basis for a CAS. The specific technical objectives of the targeted investigation were to accomplish the following:

- Further identify the potential distribution of carbon tetrachloride in subsurface soils at the former CCC/USDA facility and evaluate selected parameters that affect the fate of this contaminant in the vadose zone.
- Confirm the interpreted patterns of groundwater flow and the potential for groundwater discharge to the surface along the intermittent creek west of Everest.

- Obtain quantitative *in situ* estimates of hydraulic parameters for the sedimentary materials that compose the Everest aquifer unit.
- Install monitoring wells; collect and analyze groundwater samples at established monitoring points along the plume migration pathway, as a basis for potential future comparisons.
- Obtain quantitative data for selected aquifer parameters that affect the migration and fate of carbon tetrachloride in groundwater.
- Develop and propose an initial list of potential corrective action alternatives for further consideration and present a work plan for their evaluation.

This targeted investigation program was approved by the KDHE in September 2003. Subsequently, an aquifer test plan (Argonne 2004a) and a revised test plan (Argonne 2004b) were submitted to the CCC/USDA and the KDHE; the latter document received approval from the two agencies in February 2004. The test plans were developed to ensure that the targeted investigation acquired data necessary and sufficient to achieve its specific objectives.

1.3 Organization of This Report

This report documents the findings of the targeted investigation at the former CCC/USDA Everest facility, summarizes the combined results of the three phases of investigation conducted at Everest, and presents preliminary remedial action objectives and potential corrective action alternatives for the study area. Section 1 provides a brief history of the site and a summary of the Phase I and Phase II findings, identifies the specific technical objectives of the targeted investigation, and describes the sections contained in this report. Section 2 describes the investigative methods used during the targeted investigation. Section 3 presents the results of the targeted investigation. Section 4 discusses and interprets the results of the targeted investigation in the context of the specific technical objectives outlined in Section 1.2. The combined results of the Phase I, Phase II, and targeted Phase III investigations are summarized in Section 5. Section 6 summarizes the identified potential remedial action objectives and potential corrective action alternatives for the area of contaminated groundwater.

To streamline the reporting process, the complete materials contained in the Everest site-specific *Work Plan* (Argonne 2000), Phase I report (Argonne 2001), and Phase II report (Argonne 2003) and the relevant sections of the Kansas-specific *Master Work Plan* (Argonne 2002) are not repeated here in detail. Consequently, these documents must also be consulted to obtain the full details of the investigative program for Everest. These documents, together with the present report, provide the technical information that completes the CI.

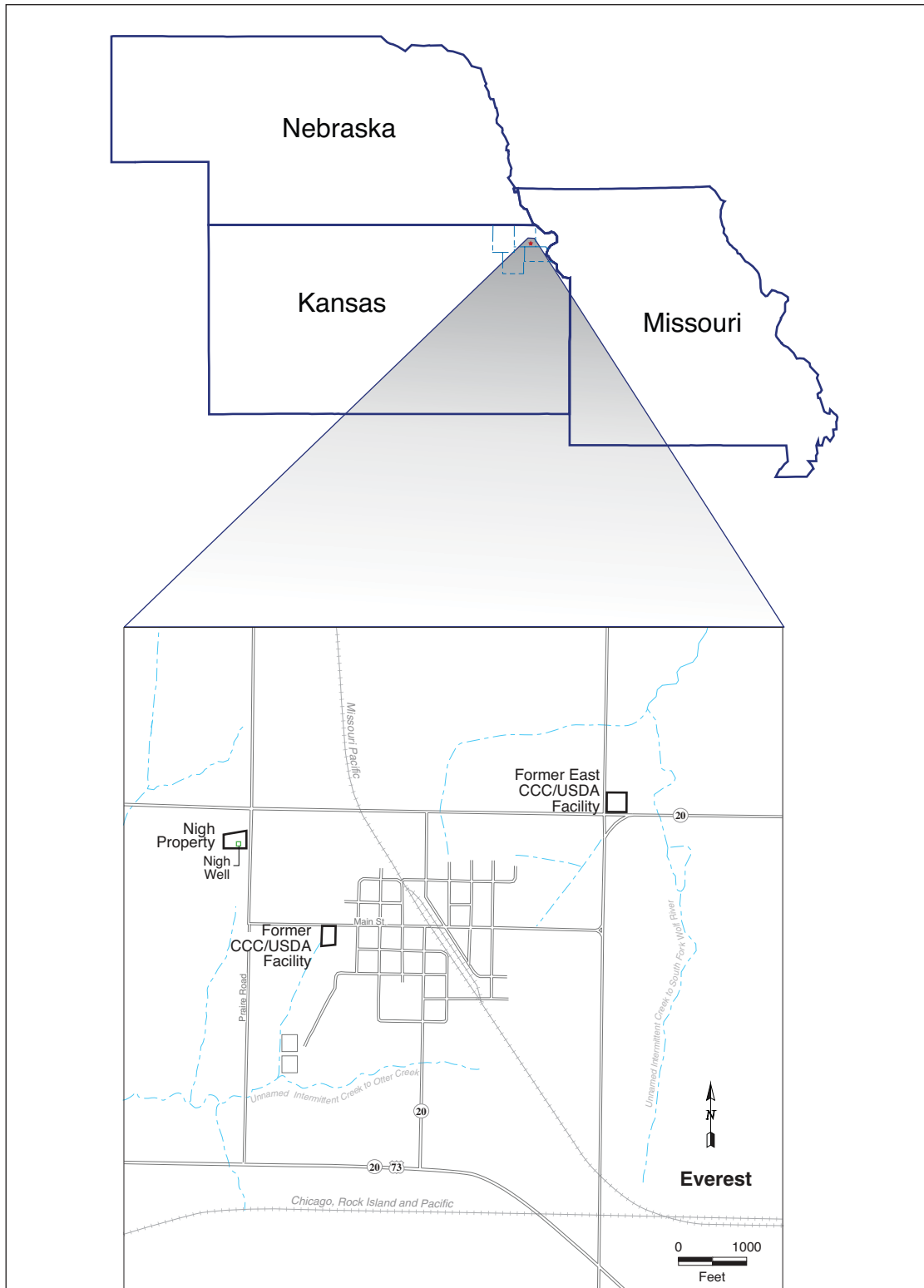


FIGURE 1.1 Locations of the former Everest and Everest East CCC/USDA grain storage facilities and the contaminated private well (DW06) on the Nigh property.

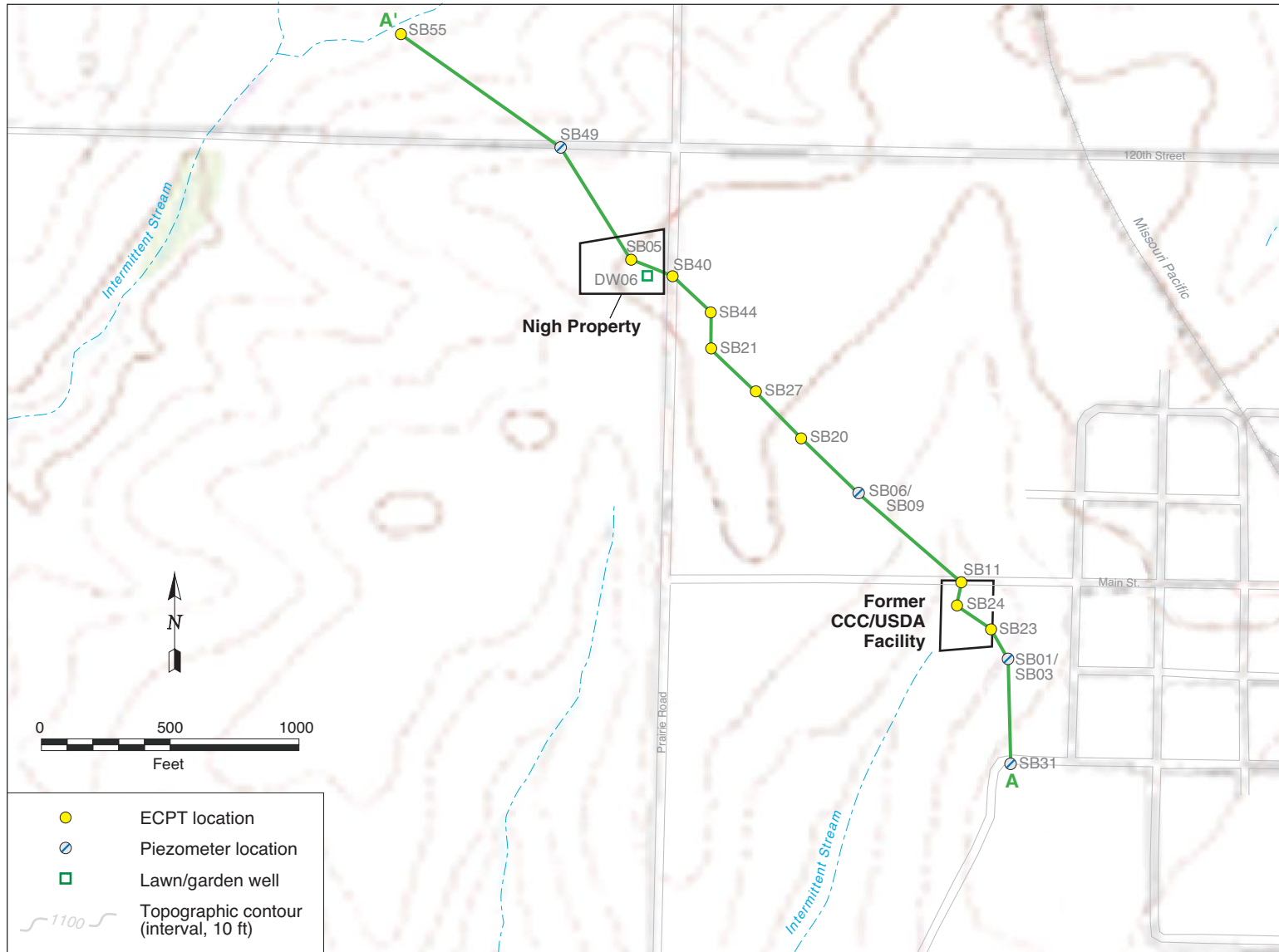


FIGURE 1.2 Location of Phase II interpretive southeast-to-northwest hydrogeologic cross section A-A'.

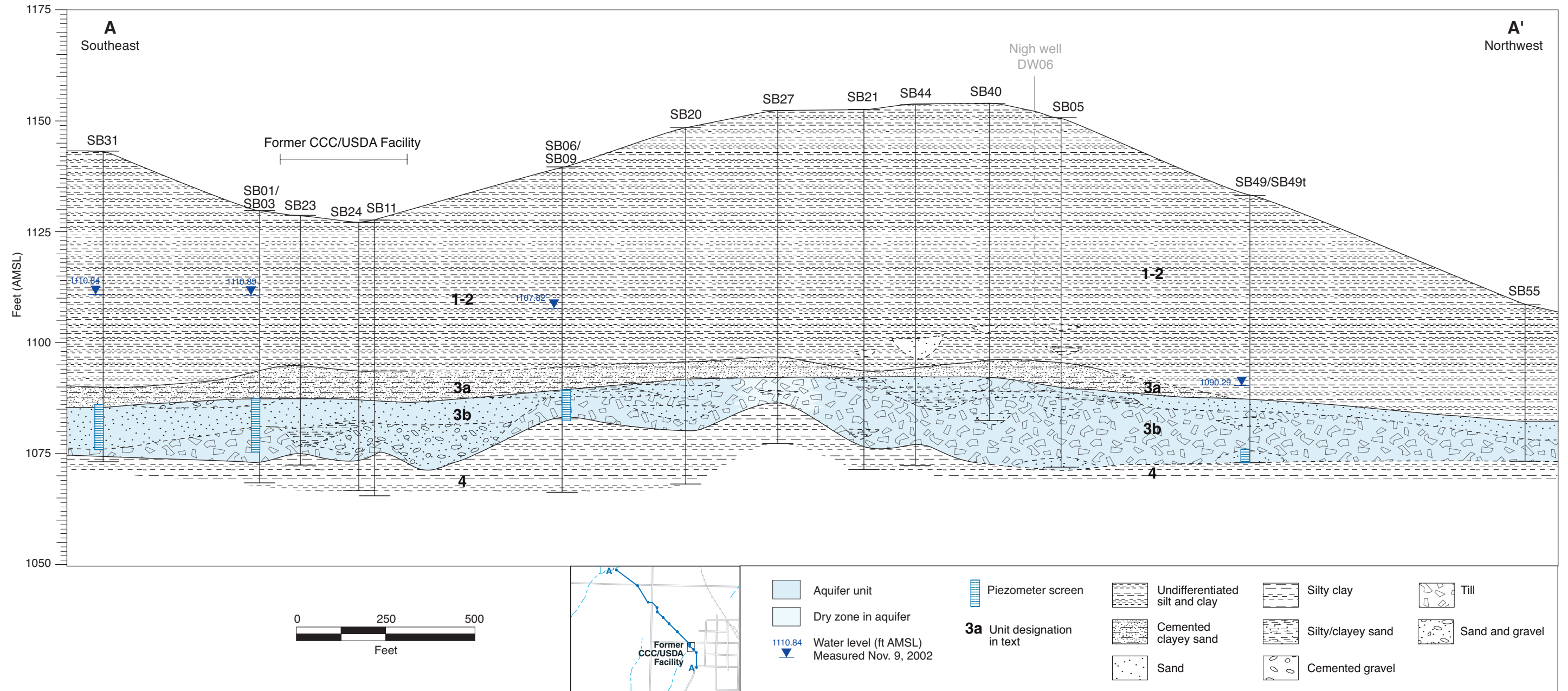


FIGURE 1.3 Phase II interpretive southeast-to-northwest hydrogeologic cross section A-A' (vertically exaggerated).

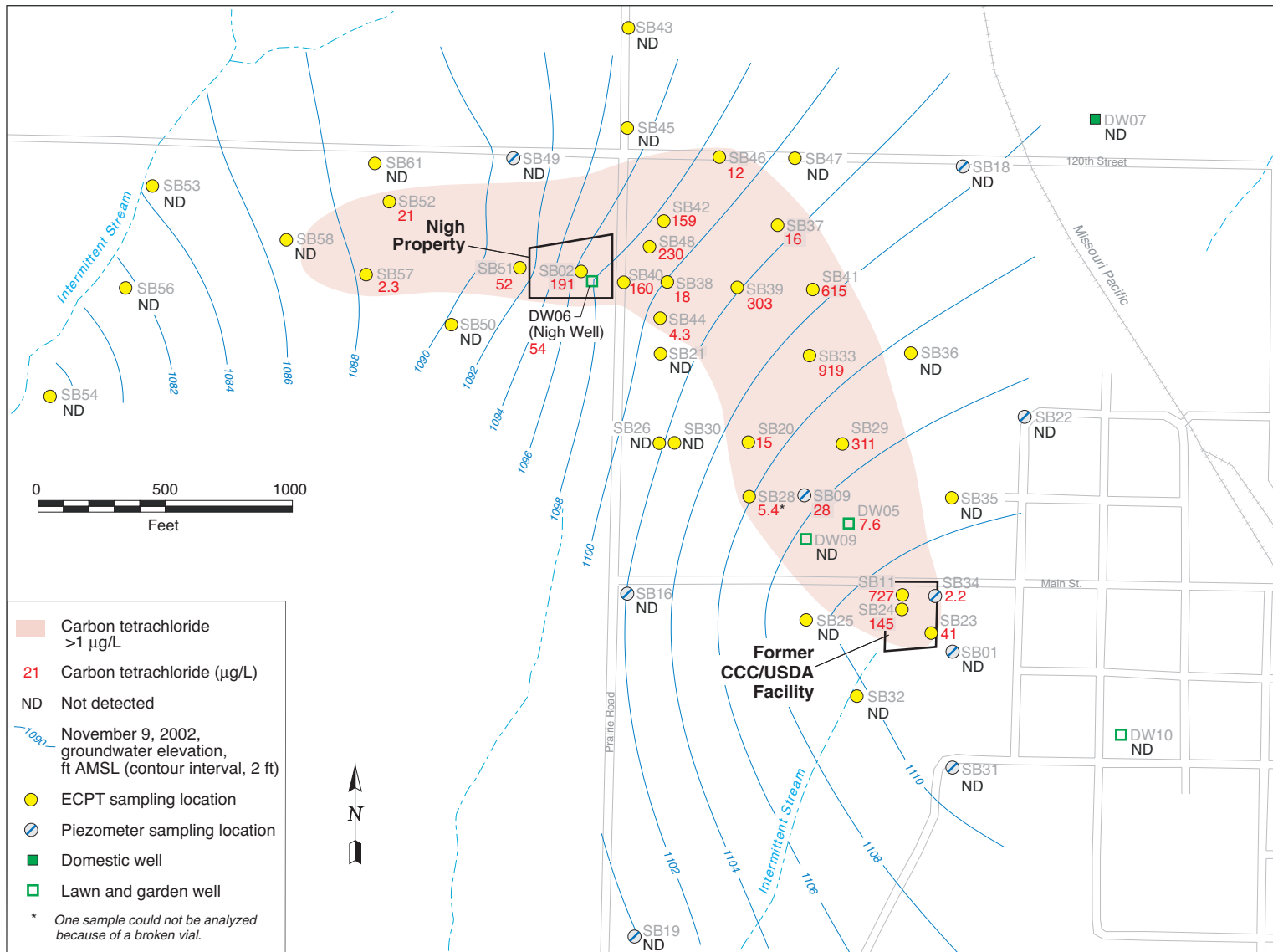


FIGURE 1.4 Locations of Phase I and Phase II groundwater samples from the aquifer unit in the western part of Everest and results of analyses for carbon tetrachloride (highest value recorded at each location), with locations of the former CCC/USDA facility and the Nigh property, plus groundwater elevations on November 9, 2002.

2 Investigative Methods

This section briefly describes the methods used to implement the targeted investigation at Everest. This section also identifies modifications made to the planned field program in response to information acquired during the study. The modifications include the following:

- Sampling of private wells west of the Nigh property at the request of the KDHE (Bunck, Knudson, Larson, Miller) and three additional private (Selland) wells south and southeast of Everest
- Installation of temporary (rather than permanent) piezometers at locations SB69–SB71 at the request of the landowner
- Limited groundwater sampling at location SB63 because of insufficient water
- Abandonment of the attempt at slug testing at location SB63 because of insufficient water
- Use of an average pumping rate of 1.12 gpm in the pumping test at MW1 rather than the planned target rate of 3 gpm, because pumping during redevelopment of the well indicated that the lower rate was required to prevent excessive drawdown at MW1

Throughout the field program, a comprehensive quality assurance/quality control (QA/QC) program was implemented to confirm the reliability of all information as it was accumulated. Procedures for the individual techniques employed at Everest are in the *Master Work Plan* (Argonne 2002).

The Phase III targeted investigation at Everest was performed in three main field mobilizations, on September 29–October 2, 2003; November 10–24, 2003; and February 16–20, 2004. The locations of all activities in the targeted investigation are shown in Figure 2.1, and the activities are summarized in Table 2.1.

TABLE 2.1 Locations of activities of the Phase III targeted investigation at Everest, Kansas.

Location	Soil Coring and Sampling ^a	ECPT Sensor Log	Piezometer	Water Level Monitoring	Water Sampling-Analysis ^b	Aquifer Parameters ^c	Slug Test	Pumping Test
<i>Existing Locations</i>								
SB01			permanent	hand	full		x	x
SB09			permanent	hand, auto	full		x	x
SB16			permanent	hand, auto	full		x	
SB18			permanent	hand	full		x	
SB19			permanent	hand	full		x	
SB22			permanent	hand	full		x	
SB31			permanent	hand	full		x	
SB34			permanent	hand	full		x	x
SB49			permanent	hand, auto	full		x	
SB60			permanent	hand, auto	full		x	
SB62			permanent	hand, auto	full		x	
SB63			permanent	hand, auto	partial		x ^d	
SB64			permanent	hand, auto	full		x	
DW06 ^e				hand				
<i>New Locations</i>								
SB65 ^e		x			partial			
SB66 ^e	x	x	temporary	hand, auto	full	x	x	
SB67 ^e	x	x	temporary	hand, auto	partial		x	
SB68 ^e		x	permanent	hand			x	x
SB69		x	temporary	hand, auto	partial			
SB70		x	temporary	hand, auto	partial			
SB71		x	temporary	hand, auto	partial			
SB72		x	permanent	hand, auto	partial			
SB73	x					x		
SB74	x	x			partial			
SB75	x	x			partial	x		
SB76	x	x			partial			
SB77		x	permanent	hand				
MW01				hand	partial			x
MW02				hand	partial			x
MW03				hand	partial			
Bunck ^f					partial			
Knudson ^g					partial			
Larson ^f					partial			
Miller ^g					partial			
Selland ^h					partial			

^a Analyses included volatile organic compounds (VOCs) and soil moisture.

^b Full suite of analyses included laboratory measurements of cations, anions, VOCs, additional organic compounds, and total organic carbon, as well as field measurements of temperature, pH, conductivity, dissolved oxygen, reduced iron, and redox potential. Partial suite included VOCs and the field measurements.

^c Parameters measured included bulk dry density, moisture, specific gravity, porosity, total organic matter, and carbon content. These parameters affect contaminant sorption to aquifer materials.

^d Planned location; insufficient water for test.

^e On or near High property.

^f Wells used for domestic drinking water supply; within approximately 1 mi of the western edge of the contaminant plume.

^g Livestock wells; within approximately 1 mi of the western edge of the contaminant plume.

^h Three currently unused wells south and southeast of the former CCC/USDA facility.

2.1 Methods to Further Identify the Potential Distribution of Carbon Tetrachloride in Subsurface Soils at the Former CCC/USDA Facility and Evaluate Selected Soil Parameters That Affect the Fate of This Contaminant in the Vadose Zone

The results of headspace analyses of near-surface soil samples collected at the former Everest CCC/USDA facility during Phase II identified five areas of relatively high carbon tetrachloride concentrations that were targeted for deeper sampling (highlighted areas in Figure 2.2). Access restrictions during Phase II limited vertical-profile sampling of the vadose zone soils to only two of these areas. Carbon tetrachloride was detected in both areas investigated, at levels of 10–23 µg/kg in samples from borings SB23, SB24, and SB34 (Argonne 2003).

To complete the investigation of the prioritized areas at the former CCC/USDA facility, subsurface soils were collected in the Phase III targeted investigation at four additional locations shown in Figure 2.2 (SB73–SB76). Location SB73 was selected to investigate an isolated area of relatively high headspace carbon tetrachloride concentrations in shallow soils that might be associated with a high carbon tetrachloride concentration (727 µg/L) identified in groundwater at location SB11 in Phase I. Locations SB74–SB76 were chosen to investigate areas of relatively high headspace concentrations in near-surface soils associated with the southwestern and central groups of former grain bins.

To directly evaluate the possible impact to groundwater of a potential continuing soil source of contamination at the former CCC/USDA facility, groundwater samples for analysis of volatile organic compounds (VOCs) were collected in the saturated zone from well MW1 (installed during the Phase III targeted investigation at location SB73) and at locations SB74–SB76 (with the electronic cone penetrometer [ECPT]).

2.2 Methods to Confirm the Interpreted Patterns of Groundwater Flow and the Potential for Groundwater Discharge to the Surface along the Intermittent Creek West of Everest

To confirm the interpretation of groundwater flow presented in Figure 1.4, the ECPT was used in the Phase III targeted investigation to advance borings at five locations west of the intermittent creek (SB69–SB72 and SB77; see Figure 2.1). The purposes were to (1) determine

the hydraulic continuity of the aquifer unit on the west side of the creek and (2) identify groundwater levels and the direction(s) of groundwater flow west of the creek and thus establish whether a groundwater divide is present.

Groundwater was sampled with the ECPT at locations SB69–SB72 to determine whether contaminated groundwater has migrated beneath and to the west of the intermittent creek. At the request of the KDHE, groundwater was also sampled in four private wells along the possible migration pathway to the west. Three wells to the south and southeast were sampled as a courtesy to their owner (Figure 2.3).

Temporary piezometers (rather than permanent piezometers) were installed at SB69–SB71, in the field west of the creek, at the request of the property owner. Permanent piezometers (sand point wells) were installed with the ECPT at SB72 and SB77 to permit longer-term monitoring of water level fluctuations on the west side of the creek. Groundwater levels were measured in the complete network of observation points depicted in Figure 2.4, both by hand and (at selected locations) with automatic water level recorders. These measurements supplemented extended water level monitoring data recovered from automatic recorders installed upon completion of the Phase II studies in November 2002.

Reconnaissance was performed to investigate for possible groundwater seepage from the aquifer unit to the creek, downgradient from the former CCC/USDA facility (Figure 2.5).

2.3 Methods to Obtain Quantitative *In Situ* Estimates of Hydraulic Parameters for the Sedimentary Materials That Compose the Everest Aquifer Unit

Argonne's Phase I and Phase II findings demonstrated complexity in the hydrogeology of the Everest aquifer unit and the migration pathways within it. In particular, significant apparent changes in the groundwater flow regime near the Nigh property affect the interpreted migration of carbon tetrachloride originating at the former CCC/USDA facility.

The expected patterns of groundwater flow and contaminant transport must be evaluated to assess the potential viability of remedial alternatives as part of the CAS. To facilitate these

studies, quantitative data on the *in situ* hydraulic characteristics of the aquifer unit were acquired in the targeted investigation through the following activities:

- Single-well response (“slug”) testing of piezometers to generate data on the range and distribution of aquifer hydraulic conductivity values across the Everest study area (Figure 2.6).
- Installation, sampling, and slug testing of additional borings near the Nigh property to refine Phase II interpretations about the influence of a zone of dry till southeast and upgradient of the Nigh property, as well as the general reduction in the frequency and thickness of more permeable intervals in the aquifer unit in this area.
- Installation of permanent wells at the former CCC/USDA facility and the Nigh property (MW1 and MW2; Figure 2.7) and test pumping for a direct determination of the aquifer response to pumping under the different hydraulic conditions along the plume migration pathway. A permanent piezometer was installed at SB68, near MW2, as a planned observation point. Near MW1, existing piezometers at SB01, SB09, and SB34 functioned as observation points.

2.4 Methods to Install Monitoring Wells and Collect and Analyze Groundwater Samples at Established Monitoring Points along the Plume Migration Pathway, as a Basis for Potential Future Comparisons

Permanent monitoring wells were installed at three locations selected by the KDHE (MW1, MW2, and MW3) along the migration pathway of the contaminant plume. Groundwater samples were collected for VOC analyses at MW1–MW3 and at the permanent piezometers (sand point wells) shown in Figure 2.8 to establish baseline conditions and permit periodic sampling and analysis of groundwater.

To facilitate the identification and monitoring of potential biological activity within the Everest aquifer unit that might affect levels of carbon tetrachloride and chloroform, groundwater samples were collected at SB66 and at a number of Phase I and Phase II locations (Table 2.1) for

laboratory analyses of selected inorganic (cation and anion concentrations) and organic (dissolved methane, ethane, and ethene, plus total organic carbon) geochemical parameters.

The groundwater samples were analyzed in the field for additional parameters (temperature, pH, conductivity, dissolved oxygen, reduced iron, and redox potential) that can aid in the immediate evaluation of groundwater relationships or are highly sensitive to changes during sample handling and transport and hence are not amenable to off-site laboratory analysis.

2.5 Methods to Obtain Quantitative Data for Selected Aquifer Parameters That Affect the Migration and Fate of Carbon Tetrachloride in Groundwater

To provide a quantitative basis for estimating contaminant sorption effects and hence the expected retardation of carbon tetrachloride along the groundwater and contaminant migration pathways, core samples of sediments in the Everest aquifer unit were collected at SB66, SB73, and SB75 (Figure 2.9). These samples were analyzed for total organic carbon content, porosity, and bulk density. The samples collected at SB73 and SB75, at the former CCC/USDA facility, were chosen to represent the range of sediment types found in this portion of the aquifer unit. Location SB66 is in the area of more restricted groundwater flow identified in Phase II northwest of the former CCC/USDA facility, near the Nigh property.

2.6 Methods to Develop and Propose a Preliminary List of Remedial Action Objectives and Alternatives for Further Consideration at the Everest Site

The results of the targeted investigation, together with the findings of the Phase I and Phase II investigations, were used as the technical basis for the development of preliminary remedial action objectives and the selection of potential corrective action alternatives for consideration for the Everest site.

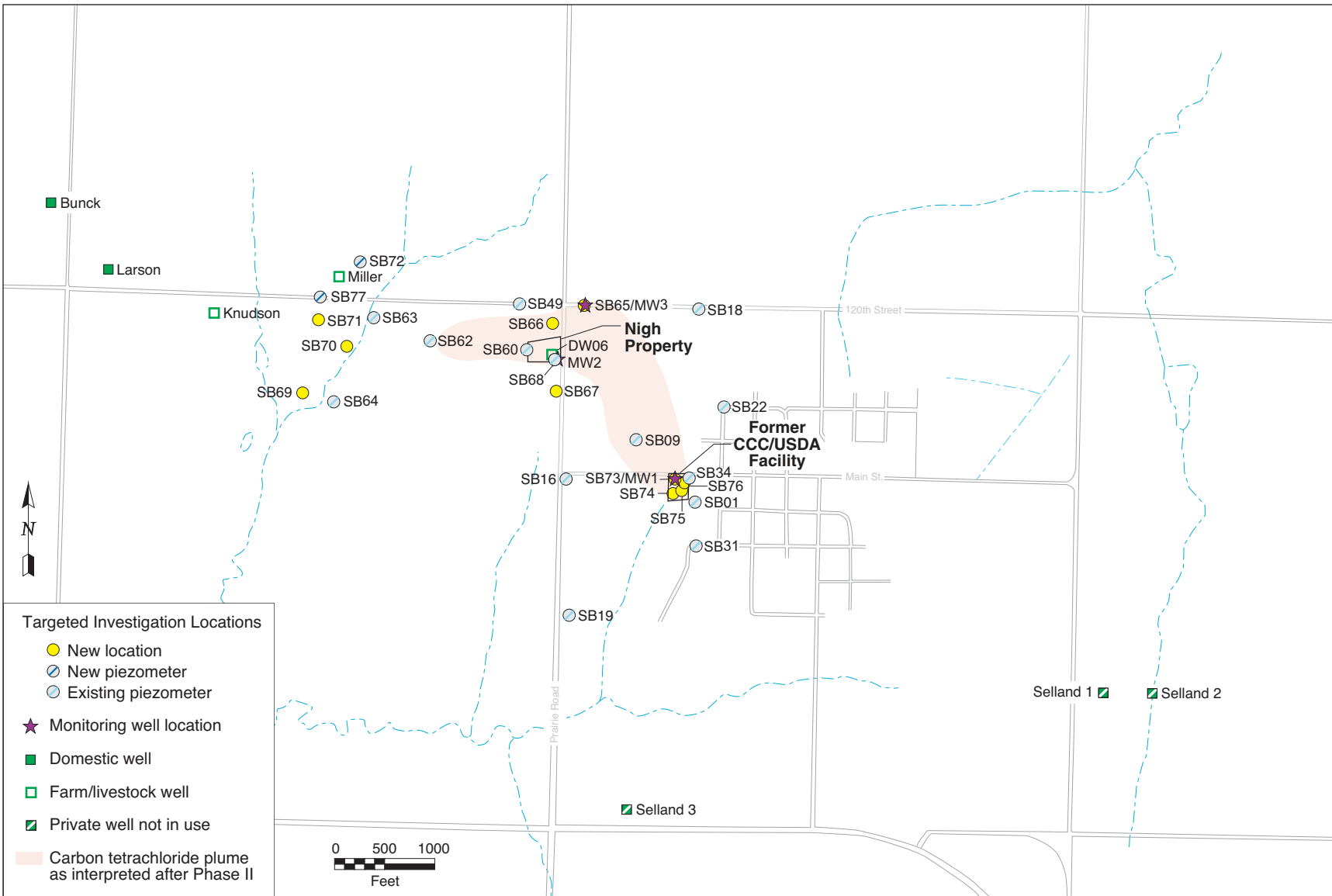


FIGURE 2.1 Locations of field activities in the Phase III targeted investigation at Everest.

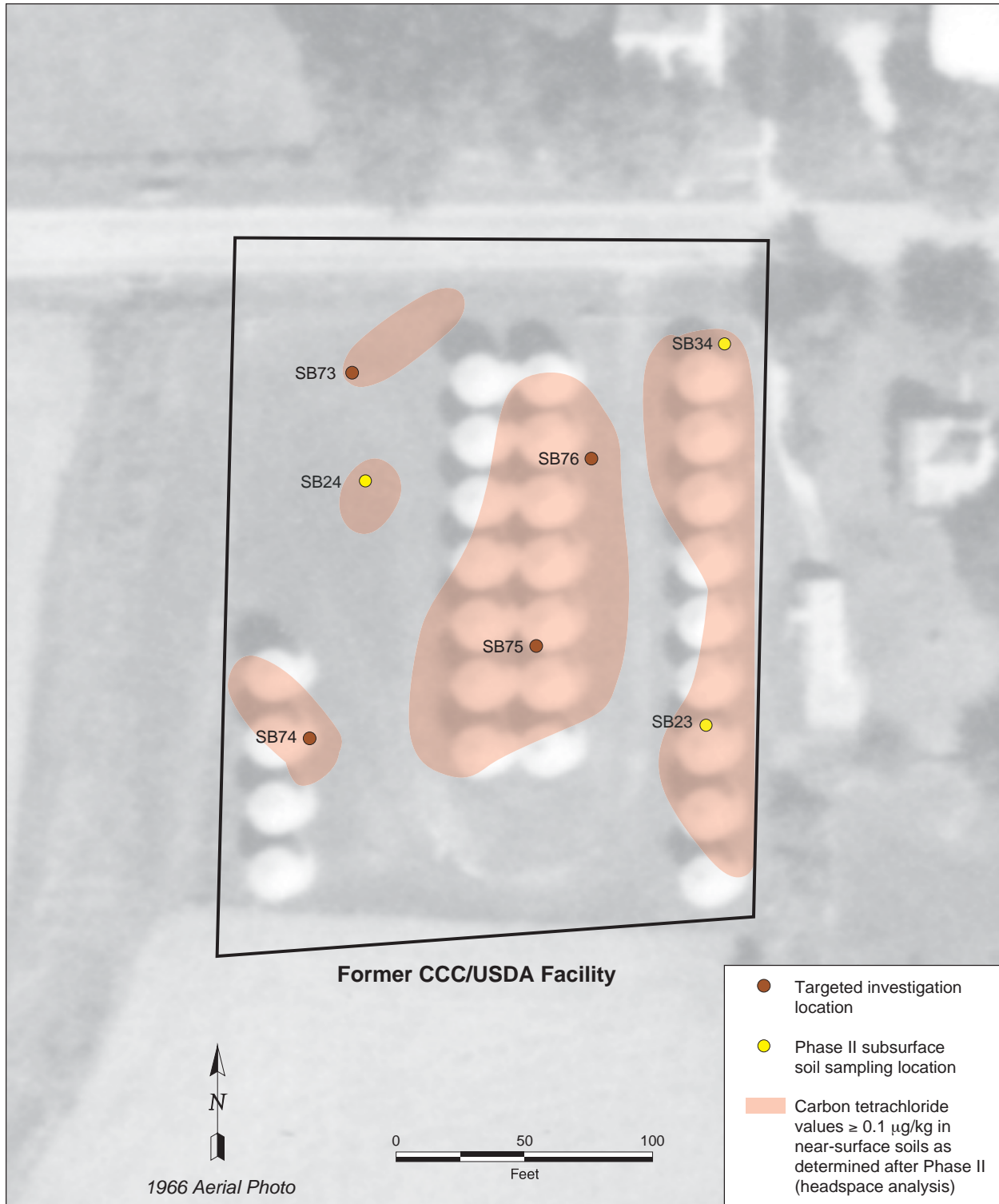


FIGURE 2.2 Locations of grain bins at the former Everest CCC/USDA facility in 1966, interpreted pattern of carbon tetrachloride contamination from headspace analyses of near-surface soil samples, and locations where subsurface soils were collected with the electronic cone penetrometer during the Phase II investigation (SB23, SB24, SB34) and the Phase III targeted investigation (SB73–SB76). Source of photograph: USDA 1966.

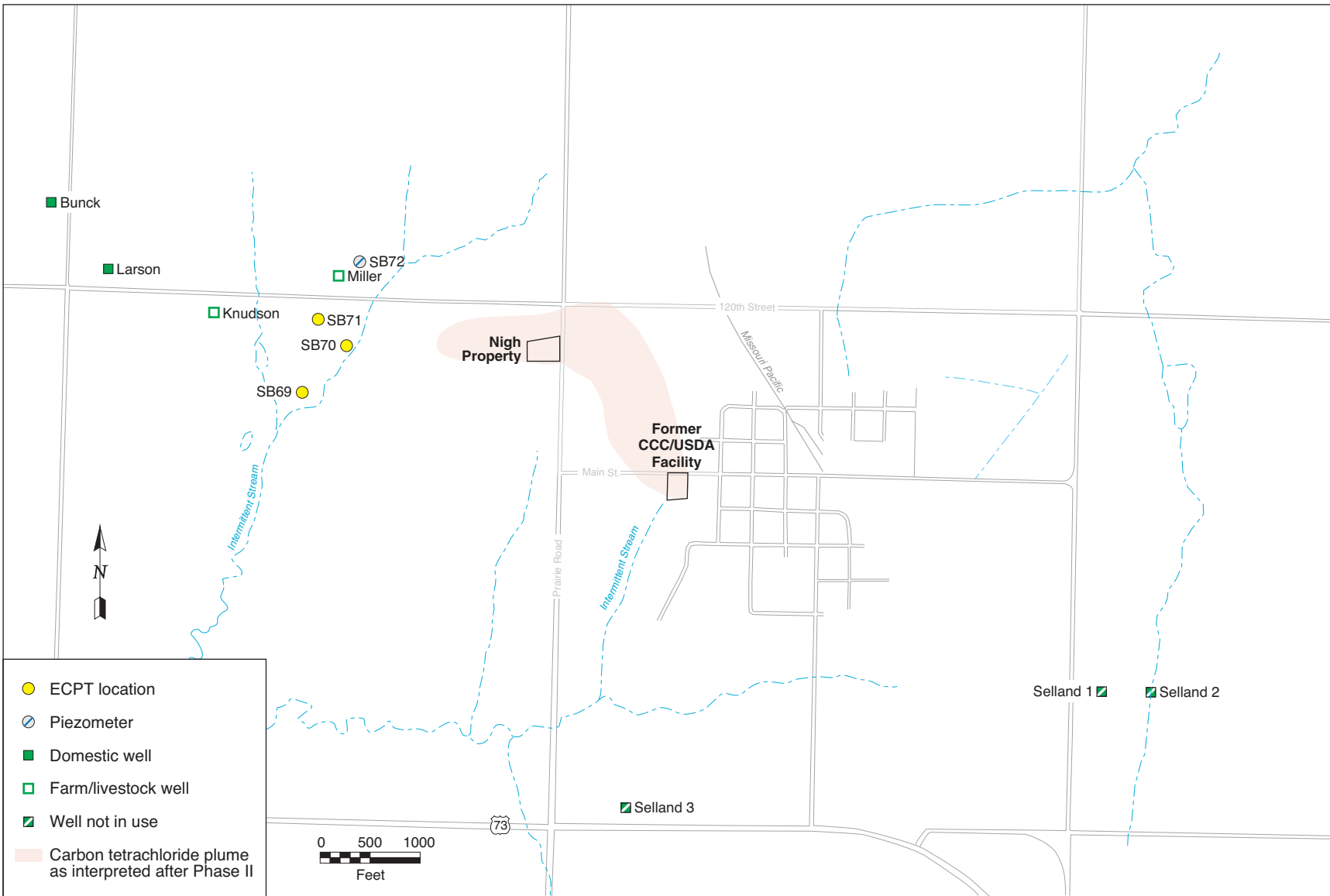


FIGURE 2.3 Locations of private wells and ECPT borings sampled for VOCs analyses during the Phase III targeted investigation.

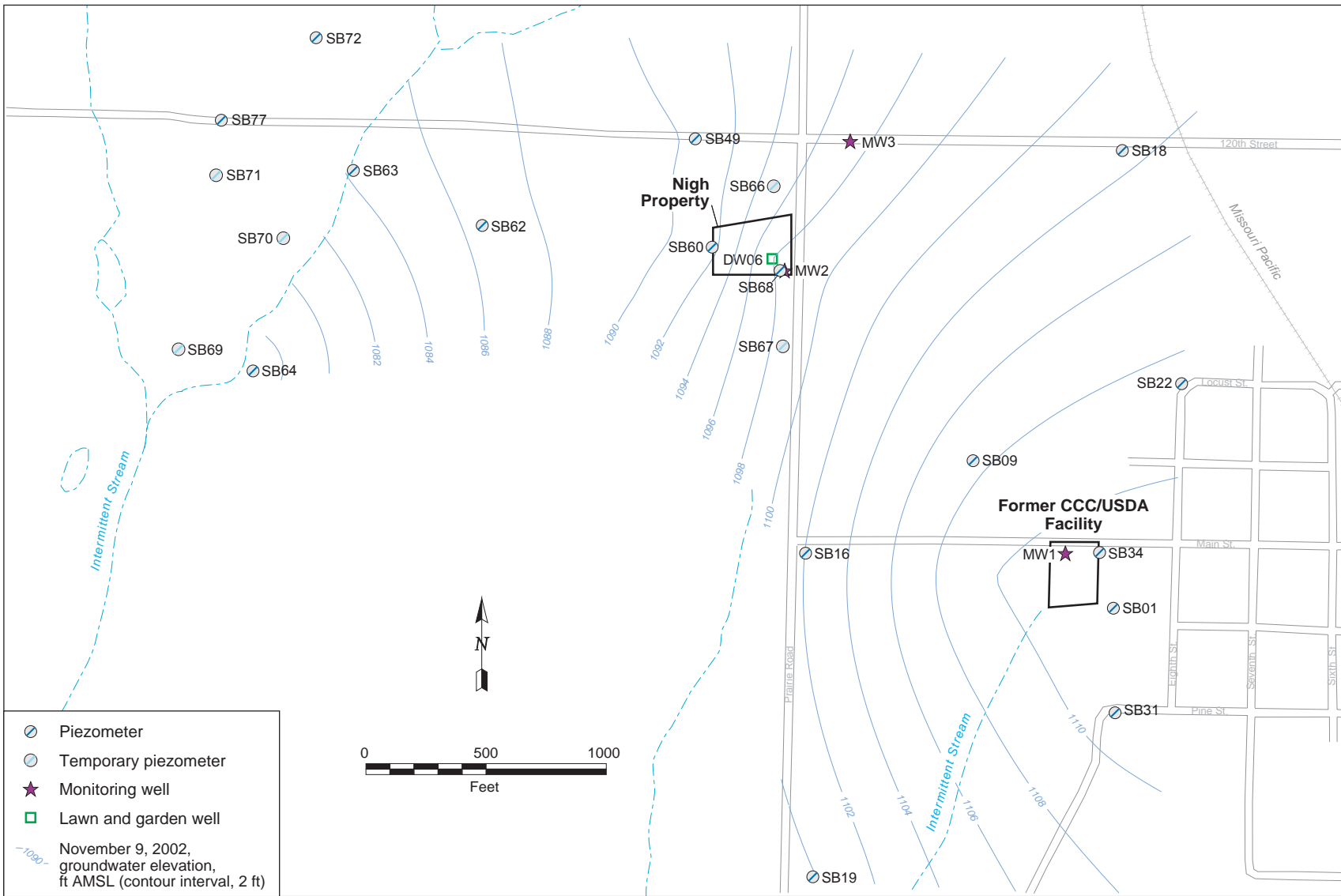


FIGURE 2.4 Locations of Phase I and Phase II permanent piezometers, private well DW06, and the new temporary and permanent piezometers and monitoring wells used for the measurement of water levels during the Phase III targeted investigation at Everest, with groundwater elevation contours determined in November 2002.

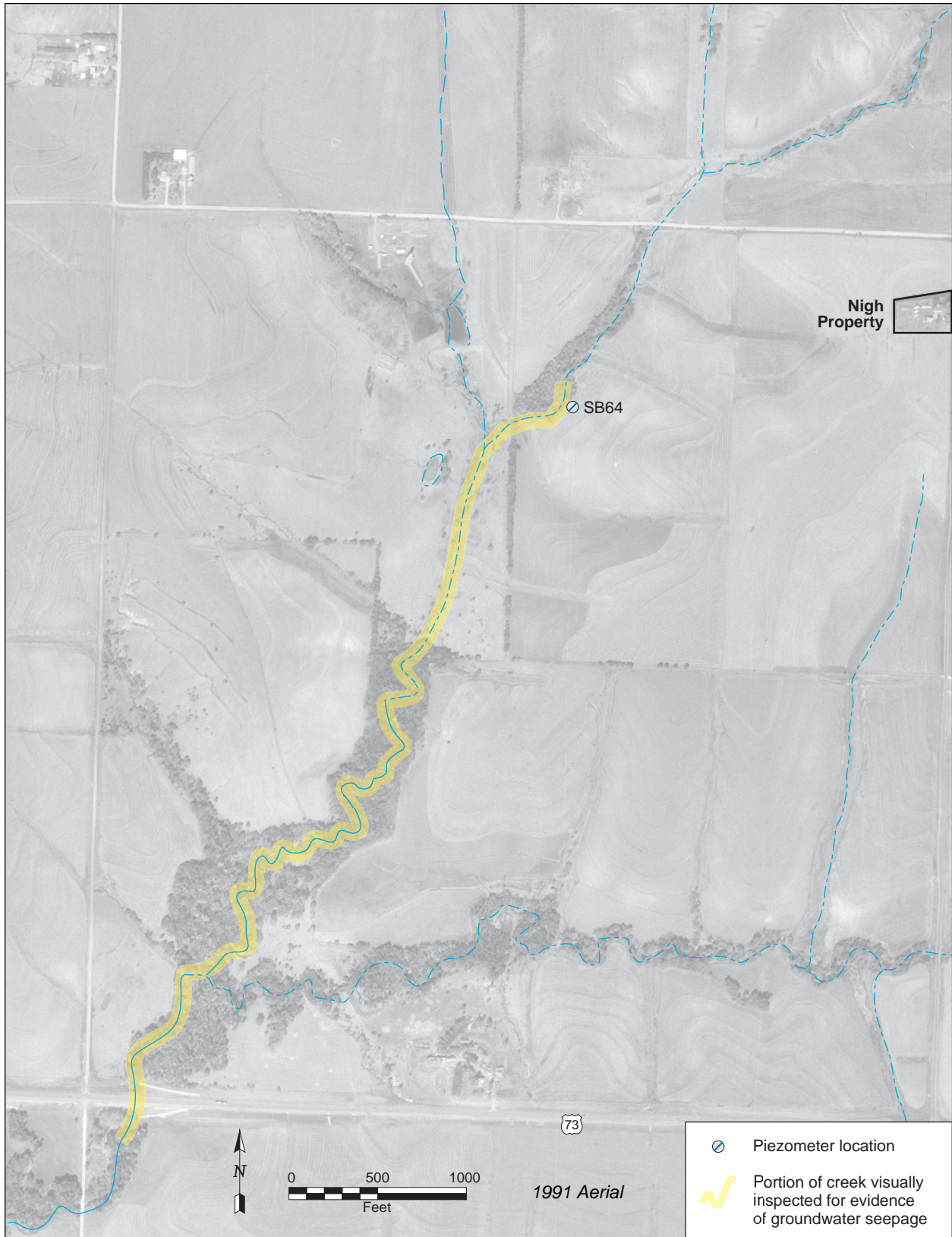


FIGURE 2.5 Portion of the creek channel west of the Nigh property that was visually inspected during the Phase III targeted investigation for evidence of groundwater seepage into the creek. Source of photograph: USGS 1991.

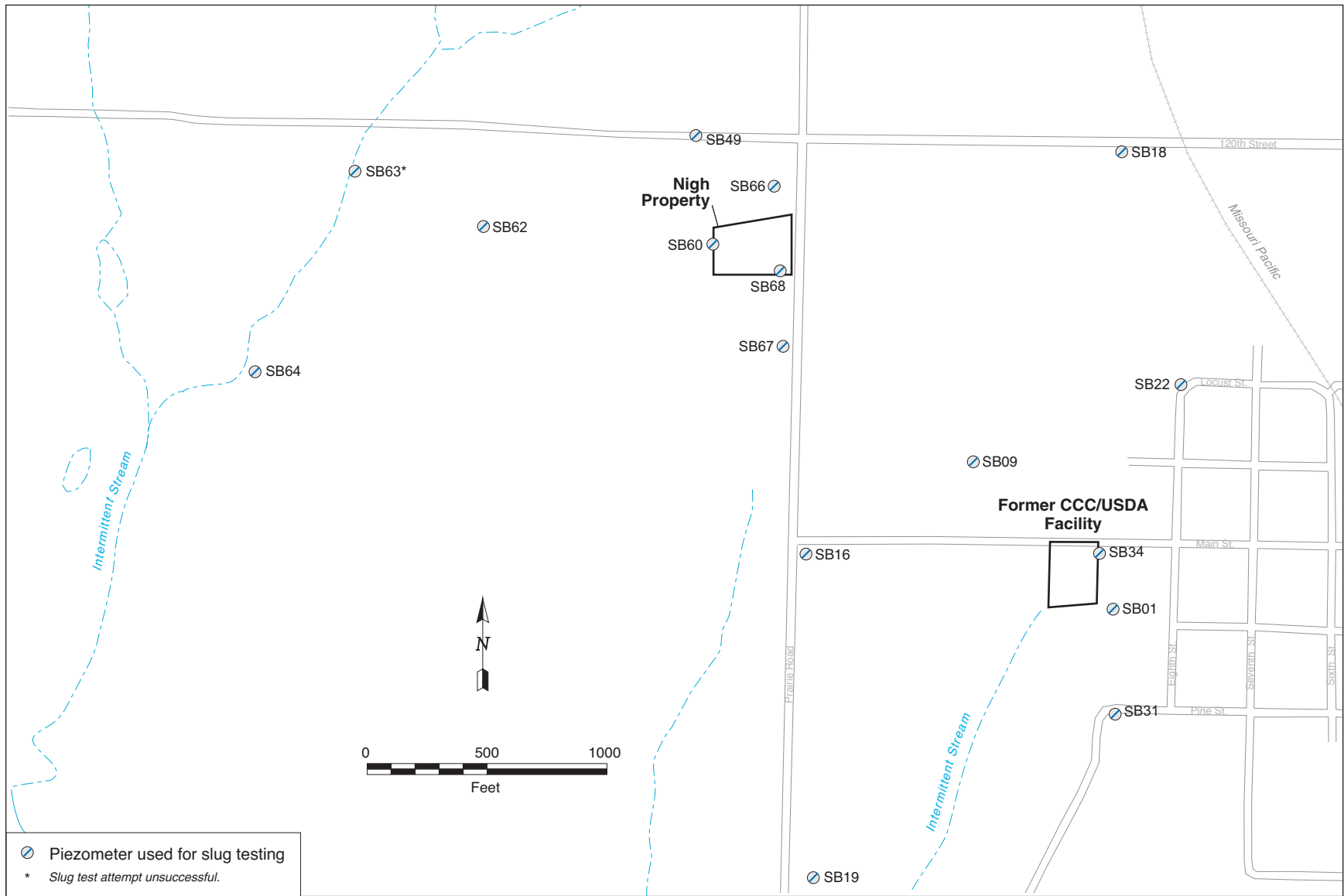


FIGURE 2.6 Locations of piezometers used for slug testing during the Phase III targeted investigation.

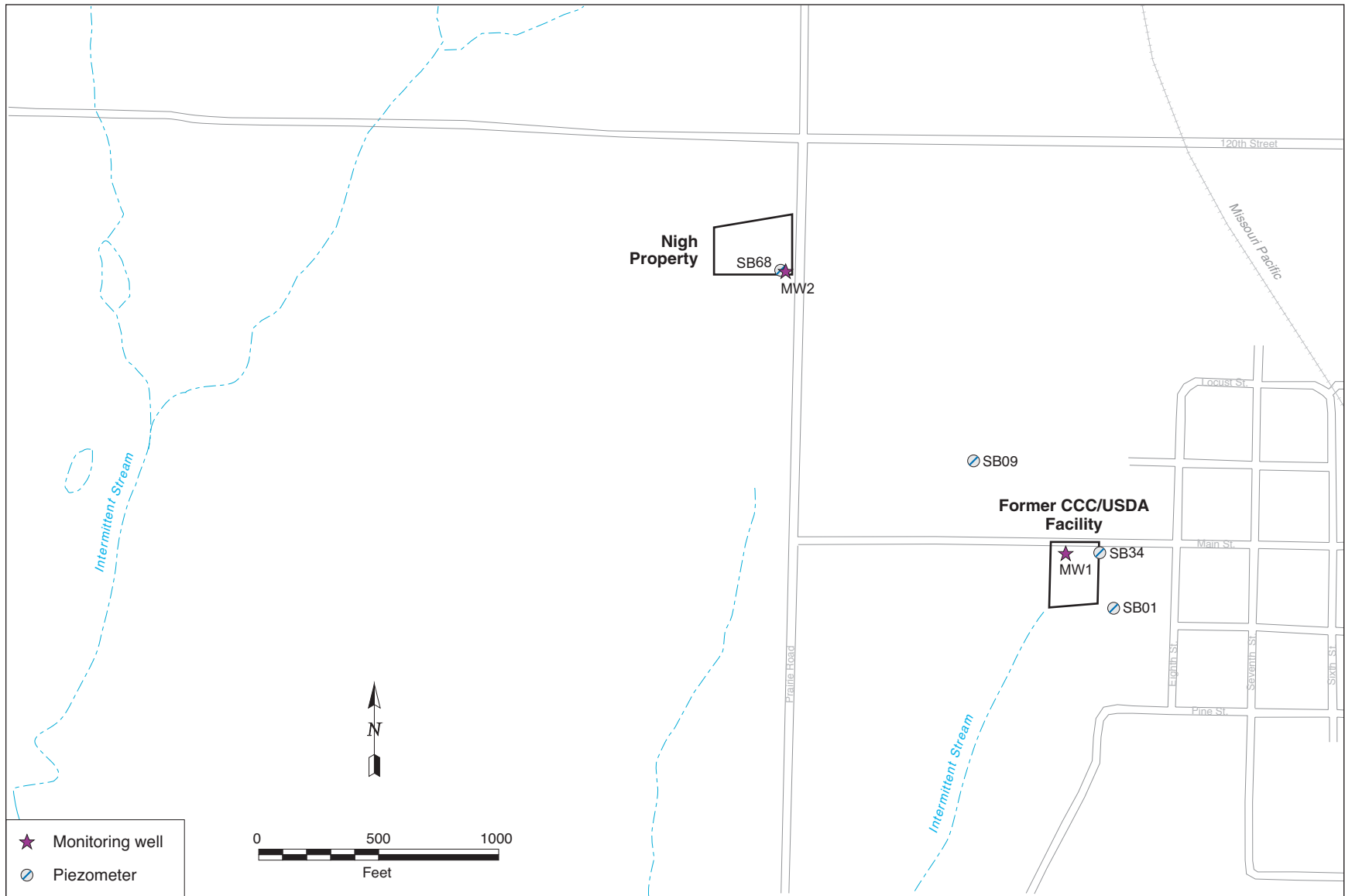


FIGURE 2.7 Locations of the pumping wells (MW1 and MW2) and observation piezometers used during test pumping of the Everest aquifer unit.

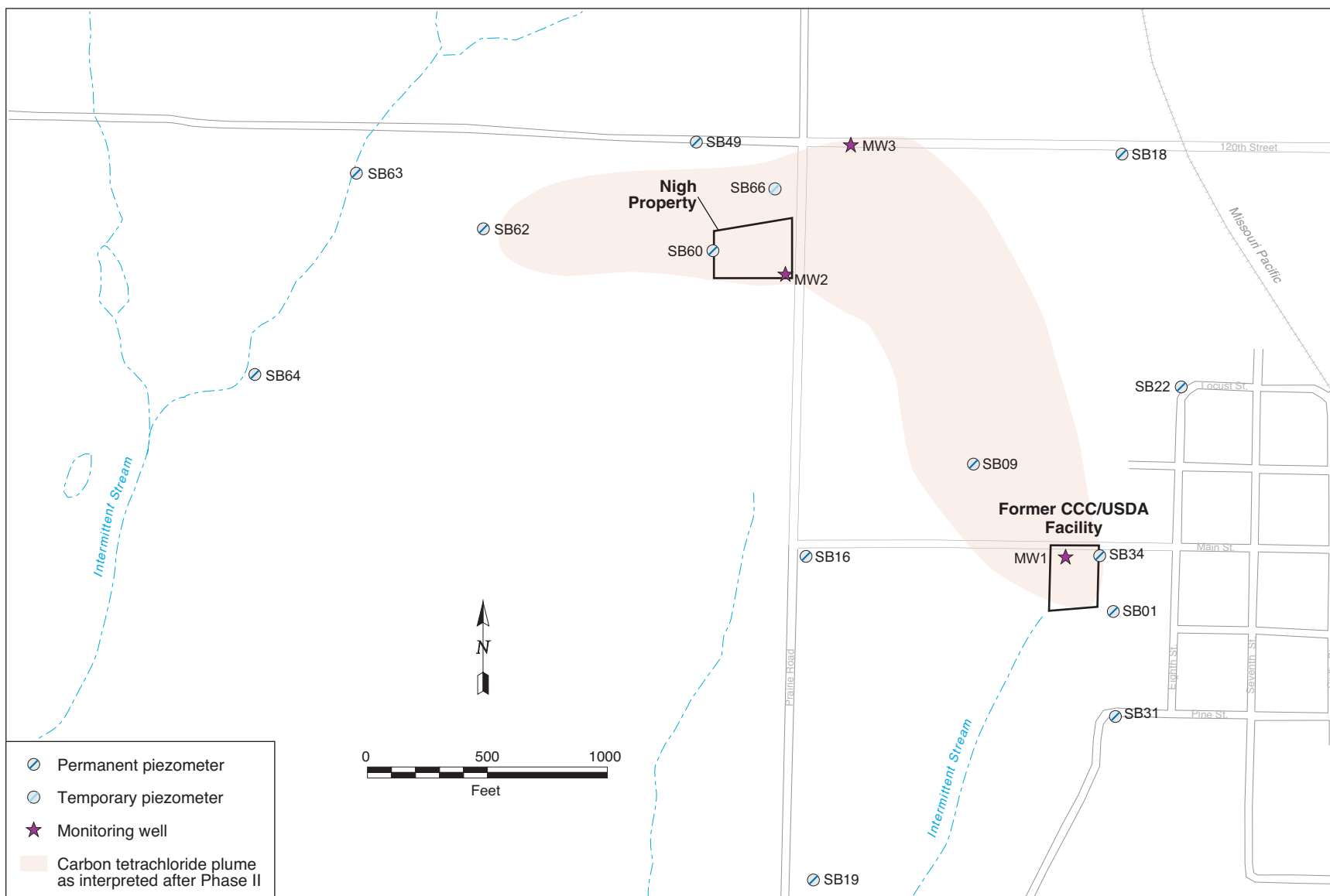


FIGURE 2.8 Locations of the monitoring wells, permanent piezometers, and temporary piezometer sampled during the Phase III targeted investigation for baseline VOCs analyses and selected organic and inorganic geochemical analyses.

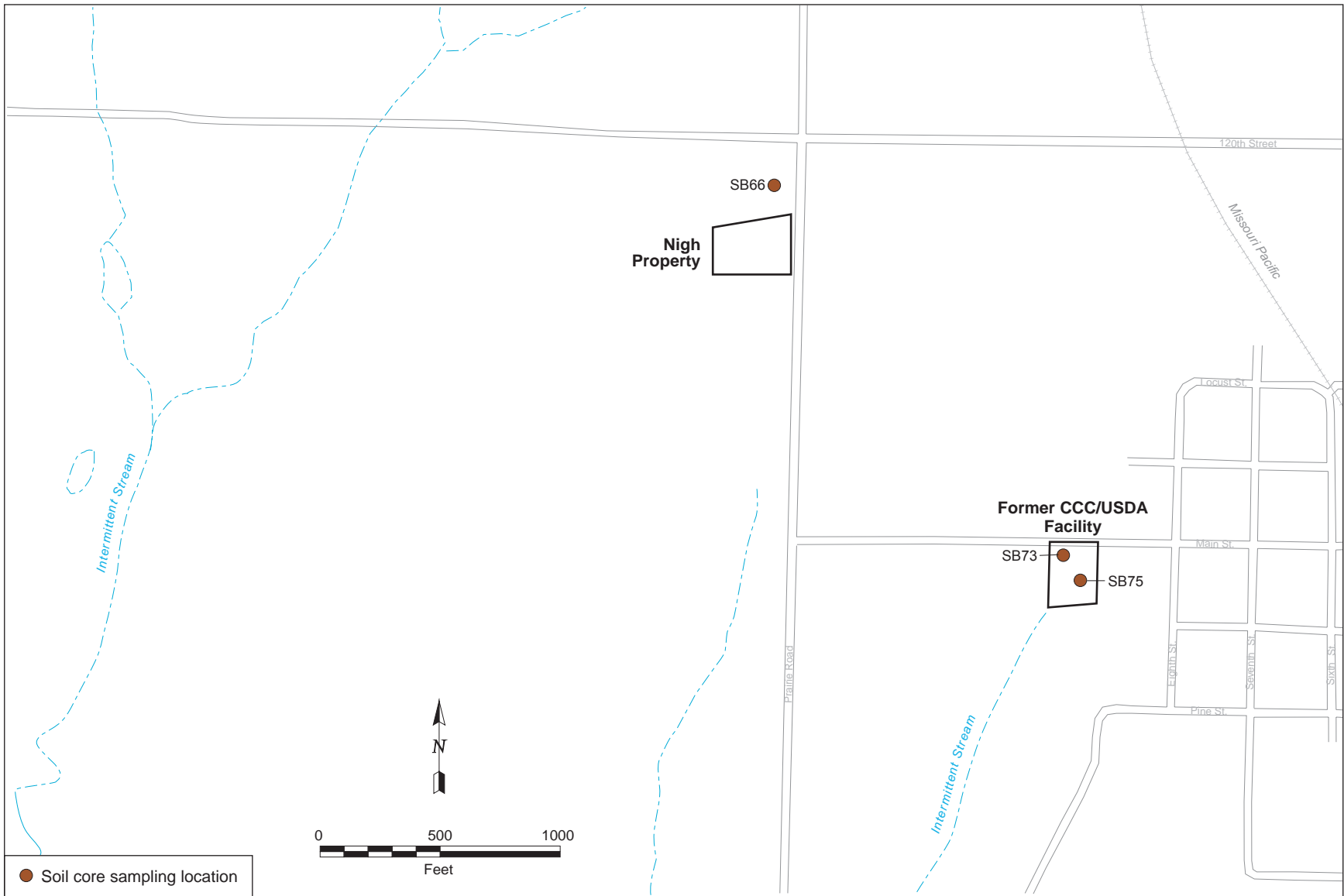


FIGURE 2.9 Locations of cores collected to determine the organic content of the Everest aquifer unit and physical properties that could affect sorption of carbon tetrachloride to the aquifer materials.

3 Field and Laboratory Data

The data generated by the targeted investigation activities are organized in this section by the type of test performed or the medium analyzed. These data are discussed and interpreted in Section 4 in the context of the objectives of the Phase III targeted investigation (Section 1.2).

3.1 Electronic Cone Penetrometer Sensor Data

At locations SB65–SB77 (except SB73), ECPT tip and sleeve friction data were collected by using the Argonne crawler (Figure 2.1). The ECPT sensor logs were used as a guide for the general identification of major stratigraphic units and to select intervals for confirmatory soil and groundwater sampling. These ECPT sensor logs are in Appendix A. A sensor log was collected in Phase I at SB11, the same location as SB73. This log is in Appendix B of the Phase I report (Argonne 2000).

3.2 Soil Sampling Data

The ECPT was used to collect soil samples for lithologic logging at borings SB66 and SB73–SB76. Sampling was attempted at SB67, but recovery was minimal. In borings SB73–SB76, soil samples were collected for VOCs analyses at 5-ft intervals from 8 ft to 38 ft below ground level (BGL; the approximate top of the saturated zone). Descriptions of the soil samples analyzed for VOCs are in Appendix B, Table B.1.

The samples collected for VOCs analyses were placed in jars, sealed, preserved on dry ice in the field, and shipped to the Applied Geosciences and Environmental Management (AGEM) Laboratory at Argonne National Laboratory for analysis by the purge-and-trap gas chromatograph-mass spectrometer (GC-MS) method (U.S. Environmental Protection Agency [EPA] Method 8260B with methanol extraction). The results are summarized in Appendix B, Table B.2. Replicate soil samples collected for verification analyses are discussed in Section 3.9.

Two core samples from SB66 (53.66–54.66 and 56–57 ft BGL), two samples from SB73 (41–42 and 47–48 ft BGL), and one sample from SB75 (44–45 ft BGL) were sent to HWS Consulting Group, Inc., Lincoln, Nebraska, for analyses of total organic carbon content, porosity, and bulk density. Specific gravity was determined in accordance with American Society for

Testing and Materials (ASTM) Standard D854-00. Measurements of bulk density and porosity used the U.S. Corps of Engineers Method EM1110-2-1906. Total organic matter and carbon content were determined by using the Walkley-Black OM test method. The results of these analyses are in Appendix B, Table B.3.

The results of AGEM Laboratory moisture determinations on soil samples collected in vertical profiles at the former CCC/USDA facility are in Appendix B, Table B.4.

3.3 Groundwater Sampling Data

Groundwater sampling in the saturated zone was conducted with the ECPT. The samples were collected by pushing ECPT rods and a disposable tip to the target depth interval. The rods were then withdrawn a predetermined distance to expose an internal filter screen section. Groundwater passing into the filter screen was sampled by using a bailer inserted through a polyvinyl chloride (PVC) riser attached to the filter screen. The groundwater sample at location SB73 was collected from monitoring well MW1. Descriptions of the groundwater samples are in Appendix C, Table C.1.

At the request of the KDHE, Argonne also sampled all private wells within approximately 1 mi to the west of the plume identified in Phase II for VOCs analyses. The four private wells identified are shown on Figure 2.3. The Bunck and Larson wells are used for domestic drinking water supply; the Miller and Knudson wells are used for livestock only. Three additional wells to the south and southeast of the former CCC/USDA facility (Seland wells; Figure 2.3) were sampled for VOCs analyses as a courtesy to their owner. The Seland wells were not in use at the time of sampling (November 2003).

Groundwater samples collected for VOCs analyses were preserved in the field by cooling to 4°C and then were shipped to the AGEM Laboratory for analysis with EPA Method 524.2. Replicate groundwater samples collected for verification analysis with EPA Contract Laboratory Program (CLP) methodology are discussed in Section 3.9. The results of analyses of the groundwater samples for carbon tetrachloride and chloroform are in Appendix C, Table C.2.

At selected locations groundwater samples were collected for additional laboratory analyses of both inorganic (cation and anion concentrations) and organic (dissolved methane,

ethane, and ethene concentrations, plus total organic carbon) geochemical parameters. Groundwater samples collected for inorganic geochemical analyses were shipped immediately to Severn-Trent Laboratory, Colchester, Vermont, for filtration, preservation, and analysis. Analyses for dissolved anion concentrations used EPA Method 300. Analyses for dissolved cations (metals) used EPA Method 6010. The analyses of methane, ethane, and ethene were performed with EPA Method 3810, RSK-175. Total organic carbon contents were determined by using the Lloyd-Kahn method, which is similar to Standard Method 5310 (APHA 1992). Results are in Tables C.3–C.5 in Appendix C.

Water temperature, pH, and conductivity were measured in the field for all groundwater samples collected by using a Checkmate field meter system after calibration with the appropriate standard solutions. Additional field measurements of dissolved oxygen content, reduced iron (Fe^{2+}) content, and oxidation-reduction potential (ORP) were made at selected locations. Dissolved oxygen levels were determined *in situ* by using a YSI Incorporated Model 550A digital meter with a downhole probe, after calibration per the manufacturer's recommendations. Reduced iron (Fe^{2+}) concentrations were measured by using a Hach model DR/820 colorimeter and the appropriate ferrous iron reagent (Hach 1037-69). Oxidation-reduction potential was determined with an Oakton model 35650-00 ORP Testr™. Results are in Table C.6 in Appendix C.

3.4 Installation of Temporary and Permanent Piezometers and Monitoring Wells

The ECPT sensor log characteristics were interpreted to select stratigraphic intervals for the installation of both temporary and permanent piezometers.

The temporary piezometers were constructed with 1-in.-diameter PVC screens and riser, by using a slight modification of the standard procedure for piezometer installation with the ECPT. Sand was placed as a filter pack around the screened interval, and bentonite grout was used to seal the remainder of the annulus from the top of the filter pack to the surface, but no permanent surface housing was installed. Instead, a temporary waterproof enclosure was provided at each location. Construction data for the temporary piezometers are summarized in Table 3.1. The temporary piezometers were abandoned in compliance with KDHE requirements on December 4, 2003, by removing the PVC casings and screens and grouting the boreholes through a tremie pipe. The KDHE requirements are online at <http://www.kdhe.state.ks.us/pdf/regs/28-30.pdf> and at <http://www.kdhe.state.ks.us/geo/ww/PluggingPacket.pdf>.

TABLE 3.1 Construction data for temporary and permanent piezometers and monitoring wells.

Boring	Type of Installation	Casing Diameter (in.)	Elevation of Screened Interval (ft AMSL) ^a	
			Top	Bottom
SB66t	Temporary piezometer	1	1096.12	1086.12
SB67t	Temporary piezometer	1	1093.68	1083.68
SB68	Permanent piezometer	1	1100.81	1085.81
SB69t	Temporary piezometer	1	1078.19	1063.19
SB70t	Temporary piezometer	1	1078.30	1068.30
SB71t	Temporary piezometer	1	1078.85	1068.85
SB72	Permanent piezometer	1	1080.76	1070.76
SB77	Permanent piezometer	1	1084.95	1069.95
MW1	Monitoring well	4	1086.30	1076.30
MW2	Monitoring well	4	1092.92	1072.92
MW3	Monitoring well	2	1088.44	1073.44

^a Feet above mean sea level.

Permanent piezometers, also known as “sand point wells,” were installed with the ECPT at SB68, SB72, and SB77 in accordance with Kansas regulations. The permanent piezometers were completed with flush mounts approved through a variance from the KDHE, in accordance with construction information supplied by the Kansas Bureau of Water (Taylor 2000). Construction data are in Table 3.1; construction diagrams are in Appendix D.

Monitoring wells MW1, MW2, and MW3 were installed by Associated Environmental, Inc., of Manhattan, Kansas. The locations of wells MW1 and MW2 were selected at the request of the KDHE to establish long-term groundwater monitoring and sampling points along the approximate axis of the groundwater carbon tetrachloride plume. Monitoring wells MW1 and MW2, designated for pump testing, were constructed with 4-in.-diameter casing and wire-wrapped stainless steel screens that fully penetrate the aquifer unit. Monitoring well MW3, not designated for pump testing, was constructed with a 2-in.-diameter PVC casing and a 10-ft screened interval. Construction data are in Table 3.1; construction diagrams are in Appendix D.

3.5 Measurement of Groundwater Levels

Groundwater levels were measured during the targeted investigation, both by hand and at selected locations with automatic water level recorders. Manual measurements were read to the

nearest 0.01 ft with an electronic water level sensor from a surveyed reference mark. The hand-measured water level data are in Appendix E.

Automatic measurements were made by installing self-contained water level sensor-recorders programmed to collect data once every 4 hr. The complete automated water level measurements are in Supplement 1 on the compact disk (CD) in this report. Included are extended water level monitoring data recovered from automatic recorders installed in permanent piezometers upon completion of the Phase II studies in November 2002.

3.6 Slug Testing of Piezometers

Slug tests were performed in October and November 2003 at 15 piezometer locations (SB01, SB09, SB16, SB18, SB19, SB22, SB31, SB34, SB49, SB60, SB62, SB64, SB66, SB67 and SB68) (Figure 2.6). Prior to testing, the screened interval in each piezometer was developed by manual (inertial) pumping of approximately three casing volumes of groundwater from the piezometer with a Geoprobe 0.375-in.-diameter tubing and a check valve system.

The tests at SB01, SB09, SB16, SB19, SB22, SB31, SB34, and SB49 were performed by using pressurized air to depress and stabilize the water level within the piezometer casing. To initiate each test, the air pressure was released to create a condition equivalent to an instantaneous drop in head. This pneumatic test method could not be used at SB18, SB60, SB62, and SB64, because static water levels were within the screened intervals at these locations. Slug tests in these piezometers, as well as at SB66, SB67 and SB68, were conducted by quickly lowering (or withdrawing) a 4-ft-long, 0.5-in.-diameter solid steel rod into the casing to perturb the static water column. Testing of an additional existing piezometer, SB63, could not be performed with either of these methods because the water column within the piezometer casing was insufficient.

The water level responses for each test were recorded by using a downhole pressure transducer connected to an automatic data logger (Hermit™ 1000C) capable of data acquisition at a high rate. The slug test procedure was repeated a minimum of three times at each location, except at SB18, where only two tests were performed because of prolonged response times.

Complete slug test data are in Supplement 2 (on CD), and interpretive curve fits for each test data set are in Appendix F.

3.7 Pumping Tests

To estimate the drawdown levels and sustainable flow rates to be expected in the planned pumping tests, water level responses in MW1 and MW2 were measured in a brief period of pumping during initial development of each well. The results demonstrated that an extended aquifer pumping test could be performed at MW1 (at an estimated flow rate of 2–4 gpm) but not at MW2. The development pumping data indicated that (1) the maximum pumping rate sustainable at MW2 for even a short period (less than 2 hr) was less than 0.8 gpm and (2) the effects of pumping MW2 at this low rate on water levels in the aquifer extended less than 21 ft from MW2 (the distance to SB68). On the basis of these observations, Argonne submitted an aquifer test plan (Argonne 2004a) to the CCC/USDA and the KDHE in January 2004, outlining a proposed aquifer test with MW1 as the producing well. The aquifer test plan was revised at the request of the KDHE, and the revised plan (Argonne 2004b) was approved in February 2004.

In preparation for the aquifer test, well MW1 was redeveloped by Associated Environmental, Inc., on February 10, 2004, through multiple cycles of surging, bailing, and air-lift pumping to remove sediments that might have accumulated since the well's installation. On February 11, 2004, the well was again pumped (with a submersible pump) for several periods, and water level responses were monitored in both MW1 and nearby piezometer SB34 (141 ft from MW1) to establish actual flow rates to be used for the pumping test. The results of this pumping, performed over approximately 3 hr, indicated that a long-term sustainable flow rate of no more than approximately 1 gpm would be required for the extended aquifer test to prevent local dewatering and the development of unconfined conditions at the pumping well. At this flow rate, a small but measurable water level response was recorded at SB34.

A 24-hr constant-rate aquifer pumping test was performed on February 17–18, 2004, with MW1 as the producing well. The test was carried out in accordance with procedures in the *Master Work Plan* and with the specific criteria identified in the revised test plan (Argonne 2004b), except that an average pumping rate at MW1 of 1.12 gpm was used throughout the test, instead of the proposed target rate of approximately 3 gpm. Flow rates were measured approximately every 0.5 hr throughout the 24-hr period and more frequently if variations in the

flow rate were detected. The recorded flow rate measurements are in Appendix G, Table G.1. A maximum instantaneous flow rate of 1.24 gpm and a minimum rate of 0.82 gpm were observed.

The aquifer's response to pumping and the subsequent recovery of water levels during the 24-hr period following the end of pumping were monitored in MW1 and at three observation points (piezometers at SB01, SB09, and SB34). Construction details for the observation piezometers are in the revised test plan (Argonne 2004b). Barometric pressure measurements were also made on-site throughout the pumping and recovery periods, coincident with the water level measurements. The pumping and recovery water level data and barometric pressure data for these periods are in Supplement 3, Table S3.1 (on CD).

To obtain data on possible trends of water level change across the test area and barometric pressure influences (barometric efficiencies) that might affect the pumping test and recovery data, ambient water levels and atmospheric pressures were monitored at each location over a 23-day period prior to the pumping test. These background water level and barometric pressure data are in Supplement 3, Table S3.2. An analysis of these data is in Appendix G, Section G.2. Corrected data from the pumping test — adjusted for background water level and barometric pressure effects on the basis of this analysis — are in Supplement 3, Tables S3.3 and S3.4. The adjusted data were used for the analysis of aquifer hydraulic properties.

3.8 Coordinates Survey

Accurate location information for field activities is required to provide horizontal and vertical control for stratigraphic correlation, water level measurement, and hydrogeologic mapping. All investigative boring locations and three surface locations (to provide elevation control along the intermittent creek bed) were surveyed by professional surveyors, Schwab-Eaton of Manhattan, Kansas. The results are in Appendix H.

3.9 Quality Control for Sample Collection, Handling, and Analysis

The QA/QC procedures followed for collection, handling, and analysis of soil and water samples during the Everest Phase III targeted investigation are described in detail in the *Master*

Work Plan (Argonne 2002) and the site-specific work plan (Argonne 2004b). Results of the QA/QC activities are summarized as follows:

- Sample integrity was maintained successfully throughout the collection, shipping, and analysis activities by the use of custody seals and chain-of-custody records. A few transcription errors in sample identifiers were resolved by comparison of the various records.
- All samples were received with custody seals intact and adequately preserved. All samples were analyzed within required holding times.
- Carbon tetrachloride and chloroform were not detected in trip blanks accompanying soil and water samples shipped for organic analysis. Methane, ethane, and ethane were not detected in trip blanks accompanying water samples shipped for attenuation parameter analyses.
- Contaminants of concern were not detected in field blanks or laboratory method blanks analyzed with the samples.
- Reusable sampling bailers were used during collection of groundwater samples with the ECPT vehicle. Rinsates from the decontaminated bailers were collected periodically to verify that cross-contamination of groundwater samples did not occur during sample collection. Contaminants of concern were not detected in the rinsates.
- Soil samples were analyzed for carbon tetrachloride and chloroform at the AGEM Laboratory by using EPA Methods 5030B and 8260B (the purge-and-trap method). The QC limits were met for the analyses. The accuracy and precision of the analytical methodology were evident in the analysis of blind replicate samples and duplicate analysis of selected samples. For samples in which no contamination was detected, the associated QC analysis showed similar results. For samples in which carbon tetrachloride was detected, the relative percent difference values between the initial analyses and the associated QC analyses were 0–12.3%. Chloroform results were similarly consistent. The soil analysis data from the AGEM Laboratory are acceptable

for quantitative determination of contaminant distribution and for risk analysis.

- Verification purge-and-trap analyses of replicate soil samples with EPA Methods 5030B and 8260B at Severn-Trent Laboratory supported the AGEM Laboratory data. Samples analyzed at AGEM Laboratory with no contamination detected were analyzed at Severn-Trent Laboratory with similar results. None of the soil samples in which carbon tetrachloride contamination was detected were selected for verification organic analysis.
- Groundwater samples were analyzed for carbon tetrachloride and chloroform at the AGEM Laboratory by using EPA Method 524.2 (the purge-and-trap method). The QC limits were met for the analyses. The accuracy and precision of the analytical methodology were evident in the analysis of blind replicate samples and duplicate analysis of selected samples. For samples in which no contamination was detected, the associated QC analysis showed similar results. For samples in which carbon tetrachloride was detected, the relative percent difference values between the initial analyses and the associated QC analyses were 0–18%. Chloroform results were similarly consistent. The groundwater analytical data from AGEM Laboratory are acceptable for quantitative determination of contaminant distribution.
- Quality control limits were met in verification analyses of replicate groundwater samples for carbon tetrachloride and chloroform with EPA CLP methodology at Clayton Laboratory, Novi, Michigan. The results support the AGEM Laboratory data.
- Quality control parameters were met for inorganic analyses and total organic carbon analyses of groundwater samples, including instrument calibration through analysis of spiked calibration check standards and the verification of interelement and background correction factors through the analysis of interference check samples for inductively coupled plasma samples. The water characterization data from Severn-Trent Laboratory are accepted on the basis of the accuracy achieved in the analysis of QC samples.

- Quality control parameters were met for methane, ethane, and ethene analyses of groundwater samples, including initial and continuing instrument calibration, and spike/spike duplicate analysis of QC samples. The attenuation parameter data from Severn-Trent Laboratory are accepted on the basis of the accuracy achieved in the analysis of QC samples.

A detailed QA/QC report addressing activities related to sample collection, handling, and analysis, including the results for replicate groundwater samples analyzed for VOCs with EPA CLP methodology, is in Supplement 4 (on CD).

3.10 Waste Characterization, Handling, and Disposal

Potentially contaminated waste soil generated during the drilling of monitoring wells MW1–MW3 was placed in containers prior to disposal. The collected materials were composited, sampled for VOCs, blended with fly ash, and placed in the Milford, Nebraska, landfill. Potentially contaminated groundwater generated during the development of the piezometers (prior to slug testing) and during the development and testing of monitoring wells MW1 and MW2 was captured in portable tanks and taken (with permission) to the municipal water treatment facility in Horton, Kansas.

4 Interpretation of Results

The results of the targeted investigation are discussed and interpreted below in the context of the specific technical objectives identified in Section 1.2. Each section title (Sections 4.1–4.5) is a technical objective.

4.1 Further Identify the Potential Distribution of Carbon Tetrachloride in Subsurface Soils at the Former CCC/USDA Facility and Evaluate Selected Parameters That Affect the Fate of This Contaminant in the Vadose Zone

4.1.1 Contaminant Distribution in Soils at the Former Facility

In the Phase II vertical-profile soil sampling at SB23, SB24, and SB34 (Figure 2.2) at the former CCC/USDA facility, maximum contaminant concentrations in the *vadose zone soils* were 23 µg/kg at SB23 and 14 µg/kg at SB34. Carbon tetrachloride detected in all three borings at the top of the saturated zone was interpreted to reflect contamination of the groundwater at these greater depths. A maximum carbon tetrachloride concentration of 66 µg/kg was identified for a soil sample from the saturated zone at SB23.

To further assess the contaminant distribution in the vadose zone soils, vertical-profile soil sampling was performed in the Phase III targeted investigation at four additional locations (SB73–SB76) at the former facility (Figure 2.2). The results of VOCs analyses (Appendix B Table B.2) are summarized in Figure 4.1.

Carbon tetrachloride was not found in the soil samples from borings SB73 and SB74 (locations in Figure 2.2). In boring SB74, relatively low levels of chloroform (14 µg/kg and 7 µg/kg) were identified without associated carbon tetrachloride in soil from two depths (approximately 23 ft and 38 ft BGL, respectively) in the lower portion of the vadose zone. Boring SB74 was targeted to evaluate the former site of four grain bins along the southwestern margin of the former facility. Boring SB73 tested the soils at a location (SB11) where elevated levels of carbon tetrachloride were found in groundwater in Phase I. After monitoring well MW1 was installed at this location, elevated levels of carbon tetrachloride were found in groundwater (see Section 4.1.2).

Carbon tetrachloride concentrations of approximately 9–57 µg/kg were identified in the lower portions of the vadose zone at both SB75 and SB76. Chloroform was also found at these locations, at concentrations of approximately 6–11 µg/kg. These borings lie along the approximate axis of two former rows of grain bins near the center of the former facility. The highest concentrations at each location, found at the bases of the sampled intervals (33–38 ft BGL), ranged from 47 µg/kg to 57 µg/kg. These concentrations also represent the highest contaminant levels detected in unsaturated soils at the former CCC/USDA facility.

The chloroform concentrations observed at SB74, SB75, and SB76 are low in absolute value but are relatively high in comparison to the associated carbon tetrachloride levels (Figure 4.1). Chloroform is present at roughly 20–80% of the carbon tetrachloride concentration (on a molar basis) at SB75 and SB76, and it occurs alone at SB74. Chloroform can be formed in the subsurface by the biological degradation (reductive dechlorination) of carbon tetrachloride under anaerobic conditions. The observed concentration relationships suggest that natural biodegradation has assisted and continues to assist, to a limited extent, in reducing carbon tetrachloride concentrations in the vadose zone soils beneath the former CCC/USDA facility.

4.1.2 Contaminant Distribution in Groundwater at the Former Facility

Groundwater samples were collected for VOCs analyses at the locations of borings SB73–SB76 as a direct indicator of potential continuing source effects associated with the contaminated soils at the former CCC/USDA facility. The results of these analyses (Appendix C, Table C.2) are illustrated in Figures 4.1 and 4.2.

Neither carbon tetrachloride nor chloroform was detected in the groundwater at SB76, and low levels of carbon tetrachloride (< 3 µg/L) were identified at SB74 and SB75. Carbon tetrachloride at 28 µg/L and chloroform at 2.8 µg/L were identified in the groundwater sample collected in November 2003 from well MW1 (screened at 41–51 ft BGL), installed at the location of soil boring SB73 during the Phase III targeted investigation. In a verification sample collected from well MW1 in June 2004, carbon tetrachloride was detected at 14 µg/L, and chloroform was detected at 1.8 µg/L. In comparison, higher carbon tetrachloride concentrations of 100 µg/L (at 48.5–52.5 ft BGL) and 727 µg/L (at 43.5–47.5 ft BGL) were identified in groundwater samples collected with the ECPT at this location (originally SB11) during the Phase I investigation (Argonne 2001).

4.1.3 Human Health Risks Associated with Exposure to Soils at the Former Facility

Results from sampling and analysis of vadose zone soils were compared against the Tier 2 risk-based standards for carbon tetrachloride and chloroform presented in *Risk Based Standards for Kansas (RSK Manual; KDHE 2003)*. In deriving these standards based on risk to human health, the KDHE evaluated exposure pathways including incidental ingestion of soil, inhalation of airborne particulates, inhalation of chemical volatilizing from soil, and direct dermal contact. Risk-based concentrations are provided for two land use settings: residential and nonresidential. The risk-based standards for carbon tetrachloride in the Tier 2 Risk-Based Summary Table (Appendix A in *RSK Manual; KDHE 2003*) are 2,500 µg/kg for a residential setting and 7,000 µg/kg for a nonresidential setting. The corresponding risk-based standards for chloroform are 3,900 µg/kg and 6,000 µg/kg.

As discussed in Section 4.1.3 of the Everest Phase II report (Argonne 2003), a comparison of the results from the analysis of near-surface soils demonstrated that no unacceptable health risks are associated with potential human exposure to the near-surface soils at the former Everest CCC/USDA facility. Similarly, comparison of the analytical results for subsurface soil samples indicates that no unacceptable health risks are associated with potential human exposure to the subsurface soils at the former Everest CCC/USDA facility.

Potential health risks associated with the soil-to-groundwater contamination pathway are also addressed in the *RSK Manual (KDHE 2003)*. For this pathway the risk-based standards for carbon tetrachloride and chloroform are 200 µg/kg and 1,200 µg/kg, respectively. Comparison with the maximum values found for carbon tetrachloride (57 µg/kg) and chloroform (11 µg/kg) indicates that the contaminant levels detected in soils at the former CCC/USDA facility are well below these target action levels and that these soils do not pose an unacceptable risk to groundwater.

4.2 Confirm the Interpreted Patterns of Groundwater Flow and the Potential for Groundwater Discharge to the Surface along the Intermittent Creek West of Everest

4.2.1 Local Hydrostratigraphic Relationships

The Phase II investigation (Argonne 2003) demonstrated that groundwater flow, and hence contaminant migration, across the investigation area is driven predominantly by groundwater recharge to the southeast of the former CCC/USDA facility and by probable groundwater discharge to the intermittent stream west of the Nigh property. The detailed pathways of groundwater flow and contaminant migration are influenced, however, by the hydrogeologic heterogeneity of the aquifer unit, particularly by a region of reduced sand content and hence decreased net permeability near the Nigh property. Groundwater levels measured by hand in 2001–2002, east of the intermittent creek, support this interpretation; see, for example, the results for November 9, 2002 (Figure 4.3).

To achieve a more detailed understanding of the water level variations, automatic water level recorders were used to make continuous water level measurements (every 4 hr) in selected piezometers from July 10, 2000, to June 11, 2001, and again from November 23, 2002, to November 10, 2003. Data for the earlier period were documented previously (Argonne 2003); results for the recent monitoring (Supplement 1, Table S1.1 [on CD]) are summarized in Figure 4.4.

Figure 4.4 illustrates that groundwater levels, and hence the configuration of the potentiometric surface, have been quite stable since fall 2002, showing only a slight net decline over the 12-month observation period. The data indicate that water level responses in the spring and early summer of 2003 were subdued in comparison to transient increases of 5–8 ft at the more eastern observation points (SB01, SB09, SB16, SB18, SB19) during the corresponding seasons in 2001 (Figure 4.13 in Argonne 2003). The recent monitoring data indicate that groundwater levels at the end of 2003 were comparable to those observed during the Phase I investigation in early 2000. The groundwater level data therefore demonstrate that groundwater flow patterns and the expected pathways of contaminant migration within the aquifer unit have remained largely unchanged since 2000.

Five borings installed during the Phase III targeted investigation west of the intermittent stream (Figure 4.5) yielded geologic and hydrostratigraphic data (Appendixes A and E)

confirming that the Everest aquifer unit can be identified as a groundwater-bearing interval at these locations. The interpreted distribution of the aquifer unit along updated line C–C', extending from the area north of the former CCC/USDA facility and westward to boring SB71, west of the intermittent stream (location shown in Figure 4.6), is depicted in Figure 4.7.

Water levels measured in the Phase III targeted investigation permit more complete mapping of the groundwater potentiometric surface along the pathway of contaminant migration identified in the aquifer unit, from the former CCC/USDA facility toward the intermittent stream and beyond. The mechanically contoured potentiometric surface shown in Figure 4.8 is based on hand measurements made on November 15–16, 2003 (Appendix E). Piezometer SB77 and monitoring wells MW1–MW3 had not yet been installed as of this date. Groundwater levels subsequently measured at these locations (Table E.1) were consistent with the interpretations presented here.

Groundwater level relationships in the eastern portion of the study area were consistent with observations during the Phase I and Phase II studies. Groundwater levels measured at all locations west of the intermittent creek were higher than those observed at piezometers immediately east of the creek. The November 2003 data demonstrate that apparent groundwater flow pathways along both the eastern and western sides of the intermittent stream are diverted toward the southwest and converge toward the trend of the stream channel.

4.2.2 Visual Reconnaissance along the Creek

Visual reconnaissance of the full length of the creek channel was performed from the vicinity of boring SB64 to the point where the channel crosses Highway 73 southwest of Everest. No clear evidence was found for groundwater seepage from the aquifer unit into the intermittent stream directly west of the Nigh property or along the section of the channel immediately downstream from SB64 (within approximately 1,500 ft of SB64), although several relatively persistent areas of shallow standing water or wet ground were located in the creek bed. These observations are consistent with the groundwater levels (Figure 4.8) measured in the piezometers near the stream and with surface elevations (Appendix H) surveyed at several points along the stream bed, indicating that the potentiometric surface was slightly below the stream bed (west of the Nigh property) in November 2003.

Further investigation along the stream southwest of the Argonne study area identified significant stream flow resulting from groundwater discharge in a forested area approximately 3,000 ft downstream of boring SB64 and 1,500 ft north of U.S. Highway 73 (Figure 4.9). The observed onset of groundwater discharge and surface water flow coincides with a change in the form of the stream bed from a fairly simple, incised channel upstream to a more meandering morphology. Available topographic maps indicate an elevation of approximately 1,070 ft AMSL (above mean sea level) at the stream bed in this area; this level roughly corresponds to the minimum elevation identified at the base of the aquifer unit in the investigation area.

4.2.3 Summary of the Factors Controlling Downgradient Groundwater Migration

The local hydrologic relationships identified by Argonne are consistent with the more regional observations reported by the Kansas Geologic Survey (KGS; Bayne and Schoewe 1967; Ross 1991) and documented in the Everest Phase I *Work Plan* (Argonne 2000). The KGS mapping of the regional water table across Brown County (presented as Figure 3.14 of the *Work Plan* and reproduced here as Figure 4.10) identified a pattern of semiradial groundwater flow westward and northwestward from the former Everest facility, as well as a southwestward shift in flow direction in the vicinity of the intermittent creek west of the town. Identical trends were documented by the local water level monitoring described in Section 4.2.1. The KGS water level data, obtained from relatively widely spaced measurement points, also indicated that groundwater following the plume migration pathway is expected to discharge to the surface along a drainage divide associated with the lower reaches of the intermittent creek and the adjacent portions of the east-west tributary into which this stream drains. The KGS geologic mapping further indicated that the glacial/till sequence that hosts the Everest aquifer unit has been fully penetrated by erosion and hence is absent along Otter Creek (*Work Plan* Figure 3.3, reproduced here as Figure 4.11), less than 1 mi west of the intermittent creek.

Argonne's groundwater mapping in the vicinity of Everest and along the intermittent creek provides finer resolution of the water level patterns in this area than the KGS results, but Argonne's results are fully consistent with the latter data. The Argonne mapping indicates that both the groundwater divide identified by the KGS along the downstream portion of the intermittent creek and the focusing effect of this divide on groundwater flow toward the southwest locally extend farther upgradient along the creek channel than the county-level data alone suggested.

These findings support Argonne's previous interpretation that groundwater flow near the intermittent creek is diverted toward the southwest, as a result of groundwater discharge along and near this creek. The available data suggest that the trend of the intermittent creek approximately reflects both local surface water and groundwater drainage divides that will limit the potential westward migration of contaminated groundwater originating at the former CCC/USDA facility. The results indicate that the carbon tetrachloride plume can be expected to continue to migrate toward the southwest and that discharge of contaminated groundwater to the stream north of Highway 73 is ultimately probable.

4.3 Obtain Quantitative *In Situ* Estimates of Hydraulic Parameters for the Sedimentary Materials That Compose the Everest Aquifer Unit

4.3.1 Aquifer Slug Tests

Slug tests at 15 piezometer locations across the Everest investigation area yielded water level response data that were interpreted by using the analysis methods of Bouwer and Rice (Bouwer and Rice 1976; Bouwer 1989) and Hvorslev (1951), as implemented in the commercial well test software analysis package AqteSolv for Windows, to generate estimates of hydraulic conductivity. Numerous alternative slug test analysis methods have been developed, each with advantages and disadvantages. The methods used for this study were selected in light of their relatively wide applicability, their level of documentation and general acceptance by the scientific community, and their ease of implementation to achieve the objective of estimating hydraulic parameters for the aquifer materials.

Complete data (time versus residual drawdown) for the slug tests and the analysis parameters are in Supplement 2 (on CD). Representative (manual) interpretive curve fits for the test data sets are in Appendix F. The resulting hydraulic conductivity estimates are summarized in Table 4.1. For each data set, the estimated hydraulic conductivity values calculated with the Bouwer and Rice method were of the same magnitude as, but roughly 20% lower than, values for the same data set calculated with the Hvorslev method. The estimated hydraulic conductivity values for the sediments composing the Everest aquifer unit ranged over two orders of magnitude, from less than 0.1 ft/day (at SB67 and SB18) to approximately 10.5 ft/day (at SB64).

TABLE 4.1 Hydraulic conductivity estimates from slug tests.

Boring	Test Method	Data Set ^a	Analysis Method ^b		Ratio (%) (Bouwer-Rice/ Hvorslev)
			Hvorslev	Bouwer-Rice	
SB01	Air	Test 5, Step 0	11.30	8.75	77
		Test 5, Step 1	6.01	4.63	77
		Test 5, Step 2	2.82	2.17	77
		Test 9, Step 0	3.18	2.43	76
		Test 9, Step 1	2.75	2.12	77
SB09	Air	Test 2, Step 0	0.25	0.19	76
		Test 3, Step 0	0.28	0.21	75
		Test 3, Step 1	0.27	0.21	78
SB16	Air	Test 1, Step 0	0.98	0.76	78
		Test 1, Step 1	1.03	0.81	79
		Test 1, Step 2	1.08	0.84	78
SB18	Slug (in) (out)	EVSB_In.txt	0.05	0.04	77
		EVSB_Out.txt	0.06	0.05	77
SB19	Air	Test 0, Step 0	2.10	1.67	80
		Test 0, Step 1	2.25	1.79	80
		Test 0, Step 2	2.05	1.63	80
SB22	Air	Test 0, Step 0	0.64	0.47	73
		Test 0, Step 1	0.54	0.40	74
		Test 0, Step 2	0.59	0.44	75
SB31	Air	Test 3, Step 0	2.25	1.73	77
		Test 3, Step 1	2.10	1.60	76
		Test 3, Step 2	2.08	1.60	77
SB34	Air	Test 4, Step 0	8.23	6.33	77
		Test 4, Step 1	6.25	4.80	77
		Test 4, Step 2	5.78	4.43	77
SB49	Air	Test 1, Step 0	0.75	0.58	77
		Test 1, Step 1	1.17	0.89	76
		Test 1, Step 2	1.55	1.18	76
		Test 7, Step 0	1.28	0.98	77
		Test 8, Step 0	1.30	1.00	77
SB60	Slug (in) (out) (in) (out)	Test 4, Step 0	1.77	1.36	77
		Test 4, Step 1	1.75	1.34	77
		Test 4, Step 2	1.45	1.10	76
		Test 4, Step 3	1.66	1.27	77
SB62	Slug (in) (out) (in) (out)	Test 6, Step 0	2.04	1.72	84
		Test 6, Step 1	2.53	2.12	84
		Test 6, Step 2	2.04	1.72	84
		Test 6, Step 3	2.59	2.17	84
SB64	Slug (in) (out) (in) (out)	Test 5, Step 0	10.18	8.87	87
		Test 5, Step 1	11.12	9.76	88
		Test 5, Step 2	9.76	8.56	88
		Test 5, Step 3	11.13	9.74	88

TABLE 4.1 (Cont.)

Boring	Test Method	Data Set ^a	Analysis Method ^b		Ratio (%) (Bouwer-Rice/ Hvorslev)
			Hvorslev	Bouwer-Rice	
SB66	Slug (in)	Test 3, Step 0	0.88	0.68	77
	(out)	Test 3, Step 1	0.86	0.66	77
	(in)	Test 3, Step 2	0.74	0.57	77
	(out)	Test 3, Step 3	0.86	0.66	77
SB67	Slug (in)	Test 2, Step 0	0.03	0.03	77
	(out)	Test 2, Step 1	0.04	0.03	77
	(in)	Test 2, Step 2	0.03	0.02	77
	(out)	Test 2, Step 3	0.05	0.04	77
SB68	Slug (out)	Test 1, Step 0	1.00	0.77	77
	(in)	Test 1, Step 1			
	(out)	Test 1, Step 2	1.08	0.83	77
	(in)	Test 1, Step 3			

^a Complete results for the tests and steps summarized here are in Supplement 2. A test consists of water level response data for a grouped series of individual sluggings of a well (or steps). The responses are automatically recorded as sequential data files. All of the data for each location were analyzed and reported.

^b Results were interpreted by using the analysis methods of Bouwer and Rice (Bouwer and Rice 1976; Bouwer 1989) and Hvorslev (1951), as implemented in the commercial well test software analysis package AqteSolv for Windows.

The areal distribution of the hydraulic conductivities estimated with the Hvorslev method (Figure 4.12) is consistent with the patterns of lithologic and permeability variations proposed previously (Argonne 2003). Estimated hydraulic conductivity values of approximately 2–5 ft/day at and southwest of the former CCC/USDA facility are consistent with the sand deposits found in this area.

Estimated hydraulic conductivity values for sediments northwest of the former facility, particularly near the Nigh property, were consistently lower, ranging from < 0.1 ft/day to approximately 1 ft/day. Argonne’s earlier observations of decreased abundance and thickness of permeable intervals in this part of the aquifer were substantiated in Phase III by ECPT sensor log and sediment core data from borings SB65, SB66, and SB67 (Appendix A). Estimated hydraulic conductivity values west of the Nigh property generally were approximately 1–2 ft/day; however, a value of roughly 10 ft/day was calculated for a sandy interval penetrated at the top of the aquifer unit at SB64.

4.3.2 Aquifer Pumping Tests

A 24-hr, constant-rate aquifer pumping test with MW1 as the producing well was conducted on February 17–18, 2004, to determine the aquifer's response to pumping along the plume migration pathway. Water level monitoring continued through the subsequent 24-hr recovery period after pumping ended.

The hydrograph for well MW1 during the aquifer pumping test and measured flow rates are shown in Figure 4.13. The hydrograph has been corrected for barometric pressure effects as described in Appendix G. At most, approximately 10 ft of drawdown was observed in MW1, at an average pumping rate of approximately 1.1 gpm. Water levels in the well were extremely sensitive to small variations (0.1–0.2 gpm) in the instantaneous flow rate during the test, which were difficult to avoid at the overall low rate of pumping that was possible.

To estimate the transmissivity (T), hydraulic conductivity (K_h), and storativity (S) of the Everest aquifer unit, the drawdown data from the pumping phase of the MW1 test were first corrected for barometric pressure effects as described in Appendix G. The corrected data were interpreted by using standard analysis methods that assume either confined (Theis 1935; Cooper and Jacob 1946) or leaky confined (Hantush and Jacob 1954, 1955; Hantush 1960) conditions, as implemented in the aquifer test analysis software package AqteSolv for Windows. The analysis methods were selected because of the relationships of static water levels in the aquifer unit and the responses of water levels to recharge events observed in the zone of influence of the pumping test.

4.3.2.1 Analysis with Methods for Confined Aquifers

The Theis and the Cooper and Jacob methods for confined aquifers can overestimate transmissivity or hydraulic conductivity if the aquifer being tested is not completely confined, but the overestimation is small when the aquifer is significantly more permeable than the overlying materials (Neuman and Witherspoon 1969). At the Everest site, the lithology indicates that this is the case. For all reported Cooper and Jacob analyses, only time-drawdown data satisfying the experimental criteria $u < 0.1$ were employed for the interpretive straight-line fits (Kruseman and deRidder 1991).

Interpretive curve fits to the (corrected) drawdown data for MW1 from the Theis (1935) and the Cooper and Jacob (1946) analyses are shown in Figure 4.14. In each diagram, an initial offset of approximately 0.9 ft in the drawdown level affected the first minute of pumping. This is an artifact of a problem at the beginning of the test with a metering valve used to restrict and control the pump's flow rate. Under the (February) conditions of the test, this valve froze before the pump was turned on and the test began, allowing a small volume of groundwater (equivalent to 0.9 ft of head in the casing) to flow from the well and into the riser pipe. As Figure 4.14 shows, the water level in well MW1 started to recover slightly after this initial withdrawal in the first minute of recording, and then the valve freed itself and drawdown resumed. In light of the planned duration of the test (24 hr), pumping was continued.

Figure 4.14 indicates that the subsequent data for MW1 fit the Theis and the Cooper and Jacob theoretical curves for confined aquifers reasonably well. The analyses yielded estimated transmissivities of 14.8 ft²/day and 13.6 ft²/day for the aquifer unit, corresponding to estimated hydraulic conductivities of 1.48 ft/day and 1.36 ft/day, respectively. These values are similar to, but slightly lower than, the hydraulic conductivity estimates from slug testing of piezometers SB34 and SB01 (Figure 4.12) near MW1 and the former CCC/USDA facility. The Theis and the Cooper and Jacob methods do not support estimation of storativity from pumping well data.

Water level recovery data for well MW1 after pumping ended are shown in Figure 4.15. The observations yielded a very poor fit to the expected straight-line recovery trend (Theis 1935). Nevertheless, the statistical fitting of the straight line shown in Figure 4.15 yielded a transmissivity estimate (13.6 ft²/day) consistent with the values obtained from the MW1 pumping data. The relatively high value of interpretive parameter S' (6.2) determined from the recovery analysis is qualitatively consistent with the observation (Appendix G, Section G.2.2) that melting snow might have recharged the aquifer during the pumping and recovery periods. (The dimensionless parameter S' is the ratio of storativity during pumping to storativity during recovery. The ratio can be determined directly from the test data, but the individual storativity values cannot.)

Drawdown data for piezometers SB01, SB09, and SB34, corrected for barometric efficiency (Appendix G), are shown in Figure 4.16. The clear drawdown responses recorded at SB34 (141 ft east of the pumping well) and SB01 (304 ft southeast of MW1) demonstrate that the pumping of MW1 exerted a small hydraulic influence on water levels in the aquifer unit near the former CCC/USDA facility. A very small drawdown response (< 0.06 ft) is suggested during the early portion of the pumping period at SB09 (525 ft northwest and downgradient of MW1);

however, this apparent trend was reversed later, as discussed in Appendix G. Because the absolute head changes occurring at the observation points during the pumping period were small, the measured drawdowns at these locations were particularly sensitive to the influence of several competing factors (other than the pumping of MW1) that also affected the water levels at these locations during the testing period, as described in Appendix G. The corrected drawdown levels shown for all three observation points (and particularly SB09) are uncertain in that the corrections for barometric efficiency required at these locations (Appendix G) represent a significant portion of the measured drawdowns (roughly 20–30% for SB34 and SB01; > 100% at SB09). Also, as noted in Appendix G, Section G.2.2, water levels later in the pumping period could have been influenced by local recharge due to melting snow, the effects of which could not be quantified. Both the observed barometric pressure changes during the pumping period and the inferred local recharge (for which no data correction could be applied) would have tended to *decrease* measured drawdown levels at the observation points, thus *increasing* calculated hydraulic conductivity estimates over values expected in the absence of these influences.

With these limitations in mind, the Theis (1935) and the Cooper and Jacob (1946) analysis methods for confined aquifers were used to fit interpretive curves to the drawdown data for piezometers SB34 and SB01 (not SB09), corrected for barometric efficiency per Appendix G. The results are in Figures 4.17 and 4.18, respectively. In each case, the theoretical trends were a reasonable approximation to the observations. The estimated transmissivities (358–360 ft²/day for SB34; 416–440 ft²/day for SB01) and hence the hydraulic conductivities (35.8–36.0 ft/day for SB34; 32.0–33.8 ft/day for SB01) calculated for the aquifer unit from these analyses were greater by an order of magnitude than those identified at MW1 and 5–10 times the hydraulic conductivity estimates from the slug tests at these locations. The values of storativity for the aquifer unit determined from the SB34 and SB01 data were similar, at 0.0003–0.0004.

Water level recovery data for SB01, SB09, and SB34 were recorded, but no attempt was made to interpret these results quantitatively because of the influence of a rising ambient water level trend at the testing site throughout the 24-hr recovery period (Appendix G, Section G.2.2).

4.3.2.2 Analysis with Methods for Leaky Confined Aquifers

An attempt was made to analyze the drawdown data for MW1, SB01, and SB34 by using both the Hantush (1956, 1960) and Hantush and Jacob (1954, 1955) methods for leaky confined aquifers. The analyses yielded no clear improvement in the fit of the theoretical interpretive

curves to the test data, and the estimated transmissivity, hydraulic conductivity, and storativity values were comparable to those of the corresponding Theis and Cooper and Jacob analyses for confined aquifers.

4.3.3 Estimates of Hydraulic Parameters for the Everest Aquifer

Hydraulic conductivities estimated from 15 slug tests and from the pumping test at MW1 indicate a general pattern of permeability variations in the Everest aquifer that is consistent with observed abundances and thicknesses of sand intervals in the aquifer unit (Figure 4.12). The highest values from slug tests (2–5 ft/day) occur at and southwest of the former CCC/USDA facility, where the aquifer unit mainly consists of sand deposits. The lowest values (< 0.1–1 ft/day, also from slug tests) occur northwest of the former facility (near the Nigh property), where the aquifer unit includes limited discontinuous sandy stringers and lenses within the low-permeability till. West of the Nigh property, estimated hydraulic conductivity values increase slightly to approximately 1–2 ft/day.

Hydraulic conductivity estimates from the MW1 pumping test ranged from 1.4 ft/day (based on data from MW1) to 36 ft/day (based on data from SB34). The hydraulic conductivity values estimated at MW1 were similar to values obtained in slug testing of nearby piezometers SB01 and SB34. The hydraulic conductivity values estimated from the pumping test data at SB34 and SB01 were higher than the corresponding values from the slug tests at these locations. These high values for SB34 and SB01 are subject to uncertainty, however, because of the small measured drawdowns observed in the pumping of well MW1 and the competing influences that affected local water levels during the pumping test, as discussed in Section 4.3.2.1 and Appendix G.

4.4 Install Monitoring Wells; Collect and Analyze Groundwater Samples at Established Monitoring Points along the Plume Migration Pathway, as a Basis for Potential Future Comparisons

The carbon tetrachloride and chloroform concentrations identified at the locations established for permanent monitoring are summarized in Table 4.2. The results are presented in Figures 4.19 and 4.20, in conjunction with all data from previous and current sampling events at the site, for an updated, composite representation of the groundwater plume at Everest. The recent sampling results indicate that the lateral and downgradient limits of the plume have

TABLE 4.2 Carbon tetrachloride and chloroform results for permanent sampling locations at Everest.^a

Location	Sampling Interval (ft BGL)	Sample Date	Concentration (µg/L)	
			Carbon Tetrachloride	Chloroform
MW1	41-51	11/22/03	28	2.8
MW1	41-51	6/4/04	14	1.8
MW2	59-79	11/22/03	16	ND ^b
MW3	56.5–71.5	12/4/03	2	ND
SB01	42-54	11/11/03	ND	ND
SB09	51-57	11/12/03	60	5.6
SB16	49-64	11/12/03	ND	ND
SB18	60-70	11/13/03	ND	ND
SB19	46-51	11/15/03	ND	ND
SB22	58-63	11/12/03	ND	ND
SB31	57-67	11/11/03	ND	ND
SB34	46-53	11/11/03	9.2	4
SB49	51-55	11/13/03	ND	ND
SB60	56.7-61.7	11/13/03	59	1.5
SB62	33-41	11/14/03	ND	ND
SB63	20-25	11/14/03	ND	ND
SB64	22-27	11/14/03	ND	ND

^a Permanent monitoring points SB72 and SB77, west of the creek, were installed too late in the November 2003 field work to be sampled.

^b ND, contaminant not detected at quantitation limit of 1 µg/L.

remained relatively unchanged since Phase II sampling in November 2002 (Argonne 2003). The data confirm that no groundwater contaminated with carbon tetrachloride has reached the vicinity of the intermittent creek west of the former CCC/USDA facility, and they further substantiate the fairly sharp westward shift in migration direction observed previously in the plume near the Nigh property.

Results of the supplemental inorganic, organic, and field parameter measurements obtained at selected permanent monitoring points and at temporary piezometer SB66 are in Appendix C, Tables C.3–C.6, and are summarized in Table 4.3. Although chloroform has been detected in association with carbon tetrachloride in many groundwater samples collected during the Phase I, Phase II (Argonne 2001, 2003), and Phase III investigations, the ratios of chloroform

to carbon tetrachloride have consistently been low (generally < 10%) and do not suggest that significant biodegradation of carbon tetrachloride (by reductive dechlorination) has occurred within the aquifer unit. Except for MW3, dissolved oxygen concentrations are approximately 1.5–6 mg/L; these levels do not suggest widespread anaerobic conditions in the aquifer to support biological reductive dechlorination. Similarly, no clear patterns in the concentrations of selected inorganic species, such as nitrate/nitrite, sulfate, and iron, relative to the distribution of the contaminant plume suggest the presence of reducing conditions in groundwater conducive to carbon tetrachloride biodegradation.

The geochemical data in Table 4.3 have been used to calculate partial screening values for the groundwater at these locations, in keeping with EPA protocols (1998a) for the identification of possible *in situ* biodegradation processes. The scoring totals in Table 4.3 are incomplete, because certain parameters required for evaluation under the EPA protocol (alkalinity, carbon dioxide content, hydrogen content) were generally not determined for the groundwater samples at Everest, and comparative levels for chloride in “background” samples were not obtained. The partial scores indicate, however, that available evidence is inadequate to suggest that reductive dechlorination of the carbon tetrachloride plume is occurring at Everest.

4.5 Obtain Quantitative Data for Selected Aquifer Parameters That Affect the Migration and Fate of Carbon Tetrachloride in Groundwater

Soil property data can be used to estimate the expected retardation of carbon tetrachloride as the contaminant migrates (in groundwater) through an aquifer, on the basis of the relationship

$$R = 1 + (\rho_b / \theta) (K_d) . \quad (1)$$

Here

R = retardation factor (dimensionless)

ρ_b = dry bulk mass density of the soil (g/cm³)

θ = porosity of the saturated soil (dimensionless)

K_d = distribution coefficient for carbon tetrachloride in soil (cm³/g)

TABLE 4.3 Summary of groundwater geochemical analyses and preliminary scoring of biodegradation processes at Everest.^a

	Units	MW01		MW02		MW03		SB01		SB09		SB16		SB34		SB60	
		Conc.	Points	Conc.	Points	Conc.	Points	Conc.	Points	Conc.	Points	Conc.	Points	Conc.	Points	Conc.	Points
Dissolved Oxygen	mg/L	2.96	0	6.1	-3	0.07	3	1.78	0	1.99	0	5.75	-3	2.45	0	5.87	-3
Nitrate	mg/L	6.3	0	11.7	0	12.4	0	11.4	0	14.6	0	10.4	0	4.7	0	13	0
Iron II	mg/L	0.28	0	0	0	0.13	0	1.12	3	0.09	0	0.2	0	0.86	0	0.18	0
Sulfate	mg/L	58.2	0	16.6	2	35	0	42.8	0	41.9	0	21.6	0	38.7	0	33.2	0
Sulfide	mg/L	NA ^b	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
Methane	mg/L	< 0.002	0	< 0.002	0	< 0.002	0	< 0.002	0	< 0.002	0	< 0.002	0	< 0.002	0	< 0.002	0
Oxidation-Reduction Potential	mV	240	0	250	0	270	0	280	0	280	0	260	0	255	0	295	0
pH	-	6.91	0	7.09	0	7.03	0	7.2	0	7.25	0	7.35	0	7.05	0	7.34	0
Total Organic Carbon	mg/L	7.7	0	2	0	< 1	0	< 1	0	1.7	0	1.1	0	2.4	0	2.5	0
Carbon Dioxide ^c	mg/L	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
Alkalinity ^c	mg/L	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
Chloride ^c	mg/L	70.4	2	28.2	2	21.1	0	43.3	2	49.4	2	14.1	0	29	2	35.5	2
Dissolved Hydrogen	nM	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
Ethene/Ethane	mg/L	ND ^d	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0
Chloroform	µg/L	2.8	2	ND	0	ND	0	ND	0	5.3	2	ND	0	4	2	1.5	2
Dichloromethane (methylene chloride)	µg/L	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0
Total points =>			4	1		3		5		4		-3		4		1	

^a Scoring is based on results for samples collected in November and December 2003. Locations are shown in Figure 2.8. The scoring of biodegradation processes was limited to locations within the carbon tetrachloride plume.

Points are interpreted as follows (EPA 1998b):

- 0–5 Inadequate evidence for reductive dechlorination.
- 6–14 Limited evidence for reductive dechlorination.
- 15–20 Adequate evidence for reductive dechlorination.
- > 20 Strong evidence for reductive dechlorination.

^b NA, data not available.

^c Points are awarded for alkalinity, carbon dioxide, and chloride when the concentration at a location is greater than twice the background concentration. For this analysis, values for SB16 were chosen to represent background concentrations.

^d ND, not detected at a quantitation limit of 1 µg/L.

The soil distribution coefficient, K_d , can be calculated as the product of the soil organic carbon/water partition coefficient, K_{oc} , multiplied by the weight fraction of organic carbon (F_{oc}) in the soil. Values for K_{oc} for carbon tetrachloride are available in the literature (Mackay et al. 1993). The reported values vary widely; however, the EPA has calculated an average $K_{oc} = 152$ mL/g for use in soil screening analyses, on the basis of a survey of published measurement data (EPA 1996).

Bulk density (ρ_b), porosity (θ), and total organic carbon (F_{oc}) data from the soil analyses (Appendix B, Table B.3) were used to estimate retardation factors for sediments of the aquifer unit on the basis of the Equation 1. The input soil parameters used for these calculations and the resulting estimates for the retardation factor are in Table 4.4.

The results suggest that retardation factor values of approximately 2.4–4.4 affect carbon tetrachloride migration rates in the sands and sandy to gravelly clay till deposits of the Everest aquifer unit. Table 4.4 indicates that carbon tetrachloride might be more strongly sorbed if it is present within the less porous, calcareous cemented sands near the base of the aquifer unit beneath the former CCC/USDA facility at SB73 (at 47–48 ft BGL).

TABLE 4.4 Soil parameters and estimated carbon tetrachloride retardation factors for sediments from the Everest aquifer unit.

Boring	SB66	SB66	SB73	SB73	SB75
Depth interval, ft BGL	53.66–54.46	56–57	41–42	47–48	44–45
ρ_b , g/cm ³	1.896	2.073	1.805	2.085	1.826
θ	0.287	0.235	0.327	0.213	0.317
F_{oc} , g/g	0.0019	0.0017	0.0017	0.0023	0.0023
K_d , cm ³ /g	0.289	0.258	0.258	0.350	0.350
R	2.91	3.28	2.42	4.43	3.02

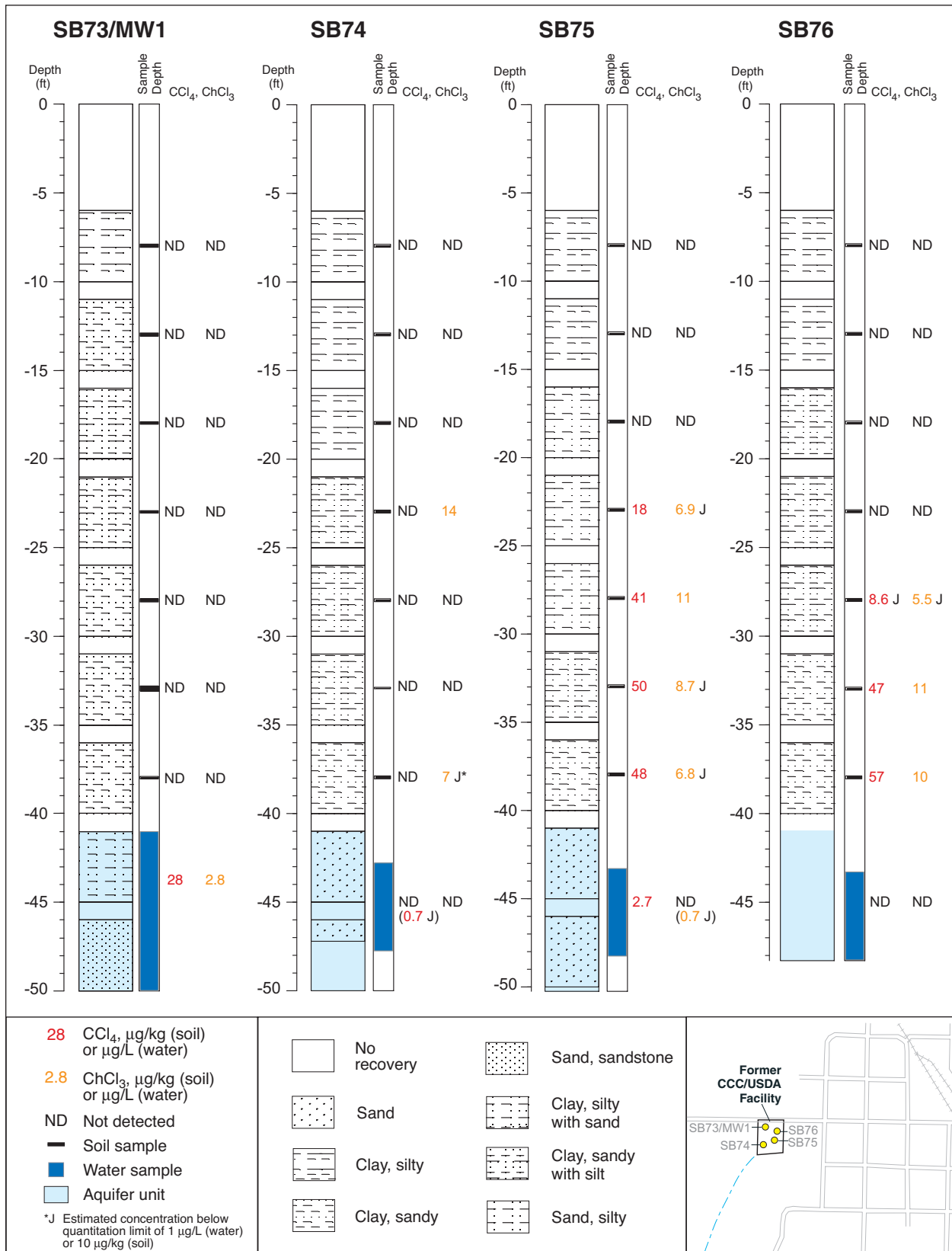


FIGURE 4.1 Results for carbon tetrachloride and chloroform from purge-and-trap analyses of subsurface soil and groundwater samples from the former CCC/USDA facility, displayed by depth on lithologic logs for SB73–SB76.

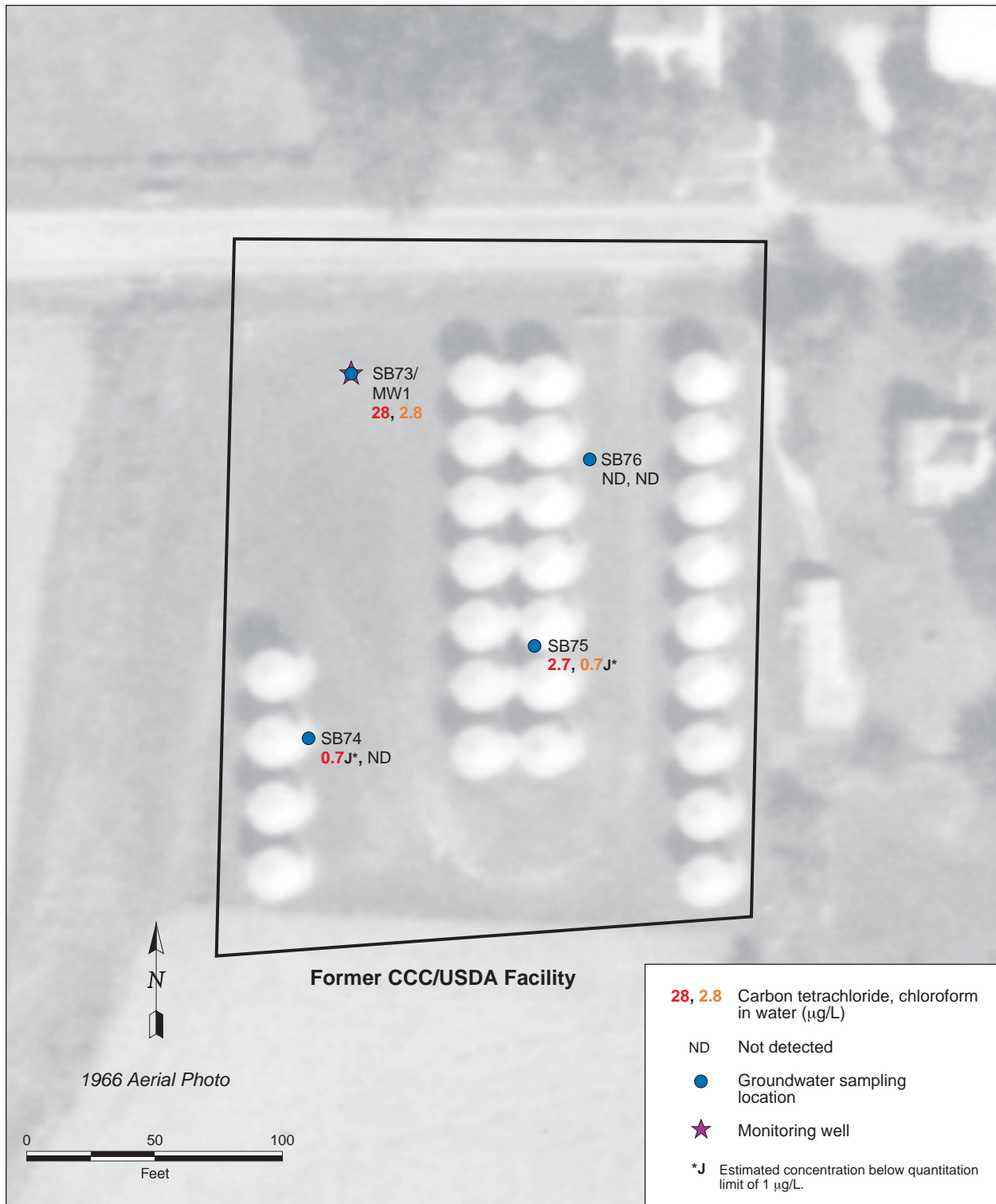


FIGURE 4.2 Locations of groundwater samples collected at the former CCC/USDA facility during the Phase III targeted investigation and results of analyses of these samples for carbon tetrachloride and chloroform. Source of photograph: USDA 1966.

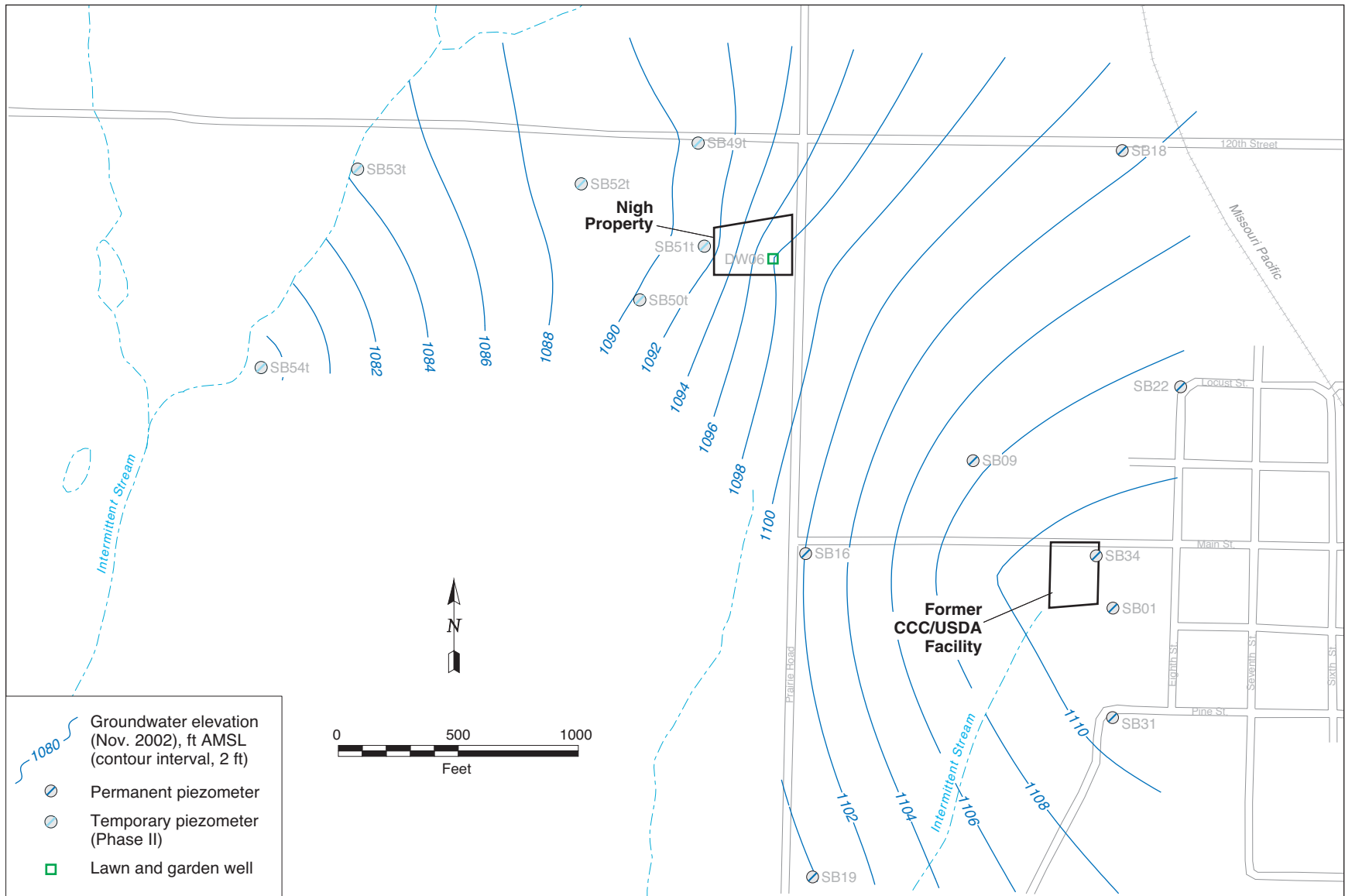


FIGURE 4.3 Potentiometric surface for the aquifer unit in the western part of Everest on November 9, 2002, with locations of the former CCC/USDA facility and the Nigh property.

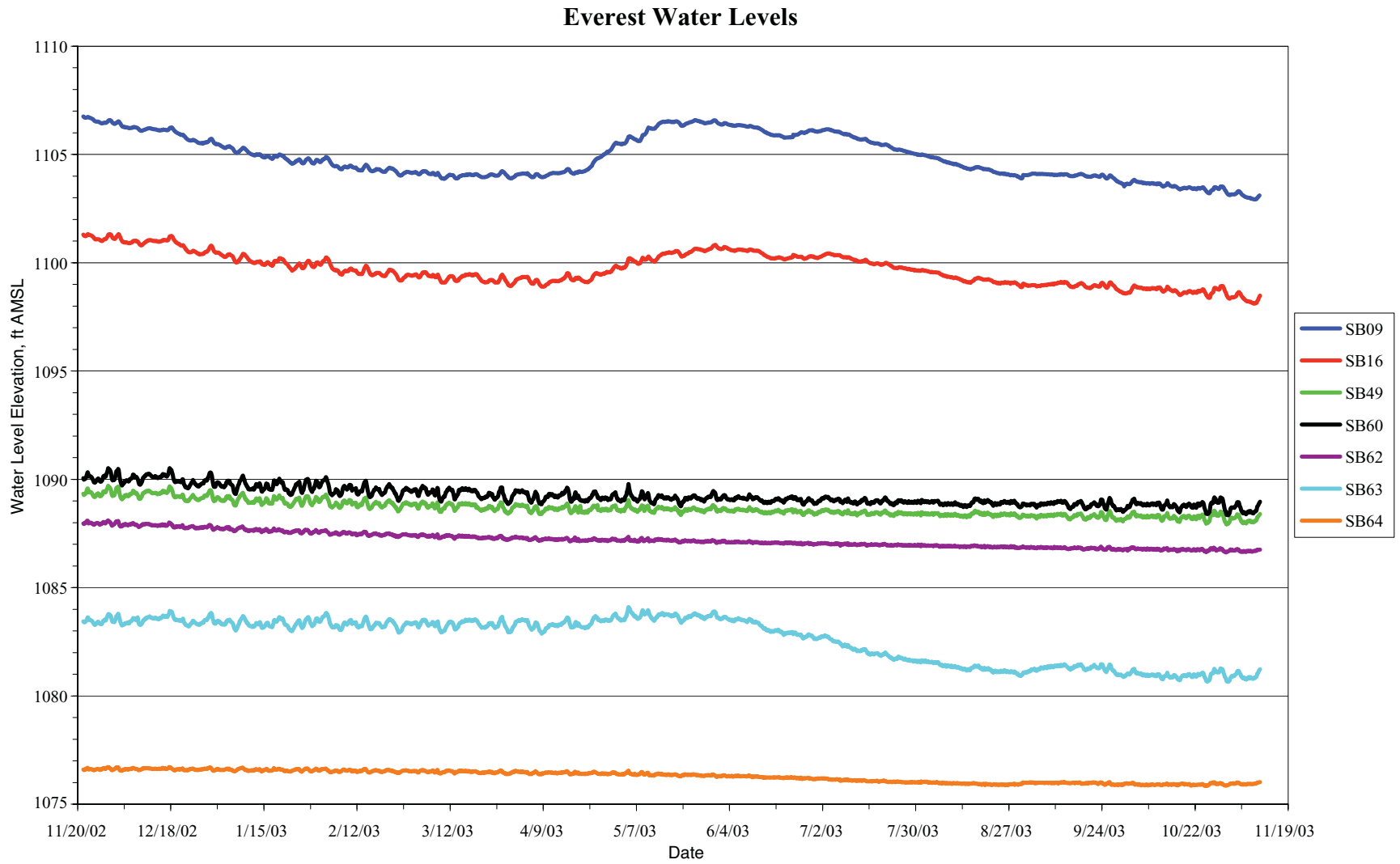


FIGURE 4.4 Hydrographs obtained by continuous (automated) monitoring of groundwater levels in selected piezometers at Everest from November 21, 2002, to November 10, 2003.

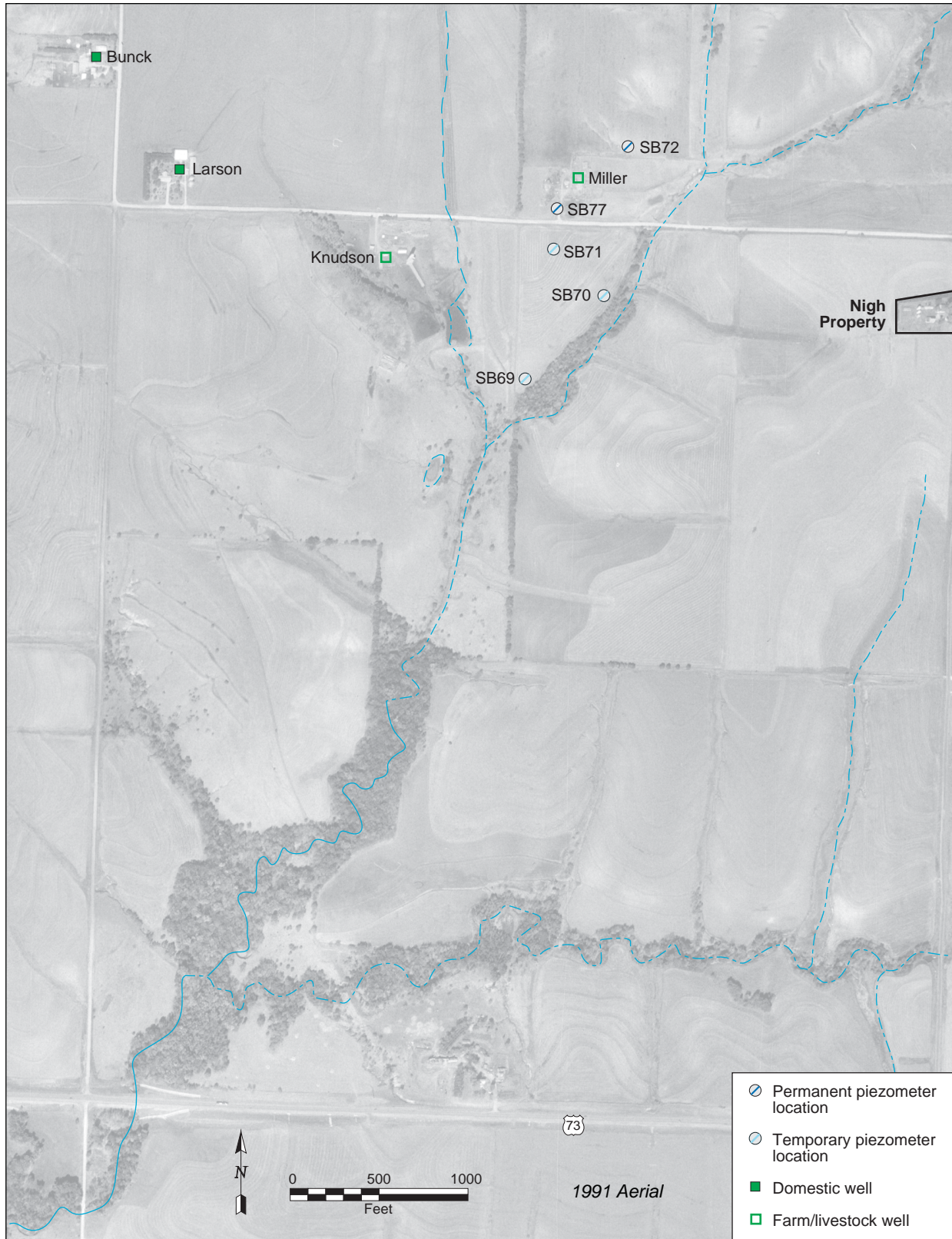


FIGURE 4.5 Locations of five investigative borings completed as temporary (SB69–SB71) or permanent (SB72, SB77) piezometers west of the intermittent stream, with locations of downgradient private wells. Source of photograph: USGS 1991.

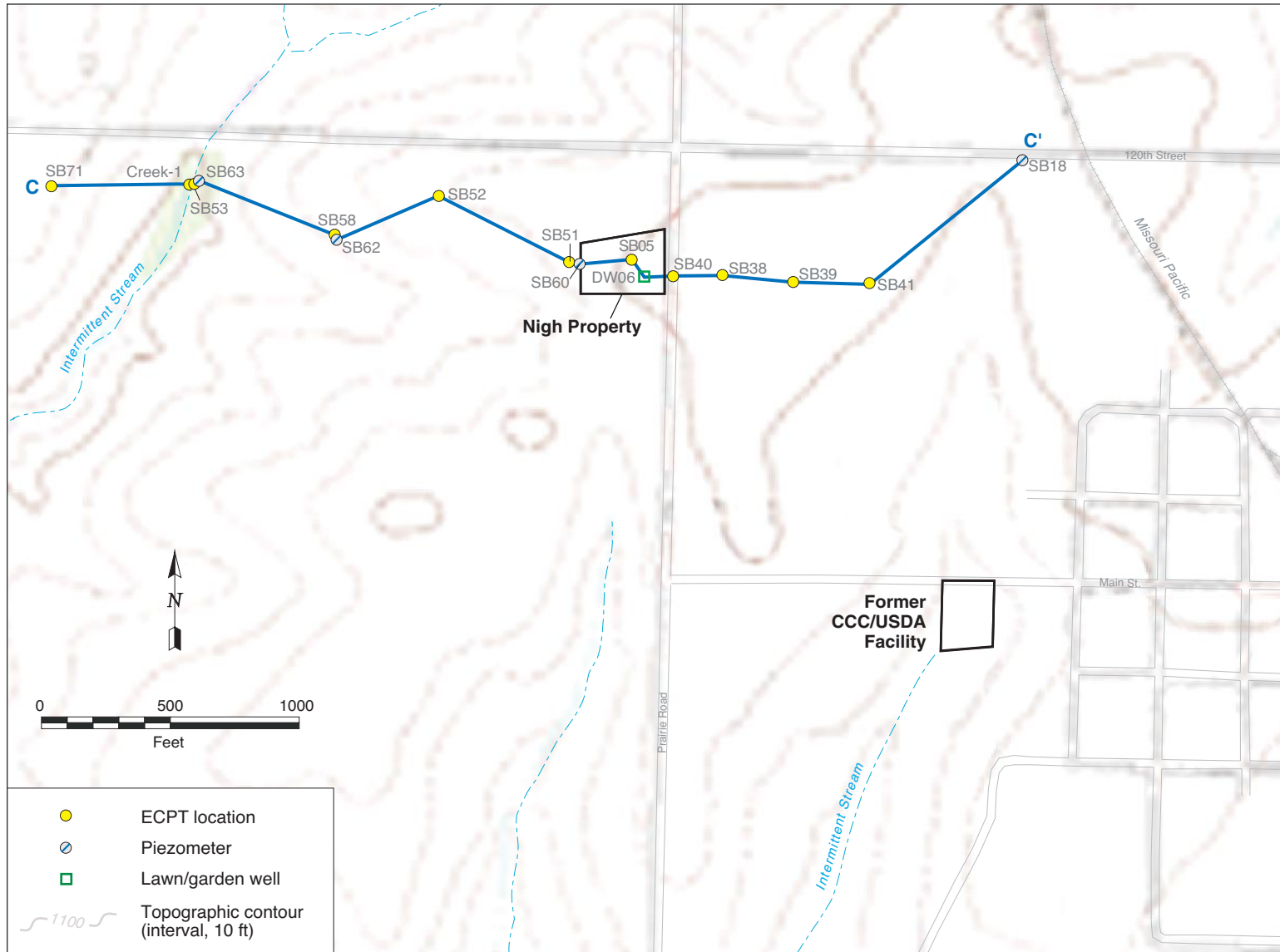


FIGURE 4.6 Location of extended west-to-east interpretive hydrogeologic cross section C–C'.

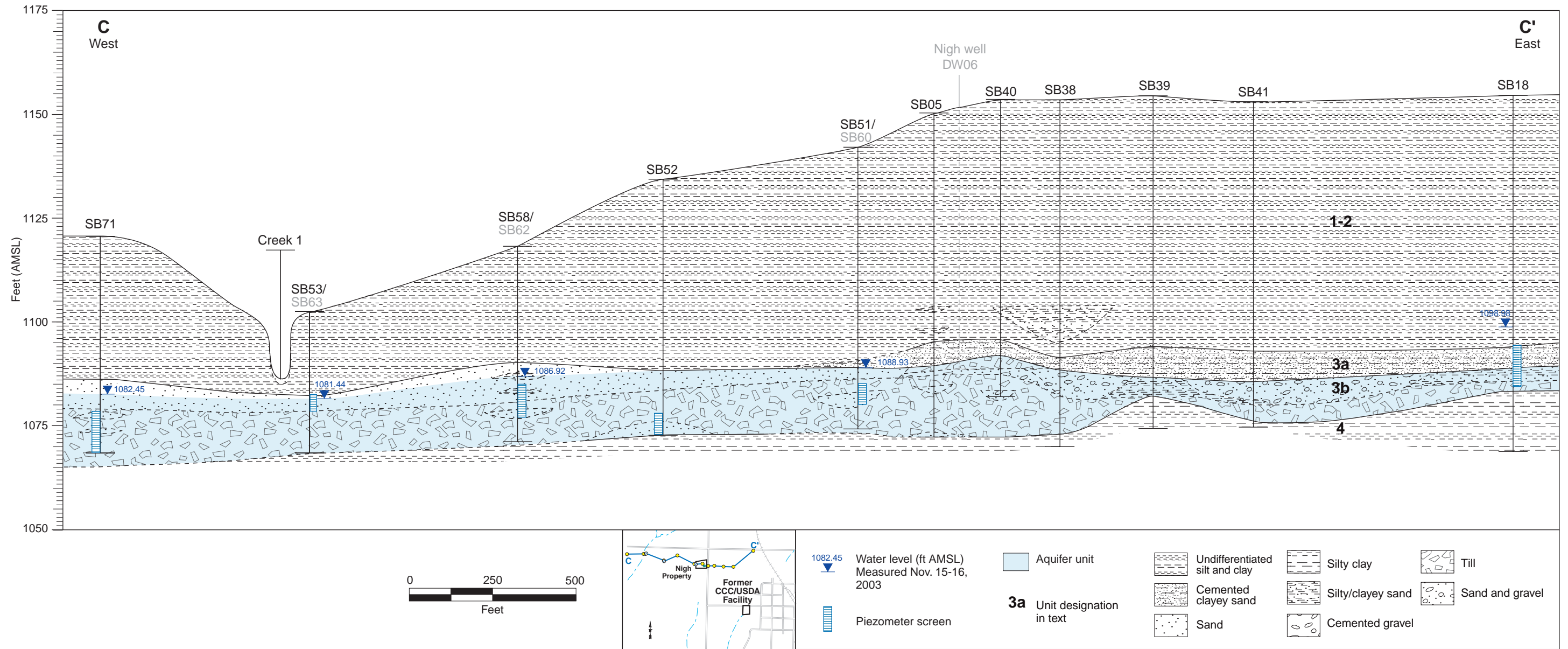


FIGURE 4.7 Extended interpretive west-to-east hydrogeologic cross section C-C' (vertically exaggerated).

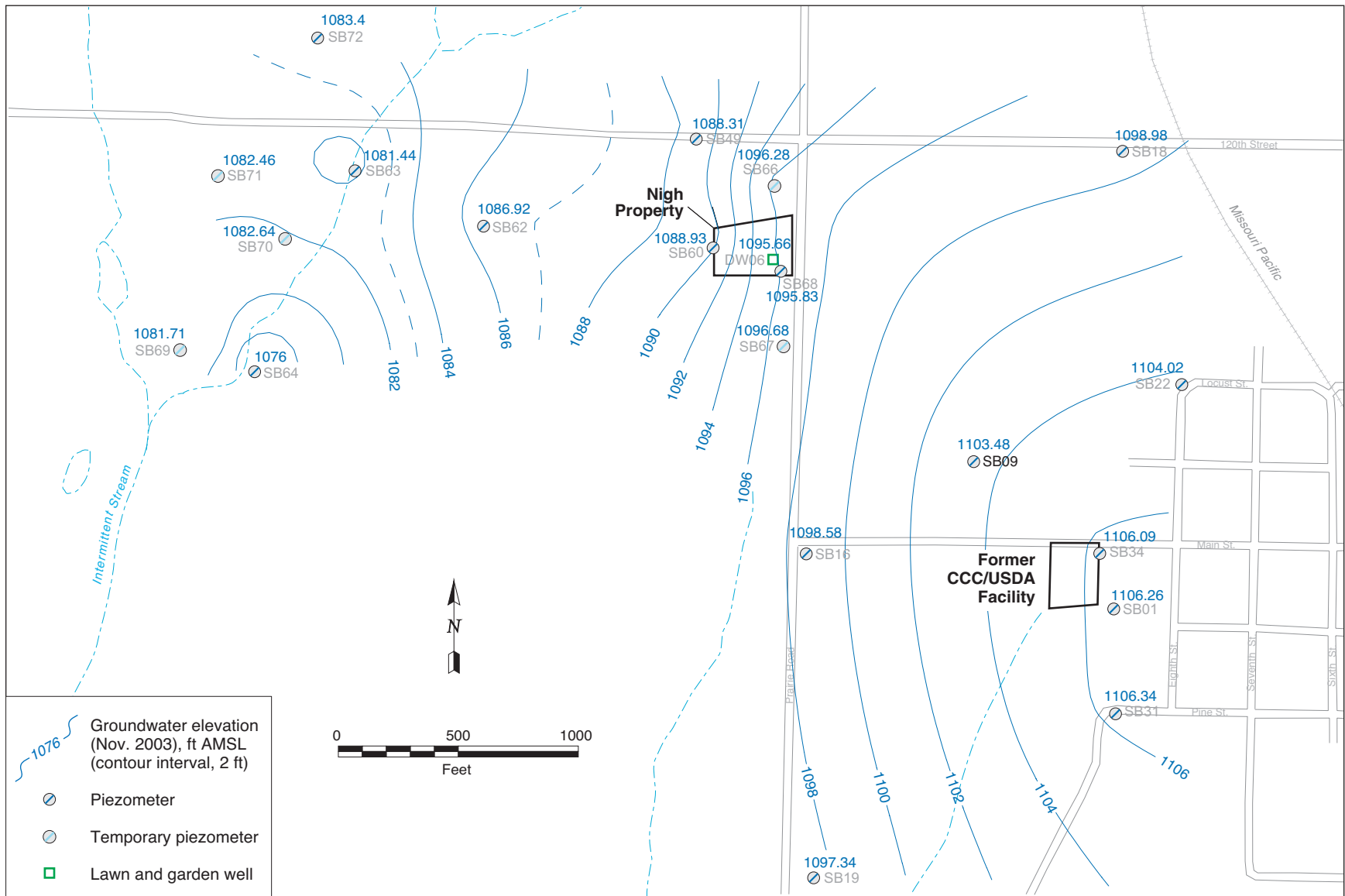


FIGURE 4.8 Potentiometric surface for the aquifer unit in the western part of Everest on November 15–16, 2003, with locations of the former CCC/USDA facility and the Nigh property.

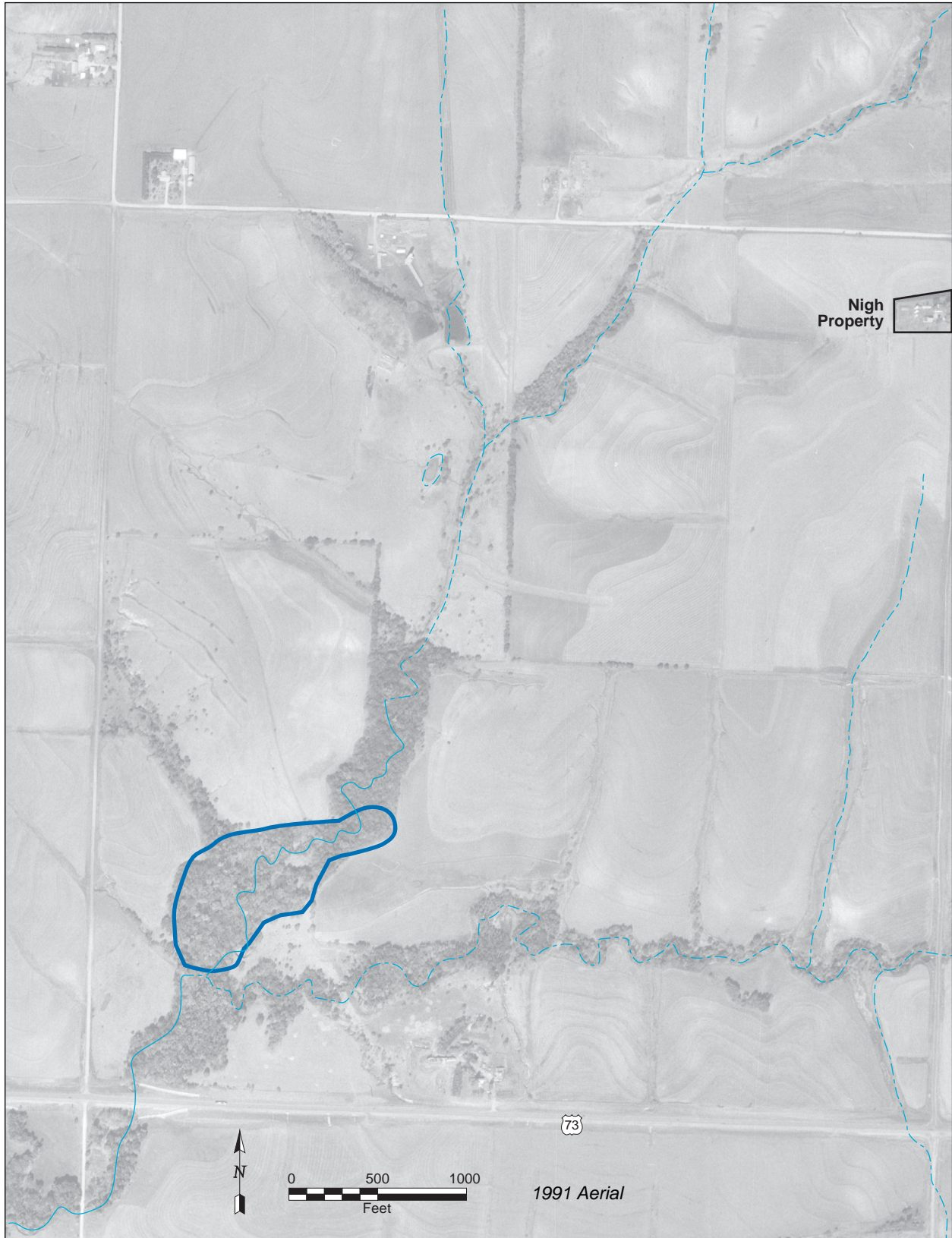


FIGURE 4.9 Area of the stream valley west of Everest and the Nigh property where the upstream limit of groundwater (base) flow to the stream was identified. Source of photograph: USGS 1991.

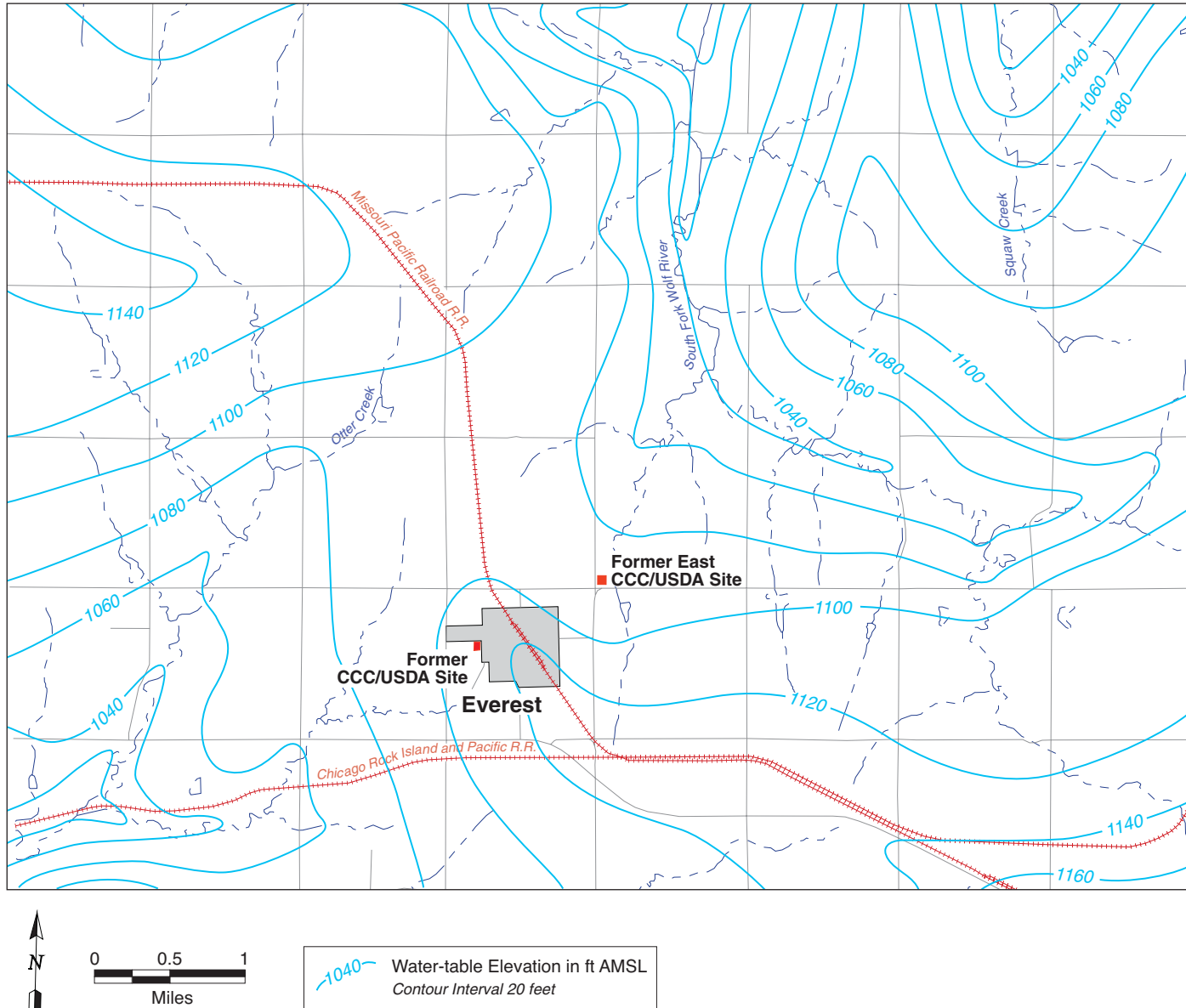


FIGURE 4.10 The configuration of the groundwater table in southeastern Brown County, Kansas. Source: Modified after Bayne and Schoewe (1967).

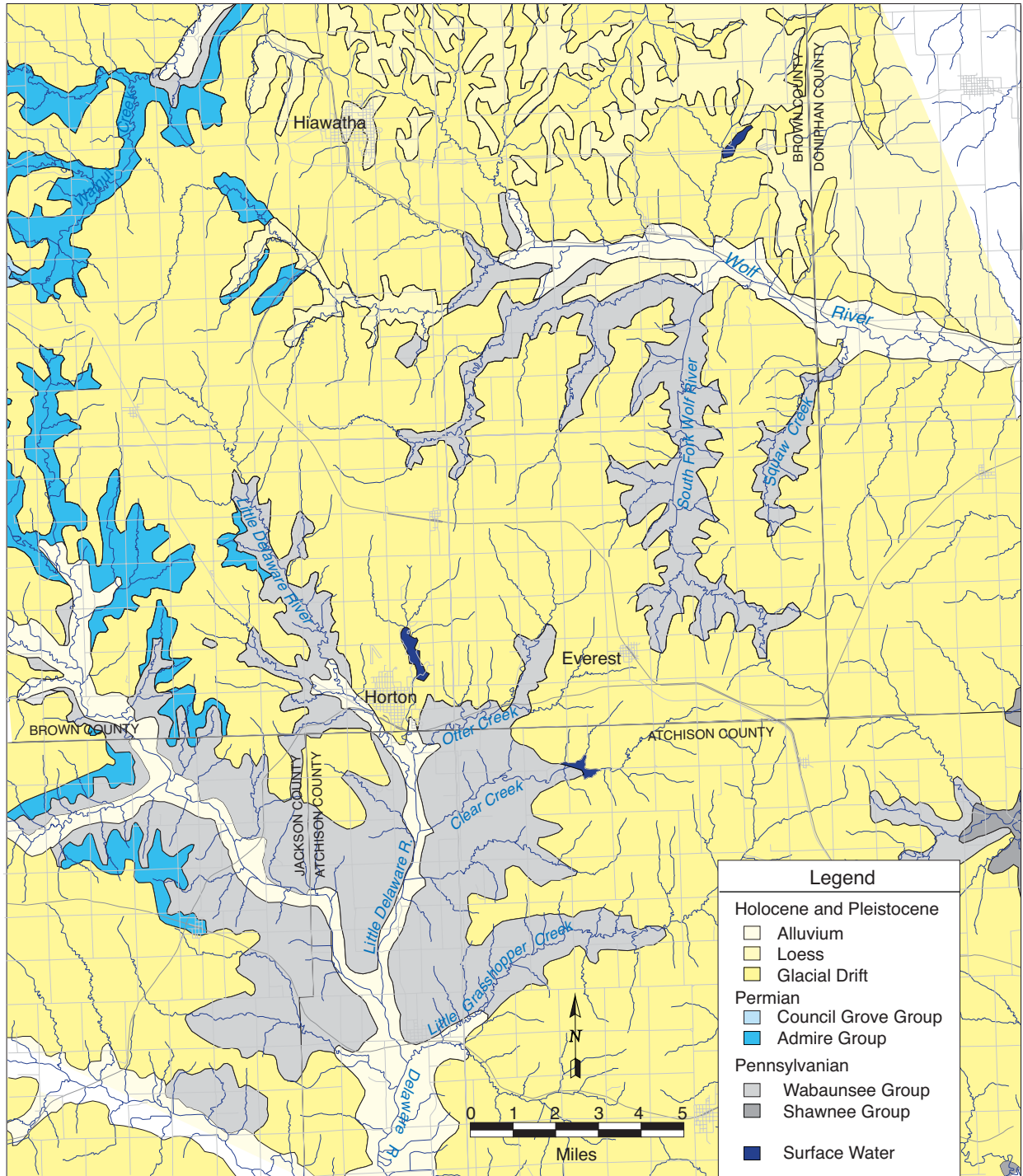


FIGURE 4.11 Geologic map of Brown County, Kansas, and vicinity. Source: Modified after Ross (1991).

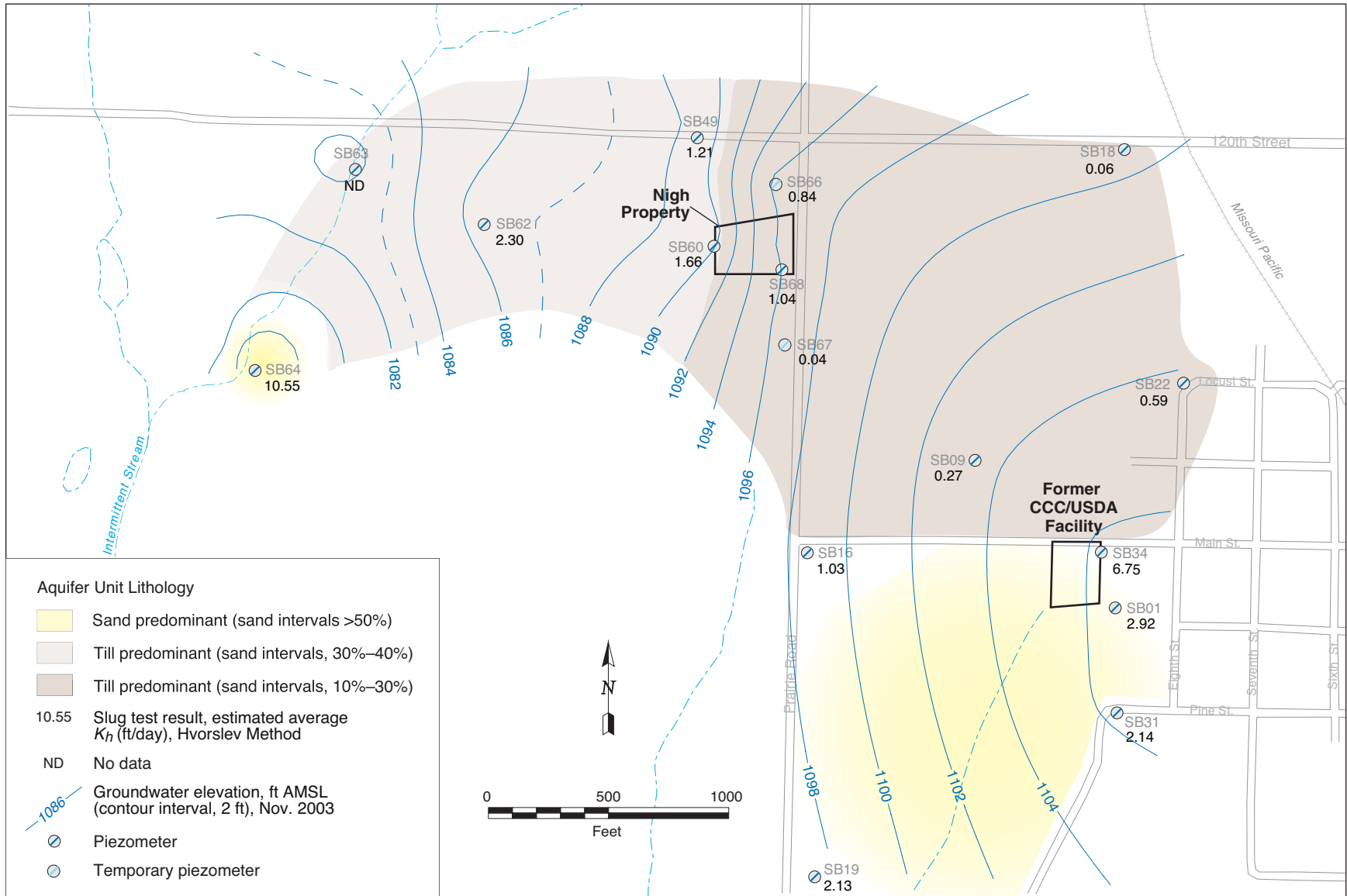


FIGURE 4.12 Interpreted general pattern of aquifer unit lithology at Everest, with hydraulic conductivity values (ft/day) along the plume migration pathway at Everest, based on the interpretation of slug test results with the Hvorslev method.

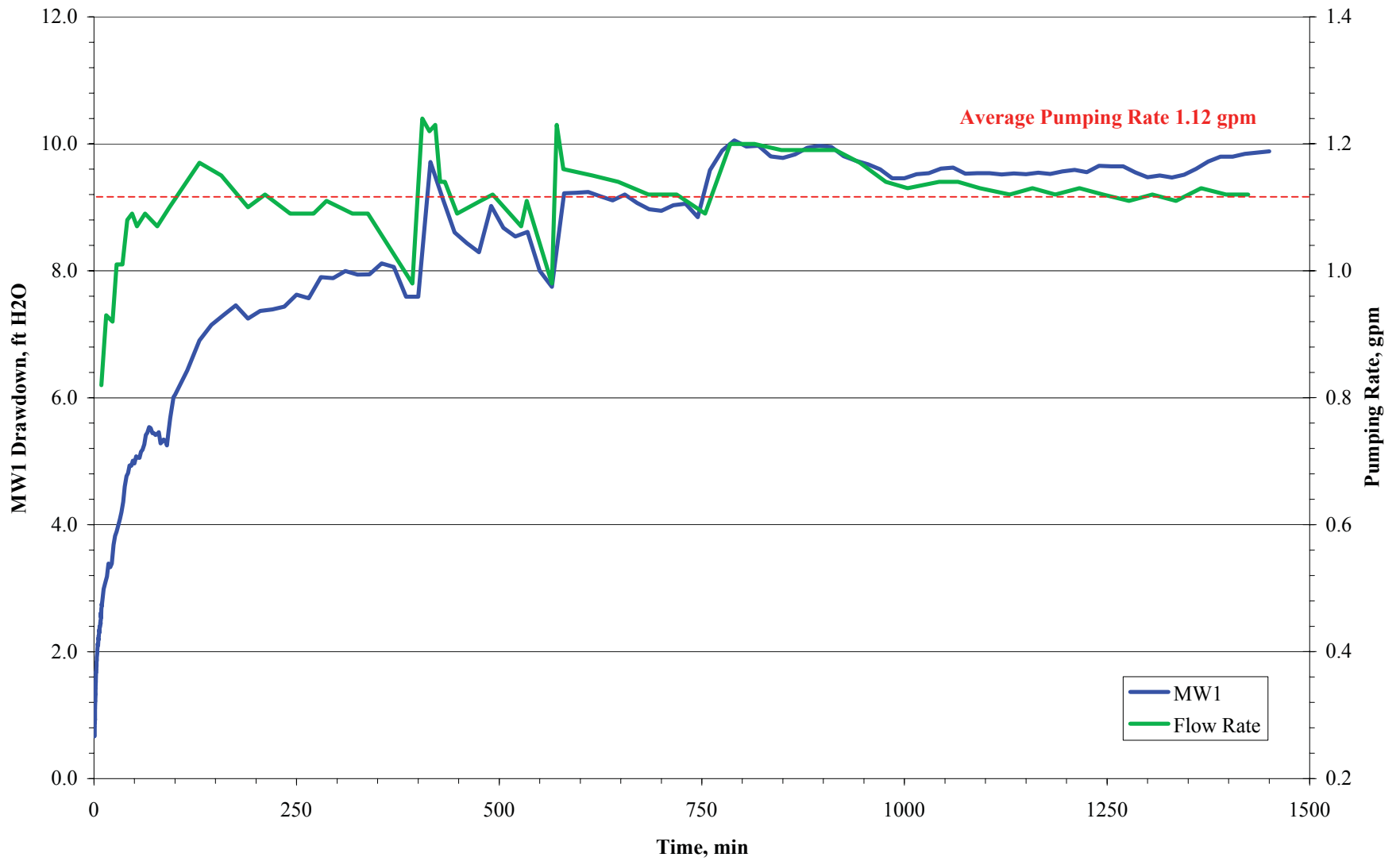


FIGURE 4.13 Hydrograph measured for MW1 during the pumping of this well on February 17–18, 2004, with corresponding measured flow rates.

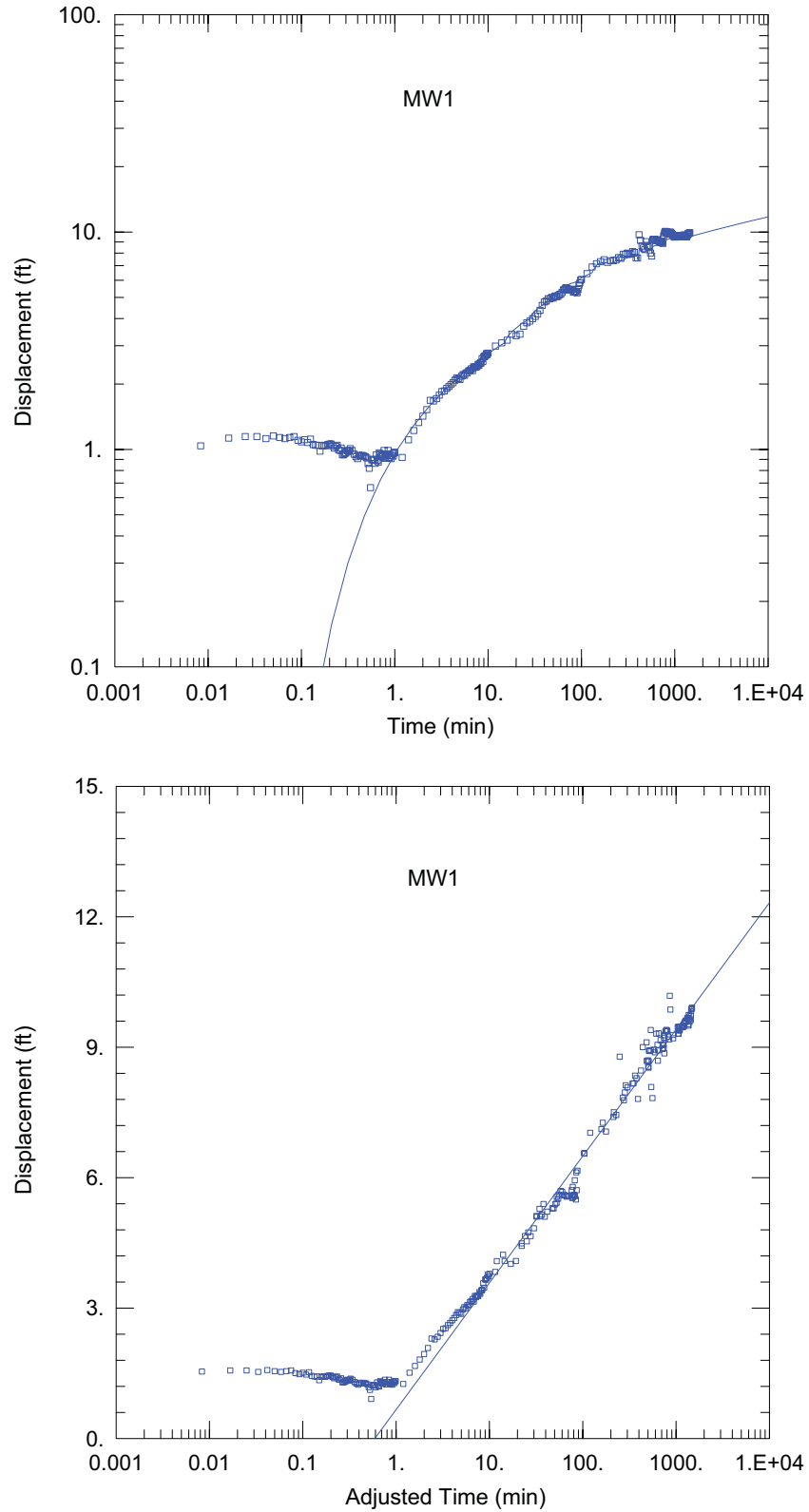


FIGURE 4.14 Analysis of drawdown data for pumping well MW1, for aquifer unit thickness = 10 ft. Top: Theis method; estimated transmissivity = 14.8 ft²/day. Bottom: Cooper and Jacob method; estimated transmissivity = 13.6 ft²/day.

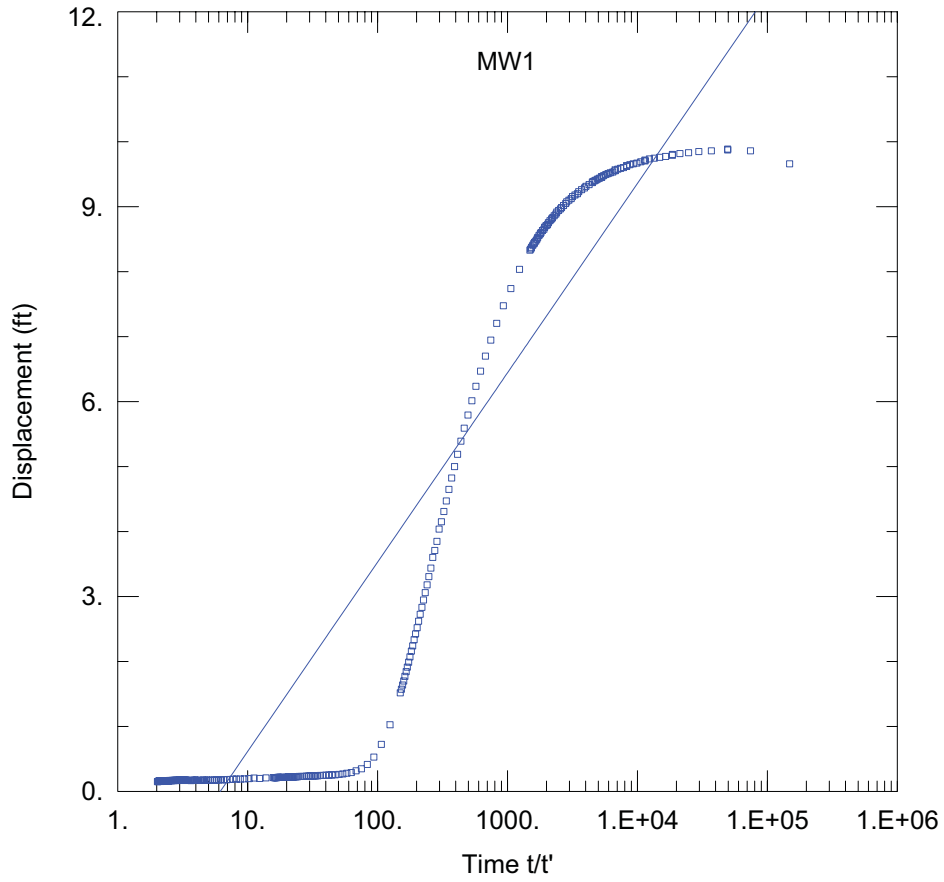


FIGURE 4.15 Analysis of residual drawdown data with the Theis recovery method for pumping well MW1. Aquifer unit thickness = 10 ft. Estimated transmissivity = 13.6 ft²/day. Estimated S' = 6.2.

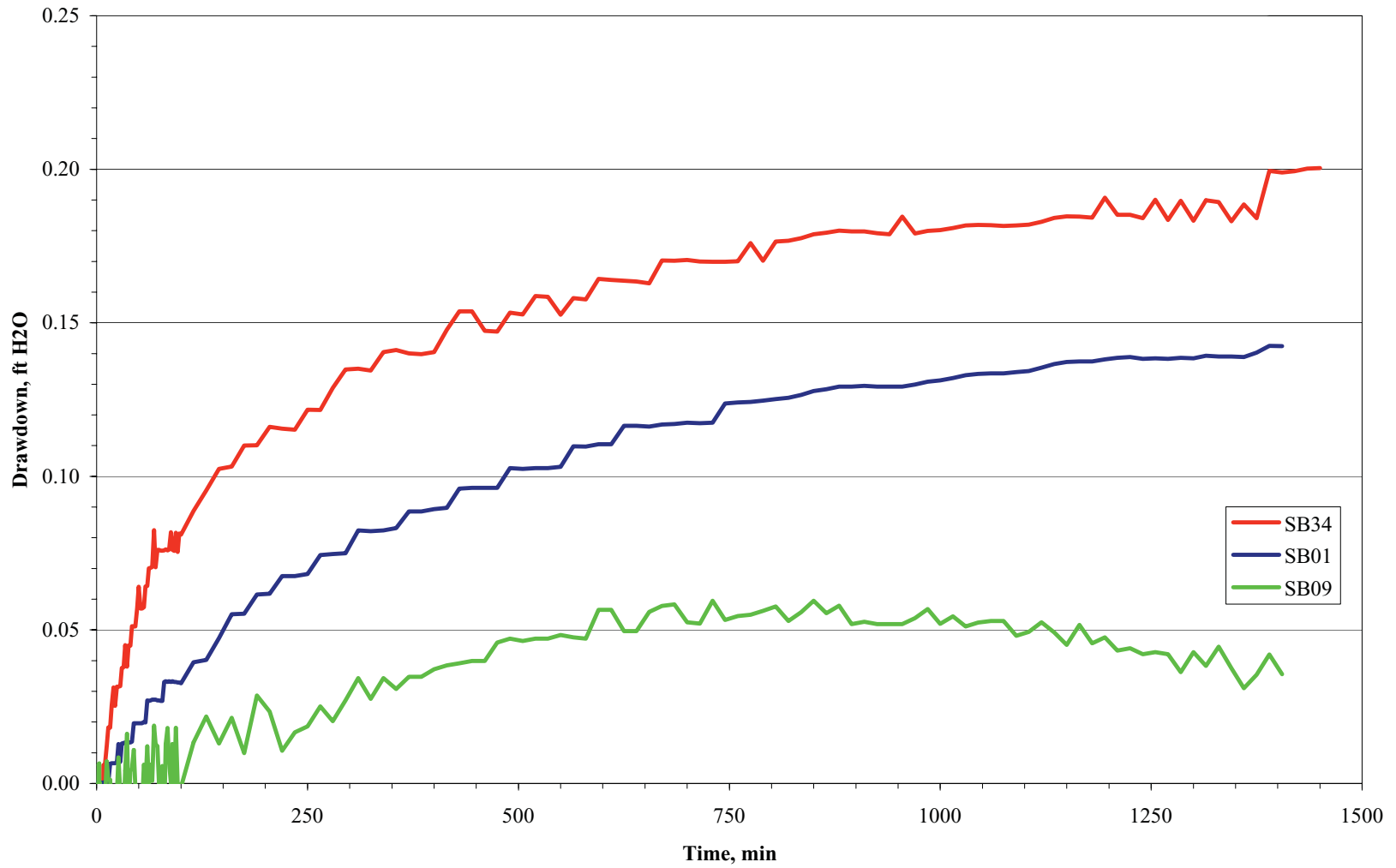


FIGURE 4.16 Hydrographs measured for piezometers SB01, SB09, and SB34 in response to the pumping of well MW1 on February 17–18, 2004.

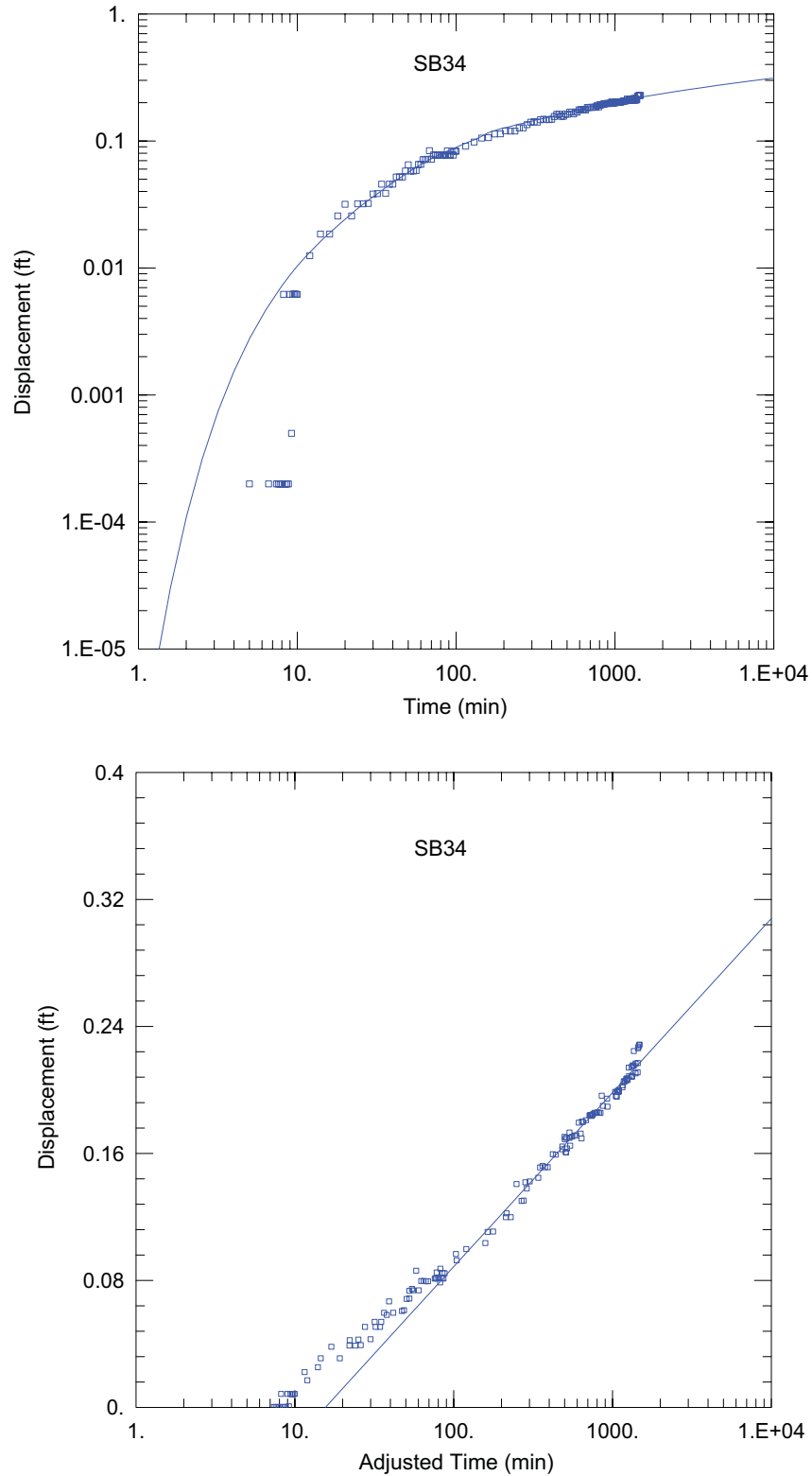


FIGURE 4.17 Analysis of drawdown data for piezometer SB34, for aquifer unit thickness = 10 ft. Top: Theis method; estimated transmissivity = 358 ft²/day and estimated storativity = 0.0004. Bottom: Cooper and Jacob method; estimated transmissivity = 360 ft²/day and estimated storativity = 0.0004.

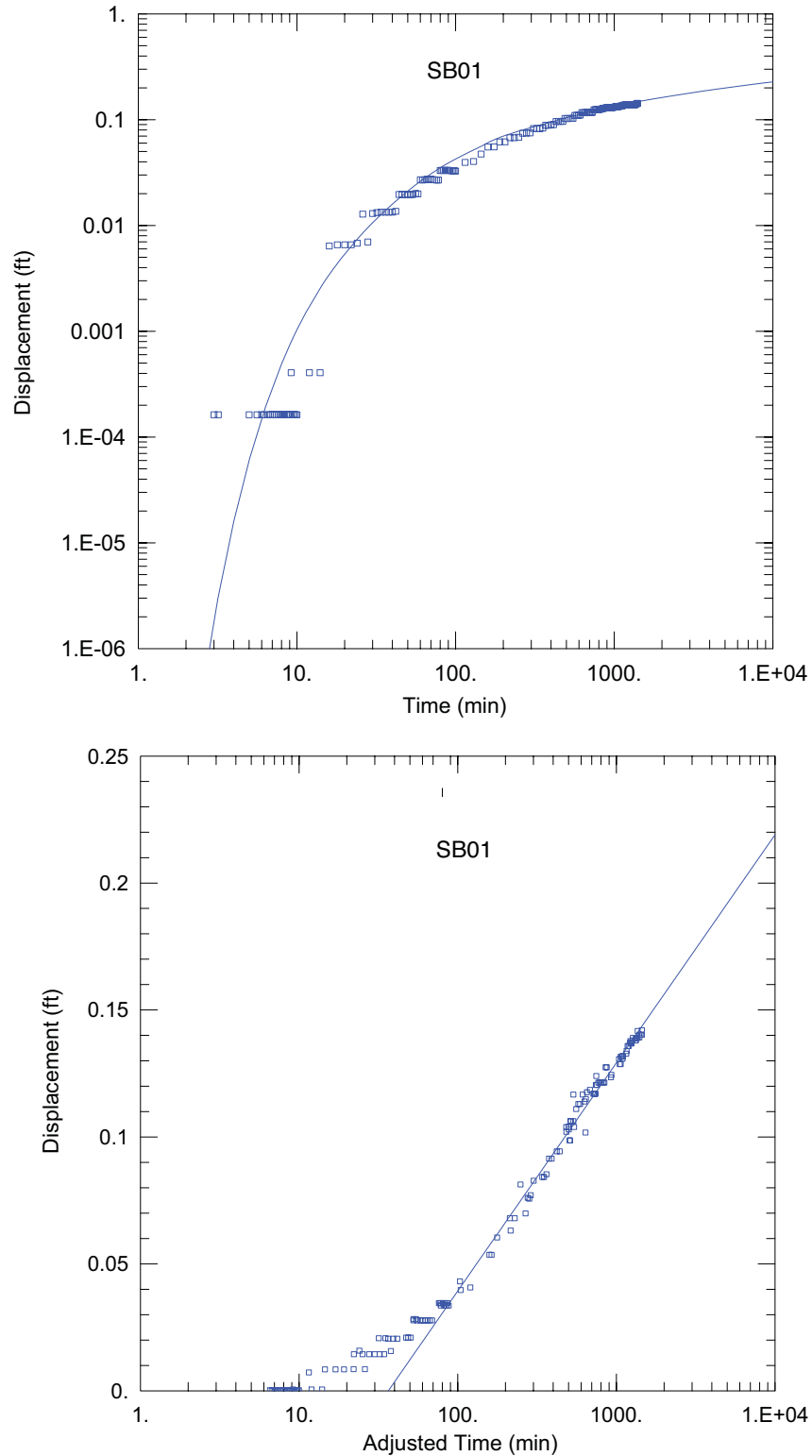


FIGURE 4.18 Analysis of drawdown data for piezometer SB01, for aquifer unit thickness = 13 ft. Top: Theis method; estimated transmissivity = 416 ft²/day and estimated storativity = 0.0003. Bottom: Cooper and Jacob method; estimated transmissivity = 440 ft²/day and estimated storativity = 0.0003.

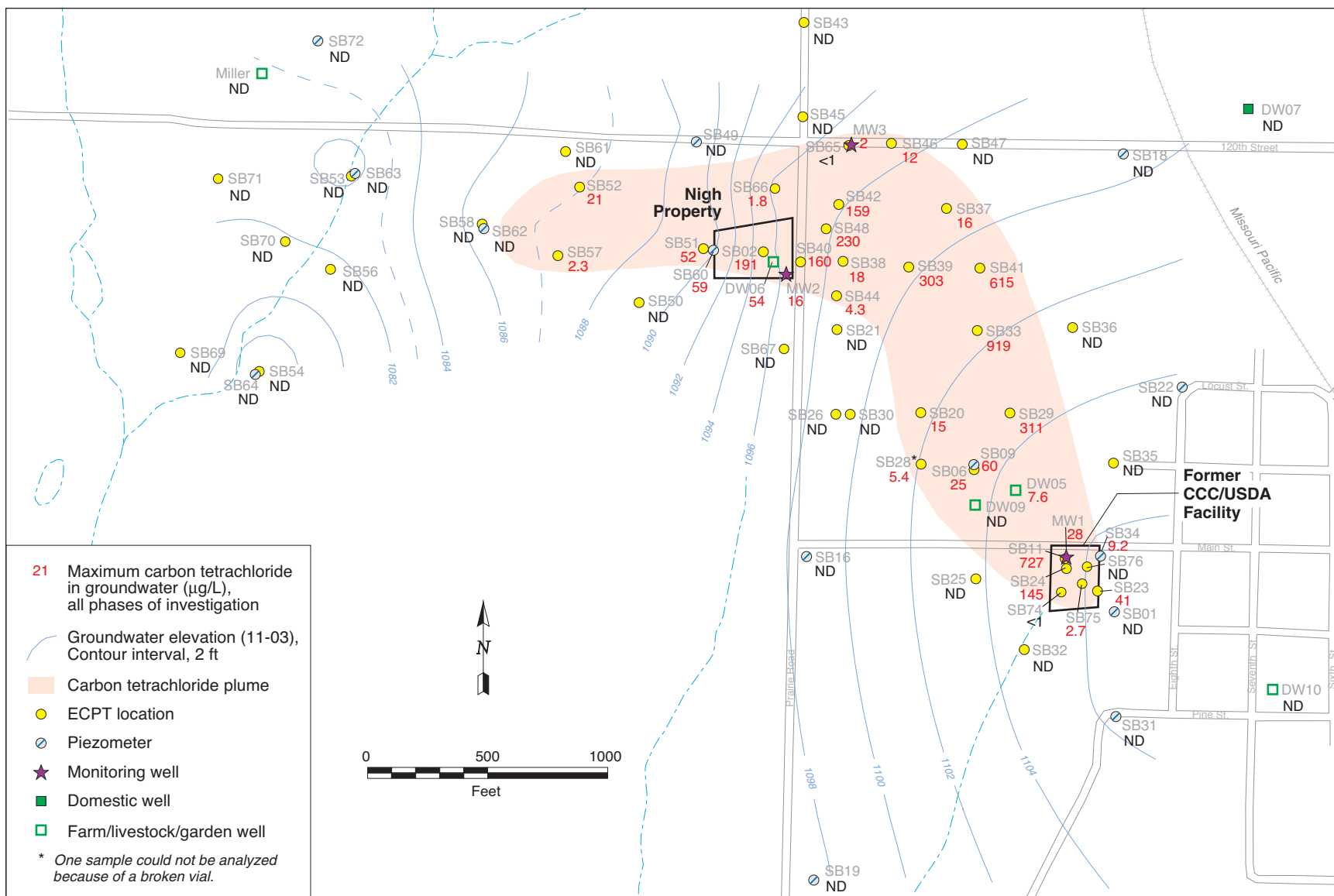


FIGURE 4.19 Locations of Phase I, Phase II, and Phase III targeted investigation groundwater samples from the aquifer unit in the western part of Everest, with results of analyses of these samples for carbon tetrachloride (highest value recorded at each location), locations of the former CCC/USDA facility and the Nigh property, and groundwater elevations on November 15–16, 2003. At sampling locations outside this field of view, no carbon tetrachloride was detected.

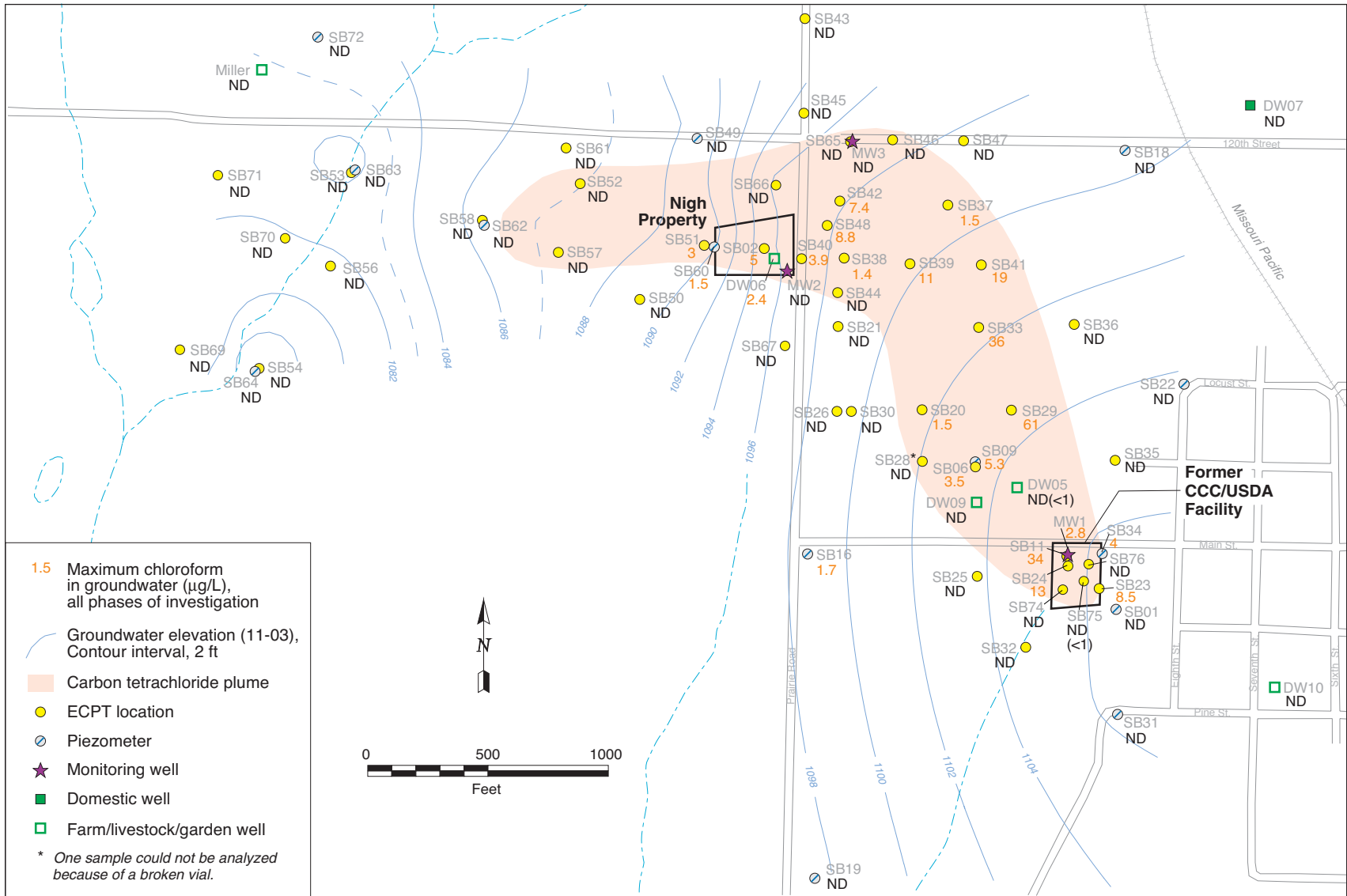


FIGURE 4.20 Locations of Phase I, Phase II, and Phase III targeted investigation groundwater samples from the aquifer unit in the western part of Everest, with results of analyses of these samples for chloroform (highest value recorded at each location), locations of the former CCC/USDA facility and the Nigh property, and groundwater elevations on November 15–16, 2003. At sampling locations outside this field of view, no chloroform was detected.

5 Site Summary

This section summarizes the combined findings of the Phase I, Phase II, and targeted Phase III investigations conducted at and near the former CCC/USDA facility in Everest. The findings are discussed as they pertain to the geologic and hydrogeologic setting, the nature and extent of contamination, potential sources, present impacts, and potential future impacts.

5.1 Geologic and Hydrogeologic Setting

Key findings about the geologic and hydrogeologic setting at Everest include the following:

- The stratigraphic sequence at Everest consists primarily of Holocene and Pleistocene loess, silts, and clays that overlie sands and sandy to gravelly clay till, which in turn rest on silty clays or Cretaceous limestone bedrock.
- The only water-bearing unit of significance identified at Everest is a variably saturated, 4- to 20-ft-thick interval of sands and sandy to gravelly clay till (called unit 3b by Argonne).
- The lithology of the aquifer unit is heterogeneous. Relatively thick sandy and gravelly channel deposits and lenses occur in the till in the vicinity of the former Everest facility. Coarser-grained deposits are limited to thinner, more discontinuous lenses and stringers in the till to the west and northwest of the former CCC/USDA facility, beyond the Nigh residence and extending west of the intermittent creek.
- Groundwater level relationships indicated that the more permeable intervals of the aquifer unit form a complex but hydraulically continuous network within the till. Semiradial groundwater flow was identified toward the southwest, west, and northwest from an apparent recharge area near (and east of) the former CCC/USDA facility.
- Measured groundwater levels demonstrate that apparent groundwater flow pathways are diverted toward the southwest near the intermittent stream. No

clear evidence of groundwater seepage from the aquifer unit into the intermittent stream channel has been found directly west of the Nigh property and the former CCC/USDA facility; however, significant stream flow results from groundwater discharge originating in a forested area to the southwest of the Nigh property, approximately 3,000 ft downstream of boring SB64 and 1,500 ft north of Highway 73.

- The observed groundwater flow and surface discharge relationships near the intermittent stream limit the potential for further westward migration of groundwater (and contamination) from the former CCC/USDA facility.

5.2 Groundwater Contamination and Migration

The lateral and vertical extent of the carbon tetrachloride plume at Everest has been delineated. A continuous plume extends downgradient to the north-northwest from the former CCC/USDA facility, passes beneath and to the north of the Nigh property, and continues downgradient approximately 800 ft to the west (Figure 4.19). Groundwater flow patterns near the intermittent stream channel west of the Nigh property indicate that future migration of the plume to the southwest, with discharge of the contaminated groundwater to the stream north of Highway 73, is to be expected. Key factors relating to the plume include the following:

- Carbon tetrachloride (727 $\mu\text{g/L}$) and chloroform (34 $\mu\text{g/L}$) were found in groundwater at the top of the aquifer beneath the northwest corner of the former Everest CCC/USDA facility, but the contaminants were not detected upgradient — to the southeast — of the former facility. A groundwater contaminant plume extending downgradient from the former Everest facility toward the Nigh property was identified.
- Groundwater and contaminant migration within the aquifer unit occur via a complex network of generally saturated, discontinuous sandy channels, stringers, and lenses within less permeable and variably saturated sandy clay till. Groundwater movement in these sediments is driven by recharge in the area southeast of the former Everest CCC/USDA facility and by discharge to the intermittent stream southwest of the former facility and the Nigh property. Groundwater flow and contaminant migration are relatively slow near the

Nigh farmstead because of a zone of dry till found upgradient of the Nigh property and a general reduction in the frequency and thickness of permeable intervals in the aquifer unit in that area.

- Estimated hydraulic conductivity values, derived from slug tests, vary across the study area. Higher values, on the order of 2–5 ft/day, occur at and southwest of the former CCC/USDA facility. The hydraulic conductivity values for sediments northwest of the former facility, particularly near the Nigh property, are consistently lower, ranging from < 0.1 ft/day to approximately 1 ft/day. West of the Nigh property, estimated hydraulic conductivity values increase slightly to approximately 1–2 ft/day.
- The results of test pumping at well MW1, at the former CCC/USDA facility, indicated that a flow rate of only about 1.1 gpm could be maintained over a 24-hr period without risk of local dewatering of the aquifer unit and the development of unconfined conditions at MW1.
- Small (maximum < 0.25-ft) drawdown responses occurred at observation points 141 ft east (SB34) and 304 ft southeast (SB01) of MW1 during a 24-hr constant-rate pumping test of MW1. These results indicate that pumping at MW1 would exert a limited hydraulic influence on water levels in the aquifer unit near the former CCC/USDA facility. No clear response to the pumping was observed at a monitoring point (SB09) 525 ft downgradient of the former CCC/USDA facility.
- Hydraulic conductivity estimates from the MW1 pumping test ranged from 1.4 ft/day (based on data from MW1) to 36 ft/day (based on data from SB34). The hydraulic conductivity values estimated at MW1 were similar to values obtained from the slug testing of nearby piezometers SB01 and SB34. The hydraulic conductivity values estimated from the pumping test data at SB34 and SB01 were higher than the corresponding values from the slug tests at these locations and are subject to uncertainty due to competing influences (other than pumping of well MW1) that affected the water levels at these locations during the pumping period.

- Pumping data for well MW2 located on the Nigh property, collected during development, indicated a maximum sustainable pumping rate at this location of < 0.8 gpm. The observed pumping behavior for MW2 is consistent with the estimated low hydraulic conductivity values obtained from the slug tests performed by using the piezometers near the Nigh property. The effect of pumping MW2 at this low rate on water levels in the aquifer was limited, extending less than 21 ft from the well.
- Soil properties suggest that retardation factor (R) values of approximately 2.4–4.4 affect carbon tetrachloride migration rates in the sands and sandy to gravelly clay till deposits of the aquifer unit. Carbon tetrachloride might be more strongly sorbed (R = 4.43) in the less porous, calcareous, cemented sands near the base of the aquifer unit at SB73, beneath the former CCC/USDA facility.

5.3 Potential Source Areas

The former CCC/USDA facility and the private grain storage bins formerly located on the Nigh property have been identified as potential sources of the observed groundwater contamination. Key findings are as follows:

- Soil sampling confirmed an association of carbon tetrachloride contamination with the soils at the former Everest CCC/USDA facility. Low levels of carbon tetrachloride (maximum 57 µg/kg) were found in vadose zone soils at four locations beneath the former facility.
- Carbon tetrachloride was also detected in vegetation and near-surface soils associated with the site of private grain storage bins formerly located on the Nigh property, suggesting a possible local source contribution to the carbon tetrachloride contamination previously identified in the domestic well (DW06) at this location and in groundwater downgradient from the Nigh property. No further investigation has been conducted at the Nigh property.
- Delineation of a possible continuing source of carbon tetrachloride contamination to groundwater — from subsurface soils at the Nigh property

— was not addressed as part of the investigations of carbon tetrachloride contamination in soils and groundwater associated with the former CCC/USDA grain storage facilities at Everest.

5.4 Current Impacts

5.4.1 Human Health Risks Associated with Soils

Results obtained from the sampling and analysis of near-surface and subsurface soils at the former Everest grain storage facility were compared against the Tier 2 risk-based standards for carbon tetrachloride and chloroform presented in the *RSK Manual* (KDHE 2003). Concentrations based on risk to human health are provided for two land use settings: residential and nonresidential. The risk-based standards for direct contact listed in the Tier 2 Risk-Based Summary Table (Appendix A in *RSK Manual*; KDHE 2003) for carbon tetrachloride are 2,500 µg/kg for a residential setting and 7,000 µg/kg for a nonresidential setting. The corresponding risk-based standards for chloroform are 3,900 µg/kg and 6,000 µg/kg. The risk-based standards for the “soil-to-ground water protection pathway” are 200 µg/kg for carbon tetrachloride and 1,200 µg/kg for chloroform. Application of these standards to the findings for the former CCC/USDA facility at Everest indicates the following:

- The maximum concentrations of carbon tetrachloride (57 µg/kg) and chloroform (11 µg/kg) detected in the soils at the former CCC/USDA facility are well below the risk-based standards. Thus, no unacceptable human health risk is associated with either carbon tetrachloride or chloroform in soils at the former CCC/USDA facility.
- The concentrations of carbon tetrachloride and chloroform detected are also well below their respective Kansas risk-based standards for the “soil-to-ground water protection pathway.”

The earlier investigational results summarized in Section 1.1 suggest that a source of carbon tetrachloride contamination to the groundwater might be associated with the site of private grain storage bins formerly located on the Nigh property. Health risks associated with a

potential continuing soil-to-groundwater contamination pathway on the Nigh property were not evaluated as part of the CCC/USDA investigations at Everest.

5.4.2 Human Health Risks Associated with Groundwater

Under present conditions no human health risk is posed by the carbon tetrachloride groundwater plume identified at Everest. The Nigh well, the single well in which carbon tetrachloride was initially detected, is no longer used for domestic purposes. The CCC/USDA connected the Nigh residence to the Everest municipal water system, which now supplies all water for drinking and other domestic uses by the residents. No other domestic wells or municipal wells are impacted or immediately threatened. No surface water is currently impacted.

5.5 Potential Future Impacts

Potential future impacts associated with the groundwater plume at Everest are limited to two possible scenarios. The first is the continued migration and ultimate discharge of the contamination into the intermittent stream and adjacent streams southwest of the Nigh residence. The second scenario would involve the installation of new drinking water wells within the affected aquifer zone. Specifically, these possible future impacts are as follows:

- Discharge of the plume into the stream could result in surface water concentrations in excess of state standards and potential human exposure.
- Installation of new drinking water wells within the footprint of the plume or its expected migration pathway could result in exposure to groundwater with carbon tetrachloride concentrations in excess of the MCL of 5 µg/L.

Existing domestic wells west of the intermittent stream should not be threatened, as the intermittent stream channel represents a local surface water divide and groundwater drainage divide that will limit the potential westward migration of contaminated groundwater. The municipal wells used by the city of Everest are not threatened, as they are located approximately 2 mi south of the town and do not lie along the plume migration pathway.

6 Recommendations

The combined results and findings of Phase I, Phase II, and targeted Phase III investigations conducted at and near the former CCC/USDA facility in Everest were used as the technical basis for developing a preliminary list of potential remedial action objectives and corrective action alternatives for this site.

6.1 Key Findings

The key results and findings of the investigations indicate the following:

1. Concentrations of carbon tetrachloride and chloroform in both near-surface and subsurface vadose zone soils at the former Everest CCC/USDA facility are below risk-based screening levels presented in the Kansas *RSK Manual* (KDHE 2003).
2. Analyses of near-surface soil samples and vegetation samples suggest that a source of carbon tetrachloride contamination to the groundwater might be associated with the site of private grain storage bins formerly located on the Nigh property. Health risks associated with a potential continuing soil-to-groundwater contamination pathway on the Nigh property were not evaluated as part of the CCC/USDA investigations at Everest.
3. A groundwater plume of carbon tetrachloride at concentrations in excess of the MCL of 5 µg/L extends downgradient from the former CCC/USDA facility.
4. Contaminant migration in the aquifer unit occurs via a complex network of generally saturated, discontinuous sandy channels, stringers, and lenses within relatively less permeable and variably saturated sandy clay till.
5. The results of test pumping (< 1.5 gpm sustainable) and hydraulic conductivity estimates obtained from grain size analyses, aquifer pump testing, and slug testing (generally < 3 ft/day) indicate that pumping to

actively withdraw groundwater is not viable across most of the contaminant plume.

6. The contaminant plume will ultimately be discharged to an intermittent stream southwest of the study area, limiting the potential for further westward migration of contaminated groundwater.
7. The results of the groundwater analyses to date do not suggest that biological degradation of carbon tetrachloride has occurred or is occurring at an appreciable rate in the Everest aquifer unit.
8. No current domestic wells are impacted or threatened.
9. The Everest municipal water system supplies drinking water to all residents of the town of Everest and to all private residences outside the city limits that are in the general vicinity of the existing groundwater plume.

On the basis of these findings, the preliminary general and specific remedial action objectives discussed below were identified for the groundwater plume associated with the former CCC/USDA facility at Everest.

6.2 Preliminary Remedial Action Objectives

Remedial actions for the carbon tetrachloride contamination at Everest must meet the following preliminary general objectives:

- Be protective of human health and the environment for currently documented land use.
- Be protective of human health and the environment for potential future residential land use.
- Meet applicable state standards and guidelines or the results of a quantitative human health risk assessment approved by the KDHE.

Satisfying these general objectives would include undertaking the following specific actions:

- Prevent or mitigate any impacts to the surface waters of the intermittent stream west of the Nigh property.
- Invoke environmental use controls to prevent the installation of domestic drinking water wells within the areal extent of the plume.
- Determine carbon tetrachloride levels — and hence the potential need for remediation of a continuing source of contamination to the groundwater — in the subsurface soils at the Nigh property.
- Reduce the volume or mass of carbon tetrachloride in the groundwater, and restore the groundwater to full beneficial use wherever practicable.

To satisfy these specific remedial objectives, the individual corrective action alternatives described below — and combinations thereof — should be evaluated in the CAS for the site.

6.3 Potential Corrective Action Alternatives

The corrective action alternatives that should be evaluated in the CAS for the Everest site — for implementation individually or in combinations — are as follows:

1. *No action* (always considered).
2. *Groundwater monitoring with environmental use controls*. Under this alternative no active remediation takes place; however, the following actions would be taken to protect human health and the environment for the currently documented land use and for potential future residential land use:
 - Existing piezometers and wells would be monitored for carbon tetrachloride and chloroform concentrations to track the status and migration of the plume.

- Environmental use controls would be established to prohibit anyone from drilling domestic drinking water wells within the areal extent of the plume.
3. *Groundwater Extraction with Surface Treatment and Environmental Use Controls*. Under this alternative attempts would be made to reduce the volume and mass of carbon tetrachloride in the groundwater at and near the former CCC/USDA facility, the area in the plume with the highest hydraulic conductivities and sustainable pumping rates. The environmental use controls specified for Alternative 2 (above) would also be needed.

Because the plume is expected to continue its migration and ultimately to be discharged into the intermittent stream in the absence of intervention, the following additional alternatives (with environmental use controls) should be considered to mitigate any future impacts to the stream:

- *A permeable reactive barrier*, to be installed near the stream to treat groundwater before discharge.
- *Phytoremediation*, which is the use of green plants to remove contaminants from soil or water. This treatment at Everest would involve the planting of appropriate vegetation near the stream discharge area to treat groundwater. (For example, more information is online at [http://www.ipd.anl.gov/biotech/programs/environment/.](http://www.ipd.anl.gov/biotech/programs/environment/))

The earlier investigational results summarized in Section 1.1 suggest that a source of carbon tetrachloride contamination to the groundwater at Everest might be associated with the site of private grain storage bins formerly located on the Nigh property. Although these bins were unrelated to the former grain storage activities of the CCC/USDA, any continued groundwater contamination arising from a migration pathway associated with such a source could directly affect the viability of the corrective action alternatives for the Everest site. As part of the CAS effort, vertical-profile soil sampling is therefore proposed at the approximate locations on the Nigh property shown in Figure 6.1, to determine the levels of subsurface carbon tetrachloride contamination that are present. If the results indicate that remediation of the subsurface soils is required, options for treatment will be evaluated in conjunction with the alternatives outlined above.

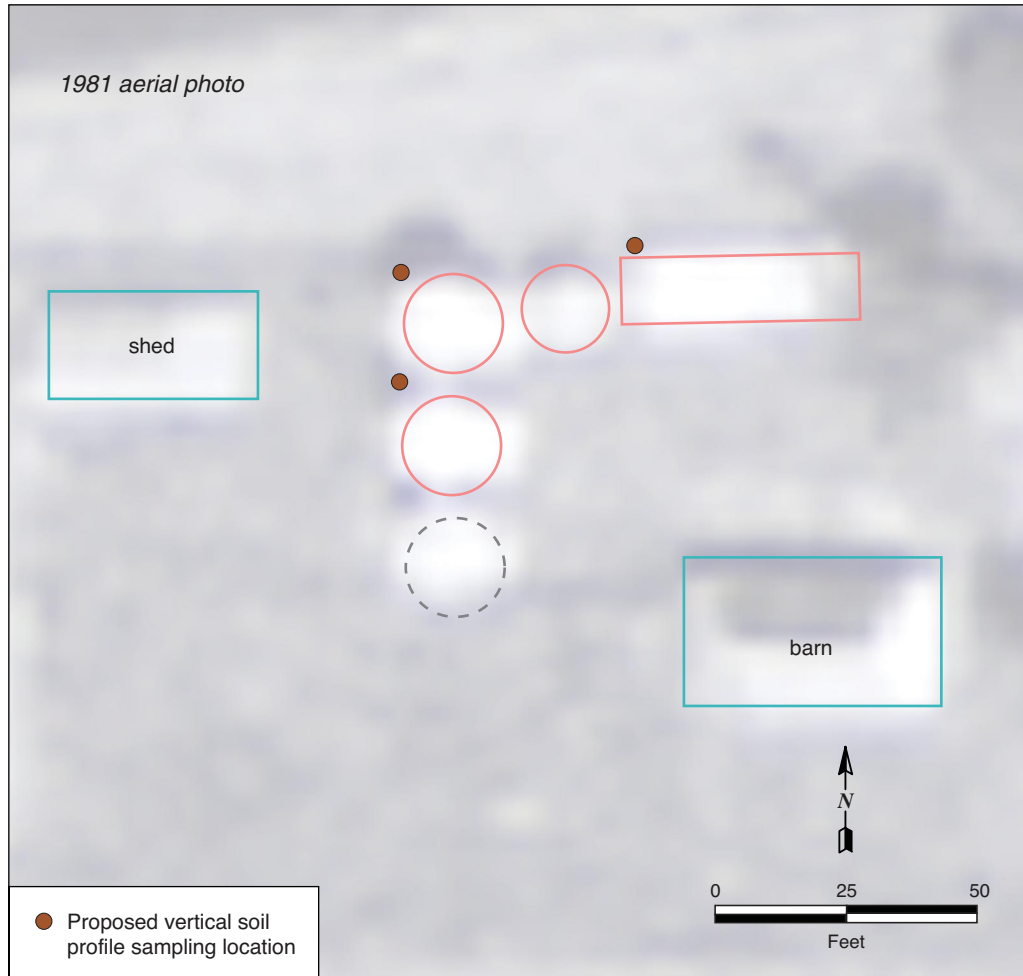


FIGURE 6.1 Proposed locations on the Nigh property for vertical-profile subsurface soil sampling with the cone penetrometer during the CAS effort. Carbon tetrachloride was previously detected at levels above 1 $\mu\text{g}/\text{kg}$ in near-surface soil samples from these locations (Figure 5.1 in Argonne 2001). Source of photograph: USDA (1981).

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Appendix A:

**Electronic Cone Penetrometer Logs
and Geologic Logs**

ARGONNE NATIONAL LABORATORY

Boring ID: SB65/MW3

Project: Everest Targeted Investigation

Elevation: 1145.44 ft

Log Date: 11/10/2003

Rig: CPT-Crawler

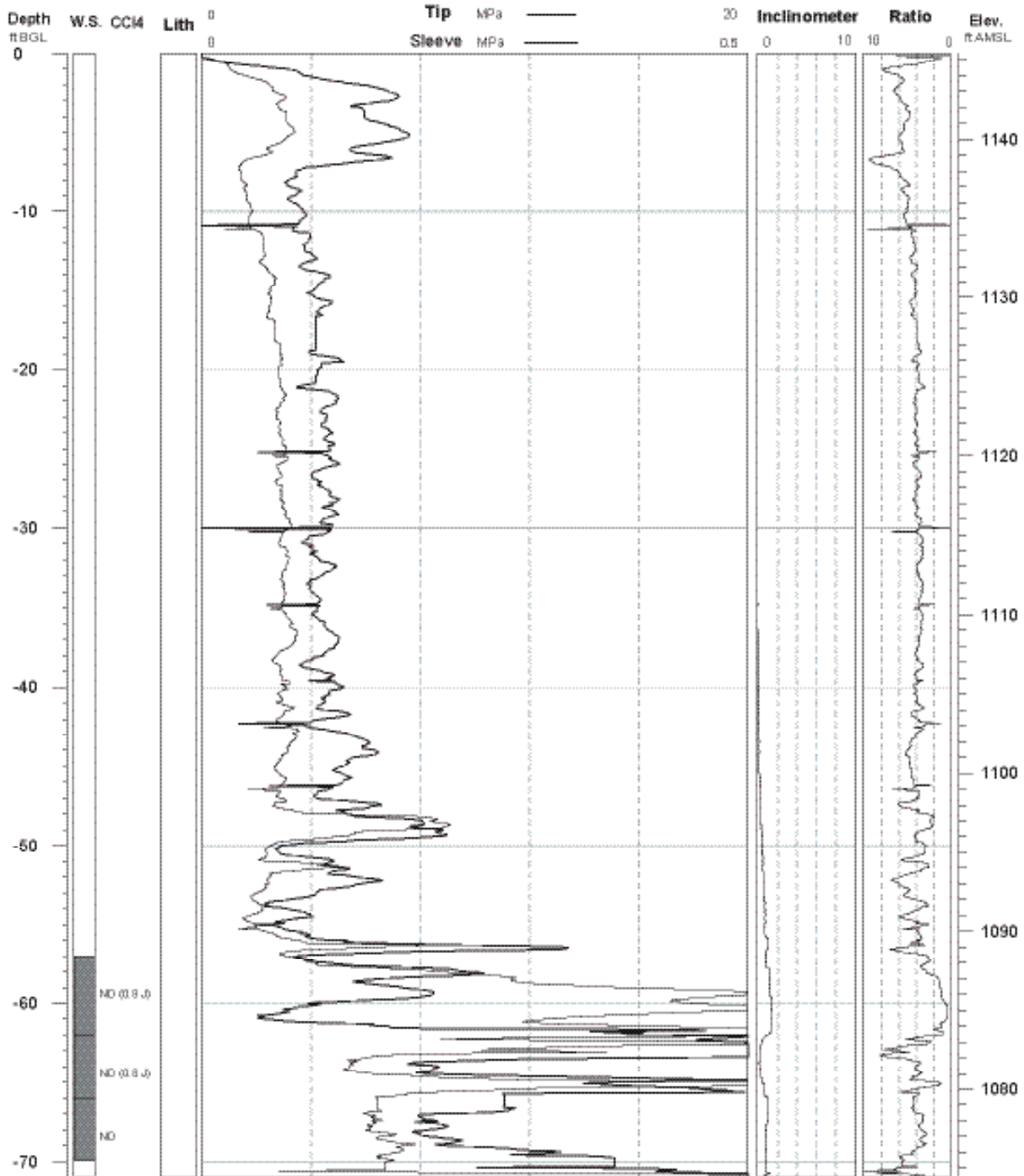
Geologist: Lorraine LaFreniere

Depth: 70.93 ft

Plot Date: 11/11/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = µg/L

Argonne National Laboratory

Well ID: SB66

Project: Everest Targeted Investigation

Elevation: 1144.82 ft

Log Date: 11/11/2003

Rig: CPT-Crawler

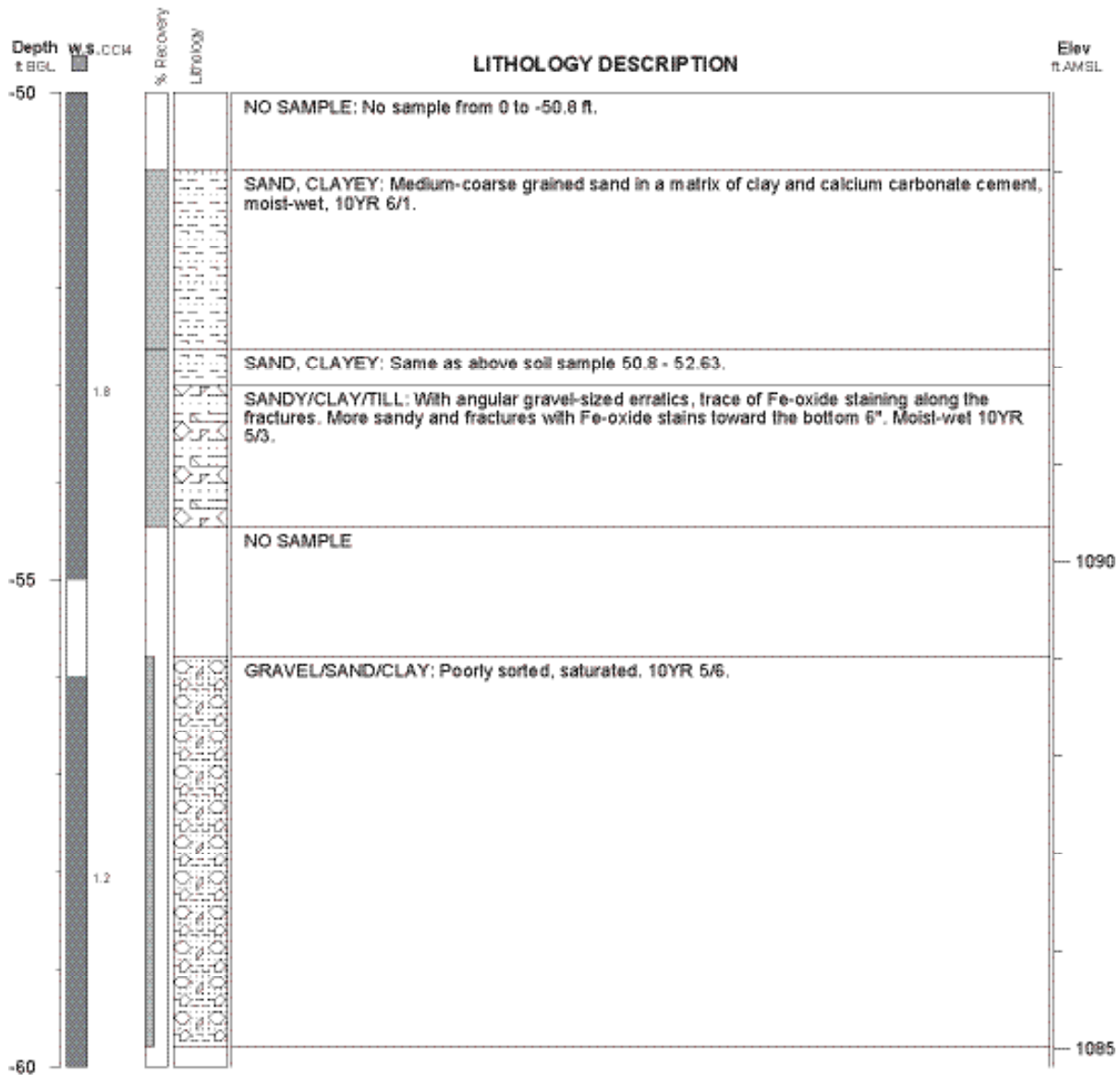
Geologist: Lorraine LaFreniere

Depth: 60.17 ft

Driller: Travis

Drilling Company: Argonne

Cored Interval: -50.8 to -59.8



Carbon tetrachloride in water sample = µg/L

ARGONNE NATIONAL LABORATORY

Boring ID: SB66

Project: Everest Targeted Investigation

Elevation: 1144.82 ft

Log Date: 11/11/2003

Rig: CPT-Crawler

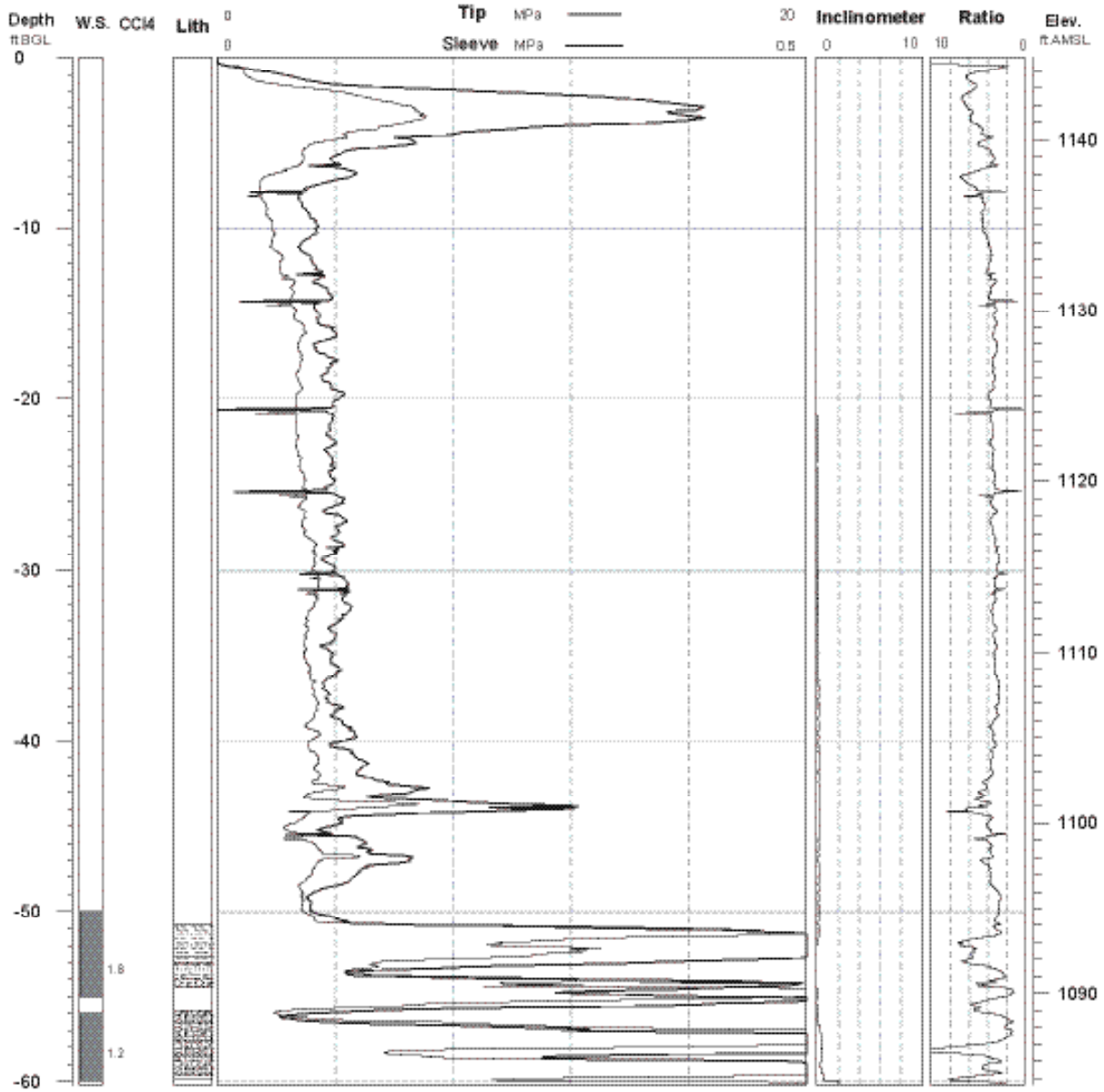
Geologist: Lorraine LaFreniere

Depth: 60.17 ft

Plot Date: 11/12/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$

Argonne National Laboratory

Well ID: SB67

Project: Everest Targeted Investigation

Elevation: 1147.68 ft

Log Date: 11/13/2003

Rig: CPT-Crawler

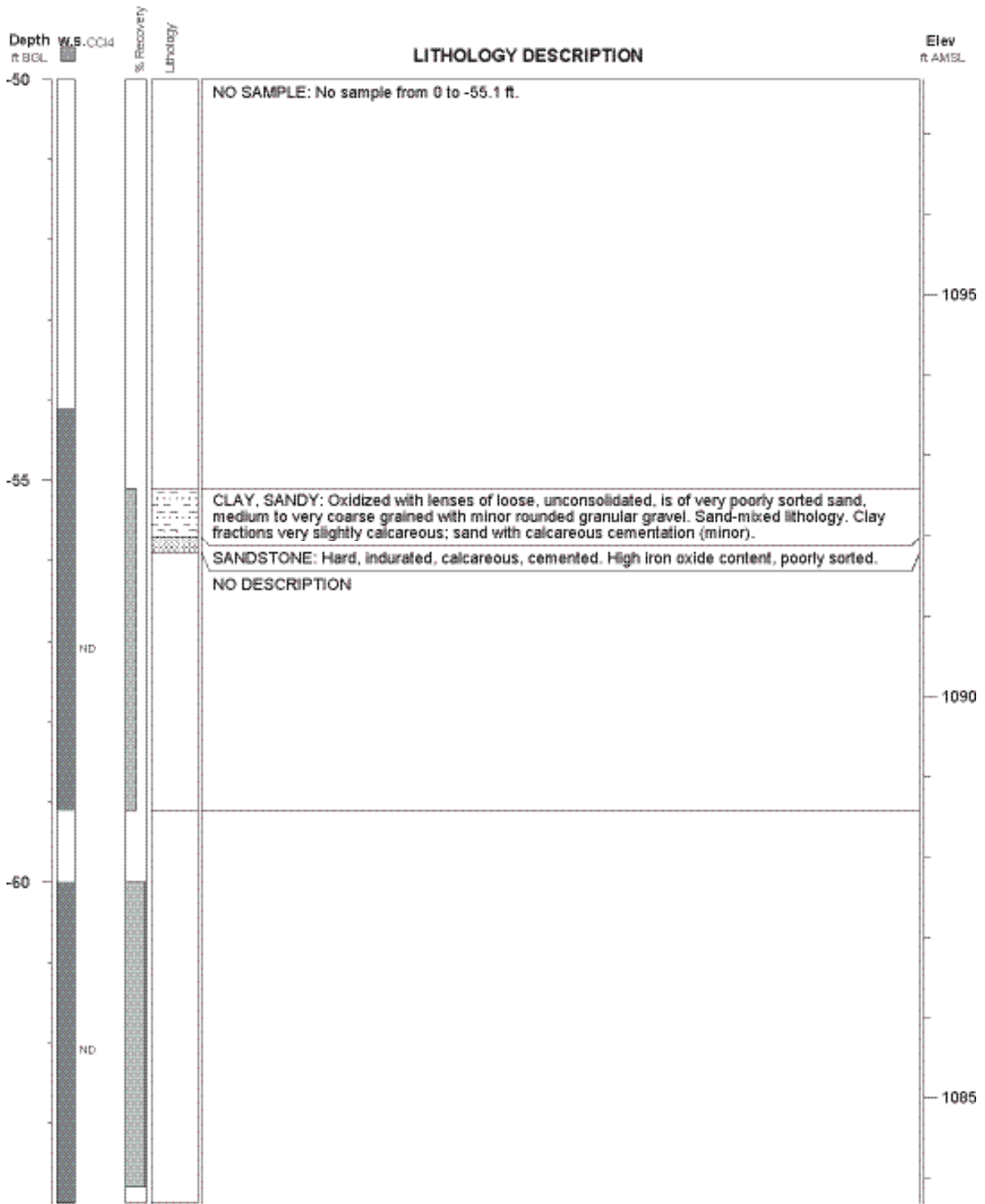
Geologist: Lorraine LaFreniere

Depth: 65.81 ft

Driller: Travis

Drilling Company: Argonne

Cored Interval: -55.1 to -59.1



ARGONNE NATIONAL LABORATORY

Boring ID: SB67

Project: Everest Targeted Investigation

Elevation: 1147.68 ft

Log Date: 11/13/2003

Rig: CPT-Crawler

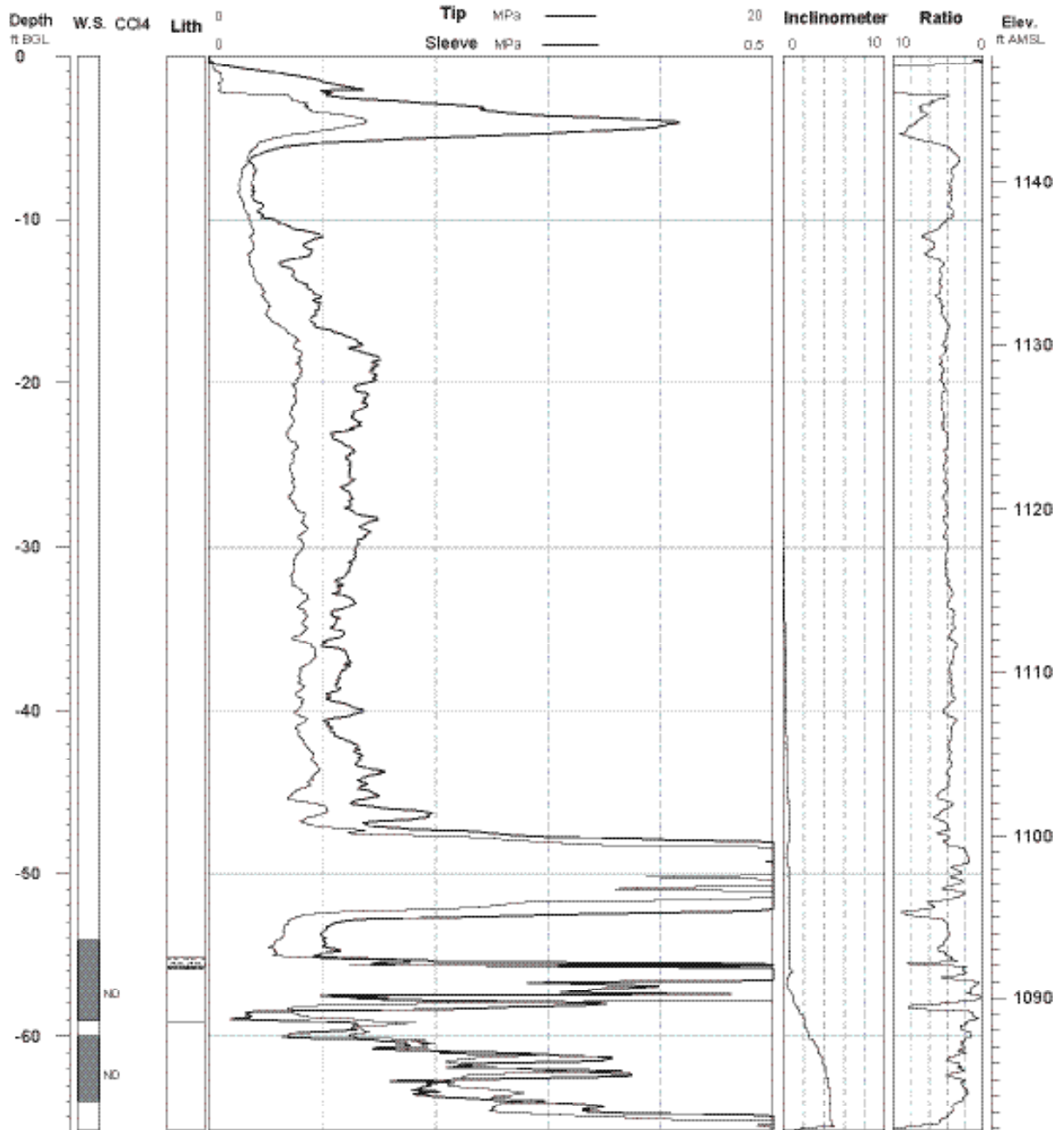
Geologist: Lorraine LaFreniere

Depth: 65.81 ft

Plot Date: 11/13/2003

Driller: Travis

Company: Argonne

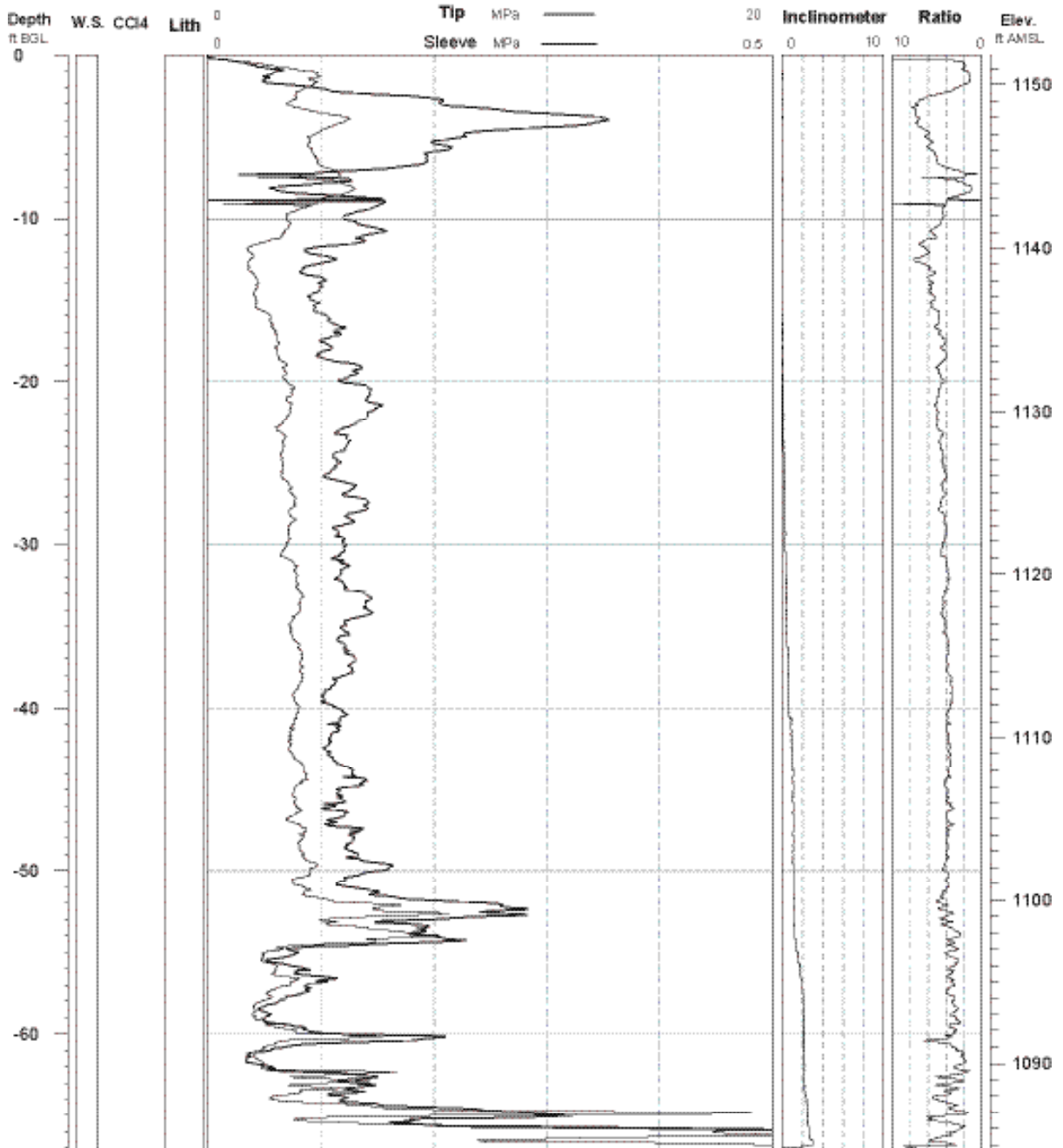


Carbon tetrachloride in water sample = $\mu\text{g/L}$.

ARGONNE NATIONAL LABORATORY

Boring ID: SB68

Project: Everest Targeted Investigation Elevation: 1151.81 ft. Log Date: 11/14/2003 Rig: CPT-Crawler
 Geologist: Lorraine LaFreniere Depth: 67.06 ft. Plot Date: 11/14/2003 Driller: Travis
 Company: Argonne



ARGONNE NATIONAL LABORATORY

Boring ID: SB69

Project: Everest Targeted Investigation

Elevation: 1099.19 ft

Log Date: 11/14/2003

Rig: CPT-Crawler

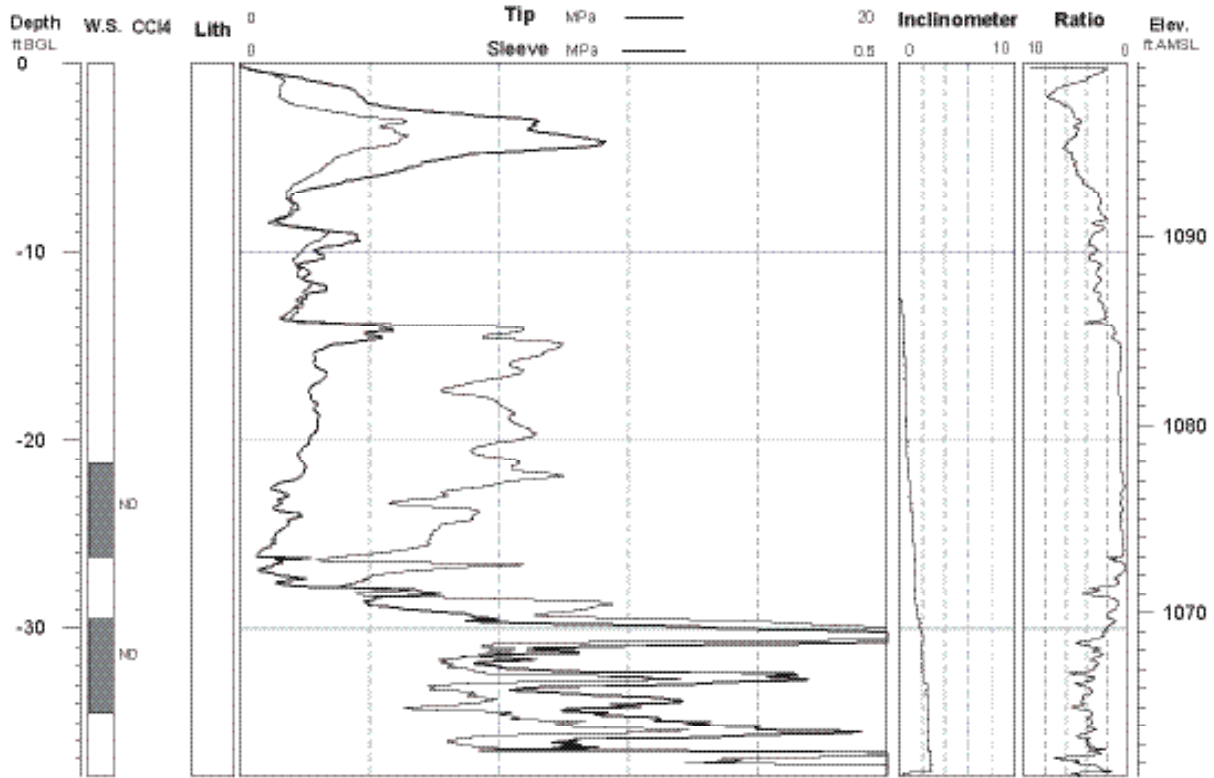
Geologist: Lorraine LaFreniere

Depth: 37.92 ft

Plot Date: 11/17/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$

ARGONNE NATIONAL LABORATORY

Boring ID: SB70

Project: Everest Targeted Investigation

Elevation: 1100.30 ft

Log Date: 11/15/2003

Rig: CPT-Crawler

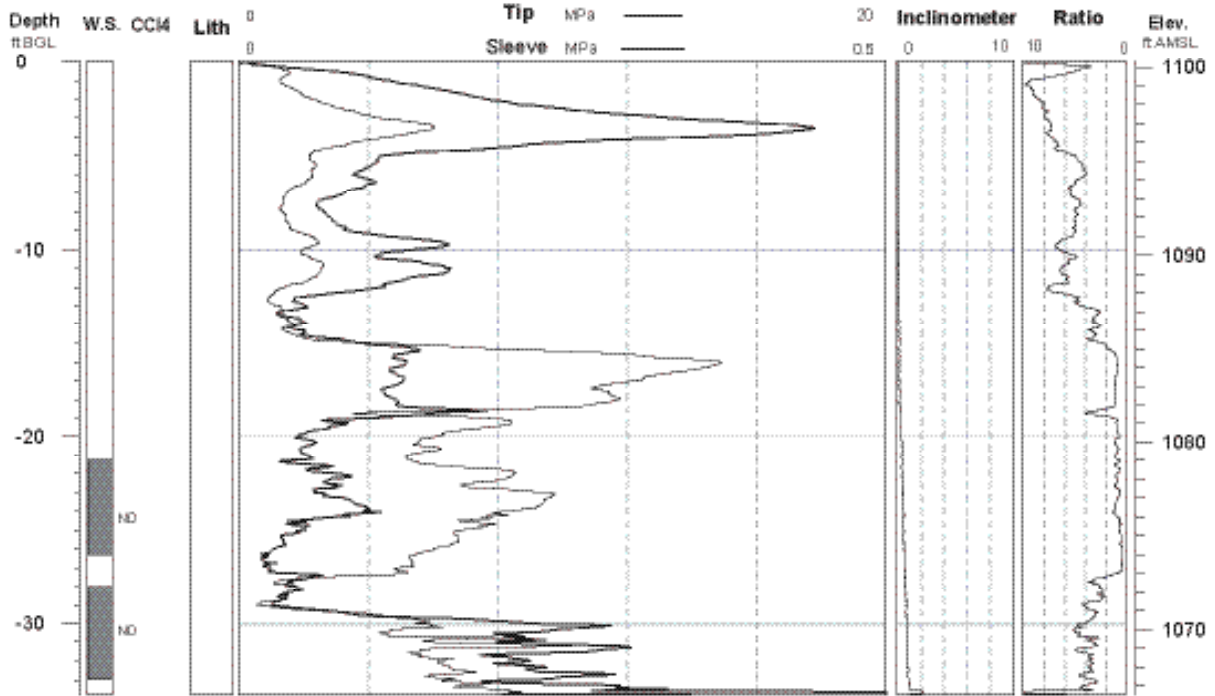
Geologist: Lorraine LaFreniere

Depth: 33.79 ft

Plot Date: 11/17/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$.

ARGONNE NATIONAL LABORATORY

Boring ID: SB71

Project: Everest Targeted Investigation

Elevation: 1120.85 ft.

Log Date: 11/15/2003

Rig: CPT-Crawler

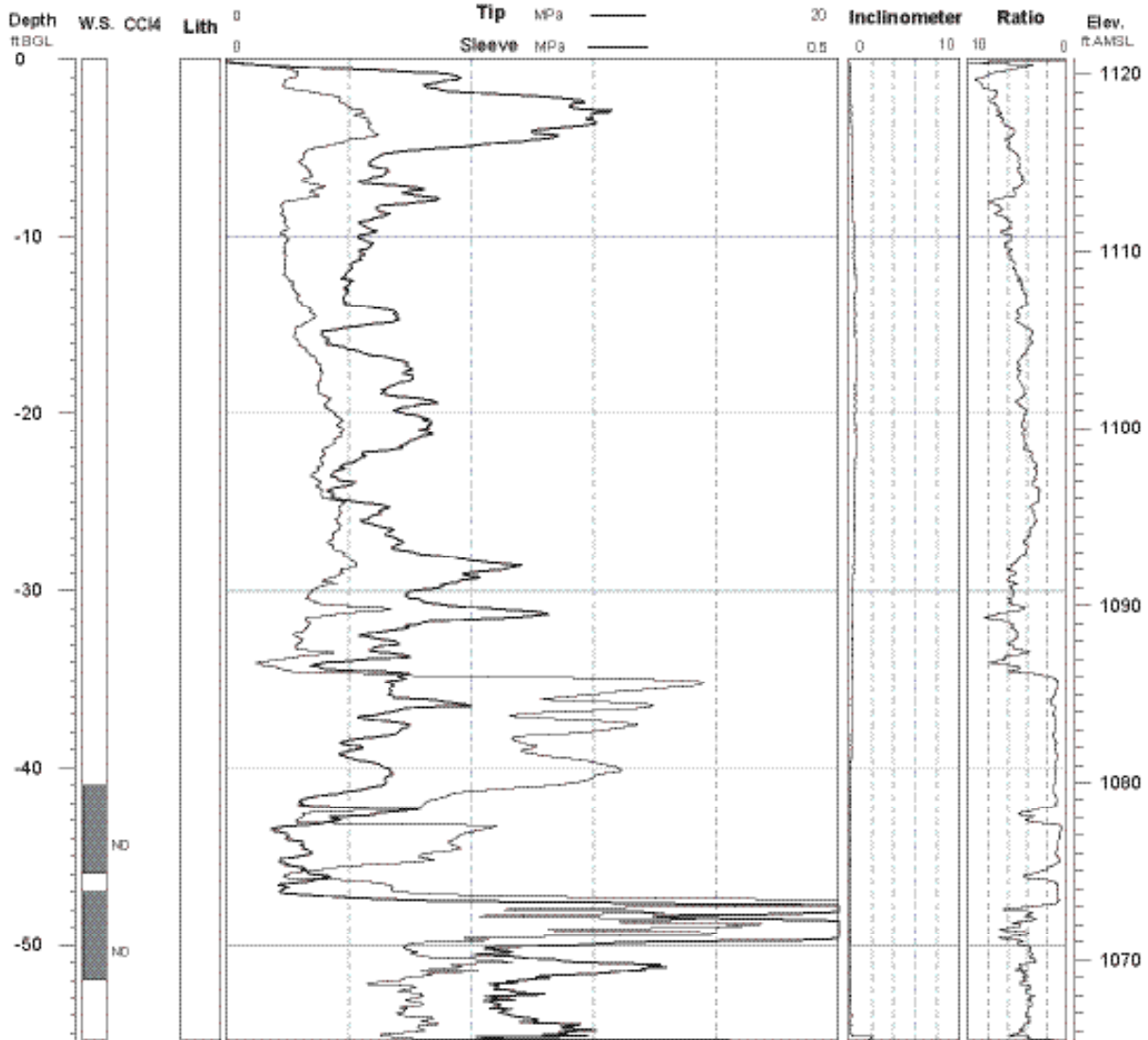
Geologist: Lorraine LaFreniere

Depth: 55.38 ft.

Plot Date: 11/17/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$

ARGONNE NATIONAL LABORATORY

Boring ID: SB72

Project: Everest Targeted Investigation

Elevation: 1112.76 ft.

Log Date: 11/15/2003

Rig: CPT-Crawler

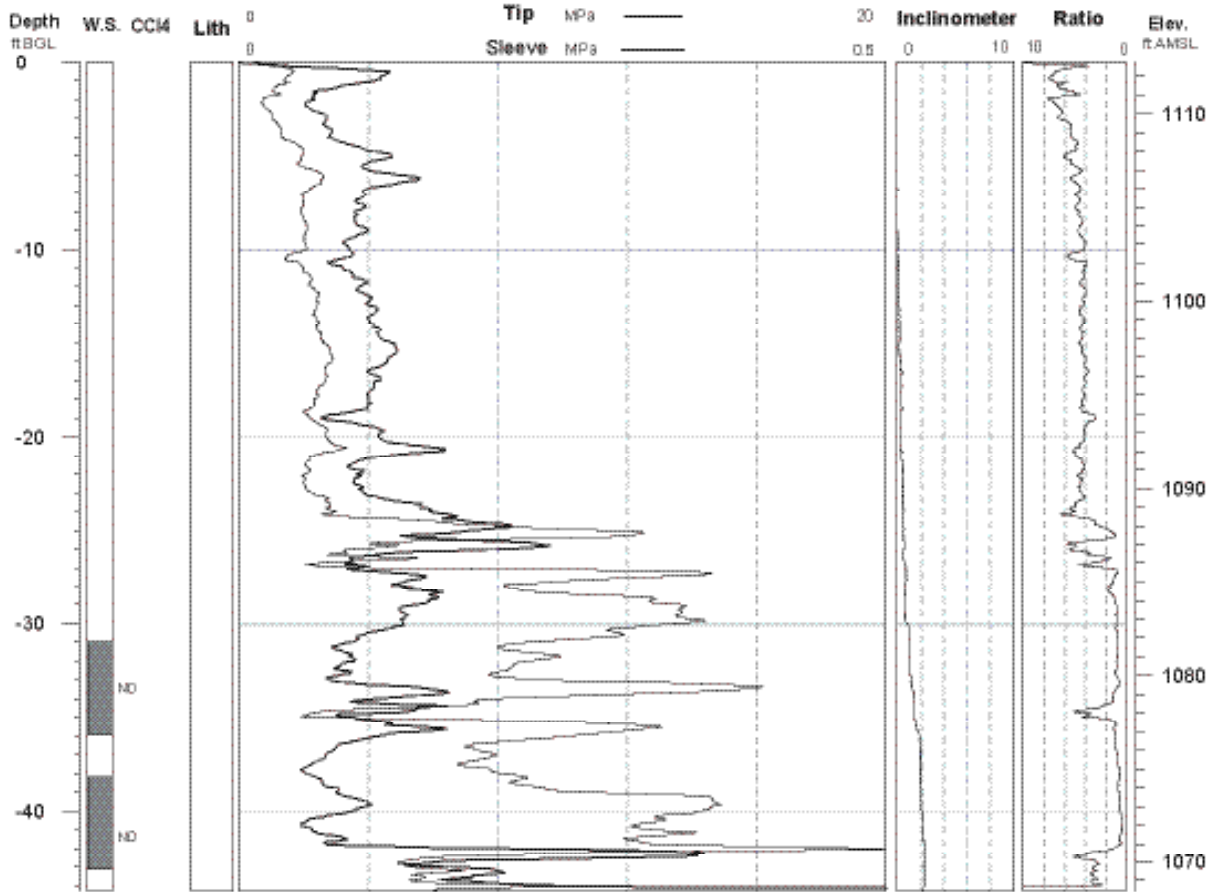
Geologist: Lorraine LaFreniere

Depth: 44.29 ft.

Plot Date: 05/12/2004

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$

Argonne National Laboratory

Well ID: SB73

Project: Everest Targeted Investigation

Elevation: 1127.30 ft

Log Date: 11/16/2003

Rig: CPT-Crawler

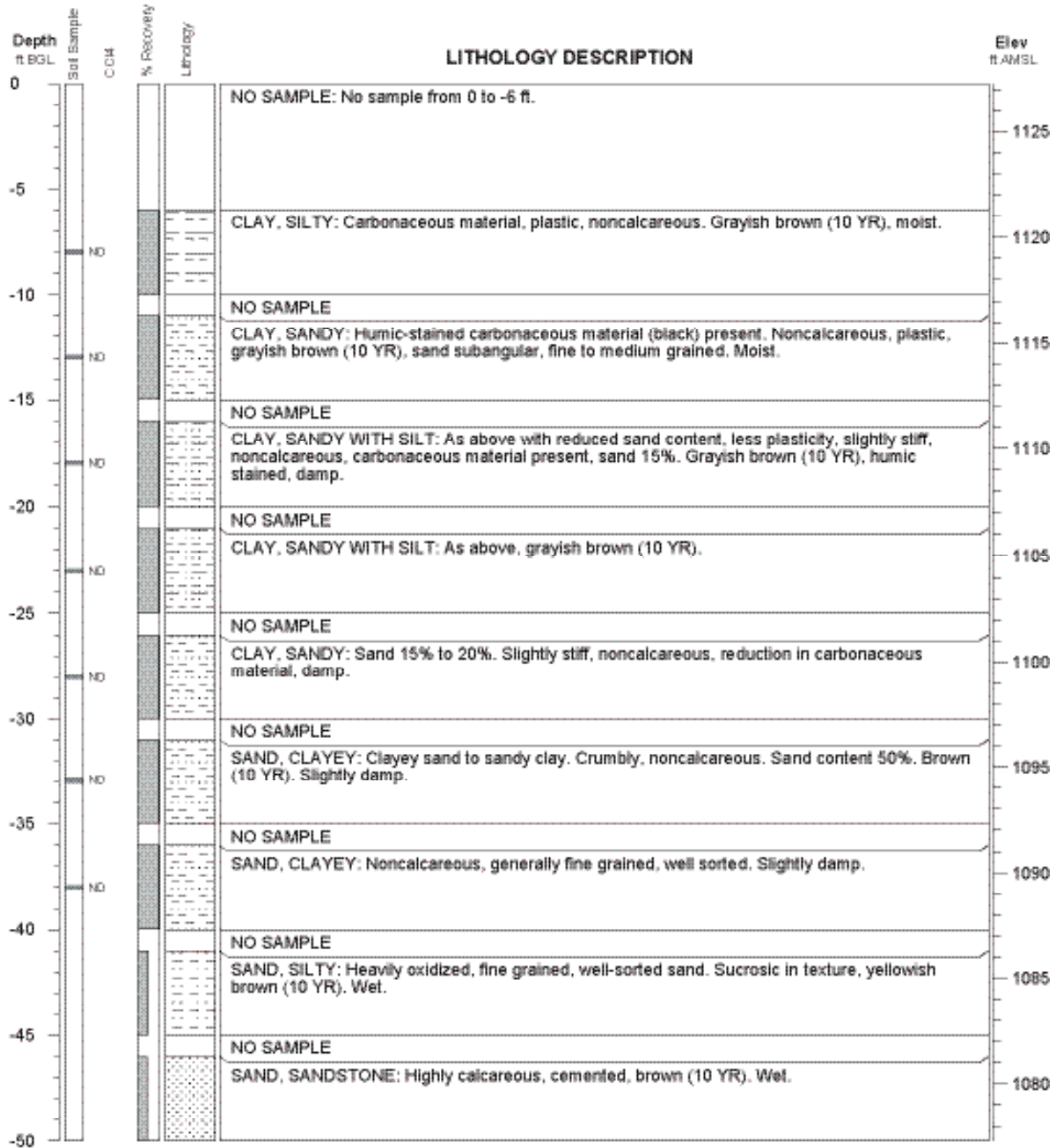
Geologist: Lorraine LaFreniere

Depth: 50 ft

Driller: Travis

Drilling Company: Argonne

Cored Interval: -6 to -50 ft



Carbon tetrachloride in soil sample = µg/L

Argonne National Laboratory

Well ID: SB74

Project: Everest Targeted Investigation

Elevation: 1125.00 ft

Log Date: 11/17/2003

Rig: CPT-Crawler

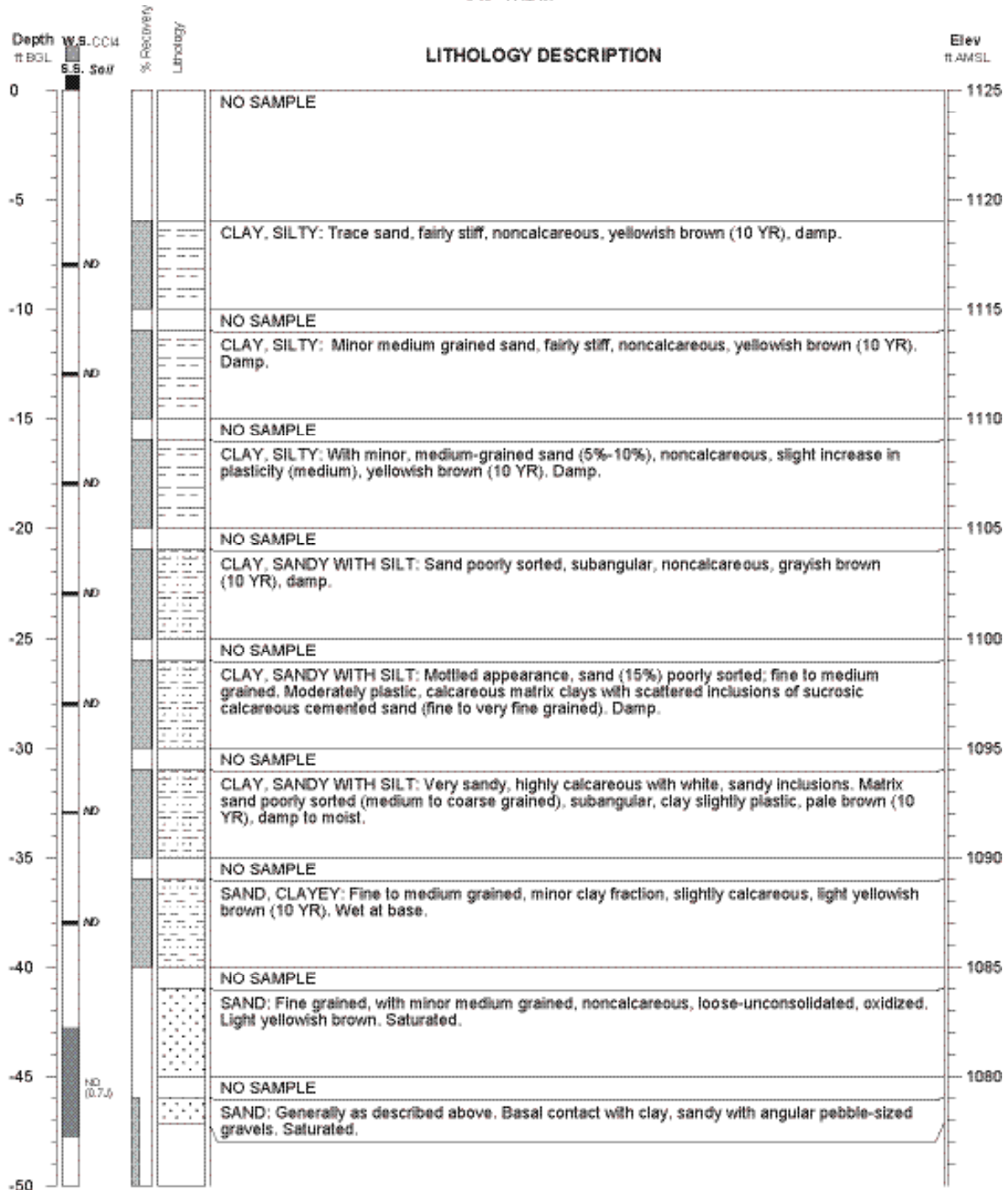
Geologist: Lorraine LaFreniere

Depth: 47.38 ft

Driller: Travis

Drilling Company: Argonne

Cored Interval: -6 to -47.2 ft.



Carbon tetrachloride in water sample = µg/L
Carbon tetrachloride in soil sample = µg/L

ARGONNE NATIONAL LABORATORY

Boring ID: SB74

Project: Everest Targeted Investigation

Elevation: 1125.00 ft

Log Date: 11/17/2003

Rig: CPT-Crawler

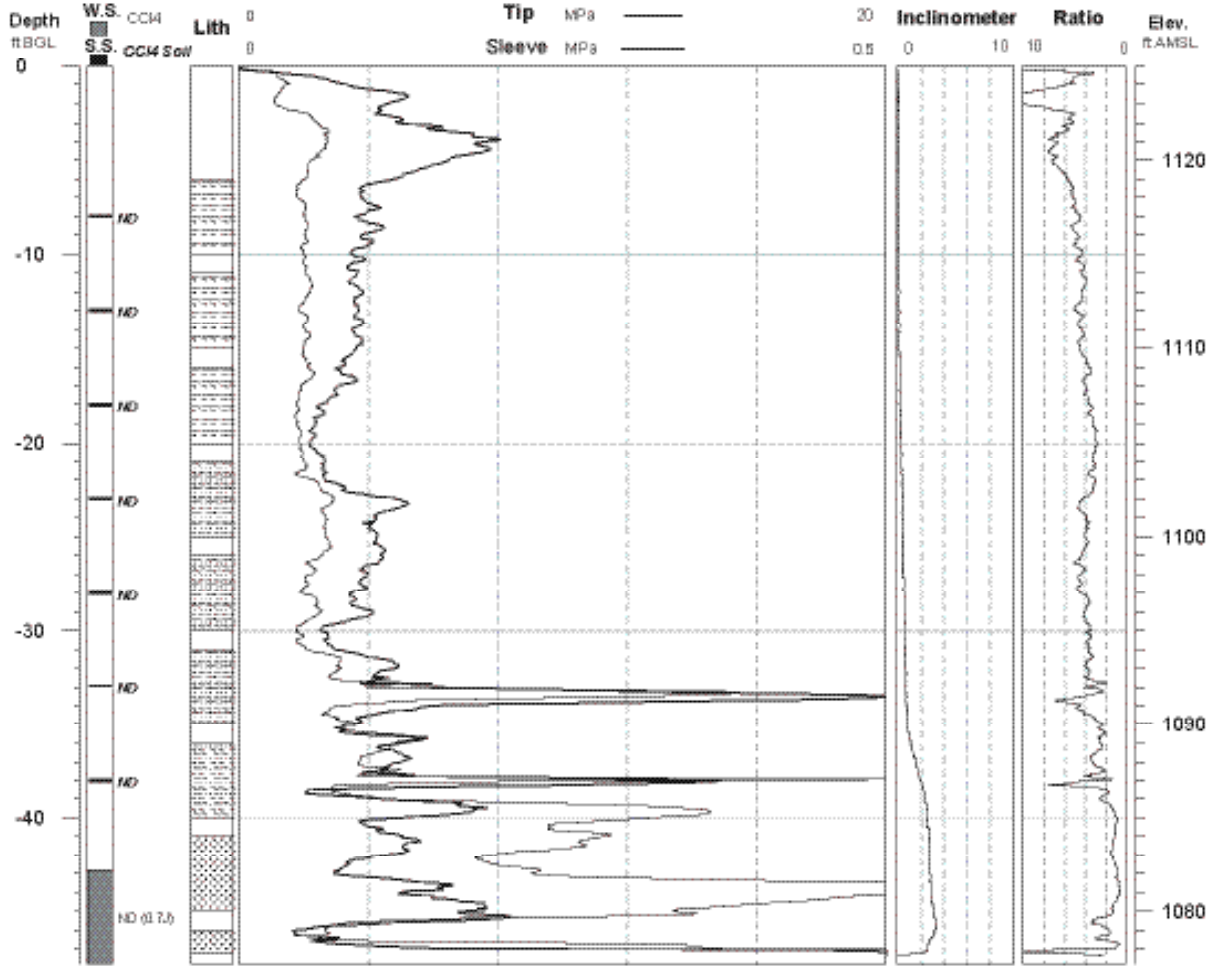
Geologist: Lorraine LaFreniere

Depth: 47.38 ft

Plot Date: 11/18/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$
Carbon tetrachloride in soil sample = $\mu\text{g/L}$

Argonne National Laboratory

Well ID: SB75

Project: Everest Targeted Investigation

Elevation: 1127.36 ft

Log Date: 11/18/2003

Rig: CPT-Crawler

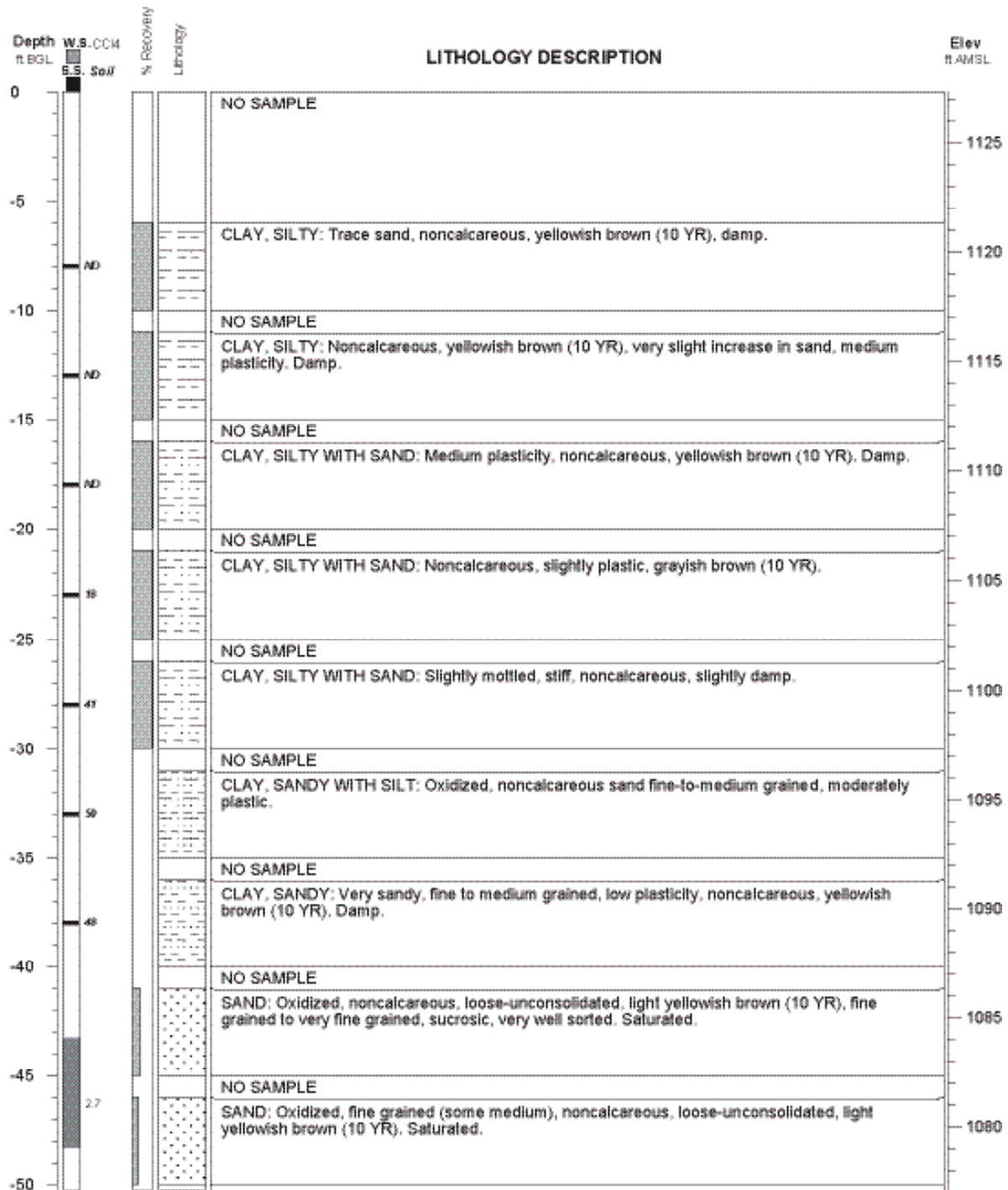
Geologist: Lorraine LaFreniere

Depth: 50.26 ft

Driller: Travis

Drilling Company: Argonne

Cored Interval: -6 to -50 ft.

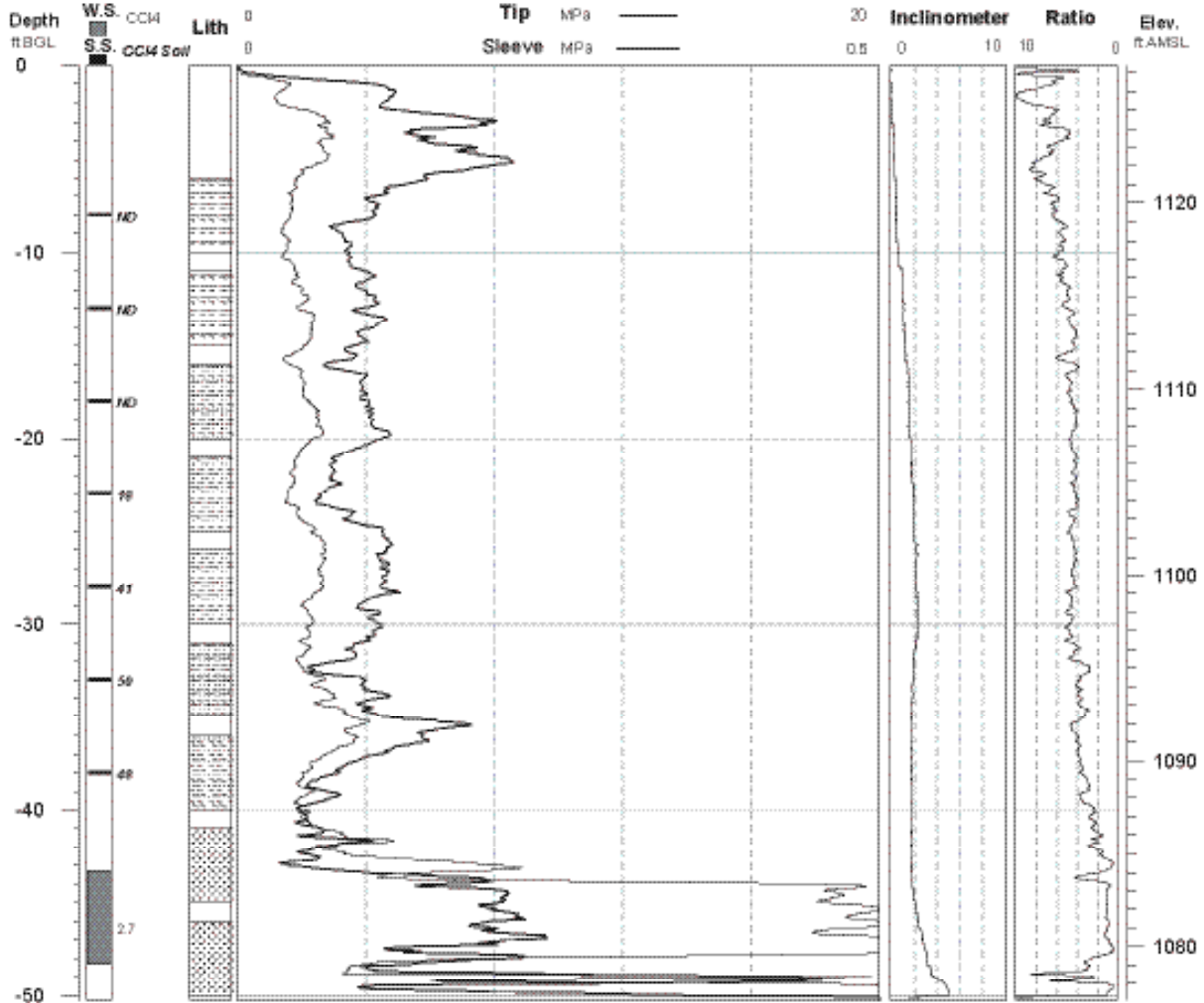


Carbon tetrachloride in water sample = $\mu\text{g/L}$
Carbon tetrachloride in soil sample = $\mu\text{g/L}$

ARGONNE NATIONAL LABORATORY

Boring ID: SB75

Project: Everest Targeted Investigation Elevation: 1127.36 ft Log Date: 11/18/2003 Rig: CPT-Crawler
Geologist: Lorraine LaFreniere Depth: 50.26 ft Plot Date: 11/18/2003 Driller: Travis
Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$
Carbon tetrachloride in soil sample = $\mu\text{g/L}$

Argonne National Laboratory

Well ID: SB76

Project: Everest Targeted Investigation

Elevation: 1129.48 ft

Log Date: 11/19/2003

Rig: CPT-Crawler

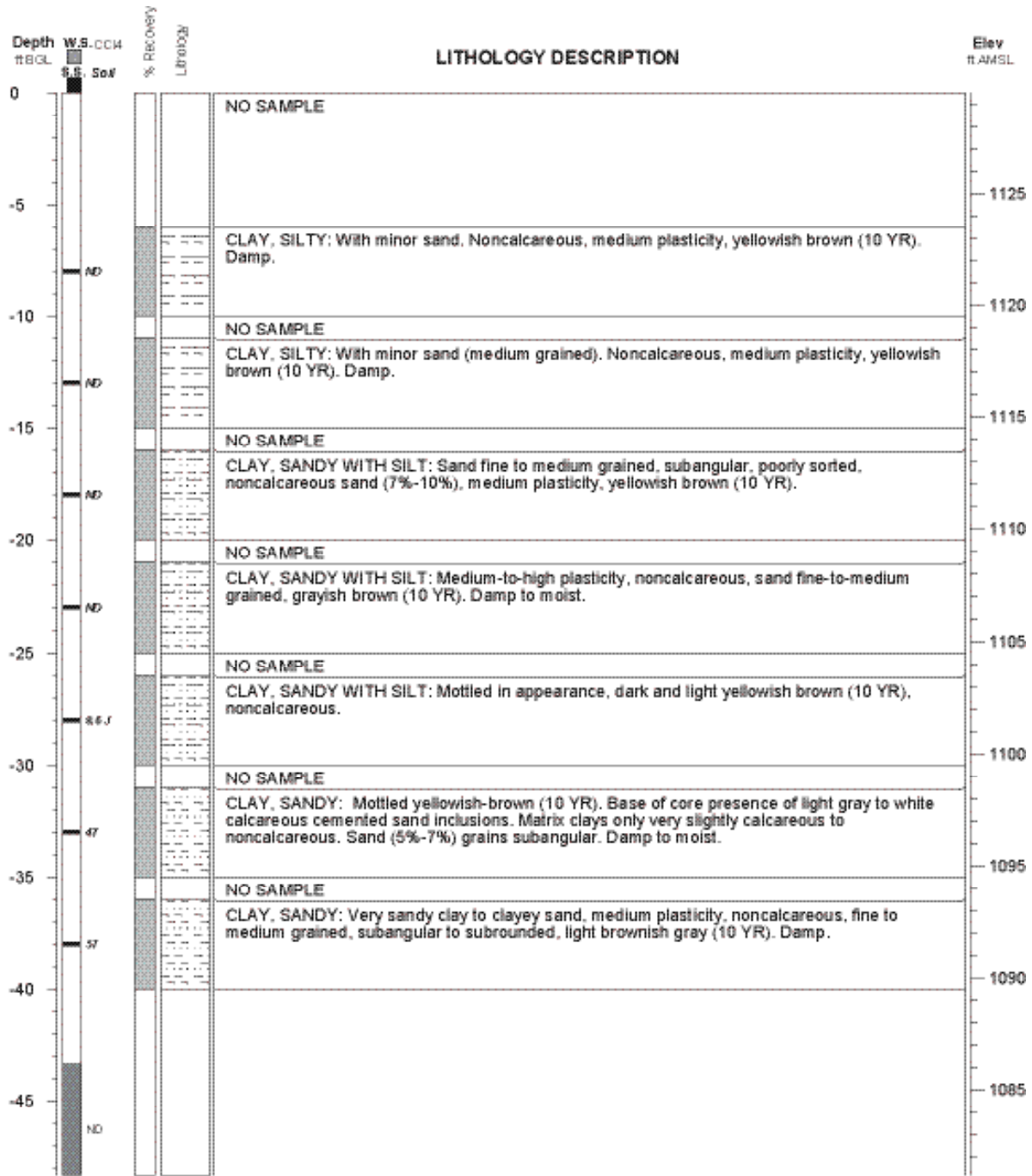
Geologist: Lorraine LaFreniere

Depth: 61.61 ft

Driller: Travis

Drilling Company: Argonne

Cored Interval: -6 to -40 ft.



Carbon tetrachloride in water sample = µg/L
Carbon tetrachloride in soil sample = µg/L

ARGONNE NATIONAL LABORATORY

Boring ID: SB76

Project: Everest Targeted Investigation

Elevation: 1129.48 ft

Log Date: 11/19/2003

Rig: CPT-Crawler

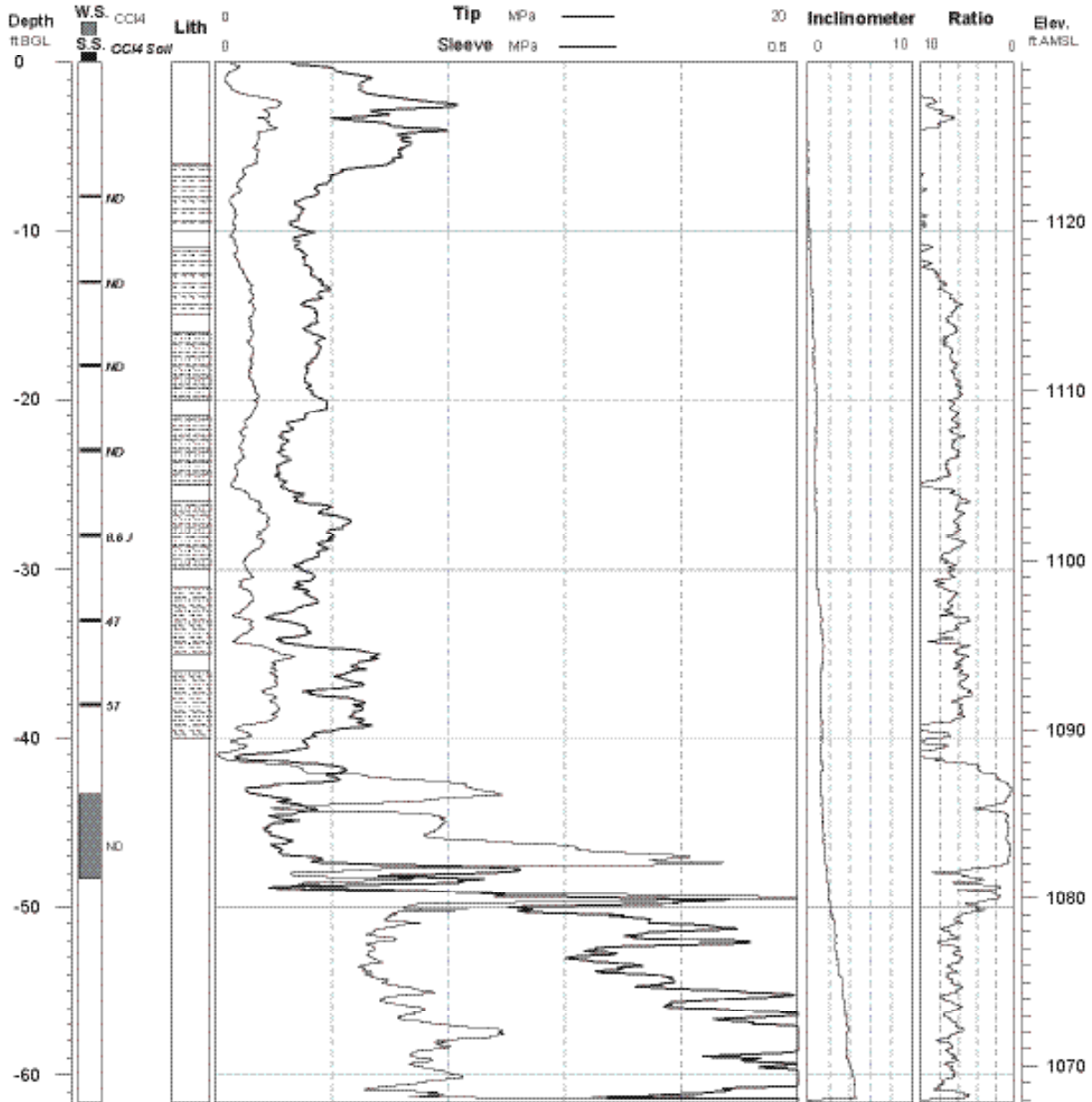
Geologist: Lorraine LaFreniere

Depth: 61.61 ft

Plot Date: 11/19/2003

Driller: Travis

Company: Argonne



Carbon tetrachloride in water sample = $\mu\text{g/L}$

Carbon tetrachloride in soil sample = $\mu\text{g/L}$

ARGONNE NATIONAL LABORATORY

Boring ID: SB77

Project: Everest Targeted Investigation

Elevation: 1124.95 ft

Log Date: 11/20/2003

Rig: CPT-Crawler

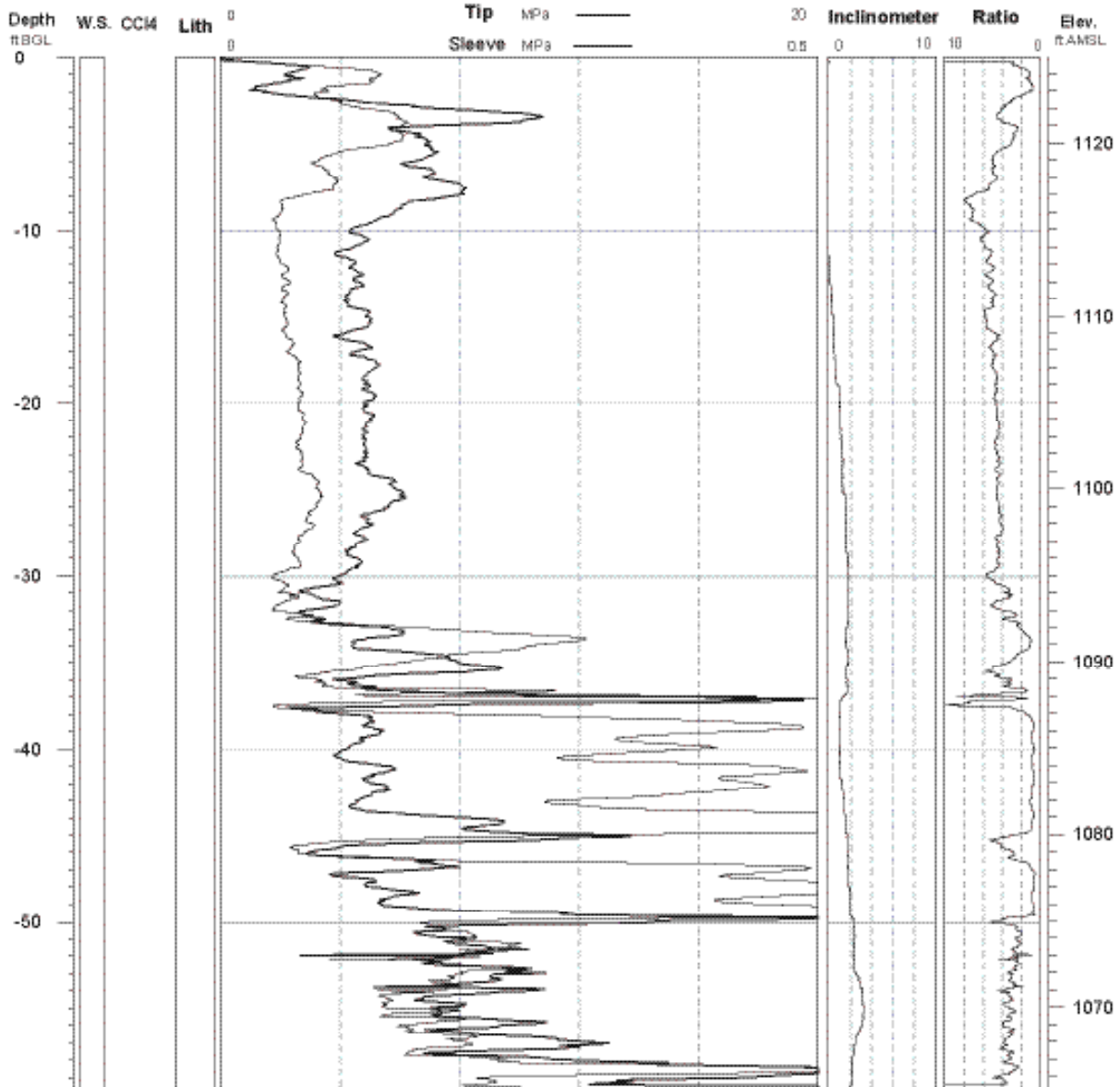
Geologist: Lorraine LaFreniere

Depth: 59.64 ft

Plot Date: 11/21/2003

Driller: Travis

Company: Argonne



Appendix B:
Soil Sample Data

TABLE B.1 Soil samples collected for analysis of volatile organic compounds during the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
SB73	EVSB73-S-15938	7.9–8.1	11/16/03	Grayish brown clay.
SB73	EVSB73-S-15939	12.9–13.1	11/16/03	Grayish brown, sandy clay with some carbonaceous material.
SB73	EVSB73-S-15940	17.9–18.1	11/16/03	Grayish brown clay, sand with silt, humic staining.
SB73	EVSB73-S-15941	22.9–23.1	11/16/03	Same as above.
SB73	EVSB73-S-15942	27.9–28.1	11/16/03	Same as above, but sandier and less humic staining.
SB73	EVSB73-S-15943	32.8–33.1	11/16/03	Brown clayey sand to sandy clay.
SB73	EVSB73-S-15944	37.9–38.1	11/16/03	Description not recorded.
SB74	EVSB74-S-15945	7.9–8.1	11/17/03	Grayish brown silty clay with minor sand.
SB74	EVSB74-S-15946	12.9–13.1	11/17/03	Same as above.
SB74	EVSB74-S-15947	17.9–18.1	11/17/03	Same as above.
SB74	EVSB74-S-15948	22.9–23.1	11/17/03	Same as above.
SB74	EVSB74-S-15949	27.9–28.1	11/17/03	Clay, very sandy with silt. Calcareous inclusions, black mottling.
SB74	EVSB74-S-15950	32.9–33.0	11/17/03	Same as above, but more calcareous.
SB74	EVSB74-S-15951	37.9–38.1	11/17/03	Yellowish brown, clayey sand; calcareous inclusions. (Wet, yellow-brown sand below sampling zone.)
SB75	EVSB75-S-15960	7.9–8.1	11/18/03	Grayish brown, silty clay.
SB75	EVSB75-S-15961	12.9–13.1	11/18/03	Same as above.
SB75	EVSB75-S-15962	17.9–18.1	11/18/03	Description not recorded.
SB75	EVSB75-S-15963	22.9–23.1	11/18/03	Gray, noncalcareous clay.
SB75	EVSB75-S-15964	27.9–28.1	11/18/03	Same, with very dark gray mottle.
SB75	EVSB75-S-15965	32.9–33.1	11/18/03	Light brownish gray, sandy clay with dark yellowish brown iron oxide inclusions.
SB75	EVSB75-S-15966	37.9–38.1	11/18/03	Same as above.
SB76	EVSB76-S-15978	7.9–8.1	11/19/03	Grayish brown clay mixed with yellow brown clay.
SB76	EVSB76-S-15979	12.9–13.1	11/19/03	Grayish brown clay, sandy with silt.
SB76	EVSB76-S-15980	17.9–18.1	11/19/03	Same as above.
SB76	EVSB76-S-15981	22.9–23.1	11/19/03	Same as above, but sandier.
SB76	EVSB76-S-15982	27.9–28.1	11/19/03	Grayish brown clay and sand, brown to gray mottling.
SB76	EVSB76-S-15983	32.9–33.1	11/19/03	Same as above.
SB76	EVSB76-S-15984	37.9–38.1	11/19/03	Sandy clay, light brownish gray with caliche/calcareous inclusions.

TABLE B.2 Results of organic analyses on soil samples collected during the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Concentration (µg/kg)	
				Carbon Tetrachloride	Chloroform
SB73	EVS73-S-15938	7.9–8.1	11/16/03	ND ^a	ND
SB73	EVS73-S-15939	12.9–13.1	11/16/03	ND	ND
SB73	EVS73-S-15940	17.9–18.1	11/16/03	ND	ND
SB73	EVS73-S-15941	22.9–23.1	11/16/03	ND	ND
SB73	EVS73-S-15942	27.9–28.1	11/16/03	ND	ND
SB73	EVS73-S-15943	32.8–33.1	11/16/03	ND	ND
SB73	EVS73-S-15944	37.9–38.1	11/16/03	ND	ND
SB74	EVS74-S-15945	7.9–8.1	11/17/03	ND	ND
SB74	EVS74-S-15946	12.9–13.1	11/17/03	ND	ND
SB74	EVS74-S-15947	17.9–18.1	11/17/03	ND	ND
SB74	EVS74-S-15948	22.9–23.1	11/17/03	ND	14
SB74	EVS74-S-15949	27.9–28.1	11/17/03	ND	ND
SB74	EVS74-S-15950	32.9–33.0	11/17/03	ND	ND
SB74	EVS74-S-15951	37.9–38.1	11/17/03	ND	7 J ^b
SB75	EVS75-S-15960	7.9–8.1	11/18/03	ND	ND
SB75	EVS75-S-15961	12.9–13.1	11/18/03	ND	ND
SB75	EVS75-S-15962	17.9–18.1	11/18/03	ND	ND
SB75	EVS75-S-15963	22.9–23.1	11/18/03	18	6.9 J
SB75	EVS75-S-15964	27.9–28.1	11/18/03	41	11
SB75	EVS75-S-15965	32.9–33.1	11/18/03	50	8.7 J
SB75	EVS75-S-15966	37.9–38.1	11/18/03	48	6.8 J
SB76	EVS76-S-15978	7.9–8.1	11/19/03	ND	ND
SB76	EVS76-S-15979	12.9–13.1	11/19/03	ND	ND
SB76	EVS76-S-15980	17.9–18.1	11/19/03	ND	ND
SB76	EVS76-S-15981	22.9–23.1	11/19/03	ND	ND
SB76	EVS76-S-15982	27.9–28.1	11/19/03	8.6 J	5.5 J
SB76	EVS76-S-15983	32.9–33.1	11/19/03	47	11
SB76	EVS76-S-15984	37.9–38.1	11/19/03	57	10

^a ND, contaminant not detected.

^b J, estimated concentration below the method quantitation limit of 10 µg/kg.

TABLE B.3 Results of analyses of soil samples for aquifer parameters. Source: Delka (2004).

Location	Depth (ft BGL)	Bulk Dry Density (lb/ft ³)	Moisture Content (%)	Specific Gravity	Porosity (%)	Total Organic Matter (%)	Carbon Content (%)
SB66	53.66-54.46	118.4	12.7	2.711	28.7	0.34	0.19
SB66	56-57	129.44	13.4	2.683	23.5	0.3	0.17
SB73	41-42	112.7	21.5	2.652	32.7	0.3	0.17
SB73	47-48	130.2	13.1	2.675	21.3	0.4	0.23
SB75	44-45	114.0	19.9	2.660	31.7	0.4	0.23

TABLE B.4 Results of moisture determinations on soil samples collected at Everest, Kansas, during the Phase III targeted investigation.

Location	Sample	Depth (ft BGL)	Weight (g)						Moisture (%)	Weight after Combustion ^a (g)	Calculated Solids ^b (%)	
			Vial	Vial + Wet Sample	Wet Sample	Vial + Dry Sample	Dry Sample	Water			Volatile	Fixed
SB73	EVSB73-S-15938	7.9–8.1	28.968	46.412	17.444	42.801	13.833	3.611	20.70	41.85	6.87	93.13
SB73	EVSB73-S-15939	12.9–13.1	29.718	53.696	23.978	48.927	19.209	4.769	19.89	48.112	4.24	95.76
SB73	EVSB73-S-15940	17.9–18.1	29.684	52.576	22.892	47.801	18.117	4.775	20.86	47.059	4.10	95.90
SB73	EVSB73-S-15941	22.9–23.1	29.49	55.734	26.244	49.975	20.485	5.759	21.94	48.442	7.48	92.52
SB73	EVSB73-S-15942	27.9–28.1	28.494	48.19	19.696	44.682	16.188	3.508	17.81	43.463	7.53	92.47
SB73	EVSB73-S-15943	32.8–33.1	29.927	60.629	30.702	54.829	24.902	5.8	18.89	54.064	3.07	96.93
SB73	EVSB73-S-15944	37.9–38.1	29.582	48.081	18.499	45.586	16.004	2.495	13.49	45.017	3.56	96.44
SB74	EVSB74-S-15945	7.9–8.1	29.919	44.415	14.496	42.021	12.102	2.394	16.51	41.568	3.74	96.26
SB74	EVSB74-S-15946	12.9–13.1	29.353	48.517	19.164	44.695	15.342	3.822	19.94	44.028	4.35	95.65
SB74	EVSB74-S-15947	17.9–18.1	28.14	44.776	16.636	41.059	12.919	3.717	22.34	40.515	4.21	95.79
SB74	EVSB74-S-15948	22.9–23.1	29.939	54.695	24.756	49.632	19.693	5.063	20.45	48.788	4.29	95.71
SB74	EVSB74-S-15949	27.9–28.1	30.245	59.669	29.424	53.796	23.551	5.873	19.96	52.894	3.83	96.17
SB74	EVSB74-S-15950	32.9–33.0	29.592	56.221	26.629	52.474	22.882	3.747	14.07	51.939	2.34	97.66
SB74	EVSB74-S-15951	37.9–38.1	30.124	63.816	33.692	61.65	31.526	2.166	6.43	61.316	1.06	98.94
SB75	EVSB75-S-15960	7.9–8.1	29.889	52.667	22.778	48.194	18.305	4.473	19.64	47.402	4.33	95.67
SB75	EVSB75-S-15961	12.9–13.1	29.551	55.132	25.581	50.043	20.492	5.089	19.89	Lost	Lost	Lost
SB75	EVSB75-S-15962	17.9–18.1	29.588	67.174	37.586	58.977	29.389	8.197	21.81	57.715	4.29	95.71
SB75	EVSB75-S-15963	22.9–23.1	30.313	54.29	23.977	48.41	18.097	5.88	24.52	47.629	4.32	95.68
SB75	EVSB75-S-15964	27.9–28.1	30.585	51.181	20.596	47.056	16.471	4.125	20.03	46.389	4.05	95.95
SB75	EVSB75-S-15965	32.9–33.1	29.178	58.706	29.528	54.33	25.152	4.376	14.82	53.597	2.91	97.09
SB75	EVSB75-S-15966	37.9–38.1	30.428	48.907	18.479	46.113	15.685	2.794	15.12	45.732	2.43	97.57
SB76	EVSB76-S-15978	7.9–8.1	28.004	53.866	25.862	48.88	20.876	4.986	19.28	47.985	4.29	95.71
SB76	EVSB76-S-15979	12.9–13.1	30.019	55.101	25.082	50.021	20.002	5.08	20.25	49.185	4.18	95.82
SB76	EVSB76-S-15980	17.9–18.1	30.322	60.898	30.576	54.611	24.289	6.287	20.56	53.642	3.99	96.01
SB76	EVSB76-S-15981	22.9–23.1	29.614	57.335	27.721	51.041	21.427	6.294	22.70	50.191	3.97	96.03
SB76	EVSB76-S-15982	27.9–28.1	28.653	47.939	19.286	44.174	15.521	3.765	19.52	43.55	4.02	95.98
SB76	EVSB76-S-15983	32.9–33.1	29.51	55.234	25.724	50.086	20.576	5.148	20.01	49.257	4.03	95.97
SB76	EVSB76-S-15984	37.9–38.1	30.159	57.278	27.119	53.523	23.364	3.755	13.85	52.852	2.87	97.13

^a Combustion at 550 ± 50°C for at least 24 hr (Method 2540E, APHA [1992]).

^b Calculated per Method 2540E (APHA 1992).

Appendix C:
Groundwater Sample Data

TABLE C.1 Water samples collected during the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
<i>Private wells</i>				
BUNCK	EVBUNCK-W-15863	Unknown	11/13/03	Steel wheel ranch. Drinking water well.
KNUDSON	EVKNUDSON-W-15861	Unknown	11/13/03	Livestock well on Don Knudson farm (silo on south side of 120th Street).
MILLER	EVMILLER-W-15967	Unknown	11/17/03	Livestock well at Miller residence.
RLARSON	EVRLARSON-W-15862	Unknown	11/13/03	Ronald Larson drinking water well. Well depth reported to be 100+ ft. Green home at the northeast corner of 120th and Plumtree.
SELLAND1	EVSELLAND1-W-15955	Unknown	11/20/03	Private well owned by Alvin Selland (Horton, Kansas) approximately 300 ft east of Raccoon Road. Reported as drilled well, formerly used as domestic supply. Now inactive, with no power.
SELLAND2	EVSELLAND2-W-15956	Unknown	11/20/03	Unused private well (old windmill) approximately 0.25 mi east of Raccoon Road and 0.25 mi north of Hwy. 73. Hand-dug, stone-lined well in drainage ditch, sporadically used for livestock. No cover on well. Depth to water approximately 8 ft.
SELLAND3	EVSELLAND3-W-15957	Unknown	11/20/03	Private well (old windmill) 0.25 mi south of sewage lagoon. Hand-dug, stone-lined. Formerly used for domestic supply, now inactive. Pump in place but inactive at least 1 yr. Poured cement top (date stamped 1936) with 18-in. hole covered by board and metal plate.
<i>Monitoring wells</i>				
MW1	EVMW1-W-15986	41–51	11/22/03	4-in. well in waterway near northwest corner of former CCC/USDA facility. Sampled after purging 168 gal. Depth to water from top of casing (TOC) = 21.14 ft. Measured well depth = 47.5 ft BGL.
MW1	EVMW1-W-15990	41–51	11/24/03	Resampling for inorganic parameters.
MW1	EVMW01-W-12988	41–51	06/04/04	Sample collected to verify contaminant concentrations detected during sampling on November 22, 2003.
MW2	EVMW2-W-15985	59–79	11/22/03	4-in. well approximately 50 ft east of Nigh private well. Sampled after purging 52.7 gal. Depth to water from TOC = 55.89 ft. Measured well depth = 76.5 ft BGL.
MW3	EVMW3-W-15991	56.5–71.5	12/04/03	2-in. well along 120th St. east of Prairie Road. Sampled after purging 12 gal. Depth to water from TOC = 47.5 ft. Measured well depth = 71 ft BGL.

TABLE C.1 (Cont.)

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
<i>Cone penetrometer locations</i>				
SB01	EVSB01-W-15919	42–54	11/11/03	Depth to water from TOC = 22.77 ft BGL. Measured depth of well = 54 ft BGL. Sample collected after purging 4 gal.
SB09	EVSB09-W-15925	51–57	11/12/03	Depth to water from TOC = 35.5 ft BGL. Depth of well not recorded. Sample collected after purging 3+ gal.
SB16	EVSB16-W-15923	49–64	11/12/03	Depth to water from TOC = 42.61 ft BGL. Measured depth of well = 64 ft BGL. Sample collected after purging 3+ gal.
SB18	EVSB18-W-15935	60–70	11/13/03	Depth to water from TOC = 54.7 ft BGL. Measured depth of well = 70 ft BGL. Sample collected after purging approximately 1 gal.
SB19	EVSB19-W-12847	46–51	11/15/03	Depth to water from TOC = 34.65 ft BGL. Measured depth of well = 51 ft BGL. Sample collected after purging 2 gal.
SB22	EVSB22-W-15924	58–63	11/12/03	Depth to water from TOC = 43.83 ft BGL. Measured depth of well = 63 ft BGL. Sample collected after purging 3+ gal.
SB31	EVSB31-W-15918	57–67	11/11/03	Depth to water from TOC = 35.86 ft BGL. Measured depth of well = 67 ft BGL. Sample collected after purging 4.5 gal.
SB34	EVSB34-W-15921	46–53	11/11/03	Depth to water from TOC = 25.58 ft BGL. Measured depth of well = 53 ft BGL. Sample collected after purging 4 gal.
SB49	EVSB49-W-15930	51–55	11/13/03	Depth to water from TOC = 44.56 ft BGL. Measured depth of well = 55 ft BGL. Sample collected after purging 1.5 gal.
SB60	EVSB60-W-15931	56.7–61.7	11/13/03	Depth to water from TOC = 55.73 ft BGL. Measured depth of well = 61.7 ft BGL. Sample collected after purging 1.5+ gal. Split sample given to KDHE.
SB62	EVSB62-W-13192	33–41	11/14/03	Depth to water from TOC = 34.21 ft BGL. Measured depth of well = 43.2 ft BGL. Sample collected after purging 1.5 gal.
SB63	EVSB63-W-15936	20–25	11/14/03	Depth to water from TOC = 23.46 ft. TOC measured at 3 ft above ground. Measured depth of well = 27 ft BGL. Poor recovery: 20 mL collected for analysis of VOCs.
SB64	EVSB64-W-15937	22–27	11/14/03	Depth to water from TOC = 22.31 ft. TOC measured at 3 ft above ground. Measured depth of well = 29.1 ft BGL. Sample collected after purging 1.5 gal.
SB65	EVSB65-W-15858	57–62	11/10/03	Depth to water = 47.52 ft BGL. Collected sample for analysis of VOCs via tube with foot valve. Valve used as bailer. First aliquot removed by cutting tube above valve. Remaining aliquots collected by pushing up on ball valve.
SB65	EVSB65-W-15895	62–66	11/11/03	Sample location 3 ft west of sample EVSB65-W-15893. Four feet of water after opening screen.
SB65	EVSB65-W-15893	66–70	11/11/03	Depth to water = 61.2 ft BGL. Sample depth based on ECPT electronic data.
SB66	EVSB66-W-15897	50–55	11/11/03	Sample location 1 ft east of SB66 ECPT sensor push. Water level at 50 ft BGL. Sampled for VOCs analyses.

TABLE C.1 (Cont.)

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
<i>Cone penetrometer locations (Cont.)</i>				
SB66	EVS66-W-15899	56–60	11/12/03	Sample location about 4 ft east of SB66 ECPT sensor push; 10.8 ft of water in riser. Sampled for VOCs analyses.
SB66	EVS66-W-15932	48.7–58.7	11/13/03	Sample from temporary piezometer for inorganic and attenuation analyses. Depth to water from TOC = 49.03 ft. Sample collected after purging 2+ gal. Recovery a little slow.
SB67	EVS67-W-15902	54.1–59.1	11/14/03	Waited overnight for water to come in.
SB67	EVS67-W-15859	60–64	11/13/03	Water recovery slow. Let sit 1 hr prior to sampling, although 12.5 ft of water when sampled. Water oxidized; bright orange-brown in color with high turbidity and sediment.
SB69	EVS69-W-15904	21.2–26.2	11/14/03	Abundant water recovery: 9 ft upon opening screen. Oxidized, high turbidity, high sediment.
SB69	EVS69-W-15906	29.5–34.5	11/14/03	ECPT sample.
SB70	EVS70-W-15907	21.3–26.3	11/15/03	Abundant, immediate water recovery. Oxidized.
SB70	EVS70-W-15909	28–33	11/15/03	Slow water recovery.
SB71	EVS71-W-15910	41–46	11/15/03	Shallow upper zone. Oxidized, highly turbid, abundant suspended sediment.
SB71	EVS71-W-15912	47–52	11/15/03	Immediate water: 9 ft in hole when screen opened. Somewhat clearer than in upper zone but still turbid. Less oxidation.
SB72	EVS72-W-15913	31–36	11/16/03	Depth to water = 37 ft below TOC. TOC 7.6 ft above ground (in ECPT truck).
SB72	EVS72-W-15914	38.2–43.2	11/16/03	Depth to water = 37.2 ft below TOC with TOC 7.6 ft above ground (in ECPT truck). Target depth of 44.4 ft BGL could not be reached. Set screen at 43.2 ft BGL.
SB74	EVS74-W-15952	42.8–47.8	11/17/03	Depth to water = 27 ft below TOC. Measured depth of well = 65.7 ft BGL.
SB75	EVS75-W-15968	43.3–48.3	11/18/03	Pushed to refusal at 48.4 ft BGL. Opened 5 ft screen. Depth to water from TOC = 30.1 ft BGL.
SB76	EVS76-W-15970	43.3–48.3	11/18/03	Depth to water below top of casing = 33 ft.

TABLE C.2 Results of analyses for carbon tetrachloride and chloroform on groundwater samples collected in the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Concentration (µg/L)	
				Carbon Tetrachloride	Chloroform
BUNCK	EVBUNCK-W-15863	Unknown	11/13/03	ND ^a	ND
KNUDSON	EVKNUDSON-W-15861	Unknown	11/13/03	ND	ND
MILLER	EVMILLER-W-15967	Unknown	11/17/03	ND	ND
RLARSON	EVRLARSON-W-15862	Unknown	11/13/03	ND	ND
SELLAND1	EVSELLAND1-W-15955	Unknown	11/20/03	ND	ND
SELLAND2	EVSELLAND2-W-15956	Unknown	11/20/03	ND	ND
SELLAND3	EVSELLAND3-W-15957	Unknown	11/20/03	ND	ND
MW1	EVMW1-W-15986	41–51	11/22/03	28	2.8
MW1	EVMW01-W-12988	41–51	06/04/04	14	1.8
MW2	EVMW2-W-15985	59–79	11/22/03	16	ND
MW3	EVMW3-W-15991	56.5–71.5	12/4/03	2	ND
SB01	EVSB01-W-15919	42–54	11/11/03	ND	ND
SB09	EVSB09-W-15925	51–57	11/12/03	57	5.3
SB16	EVSB16-W-15923	49–64	11/12/03	ND	ND
SB18	EVSB18-W-15935	60–70	11/13/03	ND	ND
SB19	EVSB19-W-12847	46–51	11/15/03	ND	ND
SB22	EVSB22-W-15924	58–63	11/12/03	ND	ND
SB31	EVSB31-W-15918	57–67	11/11/03	ND	ND
SB34	EVSB34-W-15921	46–53	11/11/03	9.2	4
SB49	EVSB49-W-15930	51–55	11/13/03	ND	ND
SB60	EVSB60-W-15931	56.7–61.7	11/13/03	59	1.5
SB62	EVSB62-W-13192	33–41	11/14/03	ND	ND
SB63	EVSB63-W-15936	20–25	11/14/03	ND	ND
SB64	EVSB64-W-15937	22–27	11/14/03	ND	ND
SB65	EVSB65-W-15858	57–62	11/10/03	ND (0.8 J ^b)	ND
SB65	EVSB65-W-15895	62–66	11/11/03	ND (0.8 J)	ND
SB65	EVSB65-W-15893	66–70	11/11/03	ND	ND
SB66	EVSB66-W-15897	50–55	11/11/03	1.8	ND
SB66	EVSB66-W-15899	56–60	11/12/03	1.2	ND
SB67	EVSB67-W-15902	54.1–59.1	11/14/03	ND	ND
SB67	EVSB67-W-15859	60–64	11/13/03	ND	ND
SB69	EVSB69-W-15904	21.2–26.2	11/14/03	ND	ND
SB69	EVSB69-W-15906	29.5–34.5	11/14/03	ND	ND
SB70	EVSB70-W-15907	21.3–26.3	11/15/03	ND	ND
SB70	EVSB70-W-15909	28–33	11/15/03	ND	ND
SB71	EVSB71-W-15910	41–46	11/15/03	ND	ND
SB71	EVSB71-W-15912	47–52	11/15/03	ND	ND
SB72	EVSB72-W-15913	31–36	11/16/03	ND	ND
SB72	EVSB72-W-15914	38.2–43.2	11/16/03	ND	ND
SB74	EVSB74-W-15952	42.8–47.8	11/17/03	ND (0.7 J)	ND
SB75	EVSB75-W-15968	43.3–48.3	11/18/03	2.7	ND (0.7 J)
SB76	EVSB76-W-15970	43.3–48.3	11/18/03	ND	ND

^a ND, contaminant not detected.

^b J, estimated concentration below quantitation limit of 1 µg/L for purge-and-trap method.

TABLE C.3 Results of trace metals analyses on groundwater samples collected during the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Concentration (µg/L)								
				Total Alkalinity	Aluminum	Calcium	Chloride	Iron	Magnesium	Manganese	Nitrate	Nitrite
MW1	EVMW1-W-15990	41-51	11/24/03	NA ^a	< 200	106,000	70,400	< 100	27,400	41.3	6,300	6
MW2	EVMW2-W-15985	59-79	11/22/03	NA	< 200	66,600	28,200	< 100	19,300	28.9	11,700	< 5
MW3	EVMW3-W-15991	56.5-71.5	12/4/03	NA	< 200	67,800	21,100	< 100	19,000	22.8	12,400	230
SB01	EWSB01-W-15919	42-54	11/11/03	NA	< 200	85,300	43,300	< 100	22,400	< 15	11,400	< 5
SB09	EWSB09-W-15925	51-57	11/12/03	NA	< 200	87,700	49,400	< 100	22,200	< 15	14,600	< 5
SB16	EWSB16-W-15923	49-64	11/12/03	NA	< 200	57,800	14,100	< 100	19,400	256	10,400	6.9
SB22	EWSB22-W-15924	58-63	11/12/03	NA	< 200	73,200	33,300	< 100	21,600	64.2	9,000	< 5
SB34	EWSB34-W-15921	46-53	11/11/03	NA	< 200	76,500	29,000	< 100	18,700	< 15	4,700	< 5
SB49	EWSB49-W-15930	51-55	11/13/03	NA	< 200	67,400	10,500	< 100	19,500	< 15	9,500	< 5
SB60	EWSB60-W-15931	56.7-61.7	11/13/03	NA	< 200	81,000	35,500	< 100	19,000	< 15	13,000	< 5
SB62	EWSB62-W-13192	33-41	11/14/03	239,000	< 200	76,400	21,400	< 100	18,200	17	17,900	< 5
SB66	EWSB66-W-15932	48.7-58.7	11/13/03	NA	< 200	71,400	15,400	< 100	16,900	< 15	10,600	13

Concentration (µg/L)												
Location	Sample	Depth (ft BGL)	Sample Date	Nitrate/Nitrite								
				Nitrogen	Phosphate	Phosphorus	Potassium	Silicon	Sodium	Sulfate	Zinc	
MW1	EVMW1-W-15990	41-51	11/24/03	5,200	< 200	< 250	< 5,000	16,700	74,400	58,200	< 20	
MW2	EVMW2-W-15985	59-79	11/22/03	10,200	< 200	< 250	< 5,000	13,700	44,700	16,600	61.4	
MW3	EVMW3-W-15991	56.5-71.5	12/4/03	11,200	< 200	< 250	< 5,000	13,800	45,300	35,000	< 20	
SB01	EWSB01-W-15919	42-54	11/11/03	10,600	< 200	< 250	< 5,000	17,100	51,400	42,800	< 20	
SB09	EWSB09-W-15925	51-57	11/12/03	14,800	< 200	< 250	< 5,000	16,300	55,900	41,900	< 20	
SB16	EWSB16-W-15923	49-64	11/12/03	10,500	< 200	< 250	< 5,000	12,800	35,000	21,600	< 20	
SB22	EWSB22-W-15924	58-63	11/12/03	9,100	< 200	< 250	< 5,000	14,300	44,500	50,300	< 20	
SB34	EWSB34-W-15921	46-53	11/11/03	4,500	< 200	< 250	< 5,000	18,200	63,600	38,700	< 20	
SB49	EWSB49-W-15930	51-55	11/13/03	9,400	< 200	< 250	< 5,000	15,600	45,000	24,300	< 20	
SB60	EWSB60-W-15931	56.7-61.7	11/13/03	12,800	< 200	< 250	5,600	15,300	49,400	33,200	< 20	
SB62	EWSB62-W-13192	33-41	11/14/03	18,300	< 200	< 250	< 5,000	14,400	48,100	25,300	< 20	
SB66	EWSB66-W-15932	48.7-58.7	11/13/03	10,500	< 200	< 250	< 5,000	14,800	44,800	24,600	< 20	

^a NA, not analyzed.

TABLE C.4 Attenuation parameters for groundwater samples collected during the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Concentration (µg/L)		
				Methane	Ethane	Ethene
MW1	EVMW1-W-15986	41–51	11/22/03	< 2	< 4	< 3
MW2	EVMW2-W-15985	59–79	11/22/03	< 2	< 4	< 3
MW3	EVMW3-W-15991	56.5–71.5	12/4/03	< 2	< 4	< 3
SB01	EVS01-W-15919	42–54	11/11/03	< 2	< 4	< 3
SB09	EVS09-W-15925	51–57	11/12/03	< 2	< 4	< 3
SB16	EVS16-W-15923	49–64	11/12/03	< 2	< 4	< 3
SB22	EVS22-W-15924	58–63	11/12/03	< 2	< 4	< 3
SB34	EVS34-W-15921	46–53	11/11/03	< 2	< 4	< 3
SB49	EVS49-W-15930	51–55	11/13/03	< 2	< 4	< 3
SB60	EVS60-W-15931	56.7–61.7	11/13/03	< 2	< 4	< 3
SB62	EVS62-W-13192	33–41	11/14/03	< 2	< 4	< 3
SB66	EVS66-W-15932	48.7–58.7	11/13/03	< 2	< 4	< 3
QC	EVQCTB-W-13197	–	11/14/03	< 2	< 4	< 3
QC	EVQCTB-W-15929	–	11/12/03	< 2	< 4	< 3
QC	EVQCTB-W-15934	–	11/13/03	< 2	< 4	< 3
QC	EVQCTB-W-15972	–	11/21/03	< 2	< 4	< 3
QC	EVQCTB-W-15989	–	11/22/03	< 2	< 4	< 3
QC	EVQCTB-W-15993	–	12/4/03	< 2	< 4	< 3

TABLE C.5 Results of total organic carbon analyses on groundwater samples collected during the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Total Organic Carbon ($\mu\text{g/L}$)
MW1	EVMW1-W-15986	41–51	11/22/03	7,700
MW2	EVMW2-W-15985	59–79	11/22/03	2,000
MW3	EVMW3-W-15991	56.5–71.5	12/4/03	< 1,000
SB01	EWSB01-W-15919	42–54	11/11/03	< 1,000
SB09	EWSB09-W-15925	51–57	11/12/03	1,700
SB16	EWSB16-W-15923	49–64	11/12/03	1,100
SB22	EWSB22-W-15924	58–63	11/12/03	< 1,000
SB34	EWSB34-W-15921	46–53	11/11/03	2,400
SB49	EWSB49-W-15930	51–55	11/13/03	1,300
SB60	EWSB60-W-15931	56.7–61.7	11/13/03	2,500
SB62	EWSB62-W-13192	33–41	11/14/03	< 1,000
SB66	EWSB66-W-15932	48.7–58.7	11/13/03	2,000

TABLE C.6 Field measurements made during collection of groundwater samples in the Phase III targeted investigation at Everest, Kansas.

Location	Sample	Depth (ft BGL)	Sample Date	Temperature (°C)	pH	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Fe (II) (mg/L)	ORP ^a (mV)
MW1	EVMW1-W-15986	41–51	11/22/03	13.7	6.91	960	2.96	0.28	240
MW2	EVMW2-W-15985	59–79	11/22/03	14.6	7.09	682	6.1	0	250
MW3	EVMW3-W-15991	56.5–71.5	12/4/03	10.6	7.03	675	0.07	0.13	270
SB01	EVS01-W-15919	42–54	11/11/03	13.8	7.2	731	1.78	1.12	280
SB09	EVS09-W-15925	51–57	11/12/03	11.1	7.25	797	1.99	0.09	280
SB16	EVS16-W-15923	49–64	11/12/03	12	7.35	558	5.75	0.2	260
SB18	EVS18-W-15935	60–70	11/13/03	6.8	7.49	653	–	–	–
SB19	EVS19-W-12847	46–51	11/15/03	11.9	7.31	628	–	–	–
SB22	EVS22-W-15924	58–63	11/12/03	13.3	7.25	664	2.35	0.21	250
SB31	EVS31-W-15918	57–67	11/11/03	13	6.91	721	1.54	–	–
SB34	EVS34-W-15921	46–53	11/11/03	14.6	7.05	676	2.45	0.86	255
SB49	EVS49-W-15930	51–55	11/13/03	11.2	7.34	600	3.35	0.24	300
SB60	EVS60-W-15931	56.7–61.7	11/13/03	12.1	7.34	681	5.87	0.18	295
SB62	EVS62-W-13192	33–41	11/14/03	11.8	7.26	673	5.9	NR ^b	285
SB63	EVS63-W-15936	20–25	11/14/03	8.7	6.71	836	–	–	–
SB64	EVS64-W-15937	22–27	11/14/03	11	6.78	798	–	–	–
SB65	EVS65-W-15858	57–62	11/10/03	13.4	7.35	596	6.02	–	105
SB65	EVS65-W-15895	62–66	11/11/03	18.3	7.54	637	–	–	–
SB65	EVS65-W-15893	66–70	11/11/03	16.3	7.57	717	–	–	–
SB66	EVS66-W-15897	50–55	11/11/03	17.2	7.43	638	–	–	–
SB66	EVS66-W-15899	56–60	11/12/03	NR	7.54	637	–	–	–
SB66	EVS66-W-15932	48.7–58.7	11/13/03	11.8	7.32	620	4.65	0.2	80
SB67	EVS67-W-15902	54.1–59.1	11/14/03	13.4	7.58	614	–	–	–
SB67	EVS67-W-15859	60–64	11/13/03	22.1	7.59	614	–	–	–
SB69	EVS69-W-15904	21.2–26.2	11/14/03	18.3	7.28	585	–	–	–
SB69	EVS69-W-15906	29.5–34.5	11/14/03	15.8	7.74	662	–	–	–
SB70	EVS70-W-15907	21.3–26.3	11/15/03	18.2	6.93	564	–	–	–
SB70	EVS70-W-15909	28–33	11/15/03	17.9	7.44	610	–	–	–
SB71	EVS71-W-15910	41–46	11/15/03	20.7	7.56	629	–	–	–
SB71	EVS71-W-15912	47–52	11/15/03	20.7	7.37	710	–	–	–
SB72	EVS72-W-15913	31–36	11/16/03	16.5	7.34	608	–	–	–
SB72	EVS72-W-15914	38.2–43.2	11/16/03	18	7.45	598	–	–	–
SB74	EVS74-W-15952	42.8–47.8	11/17/03	18.1	7.36	785	–	–	–
SB75	EVS75-W-15968	43.3–48.3	11/18/03	15.3	7.25	778	–	–	–
SB76	EVS76-W-15970	43.3–48.3	11/18/03	15.6	7.19	789	–	–	–

^a Oxidation-reduction potential.

^b NR, not recorded.

Appendix D:

**Construction Data for Monitoring Wells
and Piezometers (Sand Point Wells)**

Monitor Well MW1: Everest, KS

NE 1/4 of SW 1/4 of NW 1/4 of Section 29, Twp. 4 South, Rge. 18 East
Brown County, State of Kansas

Date: 11/20/03

WELL HEAD PROTECTION

12" Morrison Brothers, Co. Model 418XA flush mount cover. Top of casing fitted with a (J-Plug) Morrison Brothers, Co. Model 678XA and a screened vent with a locking pipe plug and padlock.

CONCRETE PAD

Must be a minimum of 8" thick and extend at least 8" larger than the flush mount (28" minimum). Sloped to prevent pooling of water and vegetation around well and to allow for placement of a surveyor pin.

IMPERVIOUS GROUT

The well must be grouted with impervious grout and must be tremied in the hole, with clean fresh water, to have a minimum density of 9.4 lbs. per gallon. Grout must extend from the top of the bentonite chips to 3' BGL.

WELL CASING

Well casing shall terminate as high as possible inside the flush mount and be capped with a (J-Plug) Morrison Brothers, Co. Model 678XA locking plug and padlock.

4" PVC schedule 40, threaded casing and stainless steel well screen.

HOLE SIZE

The hole is 8.625" in diameter from the surface to 56' T.D. and grouted from the top of the sand pack to the base of the flush mount.

GRAVEL / SAND PACK

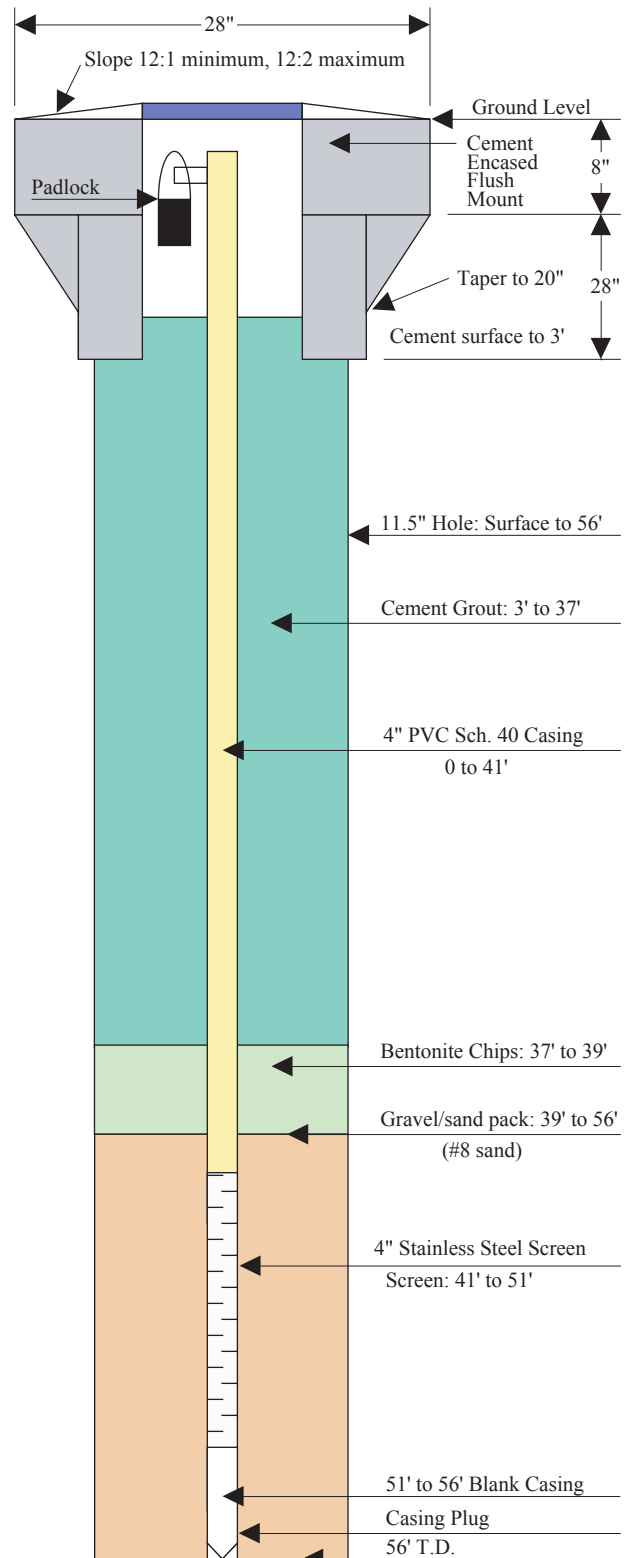
Gravel/sand pack screen size and gradation shall be determined based upon the grain size and gradation of portion or portions of the aquifer to be screened. Gravel/sand pack shall be designed to stabilize the aquifer material and permit the fine fraction to move into the well during development. Gravel/sand pack shall extend to at least 2' above screen.

CONTRACTOR LICENSING

All wells must be constructed under the direction of a licensed water well contractor as specified under the Kansas Department of Health and Environment.

REGISTRATION

All wells must be registered with the Kansas Department of Health and Environment on form WWC-5 provided by that Department.



(NOT TO SCALE)

Monitor Well MW2: Everest, KS

NE 1/4 of NE 1/4 of NE 1/4 of Section 30, Twp. 4 South, Rge. 18 East
Brown County, State of Kansas

Date: 11/20/03

WELL HEAD PROTECTION

12" Morrison Brothers, Co. Model 418XA flush mount cover. Top of casing fitted with a (J-Plug) Morrison Brothers, Co. Model 678XA and a screened vent with a locking pipe plug and padlock.

CONCRETE PAD

Must be a minimum of 8" thick and extend at least 8" larger than the flush mount (28" minimum). Sloped to prevent pooling of water and vegetation around well and to allow for placement of a surveyor pin.

IMPERVIOUS GROUT

The well must be grouted with impervious grout and must be tremied in the hole, with clean fresh water, to have a minimum density of 9.4 lbs. per gallon. Grout must extend from the top of the bentonite chips to 3' BGL.

WELL CASING

Well casing shall terminate as high as possible inside the flush mount and be capped with a (J-Plug) Morrison Brothers, Co. Model 678XA locking plug and padlock.

4" PVC schedule 40, threaded casing and stainless steel well screen.

HOLE SIZE

The hole is 8.625" in diameter from the surface to 79' T.D. and grouted from the top of the sand pack to the base of the flush mount.

GRAVEL / SAND PACK

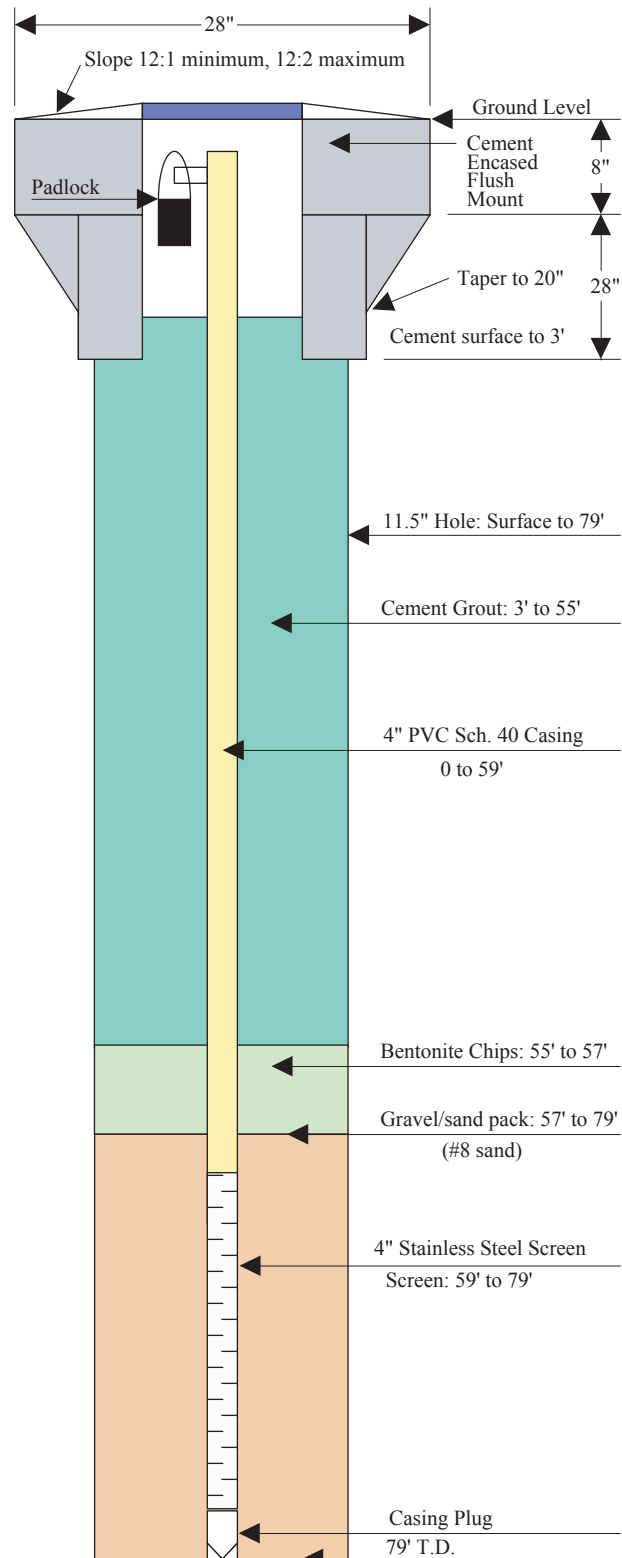
Gravel/sand pack screen size and gradation shall be determined based upon the grain size and gradation of portion or portions of the aquifer to be screened. Gravel pack shall be designed to stabilize the aquifer material and permit the fine fraction to move into the well during development. Gravel/sand pack shall extend to at least 2' above screen.

CONTRACTOR LICENSING

All wells must be constructed under the direction of a licensed water well contractor as specified under the Kansas Department of Health and Environment.

REGISTRATION

All wells must be registered with the Kansas Department of Health and Environment on form WWC-5 provided by that Department.



(NOT TO SCALE)

Monitor Well MW3: Everest, KS

NW 1/4 of NW 1/4 of NW 1/4 of Section 29, Twp. 4 South, Rge. 18 East
Brown County, State of Kansas

Date: 11/20/03

WELL HEAD PROTECTION

12" Morrison Brothers, Co. Model 418XA flush mount cover. Top of casing fitted with a (J-Plug) Morrison Brothers, Co. Model 678XA and a screened vent with a locking pipe plug and padlock.

CONCRETE PAD

Must be a minimum of 8" thick and extend at least 8" larger than the flush mount (28" minimum). Sloped to prevent pooling of water and vegetation around well and to allow for placement of a surveyor pin.

IMPERVIOUS GROUT

The well must be grouted with impervious grout and must be tremied in the hole, with clean fresh water, to have a minimum density of 9.4 lbs. per gallon. Grout must extend from the top of the bentonite chips to 3' BGL.

WELL CASING

Well casing shall terminate as high as possible inside the flush mount and be capped with a (J-Plug) Morrison Brothers, Co. Model 678XA locking plug and padlock.

2" PVC schedule 40, threaded casing and schedule 40 PVC well screen.

HOLE SIZE

The hole is 8.625" in diameter from the surface to 71.5' T.D. and grouted from the top of the sand pack to the base of the flush mount.

GRAVEL / SAND PACK

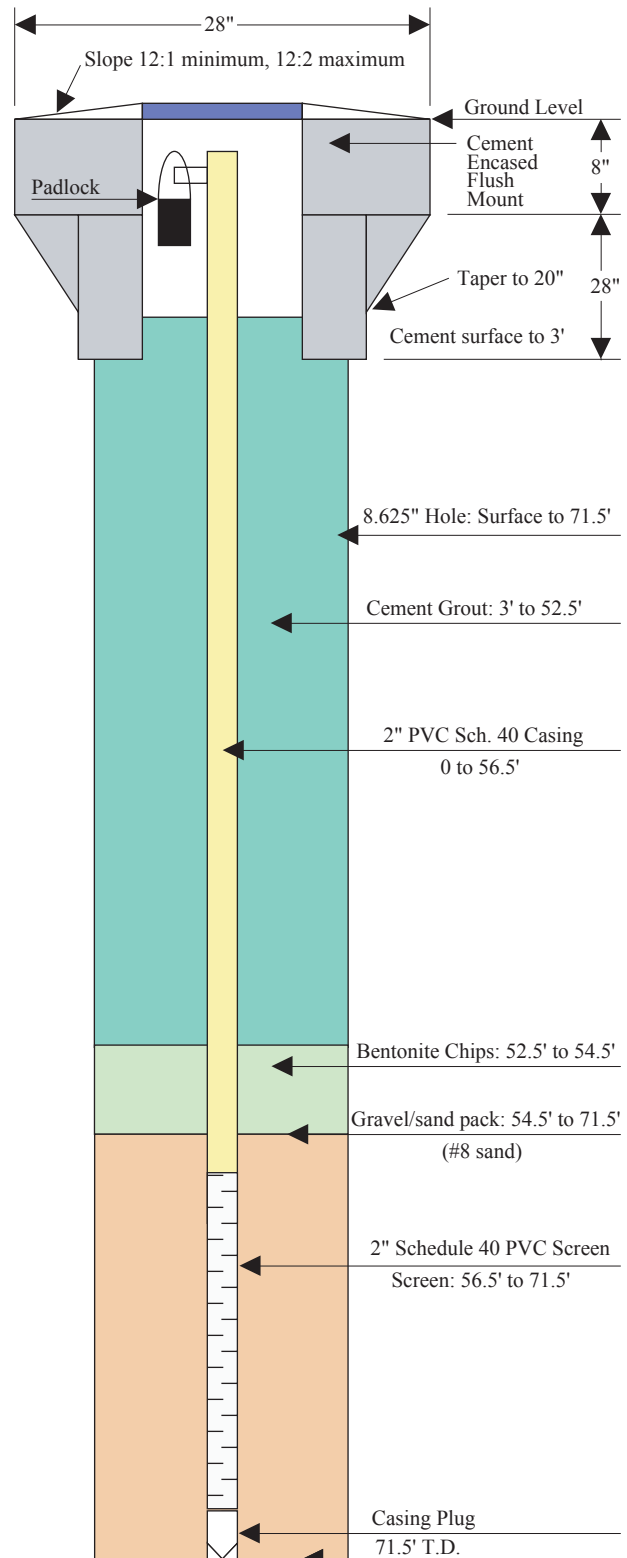
Gravel/sand pack screen size and gradation shall be determined based upon the grain size and gradation of portion or portions of the aquifer to be screened. Gravel pack shall be designed to stabilize the aquifer material and permit the fine fraction to move into the well during development. Gravel/sand pack shall extend to at least 2' above screen.

CONTRACTOR LICENSING

All wells must be constructed under the direction of a licensed water well contractor as specified under the Kansas Department of Health and Environment.

REGISTRATION

All wells must be registered with the Kansas Department of Health and Environment on form WWC-5 provided by that Department.



(NOT TO SCALE)

Piezometer (Sand Point Well) SB68: Everest, KS

NE 1/4 of NE 1/4 of NE 1/4 of Section 30, Twp. 4 South, Rge. 18 East
Brown County, State of Kansas

Date: 11/13/03

WELL HEAD PROTECTION

12" Morrison Brothers, Co. Model 418XA flush mount cover. Top of casing fitted with a (J-Plug) Morrison Brothers, Co. Model 678XA and a screened vent with a locking pipe plug and padlock.

CONCRETE PAD

Must be a minimum of 8" thick and extend at least 8" larger than the flush mount (28" minimum). Sloped to prevent pooling of water and vegetation around well and to allow for placement of a surveyor pin.

IMPERVIOUS GROUT

The well must be grouted with impervious grout and must be tremied in the hole, with clean fresh water, to have a minimum density of 9.4 lbs. per gallon. Grout must extend from the top of the bentonite chips to 3' BGL.

WELL CASING

Well casing shall terminate as high as possible inside the flush mount and be capped with a (J-Plug) Morrison Brothers, Co. Model 678XA locking plug and padlock.

1" PVC Schedule 40 threaded casing and Mill Slot (0.010") well screen.

HOLE SIZE

The hole must be at least 5.25" in diameter for the top 20' and grouted to the base of the flush mount.

GRAVEL / SAND PACK

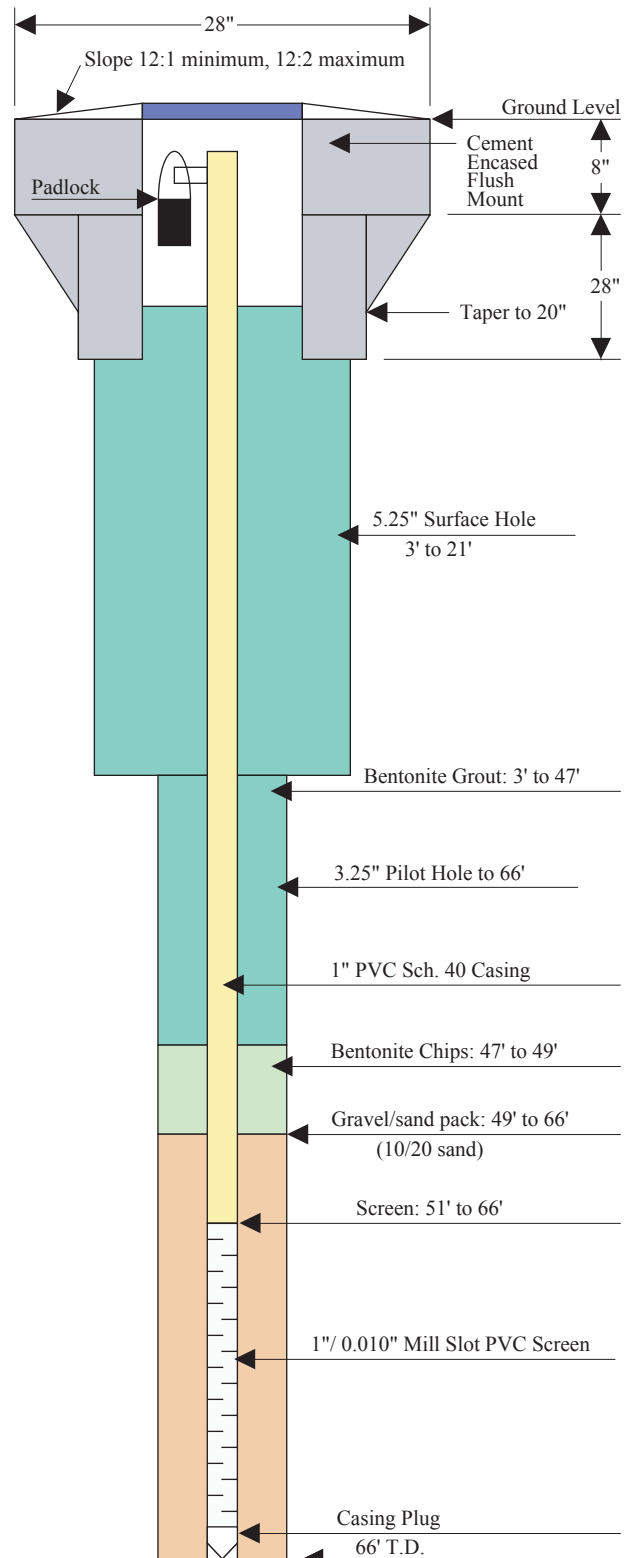
Gravel/sand pack screen size and gradation shall be determined based upon the grain size and gradation of portion or portions of the aquifer to be screened. Gravel pack shall be designed to stabilize the aquifer material and permit the fine fraction to move into the well during development. Gravel/sand pack shall extend to at least 2' above screen.

CONTRACTOR LICENSING

All wells must be constructed under the direction of a licensed water well contractor as specified under the Kansas Department of Health and Environment.

REGISTRATION

All wells must be registered with the Kansas Department of Health and Environment on form WWC-5 provided by that Department.



(NOT TO SCALE)

Piezometer (Sand Point Well) SB72: Everest, KS

SW 1/4 of SW 1/4 of SE 1/4 of Section 19, Twp. 4 South, Rge. 18 East
Brown County, State of Kansas

Date: 11/15/03

WELL HEAD PROTECTION

12" Morrison Brothers, Co. Model 418XA flush mount cover. Top of casing fitted with a (J-Plug) Morrison Brothers, Co. Model 678XA and a screened vent with a locking pipe plug and padlock.

CONCRETE PAD

Must be a minimum of 8" thick and extend at least 8" larger than the flush mount (28" minimum). Sloped to prevent pooling of water and vegetation around well and to allow for placement of a surveyor pin.

IMPERVIOUS GROUT

The well must be grouted with impervious grout and must be tremied in the hole, with clean fresh water, to have a minimum density of 9.4 lbs. per gallon. Grout must extend from the top of the bentonite chips to 3' BGL.

WELL CASING

Well casing shall terminate as high as possible inside the flush mount and be capped with a (J-Plug) Morrison Brothers, Co. Model 678XA locking plug and padlock.

1" PVC Schedule 40 threaded casing and Mill Slot (0.010") well screen.

HOLE SIZE

The hole must be at least 5.25" in diameter for the top 20' and grouted to the base of the flush mount.

GRAVEL / SAND PACK

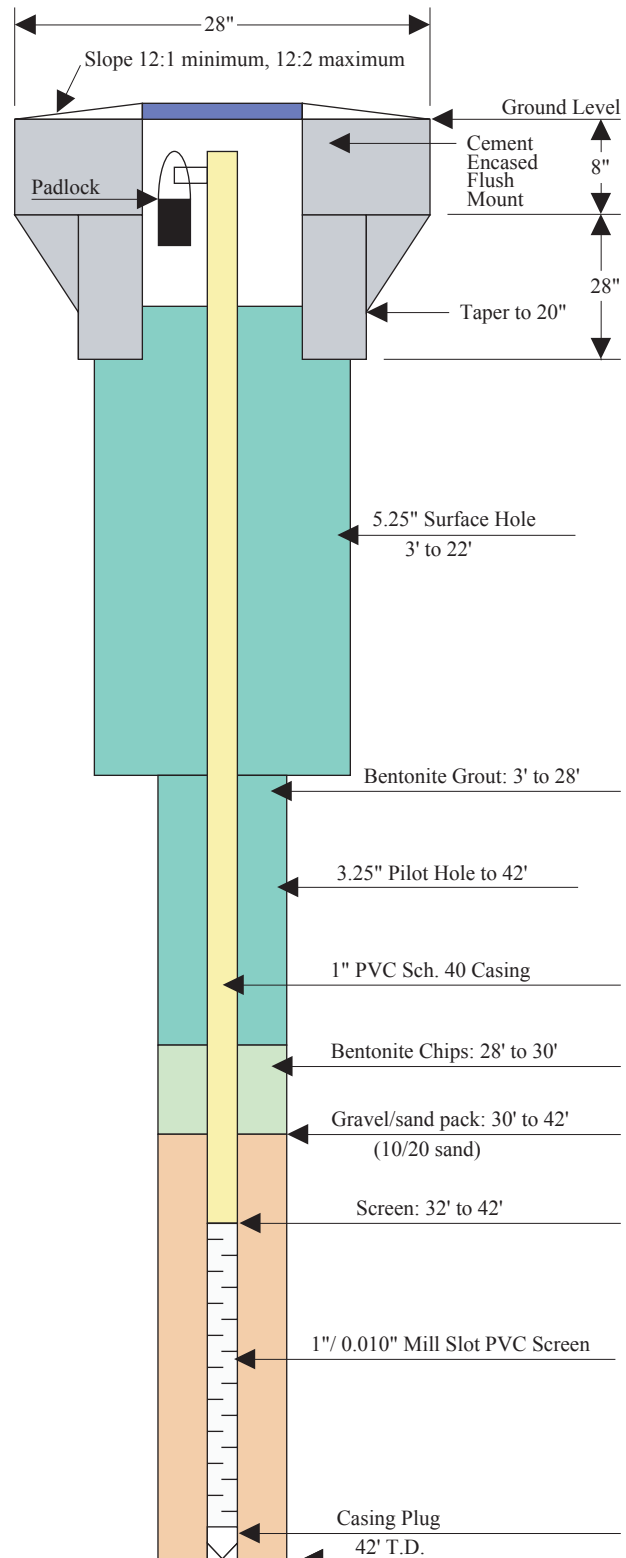
Gravel/sand pack screen size and gradation shall be determined based upon the grain size and gradation of portion or portions of the aquifer to be screened. Gravel pack shall be designed to stabilize the aquifer material and permit the fine fraction to move into the well during development. Gravel/sand pack shall extend to at least 2' above screen.

CONTRACTOR LICENSING

All wells must be constructed under the direction of a licensed water well contractor as specified under the Kansas Department of Health and Environment.

REGISTRATION

All wells must be registered with the Kansas Department of Health and Environment on form WWC-5 provided by that Department.



(NOT TO SCALE)

Piezometer (Sand Point Well) SB77: Everest, KS

SW 1/4 of SW 1/4 of SE 1/4 of Section 19, Twp. 4 South, Rge. 18 East
Brown County, State of Kansas

Date: 11/20/03

WELL HEAD PROTECTION

12" Morrison Brothers, Co. Model 418XA flush mount cover. Top of casing fitted with a (J-Plug) Morrison Brothers, Co. Model 678XA and a screened vent with a locking pipe plug and padlock.

CONCRETE PAD

Must be a minimum of 8" thick and extend at least 8" larger than the flush mount (28" minimum). Sloped to prevent pooling of water and vegetation around well and to allow for placement of a surveyor pin.

IMPERVIOUS GROUT

The well must be grouted with impervious grout and must be tremied in the hole, with clean fresh water, to have a minimum density of 9.4 lbs. per gallon. Grout must extend from the top of the bentonite chips to 3' BGL.

WELL CASING

Well casing shall terminate as high as possible inside the flush mount and be capped with a (J-Plug) Morrison Brothers, Co. Model 678XA locking plug and padlock.

1" PVC Schedule 40 threaded casing and Mill Slot (0.010") well screen.

HOLE SIZE

The hole must be at least 5.25" in diameter for the top 20' and grouted to the base of the flush mount.

GRAVEL / SAND PACK

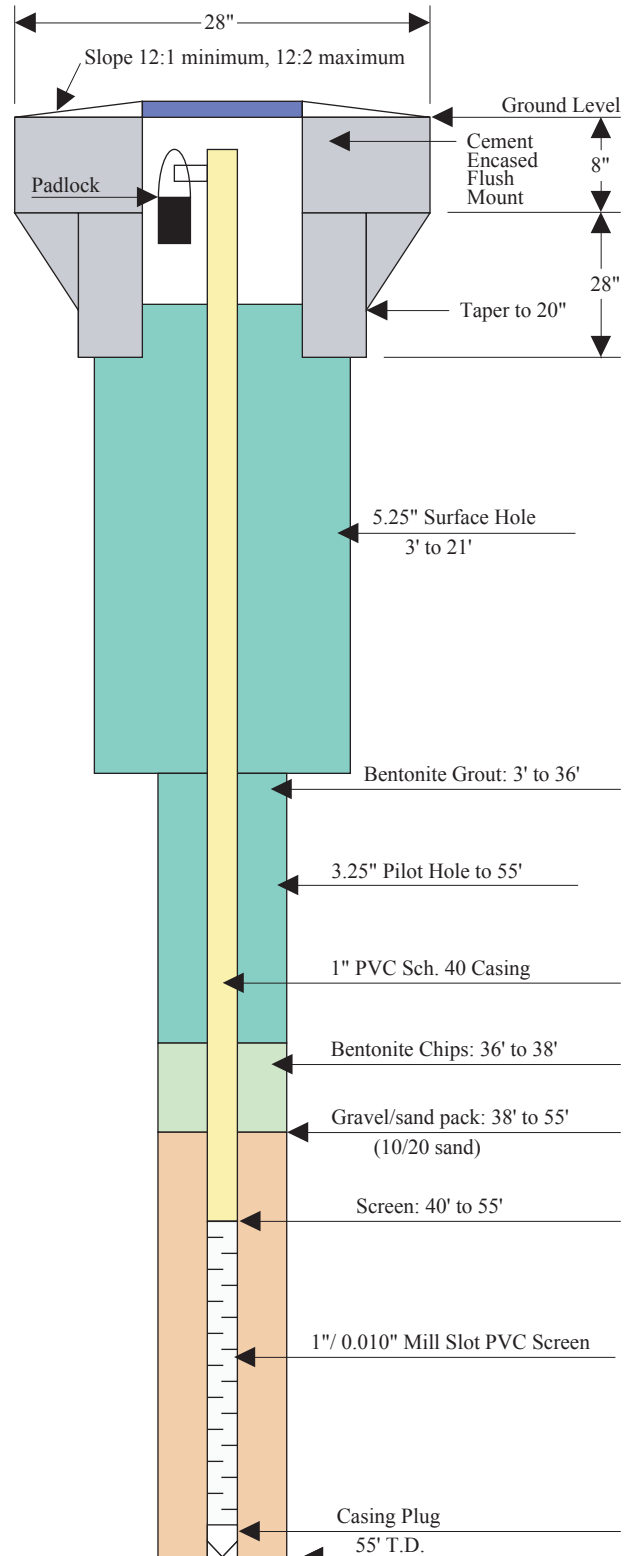
Gravel/sand pack screen size and gradation shall be determined based upon the grain size and gradation of portion or portions of the aquifer to be screened. Gravel pack shall be designed to stabilize the aquifer material and permit the fine fraction to move into the well during development. Gravel/sand pack shall extend to at least 2' above screen.

CONTRACTOR LICENSING

All wells must be constructed under the direction of a licensed water well contractor as specified under the Kansas Department of Health and Environment.

REGISTRATION

All wells must be registered with the Kansas Department of Health and Environment on form WWC-5 provided by that Department.



(NOT TO SCALE)

Appendix E:

Hand-Measured Water Level Data

TABLE E.1 Water levels measured by hand during the Phase III targeted investigation at Everest, Kansas.

Location	Elevation (ft AMSL)		September 29–October 31, 2003			November 10 and 12, 2003			November 15, 2003			November 16, 2003		
	Reference	Ground	Time	Depth (ft BGL)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)
	SB01	1129.12	1129.55	10/1, 11:08	22.00	1107.12	11/10, 11:09	22.79	1106.33	12:55	22.86	1106.26		
SB09	1138.94	1139.40	10/1, 10:33	35.04	1103.90	11/10, 11:30	35.49	1103.45	12:36	35.46	1103.48			
SB16	1141.17	1141.50	9/29, 14:34	42.51	1098.66	11/10, 12:10	42.73	1098.44	12:26	42.59	1098.58			
SB18	1153.97	1154.50	10/1, 17:37	54.17	1099.80	11/10, 17:01	54.62	1099.35	11:42	54.99	1098.98			
SB19	1131.98	1132.50	9/29, 11:33	34.43	1097.55				12:19	34.64	1097.34			
SB22	1147.87	1148.30	9/30, 8:50	43.40	1104.47	11/10, 11:02	43.78	1104.09	13:01	43.85	1104.02			
SB31	1142.26	1142.76	9/29, 16:35	34.99	1107.27	11/10, 11:15	35.86	1106.40	12:48	35.92	1106.34			
SB34	1131.73	1132.10	10/1, 8:33	24.84	1106.89	11/10, 11:23	25.59	1106.14	12:42	25.64	1106.09			
SB49	1132.48	1132.90	9/30, 12:45	44.52	1087.96	11/10, 14:00	44.05	1088.43	11:30	44.17	1088.31			
SB60	1144.11	1144.44	10/1, 13:35	55.41	1088.70	11/10, 12:42	55.16	1088.95	11:55	55.18	1088.93			
SB62	1121.22	1118.92	10/1, 17:02	34.21	1087.01	11/10, 14:33	34.21	1087.01	10:59	34.30	1086.92			
SB63	1104.75	1102.37	10/1, 16:25	23.61	1081.14	11/10, 14:51	23.34	1081.41	11:17	23.31	1081.44			
SB64	1098.36	1095.98	10/1, 16:37	22.37	1075.99	11/10, 15:12	22.31	1076.05	11:09	22.36	1076.00			
DW06 ^b	1152.23	1151.70							11:50	56.60	1095.63			
SB66t	1144.94	1144.82				11/12, 16:24	48.80	1096.14	11:37	48.66	1096.28			
SB67t	1148.36	1147.68							12:07	51.68	1096.68			
SB68	1151.34	1151.81							12:00	55.51	1095.83	15:27	55.66	1095.68
SB69t	1100.13	1099.19							8:39	18.42	1081.71	10:59	18.55	1081.58
SB70t	1101.23	1100.30							13:47	18.59	1082.64	10:53	18.63	1082.60
SB71t	1121.85	1120.85							17:45	39.39	1082.46	10:00	39.40	1082.45
SB72	1112.53	1112.76										17:22	29.13	1083.40
SB77	1124.57	1124.95												
MW1	1127.08	1127.30												
MW2	1151.68	1151.92												
MW3	1144.92	1145.44												

TABLE E.1 (Cont.)

Location	Elevation (ft AMSL)		November 17–18, 2003			November 20–22, 2003			December 4, 2003			January 24, 2004		
	Reference	Ground	Time	Depth ^a (ft)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)
	SB01	1129.12	1129.55				11/22, 11:36	22.92	1106.20	12:19	22.87	1106.25	13:04	21.40
SB09	1138.94	1139.40							11:53	35.77	1103.17			
SB16	1141.17	1141.50							11:46	43.02	1098.15			
SB18	1153.97	1154.50	11/18, 9:34	54.56	1099.41									
SB19	1131.98	1132.50												
SB22	1147.87	1148.30							12:26	44.18	1103.69			
SB31	1142.26	1142.76							12:10	35.91	1106.35			
SB34	1131.73	1132.10							12:00	25.69	1106.04			
SB49	1132.48	1132.90												
SB60	1144.11	1144.44							10:27	55.57	1088.54			
SB62	1121.22	1118.92							16:26	34.41	1086.81			
SB63	1104.75	1102.37							16:38	23.27	1081.48			
SB64	1098.36	1095.98							16:46	22.42	1075.94			
DW06 ^b	1152.23	1151.70				11/21, 11:51	56.81	1095.42						
SB66t	1144.94	1144.82	11/17, 15:35	48.46	1096.48				9:55	49.04	1095.90			
SB67t	1148.36	1147.68	11/17, 10:45	51.58	1096.78				10:02 ^c	52.45	1095.91			
SB68	1151.34	1151.81				11/22, 10:57	55.83	1095.51	10:20	56.08	1095.26			
SB69t	1100.13	1099.19							10:46	18.61	1081.52			
SB70t	1101.23	1100.30							10:57	18.68	1082.55			
SB71t	1121.85	1120.85	11/17, 13:35	39.24	1082.61				11:11	39.42	1082.43			
SB72	1112.53	1112.76				11/20, 10:54	29.09	1083.44	17:11	29.22	1083.31			
SB77	1124.57	1124.95				11/21, 8:33	42.03	1082.54	11:35	42.04	1082.53			
MW1	1127.08	1127.30				11/22, 11:30	21.14	1105.94	12:04	21.21	1105.87	12:19	20.69	1106.39
MW2	1151.68	1151.92				11/20, 11:27	55.89	1095.79	10:12	55.74	1095.94			
MW3	1144.92	1145.44							12:46	47.53	1097.39			

TABLE E.1 (Cont.)

Location	Elevation (ft AMSL)		February 11, 2004			February 20, 2004		
	Reference	Ground	Time	Depth ^a (ft)	Elevation (ft AMSL)	Time	Depth ^a (ft)	Elevation (ft AMSL)
SB01	1129.12	1129.55				11:24	22.64	1106.48
SB09	1138.94	1139.40				11:41	35.81	1103.13
SB16	1141.17	1141.50						
SB18	1153.97	1154.50						
SB19	1131.98	1132.50						
SB22	1147.87	1148.30						
SB31	1142.26	1142.76						
SB34	1131.73	1132.10	9:10	25.67	1106.06	10:57	25.49	1106.24
SB49	1132.48	1132.90						
SB60	1144.11	1144.44						
SB62	1121.22	1118.92						
SB63	1104.75	1102.37						
SB64	1098.36	1095.98						
DW06 ^b	1152.23	1151.70						
SB66t	1144.94	1144.82						
SB67t	1148.36	1147.68						
SB68	1151.34	1151.81						
SB69t	1100.13	1099.19						
SB70t	1101.23	1100.30						
SB71t	1121.85	1120.85						
SB72	1112.53	1112.76						
SB77	1124.57	1124.95						
MW1	1127.08	1127.30	9:18	21.08	1106.00			
MW2	1151.68	1151.92						
MW3	1144.92	1145.44						

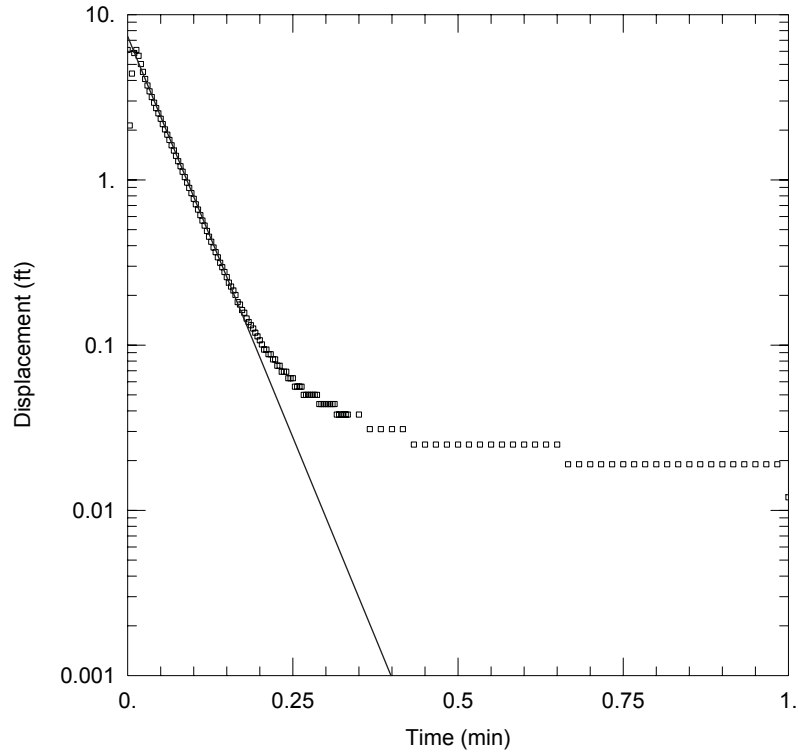
^a Depth measured in feet below reference point.

^b DW06 is the Nigh well.

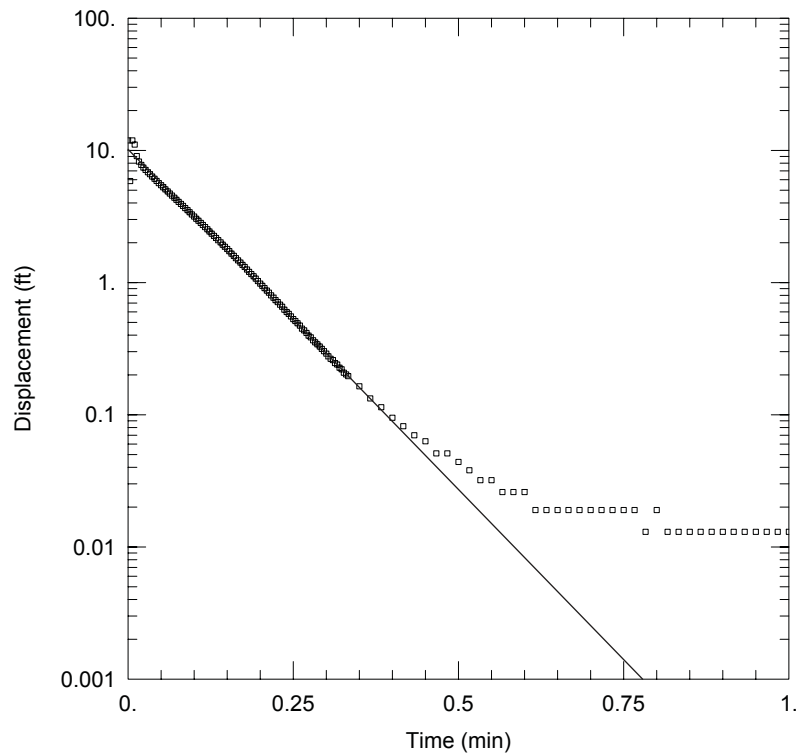
^c Measurement made shortly after the water level recorder was removed from the piezometer.

Appendix F:

Interpretive Analyses of Slug Test Data

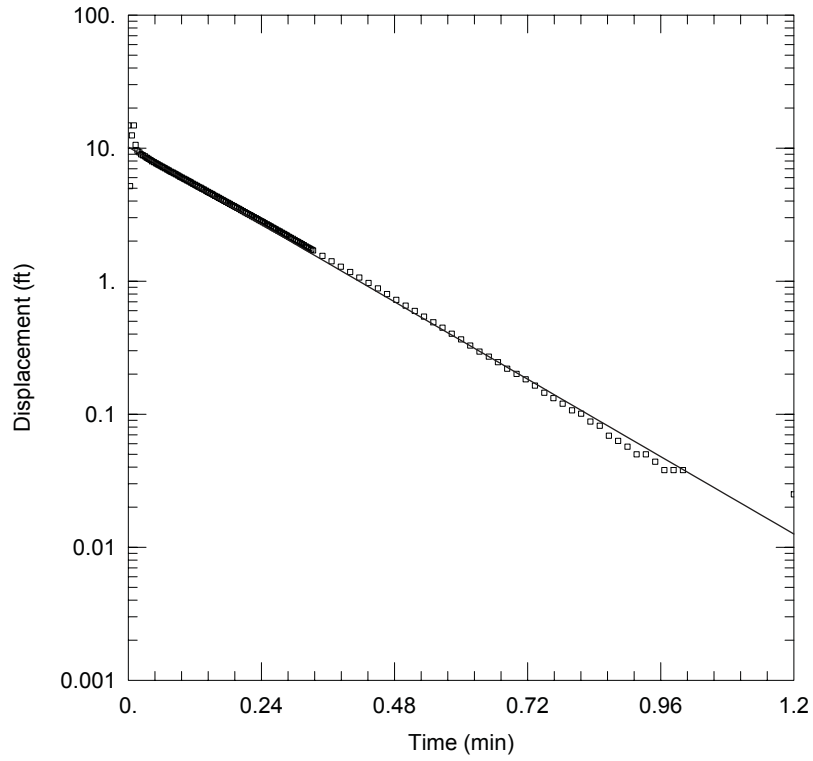


Observed slug test water level response and interpretive straight-line fit to the measured data for SB01 Test 5, Step 0.



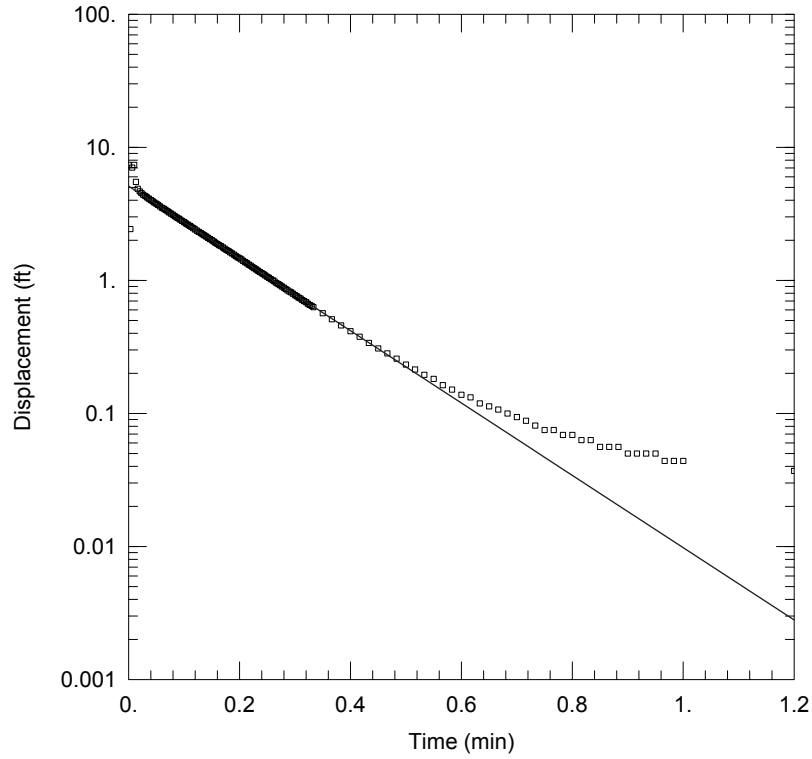
Observed slug test water level response and interpretive straight-line fit to the measured data for SB01 Test 5, Step 1.

FIGURE F.1 Observed slug test water level response and interpretive fit for the data for SB01 shown in Table S2.1.

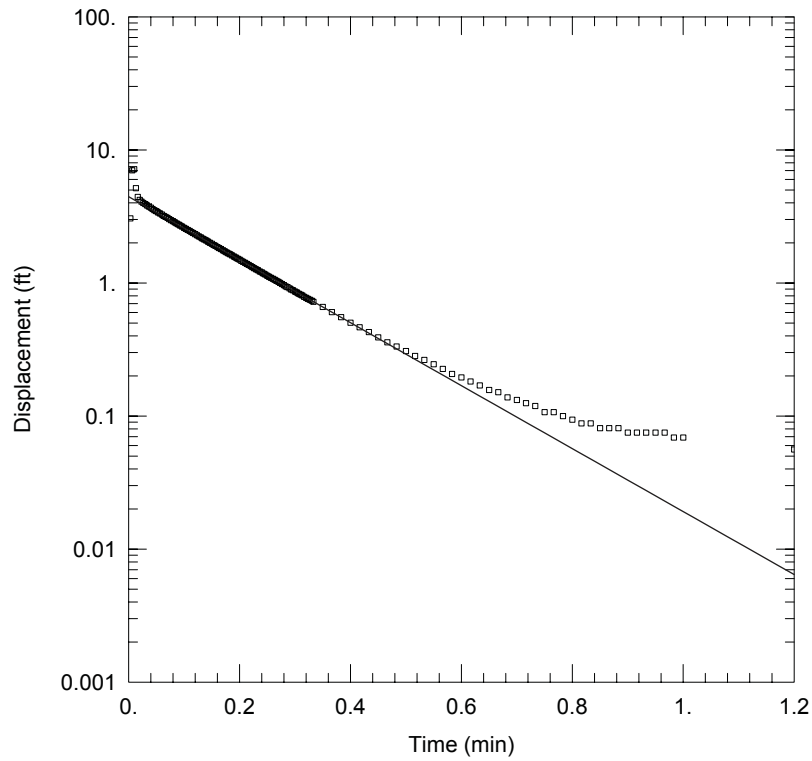


Observed slug test water level response and interpretive straight-line fit to the measured data for SB01 Test 5, Step 2.

FIGURE F.1 (Cont.)

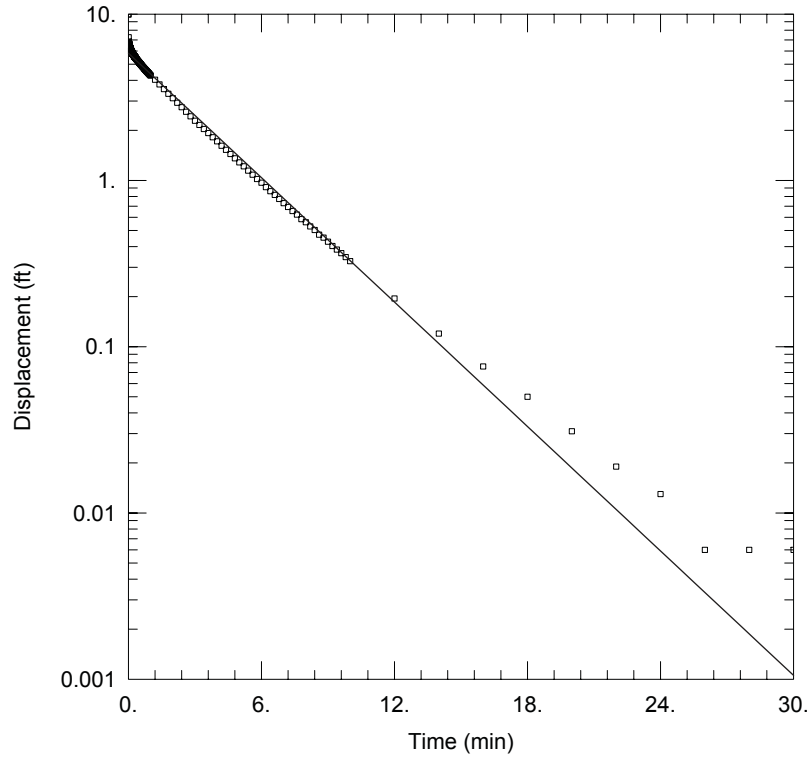


Observed slug test water level response and interpretive straight-line fit to the measured data for SB01 Test 9, Step 0.



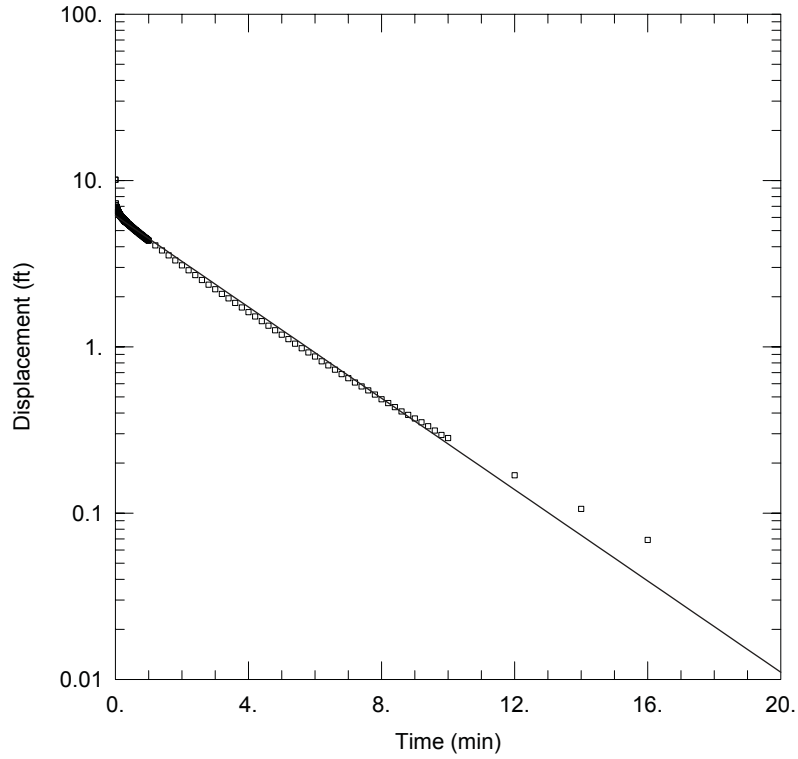
Observed slug test water level response and interpretive straight-line fit to the measured data for SB01 Test 9, Step 1.

FIGURE F.1 (Cont.)

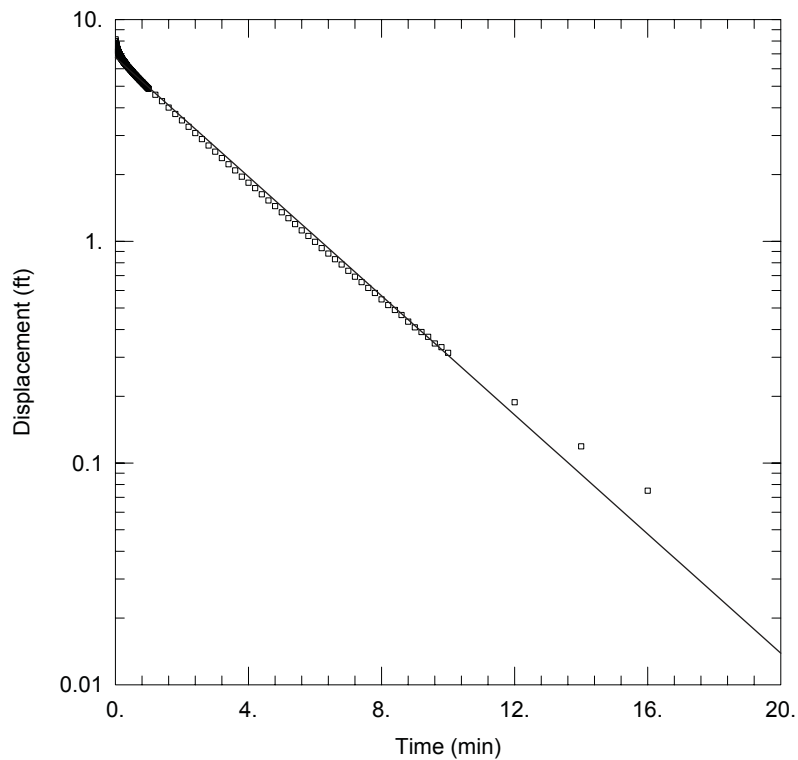


Observed slug test water level response and interpretive straight-line fit to the measured data for SB09 Test 2, Step 0.

FIGURE F.2 Observed slug test water level response and interpretive fit for the data for SB09 shown in Table S2.2.

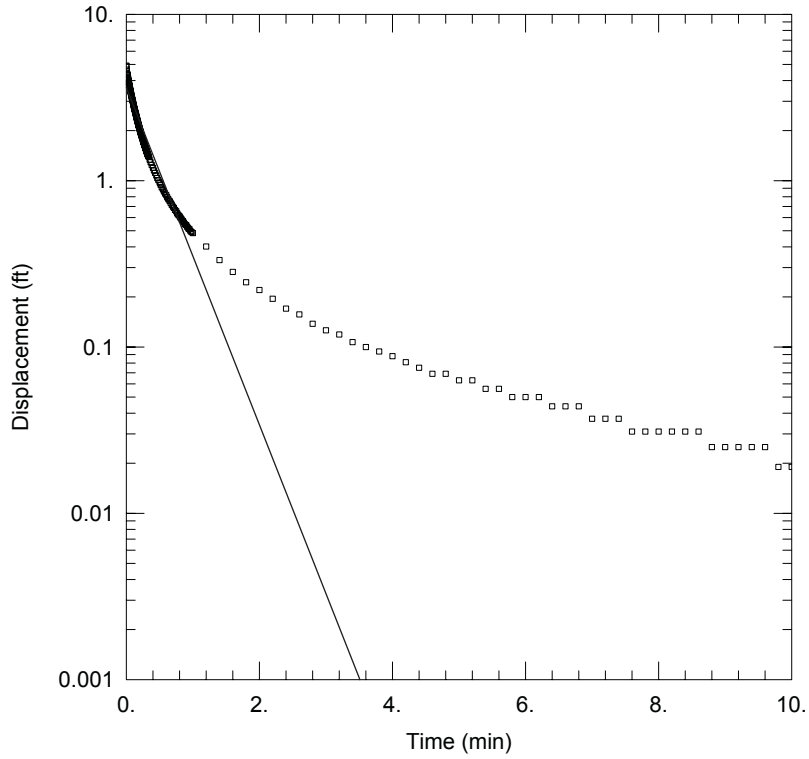


Observed slug test water level response and interpretive straight-line fit to the measured data for SB09 Test 3, Step 0.



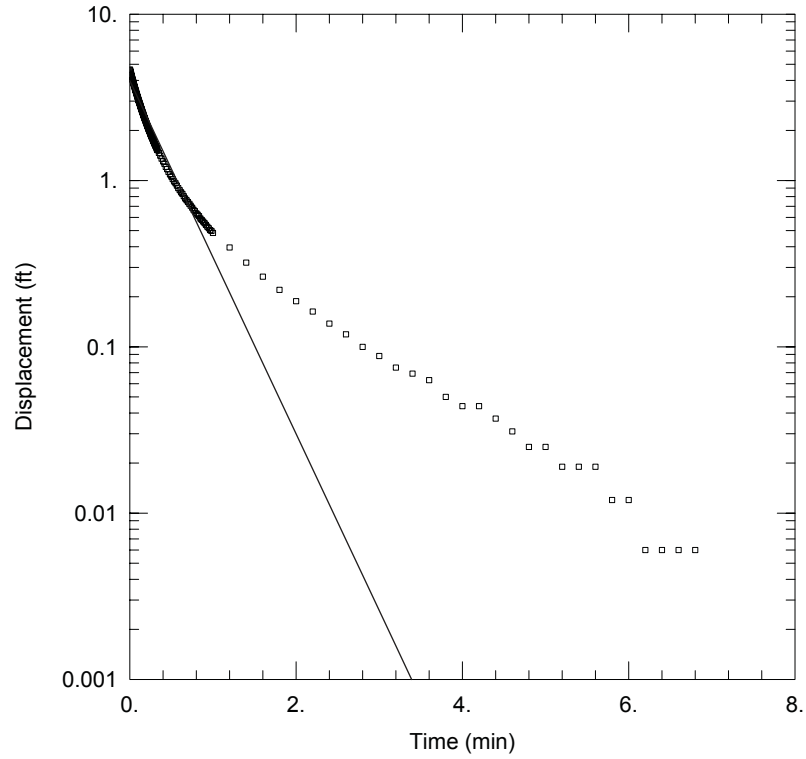
Observed slug test water level response and interpretive straight-line fit to the measured data for SB09 Test 3, Step 1.

FIGURE F.2 (Cont.)

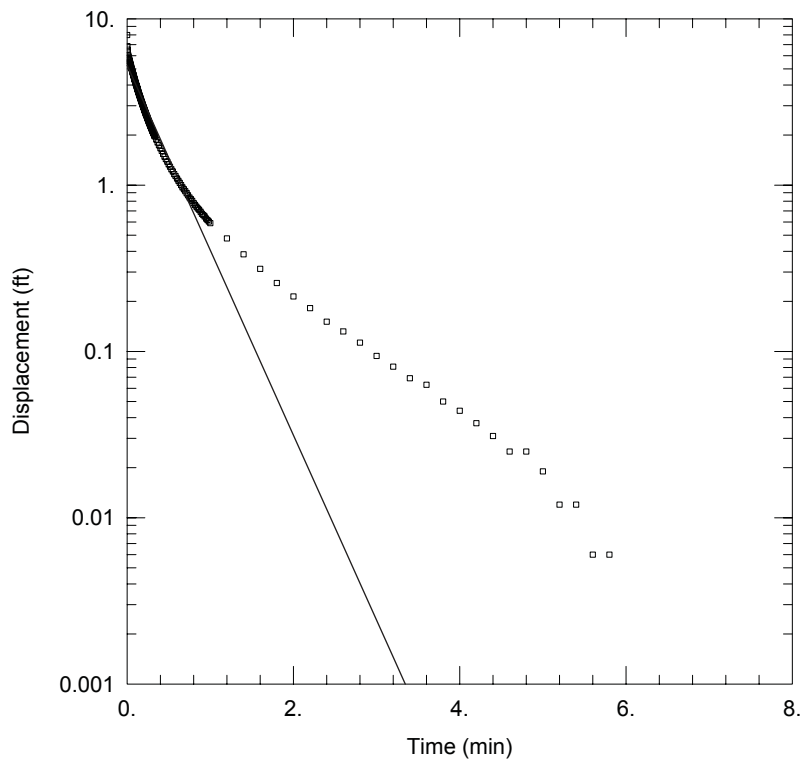


Observed slug test water level response and interpretive straight-line fit to the measured data for SB16 Test 1, Step 0.

FIGURE F.3 Observed slug test water level response and interpretive fit for the data for SB16 shown in Table S2.3.

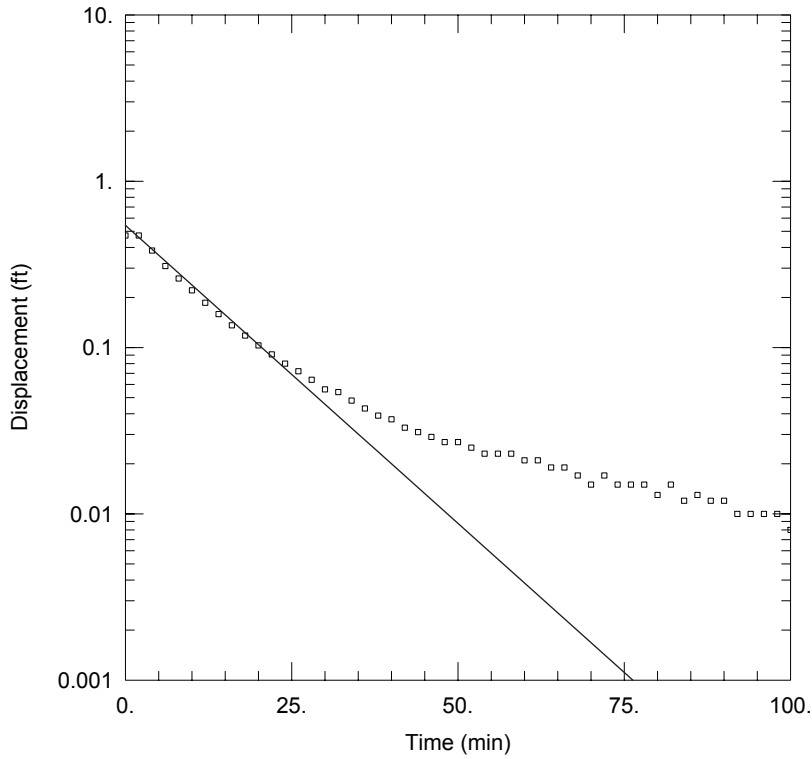


Observed slug test water level response and interpretive straight-line fit to the measured data for SB16 Test 2, Step 0.

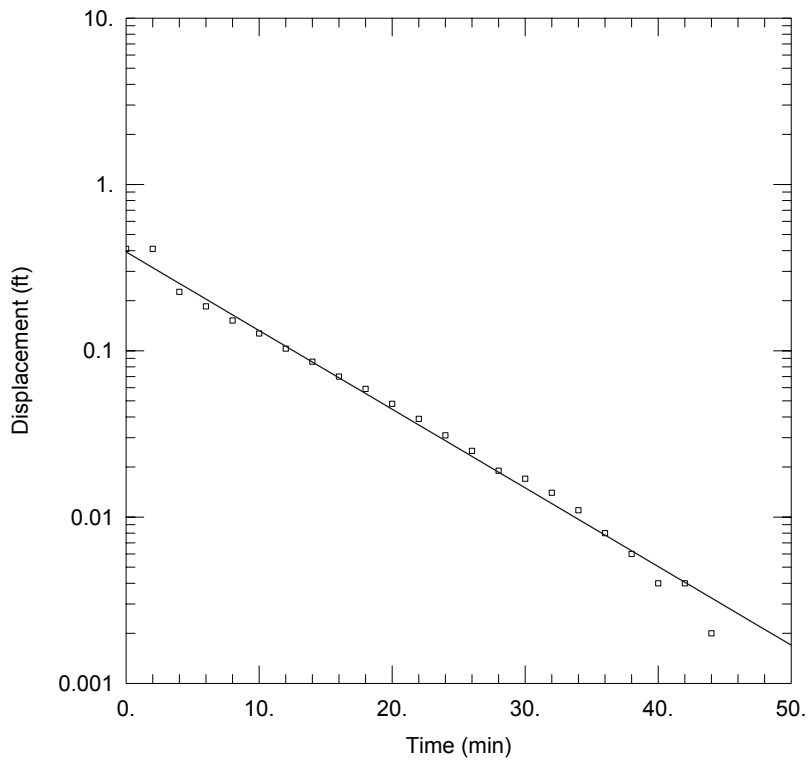


Observed slug test water level response and interpretive straight-line fit to the measured data for SB16 Test 2, Step 1.

FIGURE F.3 (Cont.)

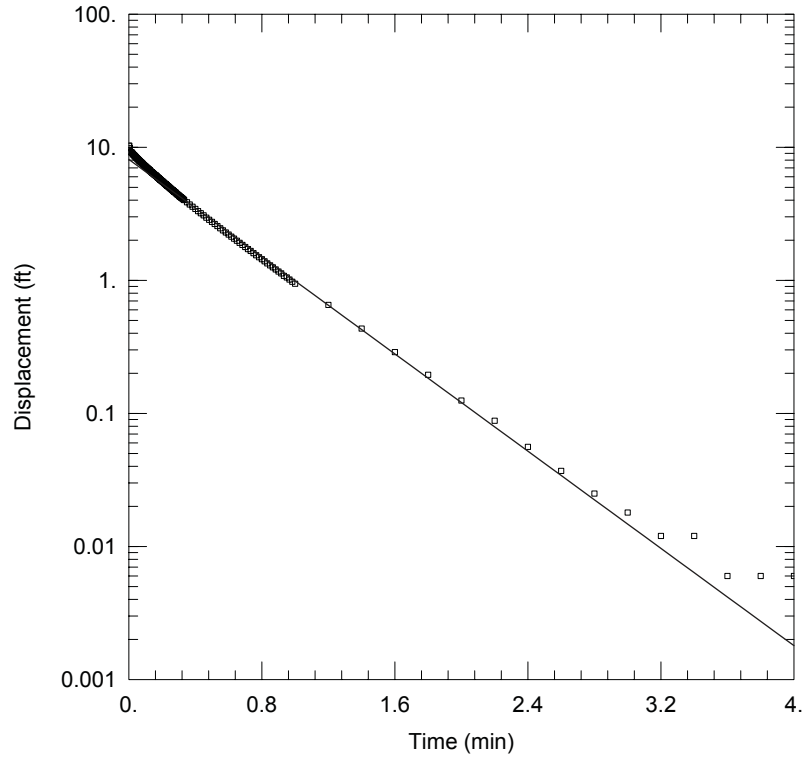


Observed slug test water level response and interpretive straight-line fit to the measured data for SB18 Slug In.

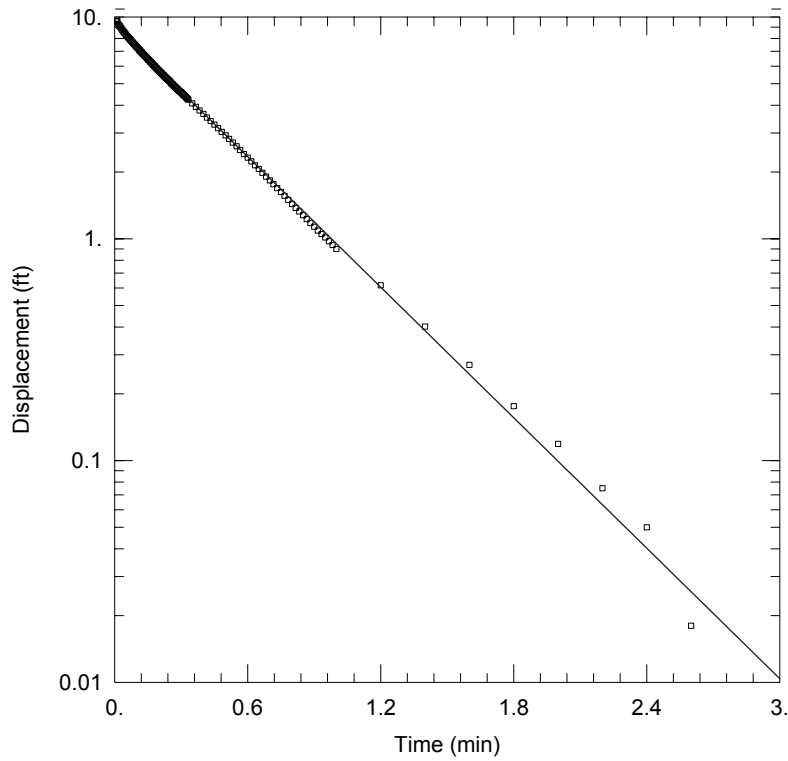


Observed slug test water level response and interpretive straight-line fit to the measured data for SB18 Slug Out.

FIGURE F.4 Observed slug test water level response and interpretive fit for the data for SB18 shown in Table S2.4.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB19 Test 0, Step 0.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB19 Test 0, Step 1.

FIGURE F.5 Observed slug test water level response and interpretive fit for the data for SB19 shown in Table S2.5.

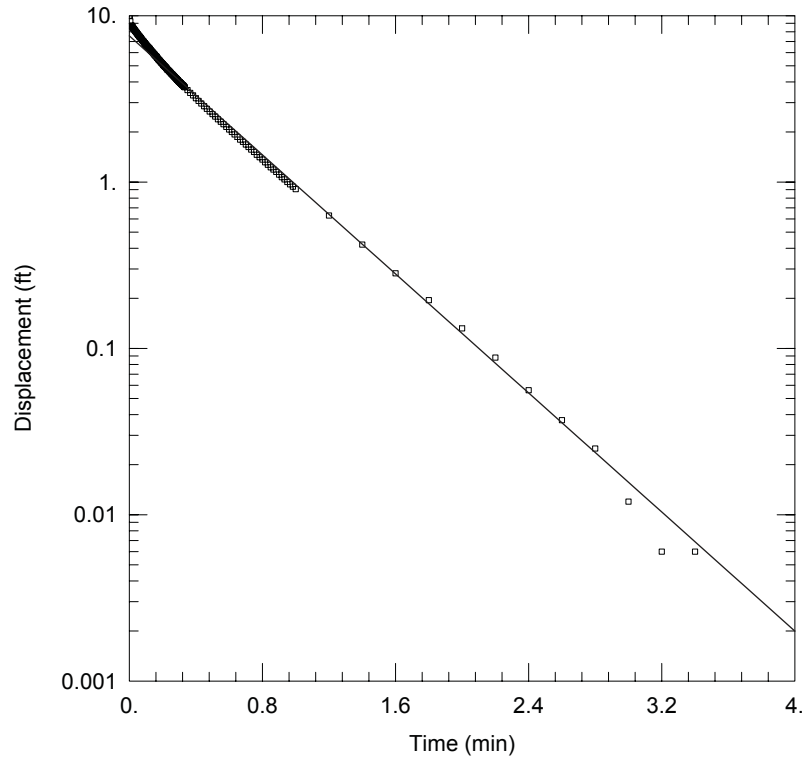
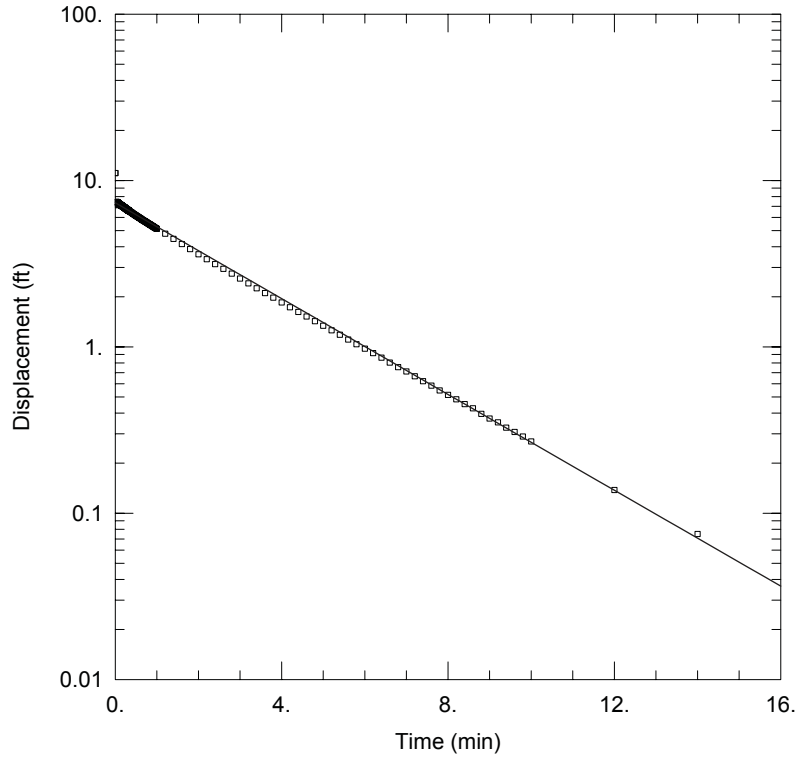
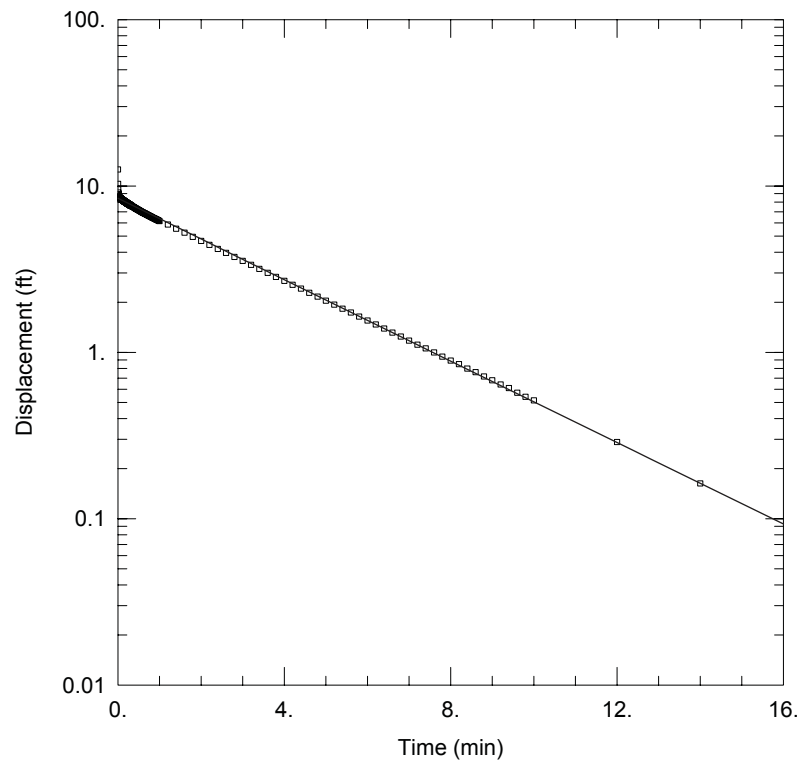


FIGURE F.5 (Cont.)



Observed slug test water level response and interpretive straight-line fit to the measured data for SB22 Test 0, Step 0.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB22 Test 0, Step 1.

FIGURE F.6 Observed slug test water level response and interpretive fit for the data for SB22 shown in Table S2.6.

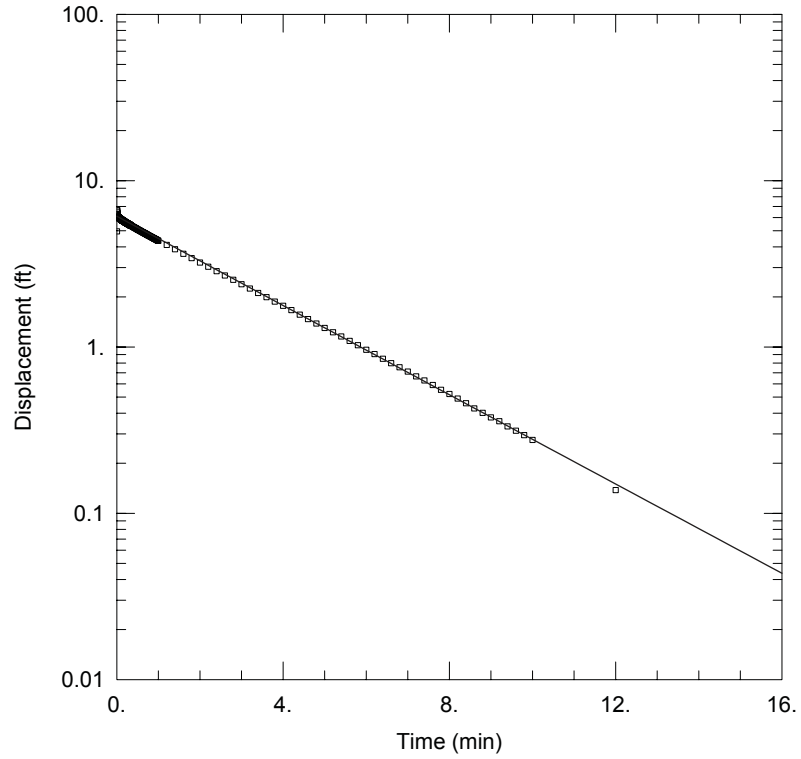
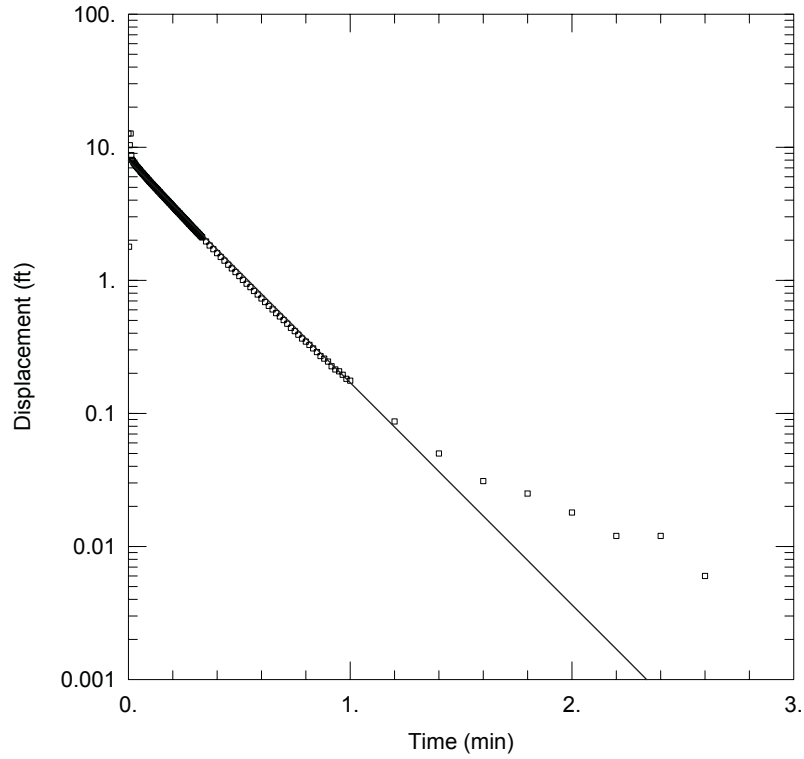
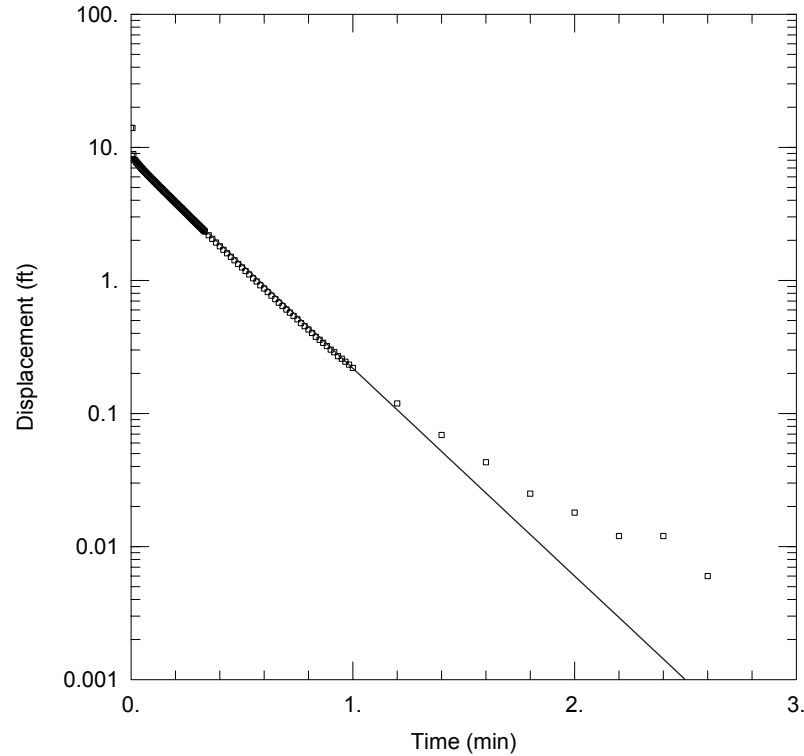


FIGURE F.6 (Cont.)

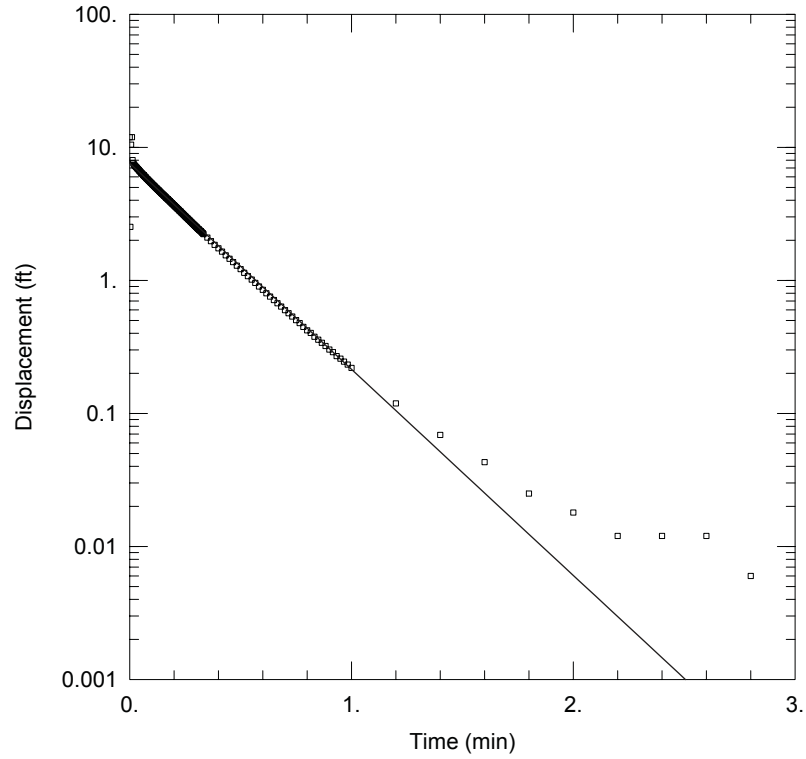


Observed slug test water level response and interpretive straight-line fit to the measured data for SB31 Test 3, Step 0.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB31 Test 3, Step 1.

FIGURE F.7 Observed slug test water level response and interpretive fit for the data for SB31 shown in Table S2.7.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB31 Test 3, Step 2.

FIGURE F.7 (Cont.)

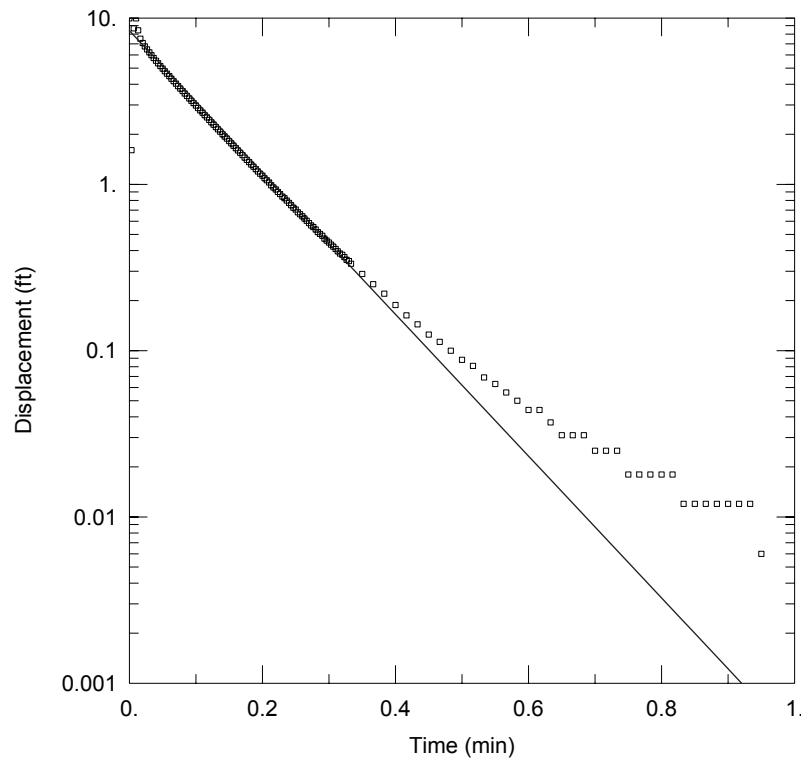
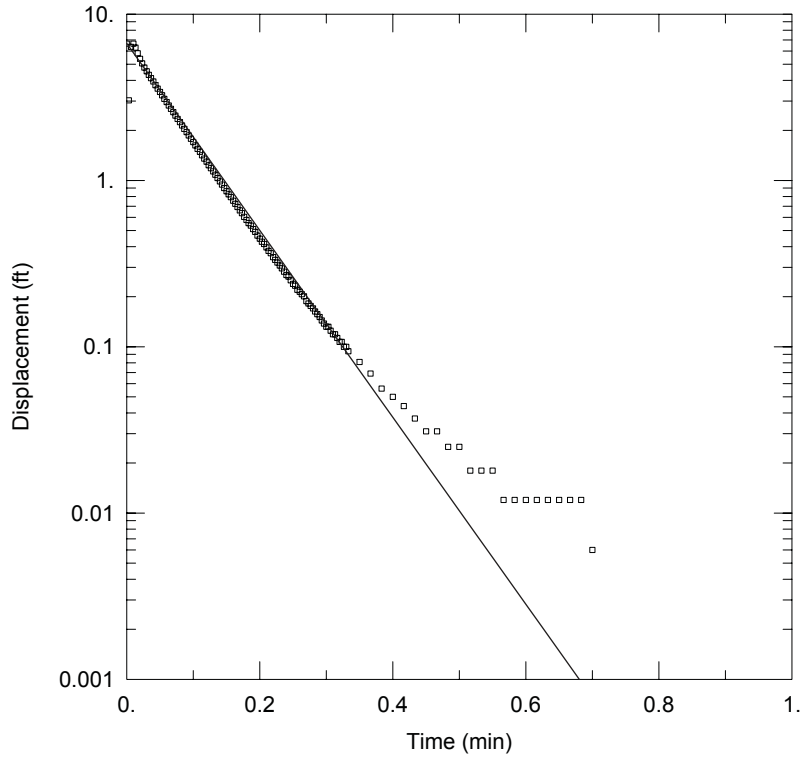
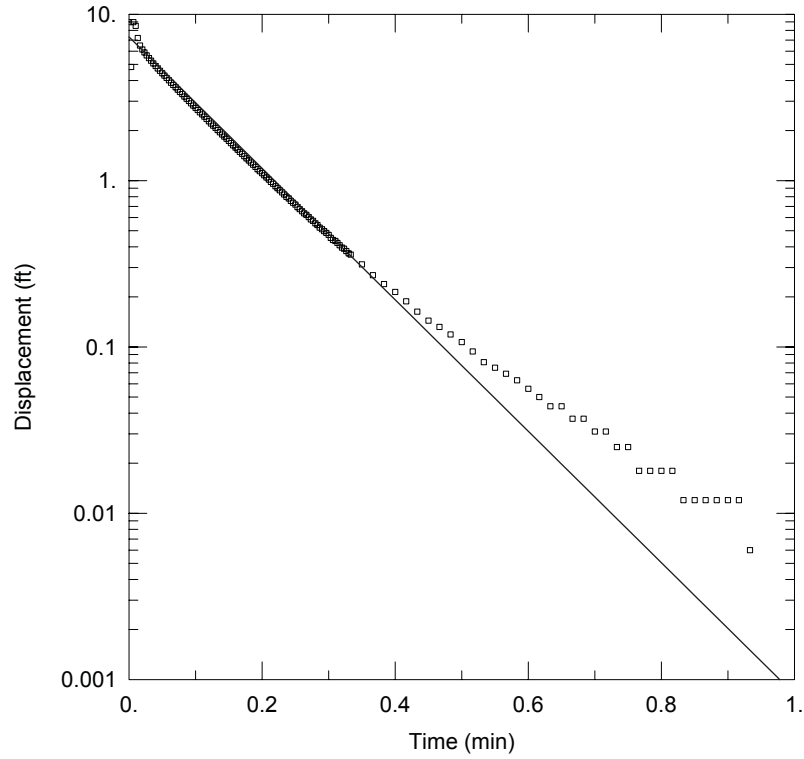
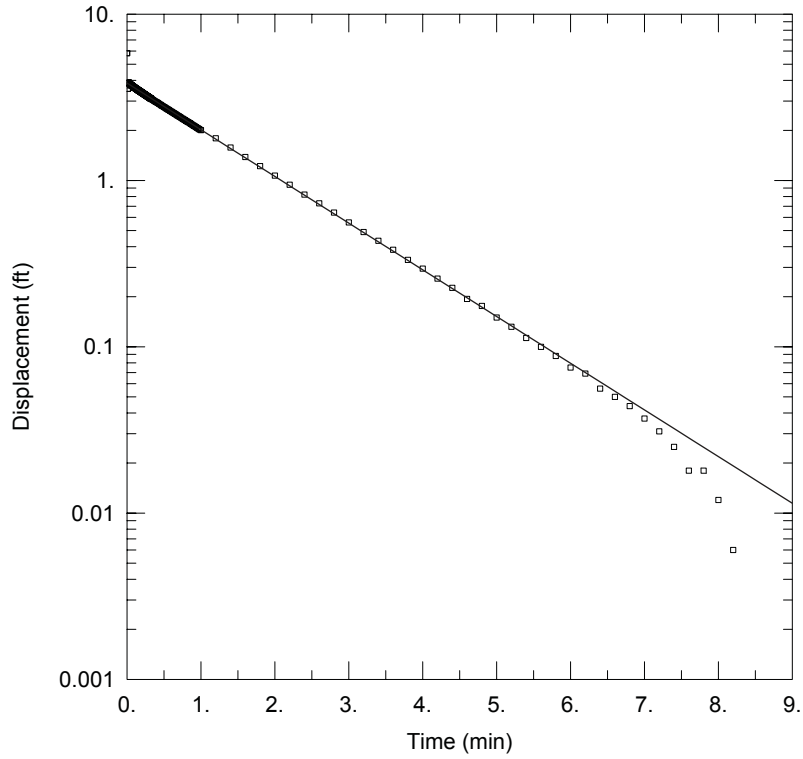


FIGURE F.8 Observed slug test water level response and interpretive fit for the data for SB34 shown in Table S2.8.

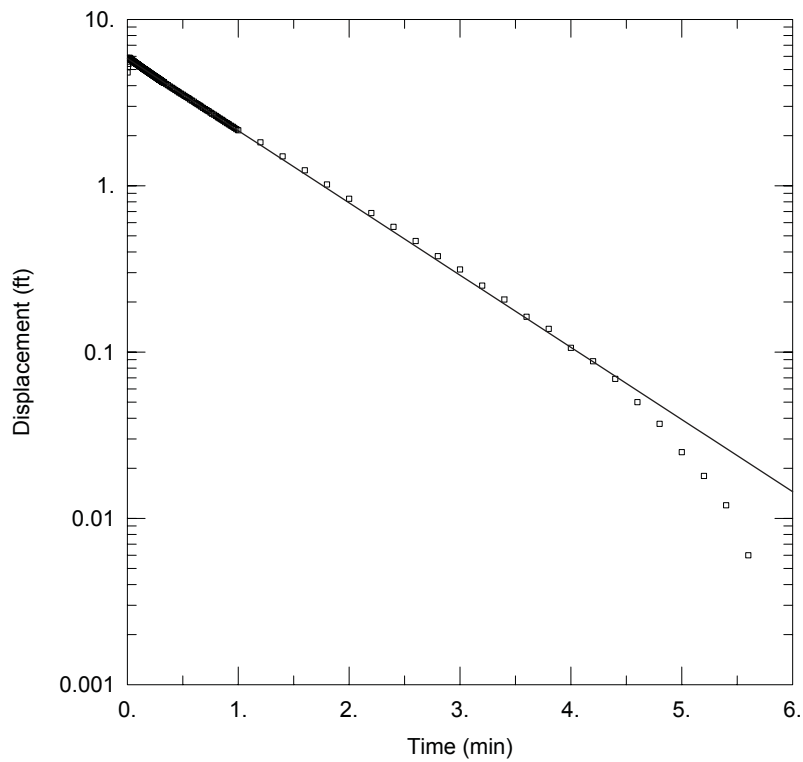


Observed slug test water level response and interpretive straight-line fit to the measured data for SB34 Test 4, Step 2.

FIGURE F.8 (Cont.)

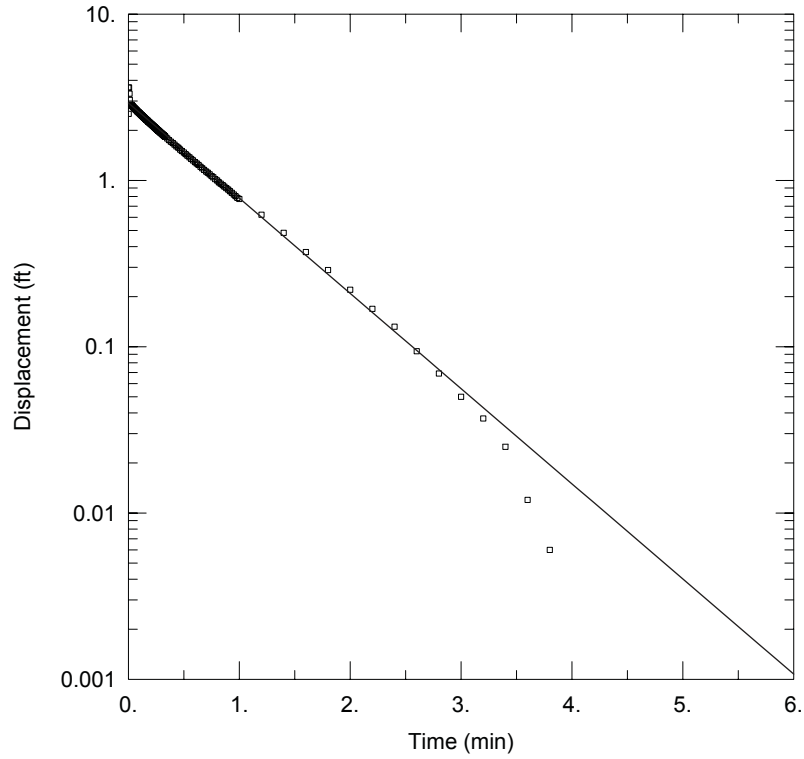


Observed slug test water level response and interpretive straight-line fit to the measured data for SB49 Test 1, Step 0.

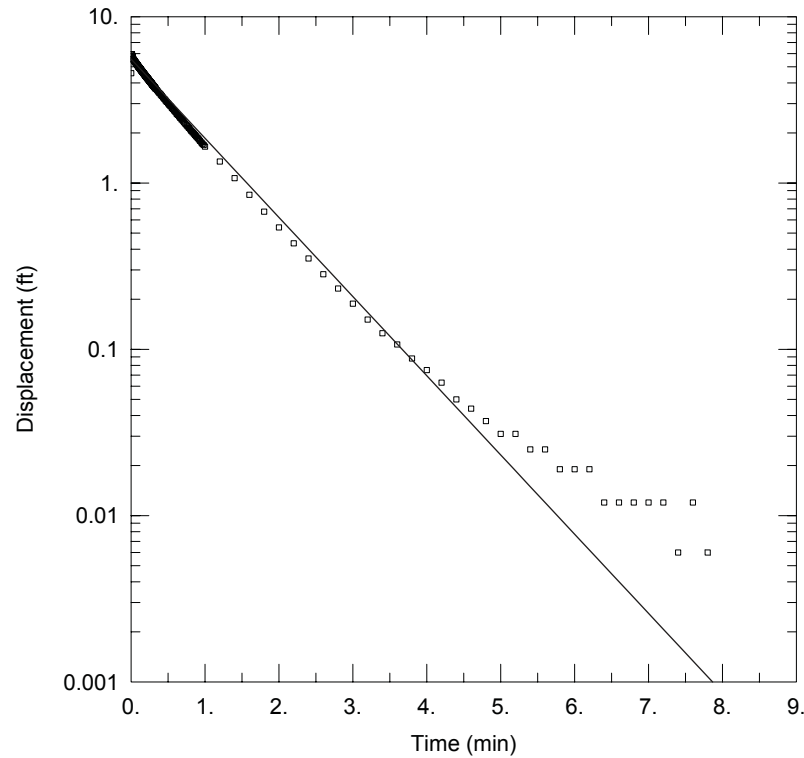


Observed slug test water level response and interpretive straight-line fit to the measured data for SB49 Test 1, Step 1.

FIGURE F.9 Observed slug test water level response and interpretive fit for the data for SB49 shown in Table S2.9.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB49 Test 1, Step 2.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB49 Test 7, Step 0.

FIGURE F.9 (Cont.)

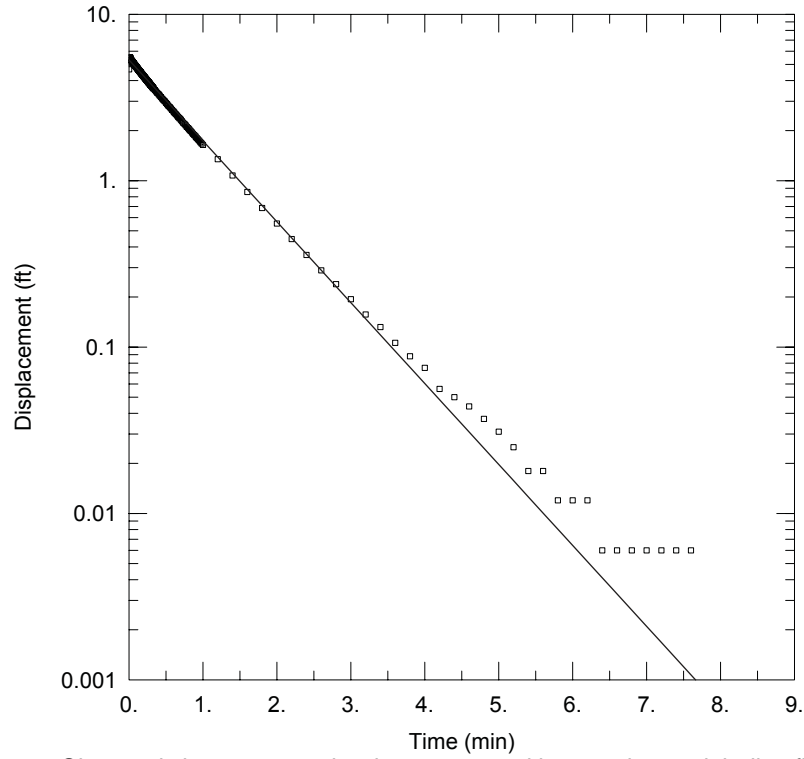
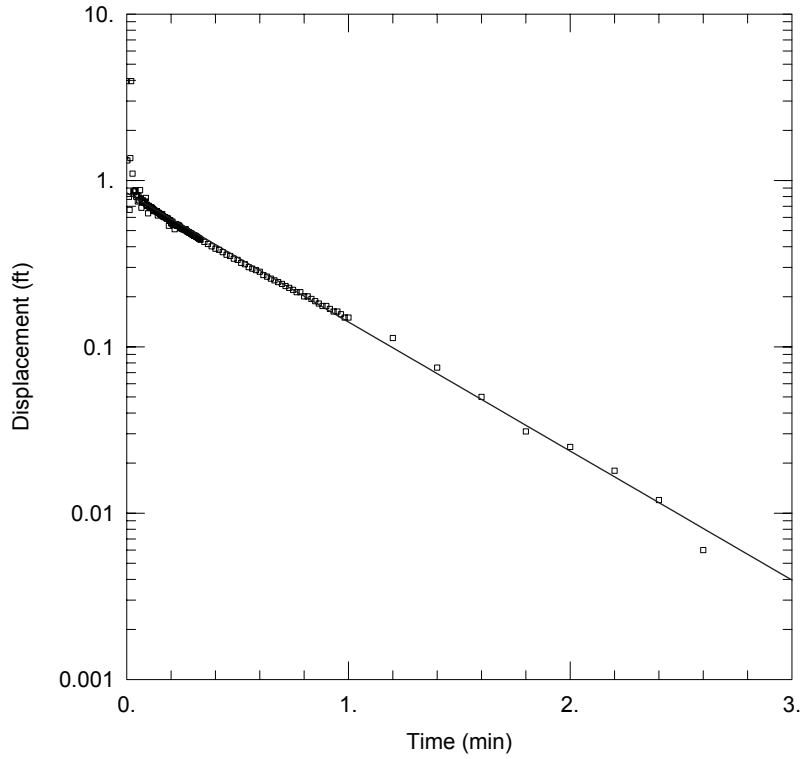
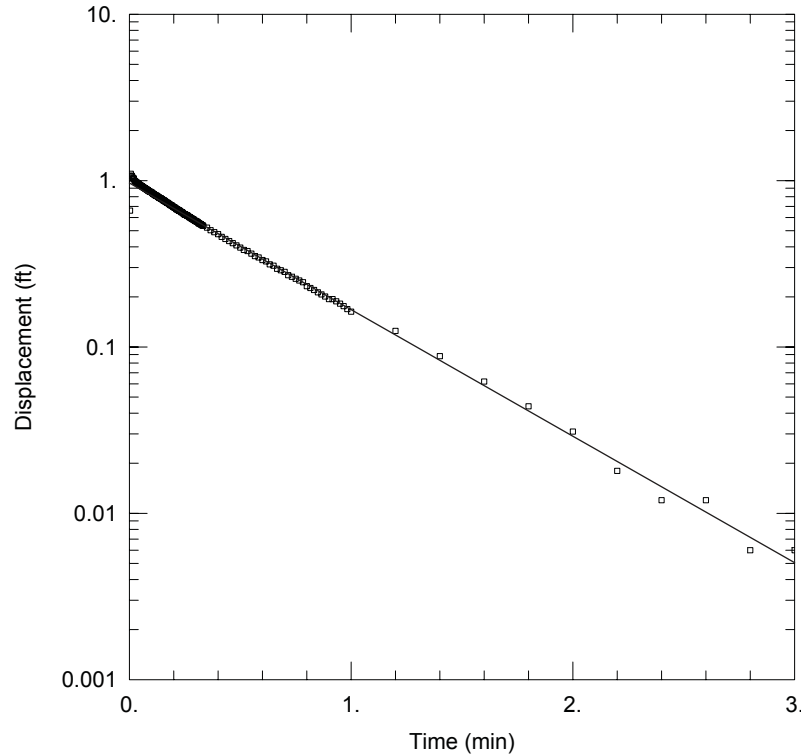


FIGURE F.9 (Cont.)

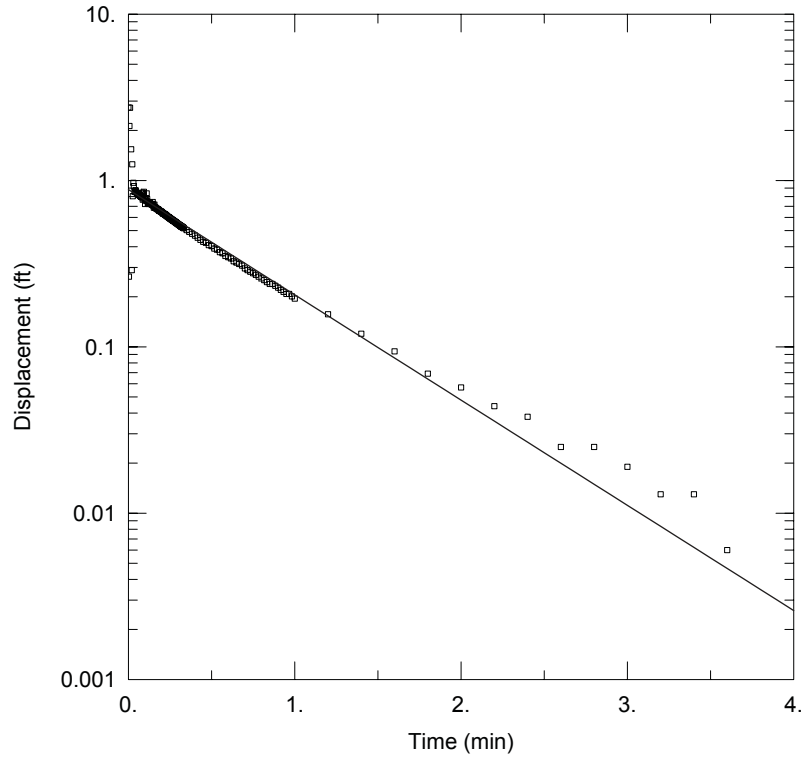


Observed slug test water level response and interpretive straight-line fit to the measured data for SB60 Test 4, Step 0.

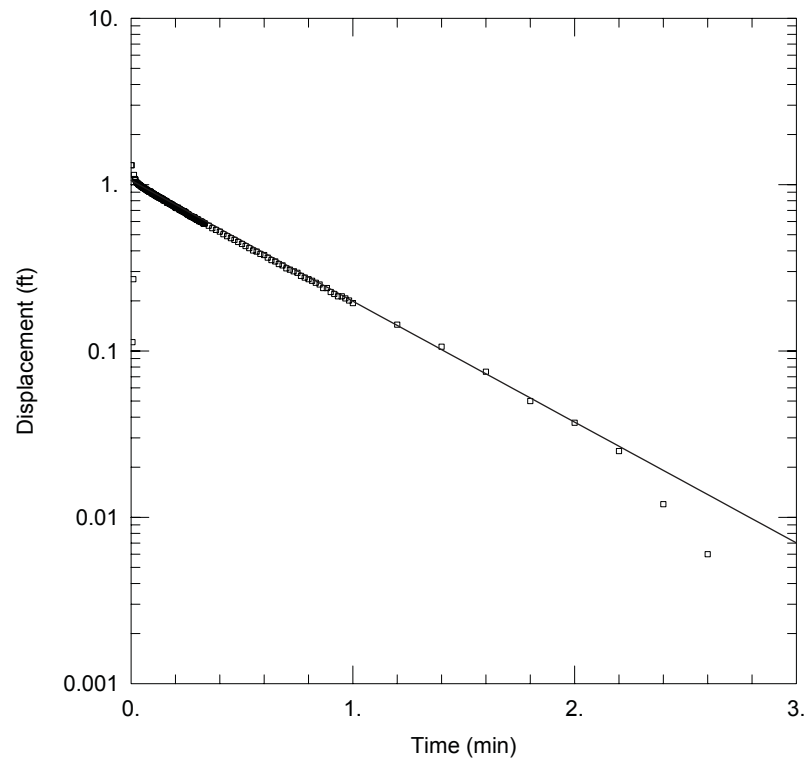


Observed slug test water level response and interpretive straight-line fit to the measured data for SB60 Test 4, Step 1.

FIGURE F.10 Observed slug test water level response and interpretive fit for the data for SB60 shown in Table S2.10.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB60 Test 4, Step 2.



Observed slug test water level response and interpretive straight-line fit to the measured data for SB60 Test 4, Step 3.

FIGURE F.10 (Cont.)

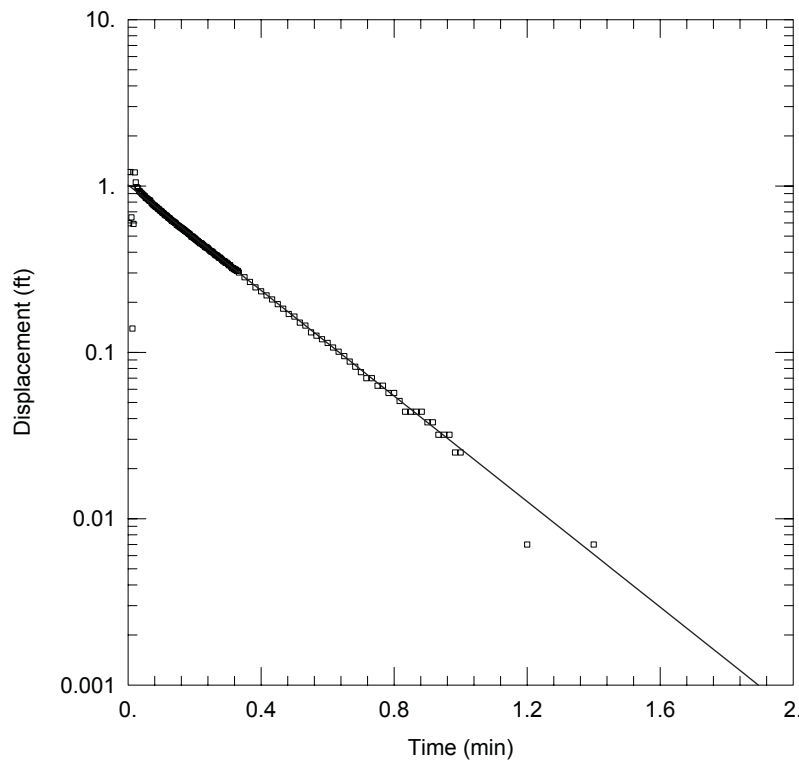
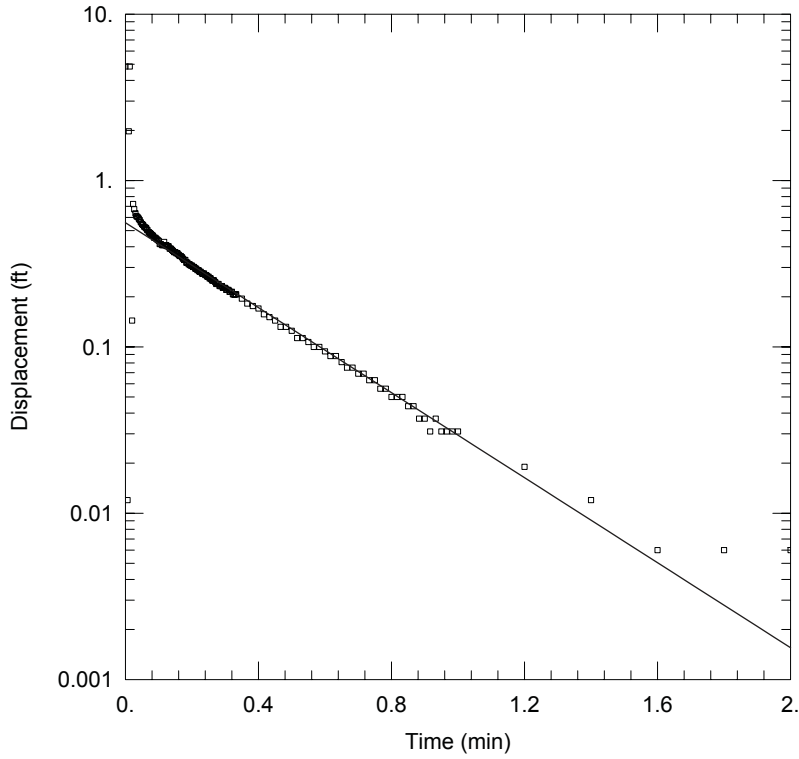


FIGURE F.11 Observed slug test water level response and interpretive fit for the data for SB62 shown in Table S2.11.

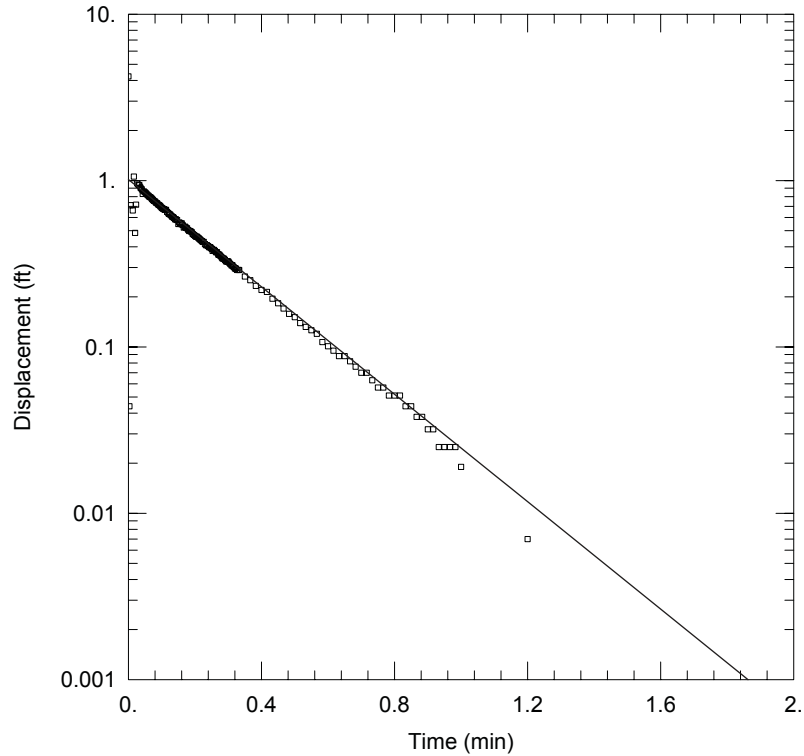
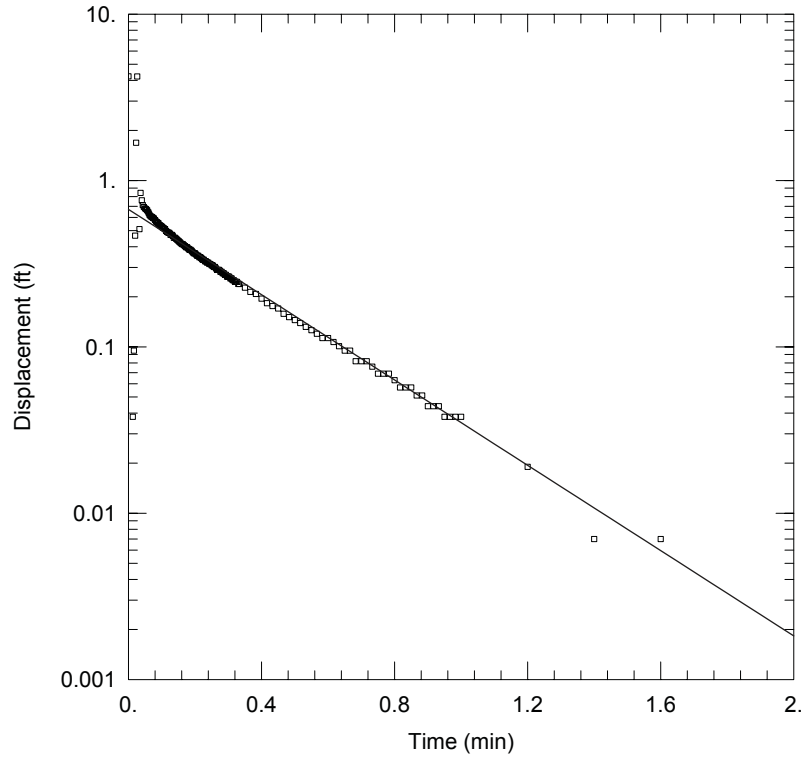
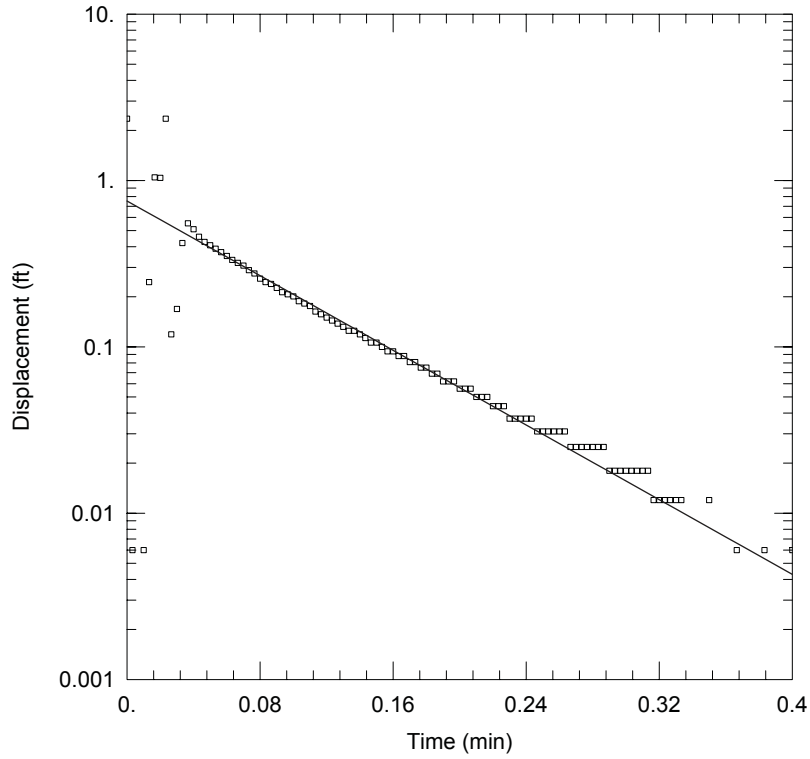
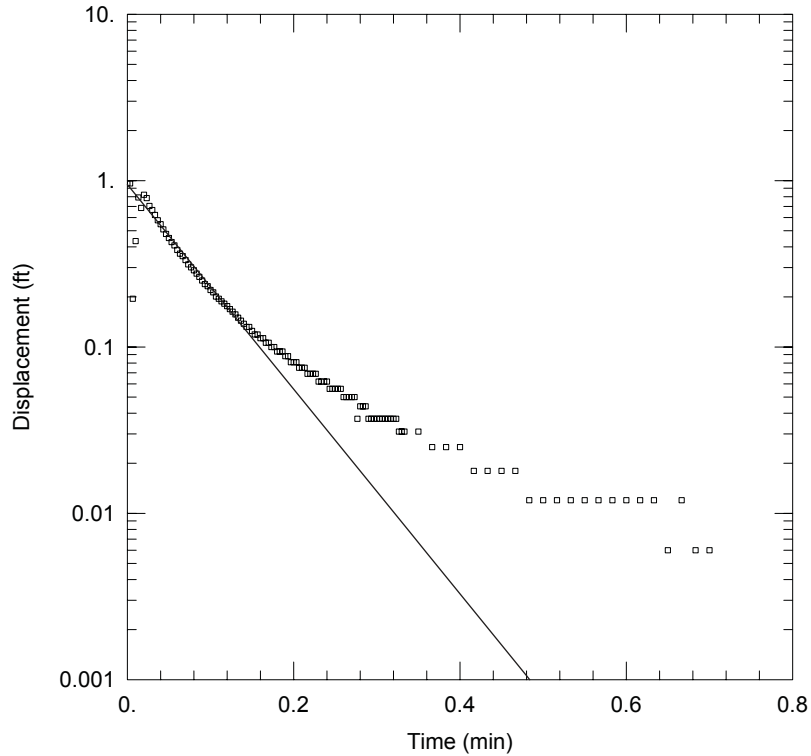


FIGURE F.11 (Cont.)

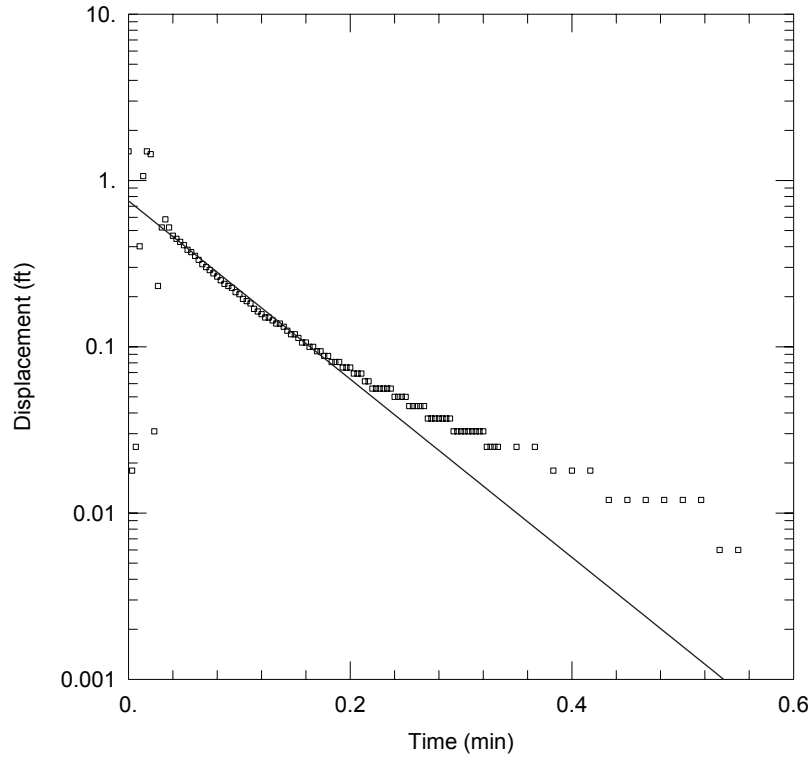


Observed slug test water level response and interpretive straight-line fit to the measured data for SB64 Test 5, Step 0.

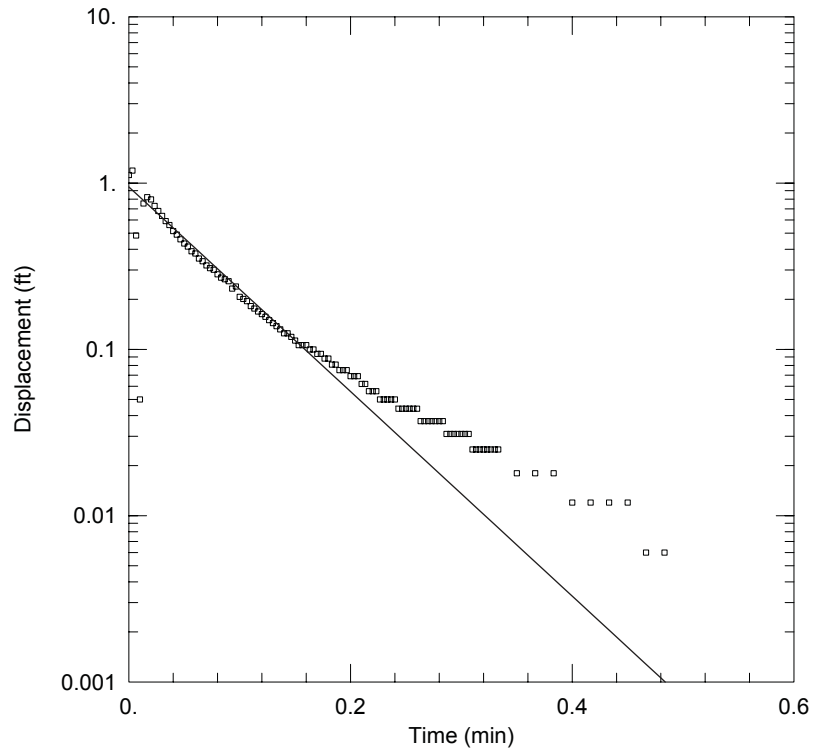


Observed slug test water level response and interpretive straight-line fit to the measured data for SB64 Test 5, Step 1.

FIGURE F.12 Observed slug test water level response and interpretive fit for the data for SB64 shown in Table S2.12.

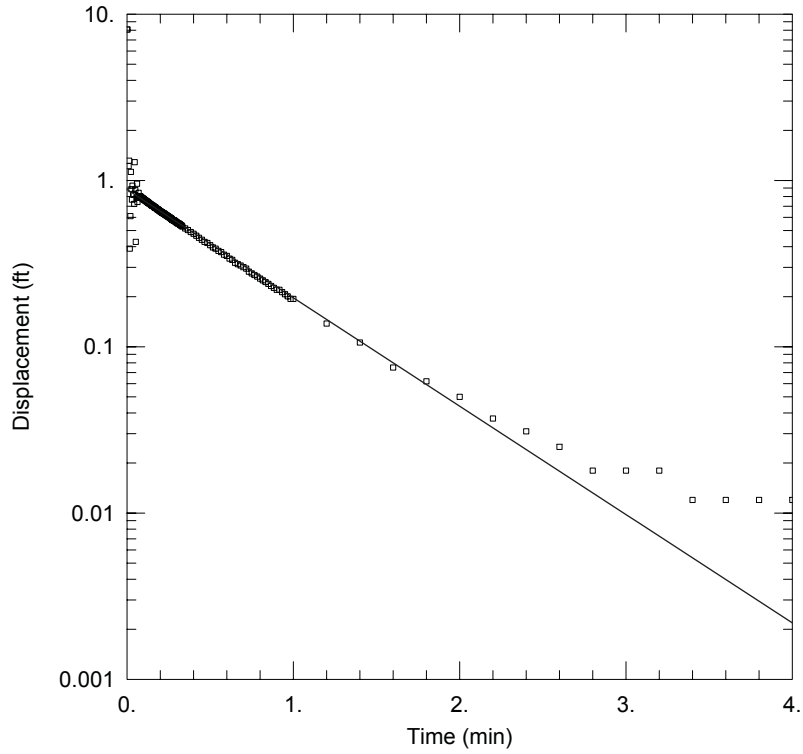


Observed slug test water level response and interpretive straight-line fit to the measured data for SB64 Test 5, Step 2.

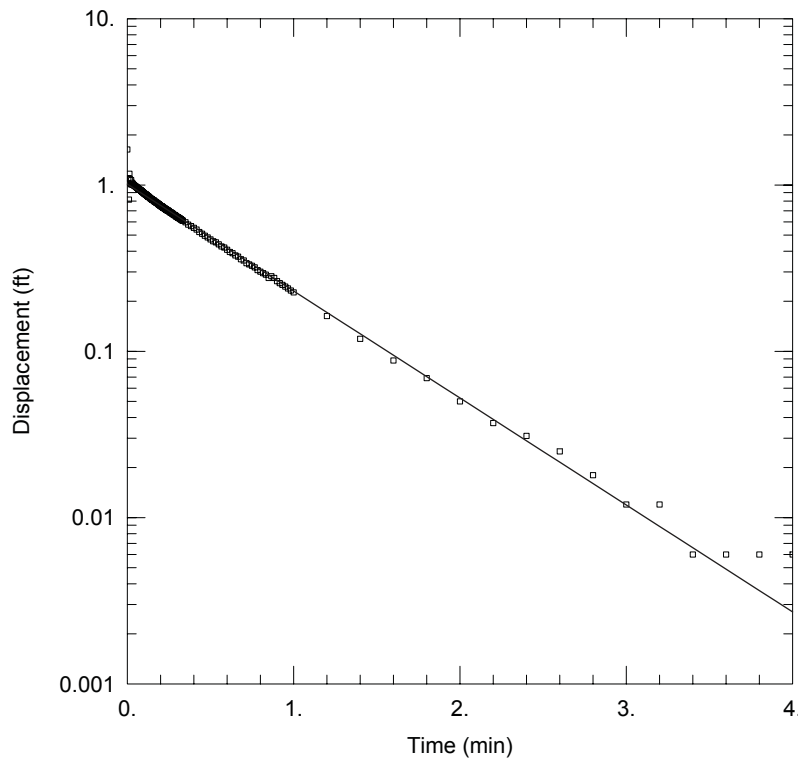


Observed slug test water level response and interpretive straight-line fit to the measured data for SB64 Test 5, Step 3.

FIGURE F.12 (Cont.)

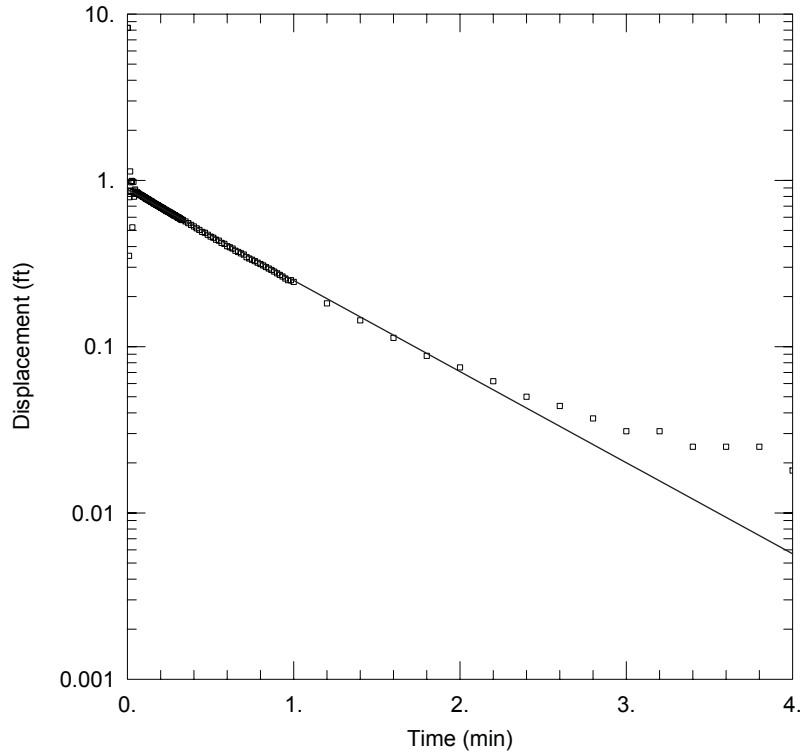


Observed slug test water level response and interpretive straight-line fit to the measured data for SB66 Test 3, Step 0.

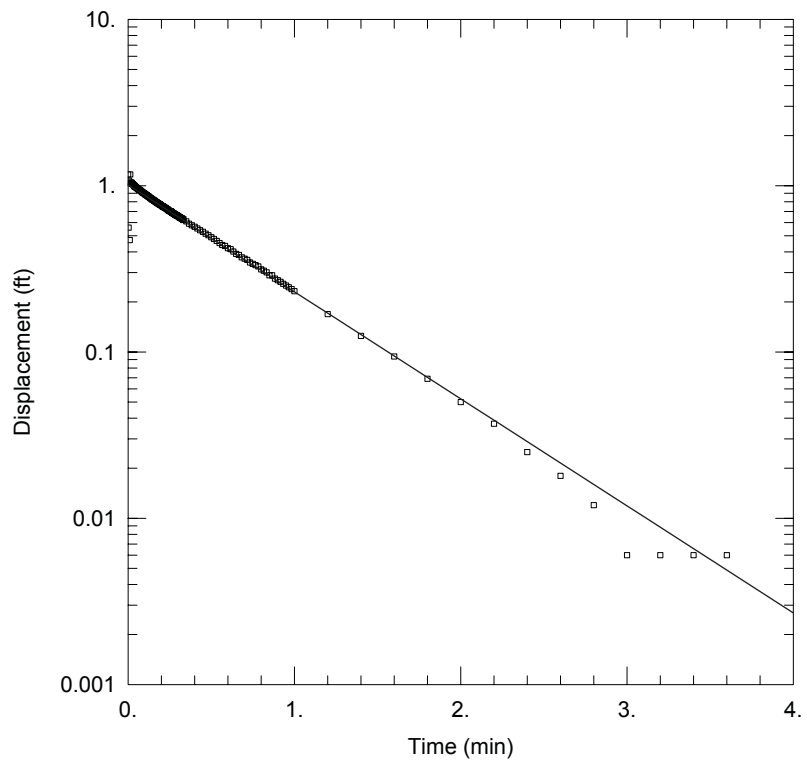


Observed slug test water level response and interpretive straight-line fit to the measured data for SB66 Test 3, Step 1.

FIGURE F.13 Observed slug test water level response and interpretive fit for the data for SB66 shown in Table S2.13.

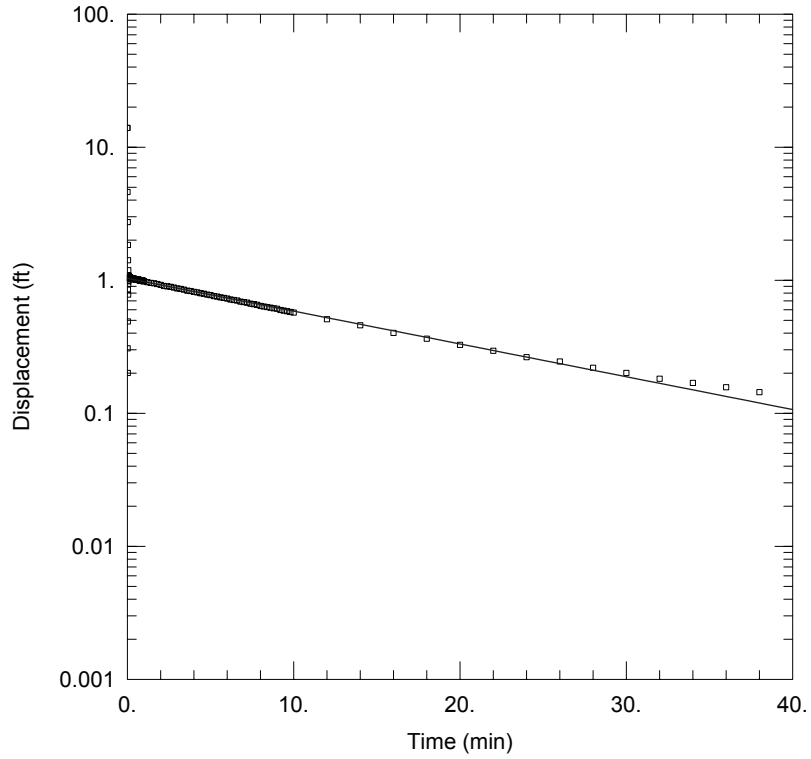


Observed slug test water level response and interpretive straight-line fit to the measured data for SB66 Test 3, Step 2.

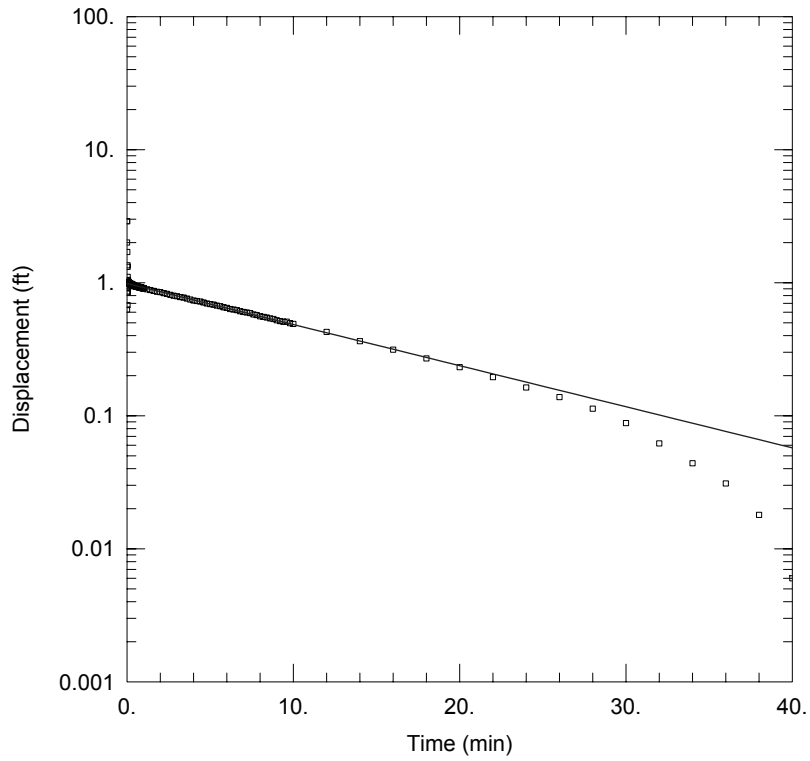


Observed slug test water level response and interpretive straight-line fit to the measured data for SB66 Test 3, Step 3.

FIGURE F.13 (Cont.)

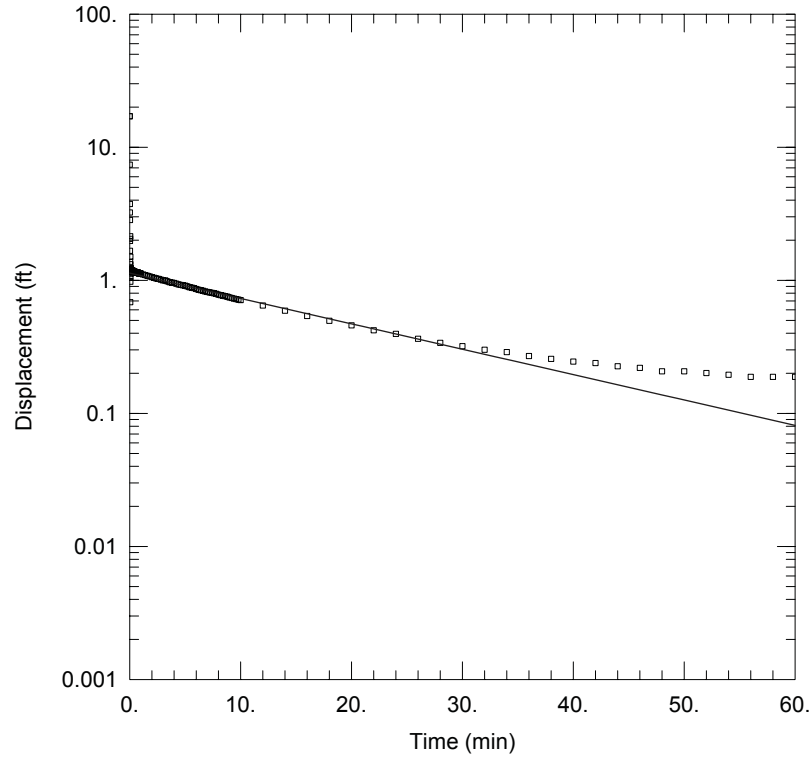


Observed slug test water level response and interpretive straight-line fit to the measured data for SB67 Test 2, Step 0.

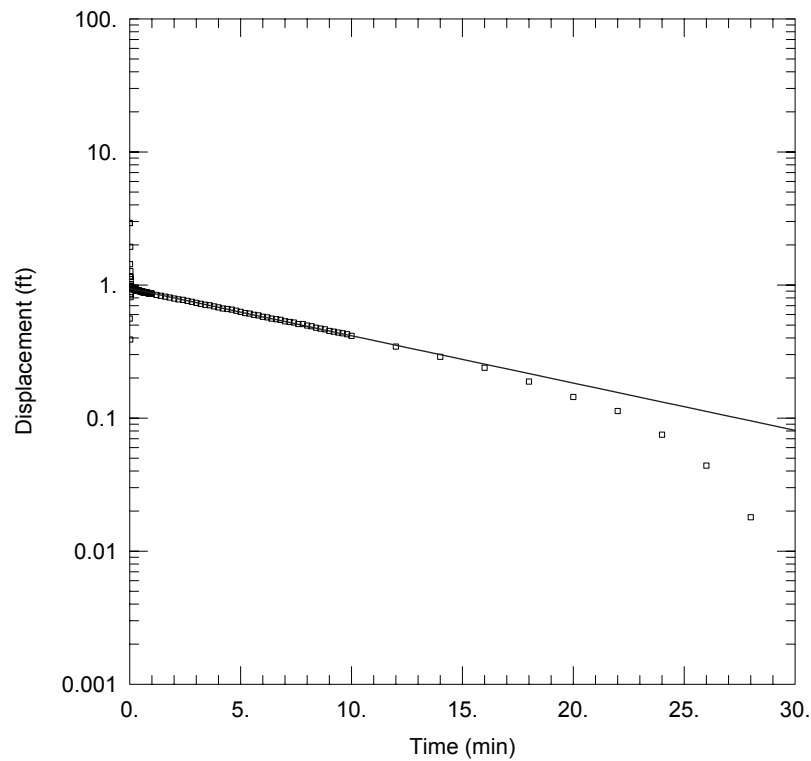


Observed slug test water level response and interpretive straight-line fit to the measured data for SB67 Test 2, Step 1.

FIGURE F.14 Observed slug test water level response and interpretive fit for the data for SB67 shown in Table S2.14.

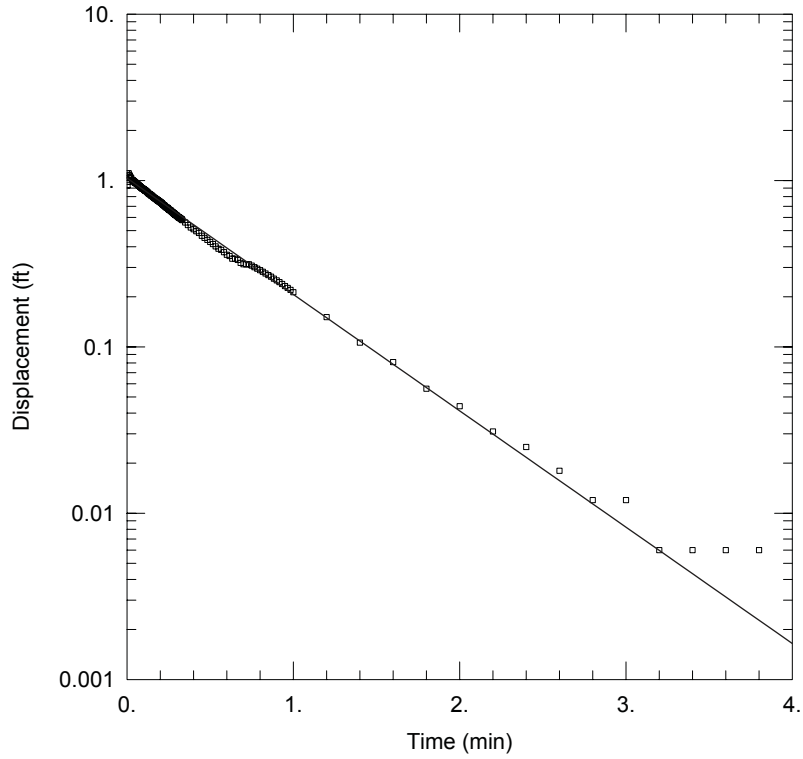


Observed slug test water level response and interpretive straight-line fit to the measured data for SB67 Test 2, Step 2.

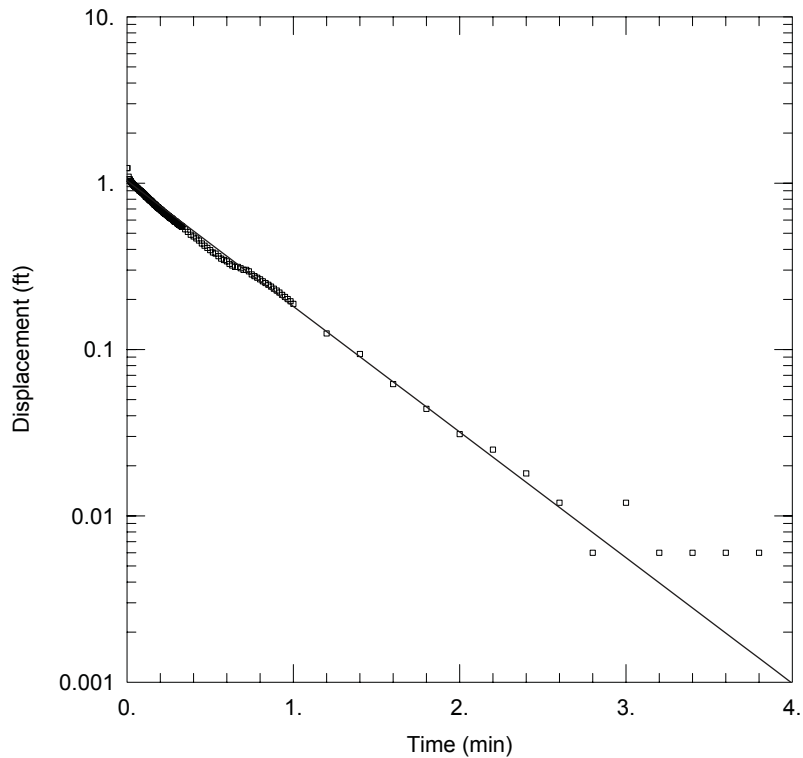


Observed slug test water level response and interpretive straight-line fit to the measured data for SB67 Test 2, Step 3.

FIGURE F.14 (Cont.)

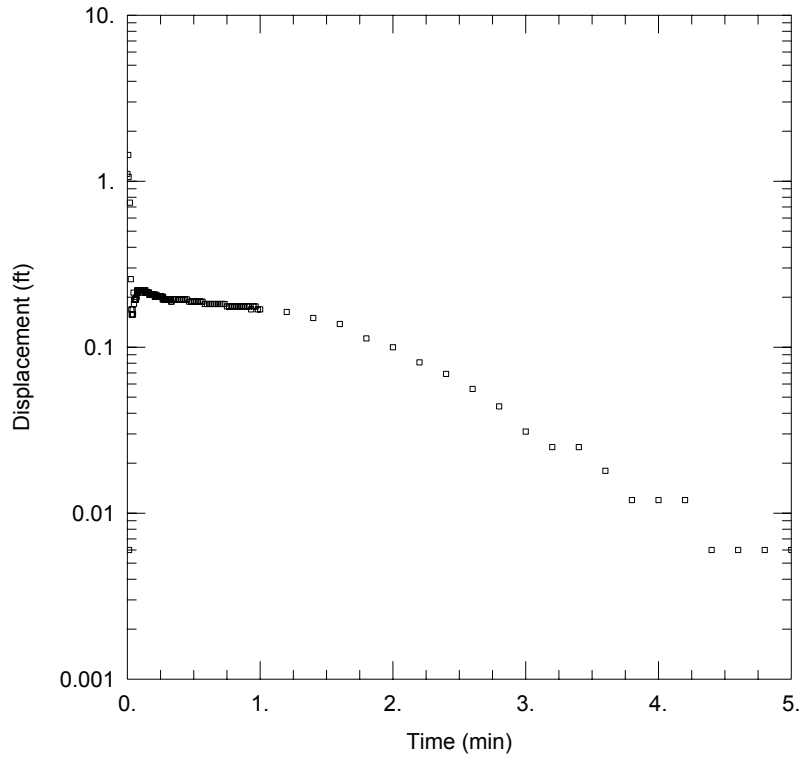


Observed slug test water level response and interpretive straight-line fit to the measured data for SB68 Test 1, Step 0.

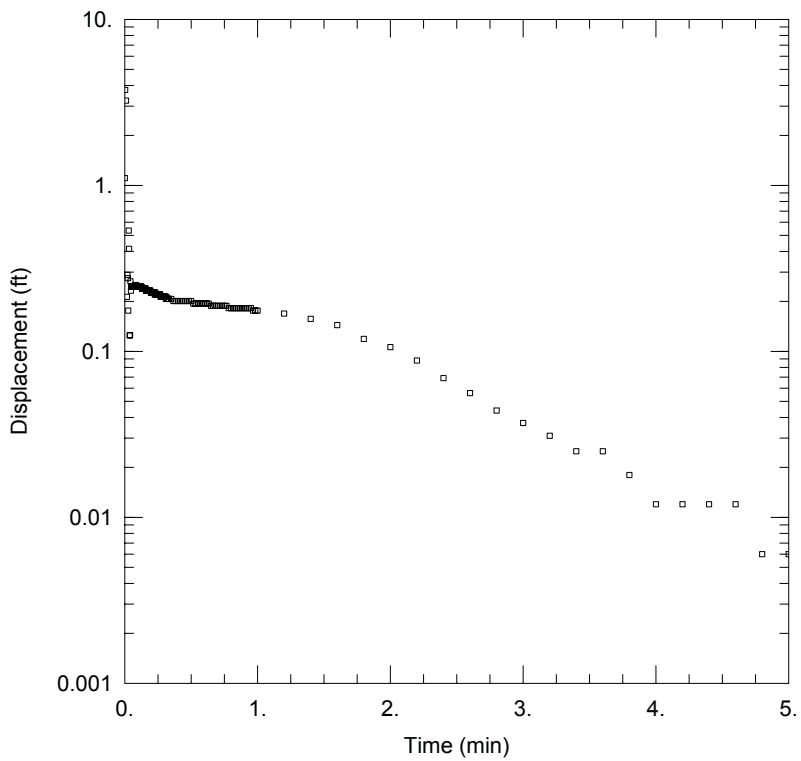


Observed slug test water level response and interpretive straight-line fit to the measured data for SB68 Test 1, Step 2.

FIGURE F.15 Observed slug test water level response and interpretive fit for the data for SB68 shown in Table S2.15.



Observed slug test water level response to the measured data for SB68 Test 1, Step 1.



Observed slug test water level response to the measured data for SB68 Test 1, Step 3.

FIGURE F.15 (Cont.)

Appendix G:

**Pump Test Data and
Evaluation of Correction Factors**

Appendix G:

Pump Test Data and Evaluation of Correction Factors

G.1 Results of MW1 Aquifer Pumping Test

The flow rates recorded for MW1 in the pumping test are in Table G.1.

TABLE G.1 Flow rate information for well MW1 during the aquifer pumping test on February 17–18, 2003, at Everest, Kansas.

Time	Elapsed Time (min)	MW1 Flow Rate (gal/min)		Duration (min)	Volume Pumped (gal)	
		Instantaneous	Average ^a		Interval	Cumulative
11:15	0					
11:24	9	0.82	0.82	9	7.38	7.38
11:30	15	0.93	0.88	6	5.25	12.63
11:38	23	0.92	0.93	8	7.40	20.03
11:43	28	1.01	0.97	5	4.83	24.86
11:50	35	1.01	1.01	7	7.07	31.93
11:56	41	1.08	1.05	6	6.27	38.20
12:02	47	1.09	1.09	6	6.51	44.71
12:08	53	1.07	1.08	6	6.48	51.19
12:18	63	1.09	1.08	10	10.80	61.99
12:33	78	1.07	1.08	15	16.20	78.19
12:48	93	1.10	1.09	15	16.28	94.46
13:25	130	1.17	1.14	37	42.00	136.46
13:52	157	1.15	1.16	27	31.32	167.78
14:25	190	1.10	1.13	33	37.13	204.90
14:46	211	1.12	1.11	21	23.31	228.21
15:17	242	1.09	1.11	31	34.26	262.47
15:46	271	1.09	1.09	29	31.61	294.08
16:02	287	1.11	1.10	16	17.60	311.68
16:34	319	1.09	1.10	32	35.20	346.88
16:53	338	1.09	1.09	19	20.71	367.59
17:48	393	0.98	1.04	55	56.93	424.51
18:00	405	1.24	1.11	12	13.32	437.83
18:09	414	1.22	1.23	9	11.07	448.90
18:16	421	1.23	1.23	7	8.58	457.48
18:22	427	1.14	1.19	6	7.11	464.59
18:28	433	1.14	1.14	6	6.84	471.43
18:43	448	1.09	1.12	15	16.73	488.15
19:12	477	1.11	1.10	29	31.90	520.05
19:27	492	1.12	1.12	15	16.73	536.78
20:02	527	1.07	1.10	35	38.33	575.10
20:09	534	1.11	1.09	7	7.63	582.73
20:40	565	0.98	1.05	31	32.40	615.13
20:46	571	1.23	1.11	6	6.63	621.76
20:54	579	1.16	1.20	8	9.56	631.32
21:30	615	1.15	1.16	36	41.58	672.90
22:02	647	1.14	1.15	32	36.64	709.54

TABLE G.1 (Cont.)

Time	Elapsed Time (min)	MW1 Flow Rate (gal/min)		Duration (min)	Volume Pumped (gal)	
		Instantaneous	Average ^a		Interval	Cumulative
22:39	684	1.12	1.13	37	41.81	751.35
23:14	719	1.12	1.12	35	39.20	790.55
23:49	754	1.09	1.11	35	38.68	829.22
0:20	785	1.20	1.15	31	35.50	864.72
0:50	815	1.20	1.20	30	36.00	900.72
1:23	848	1.19	1.20	33	39.44	940.15
1:54	879	1.19	1.19	31	36.89	977.04
2:30	915	1.19	1.19	36	42.84	1019.88
3:00	945	1.17	1.18	30	35.40	1055.28
3:32	977	1.14	1.16	32	36.96	1092.24
3:59	1004	1.13	1.14	27	30.65	1122.89
4:38	1043	1.14	1.14	39	44.27	1167.15
5:01	1066	1.14	1.14	23	26.22	1193.37
5:28	1093	1.13	1.14	27	30.65	1224.02
6:05	1130	1.12	1.13	37	41.63	1265.64
6:33	1158	1.13	1.13	28	31.50	1297.14
7:01	1186	1.12	1.13	28	31.50	1328.64
7:31	1216	1.13	1.13	30	33.75	1362.39
8:00	1245	1.12	1.13	29	32.63	1395.02
8:32	1277	1.11	1.12	32	35.68	1430.70
9:01	1306	1.12	1.12	29	32.34	1463.03
9:30	1335	1.11	1.12	29	32.34	1495.37
10:01	1366	1.13	1.12	31	34.72	1530.09
10:32	1397	1.12	1.13	31	34.88	1564.96
10:59	1424	1.12	1.12	27	30.24	1595.20
11:30	1455		1.12	31	34.72	1629.92
Overall average rate			1.12			
Maximum average rate (16 min)			1.23^b			
Minimum average rate (9 min)			0.82^b			

^a Average flow rate during the period (defined in "Duration" column) between this measurement and previous one.

^b Maximum and minimum average values over any period between two measurements.

G.2 Evaluation of Correction Factors for the Drawdown Data Obtained from the MW1 Pumping Test

Before the pumping test at MW1 began, automatic data recorders programmed to take readings at 4-hr intervals were used to monitor groundwater levels continuously in piezometers SB01, SB09, and SB34 for 23 days and in MW1 for 16 days. The monitoring continued for several days after pumping ended. The purpose was to identify possible trends in the patterns of water level fluctuations at these locations that might affect the water level responses observed during the pumping (24-hr) and recovery (24-hr) periods of the actual aquifer test. Atmospheric pressure variations during this period were measured simultaneously on-site to determine the barometric response of each boring. The results of the monitoring are presented in Table S3.2 and are summarized in Figure G.1.

Water level monitoring was suspended at MW1 on February 10, 2004, to permit the redevelopment of the well. Subsequent water level data recorded at MW1 are not included in Figure G.1 because of the much larger head changes during pumping and recovery of this well.

G.2.1 Evaluation of Barometric Efficiencies

Water levels measured in borings completed in confined and leaky confined aquifers respond to fluctuations in atmospheric pressure according to the barometric efficiency of each well or piezometer. Although these head changes are usually small, they can be significant for the interpretation of aquifer test drawdown data for observation points in which the net total head change is also relatively small. Water level responses to barometric pressure changes are typically not observed in unconfined aquifers, or they are only minor.

Barometric efficiencies were computed for well MW1 and for observation points SB01, SB09, and SB34 (Figures G.2–G.5, respectively) by comparing the incremental changes in water levels (prior to the aquifer pumping test) between successive readings at each location with the corresponding changes in atmospheric pressure. The resulting barometric efficiency values (B.E. values in Figures G.2–G.5) for MW1, SB01, and SB34 were relatively consistent at approximately 8–10%. A higher value, approximately 24%, was observed for piezometer SB09.

These calculated barometric efficiency values are uncharacteristically low for the confined or possibly leaky confined aquifer conditions indicated by static water levels for the

Everest aquifer unit. The observed results suggest that the mineral matrix of the aquifer unit might have a relatively high degree of elasticity, or alternatively that the silts and clayey sand deposits that appear to confine the aquifer unit in the vicinity of the former CCC/USDA facility have sufficient permeability to transmit a major fraction of the atmospheric pressure directly to the potentiometric surface of the aquifer unit.

The calculated barometric efficiency values were used, in conjunction with barometric pressure measurements recorded during the Everest aquifer test, to correct the drawdown measurements obtained from MW1 and piezometers SB01, SB09, and SB34 for the effects of the continuous drop in barometric pressure observed (Figure G.1) throughout the pumping and recovery periods of the test. The corrections for barometric efficiency applied to the drawdown data for MW1, SB01, and SB34 are listed in Table S3.3, and the corrections for the recovery data for MW1 (see below) are in Table S3.4. The test data for SB09 were not used for the estimation of hydraulic parameters, in view of the questionable water level response to pumping at this location.

Figure G.6 shows the measured water level data for MW1, SB01, SB09, and SB34 after correction for the barometric pressure effects. Application of the corrections results in smoothing of each hydrograph, but both small-scale variations in the graphs and longer-term trends are still apparent. The small-scale variations that remain are likely the result of the imperfect barometric response for actual borings and the averaging incorporated into the calculation of the barometric efficiency factors.

G.2.2 Evaluation of Ambient Water Level Trends

Figure G.6 illustrates that the ambient water levels recorded at MW1 and at each of the observation piezometers showed a fairly consistent, approximately linear, trend of decline from January 24, 2003, to February 11, 2004, that cannot be attributed to barometric pressure influences. The corrected levels appeared to generally stabilize from February 11 until the measurements were temporarily discontinued for setup of the aquifer test equipment on February 16. After pumping ended, the water levels at each location rose beyond their levels at the onset of pumping during the first 24 hr of recovery. The rise continued until the water level recording was discontinued on February 20. The demonstrated reversal in ambient water level trends cannot be explained quantitatively; however, observations during the testing period indicated that up to 2 ft of snow in the area at the beginning of the testing on February 16, 2004,

had completely melted by the end of the monitoring period on February 20. Therefore, the rising water level trend observed at the testing site during the 24-hr recovery period and subsequently might reflect local recharge of surface melt to the Everest aquifer unit.

The exact onset in time of the rising trend in water levels cannot be identified with certainty; however, the results for piezometer SB09 showed little apparent decline in response to the pumping of MW1 and began to rise while the pumping continued. These observations suggest that the reversal of the ambient water level trend began during the pumping phase of the test. Because of this uncertainty, the drawdown data recorded for MW1, SB01, and SB34 were not corrected for the possible background trend. The hydrographs in Figure S3.6 suggest, however, that the influence of this trend probably affected the entire (24-hr) recovery period following the pumping test, at a background rate of rise of approximately 0.15–0.2 ft/day. A conservative, linear correction of 0.15 ft/day was therefore applied to the measured residual drawdown data for MW1 (see Table S3.4). The recovery data for SB01, SB09, and SB34 were not corrected or used for the possible estimation of aquifer hydraulic parameters because of the relatively small water level responses observed at these locations in comparison to the magnitude of the indicated trend correction. The final adjusted water level data used for the aquifer test interpretations are presented in Tables S3.3 and S3.4.

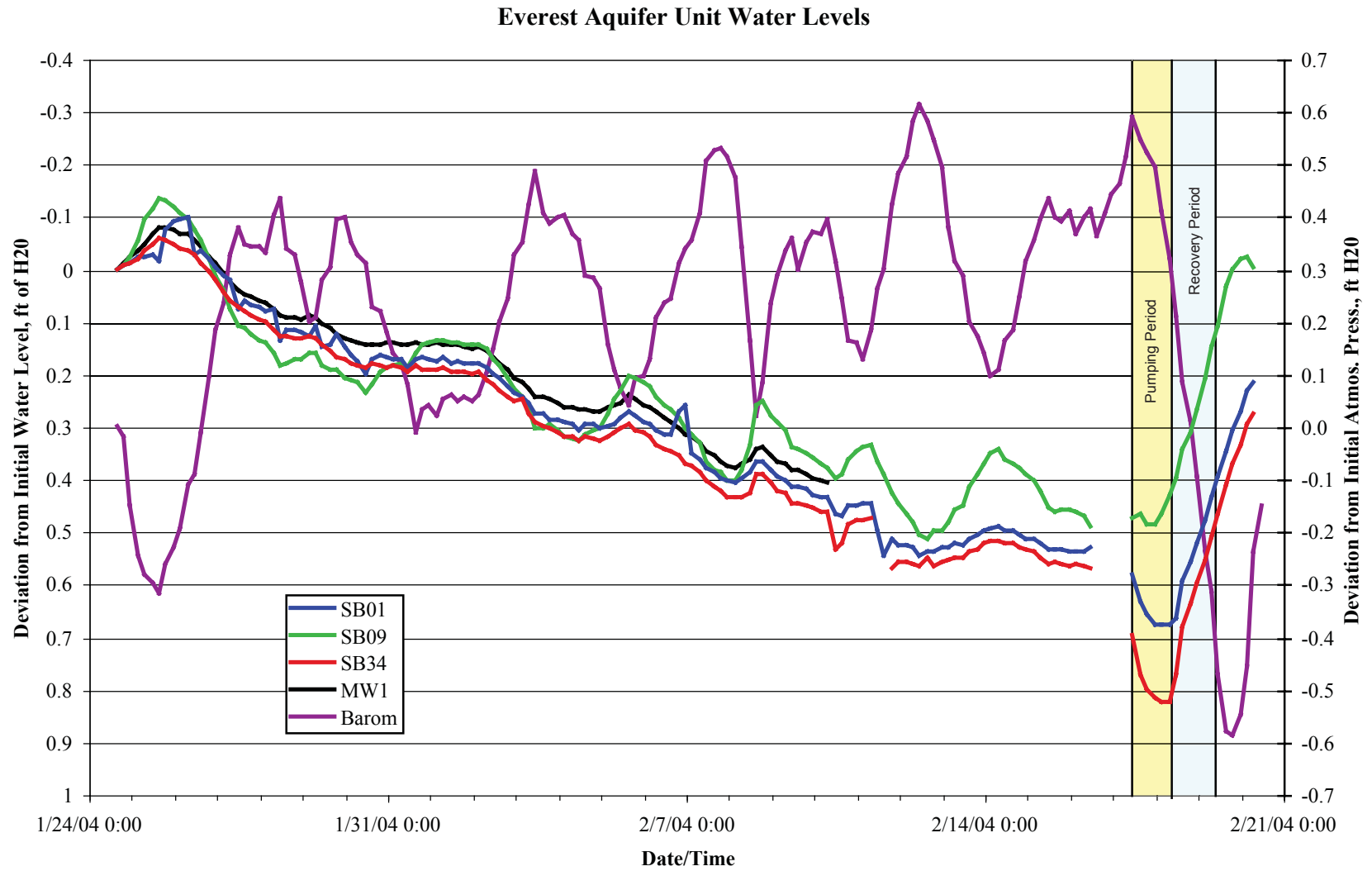


FIGURE G.1 Hydrographs measured in well MW1 on January 4–February 10, 2004, and in piezometers SB01, SB09, and SB34 on January 4–February 20, 2004, with barometric pressure variations recorded at Everest.

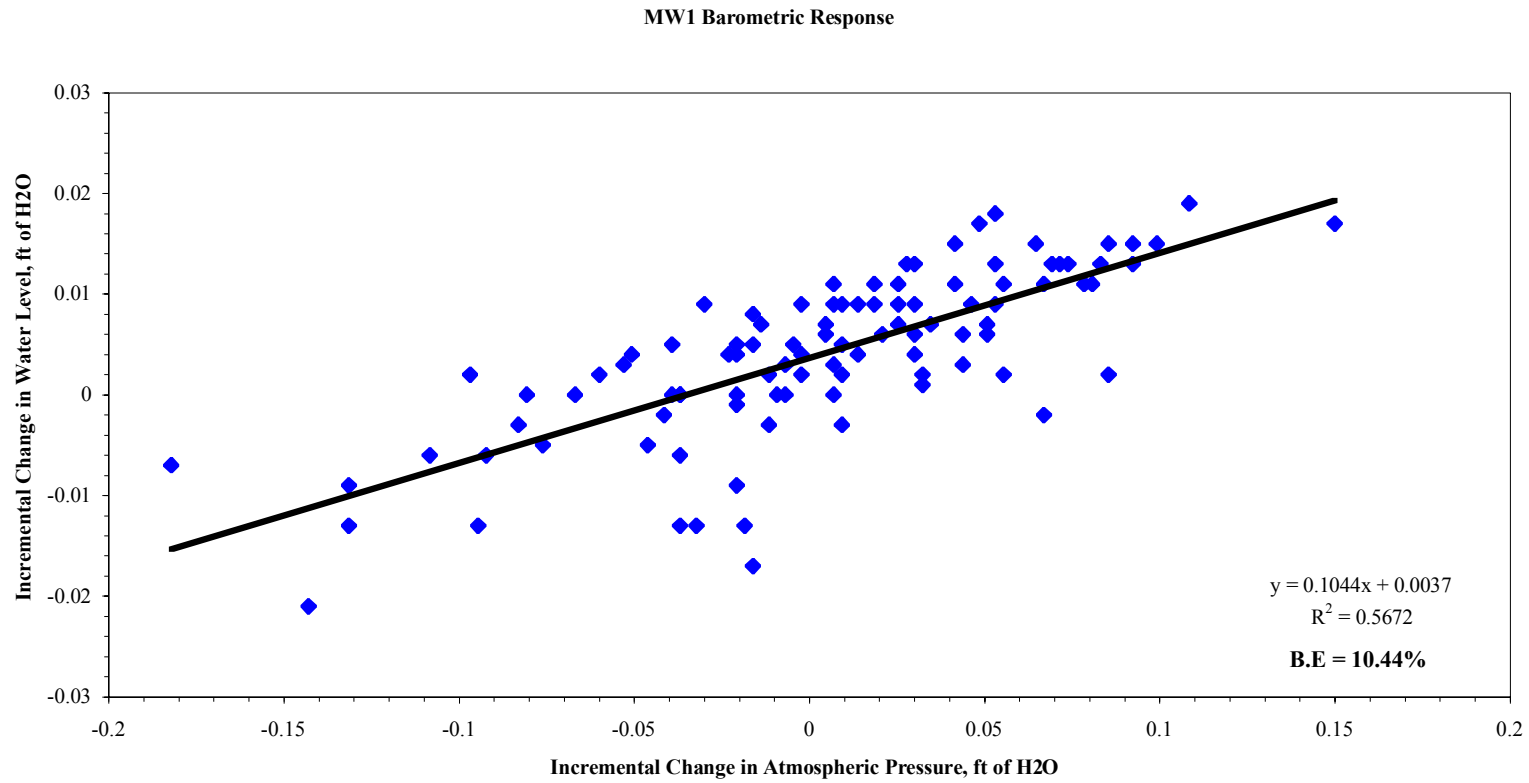


FIGURE G.2 Interpretation of water level responses in well MW1 to the effects of barometric pressure variations.

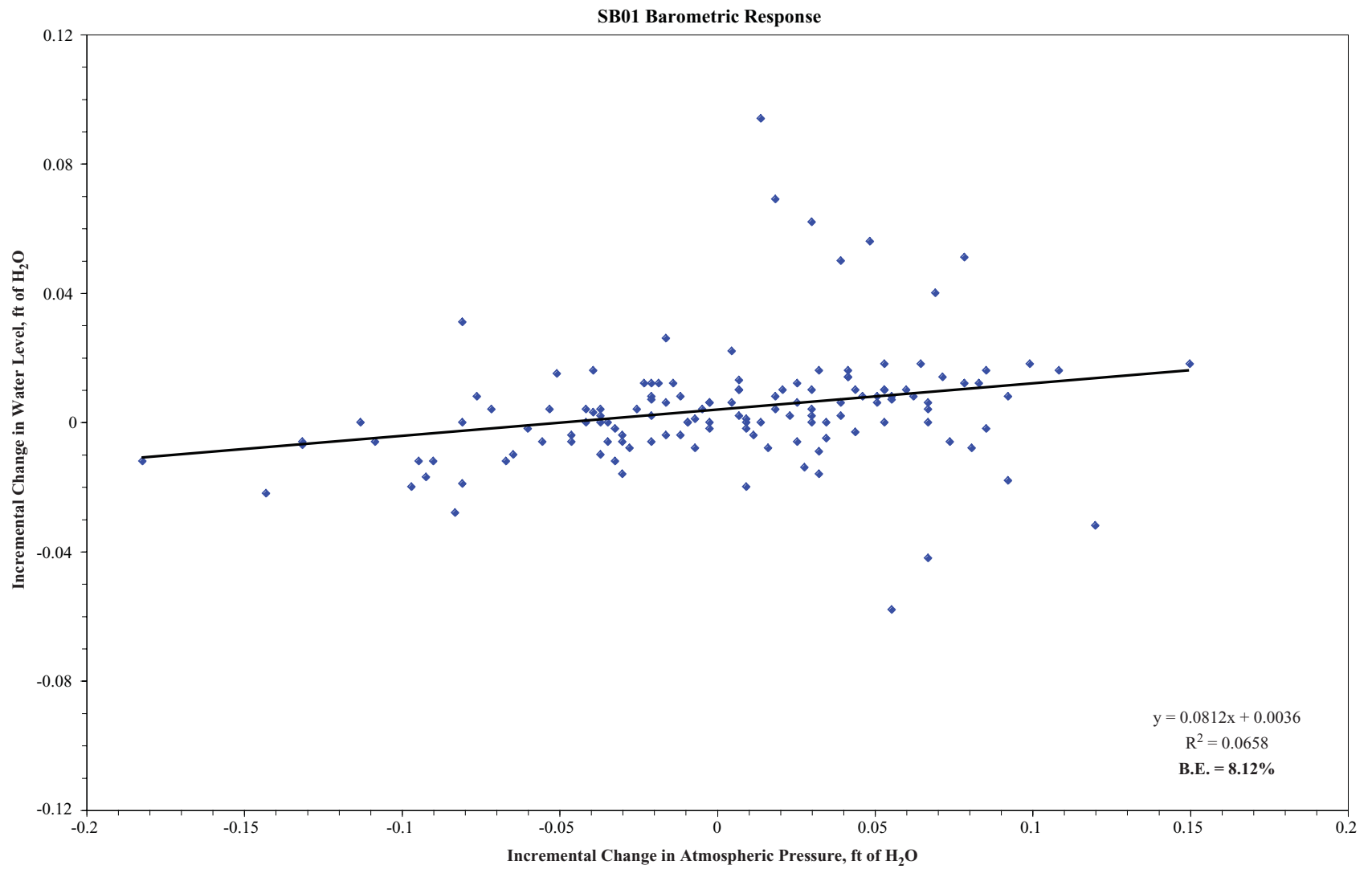


FIGURE G.3 Interpretation of water level responses in piezometer SB01 to the effects of barometric pressure variations.

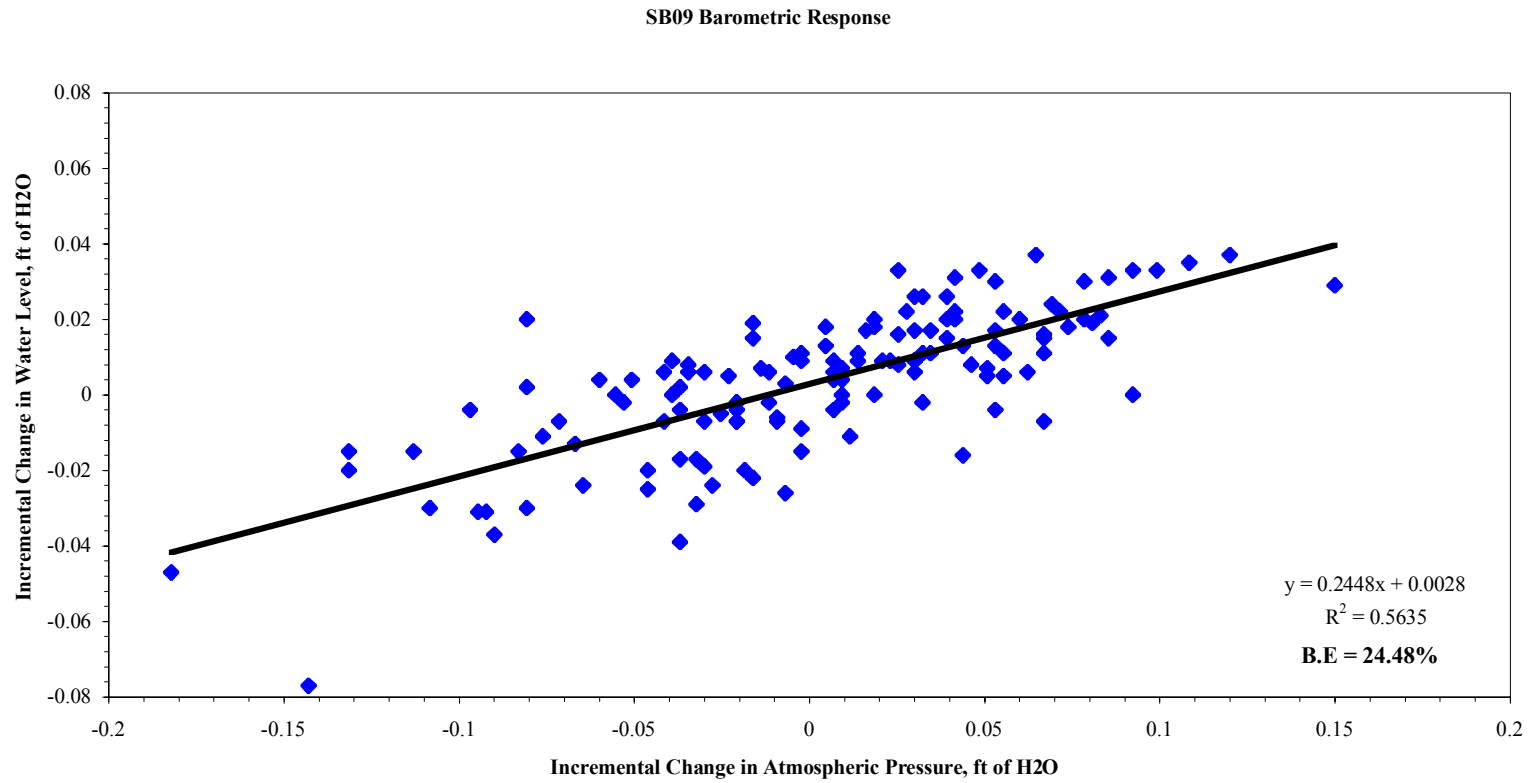


FIGURE G.4 Interpretation of water level responses in well piezometer SB09 to the effects of barometric pressure variations.

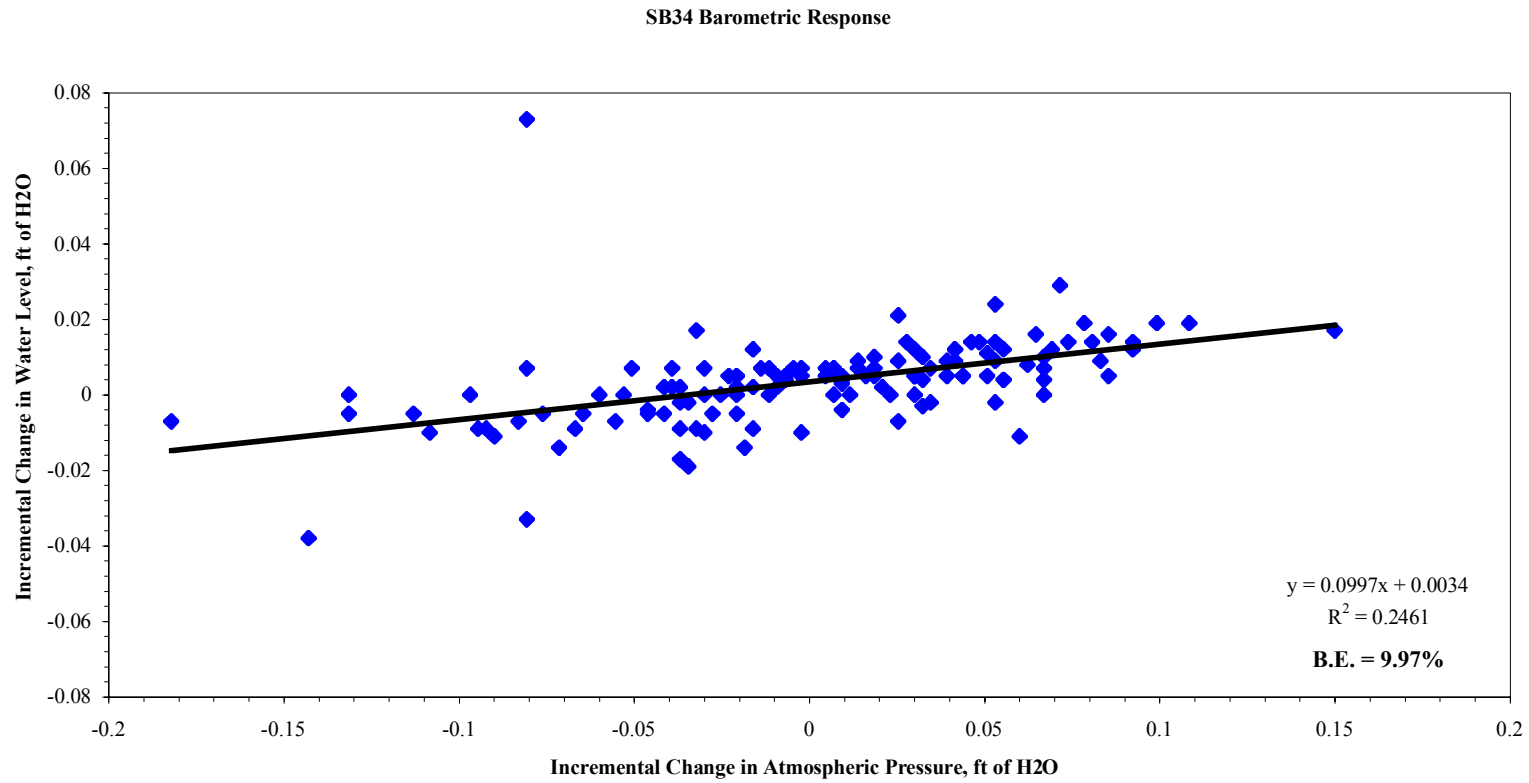


FIGURE G.5 Interpretation of water level responses in piezometer SB34 to the effects of barometric pressure variations.

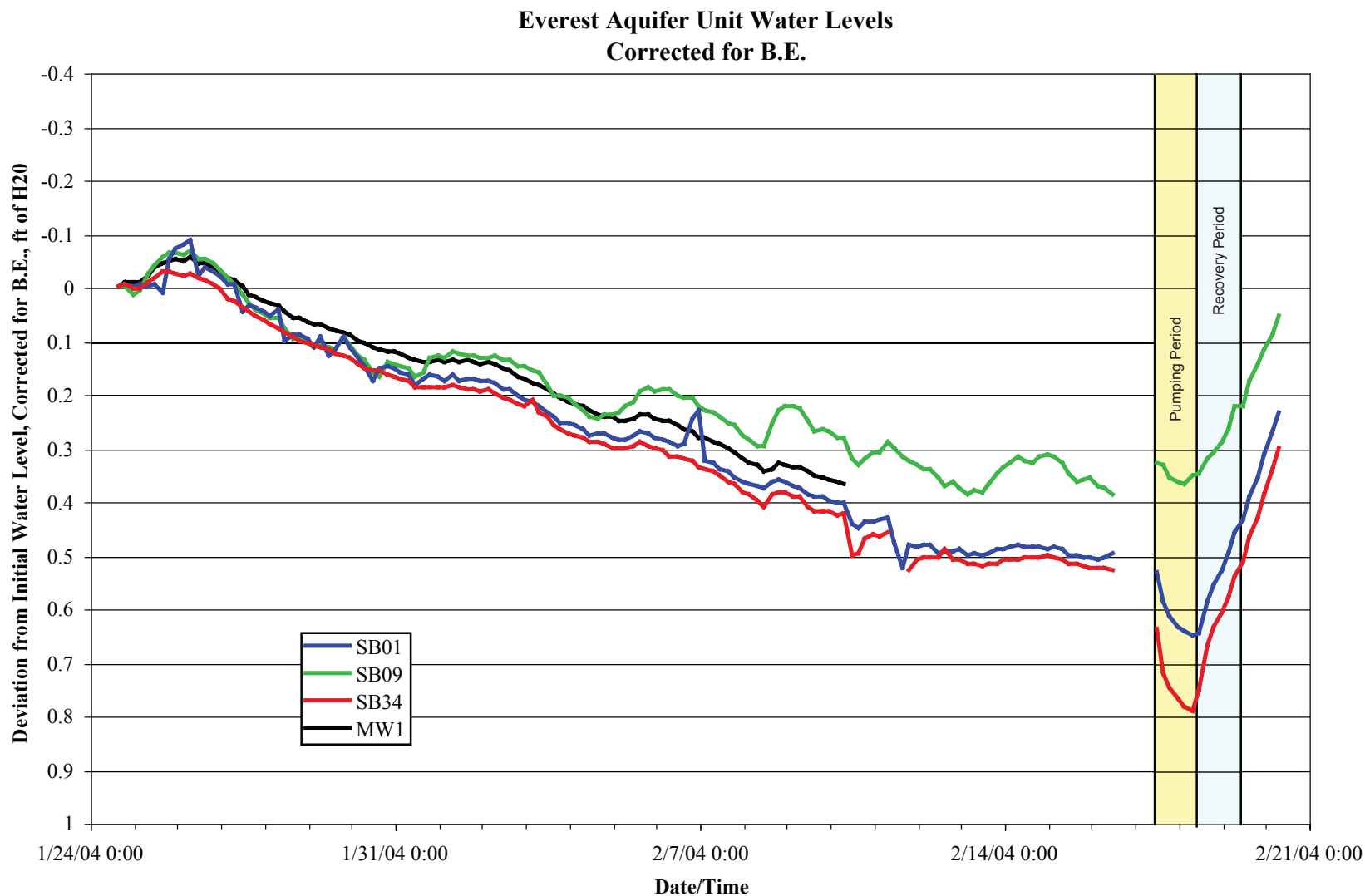


FIGURE G.6 Hydrographs measured in well MW1 on January 4–February 10, 2004, and in piezometers SB01, SB09, and SB34 on January 4–February 20, 2004, after correction for barometric efficiencies.

Appendix H:

Survey Data

TABLE H.1 Surveyed coordinates for targeted investigation sample locations at Everest, Kansas.

Location	Horizontal Location ^a (ft)		Elevation ^b (ft AMSL)	
	Easting	Northing	Representative Ground Surface	Reference ^c
<i>Soil borings</i>				
SB73	2035660.09	499702.89	1127.30	–
SB74	2035650.74	499561.28	1125.00	–
SB75	2035737.74	499601.57	1127.37	–
SB76	2035754.42	499674.27	1129.48	–
<i>Temporary piezometers</i>				
SB66t	2034360.73	501210.23	1144.82	1144.94
SB67t	2034432.94	500532.20	1147.68	1148.36
SB69t	2031891.49	500386.63	1099.19	1100.13
SB70t	2032310.08	500880.53	1100.30	1101.23
SB71t	2032014.46	501132.54	1120.85	1121.85
<i>Permanent piezometers (sand point wells)</i>				
SB68	2034404.34	500849.90	1151.81	1151.34
SB72	2032404.16	501738.26	1112.76	1112.53
SB77	2032022.88	501376.46	1124.95	1124.57
<i>Monitoring wells</i>				
MW1	2035660.09	499702.89	1127.30	1127.08
MW2	2034424.88	500849.57	1151.92	1151.68
MW3	2034666.11	501409.19	1145.44	1144.92
<i>Creek locations</i>				
CREEK 1	2032513.17	501164.19	1086.18	–
CREEK 2	2032409.04	500827.77	1083.05	–
CREEK 3	2032025.77	500218.30	1080.25	–

^a Horizontal coordinates are target location centers. Northings and Eastings are Kansas State Plane Coordinates. Horizontal datum is converted North American Datum (NAD) 83.

^b Vertical datum is North American Vertical Datum (NAVD) 88.

^c Location for water level measurement.

Supplement 1:

Results of Automated Water Level Measurements

TABLE S1.1 Water levels in piezometers for the period of automated monitoring from November 21, 2002, to November 10, 2003, at Everest, Kansas.

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
11/21/02	16:00	32.18	39.88	43.14	54.05	33.27	21.31	21.76	1106.76	1101.30	1089.34	1090.06	1087.96	1083.44	1076.60
11/21/02	20:00	32.21	39.91	43.21	54.12	33.29	21.35	21.78	1106.73	1101.27	1089.27	1089.99	1087.93	1083.40	1076.58
11/22/02	0:00	32.23	39.93	43.17	54.11	33.25	21.33	21.76	1106.71	1101.24	1089.31	1090.00	1087.97	1083.42	1076.60
11/22/02	4:00	32.23	39.93	43.16	54.09	33.24	21.35	21.75	1106.71	1101.24	1089.32	1090.02	1087.98	1083.40	1076.61
11/22/02	8:00	32.24	39.94	43.16	54.10	33.25	21.34	21.77	1106.70	1101.23	1089.32	1090.02	1087.97	1083.41	1076.59
11/22/02	12:00	32.25	39.94	43.11	54.04	33.20	21.30	21.73	1106.69	1101.23	1089.37	1090.07	1088.02	1083.45	1076.63
11/22/02	16:00	32.23	39.92	43.01	53.93	33.15	21.24	21.70	1106.71	1101.25	1089.47	1090.18	1088.07	1083.51	1076.66
11/22/02	20:00	32.22	39.88	42.94	53.84	33.13	21.19	21.69	1106.72	1101.29	1089.54	1090.27	1088.09	1083.57	1076.67
11/23/02	0:00	32.21	39.85	42.90	53.78	33.13	21.12	21.68	1106.73	1101.32	1089.58	1090.33	1088.09	1083.63	1076.68
11/23/02	4:00	32.21	39.84	42.96	53.85	33.19	21.15	21.72	1106.73	1101.33	1089.52	1090.26	1088.03	1083.60	1076.64
11/23/02	8:00	32.22	39.86	43.07	53.96	33.26	21.22	21.76	1106.72	1101.31	1089.41	1090.15	1087.96	1083.53	1076.60
11/23/02	12:00	32.24	39.89	43.09	53.99	33.23	21.25	21.75	1106.70	1101.28	1089.39	1090.12	1087.99	1083.50	1076.62
11/23/02	16:00	32.25	39.89	43.06	53.96	33.22	21.25	21.74	1106.70	1101.28	1089.42	1090.15	1088.00	1083.50	1076.62
11/23/02	20:00	32.25	39.89	43.07	53.97	33.23	21.24	21.74	1106.69	1101.28	1089.41	1090.14	1087.99	1083.51	1076.62
11/24/02	0:00	32.27	39.91	43.08	53.98	33.23	21.26	21.74	1106.68	1101.26	1089.40	1090.13	1087.99	1083.49	1076.62
11/24/02	4:00	32.28	39.92	43.10	54.00	33.24	21.28	21.74	1106.66	1101.25	1089.38	1090.11	1087.98	1083.47	1076.62
11/24/02	8:00	32.28	39.93	43.14	54.05	33.27	21.29	21.76	1106.66	1101.24	1089.34	1090.06	1087.95	1083.46	1076.60
11/24/02	12:00	32.31	39.95	43.19	54.10	33.27	21.34	21.77	1106.63	1101.22	1089.30	1090.01	1087.95	1083.41	1076.60
11/24/02	16:00	32.33	39.98	43.24	54.17	33.31	21.39	21.78	1106.61	1101.19	1089.24	1089.94	1087.91	1083.36	1076.58
11/24/02	20:00	32.36	40.02	43.29	54.24	33.32	21.43	21.80	1106.58	1101.15	1089.19	1089.87	1087.90	1083.32	1076.56
11/25/02	0:00	32.39	40.05	43.29	54.25	33.29	21.46	21.78	1106.56	1101.12	1089.19	1089.86	1087.93	1083.29	1076.58
11/25/02	4:00	32.40	40.08	43.30	54.27	33.30	21.48	21.79	1106.54	1101.09	1089.18	1089.84	1087.92	1083.27	1076.57
11/25/02	8:00	32.41	40.09	43.26	54.23	33.27	21.46	21.76	1106.53	1101.08	1089.22	1089.88	1087.95	1083.29	1076.60
11/25/02	12:00	32.42	40.10	43.25	54.23	33.27	21.44	21.76	1106.52	1101.07	1089.23	1089.89	1087.96	1083.31	1076.60
11/25/02	16:00	32.42	40.09	43.16	54.13	33.23	21.38	21.73	1106.52	1101.08	1089.32	1089.98	1087.99	1083.37	1076.63
11/25/02	20:00	32.42	40.08	43.15	54.11	33.24	21.36	21.73	1106.52	1101.09	1089.33	1090.00	1087.99	1083.40	1076.63
11/26/02	0:00	32.42	40.08	43.15	54.10	33.24	21.34	21.73	1106.52	1101.09	1089.33	1090.01	1087.98	1083.41	1076.63
11/26/02	4:00	32.42	40.08	43.12	54.06	33.24	21.32	21.73	1106.52	1101.09	1089.36	1090.05	1087.98	1083.43	1076.63
11/26/02	8:00	32.43	40.08	43.15	54.10	33.27	21.36	21.75	1106.51	1101.09	1089.33	1090.01	1087.95	1083.39	1076.61
11/26/02	12:00	32.45	40.10	43.22	54.16	33.29	21.39	21.77	1106.49	1101.07	1089.26	1089.95	1087.93	1083.36	1076.60
11/26/02	16:00	32.46	40.12	43.26	54.21	33.31	21.43	21.78	1106.48	1101.05	1089.22	1089.90	1087.91	1083.32	1076.58
11/26/02	20:00	32.48	40.14	43.26	54.22	33.30	21.43	21.75	1106.46	1101.03	1089.22	1089.89	1087.93	1083.32	1076.61
11/27/02	0:00	32.50	40.16	43.26	54.22	33.29	21.44	21.76	1106.44	1101.02	1089.22	1089.89	1087.93	1083.31	1076.60
11/27/02	4:00	32.50	40.16	43.22	54.18	33.26	21.41	21.75	1106.44	1101.01	1089.26	1089.93	1087.96	1083.34	1076.62

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
11/27/02	8:00	32.50	40.16	43.21	54.17	33.27	21.42	21.75	1106.44	1101.01	1089.27	1089.94	1087.95	1083.34	1076.61
11/27/02	12:00	32.50	40.15	43.15	54.10	33.23	21.35	21.72	1106.44	1101.02	1089.33	1090.02	1087.99	1083.40	1076.64
11/27/02	16:00	32.48	40.11	43.04	53.97	33.19	21.27	21.69	1106.46	1101.06	1089.44	1090.14	1088.03	1083.48	1076.67
11/27/02	20:00	32.48	40.10	43.05	53.97	33.22	21.26	21.71	1106.46	1101.07	1089.43	1090.14	1088.00	1083.49	1076.65
11/28/02	0:00	32.47	40.08	43.03	53.94	33.21	21.24	21.70	1106.47	1101.09	1089.45	1090.17	1088.01	1083.51	1076.66
11/28/02	4:00	32.47	40.07	43.04	53.94	33.23	21.23	21.71	1106.47	1101.10	1089.44	1090.17	1087.99	1083.52	1076.65
11/28/02	8:00	32.48	40.08	43.09	53.99	33.26	21.27	21.74	1106.46	1101.09	1089.39	1090.12	1087.96	1083.48	1076.62
11/28/02	12:00	32.48	40.07	43.07	53.97	33.23	21.26	21.71	1106.46	1101.10	1089.41	1090.14	1087.99	1083.49	1076.65
11/28/02	16:00	32.46	40.04	42.98	53.87	33.20	21.18	21.69	1106.48	1101.13	1089.50	1090.24	1088.02	1083.57	1076.68
11/28/02	20:00	32.44	39.99	42.91	53.78	33.16	21.11	21.67	1106.50	1101.18	1089.57	1090.33	1088.06	1083.64	1076.70
11/29/02	0:00	32.42	39.94	42.85	53.70	33.13	21.04	21.66	1106.53	1101.23	1089.64	1090.41	1088.09	1083.71	1076.70
11/29/02	4:00	32.38	39.88	42.78	53.60	33.12	20.99	21.64	1106.56	1101.29	1089.71	1090.51	1088.10	1083.77	1076.72
11/29/02	8:00	32.37	39.86	42.82	53.63	33.17	20.96	21.68	1106.58	1101.31	1089.67	1090.48	1088.05	1083.79	1076.69
11/29/02	12:00	32.36	39.85	42.86	53.68	33.18	21.02	21.67	1106.58	1101.32	1089.62	1090.43	1088.04	1083.73	1076.69
11/29/02	16:00	32.35	39.84	42.85	53.66	33.18	21.00	21.69	1106.59	1101.33	1089.63	1090.45	1088.04	1083.75	1076.67
11/29/02	20:00	32.36	39.85	42.92	53.74	33.22	21.04	21.71	1106.58	1101.32	1089.56	1090.37	1088.00	1083.71	1076.65
11/30/02	0:00	32.38	39.87	42.98	53.82	33.25	21.09	21.73	1106.56	1101.30	1089.50	1090.29	1087.97	1083.66	1076.63
11/30/02	4:00	32.41	39.91	43.12	53.98	33.33	21.21	21.78	1106.53	1101.26	1089.36	1090.13	1087.89	1083.54	1076.58
11/30/02	8:00	32.45	39.97	43.22	54.11	33.36	21.29	21.80	1106.49	1101.20	1089.26	1090.00	1087.86	1083.46	1076.56
11/30/02	12:00	32.48	40.02	43.25	54.16	33.34	21.33	21.79	1106.46	1101.15	1089.23	1089.95	1087.88	1083.42	1076.58
11/30/02	16:00	32.50	40.04	43.22	54.13	33.31	21.33	21.77	1106.44	1101.14	1089.26	1089.98	1087.91	1083.42	1076.60
11/30/02	20:00	32.52	40.06	43.23	54.15	33.31	21.33	21.76	1106.42	1101.11	1089.25	1089.96	1087.91	1083.42	1076.60
12/1/02	0:00	32.53	40.07	43.21	54.14	33.30	21.34	21.75	1106.41	1101.10	1089.27	1089.97	1087.92	1083.41	1076.61
12/1/02	4:00	32.53	40.07	43.15	54.07	33.25	21.30	21.73	1106.41	1101.10	1089.33	1090.04	1087.97	1083.45	1076.63
12/1/02	8:00	32.52	40.05	43.08	53.99	33.23	21.24	21.71	1106.42	1101.12	1089.40	1090.13	1087.99	1083.51	1076.65
12/1/02	12:00	32.50	40.02	42.98	53.86	33.17	21.14	21.68	1106.44	1101.15	1089.50	1090.25	1088.05	1083.61	1076.69
12/1/02	16:00	32.47	39.96	42.88	53.74	33.15	21.06	21.66	1106.47	1101.21	1089.60	1090.37	1088.07	1083.69	1076.70
12/1/02	20:00	32.46	39.93	42.89	53.73	33.18	21.04	21.68	1106.49	1101.24	1089.60	1090.38	1088.05	1083.72	1076.69
12/2/02	0:00	32.44	39.90	42.86	53.69	33.16	21.02	21.67	1106.50	1101.27	1089.63	1090.42	1088.06	1083.73	1076.69
12/2/02	4:00	32.41	39.86	42.81	53.63	33.14	20.95	21.65	1106.53	1101.31	1089.67	1090.48	1088.08	1083.80	1076.71
12/2/02	8:00	32.40	39.85	42.87	53.68	33.20	21.00	21.69	1106.54	1101.32	1089.61	1090.43	1088.02	1083.75	1076.67
12/2/02	12:00	32.43	39.88	43.03	53.86	33.29	21.11	21.75	1106.51	1101.29	1089.45	1090.25	1087.93	1083.64	1076.61
12/2/02	16:00	32.47	39.94	43.17	54.04	33.36	21.21	21.80	1106.48	1101.23	1089.31	1090.07	1087.86	1083.54	1076.56
12/2/02	20:00	32.52	40.01	43.31	54.21	33.40	21.36	21.81	1106.42	1101.16	1089.18	1089.90	1087.82	1083.39	1076.55
12/3/02	0:00	32.56	40.08	43.35	54.29	33.39	21.41	21.81	1106.38	1101.09	1089.13	1089.82	1087.83	1083.34	1076.55
12/3/02	4:00	32.60	40.12	43.39	54.35	33.39	21.46	21.81	1106.34	1101.05	1089.10	1089.76	1087.84	1083.29	1076.55

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
12/3/02	8:00	32.63	40.17	43.41	54.39	33.39	21.50	21.82	1106.31	1101.00	1089.07	1089.72	1087.83	1083.25	1076.54
12/3/02	12:00	32.65	40.20	43.37	54.36	33.34	21.49	21.78	1106.29	1100.97	1089.11	1089.75	1087.88	1083.26	1076.58
12/3/02	16:00	32.65	40.21	43.30	54.28	33.32	21.44	21.76	1106.29	1100.96	1089.18	1089.83	1087.90	1083.31	1076.60
12/3/02	20:00	32.67	40.23	43.32	54.30	33.33	21.47	21.77	1106.27	1100.95	1089.16	1089.81	1087.89	1083.28	1076.59
12/4/02	0:00	32.68	40.23	43.27	54.24	33.30	21.43	21.75	1106.26	1100.94	1089.21	1089.87	1087.92	1083.32	1076.61
12/4/02	4:00	32.67	40.22	43.22	54.19	33.29	21.40	21.74	1106.27	1100.95	1089.26	1089.92	1087.93	1083.35	1076.62
12/4/02	8:00	32.68	40.23	43.26	54.23	33.33	21.42	21.76	1106.26	1100.94	1089.22	1089.89	1087.89	1083.33	1076.60
12/4/02	12:00	32.69	40.24	43.23	54.18	33.30	21.39	21.74	1106.25	1100.93	1089.25	1089.93	1087.92	1083.36	1076.62
12/4/02	16:00	32.68	40.23	43.20	54.15	33.30	21.38	21.74	1106.26	1100.94	1089.28	1089.96	1087.93	1083.37	1076.62
12/4/02	20:00	32.69	40.23	43.22	54.16	33.33	21.37	21.75	1106.25	1100.94	1089.26	1089.95	1087.89	1083.38	1076.61
12/5/02	0:00	32.71	40.25	43.25	54.20	33.34	21.39	21.76	1106.24	1100.92	1089.23	1089.91	1087.88	1083.36	1076.60
12/5/02	4:00	32.71	40.26	43.24	54.19	33.32	21.38	21.75	1106.23	1100.91	1089.24	1089.92	1087.90	1083.37	1076.61
12/5/02	8:00	32.71	40.26	43.26	54.21	33.33	21.40	21.76	1106.23	1100.91	1089.22	1089.90	1087.89	1083.35	1076.60
12/5/02	12:00	32.72	40.27	43.23	54.19	33.31	21.40	21.75	1106.22	1100.90	1089.25	1089.92	1087.91	1083.35	1076.61
12/5/02	16:00	32.71	40.25	43.16	54.10	33.29	21.32	21.72	1106.23	1100.92	1089.32	1090.01	1087.93	1083.43	1076.64
12/5/02	20:00	32.71	40.24	43.16	54.09	33.30	21.31	21.73	1106.23	1100.93	1089.32	1090.02	1087.92	1083.44	1076.63
12/6/02	0:00	32.72	40.25	43.17	54.09	33.31	21.31	21.74	1106.22	1100.92	1089.31	1090.02	1087.91	1083.44	1076.62
12/6/02	4:00	32.71	40.24	43.15	54.07	33.30	21.29	21.72	1106.23	1100.93	1089.33	1090.04	1087.92	1083.46	1076.65
12/6/02	8:00	32.71	40.23	43.14	54.06	33.30	21.27	21.72	1106.23	1100.94	1089.34	1090.05	1087.92	1083.48	1076.64
12/6/02	12:00	32.70	40.21	43.07	53.98	33.25	21.23	21.70	1106.24	1100.96	1089.41	1090.13	1087.97	1083.52	1076.66
12/6/02	16:00	32.68	40.17	43.00	53.89	33.24	21.16	21.68	1106.26	1101.00	1089.48	1090.22	1087.98	1083.59	1076.68
12/6/02	20:00	32.67	40.15	43.03	53.90	33.27	21.17	21.70	1106.27	1101.02	1089.45	1090.21	1087.95	1083.58	1076.66
12/7/02	0:00	32.67	40.15	43.07	53.95	33.29	21.18	21.70	1106.27	1101.02	1089.41	1090.16	1087.93	1083.57	1076.66
12/7/02	4:00	32.68	40.15	43.08	53.96	33.30	21.18	21.72	1106.26	1101.02	1089.40	1090.15	1087.92	1083.57	1076.65
12/7/02	8:00	32.68	40.16	43.13	54.02	33.33	21.24	21.74	1106.26	1101.01	1089.35	1090.09	1087.89	1083.51	1076.62
12/7/02	12:00	32.70	40.17	43.14	54.03	33.32	21.25	21.74	1106.24	1101.00	1089.34	1090.08	1087.90	1083.50	1076.62
12/7/02	16:00	32.69	40.17	43.10	53.99	33.31	21.21	21.72	1106.25	1101.00	1089.38	1090.12	1087.91	1083.54	1076.64
12/7/02	20:00	32.70	40.17	43.14	54.04	33.33	21.25	21.74	1106.24	1101.00	1089.34	1090.08	1087.89	1083.50	1076.62
12/8/02	0:00	32.72	40.19	43.19	54.09	33.36	21.13	21.75	1106.22	1100.98	1089.29	1090.02	1087.86	1083.63	1076.61
12/8/02	4:00	32.74	40.22	43.25	54.16	33.38	21.30	21.77	1106.20	1100.96	1089.23	1089.95	1087.84	1083.45	1076.59
12/8/02	8:00	32.76	40.25	43.34	54.27	33.42	21.39	21.80	1106.18	1100.92	1089.14	1089.84	1087.80	1083.36	1076.56
12/8/02	12:00	32.80	40.30	43.39	54.34	33.40	21.44	21.79	1106.14	1100.87	1089.09	1089.77	1087.82	1083.31	1076.57
12/8/02	16:00	32.81	40.32	43.38	54.34	33.40	21.47	21.79	1106.13	1100.85	1089.10	1089.77	1087.82	1083.28	1076.57
12/8/02	20:00	32.84	40.35	43.39	54.37	33.39	21.47	21.79	1106.10	1100.82	1089.09	1089.74	1087.83	1083.28	1076.58
12/9/02	0:00	32.85	40.36	43.34	54.32	33.35	21.47	21.76	1106.09	1100.81	1089.14	1089.79	1087.87	1083.28	1076.60
12/9/02	4:00	32.85	40.36	43.30	54.27	33.34	21.43	21.75	1106.09	1100.81	1089.18	1089.84	1087.88	1083.32	1076.61

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
12/9/02	8:00	32.85	40.36	43.26	54.22	33.34	21.40	21.75	1106.09	1100.81	1089.22	1089.89	1087.88	1083.35	1076.61
12/9/02	12:00	32.84	40.35	43.19	54.13	33.29	21.35	21.71	1106.10	1100.83	1089.30	1089.98	1087.93	1083.40	1076.65
12/9/02	16:00	32.82	40.31	43.12	54.04	33.28	21.28	21.69	1106.12	1100.86	1089.36	1090.07	1087.94	1083.47	1076.67
12/9/02	20:00	32.81	40.28	43.11	54.01	33.29	21.27	21.71	1106.13	1100.89	1089.38	1090.10	1087.93	1083.48	1076.66
12/10/02	0:00	32.80	40.26	43.10	54.00	33.30	21.22	21.71	1106.14	1100.91	1089.38	1090.11	1087.92	1083.53	1076.65
12/10/02	4:00	32.79	40.24	43.06	53.95	33.28	21.20	21.70	1106.15	1100.93	1089.42	1090.16	1087.94	1083.55	1076.67
12/10/02	8:00	32.78	40.22	43.07	53.95	33.30	21.19	21.71	1106.16	1100.95	1089.41	1090.16	1087.92	1083.56	1076.66
12/10/02	12:00	32.78	40.21	43.06	53.93	33.28	21.20	21.70	1106.16	1100.96	1089.43	1090.18	1087.94	1083.55	1076.66
12/10/02	16:00	32.76	40.18	43.02	53.88	33.28	21.14	21.69	1106.18	1100.99	1089.46	1090.23	1087.95	1083.61	1076.67
12/10/02	20:00	32.75	40.17	43.02	53.88	33.29	21.13	21.70	1106.19	1101.00	1089.46	1090.23	1087.93	1083.62	1076.66
12/11/02	0:00	32.74	40.16	43.01	53.86	33.28	21.13	21.70	1106.20	1101.02	1089.47	1090.25	1087.94	1083.62	1076.67
12/11/02	4:00	32.74	40.14	43.01	53.86	33.28	21.11	21.70	1106.20	1101.03	1089.47	1090.26	1087.94	1083.65	1076.66
12/11/02	8:00	32.73	40.13	43.02	53.87	33.30	21.11	21.71	1106.21	1101.04	1089.46	1090.24	1087.92	1083.65	1076.65
12/11/02	12:00	32.73	40.13	43.02	53.87	33.29	21.09	21.70	1106.21	1101.05	1089.46	1090.24	1087.93	1083.66	1076.66
12/11/02	16:00	32.73	40.11	43.02	53.87	33.30	21.07	21.71	1106.21	1101.06	1089.46	1090.24	1087.92	1083.68	1076.65
12/11/02	20:00	32.73	40.12	43.05	53.91	33.31	21.11	21.72	1106.21	1101.05	1089.43	1090.21	1087.91	1083.64	1076.65
12/12/02	0:00	32.74	40.13	43.07	53.93	33.33	21.14	21.72	1106.20	1101.05	1089.41	1090.18	1087.89	1083.61	1076.64
12/12/02	4:00	32.75	40.13	43.10	53.96	33.34	21.14	21.73	1106.19	1101.04	1089.39	1090.15	1087.88	1083.61	1076.63
12/12/02	8:00	32.76	40.14	43.12	53.99	33.35	21.16	21.74	1106.18	1101.03	1089.36	1090.12	1087.87	1083.59	1076.62
12/12/02	12:00	32.77	40.16	43.12	53.99	33.33	21.17	21.72	1106.17	1101.02	1089.36	1090.12	1087.89	1083.59	1076.64
12/12/02	16:00	32.77	40.16	43.12	54.00	33.36	21.15	21.74	1106.17	1101.02	1089.36	1090.11	1087.87	1083.60	1076.62
12/12/02	20:00	32.78	40.16	43.13	54.01	33.35	21.17	21.73	1106.16	1101.01	1089.35	1090.11	1087.87	1083.58	1076.63
12/13/02	0:00	32.78	40.16	43.11	53.99	33.34	21.18	21.72	1106.16	1101.01	1089.37	1090.12	1087.88	1083.57	1076.64
12/13/02	4:00	32.78	40.16	43.11	53.99	33.34	21.15	21.73	1106.16	1101.01	1089.37	1090.13	1087.88	1083.60	1076.64
12/13/02	8:00	32.78	40.15	43.09	53.96	33.33	21.13	21.72	1106.16	1101.02	1089.39	1090.15	1087.89	1083.62	1076.64
12/13/02	12:00	32.79	40.16	43.12	53.99	33.34	21.15	21.73	1106.15	1101.01	1089.36	1090.12	1087.88	1083.60	1076.63
12/13/02	16:00	32.79	40.16	43.12	53.99	33.35	21.16	21.73	1106.15	1101.01	1089.36	1090.12	1087.87	1083.59	1076.63
12/13/02	20:00	32.80	40.17	43.14	54.02	33.36	21.20	21.74	1106.14	1101.00	1089.34	1090.09	1087.87	1083.56	1076.62
12/14/02	0:00	32.81	40.19	43.18	54.06	33.37	21.21	21.74	1106.13	1100.99	1089.31	1090.05	1087.85	1083.54	1076.62
12/14/02	4:00	32.82	40.19	43.16	54.05	33.35	21.20	21.73	1106.12	1100.98	1089.32	1090.06	1087.87	1083.56	1076.63
12/14/02	8:00	32.82	40.20	43.15	54.04	33.36	21.18	21.73	1106.12	1100.97	1089.33	1090.07	1087.86	1083.57	1076.63
12/14/02	12:00	32.83	40.20	43.14	54.02	33.33	21.20	21.72	1106.11	1100.97	1089.35	1090.09	1087.89	1083.55	1076.64
12/14/02	16:00	32.82	40.18	43.11	53.99	33.34	21.15	21.73	1106.12	1100.99	1089.37	1090.12	1087.88	1083.60	1076.63
12/14/02	20:00	32.82	40.19	43.15	54.03	33.37	21.18	21.74	1106.12	1100.98	1089.33	1090.08	1087.86	1083.57	1076.62
12/15/02	0:00	32.83	40.18	43.11	53.99	33.34	21.16	21.73	1106.12	1100.99	1089.37	1090.12	1087.89	1083.59	1076.63
12/15/02	4:00	32.82	40.17	43.08	53.95	33.32	21.13	21.71	1106.12	1101.00	1089.40	1090.16	1087.90	1083.62	1076.65

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
12/15/02	8:00	32.82	40.16	43.10	53.97	33.34	21.13	21.73	1106.12	1101.01	1089.39	1090.14	1087.88	1083.62	1076.64
12/15/02	12:00	32.81	40.14	43.03	53.89	33.29	21.09	21.68	1106.13	1101.03	1089.45	1090.22	1087.93	1083.66	1076.68
12/15/02	16:00	32.79	40.12	43.01	53.86	33.30	21.04	21.70	1106.15	1101.06	1089.48	1090.25	1087.92	1083.71	1076.66
12/15/02	20:00	32.79	40.12	43.03	53.89	33.34	21.05	21.71	1106.15	1101.06	1089.45	1090.22	1087.88	1083.70	1076.65
12/16/02	0:00	32.80	40.13	43.07	53.94	33.36	21.11	21.72	1106.14	1101.05	1089.41	1090.18	1087.86	1083.64	1076.64
12/16/02	4:00	32.80	40.12	43.03	53.89	33.31	21.06	21.70	1106.14	1101.06	1089.45	1090.22	1087.91	1083.69	1076.66
12/16/02	8:00	32.80	40.12	43.08	53.94	33.36	21.06	21.73	1106.14	1101.05	1089.40	1090.17	1087.86	1083.69	1076.63
12/16/02	12:00	32.81	40.13	43.09	53.95	33.34	21.10	21.72	1106.13	1101.04	1089.39	1090.16	1087.88	1083.65	1076.64
12/16/02	16:00	32.81	40.13	43.08	53.94	33.35	21.08	21.72	1106.13	1101.04	1089.40	1090.17	1087.87	1083.67	1076.64
12/16/02	20:00	32.82	40.14	43.11	53.98	33.36	21.10	21.74	1106.12	1101.03	1089.37	1090.13	1087.86	1083.65	1076.62
12/17/02	0:00	32.83	40.14	43.09	53.95	33.34	21.12	21.72	1106.12	1101.03	1089.39	1090.16	1087.89	1083.64	1076.64
12/17/02	4:00	32.81	40.12	43.03	53.89	33.30	21.04	21.70	1106.13	1101.06	1089.45	1090.22	1087.92	1083.71	1076.66
12/17/02	8:00	32.79	40.08	42.96	53.81	33.27	20.99	21.68	1106.15	1101.09	1089.52	1090.30	1087.95	1083.76	1076.68
12/17/02	12:00	32.76	40.02	42.85	53.68	33.21	20.94	21.64	1106.18	1101.15	1089.63	1090.43	1088.01	1083.81	1076.72
12/17/02	16:00	32.71	39.95	42.80	53.60	33.23	20.82	21.66	1106.23	1101.22	1089.68	1090.51	1087.99	1083.93	1076.70
12/17/02	20:00	32.70	39.94	42.86	53.64	33.27	20.84	21.68	1106.24	1101.23	1089.63	1090.47	1087.95	1083.91	1076.68
12/18/02	0:00	32.70	39.94	42.86	53.65	33.26	20.85	21.67	1106.24	1101.23	1089.62	1090.46	1087.96	1083.90	1076.69
12/18/02	4:00	32.69	39.93	42.89	53.69	33.29	20.85	21.70	1106.25	1101.24	1089.59	1090.42	1087.93	1083.90	1076.66
12/18/02	8:00	32.70	39.94	42.98	53.78	33.34	20.88	21.73	1106.24	1101.23	1089.51	1090.33	1087.88	1083.87	1076.63
12/18/02	12:00	32.72	39.97	43.03	53.85	33.35	20.96	21.74	1106.22	1101.20	1089.45	1090.26	1087.87	1083.79	1076.62
12/18/02	16:00	32.75	40.01	43.12	53.96	33.40	21.02	21.76	1106.19	1101.16	1089.36	1090.15	1087.82	1083.73	1076.60
12/18/02	20:00	32.79	40.07	43.23	54.10	33.44	21.12	21.79	1106.15	1101.10	1089.26	1090.01	1087.78	1083.63	1076.57
12/19/02	0:00	32.83	40.12	43.26	54.15	33.43	21.17	21.79	1106.12	1101.06	1089.22	1089.96	1087.79	1083.58	1076.57
12/19/02	4:00	32.86	40.16	43.31	54.23	33.45	21.22	21.81	1106.09	1101.01	1089.17	1089.88	1087.77	1083.53	1076.56
12/19/02	8:00	32.88	40.19	43.31	54.24	33.43	21.24	21.79	1106.06	1100.98	1089.17	1089.87	1087.79	1083.51	1076.57
12/19/02	12:00	32.90	40.22	43.28	54.21	33.39	21.25	21.76	1106.04	1100.95	1089.20	1089.90	1087.83	1083.50	1076.60
12/19/02	16:00	32.91	40.23	43.25	54.18	33.39	21.22	21.75	1106.03	1100.94	1089.23	1089.93	1087.83	1083.53	1076.61
12/19/02	20:00	32.93	40.25	43.28	54.21	33.41	21.25	21.76	1106.01	1100.92	1089.20	1089.90	1087.81	1083.50	1076.60
12/20/02	0:00	32.95	40.28	43.27	54.20	33.39	21.25	21.75	1105.99	1100.90	1089.21	1089.91	1087.83	1083.50	1076.61
12/20/02	4:00	32.96	40.29	43.27	54.20	33.40	21.26	21.75	1105.98	1100.88	1089.21	1089.91	1087.82	1083.49	1076.61
12/20/02	8:00	32.97	40.30	43.27	54.21	33.40	21.26	21.76	1105.97	1100.87	1089.21	1089.90	1087.82	1083.49	1076.60
12/20/02	12:00	32.98	40.32	43.26	54.19	33.38	21.27	21.75	1105.96	1100.86	1089.22	1089.92	1087.84	1083.48	1076.61
12/20/02	16:00	32.99	40.32	43.26	54.19	33.40	21.25	21.74	1105.95	1100.85	1089.22	1089.92	1087.82	1083.51	1076.63
12/20/02	20:00	33.01	40.35	43.30	54.24	33.42	21.29	21.76	1105.93	1100.83	1089.18	1089.87	1087.80	1083.46	1076.60
12/21/02	0:00	33.03	40.37	43.29	54.24	33.40	21.29	21.75	1105.91	1100.80	1089.19	1089.87	1087.82	1083.46	1076.61
12/21/02	4:00	33.04	40.38	43.29	54.23	33.39	21.29	21.75	1105.90	1100.79	1089.19	1089.88	1087.83	1083.47	1076.61

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
12/21/02	8:00	33.04	40.38	43.27	54.20	33.39	21.29	21.74	1105.90	1100.79	1089.22	1089.91	1087.83	1083.46	1076.62
12/21/02	12:00	33.04	40.37	43.18	54.11	33.33	21.23	21.71	1105.90	1100.80	1089.30	1090.00	1087.89	1083.52	1076.65
12/21/02	16:00	33.03	40.35	43.20	54.12	33.39	21.19	21.74	1105.91	1100.82	1089.28	1090.00	1087.83	1083.56	1076.62
12/21/02	20:00	33.05	40.38	43.31	54.23	33.44	21.27	21.77	1105.89	1100.79	1089.18	1089.88	1087.78	1083.48	1076.59
12/22/02	0:00	33.08	40.43	43.40	54.35	33.47	21.37	21.79	1105.86	1100.74	1089.08	1089.76	1087.75	1083.39	1076.57
12/22/02	4:00	33.11	40.47	43.43	54.40	33.47	21.39	21.80	1105.83	1100.71	1089.06	1089.71	1087.75	1083.36	1076.56
12/22/02	8:00	33.14	40.51	43.48	54.47	33.49	21.45	21.80	1105.80	1100.66	1089.00	1089.64	1087.74	1083.30	1076.56
12/22/02	12:00	33.17	40.55	43.47	54.48	33.45	21.47	21.78	1105.77	1100.62	1089.01	1089.63	1087.77	1083.28	1076.58
12/22/02	16:00	33.19	40.57	43.46	54.47	33.46	21.47	21.79	1105.75	1100.60	1089.02	1089.64	1087.76	1083.28	1076.57
12/22/02	20:00	33.21	40.60	43.47	54.50	33.47	21.51	21.80	1105.73	1100.57	1089.01	1089.61	1087.75	1083.24	1076.56
12/23/02	0:00	33.24	40.63	43.49	54.52	33.47	21.51	21.79	1105.70	1100.54	1088.99	1089.60	1087.75	1083.24	1076.57
12/23/02	4:00	33.26	40.66	43.49	54.53	33.47	21.53	21.80	1105.68	1100.51	1088.99	1089.58	1087.75	1083.22	1076.56
12/23/02	8:00	33.27	40.67	43.46	54.49	33.44	21.51	21.78	1105.67	1100.50	1089.02	1089.62	1087.78	1083.24	1076.58
12/23/02	12:00	33.29	40.69	43.44	54.47	33.41	21.54	21.75	1105.65	1100.48	1089.04	1089.64	1087.81	1083.21	1076.61
12/23/02	16:00	33.29	40.69	43.39	54.41	33.43	21.46	21.76	1105.65	1100.48	1089.09	1089.70	1087.80	1083.29	1076.60
12/23/02	20:00	33.29	40.69	43.36	54.37	33.41	21.46	21.74	1105.65	1100.48	1089.12	1089.74	1087.81	1083.29	1076.62
12/24/02	0:00	33.30	40.69	43.35	54.34	33.41	21.44	21.72	1105.64	1100.48	1089.13	1089.77	1087.81	1083.31	1076.64
12/24/02	4:00	33.29	40.67	43.28	54.27	33.39	21.39	21.73	1105.65	1100.50	1089.20	1089.84	1087.83	1083.37	1076.64
12/24/02	8:00	33.29	40.66	43.27	54.24	33.39	21.38	21.73	1105.66	1100.51	1089.22	1089.87	1087.83	1083.37	1076.63
12/24/02	12:00	33.29	40.65	43.25	54.21	33.38	21.33	21.71	1105.66	1100.52	1089.23	1089.90	1087.84	1083.42	1076.65
12/24/02	16:00	33.27	40.62	43.20	54.14	33.37	21.28	21.72	1105.68	1100.55	1089.28	1089.97	1087.85	1083.48	1076.65
12/24/02	20:00	33.27	40.62	43.25	54.19	33.42	21.29	21.74	1105.67	1100.56	1089.23	1089.92	1087.80	1083.46	1076.63
12/25/02	0:00	33.28	40.62	43.27	54.23	33.43	21.31	21.74	1105.66	1100.55	1089.21	1089.88	1087.79	1083.44	1076.62
12/25/02	4:00	33.29	40.64	43.31	54.26	33.45	21.34	21.76	1105.65	1100.53	1089.17	1089.85	1087.77	1083.41	1076.60
12/25/02	8:00	33.31	40.66	43.37	54.34	33.48	21.38	21.79	1105.63	1100.51	1089.11	1089.77	1087.74	1083.37	1076.57
12/25/02	12:00	33.33	40.68	43.38	54.35	33.45	21.39	21.76	1105.62	1100.49	1089.10	1089.76	1087.77	1083.36	1076.60
12/25/02	16:00	33.34	40.69	43.38	54.36	33.47	21.40	21.77	1105.61	1100.48	1089.10	1089.76	1087.75	1083.35	1076.59
12/25/02	20:00	33.35	40.71	43.42	54.40	33.49	21.44	21.79	1105.59	1100.46	1089.06	1089.71	1087.74	1083.31	1076.57
12/26/02	0:00	33.37	40.73	43.43	54.42	33.47	21.44	21.78	1105.57	1100.44	1089.05	1089.69	1087.75	1083.31	1076.58
12/26/02	4:00	33.39	40.75	43.44	54.43	33.47	21.46	21.78	1105.56	1100.42	1089.04	1089.68	1087.75	1083.29	1076.58
12/26/02	8:00	33.40	40.76	43.44	54.45	33.48	21.46	21.79	1105.54	1100.41	1089.04	1089.66	1087.74	1083.29	1076.57
12/26/02	12:00	33.41	40.78	43.42	54.42	33.45	21.48	21.76	1105.53	1100.39	1089.06	1089.69	1087.77	1083.28	1076.60
12/26/02	16:00	33.41	40.77	43.39	54.38	33.45	21.42	21.76	1105.53	1100.40	1089.10	1089.73	1087.77	1083.33	1076.60
12/26/02	20:00	33.42	40.78	43.40	54.38	33.47	21.44	21.77	1105.52	1100.39	1089.09	1089.73	1087.75	1083.31	1076.59
12/27/02	0:00	33.42	40.78	43.36	54.33	33.44	21.40	21.75	1105.52	1100.40	1089.13	1089.78	1087.78	1083.35	1076.61
12/27/02	4:00	33.42	40.78	43.36	54.33	33.46	21.41	21.76	1105.52	1100.40	1089.12	1089.78	1087.76	1083.34	1076.60

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
12/27/02	8:00	33.42	40.77	43.33	54.30	33.45	21.39	21.75	1105.52	1100.40	1089.15	1089.81	1087.77	1083.37	1076.61
12/27/02	12:00	33.43	40.77	43.33	54.29	33.43	21.39	21.73	1105.52	1100.40	1089.15	1089.82	1087.79	1083.37	1076.63
12/27/02	16:00	33.42	40.76	43.32	54.28	33.45	21.34	21.75	1105.52	1100.41	1089.16	1089.83	1087.77	1083.42	1076.61
12/27/02	20:00	33.43	40.76	43.34	54.30	33.46	21.37	21.75	1105.52	1100.41	1089.14	1089.81	1087.76	1083.38	1076.61
12/28/02	0:00	33.41	40.73	43.27	54.22	33.42	21.31	21.73	1105.53	1100.44	1089.21	1089.89	1087.80	1083.44	1076.63
12/28/02	4:00	33.39	40.70	43.23	54.16	33.41	21.25	21.72	1105.55	1100.47	1089.25	1089.95	1087.81	1083.50	1076.64
12/28/02	8:00	33.38	40.68	43.23	54.15	33.43	21.25	21.73	1105.56	1100.49	1089.25	1089.96	1087.79	1083.50	1076.63
12/28/02	12:00	33.39	40.68	43.23	54.15	33.42	21.25	21.72	1105.55	1100.49	1089.25	1089.96	1087.80	1083.50	1076.64
12/28/02	16:00	33.38	40.66	43.22	54.13	33.43	21.22	21.72	1105.56	1100.51	1089.26	1089.98	1087.79	1083.53	1076.64
12/28/02	20:00	33.38	40.66	43.25	54.17	33.45	21.25	21.74	1105.56	1100.51	1089.23	1089.94	1087.77	1083.50	1076.62
12/29/02	0:00	33.38	40.65	43.22	54.13	33.42	21.20	21.72	1105.56	1100.52	1089.26	1089.98	1087.80	1083.55	1076.64
12/29/02	4:00	33.36	40.61	43.15	54.05	33.39	21.15	21.70	1105.58	1100.56	1089.33	1090.06	1087.83	1083.60	1076.66
12/29/02	8:00	33.34	40.57	43.11	53.99	33.37	21.13	21.69	1105.61	1100.60	1089.37	1090.12	1087.85	1083.62	1076.67
12/29/02	12:00	33.31	40.52	43.05	53.90	33.34	21.06	21.67	1105.64	1100.65	1089.43	1090.21	1087.88	1083.69	1076.70
12/29/02	16:00	33.26	40.46	42.99	53.82	33.34	20.98	21.67	1105.68	1100.71	1089.49	1090.29	1087.88	1083.77	1076.69
12/29/02	20:00	33.24	40.43	42.98	53.79	33.33	20.97	21.66	1105.70	1100.74	1089.51	1090.32	1087.89	1083.78	1076.70
12/30/02	0:00	33.22	40.40	42.98	53.79	33.35	20.93	21.67	1105.72	1100.77	1089.50	1090.32	1087.88	1083.82	1076.69
12/30/02	4:00	33.21	40.38	43.01	53.83	33.37	20.92	21.69	1105.73	1100.79	1089.47	1090.29	1087.85	1083.83	1076.67
12/30/02	8:00	33.22	40.40	43.13	53.96	33.45	20.98	21.74	1105.72	1100.77	1089.35	1090.15	1087.77	1083.77	1076.62
12/30/02	12:00	33.27	40.46	43.28	54.14	33.50	21.14	21.78	1105.67	1100.71	1089.20	1089.97	1087.73	1083.61	1076.58
12/30/02	16:00	33.31	40.51	43.38	54.28	33.54	21.23	21.81	1105.63	1100.66	1089.10	1089.83	1087.68	1083.52	1076.55
12/30/02	20:00	33.36	40.58	43.46	54.40	33.55	21.30	21.82	1105.58	1100.59	1089.02	1089.71	1087.67	1083.45	1076.54
12/31/02	0:00	33.40	40.64	43.48	54.45	33.53	21.39	21.81	1105.54	1100.53	1089.00	1089.66	1087.69	1083.36	1076.56
12/31/02	4:00	33.42	40.67	43.48	54.46	33.51	21.40	21.80	1105.52	1100.50	1089.00	1089.65	1087.71	1083.35	1076.56
12/31/02	8:00	33.44	40.69	43.47	54.46	33.51	21.42	21.80	1105.50	1100.48	1089.01	1089.65	1087.71	1083.33	1076.56
12/31/02	12:00	33.46	40.71	43.41	54.39	33.47	21.40	21.77	1105.48	1100.46	1089.07	1089.72	1087.75	1083.35	1076.59
12/31/02	16:00	33.45	40.70	43.35	54.31	33.46	21.34	21.76	1105.49	1100.47	1089.13	1089.80	1087.77	1083.41	1076.61
12/31/02	20:00	33.46	40.70	43.33	54.28	33.45	21.32	21.75	1105.48	1100.47	1089.15	1089.83	1087.77	1083.43	1076.61
1/1/03	0:00	33.46	40.70	43.30	54.24	33.43	21.29	21.73	1105.48	1100.47	1089.18	1089.87	1087.79	1083.46	1076.63
1/1/03	4:00	33.46	40.69	43.30	54.24	33.45	21.28	21.75	1105.48	1100.48	1089.18	1089.87	1087.77	1083.47	1076.61
1/1/03	8:00	33.47	40.70	43.34	54.27	33.48	21.31	21.76	1105.47	1100.47	1089.14	1089.84	1087.74	1083.44	1076.60
1/1/03	12:00	33.49	40.72	43.35	54.28	33.46	21.31	21.75	1105.45	1100.45	1089.13	1089.83	1087.76	1083.44	1076.61
1/1/03	16:00	33.50	40.73	43.38	54.32	33.50	21.35	21.78	1105.44	1100.44	1089.10	1089.79	1087.72	1083.41	1076.58
1/1/03	20:00	33.51	40.75	43.41	54.36	33.51	21.35	21.78	1105.43	1100.42	1089.07	1089.75	1087.71	1083.40	1076.58
1/2/03	0:00	33.54	40.78	43.45	54.41	33.53	21.40	21.79	1105.40	1100.39	1089.03	1089.70	1087.70	1083.36	1076.57
1/2/03	4:00	33.55	40.80	43.46	54.42	33.52	21.43	21.79	1105.39	1100.37	1089.02	1089.69	1087.71	1083.33	1076.57

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
1/2/03	8:00	33.56	40.82	43.47	54.45	33.53	21.45	21.79	1105.38	1100.35	1089.01	1089.66	1087.70	1083.30	1076.57
1/2/03	12:00	33.58	40.84	43.46	54.45	33.50	21.45	21.78	1105.36	1100.33	1089.02	1089.66	1087.72	1083.30	1076.58
1/2/03	16:00	33.59	40.85	43.44	54.42	33.51	21.42	21.77	1105.35	1100.32	1089.05	1089.69	1087.71	1083.33	1076.59
1/2/03	20:00	33.61	40.87	43.47	54.46	33.53	21.44	21.79	1105.33	1100.31	1089.01	1089.65	1087.69	1083.31	1076.57
1/3/03	0:00	33.62	40.89	43.48	54.48	33.53	21.46	21.78	1105.32	1100.28	1089.00	1089.63	1087.70	1083.29	1076.58
1/3/03	4:00	33.63	40.90	43.46	54.45	33.50	21.46	21.78	1105.31	1100.27	1089.02	1089.66	1087.72	1083.29	1076.58
1/3/03	8:00	33.64	40.90	43.44	54.42	33.48	21.45	21.76	1105.30	1100.27	1089.04	1089.69	1087.74	1083.30	1076.60
1/3/03	12:00	33.64	40.91	43.40	54.38	33.47	21.43	21.75	1105.30	1100.27	1089.08	1089.74	1087.75	1083.32	1076.61
1/3/03	16:00	33.61	40.87	43.29	54.25	33.44	21.32	21.73	1105.33	1100.30	1089.19	1089.86	1087.78	1083.43	1076.64
1/3/03	20:00	33.60	40.85	43.29	54.24	33.46	21.31	21.74	1105.35	1100.32	1089.19	1089.87	1087.76	1083.44	1076.63
1/4/03	0:00	33.58	40.82	43.26	54.19	33.44	21.26	21.72	1105.36	1100.35	1089.23	1089.92	1087.78	1083.49	1076.64
1/4/03	4:00	33.57	40.80	43.25	54.17	33.45	21.25	21.72	1105.37	1100.37	1089.23	1089.94	1087.77	1083.50	1076.64
1/4/03	8:00	33.58	40.80	43.32	54.24	33.50	21.29	21.76	1105.37	1100.37	1089.16	1089.87	1087.72	1083.47	1076.60
1/4/03	12:00	33.58	40.79	43.26	54.17	33.43	21.24	21.72	1105.36	1100.38	1089.23	1089.94	1087.79	1083.51	1076.64
1/4/03	16:00	33.56	40.77	43.27	54.18	33.49	21.22	21.75	1105.38	1100.40	1089.21	1089.93	1087.73	1083.53	1076.61
1/4/03	20:00	33.59	40.80	43.38	54.31	33.54	21.31	21.76	1105.35	1100.37	1089.10	1089.80	1087.68	1083.44	1076.60
1/5/03	0:00	33.61	40.82	43.38	54.33	33.52	21.32	21.78	1105.33	1100.35	1089.10	1089.79	1087.70	1083.44	1076.58
1/5/03	4:00	33.62	40.83	43.40	54.35	33.53	21.33	21.79	1105.32	1100.34	1089.08	1089.76	1087.69	1083.42	1076.57
1/5/03	8:00	33.63	40.84	43.41	54.36	33.52	21.34	21.77	1105.31	1100.33	1089.07	1089.75	1087.70	1083.41	1076.59
1/5/03	12:00	33.65	40.87	43.44	54.39	33.53	21.38	21.78	1105.29	1100.30	1089.05	1089.72	1087.69	1083.37	1076.58
1/5/03	16:00	33.67	40.89	43.49	54.46	33.57	21.41	21.81	1105.27	1100.28	1088.99	1089.66	1087.65	1083.34	1076.55
1/5/03	20:00	33.71	40.94	43.59	54.58	33.61	21.50	21.83	1105.23	1100.23	1088.89	1089.53	1087.61	1083.25	1076.53
1/6/03	0:00	33.75	41.01	43.66	54.69	33.62	21.58	21.85	1105.19	1100.16	1088.82	1089.42	1087.61	1083.17	1076.51
1/6/03	4:00	33.79	41.06	43.68	54.74	33.61	21.65	21.84	1105.15	1100.12	1088.81	1089.37	1087.61	1083.10	1076.52
1/6/03	8:00	33.82	41.10	43.70	54.78	33.62	21.68	21.85	1105.12	1100.07	1088.78	1089.33	1087.60	1083.07	1076.51
1/6/03	12:00	33.85	41.15	43.69	54.78	33.58	21.74	21.83	1105.09	1100.02	1088.80	1089.33	1087.64	1083.01	1076.54
1/6/03	16:00	33.86	41.16	43.62	54.71	33.57	21.66	21.82	1105.08	1100.01	1088.86	1089.40	1087.65	1083.09	1076.55
1/6/03	20:00	33.86	41.15	43.56	54.63	33.53	21.66	21.78	1105.08	1100.02	1088.93	1089.48	1087.69	1083.09	1076.58
1/7/03	0:00	33.86	41.15	43.48	54.53	33.50	21.61	21.76	1105.08	1100.03	1089.00	1089.58	1087.72	1083.14	1076.60
1/7/03	4:00	33.85	41.12	43.42	54.45	33.48	21.54	21.74	1105.09	1100.05	1089.06	1089.66	1087.74	1083.21	1076.62
1/7/03	8:00	33.83	41.09	43.37	54.38	33.49	21.48	21.74	1105.11	1100.08	1089.11	1089.74	1087.73	1083.28	1076.62
1/7/03	12:00	33.82	41.07	43.33	54.31	33.46	21.43	21.73	1105.13	1100.10	1089.15	1089.80	1087.76	1083.32	1076.64
1/7/03	16:00	33.77	41.01	43.25	54.20	33.44	21.31	21.70	1105.17	1100.16	1089.23	1089.91	1087.78	1083.44	1076.66
1/7/03	20:00	33.76	40.98	43.24	54.18	33.45	21.30	21.71	1105.18	1100.19	1089.24	1089.93	1087.77	1083.45	1076.65
1/8/03	0:00	33.74	40.94	43.23	54.15	33.45	21.24	21.71	1105.20	1100.23	1089.25	1089.96	1087.77	1083.51	1076.65
1/8/03	4:00	33.72	40.91	43.20	54.11	33.44	21.20	21.70	1105.22	1100.26	1089.28	1090.00	1087.78	1083.55	1076.66

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
1/8/03	8:00	33.69	40.86	43.16	54.05	33.43	21.17	21.69	1105.25	1100.31	1089.32	1090.06	1087.79	1083.58	1076.67
1/8/03	12:00	33.66	40.81	43.11	53.97	33.39	21.12	21.67	1105.28	1100.36	1089.38	1090.14	1087.83	1083.63	1076.69
1/8/03	16:00	33.63	40.76	43.10	53.94	33.42	21.06	21.68	1105.31	1100.41	1089.39	1090.17	1087.80	1083.69	1076.68
1/8/03	20:00	33.63	40.75	43.17	54.02	33.46	21.07	21.71	1105.31	1100.42	1089.31	1090.09	1087.76	1083.68	1076.65
1/9/03	0:00	33.64	40.77	43.23	54.09	33.49	21.12	21.74	1105.30	1100.40	1089.25	1090.02	1087.73	1083.63	1076.63
1/9/03	4:00	33.66	40.78	43.26	54.14	33.49	21.15	21.74	1105.28	1100.39	1089.22	1089.97	1087.73	1083.60	1076.62
1/9/03	8:00	33.68	40.81	43.36	54.26	33.55	21.20	21.79	1105.26	1100.36	1089.13	1089.85	1087.67	1083.55	1076.57
1/9/03	12:00	33.71	40.85	43.42	54.34	33.55	21.30	21.77	1105.23	1100.32	1089.06	1089.77	1087.67	1083.45	1076.59
1/9/03	16:00	33.73	40.88	43.41	54.35	33.55	21.30	21.78	1105.21	1100.30	1089.07	1089.76	1087.67	1083.45	1076.58
1/9/03	20:00	33.76	40.91	43.47	54.43	33.58	21.38	21.80	1105.18	1100.26	1089.02	1089.68	1087.64	1083.37	1076.56
1/10/03	0:00	33.79	40.94	43.48	54.46	33.57	21.39	21.80	1105.16	1100.23	1089.00	1089.65	1087.65	1083.36	1076.56
1/10/03	4:00	33.80	40.97	43.49	54.47	33.57	21.40	21.80	1105.14	1100.21	1088.99	1089.64	1087.65	1083.35	1076.56
1/10/03	8:00	33.84	41.01	43.57	54.57	33.62	21.46	21.83	1105.11	1100.16	1088.91	1089.54	1087.60	1083.29	1076.53
1/10/03	12:00	33.86	41.05	43.57	54.58	33.59	21.51	21.81	1105.08	1100.12	1088.91	1089.53	1087.64	1083.24	1076.55
1/10/03	16:00	33.88	41.06	43.55	54.56	33.58	21.51	21.81	1105.06	1100.11	1088.93	1089.55	1087.64	1083.24	1076.55
1/10/03	20:00	33.89	41.08	43.56	54.57	33.59	21.52	21.81	1105.05	1100.09	1088.92	1089.54	1087.64	1083.23	1076.55
1/11/03	0:00	33.91	41.10	43.56	54.57	33.58	21.53	21.81	1105.03	1100.07	1088.92	1089.54	1087.64	1083.22	1076.55
1/11/03	4:00	33.92	41.12	43.56	54.57	33.57	21.54	21.78	1105.02	1100.05	1088.93	1089.54	1087.65	1083.22	1076.58
1/11/03	8:00	33.94	41.13	43.55	54.56	33.58	21.55	21.80	1105.01	1100.04	1088.93	1089.55	1087.64	1083.20	1076.56
1/11/03	12:00	33.95	41.15	43.56	54.57	33.57	21.57	21.80	1104.99	1100.02	1088.93	1089.54	1087.65	1083.18	1076.56
1/11/03	16:00	33.95	41.15	43.51	54.52	33.56	21.52	21.79	1104.99	1100.02	1088.97	1089.59	1087.66	1083.23	1076.57
1/11/03	20:00	33.96	41.17	43.55	54.56	33.60	21.54	21.81	1104.98	1100.00	1088.93	1089.55	1087.62	1083.21	1076.55
1/12/03	0:00	33.98	41.18	43.57	54.58	33.59	21.56	21.81	1104.96	1099.99	1088.91	1089.53	1087.63	1083.19	1076.55
1/12/03	4:00	33.98	41.19	43.52	54.52	33.56	21.53	21.79	1104.96	1099.98	1088.96	1089.59	1087.67	1083.22	1076.57
1/12/03	8:00	33.98	41.19	43.50	54.50	33.56	21.52	21.79	1104.96	1099.98	1088.98	1089.61	1087.66	1083.23	1076.57
1/12/03	12:00	33.97	41.18	43.44	54.43	33.53	21.47	21.75	1104.97	1100.00	1089.04	1089.68	1087.70	1083.28	1076.61
1/12/03	16:00	33.94	41.14	43.36	54.32	33.50	21.38	21.73	1105.01	1100.03	1089.12	1089.79	1087.72	1083.37	1076.63
1/12/03	20:00	33.93	41.13	43.41	54.36	33.55	21.41	21.76	1105.01	1100.04	1089.07	1089.75	1087.67	1083.34	1076.60
1/13/03	0:00	33.93	41.12	43.42	54.38	33.56	21.41	21.77	1105.01	1100.05	1089.06	1089.74	1087.66	1083.34	1076.59
1/13/03	4:00	33.94	41.13	43.44	54.39	33.56	21.43	21.77	1105.00	1100.04	1089.05	1089.72	1087.66	1083.32	1076.59
1/13/03	8:00	33.96	41.14	43.48	54.45	33.58	21.46	21.79	1104.98	1100.03	1089.00	1089.66	1087.64	1083.29	1076.57
1/13/03	12:00	33.96	41.14	43.45	54.41	33.56	21.45	21.77	1104.98	1100.03	1089.03	1089.70	1087.67	1083.30	1076.59
1/13/03	16:00	33.93	41.11	43.35	54.29	33.52	21.35	21.74	1105.01	1100.06	1089.13	1089.82	1087.70	1083.40	1076.62
1/13/03	20:00	33.93	41.10	43.40	54.34	33.56	21.35	21.77	1105.01	1100.07	1089.08	1089.77	1087.66	1083.40	1076.59
1/14/03	0:00	33.95	41.12	43.48	54.43	33.60	21.41	21.80	1104.99	1100.06	1089.00	1089.68	1087.62	1083.34	1076.56
1/14/03	4:00	33.98	41.15	43.58	54.55	33.64	21.51	21.84	1104.96	1100.02	1088.90	1089.56	1087.58	1083.25	1076.53

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
1/14/03	8:00	34.02	41.20	43.67	54.67	33.66	21.59	21.85	1104.92	1099.97	1088.81	1089.44	1087.56	1083.16	1076.51
1/14/03	12:00	34.05	41.24	43.66	54.68	33.62	21.62	21.82	1104.89	1099.93	1088.82	1089.43	1087.60	1083.13	1076.54
1/14/03	16:00	34.05	41.24	43.56	54.58	33.58	21.55	21.79	1104.89	1099.93	1088.92	1089.53	1087.64	1083.20	1076.57
1/14/03	20:00	34.06	41.25	43.58	54.59	33.62	21.57	21.81	1104.88	1099.92	1088.90	1089.52	1087.61	1083.18	1076.55
1/15/03	0:00	34.07	41.27	43.57	54.59	33.60	21.59	21.80	1104.87	1099.90	1088.91	1089.52	1087.62	1083.17	1076.56
1/15/03	4:00	34.07	41.26	43.54	54.55	33.58	21.55	21.79	1104.87	1099.91	1088.94	1089.56	1087.64	1083.20	1076.57
1/15/03	8:00	34.07	41.26	43.52	54.52	33.58	21.50	21.77	1104.87	1099.91	1088.96	1089.59	1087.64	1083.25	1076.59
1/15/03	12:00	34.07	41.25	43.47	54.46	33.54	21.50	21.76	1104.87	1099.92	1089.01	1089.66	1087.68	1083.25	1076.60
1/15/03	16:00	34.02	41.19	43.35	54.30	33.51	21.41	21.73	1104.92	1099.98	1089.13	1089.81	1087.71	1083.34	1076.63
1/15/03	20:00	34.01	41.17	43.40	54.34	33.57	21.38	21.77	1104.93	1100.00	1089.08	1089.77	1087.65	1083.37	1076.59
1/16/03	0:00	34.00	41.15	43.39	54.33	33.54	21.37	21.75	1104.94	1100.02	1089.09	1089.79	1087.68	1083.38	1076.61
1/16/03	4:00	33.99	41.14	43.41	54.34	33.58	21.37	21.77	1104.95	1100.03	1089.07	1089.77	1087.64	1083.38	1076.59
1/16/03	8:00	34.01	41.16	43.52	54.47	33.63	21.44	21.82	1104.93	1100.01	1088.96	1089.64	1087.59	1083.31	1076.54
1/16/03	12:00	34.05	41.20	43.60	54.57	33.65	21.50	21.83	1104.89	1099.97	1088.89	1089.54	1087.57	1083.25	1076.54
1/16/03	16:00	34.07	41.22	43.60	54.58	33.63	21.53	21.82	1104.87	1099.95	1088.89	1089.53	1087.59	1083.22	1076.54
1/16/03	20:00	34.09	41.24	43.59	54.59	33.63	21.55	21.81	1104.85	1099.93	1088.89	1089.52	1087.60	1083.20	1076.55
1/17/03	0:00	34.10	41.26	43.58	54.57	33.61	21.55	21.81	1104.84	1099.91	1088.90	1089.54	1087.61	1083.20	1076.55
1/17/03	4:00	34.11	41.27	43.59	54.58	33.62	21.55	21.81	1104.83	1099.90	1088.90	1089.53	1087.60	1083.20	1076.55
1/17/03	8:00	34.12	41.28	43.59	54.59	33.63	21.57	21.81	1104.82	1099.89	1088.89	1089.52	1087.59	1083.18	1076.55
1/17/03	12:00	34.15	41.31	43.60	54.60	33.62	21.58	21.81	1104.79	1099.86	1088.88	1089.51	1087.61	1083.17	1076.55
1/17/03	16:00	34.12	41.28	43.48	54.47	33.57	21.49	21.77	1104.82	1099.89	1089.00	1089.65	1087.66	1083.26	1076.59
1/17/03	20:00	34.09	41.23	43.38	54.34	33.53	21.41	21.74	1104.85	1099.94	1089.10	1089.77	1087.69	1083.34	1076.63
1/18/03	0:00	34.03	41.14	43.25	54.16	33.48	21.28	21.70	1104.91	1100.03	1089.23	1089.95	1087.74	1083.47	1076.66
1/18/03	4:00	33.99	41.09	43.27	54.16	33.53	21.24	21.73	1104.95	1100.08	1089.21	1089.95	1087.69	1083.51	1076.64
1/18/03	8:00	34.00	41.08	43.35	54.23	33.57	21.30	21.76	1104.94	1100.09	1089.13	1089.88	1087.65	1083.46	1076.60
1/18/03	12:00	34.02	41.10	43.39	54.29	33.58	21.32	21.76	1104.92	1100.07	1089.09	1089.82	1087.64	1083.44	1076.60
1/18/03	16:00	34.03	41.10	43.41	54.32	33.59	21.33	21.77	1104.91	1100.07	1089.07	1089.79	1087.63	1083.42	1076.59
1/18/03	20:00	34.04	41.11	43.42	54.34	33.60	21.32	21.78	1104.90	1100.06	1089.06	1089.77	1087.63	1083.43	1076.58
1/19/03	0:00	34.04	41.11	43.39	54.31	33.57	21.28	21.76	1104.90	1100.06	1089.09	1089.80	1087.65	1083.47	1076.60
1/19/03	4:00	34.02	41.09	43.34	54.25	33.55	21.25	21.74	1104.92	1100.08	1089.14	1089.86	1087.67	1083.50	1076.62
1/19/03	8:00	33.99	41.05	43.29	54.19	33.54	21.20	21.73	1104.95	1100.12	1089.19	1089.92	1087.68	1083.55	1076.63
1/19/03	12:00	33.97	41.02	43.26	54.14	33.52	21.16	21.72	1104.97	1100.15	1089.22	1089.97	1087.70	1083.59	1076.64
1/19/03	16:00	33.93	40.96	43.22	54.08	33.54	21.11	21.73	1105.01	1100.21	1089.26	1090.03	1087.68	1083.65	1076.64
1/19/03	20:00	33.94	40.96	43.31	54.17	33.57	21.16	21.76	1105.00	1100.21	1089.17	1089.94	1087.65	1083.59	1076.60
1/20/03	0:00	33.96	40.98	43.32	54.20	33.56	21.16	21.75	1104.98	1100.19	1089.16	1089.92	1087.66	1083.59	1076.61
1/20/03	4:00	33.97	40.99	43.36	54.26	33.59	21.21	21.77	1104.97	1100.18	1089.12	1089.85	1087.63	1083.54	1076.59

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
1/20/03	8:00	33.98	41.00	43.38	54.27	33.60	21.23	21.78	1104.96	1100.17	1089.10	1089.84	1087.62	1083.52	1076.58
1/20/03	12:00	34.00	41.01	43.38	54.28	33.57	21.23	21.76	1104.94	1100.16	1089.10	1089.83	1087.65	1083.52	1076.60
1/20/03	16:00	33.98	41.00	43.33	54.23	33.58	21.19	21.76	1104.96	1100.17	1089.15	1089.88	1087.64	1083.57	1076.60
1/20/03	20:00	34.00	41.03	43.46	54.38	33.65	21.27	21.81	1104.94	1100.15	1089.02	1089.74	1087.57	1083.48	1076.55
1/21/03	0:00	34.04	41.07	43.52	54.46	33.65	21.33	21.82	1104.90	1100.10	1088.96	1089.65	1087.57	1083.42	1076.55
1/21/03	4:00	34.08	41.12	43.58	54.55	33.67	21.42	21.83	1104.87	1100.06	1088.90	1089.56	1087.55	1083.33	1076.53
1/21/03	8:00	34.10	41.15	43.61	54.60	33.68	21.45	21.84	1104.84	1100.02	1088.87	1089.52	1087.54	1083.30	1076.52
1/21/03	12:00	34.13	41.19	43.60	54.60	33.64	21.47	21.82	1104.81	1099.98	1088.88	1089.51	1087.58	1083.28	1076.54
1/21/03	16:00	34.14	41.20	43.57	54.57	33.63	21.48	21.82	1104.80	1099.97	1088.91	1089.55	1087.59	1083.27	1076.55
1/21/03	20:00	34.16	41.22	43.59	54.58	33.64	21.48	21.82	1104.78	1099.95	1088.89	1089.53	1087.58	1083.27	1076.54
1/22/03	0:00	34.18	41.25	43.62	54.62	33.66	21.51	21.83	1104.76	1099.92	1088.86	1089.49	1087.56	1083.24	1076.53
1/22/03	4:00	34.20	41.27	43.62	54.62	33.65	21.52	21.82	1104.74	1099.90	1088.86	1089.50	1087.57	1083.23	1076.54
1/22/03	8:00	34.22	41.30	43.67	54.69	33.67	21.57	21.84	1104.72	1099.87	1088.81	1089.42	1087.55	1083.18	1076.52
1/22/03	12:00	34.25	41.35	43.73	54.76	33.69	21.64	21.85	1104.70	1099.82	1088.76	1089.35	1087.53	1083.11	1076.51
1/22/03	16:00	34.27	41.37	43.71	54.75	33.67	21.67	21.84	1104.67	1099.80	1088.77	1089.36	1087.55	1083.08	1076.52
1/22/03	20:00	34.29	41.41	43.75	54.81	33.70	21.69	21.86	1104.65	1099.77	1088.73	1089.30	1087.52	1083.06	1076.50
1/23/03	0:00	34.32	41.45	43.76	54.84	33.69	21.74	21.86	1104.62	1099.72	1088.72	1089.27	1087.53	1083.01	1076.50
1/23/03	4:00	34.34	41.47	43.72	54.81	33.67	21.73	21.84	1104.60	1099.70	1088.76	1089.30	1087.55	1083.02	1076.52
1/23/03	8:00	34.35	41.49	43.72	54.81	33.67	21.76	21.84	1104.59	1099.68	1088.76	1089.30	1087.55	1082.99	1076.52
1/23/03	12:00	34.37	41.53	43.70	54.79	33.65	21.77	21.81	1104.57	1099.64	1088.78	1089.32	1087.57	1082.98	1076.56
1/23/03	16:00	34.36	41.52	43.62	54.69	33.63	21.70	21.80	1104.58	1099.65	1088.86	1089.42	1087.59	1083.05	1076.56
1/23/03	20:00	34.35	41.50	43.59	54.64	33.63	21.65	21.79	1104.59	1099.67	1088.89	1089.47	1087.59	1083.10	1076.57
1/24/03	0:00	34.34	41.48	43.56	54.59	33.63	21.62	21.79	1104.60	1099.69	1088.92	1089.52	1087.59	1083.13	1076.57
1/24/03	4:00	34.32	41.46	43.50	54.51	33.61	21.54	21.77	1104.62	1099.71	1088.98	1089.60	1087.61	1083.21	1076.59
1/24/03	8:00	34.30	41.44	43.49	54.48	33.62	21.51	21.78	1104.64	1099.73	1088.99	1089.63	1087.60	1083.24	1076.58
1/24/03	12:00	34.29	41.43	43.44	54.42	33.58	21.50	21.75	1104.65	1099.75	1089.04	1089.69	1087.64	1083.25	1076.61
1/24/03	16:00	34.25	41.36	43.38	54.33	33.58	21.43	21.74	1104.70	1099.81	1089.10	1089.78	1087.64	1083.32	1076.62
1/24/03	20:00	34.24	41.33	43.40	54.35	33.59	21.40	21.75	1104.70	1099.84	1089.08	1089.76	1087.63	1083.35	1076.61
1/25/03	0:00	34.23	41.31	43.39	54.32	33.59	21.38	21.74	1104.72	1099.86	1089.09	1089.79	1087.63	1083.37	1076.63
1/25/03	4:00	34.21	41.27	43.36	54.28	33.58	21.31	21.74	1104.73	1099.90	1089.12	1089.83	1087.64	1083.44	1076.62
1/25/03	8:00	34.20	41.25	43.37	54.28	33.59	21.29	21.75	1104.74	1099.92	1089.11	1089.83	1087.63	1083.46	1076.61
1/25/03	12:00	34.19	41.25	43.37	54.28	33.58	21.30	21.74	1104.75	1099.92	1089.11	1089.84	1087.64	1083.45	1076.62
1/25/03	16:00	34.16	41.20	43.32	54.23	33.58	21.25	21.74	1104.78	1099.97	1089.16	1089.89	1087.64	1083.50	1076.62
1/25/03	20:00	34.19	41.23	43.51	54.43	33.70	21.38	21.83	1104.75	1099.94	1088.97	1089.68	1087.52	1083.37	1076.53
1/26/03	0:00	34.23	41.28	43.59	54.54	33.70	21.47	21.84	1104.71	1099.90	1088.90	1089.57	1087.52	1083.28	1076.53
1/26/03	4:00	34.27	41.32	43.64	54.63	33.71	21.52	21.85	1104.67	1099.85	1088.84	1089.48	1087.51	1083.23	1076.51

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
1/26/03	8:00	34.31	41.37	43.70	54.72	33.73	21.58	21.86	1104.63	1099.80	1088.78	1089.39	1087.49	1083.17	1076.50
1/26/03	12:00	34.34	41.42	43.70	54.74	33.70	21.62	21.85	1104.60	1099.75	1088.78	1089.37	1087.52	1083.13	1076.51
1/26/03	16:00	34.35	41.43	43.62	54.65	33.66	21.60	21.82	1104.59	1099.75	1088.86	1089.46	1087.56	1083.15	1076.54
1/26/03	20:00	34.35	41.42	43.60	54.61	33.66	21.55	21.80	1104.59	1099.75	1088.89	1089.50	1087.56	1083.20	1076.56
1/27/03	0:00	34.34	41.40	43.52	54.51	33.61	21.49	21.77	1104.60	1099.77	1088.96	1089.60	1087.61	1083.26	1076.59
1/27/03	4:00	34.31	41.37	43.44	54.40	33.58	21.41	21.75	1104.63	1099.80	1089.05	1089.71	1087.64	1083.34	1076.61
1/27/03	8:00	34.26	41.32	43.38	54.31	33.58	21.32	21.74	1104.68	1099.85	1089.10	1089.80	1087.64	1083.43	1076.62
1/27/03	12:00	34.23	41.27	43.32	54.22	33.55	21.26	21.72	1104.71	1099.90	1089.16	1089.89	1087.67	1083.49	1076.64
1/27/03	16:00	34.18	41.19	43.27	54.13	33.55	21.21	21.71	1104.76	1099.98	1089.22	1089.98	1087.67	1083.55	1076.65
1/27/03	20:00	34.16	41.16	43.28	54.13	33.57	21.18	21.72	1104.78	1100.01	1089.20	1089.98	1087.66	1083.57	1076.64
1/28/03	0:00	34.15	41.14	43.29	54.13	33.57	21.16	21.73	1104.79	1100.03	1089.19	1089.98	1087.65	1083.59	1076.63
1/28/03	4:00	34.13	41.09	43.25	54.09	33.56	21.12	21.72	1104.82	1100.08	1089.23	1090.02	1087.66	1083.63	1076.64
1/28/03	8:00	34.11	41.07	43.29	54.13	33.60	21.11	21.75	1104.83	1100.10	1089.19	1089.98	1087.62	1083.64	1076.61
1/28/03	12:00	34.13	41.08	43.35	54.21	33.62	21.16	21.76	1104.81	1100.09	1089.13	1089.90	1087.60	1083.59	1076.60
1/28/03	16:00	34.15	41.10	43.40	54.28	33.65	21.20	21.78	1104.79	1100.07	1089.08	1089.83	1087.57	1083.55	1076.58
1/28/03	20:00	34.19	41.15	43.52	54.44	33.70	21.30	21.83	1104.75	1100.02	1088.96	1089.67	1087.52	1083.45	1076.53
1/29/03	0:00	34.23	41.21	43.60	54.56	33.72	21.40	21.85	1104.71	1099.96	1088.88	1089.55	1087.50	1083.35	1076.51
1/29/03	4:00	34.26	41.25	43.63	54.61	33.73	21.44	21.85	1104.68	1099.92	1088.85	1089.50	1087.49	1083.31	1076.51
1/29/03	8:00	34.30	41.29	43.65	54.66	33.72	21.48	21.86	1104.65	1099.88	1088.83	1089.45	1087.50	1083.27	1076.50
1/29/03	12:00	34.33	41.34	43.68	54.70	33.71	21.53	21.85	1104.61	1099.83	1088.81	1089.42	1087.51	1083.22	1076.51
1/29/03	16:00	34.34	41.35	43.60	54.61	33.67	21.51	21.82	1104.60	1099.82	1088.88	1089.50	1087.55	1083.24	1076.54
1/29/03	20:00	34.35	41.36	43.57	54.57	33.66	21.48	21.80	1104.59	1099.81	1088.91	1089.54	1087.56	1083.27	1076.56
1/30/03	0:00	34.36	41.37	43.56	54.55	33.67	21.48	21.80	1104.58	1099.80	1088.92	1089.56	1087.55	1083.28	1076.56
1/30/03	4:00	34.33	41.35	43.49	54.46	33.63	21.42	21.78	1104.61	1099.82	1088.99	1089.65	1087.59	1083.33	1076.58
1/30/03	8:00	34.30	41.33	43.43	54.38	33.62	21.35	21.76	1104.64	1099.85	1089.05	1089.73	1087.60	1083.40	1076.60
1/30/03	12:00	34.28	41.29	43.39	54.31	33.59	21.29	21.74	1104.66	1099.88	1089.09	1089.80	1087.63	1083.46	1076.62
1/30/03	16:00	34.22	41.20	43.29	54.17	33.56	21.19	21.71	1104.72	1099.97	1089.19	1089.94	1087.66	1083.56	1076.65
1/30/03	20:00	34.19	41.16	43.31	54.18	33.62	21.17	21.75	1104.75	1100.01	1089.17	1089.93	1087.60	1083.58	1076.61
1/31/03	0:00	34.20	41.16	43.35	54.22	33.61	21.17	21.75	1104.74	1100.01	1089.13	1089.89	1087.61	1083.58	1076.61
1/31/03	4:00	34.19	41.15	43.37	54.25	33.62	21.19	21.76	1104.75	1100.02	1089.11	1089.86	1087.60	1083.56	1076.60
1/31/03	8:00	34.22	41.18	43.47	54.37	33.68	21.26	21.81	1104.72	1100.00	1089.01	1089.74	1087.54	1083.49	1076.56
1/31/03	12:00	34.25	41.22	43.52	54.46	33.69	21.32	21.80	1104.69	1099.95	1088.96	1089.66	1087.53	1083.43	1076.56
1/31/03	16:00	34.27	41.24	43.53	54.48	33.69	21.34	21.82	1104.67	1099.94	1088.95	1089.63	1087.53	1083.42	1076.54
1/31/03	20:00	34.29	41.25	43.52	54.47	33.67	21.33	21.81	1104.65	1099.92	1088.97	1089.64	1087.55	1083.42	1076.56
2/1/03	0:00	34.30	41.26	43.47	54.41	33.64	21.31	21.78	1104.65	1099.91	1089.01	1089.70	1087.58	1083.44	1076.58
2/1/03	4:00	34.26	41.24	43.39	54.32	33.60	21.24	21.75	1104.68	1099.93	1089.09	1089.79	1087.62	1083.51	1076.61

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
2/1/03	8:00	34.23	41.20	43.37	54.28	33.63	21.20	21.76	1104.71	1099.97	1089.11	1089.83	1087.59	1083.55	1076.60
2/1/03	12:00	34.22	41.17	43.34	54.24	33.61	21.16	21.74	1104.72	1100.00	1089.14	1089.87	1087.61	1083.59	1076.62
2/1/03	16:00	34.18	41.12	43.29	54.17	33.60	21.10	21.74	1104.76	1100.05	1089.19	1089.94	1087.62	1083.65	1076.62
2/1/03	20:00	34.16	41.09	43.30	54.16	33.60	21.10	21.74	1104.78	1100.08	1089.19	1089.95	1087.62	1083.65	1076.62
2/2/03	0:00	34.16	41.08	43.30	54.15	33.60	21.08	21.74	1104.78	1100.09	1089.19	1089.96	1087.62	1083.67	1076.62
2/2/03	4:00	34.14	41.05	43.28	54.14	33.60	21.05	21.74	1104.80	1100.12	1089.20	1089.98	1087.62	1083.70	1076.62
2/2/03	8:00	34.13	41.03	43.27	54.12	33.59	21.02	21.74	1104.81	1100.14	1089.21	1089.99	1087.63	1083.73	1076.62
2/2/03	12:00	34.10	40.99	43.22	54.05	33.56	20.98	21.72	1104.84	1100.19	1089.26	1090.06	1087.66	1083.77	1076.65
2/2/03	16:00	34.06	40.93	43.19	54.00	33.57	20.92	21.72	1104.88	1100.24	1089.30	1090.11	1087.65	1083.83	1076.64
2/2/03	20:00	34.06	40.93	43.23	54.05	33.61	20.92	21.74	1104.88	1100.24	1089.25	1090.06	1087.62	1083.83	1076.62
2/3/03	0:00	34.08	40.95	43.32	54.17	33.65	20.97	21.78	1104.86	1100.22	1089.16	1089.94	1087.57	1083.78	1076.58
2/3/03	4:00	34.11	40.98	43.39	54.26	33.67	21.03	21.81	1104.84	1100.19	1089.09	1089.85	1087.55	1083.72	1076.56
2/3/03	8:00	34.13	41.01	43.42	54.31	33.67	21.08	21.80	1104.81	1100.16	1089.06	1089.80	1087.55	1083.67	1076.56
2/3/03	12:00	34.16	41.06	43.49	54.41	33.70	21.17	21.83	1104.78	1100.12	1088.99	1089.70	1087.52	1083.58	1076.53
2/3/03	16:00	34.19	41.10	43.58	54.52	33.75	21.24	21.86	1104.75	1100.07	1088.90	1089.59	1087.48	1083.51	1076.50
2/3/03	20:00	34.25	41.19	43.69	54.69	33.78	21.38	21.88	1104.69	1099.98	1088.79	1089.42	1087.45	1083.37	1076.48
2/4/03	0:00	34.30	41.26	43.74	54.77	33.78	21.47	21.89	1104.64	1099.91	1088.74	1089.34	1087.44	1083.28	1076.47
2/4/03	4:00	34.34	41.31	43.74	54.79	33.75	21.48	21.87	1104.60	1099.86	1088.74	1089.32	1087.47	1083.27	1076.49
2/4/03	8:00	34.37	41.36	43.75	54.81	33.75	21.53	21.88	1104.57	1099.81	1088.73	1089.31	1087.47	1083.22	1076.48
2/4/03	12:00	34.41	41.42	43.78	54.84	33.75	21.59	21.87	1104.53	1099.75	1088.70	1089.27	1087.47	1083.17	1076.49
2/4/03	16:00	34.43	41.44	43.73	54.79	33.73	21.57	21.85	1104.51	1099.73	1088.76	1089.32	1087.50	1083.18	1076.51
2/4/03	20:00	34.45	41.46	43.73	54.79	33.73	21.58	21.85	1104.49	1099.71	1088.75	1089.32	1087.49	1083.17	1076.51
2/5/03	0:00	34.47	41.49	43.71	54.77	33.72	21.59	21.84	1104.47	1099.68	1088.77	1089.34	1087.51	1083.17	1076.52
2/5/03	4:00	34.48	41.51	43.69	54.74	33.71	21.59	21.82	1104.46	1099.66	1088.79	1089.37	1087.51	1083.16	1076.54
2/5/03	8:00	34.49	41.52	43.67	54.72	33.72	21.57	21.84	1104.45	1099.66	1088.81	1089.39	1087.51	1083.18	1076.52
2/5/03	12:00	34.49	41.52	43.63	54.66	33.68	21.53	21.81	1104.45	1099.65	1088.85	1089.45	1087.54	1083.22	1076.55
2/5/03	16:00	34.47	41.50	43.55	54.57	33.67	21.48	21.79	1104.47	1099.67	1088.93	1089.55	1087.56	1083.27	1076.57
2/5/03	20:00	34.47	41.50	43.58	54.58	33.70	21.49	21.81	1104.47	1099.67	1088.90	1089.53	1087.53	1083.26	1076.55
2/6/03	0:00	34.48	41.51	43.60	54.60	33.70	21.48	21.81	1104.46	1099.66	1088.89	1089.51	1087.52	1083.27	1076.55
2/6/03	4:00	34.49	41.53	43.62	54.62	33.71	21.50	21.82	1104.45	1099.64	1088.86	1089.49	1087.51	1083.25	1076.54
2/6/03	8:00	34.51	41.55	43.70	54.71	33.77	21.55	21.86	1104.43	1099.62	1088.78	1089.40	1087.45	1083.20	1076.50
2/6/03	12:00	34.55	41.60	43.78	54.81	33.77	21.64	21.87	1104.39	1099.57	1088.70	1089.30	1087.45	1083.12	1076.49
2/6/03	16:00	34.57	41.63	43.76	54.81	33.75	21.64	21.86	1104.37	1099.54	1088.73	1089.30	1087.47	1083.11	1076.50
2/6/03	20:00	34.59	41.67	43.80	54.88	33.78	21.70	21.88	1104.35	1099.50	1088.68	1089.23	1087.45	1083.05	1076.48
2/7/03	0:00	34.61	41.69	43.79	54.88	33.76	21.70	21.87	1104.33	1099.48	1088.69	1089.23	1087.47	1083.05	1076.49
2/7/03	4:00	34.62	41.71	43.76	54.84	33.74	21.71	21.85	1104.32	1099.46	1088.73	1089.27	1087.48	1083.04	1076.51

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
2/7/03	8:00	34.63	41.71	43.71	54.79	33.73	21.68	21.84	1104.32	1099.46	1088.77	1089.32	1087.49	1083.07	1076.52
2/7/03	12:00	34.62	41.71	43.66	54.72	33.70	21.65	21.82	1104.32	1099.46	1088.82	1089.39	1087.52	1083.10	1076.55
2/7/03	16:00	34.58	41.67	43.55	54.57	33.66	21.56	21.78	1104.36	1099.50	1088.94	1089.54	1087.56	1083.20	1076.58
2/7/03	20:00	34.54	41.63	43.49	54.49	33.65	21.48	21.76	1104.40	1099.54	1088.99	1089.62	1087.57	1083.28	1076.60
2/8/03	0:00	34.52	41.59	43.48	54.45	33.66	21.42	21.77	1104.42	1099.58	1089.00	1089.66	1087.56	1083.33	1076.59
2/8/03	4:00	34.50	41.56	43.45	54.41	33.65	21.36	21.76	1104.44	1099.61	1089.03	1089.70	1087.57	1083.39	1076.60
2/8/03	8:00	34.50	41.54	43.49	54.45	33.69	21.36	21.79	1104.44	1099.63	1088.99	1089.66	1087.53	1083.39	1076.57
2/8/03	12:00	34.51	41.55	43.55	54.52	33.71	21.40	21.81	1104.43	1099.62	1088.93	1089.59	1087.51	1083.35	1076.55
2/8/03	16:00	34.51	41.54	43.52	54.49	33.70	21.39	21.79	1104.43	1099.63	1088.96	1089.62	1087.52	1083.36	1076.57
2/8/03	20:00	34.53	41.55	43.57	54.55	33.72	21.42	21.81	1104.41	1099.62	1088.91	1089.56	1087.50	1083.33	1076.55
2/9/03	0:00	34.54	41.57	43.60	54.59	33.73	21.46	21.82	1104.40	1099.60	1088.88	1089.52	1087.49	1083.29	1076.54
2/9/03	4:00	34.54	41.57	43.56	54.54	33.70	21.42	21.80	1104.40	1099.60	1088.93	1089.57	1087.52	1083.33	1076.56
2/9/03	8:00	34.53	41.56	43.53	54.51	33.70	21.41	21.80	1104.41	1099.62	1088.95	1089.60	1087.53	1083.34	1076.56
2/9/03	12:00	34.52	41.54	43.50	54.46	33.67	21.36	21.78	1104.43	1099.63	1088.98	1089.65	1087.55	1083.39	1076.58
2/9/03	16:00	34.47	41.48	43.43	54.37	33.66	21.29	21.76	1104.47	1099.69	1089.05	1089.74	1087.56	1083.46	1076.60
2/9/03	20:00	34.46	41.45	43.44	54.37	33.67	21.27	21.77	1104.48	1099.72	1089.04	1089.74	1087.55	1083.48	1076.59
2/10/03	0:00	34.46	41.44	43.45	54.38	33.69	21.25	21.78	1104.48	1099.73	1089.03	1089.73	1087.53	1083.50	1076.58
2/10/03	4:00	34.46	41.43	43.47	54.39	33.70	21.24	21.79	1104.48	1099.74	1089.02	1089.72	1087.53	1083.51	1076.57
2/10/03	8:00	34.48	41.45	43.57	54.52	33.76	21.33	21.84	1104.46	1099.72	1088.91	1089.59	1087.46	1083.42	1076.52
2/10/03	12:00	34.52	41.49	43.65	54.63	33.77	21.43	21.86	1104.42	1099.68	1088.83	1089.48	1087.45	1083.32	1076.50
2/10/03	16:00	34.53	41.50	43.58	54.57	33.73	21.38	21.82	1104.41	1099.67	1088.90	1089.55	1087.49	1083.37	1076.54
2/10/03	20:00	34.54	41.52	43.60	54.58	33.73	21.39	21.83	1104.40	1099.66	1088.88	1089.53	1087.49	1083.36	1076.53
2/11/03	0:00	34.54	41.52	43.58	54.56	33.74	21.37	21.83	1104.40	1099.65	1088.90	1089.55	1087.48	1083.38	1076.53
2/11/03	4:00	34.55	41.53	43.58	54.55	33.72	21.40	21.81	1104.39	1099.65	1088.90	1089.56	1087.50	1083.35	1076.55
2/11/03	8:00	34.55	41.53	43.59	54.57	33.74	21.40	21.82	1104.39	1099.64	1088.89	1089.54	1087.48	1083.35	1076.54
2/11/03	12:00	34.55	41.54	43.58	54.55	33.72	21.38	21.81	1104.39	1099.63	1088.90	1089.56	1087.50	1083.37	1076.55
2/11/03	16:00	34.54	41.53	43.56	54.52	33.72	21.34	21.81	1104.40	1099.64	1088.92	1089.59	1087.50	1083.41	1076.56
2/11/03	20:00	34.57	41.56	43.70	54.68	33.81	21.47	21.86	1104.37	1099.61	1088.78	1089.43	1087.41	1083.28	1076.50
2/12/03	0:00	34.61	41.61	43.76	54.78	33.80	21.54	21.88	1104.33	1099.56	1088.72	1089.33	1087.42	1083.21	1076.49
2/12/03	4:00	34.64	41.65	43.77	54.81	33.78	21.57	21.87	1104.31	1099.53	1088.71	1089.30	1087.44	1083.18	1076.50
2/12/03	8:00	34.66	41.67	43.77	54.81	33.78	21.60	21.87	1104.28	1099.50	1088.72	1089.30	1087.44	1083.15	1076.50
2/12/03	12:00	34.67	41.69	43.73	54.78	33.75	21.59	21.85	1104.27	1099.48	1088.75	1089.33	1087.47	1083.16	1076.51
2/12/03	16:00	34.66	41.68	43.65	54.69	33.73	21.53	21.82	1104.28	1099.49	1088.83	1089.42	1087.49	1083.22	1076.54
2/12/03	20:00	34.66	41.68	43.65	54.67	33.74	21.53	21.82	1104.28	1099.49	1088.83	1089.44	1087.48	1083.22	1076.54
2/13/03	0:00	34.68	41.69	43.68	54.69	33.76	21.54	21.83	1104.27	1099.48	1088.81	1089.42	1087.47	1083.21	1076.53
2/13/03	4:00	34.66	41.68	43.62	54.63	33.73	21.52	21.81	1104.28	1099.49	1088.86	1089.48	1087.49	1083.24	1076.55
2/13/03	8:00	34.67	41.69	43.67	54.67	33.76	21.51	21.84	1104.27	1099.48	1088.81	1089.44	1087.46	1083.24	1076.52

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
2/13/03	12:00	34.68	41.70	43.66	54.67	33.75	21.54	21.83	1104.26	1099.47	1088.82	1089.44	1087.47	1083.21	1076.53
2/13/03	16:00	34.64	41.65	43.55	54.54	33.70	21.44	21.79	1104.31	1099.52	1088.93	1089.57	1087.52	1083.31	1076.57
2/13/03	20:00	34.60	41.59	43.50	54.46	33.68	21.38	21.78	1104.34	1099.58	1088.98	1089.65	1087.54	1083.37	1076.58
2/14/03	0:00	34.56	41.53	43.44	54.36	33.65	21.31	21.75	1104.38	1099.64	1089.04	1089.75	1087.57	1083.44	1076.61
2/14/03	4:00	34.49	41.43	43.36	54.26	33.64	21.18	21.73	1104.45	1099.74	1089.12	1089.85	1087.58	1083.57	1076.63
2/14/03	8:00	34.46	41.39	43.36	54.22	33.65	21.15	21.74	1104.48	1099.78	1089.12	1089.89	1087.57	1083.60	1076.62
2/14/03	12:00	34.44	41.35	43.36	54.21	33.66	21.12	21.75	1104.50	1099.82	1089.12	1089.90	1087.56	1083.64	1076.61
2/14/03	16:00	34.41	41.30	43.32	54.17	33.65	21.09	21.74	1104.53	1099.87	1089.16	1089.94	1087.57	1083.67	1076.62
2/14/03	20:00	34.42	41.31	43.41	54.29	33.71	21.12	21.79	1104.52	1099.86	1089.07	1089.82	1087.51	1083.63	1076.57
2/15/03	0:00	34.45	41.35	43.51	54.42	33.74	21.19	21.82	1104.49	1099.82	1088.97	1089.69	1087.48	1083.56	1076.54
2/15/03	4:00	34.47	41.39	43.60	54.56	33.79	21.29	21.85	1104.47	1099.78	1088.88	1089.55	1087.43	1083.46	1076.51
2/15/03	8:00	34.52	41.46	43.73	54.72	33.83	21.39	21.90	1104.43	1099.71	1088.75	1089.39	1087.39	1083.36	1076.46
2/15/03	12:00	34.57	41.54	43.81	54.83	33.83	21.50	21.89	1104.37	1099.63	1088.67	1089.28	1087.39	1083.25	1076.47
2/15/03	16:00	34.60	41.58	43.81	54.86	33.82	21.55	21.89	1104.34	1099.59	1088.68	1089.26	1087.41	1083.20	1076.47
2/15/03	20:00	34.64	41.65	43.86	54.93	33.83	21.62	21.90	1104.30	1099.53	1088.62	1089.18	1087.39	1083.13	1076.46
2/16/03	0:00	34.67	41.69	43.83	54.93	33.82	21.67	21.89	1104.27	1099.48	1088.65	1089.18	1087.40	1083.08	1076.47
2/16/03	4:00	34.69	41.71	43.82	54.90	33.80	21.66	21.87	1104.25	1099.46	1088.66	1089.21	1087.42	1083.09	1076.49
2/16/03	8:00	34.71	41.73	43.80	54.88	33.79	21.67	21.85	1104.24	1099.44	1088.68	1089.23	1087.43	1083.08	1076.51
2/16/03	12:00	34.72	41.75	43.77	54.84	33.77	21.65	21.85	1104.22	1099.42	1088.72	1089.28	1087.45	1083.10	1076.51
2/16/03	16:00	34.71	41.73	43.69	54.74	33.76	21.59	21.83	1104.23	1099.44	1088.79	1089.37	1087.47	1083.16	1076.53
2/16/03	20:00	34.71	41.72	43.65	54.69	33.75	21.55	21.82	1104.24	1099.45	1088.83	1089.42	1087.47	1083.20	1076.54
2/17/03	0:00	34.70	41.72	43.64	54.66	33.74	21.54	21.82	1104.24	1099.45	1088.84	1089.45	1087.48	1083.21	1076.54
2/17/03	4:00	34.68	41.70	43.59	54.59	33.73	21.49	21.80	1104.26	1099.47	1088.89	1089.52	1087.50	1083.26	1076.56
2/17/03	8:00	34.67	41.70	43.60	54.59	33.73	21.48	21.81	1104.27	1099.47	1088.88	1089.52	1087.49	1083.27	1076.55
2/17/03	12:00	34.67	41.69	43.59	54.57	33.73	21.45	21.80	1104.27	1099.48	1088.89	1089.54	1087.49	1083.30	1076.56
2/17/03	16:00	34.62	41.65	43.51	54.48	33.71	21.37	21.78	1104.32	1099.52	1088.97	1089.63	1087.51	1083.38	1076.59
2/17/03	20:00	34.61	41.63	43.55	54.52	33.75	21.37	21.80	1104.33	1099.54	1088.93	1089.59	1087.47	1083.38	1076.56
2/18/03	0:00	34.62	41.64	43.57	54.55	33.75	21.38	21.81	1104.32	1099.53	1088.91	1089.56	1087.47	1083.37	1076.55
2/18/03	4:00	34.63	41.64	43.58	54.55	33.75	21.39	21.81	1104.32	1099.53	1088.90	1089.56	1087.47	1083.36	1076.55
2/18/03	8:00	34.63	41.64	43.61	54.59	33.77	21.40	21.83	1104.31	1099.53	1088.87	1089.52	1087.45	1083.35	1076.53
2/18/03	12:00	34.64	41.65	43.61	54.58	33.76	21.41	21.81	1104.31	1099.53	1088.87	1089.53	1087.47	1083.35	1076.55
2/18/03	16:00	34.62	41.63	43.58	54.55	33.76	21.38	21.81	1104.32	1099.54	1088.90	1089.56	1087.47	1083.37	1076.55
2/18/03	20:00	34.64	41.65	43.69	54.68	33.82	21.45	21.86	1104.31	1099.52	1088.80	1089.44	1087.40	1083.30	1076.51
2/19/03	0:00	34.66	41.68	43.70	54.71	33.80	21.47	21.86	1104.28	1099.49	1088.78	1089.40	1087.42	1083.28	1076.50
2/19/03	4:00	34.68	41.70	43.73	54.74	33.80	21.51	21.86	1104.27	1099.47	1088.75	1089.37	1087.42	1083.24	1076.51
2/19/03	8:00	34.69	41.73	43.78	54.81	33.83	21.55	21.88	1104.25	1099.44	1088.70	1089.30	1087.39	1083.20	1076.48
2/19/03	12:00	34.72	41.76	43.79	54.83	33.82	21.60	21.88	1104.22	1099.41	1088.69	1089.28	1087.41	1083.15	1076.48
2/19/03	16:00	34.73	41.76	43.73	54.77	33.79	21.55	21.85	1104.21	1099.41	1088.75	1089.34	1087.43	1083.20	1076.51
2/19/03	20:00	34.74	41.77	43.73	54.78	33.80	21.56	21.85	1104.20	1099.40	1088.75	1089.34	1087.42	1083.19	1076.51
2/20/03	0:00	34.74	41.78	43.73	54.77	33.79	21.57	21.85	1104.20	1099.39	1088.75	1089.34	1087.43	1083.18	1076.51

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
2/20/03	4:00	34.74	41.78	43.70	54.73	33.78	21.56	21.84	1104.20	1099.39	1088.78	1089.38	1087.44	1083.19	1076.52
2/20/03	8:00	34.74	41.78	43.70	54.73	33.79	21.55	21.85	1104.20	1099.39	1088.78	1089.38	1087.43	1083.20	1076.51
2/20/03	12:00	34.74	41.78	43.66	54.68	33.76	21.51	21.82	1104.20	1099.39	1088.82	1089.44	1087.46	1083.24	1076.54
2/20/03	16:00	34.69	41.74	43.57	54.56	33.73	21.42	21.80	1104.25	1099.43	1088.91	1089.55	1087.49	1083.33	1076.57
2/20/03	20:00	34.67	41.70	43.56	54.52	33.74	21.38	21.79	1104.27	1099.47	1088.93	1089.59	1087.48	1083.37	1076.57
2/21/03	0:00	34.65	41.66	43.53	54.48	33.73	21.33	21.79	1104.29	1099.51	1088.95	1089.63	1087.49	1083.42	1076.58
2/21/03	4:00	34.63	41.62	43.50	54.44	33.72	21.30	21.77	1104.31	1099.55	1088.98	1089.68	1087.50	1083.45	1076.59
2/21/03	8:00	34.60	41.58	43.50	54.42	33.73	21.28	21.79	1104.34	1099.59	1088.98	1089.69	1087.49	1083.47	1076.58
2/21/03	12:00	34.58	41.54	43.45	54.36	33.71	21.23	21.77	1104.36	1099.63	1089.03	1089.75	1087.51	1083.52	1076.59
2/21/03	16:00	34.55	41.50	43.44	54.33	33.72	21.20	21.77	1104.39	1099.68	1089.04	1089.78	1087.50	1083.55	1076.59
2/21/03	20:00	34.55	41.49	43.50	54.40	33.76	21.22	21.80	1104.39	1099.68	1088.98	1089.71	1087.46	1083.53	1076.56
2/22/03	0:00	34.56	41.50	43.54	54.45	33.76	21.24	21.81	1104.38	1099.67	1088.94	1089.66	1087.46	1083.51	1076.55
2/22/03	4:00	34.57	41.51	43.51	54.44	33.75	21.22	21.80	1104.37	1099.66	1088.97	1089.68	1087.47	1083.53	1076.56
2/22/03	8:00	34.58	41.52	43.58	54.51	33.79	21.28	21.83	1104.36	1099.65	1088.90	1089.60	1087.44	1083.47	1076.53
2/22/03	12:00	34.59	41.53	43.57	54.51	33.76	21.27	21.81	1104.35	1099.64	1088.91	1089.60	1087.46	1083.48	1076.55
2/22/03	16:00	34.59	41.53	43.56	54.50	33.76	21.27	21.81	1104.35	1099.64	1088.92	1089.61	1087.46	1083.48	1076.55
2/22/03	20:00	34.61	41.56	43.64	54.60	33.81	21.33	21.85	1104.33	1099.61	1088.84	1089.51	1087.41	1083.42	1076.52
2/23/03	0:00	34.63	41.58	43.65	54.63	33.80	21.36	21.85	1104.32	1099.59	1088.83	1089.48	1087.42	1083.39	1076.52
2/23/03	4:00	34.64	41.60	43.66	54.65	33.80	21.37	21.84	1104.30	1099.57	1088.82	1089.47	1087.42	1083.38	1076.52
2/23/03	8:00	34.67	41.64	43.75	54.76	33.85	21.45	21.88	1104.27	1099.53	1088.73	1089.35	1087.37	1083.30	1076.48
2/23/03	12:00	34.69	41.67	43.77	54.79	33.84	21.49	21.88	1104.25	1099.50	1088.71	1089.32	1087.38	1083.26	1076.48
2/23/03	16:00	34.71	41.69	43.75	54.77	33.82	21.51	21.87	1104.24	1099.48	1088.73	1089.34	1087.40	1083.24	1076.50
2/23/03	20:00	34.73	41.74	43.84	54.89	33.88	21.55	21.90	1104.21	1099.44	1088.64	1089.23	1087.35	1083.20	1076.46
2/24/03	0:00	34.76	41.78	43.86	54.94	33.86	21.63	21.90	1104.18	1099.39	1088.62	1089.18	1087.36	1083.12	1076.46
2/24/03	4:00	34.80	41.82	43.88	54.97	33.85	21.70	21.89	1104.15	1099.35	1088.60	1089.14	1087.37	1083.06	1076.47
2/24/03	8:00	34.83	41.89	43.97	55.09	33.89	21.77	21.93	1104.11	1099.28	1088.52	1089.02	1087.33	1082.98	1076.44
2/24/03	12:00	34.87	41.94	43.95	55.11	33.86	21.83	21.91	1104.07	1099.23	1088.53	1089.00	1087.36	1082.92	1076.45
2/24/03	16:00	34.89	41.97	43.89	55.05	33.83	21.81	21.89	1104.05	1099.21	1088.59	1089.06	1087.39	1082.94	1076.47
2/24/03	20:00	34.90	41.98	43.88	55.03	33.85	21.80	21.90	1104.04	1099.19	1088.60	1089.08	1087.37	1082.95	1076.46
2/25/03	0:00	34.91	41.99	43.85	54.99	33.83	21.79	21.88	1104.03	1099.18	1088.63	1089.12	1087.39	1082.96	1076.48
2/25/03	4:00	34.91	41.99	43.80	54.92	33.80	21.77	21.86	1104.03	1099.18	1088.68	1089.19	1087.42	1082.98	1076.50
2/25/03	8:00	34.90	41.99	43.76	54.87	33.80	21.75	21.86	1104.04	1099.18	1088.72	1089.24	1087.42	1083.00	1076.50
2/25/03	12:00	34.89	41.98	43.71	54.79	33.78	21.69	21.83	1104.05	1099.19	1088.77	1089.32	1087.44	1083.06	1076.53
2/25/03	16:00	34.85	41.93	43.63	54.68	33.76	21.60	21.81	1104.09	1099.24	1088.85	1089.44	1087.47	1083.15	1076.55
2/25/03	20:00	34.83	41.90	43.60	54.62	33.76	21.55	21.81	1104.11	1099.27	1088.88	1089.49	1087.46	1083.20	1076.55
2/26/03	0:00	34.82	41.88	43.60	54.61	33.76	21.52	21.80	1104.12	1099.29	1088.88	1089.50	1087.46	1083.23	1076.56
2/26/03	4:00	34.80	41.85	43.58	54.58	33.76	21.48	21.80	1104.14	1099.32	1088.90	1089.53	1087.47	1083.27	1076.56
2/26/03	8:00	34.79	41.83	43.59	54.58	33.77	21.46	21.81	1104.15	1099.34	1088.89	1089.53	1087.45	1083.29	1076.55
2/26/03	12:00	34.79	41.82	43.60	54.60	33.77	21.44	21.81	1104.15	1099.35	1088.88	1089.52	1087.45	1083.31	1076.55
2/26/03	16:00	34.76	41.77	43.54	54.51	33.75	21.38	21.79	1104.18	1099.40	1088.94	1089.60	1087.47	1083.37	1076.57

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
2/26/03	20:00	34.74	41.74	43.54	54.51	33.77	21.36	21.79	1104.20	1099.43	1088.94	1089.60	1087.46	1083.39	1076.57
2/27/03	0:00	34.74	41.74	43.56	54.53	33.78	21.37	21.81	1104.20	1099.44	1088.92	1089.58	1087.44	1083.38	1076.55
2/27/03	4:00	34.74	41.73	43.58	54.54	33.78	21.39	21.81	1104.20	1099.44	1088.90	1089.57	1087.44	1083.36	1076.55
2/27/03	8:00	34.74	41.72	43.59	54.56	33.79	21.38	21.82	1104.20	1099.45	1088.89	1089.55	1087.43	1083.37	1076.54
2/27/03	12:00	34.76	41.73	43.63	54.61	33.81	21.39	21.83	1104.19	1099.44	1088.85	1089.50	1087.41	1083.36	1076.53
2/27/03	16:00	34.76	41.73	43.61	54.60	33.80	21.38	21.82	1104.18	1099.44	1088.87	1089.52	1087.43	1083.37	1076.54
2/27/03	20:00	34.76	41.74	43.64	54.63	33.82	21.40	21.84	1104.18	1099.44	1088.84	1089.48	1087.40	1083.35	1076.52
2/28/03	0:00	34.78	41.75	43.66	54.66	33.82	21.43	21.84	1104.16	1099.42	1088.82	1089.45	1087.41	1083.32	1076.52
2/28/03	4:00	34.78	41.75	43.64	54.65	33.81	21.40	21.85	1104.16	1099.42	1088.84	1089.46	1087.41	1083.35	1076.52
2/28/03	8:00	34.79	41.76	43.69	54.69	33.83	21.46	21.86	1104.15	1099.41	1088.79	1089.42	1087.39	1083.30	1076.51
2/28/03	12:00	34.80	41.77	43.67	54.68	33.81	21.45	21.84	1104.14	1099.40	1088.81	1089.43	1087.41	1083.30	1076.52
2/28/03	16:00	34.78	41.76	43.64	54.63	33.81	21.41	21.83	1104.16	1099.41	1088.85	1089.48	1087.41	1083.34	1076.53
2/28/03	20:00	34.78	41.75	43.64	54.62	33.81	21.41	21.83	1104.16	1099.42	1088.85	1089.49	1087.41	1083.34	1076.53
3/1/03	0:00	34.78	41.75	43.64	54.62	33.81	21.40	21.83	1104.16	1099.42	1088.85	1089.49	1087.41	1083.35	1076.53
3/1/03	4:00	34.76	41.72	43.60	54.58	33.80	21.37	21.82	1104.18	1099.45	1088.88	1089.53	1087.43	1083.38	1076.54
3/1/03	8:00	34.76	41.72	43.63	54.60	33.82	21.37	21.83	1104.18	1099.45	1088.85	1089.51	1087.41	1083.38	1076.53
3/1/03	12:00	34.77	41.73	43.64	54.62	33.82	21.39	21.84	1104.17	1099.44	1088.84	1089.49	1087.41	1083.36	1076.52
3/1/03	16:00	34.75	41.70	43.60	54.56	33.79	21.34	21.82	1104.19	1099.47	1088.89	1089.55	1087.43	1083.41	1076.54
3/1/03	20:00	34.76	41.71	43.65	54.62	33.83	21.37	21.84	1104.18	1099.46	1088.83	1089.49	1087.39	1083.38	1076.52
3/2/03	0:00	34.78	41.74	43.73	54.71	33.87	21.42	21.87	1104.16	1099.43	1088.76	1089.40	1087.35	1083.33	1076.49
3/2/03	4:00	34.81	41.77	43.77	54.79	33.87	21.49	21.88	1104.13	1099.40	1088.71	1089.32	1087.35	1083.26	1076.48
3/2/03	8:00	34.84	41.81	43.83	54.88	33.89	21.56	21.90	1104.10	1099.36	1088.65	1089.23	1087.33	1083.19	1076.46
3/2/03	12:00	34.86	41.85	43.83	54.89	33.86	21.60	21.89	1104.08	1099.32	1088.65	1089.22	1087.36	1083.15	1076.47
3/2/03	16:00	34.86	41.84	43.73	54.77	33.81	21.53	21.85	1104.08	1099.33	1088.75	1089.34	1087.41	1083.22	1076.52
3/2/03	20:00	34.85	41.84	43.69	54.71	33.81	21.50	21.84	1104.09	1099.34	1088.79	1089.40	1087.41	1083.25	1076.53
3/3/03	0:00	34.83	41.82	43.65	54.66	33.79	21.46	21.82	1104.11	1099.35	1088.83	1089.45	1087.43	1083.29	1076.54
3/3/03	4:00	34.80	41.76	43.59	54.57	33.77	21.40	21.80	1104.15	1099.41	1088.89	1089.54	1087.45	1083.35	1076.56
3/3/03	8:00	34.76	41.71	43.56	54.51	33.78	21.33	21.80	1104.18	1099.46	1088.92	1089.60	1087.44	1083.42	1076.56
3/3/03	12:00	34.75	41.68	43.55	54.48	33.77	21.28	21.80	1104.19	1099.49	1088.93	1089.63	1087.45	1083.47	1076.56
3/3/03	16:00	34.71	41.62	43.50	54.41	33.75	21.24	21.78	1104.23	1099.55	1088.98	1089.70	1087.47	1083.51	1076.58
3/3/03	20:00	34.71	41.62	43.57	54.49	33.80	21.27	21.82	1104.23	1099.55	1088.91	1089.62	1087.42	1083.48	1076.54
3/4/03	0:00	34.73	41.64	43.59	54.53	33.81	21.28	21.82	1104.21	1099.53	1088.89	1089.58	1087.41	1083.47	1076.54
3/4/03	4:00	34.72	41.62	43.54	54.47	33.78	21.25	21.80	1104.22	1099.55	1088.94	1089.64	1087.44	1083.50	1076.56
3/4/03	8:00	34.71	41.60	43.55	54.48	33.80	21.23	21.82	1104.23	1099.57	1088.93	1089.63	1087.42	1083.52	1076.54
3/4/03	12:00	34.71	41.61	43.58	54.51	33.80	21.25	21.82	1104.23	1099.56	1088.90	1089.60	1087.42	1083.50	1076.54
3/4/03	16:00	34.71	41.61	43.60	54.53	33.81	21.27	21.83	1104.23	1099.56	1088.89	1089.58	1087.41	1083.48	1076.53
3/4/03	20:00	34.73	41.63	43.69	54.65	33.85	21.34	21.86	1104.21	1099.54	1088.79	1089.46	1087.37	1083.41	1076.50
3/5/03	0:00	34.76	41.68	43.75	54.73	33.87	21.40	21.87	1104.18	1099.49	1088.73	1089.38	1087.35	1083.35	1076.49
3/5/03	4:00	34.78	41.71	43.77	54.77	33.87	21.43	21.88	1104.16	1099.47	1088.72	1089.34	1087.35	1083.32	1076.48
3/5/03	8:00	34.80	41.74	43.79	54.82	33.87	21.49	21.89	1104.14	1099.43	1088.69	1089.29	1087.35	1083.26	1076.47

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
3/5/03	12:00	34.83	41.77	43.78	54.81	33.85	21.51	21.87	1104.11	1099.40	1088.70	1089.30	1087.37	1083.24	1076.49
3/5/03	16:00	34.83	41.76	43.70	54.72	33.82	21.46	21.84	1104.11	1099.41	1088.78	1089.39	1087.40	1083.29	1076.52
3/5/03	20:00	34.84	41.77	43.73	54.75	33.86	21.45	21.87	1104.10	1099.40	1088.75	1089.37	1087.36	1083.30	1076.49
3/6/03	0:00	34.85	41.79	43.72	54.73	33.83	21.44	21.85	1104.09	1099.38	1088.76	1089.38	1087.39	1083.31	1076.51
3/6/03	4:00	34.85	41.79	43.70	54.71	33.84	21.44	21.85	1104.10	1099.38	1088.78	1089.40	1087.38	1083.31	1076.51
3/6/03	8:00	34.84	41.80	43.71	54.72	33.85	21.42	21.86	1104.10	1099.38	1088.77	1089.39	1087.37	1083.33	1076.50
3/6/03	12:00	34.85	41.81	43.70	54.70	33.83	21.44	21.84	1104.09	1099.37	1088.78	1089.41	1087.40	1083.31	1076.52
3/6/03	16:00	34.80	41.74	43.59	54.57	33.78	21.34	21.80	1104.14	1099.43	1088.89	1089.54	1087.44	1083.42	1076.56
3/6/03	20:00	34.79	41.73	43.64	54.62	33.84	21.38	21.84	1104.15	1099.44	1088.84	1089.50	1087.38	1083.37	1076.52
3/7/03	0:00	34.80	41.74	43.64	54.61	33.82	21.36	21.83	1104.14	1099.44	1088.84	1089.50	1087.40	1083.39	1076.53
3/7/03	4:00	34.82	41.76	43.72	54.71	33.86	21.43	21.87	1104.12	1099.41	1088.77	1089.40	1087.36	1083.32	1076.49
3/7/03	8:00	34.85	41.80	43.82	54.84	33.90	21.52	21.90	1104.09	1099.37	1088.66	1089.28	1087.32	1083.23	1076.46
3/7/03	12:00	34.88	41.84	43.82	54.86	33.88	21.54	21.90	1104.06	1099.34	1088.66	1089.26	1087.34	1083.21	1076.47
3/7/03	16:00	34.89	41.84	43.74	54.78	33.83	21.48	21.85	1104.05	1099.33	1088.74	1089.34	1087.39	1083.27	1076.51
3/7/03	20:00	34.88	41.84	43.72	54.76	33.85	21.48	21.85	1104.06	1099.33	1088.76	1089.36	1087.37	1083.27	1076.51
3/8/03	0:00	34.86	41.82	43.67	54.67	33.80	21.45	21.82	1104.08	1099.35	1088.81	1089.45	1087.42	1083.30	1076.54
3/8/03	4:00	34.80	41.73	43.54	54.51	33.76	21.32	21.78	1104.14	1099.44	1088.94	1089.60	1087.47	1083.43	1076.58
3/8/03	8:00	34.79	41.71	43.58	54.53	33.79	21.31	21.81	1104.15	1099.46	1088.90	1089.58	1087.43	1083.44	1076.56
3/8/03	12:00	34.83	41.77	43.81	54.81	33.94	21.49	21.92	1104.11	1099.40	1088.67	1089.31	1087.28	1083.26	1076.44
3/8/03	16:00	34.89	41.86	43.93	54.97	33.94	21.61	21.92	1104.05	1099.32	1088.55	1089.14	1087.28	1083.14	1076.44
3/8/03	20:00	34.93	41.92	43.97	55.07	33.94	21.70	21.94	1104.01	1099.25	1088.51	1089.05	1087.28	1083.05	1076.42
3/9/03	0:00	34.97	41.96	43.95	55.07	33.91	21.73	21.93	1103.97	1099.21	1088.53	1089.04	1087.31	1083.02	1076.43
3/9/03	4:00	35.00	42.02	43.98	55.12	33.92	21.79	21.93	1103.94	1099.16	1088.50	1088.99	1087.30	1082.96	1076.43
3/9/03	8:00	35.03	42.06	43.99	55.15	33.93	21.82	21.94	1103.91	1099.11	1088.49	1088.97	1087.29	1082.93	1076.42
3/9/03	12:00	35.05	42.09	43.94	55.10	33.89	21.83	21.92	1103.89	1099.09	1088.54	1089.01	1087.33	1082.93	1076.44
3/9/03	16:00	35.05	42.08	43.84	54.97	33.86	21.77	21.88	1103.90	1099.09	1088.64	1089.14	1087.36	1082.98	1076.48
3/9/03	20:00	35.05	42.08	43.83	54.95	33.87	21.76	21.88	1103.89	1099.09	1088.65	1089.16	1087.35	1082.99	1076.48
3/10/03	0:00	35.06	42.08	43.82	54.92	33.86	21.74	21.88	1103.88	1099.09	1088.66	1089.19	1087.37	1083.01	1076.48
3/10/03	4:00	35.05	42.08	43.80	54.90	33.87	21.72	21.88	1103.89	1099.09	1088.68	1089.21	1087.35	1083.03	1076.48
3/10/03	8:00	35.06	42.09	43.83	54.92	33.88	21.74	21.89	1103.88	1099.08	1088.65	1089.20	1087.34	1083.01	1076.47
3/10/03	12:00	35.05	42.08	43.76	54.83	33.84	21.68	21.86	1103.89	1099.09	1088.72	1089.28	1087.38	1083.07	1076.50
3/10/03	16:00	35.01	42.04	43.67	54.71	33.81	21.60	21.83	1103.93	1099.13	1088.81	1089.40	1087.41	1083.15	1076.53
3/10/03	20:00	35.00	42.01	43.67	54.69	33.83	21.54	21.83	1103.94	1099.16	1088.81	1089.42	1087.40	1083.21	1076.53
3/11/03	0:00	34.98	41.98	43.65	54.66	33.82	21.52	21.82	1103.96	1099.19	1088.83	1089.45	1087.40	1083.24	1076.54
3/11/03	4:00	34.95	41.93	43.60	54.59	33.80	21.47	21.81	1104.00	1099.24	1088.89	1089.52	1087.42	1083.28	1076.55
3/11/03	8:00	34.93	41.90	43.61	54.60	33.83	21.44	21.83	1104.01	1099.27	1088.87	1089.51	1087.40	1083.31	1076.53
3/11/03	12:00	34.92	41.87	43.59	54.56	33.80	21.39	21.81	1104.03	1099.30	1088.89	1089.55	1087.42	1083.36	1076.55
3/11/03	16:00	34.88	41.82	43.55	54.49	33.79	21.34	21.79	1104.06	1099.35	1088.93	1089.62	1087.43	1083.41	1076.57
3/11/03	20:00	34.88	41.80	43.58	54.53	33.82	21.36	21.82	1104.07	1099.37	1088.90	1089.58	1087.40	1083.39	1076.55
3/12/03	0:00	34.88	41.79	43.60	54.56	33.83	21.36	21.83	1104.06	1099.38	1088.88	1089.55	1087.39	1083.40	1076.53

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
3/12/03	4:00	34.88	41.79	43.61	54.58	33.84	21.33	21.83	1104.06	1099.38	1088.87	1089.53	1087.38	1083.43	1076.53
3/12/03	8:00	34.89	41.79	43.63	54.60	33.84	21.37	21.84	1104.05	1099.38	1088.85	1089.51	1087.38	1083.38	1076.52
3/12/03	12:00	34.90	41.80	43.66	54.63	33.85	21.37	21.84	1104.04	1099.37	1088.82	1089.48	1087.37	1083.38	1076.52
3/12/03	16:00	34.89	41.79	43.62	54.59	33.84	21.35	21.83	1104.05	1099.38	1088.86	1089.52	1087.38	1083.40	1076.53
3/12/03	20:00	34.90	41.81	43.70	54.70	33.88	21.40	21.87	1104.04	1099.36	1088.78	1089.41	1087.34	1083.35	1076.49
3/13/03	0:00	34.92	41.84	43.78	54.80	33.92	21.46	21.90	1104.02	1099.33	1088.70	1089.31	1087.30	1083.29	1076.46
3/13/03	4:00	34.95	41.88	43.85	54.91	33.94	21.56	21.92	1103.99	1099.29	1088.63	1089.21	1087.28	1083.19	1076.44
3/13/03	8:00	34.99	41.95	43.94	55.03	33.97	21.64	21.95	1103.95	1099.22	1088.54	1089.08	1087.25	1083.11	1076.41
3/13/03	12:00	35.03	41.99	43.93	55.03	33.92	21.69	21.92	1103.91	1099.18	1088.56	1089.08	1087.30	1083.06	1076.44
3/13/03	16:00	35.04	42.00	43.84	54.93	33.88	21.65	21.87	1103.91	1099.17	1088.64	1089.18	1087.34	1083.10	1076.49
3/13/03	20:00	35.05	42.01	43.84	54.92	33.89	21.66	21.89	1103.89	1099.16	1088.65	1089.20	1087.33	1083.09	1076.47
3/14/03	0:00	35.05	42.01	43.81	54.87	33.87	21.62	21.88	1103.89	1099.16	1088.68	1089.24	1087.35	1083.13	1076.49
3/14/03	4:00	35.04	42.00	43.77	54.82	33.87	21.58	21.86	1103.90	1099.17	1088.71	1089.29	1087.35	1083.17	1076.50
3/14/03	8:00	35.04	42.00	43.77	54.81	33.87	21.58	21.87	1103.90	1099.17	1088.72	1089.30	1087.35	1083.17	1076.49
3/14/03	12:00	35.02	41.99	43.71	54.73	33.84	21.54	21.84	1103.93	1099.19	1088.77	1089.38	1087.38	1083.21	1076.52
3/14/03	16:00	34.96	41.91	43.61	54.60	33.80	21.43	21.81	1103.98	1099.26	1088.87	1089.51	1087.42	1083.32	1076.56
3/14/03	20:00	34.94	41.88	43.61	54.59	33.83	21.39	21.81	1104.00	1099.29	1088.87	1089.52	1087.39	1083.36	1076.55
3/15/03	0:00	34.94	41.87	43.64	54.62	33.85	21.39	21.84	1104.00	1099.30	1088.84	1089.49	1087.37	1083.36	1076.52
3/15/03	4:00	34.93	41.84	43.61	54.58	33.83	21.36	21.82	1104.01	1099.33	1088.87	1089.53	1087.39	1083.40	1076.54
3/15/03	8:00	34.93	41.84	43.65	54.61	33.86	21.37	21.84	1104.01	1099.33	1088.83	1089.50	1087.36	1083.38	1076.52
3/15/03	12:00	34.92	41.82	43.63	54.58	33.84	21.35	21.82	1104.02	1099.35	1088.85	1089.53	1087.38	1083.40	1076.54
3/15/03	16:00	34.89	41.77	43.57	54.52	33.82	21.30	21.81	1104.05	1099.40	1088.91	1089.60	1087.40	1083.45	1076.56
3/15/03	20:00	34.89	41.78	43.63	54.58	33.86	21.33	21.84	1104.05	1099.40	1088.85	1089.53	1087.36	1083.42	1076.52
3/16/03	0:00	34.90	41.78	43.64	54.60	33.86	21.33	21.84	1104.04	1099.39	1088.84	1089.51	1087.36	1083.42	1076.52
3/16/03	4:00	34.90	41.78	43.64	54.60	33.86	21.33	21.84	1104.04	1099.39	1088.84	1089.51	1087.37	1083.42	1076.52
3/16/03	8:00	34.90	41.77	43.64	54.60	33.86	21.31	21.85	1104.05	1099.40	1088.84	1089.51	1087.36	1083.44	1076.51
3/16/03	12:00	34.90	41.77	43.64	54.58	33.84	21.30	21.84	1104.05	1099.41	1088.85	1089.53	1087.38	1083.45	1076.52
3/16/03	16:00	34.87	41.72	43.57	54.51	33.83	21.23	21.81	1104.08	1099.46	1088.91	1089.60	1087.39	1083.52	1076.55
3/16/03	20:00	34.87	41.73	43.64	54.59	33.87	21.27	21.85	1104.07	1099.44	1088.85	1089.52	1087.35	1083.48	1076.51
3/17/03	0:00	34.88	41.73	43.63	54.59	33.86	21.28	21.84	1104.06	1099.44	1088.85	1089.52	1087.36	1083.47	1076.52
3/17/03	4:00	34.87	41.72	43.62	54.57	33.86	21.24	21.84	1104.07	1099.45	1088.86	1089.54	1087.37	1083.51	1076.52
3/17/03	8:00	34.88	41.73	43.66	54.62	33.88	21.27	21.86	1104.06	1099.44	1088.82	1089.49	1087.34	1083.48	1076.50
3/17/03	12:00	34.88	41.73	43.63	54.60	33.86	21.28	21.86	1104.06	1099.44	1088.85	1089.52	1087.36	1083.47	1076.50
3/17/03	16:00	34.86	41.69	43.58	54.54	33.83	21.23	21.82	1104.08	1099.48	1088.90	1089.58	1087.39	1083.52	1076.54
3/17/03	20:00	34.85	41.69	43.62	54.57	33.87	21.22	21.86	1104.09	1099.48	1088.86	1089.54	1087.35	1083.53	1076.50
3/18/03	0:00	34.87	41.71	43.66	54.62	33.88	21.27	21.87	1104.07	1099.46	1088.82	1089.49	1087.34	1083.49	1076.50
3/18/03	4:00	34.87	41.72	43.66	54.63	33.88	21.27	21.86	1104.07	1099.45	1088.82	1089.48	1087.34	1083.48	1076.50
3/18/03	8:00	34.88	41.73	43.68	54.65	33.88	21.28	21.87	1104.06	1099.44	1088.81	1089.46	1087.34	1083.47	1076.50
3/18/03	12:00	34.90	41.75	43.68	54.66	33.87	21.30	21.86	1104.04	1099.42	1088.80	1089.45	1087.35	1083.46	1076.50
3/18/03	16:00	34.88	41.73	43.63	54.61	33.85	21.24	21.84	1104.06	1099.44	1088.85	1089.50	1087.37	1083.52	1076.52

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
3/18/03	20:00	34.89	41.74	43.68	54.66	33.88	21.29	21.87	1104.05	1099.44	1088.80	1089.45	1087.34	1083.46	1076.50
3/19/03	0:00	34.90	41.75	43.67	54.65	33.87	21.27	21.85	1104.04	1099.42	1088.81	1089.46	1087.35	1083.48	1076.51
3/19/03	4:00	34.88	41.72	43.63	54.60	33.86	21.24	21.85	1104.06	1099.45	1088.85	1089.51	1087.37	1083.52	1076.51
3/19/03	8:00	34.88	41.72	43.64	54.60	33.86	21.26	21.85	1104.06	1099.45	1088.84	1089.51	1087.36	1083.49	1076.51
3/19/03	12:00	34.86	41.70	43.64	54.60	33.86	21.22	21.84	1104.08	1099.47	1088.85	1089.51	1087.36	1083.53	1076.52
3/19/03	16:00	34.85	41.69	43.65	54.62	33.88	21.22	21.84	1104.10	1099.48	1088.83	1089.49	1087.34	1083.53	1076.52
3/19/03	20:00	34.84	41.70	43.80	54.69	33.91	21.27	21.86	1104.10	1099.47	1088.68	1089.42	1087.31	1083.48	1076.50
3/20/03	0:00	34.86	41.72	43.75	54.72	33.89	21.29	21.87	1104.08	1099.45	1088.73	1089.39	1087.33	1083.46	1076.49
3/20/03	4:00	34.86	41.73	43.78	54.73	33.89	21.28	21.88	1104.08	1099.44	1088.70	1089.39	1087.33	1083.47	1076.49
3/20/03	8:00	34.88	41.77	43.77	54.81	33.93	21.35	21.90	1104.06	1099.41	1088.71	1089.31	1087.29	1083.41	1076.46
3/20/03	12:00	34.91	41.82	43.83	54.88	33.94	21.41	21.92	1104.03	1099.35	1088.65	1089.23	1087.28	1083.34	1076.44
3/20/03	16:00	34.92	41.85	43.85	54.90	33.93	21.43	21.91	1104.02	1099.32	1088.63	1089.21	1087.29	1083.32	1076.45
3/20/03	20:00	34.93	41.88	43.88	54.94	33.94	21.47	21.92	1104.01	1099.29	1088.60	1089.17	1087.28	1083.28	1076.44
3/21/03	0:00	34.95	41.91	43.89	54.97	33.94	21.51	21.92	1103.99	1099.26	1088.59	1089.14	1087.29	1083.24	1076.44
3/21/03	4:00	34.96	41.95	43.90	54.99	33.94	21.54	21.93	1103.98	1099.22	1088.58	1089.12	1087.28	1083.21	1076.43
3/21/03	8:00	34.97	41.98	43.94	55.03	33.95	21.57	21.93	1103.97	1099.19	1088.54	1089.08	1087.27	1083.18	1076.43
3/21/03	12:00	34.99	42.02	43.93	55.03	33.93	21.61	21.92	1103.95	1099.15	1088.55	1089.08	1087.29	1083.14	1076.44
3/21/03	16:00	34.99	42.02	43.87	54.97	33.91	21.58	21.90	1103.95	1099.15	1088.61	1089.14	1087.31	1083.17	1076.46
3/21/03	20:00	34.99	42.03	43.88	54.98	33.93	21.58	21.91	1103.95	1099.14	1088.60	1089.13	1087.29	1083.17	1076.45
3/22/03	0:00	34.99	42.05	43.88	54.97	33.92	21.58	21.90	1103.95	1099.12	1088.60	1089.14	1087.30	1083.17	1076.46
3/22/03	4:00	34.99	42.06	43.86	54.95	33.91	21.58	21.90	1103.95	1099.12	1088.62	1089.16	1087.31	1083.17	1076.46
3/22/03	8:00	34.99	42.07	43.90	54.98	33.93	21.60	21.91	1103.95	1099.10	1088.58	1089.13	1087.29	1083.15	1076.45
3/22/03	12:00	34.99	42.08	43.87	54.96	33.92	21.61	21.90	1103.95	1099.09	1088.61	1089.15	1087.30	1083.15	1076.46
3/22/03	16:00	34.98	42.07	43.82	54.90	33.90	21.55	21.88	1103.96	1099.10	1088.66	1089.21	1087.32	1083.20	1076.48
3/22/03	20:00	34.97	42.07	43.84	54.92	33.92	21.56	21.90	1103.97	1099.10	1088.64	1089.19	1087.30	1083.19	1076.46
3/23/03	0:00	34.97	42.07	43.85	54.93	33.92	21.56	21.90	1103.98	1099.10	1088.63	1089.18	1087.30	1083.19	1076.46
3/23/03	4:00	34.95	42.06	43.80	54.87	33.89	21.52	21.88	1103.99	1099.11	1088.68	1089.24	1087.33	1083.23	1076.48
3/23/03	8:00	34.94	42.06	43.81	54.87	33.91	21.51	21.88	1104.00	1099.12	1088.67	1089.24	1087.31	1083.24	1076.48
3/23/03	12:00	34.93	42.04	43.77	54.81	33.88	21.47	21.86	1104.01	1099.13	1088.72	1089.30	1087.34	1083.28	1076.50
3/23/03	16:00	34.91	42.00	43.70	54.73	33.87	21.40	21.84	1104.03	1099.17	1088.78	1089.38	1087.35	1083.36	1076.52
3/23/03	20:00	34.89	41.98	43.73	54.76	33.90	21.39	21.87	1104.05	1099.19	1088.76	1089.36	1087.32	1083.36	1076.49
3/24/03	0:00	34.87	41.97	43.72	54.75	33.90	21.38	21.86	1104.07	1099.20	1088.76	1089.37	1087.32	1083.37	1076.50
3/24/03	4:00	34.86	41.97	43.77	54.79	33.93	21.41	21.89	1104.08	1099.21	1088.71	1089.32	1087.29	1083.34	1076.47
3/24/03	8:00	34.87	41.97	43.80	54.84	33.93	21.44	21.90	1104.08	1099.20	1088.68	1089.27	1087.29	1083.31	1076.46
3/24/03	12:00	34.86	41.97	43.77	54.81	33.90	21.42	21.87	1104.08	1099.20	1088.71	1089.30	1087.32	1083.33	1076.49
3/24/03	16:00	34.85	41.96	43.76	54.79	33.91	21.38	21.87	1104.09	1099.21	1088.73	1089.32	1087.31	1083.37	1076.49
3/24/03	20:00	34.87	41.98	43.85	54.90	33.97	21.48	21.91	1104.08	1099.19	1088.63	1089.21	1087.25	1083.27	1076.45
3/25/03	0:00	34.88	42.01	43.89	54.96	33.95	21.53	21.93	1104.06	1099.16	1088.59	1089.15	1087.27	1083.22	1076.43
3/25/03	4:00	34.89	42.03	43.91	55.00	33.96	21.53	21.93	1104.05	1099.14	1088.57	1089.11	1087.26	1083.22	1076.43
3/25/03	8:00	34.90	42.06	43.95	55.05	33.97	21.58	21.95	1104.04	1099.11	1088.53	1089.06	1087.25	1083.17	1076.42

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
3/25/03	12:00	34.92	42.08	43.94	55.05	33.94	21.62	21.93	1104.02	1099.09	1088.55	1089.07	1087.28	1083.13	1076.43
3/25/03	16:00	34.92	42.08	43.87	54.97	33.93	21.57	21.90	1104.03	1099.09	1088.61	1089.14	1087.29	1083.18	1076.46
3/25/03	20:00	34.92	42.09	43.89	54.99	33.95	21.57	21.91	1104.02	1099.08	1088.60	1089.13	1087.28	1083.18	1076.45
3/26/03	0:00	34.92	42.09	43.87	54.97	33.94	21.57	21.90	1104.02	1099.08	1088.61	1089.15	1087.29	1083.18	1076.46
3/26/03	4:00	34.92	42.08	43.84	54.92	33.92	21.55	21.89	1104.03	1099.09	1088.65	1089.19	1087.31	1083.21	1076.47
3/26/03	8:00	34.92	42.08	43.85	54.92	33.93	21.55	21.89	1104.02	1099.09	1088.63	1089.19	1087.29	1083.20	1076.47
3/26/03	12:00	34.91	42.07	43.79	54.86	33.90	21.50	21.87	1104.03	1099.10	1088.69	1089.25	1087.32	1083.25	1076.49
3/26/03	16:00	34.88	42.01	43.68	54.70	33.85	21.38	21.83	1104.06	1099.16	1088.80	1089.41	1087.37	1083.37	1076.53
3/26/03	20:00	34.85	41.96	43.67	54.67	33.88	21.34	21.84	1104.09	1099.21	1088.81	1089.44	1087.34	1083.41	1076.52
3/27/03	0:00	34.82	41.91	43.62	54.61	33.86	21.28	21.82	1104.12	1099.26	1088.86	1089.50	1087.37	1083.48	1076.54
3/27/03	4:00	34.78	41.81	43.54	54.49	33.83	21.17	21.79	1104.17	1099.36	1088.94	1089.62	1087.40	1083.58	1076.57
3/27/03	8:00	34.74	41.77	43.57	54.49	33.86	21.15	21.82	1104.20	1099.40	1088.91	1089.62	1087.36	1083.60	1076.54
3/27/03	12:00	34.72	41.74	43.56	54.48	33.85	21.12	21.82	1104.22	1099.43	1088.92	1089.63	1087.37	1083.63	1076.54
3/27/03	16:00	34.70	41.72	43.58	54.49	33.87	21.10	21.83	1104.24	1099.46	1088.90	1089.62	1087.35	1083.65	1076.53
3/27/03	20:00	34.73	41.77	43.77	54.74	33.96	21.26	21.91	1104.22	1099.40	1088.72	1089.37	1087.26	1083.49	1076.45
3/28/03	0:00	34.74	41.81	43.80	54.82	33.95	21.31	21.91	1104.20	1099.37	1088.69	1089.29	1087.27	1083.44	1076.45
3/28/03	4:00	34.76	41.84	43.84	54.86	33.95	21.37	21.91	1104.18	1099.34	1088.64	1089.25	1087.27	1083.38	1076.45
3/28/03	8:00	34.79	41.89	43.92	54.98	33.99	21.44	21.94	1104.15	1099.28	1088.56	1089.13	1087.23	1083.32	1076.42
3/28/03	12:00	34.83	41.95	43.97	55.07	33.99	21.53	21.95	1104.11	1099.22	1088.51	1089.04	1087.23	1083.22	1076.41
3/28/03	16:00	34.84	41.98	43.94	55.05	33.97	21.53	21.93	1104.10	1099.19	1088.54	1089.06	1087.26	1083.22	1076.43
3/28/03	20:00	34.88	42.03	44.01	55.14	34.02	21.59	21.97	1104.06	1099.14	1088.47	1088.97	1087.20	1083.16	1076.39
3/29/03	0:00	34.91	42.07	44.02	55.17	33.99	21.66	21.96	1104.03	1099.10	1088.46	1088.94	1087.23	1083.09	1076.40
3/29/03	4:00	34.93	42.10	44.01	55.17	33.99	21.69	21.96	1104.01	1099.07	1088.47	1088.94	1087.23	1083.06	1076.40
3/29/03	8:00	34.96	42.15	44.07	55.25	34.01	21.77	21.98	1103.98	1099.02	1088.41	1088.86	1087.21	1082.98	1076.38
3/29/03	12:00	34.99	42.20	44.06	55.25	33.99	21.82	21.97	1103.95	1098.97	1088.42	1088.86	1087.23	1082.94	1076.39
3/29/03	16:00	35.01	42.21	44.00	55.19	33.97	21.80	21.94	1103.93	1098.96	1088.48	1088.92	1087.25	1082.95	1076.42
3/29/03	20:00	35.02	42.23	44.01	55.20	33.99	21.80	21.95	1103.92	1098.94	1088.47	1088.91	1087.23	1082.95	1076.41
3/30/03	0:00	35.04	42.25	43.99	55.18	33.97	21.81	21.95	1103.90	1098.92	1088.49	1088.93	1087.25	1082.94	1076.41
3/30/03	4:00	35.04	42.24	43.95	55.12	33.95	21.78	21.93	1103.90	1098.93	1088.53	1088.99	1087.27	1082.97	1076.43
3/30/03	8:00	35.04	42.24	43.94	55.08	33.96	21.79	21.93	1103.90	1098.93	1088.54	1089.03	1087.26	1082.97	1076.43
3/30/03	12:00	35.04	42.23	43.87	54.99	33.92	21.74	21.90	1103.90	1098.94	1088.61	1089.12	1087.30	1083.02	1076.46
3/30/03	16:00	35.02	42.18	43.79	54.88	33.90	21.63	21.87	1103.93	1098.99	1088.69	1089.23	1087.32	1083.12	1076.49
3/30/03	20:00	35.01	42.16	43.79	54.86	33.92	21.63	21.89	1103.93	1099.01	1088.69	1089.25	1087.30	1083.13	1076.47
3/31/03	0:00	35.00	42.15	43.78	54.84	33.92	21.56	21.87	1103.94	1099.03	1088.70	1089.27	1087.30	1083.19	1076.49
3/31/03	4:00	34.98	42.11	43.73	54.77	33.90	21.53	21.85	1103.96	1099.06	1088.76	1089.34	1087.32	1083.22	1076.51
3/31/03	8:00	34.97	42.09	43.74	54.77	33.91	21.48	21.87	1103.98	1099.08	1088.74	1089.34	1087.31	1083.27	1076.49
3/31/03	12:00	34.95	42.06	43.70	54.72	33.89	21.46	21.85	1103.99	1099.11	1088.78	1089.39	1087.33	1083.29	1076.51
3/31/03	16:00	34.91	42.00	43.62	54.61	33.86	21.35	21.82	1104.03	1099.17	1088.86	1089.50	1087.36	1083.40	1076.55
3/31/03	20:00	34.89	41.96	43.64	54.62	33.90	21.31	21.85	1104.05	1099.21	1088.84	1089.49	1087.32	1083.44	1076.51
4/1/03	0:00	34.88	41.95	43.67	54.65	33.90	21.32	21.85	1104.06	1099.22	1088.81	1089.46	1087.32	1083.43	1076.51

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
4/1/03	4:00	34.87	41.93	43.65	54.64	33.90	21.30	21.84	1104.07	1099.25	1088.83	1089.47	1087.32	1083.45	1076.52
4/1/03	8:00	34.86	41.92	43.69	54.68	33.92	21.30	21.86	1104.08	1099.25	1088.79	1089.43	1087.31	1083.45	1076.50
4/1/03	12:00	34.86	41.91	43.68	54.67	33.90	21.29	21.85	1104.08	1099.26	1088.80	1089.45	1087.32	1083.46	1076.51
4/1/03	16:00	34.85	41.89	43.66	54.64	33.91	21.24	21.85	1104.09	1099.28	1088.82	1089.47	1087.32	1083.51	1076.51
4/1/03	20:00	34.84	41.88	43.69	54.68	33.93	21.28	21.87	1104.10	1099.29	1088.79	1089.43	1087.29	1083.47	1076.49
4/2/03	0:00	34.85	41.89	43.72	54.72	33.93	21.30	21.88	1104.09	1099.28	1088.76	1089.39	1087.29	1083.45	1076.48
4/2/03	4:00	34.84	41.87	43.68	54.67	33.90	21.25	21.86	1104.10	1099.30	1088.81	1089.45	1087.32	1083.50	1076.50
4/2/03	8:00	34.83	41.86	43.69	54.68	33.91	21.24	21.87	1104.11	1099.31	1088.79	1089.44	1087.31	1083.51	1076.49
4/2/03	12:00	34.83	41.86	43.69	54.67	33.91	21.24	21.86	1104.11	1099.31	1088.79	1089.44	1087.31	1083.51	1076.50
4/2/03	16:00	34.82	41.83	43.64	54.61	33.90	21.21	21.84	1104.12	1099.34	1088.84	1089.50	1087.32	1083.54	1076.52
4/2/03	20:00	34.82	41.82	43.71	54.69	33.94	21.25	21.88	1104.13	1099.35	1088.77	1089.42	1087.28	1083.50	1076.48
4/3/03	0:00	34.82	41.83	43.71	54.70	33.93	21.26	21.87	1104.12	1099.34	1088.77	1089.41	1087.29	1083.49	1076.49
4/3/03	4:00	34.82	41.83	43.69	54.68	33.92	21.25	21.86	1104.12	1099.34	1088.79	1089.43	1087.30	1083.50	1076.50
4/3/03	8:00	34.82	41.83	43.71	54.70	33.93	21.24	21.87	1104.12	1099.34	1088.77	1089.41	1087.29	1083.51	1076.49
4/3/03	12:00	34.83	41.84	43.73	54.73	33.94	21.27	21.89	1104.11	1099.33	1088.75	1089.39	1087.28	1083.48	1076.47
4/3/03	16:00	34.82	41.83	43.70	54.69	33.94	21.24	21.88	1104.12	1099.34	1088.78	1089.42	1087.28	1083.51	1076.48
4/3/03	20:00	34.83	41.83	43.75	54.76	33.97	21.26	21.90	1104.11	1099.34	1088.73	1089.36	1087.26	1083.49	1076.46
4/4/03	0:00	34.84	41.85	43.75	54.78	33.94	21.30	21.89	1104.10	1099.32	1088.73	1089.34	1087.29	1083.45	1076.47
4/4/03	4:00	34.80	41.81	43.69	54.71	33.92	21.24	21.87	1104.14	1099.37	1088.79	1089.40	1087.30	1083.52	1076.49
4/4/03	8:00	34.82	41.83	43.80	54.82	33.99	21.31	21.92	1104.13	1099.34	1088.68	1089.29	1087.23	1083.44	1076.44
4/4/03	12:00	34.84	41.87	43.87	54.91	34.00	21.41	21.94	1104.10	1099.30	1088.61	1089.20	1087.22	1083.34	1076.42
4/4/03	16:00	34.87	41.92	43.92	54.99	34.01	21.47	21.95	1104.07	1099.25	1088.56	1089.12	1087.22	1083.28	1076.41
4/4/03	20:00	34.90	41.97	43.99	55.09	34.03	21.52	21.97	1104.04	1099.20	1088.49	1089.02	1087.19	1083.23	1076.39
4/5/03	0:00	34.92	42.02	44.00	55.12	34.01	21.57	21.96	1104.02	1099.15	1088.48	1088.99	1087.21	1083.18	1076.40
4/5/03	4:00	34.94	42.05	44.01	55.14	34.02	21.64	21.97	1104.00	1099.12	1088.47	1088.97	1087.20	1083.11	1076.39
4/5/03	8:00	34.97	42.10	44.05	55.19	34.02	21.67	21.97	1103.97	1099.07	1088.43	1088.92	1087.20	1083.08	1076.39
4/5/03	12:00	34.99	42.13	44.02	55.18	34.00	21.70	21.96	1103.95	1099.04	1088.46	1088.94	1087.22	1083.05	1076.40
4/5/03	16:00	34.99	42.13	43.95	55.09	33.97	21.65	21.93	1103.95	1099.04	1088.53	1089.02	1087.25	1083.10	1076.43
4/5/03	20:00	34.99	42.13	43.93	55.05	33.98	21.64	21.93	1103.95	1099.04	1088.55	1089.06	1087.24	1083.11	1076.43
4/6/03	0:00	34.99	42.14	43.92	55.03	33.97	21.64	21.92	1103.95	1099.03	1088.56	1089.08	1087.26	1083.11	1076.44
4/6/03	4:00	34.98	42.11	43.83	54.92	33.93	21.59	21.89	1103.96	1099.06	1088.65	1089.19	1087.29	1083.16	1076.47
4/6/03	8:00	34.94	42.06	43.77	54.85	33.94	21.51	21.89	1104.01	1099.11	1088.71	1089.26	1087.29	1083.24	1076.47
4/6/03	12:00	34.91	42.03	43.81	54.76	33.90	21.45	21.85	1104.03	1099.15	1088.67	1089.35	1087.32	1083.30	1076.51
4/6/03	16:00	34.87	41.97	43.73	54.68	33.88	21.35	21.84	1104.07	1099.20	1088.75	1089.43	1087.34	1083.40	1076.52
4/6/03	20:00	34.85	41.96	43.72	54.74	33.94	21.36	21.88	1104.09	1099.21	1088.76	1089.37	1087.29	1083.39	1076.48
4/7/03	0:00	34.84	41.96	43.76	54.77	33.95	21.37	21.88	1104.10	1099.21	1088.73	1089.34	1087.27	1083.38	1076.48
4/7/03	4:00	34.84	41.97	43.79	54.83	33.98	21.41	21.91	1104.10	1099.21	1088.69	1089.28	1087.24	1083.34	1076.45
4/7/03	8:00	34.86	42.00	43.90	54.97	34.03	21.49	21.95	1104.08	1099.17	1088.58	1089.14	1087.19	1083.26	1076.41
4/7/03	12:00	34.89	42.06	44.00	55.09	34.04	21.58	21.97	1104.05	1099.11	1088.48	1089.02	1087.18	1083.17	1076.39
4/7/03	16:00	34.91	42.10	44.02	55.14	34.03	21.64	21.97	1104.03	1099.07	1088.46	1088.97	1087.19	1083.12	1076.39

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
4/7/03	20:00	34.93	42.15	44.08	55.23	34.05	21.73	21.99	1104.01	1099.02	1088.40	1088.89	1087.17	1083.02	1076.37
4/8/03	0:00	34.95	42.19	44.07	55.23	34.02	21.76	21.97	1103.99	1098.98	1088.41	1088.88	1087.20	1082.99	1076.39
4/8/03	4:00	34.96	42.21	44.05	55.23	34.03	21.77	21.97	1103.98	1098.96	1088.43	1088.89	1087.20	1082.98	1076.39
4/8/03	8:00	34.97	42.25	44.08	55.26	34.04	21.82	21.99	1103.97	1098.93	1088.40	1088.85	1087.19	1082.93	1076.38
4/8/03	12:00	34.99	42.28	44.08	55.27	34.02	21.88	21.97	1103.95	1098.90	1088.40	1088.84	1087.20	1082.87	1076.39
4/8/03	16:00	34.99	42.27	43.98	55.16	33.98	21.81	21.93	1103.95	1098.90	1088.50	1088.95	1087.24	1082.94	1076.43
4/8/03	20:00	34.99	42.27	43.99	55.15	34.01	21.81	21.95	1103.96	1098.90	1088.49	1088.96	1087.21	1082.94	1076.41
4/9/03	0:00	34.98	42.27	43.99	55.15	34.00	21.82	21.95	1103.96	1098.90	1088.49	1088.97	1087.22	1082.93	1076.41
4/9/03	4:00	34.98	42.27	43.96	55.10	33.99	21.78	21.94	1103.96	1098.90	1088.52	1089.01	1087.23	1082.97	1076.42
4/9/03	8:00	34.97	42.26	43.94	55.07	33.98	21.78	21.93	1103.97	1098.91	1088.54	1089.04	1087.24	1082.97	1076.43
4/9/03	12:00	34.96	42.25	43.90	55.02	33.97	21.73	21.92	1103.98	1098.92	1088.58	1089.09	1087.25	1083.02	1076.44
4/9/03	16:00	34.94	42.22	43.84	54.93	33.95	21.67	21.89	1104.00	1098.95	1088.64	1089.18	1087.27	1083.08	1076.47
4/9/03	20:00	34.92	42.19	43.82	54.90	33.97	21.62	21.90	1104.02	1098.98	1088.66	1089.21	1087.26	1083.13	1076.46
4/10/03	0:00	34.91	42.18	43.85	54.91	33.98	21.64	21.90	1104.03	1099.00	1088.64	1089.20	1087.24	1083.12	1076.46
4/10/03	4:00	34.90	42.16	43.85	54.92	33.98	21.62	21.91	1104.04	1099.01	1088.63	1089.19	1087.24	1083.13	1076.45
4/10/03	8:00	34.90	42.16	43.86	54.93	33.98	21.59	21.92	1104.04	1099.01	1088.62	1089.18	1087.24	1083.16	1076.44
4/10/03	12:00	34.89	42.14	43.82	54.88	33.95	21.58	21.90	1104.06	1099.03	1088.66	1089.23	1087.27	1083.17	1076.47
4/10/03	16:00	34.86	42.10	43.75	54.78	33.93	21.49	21.88	1104.08	1099.07	1088.73	1089.33	1087.29	1083.26	1076.48
4/10/03	20:00	34.84	42.07	43.76	54.78	33.96	21.47	21.89	1104.10	1099.10	1088.72	1089.33	1087.26	1083.28	1076.47
4/11/03	0:00	34.83	42.06	43.79	54.81	33.97	21.48	21.90	1104.11	1099.12	1088.69	1089.30	1087.25	1083.27	1076.46
4/11/03	4:00	34.82	42.04	43.78	54.81	33.97	21.47	21.90	1104.12	1099.13	1088.70	1089.31	1087.26	1083.29	1076.46
4/11/03	8:00	34.82	42.04	43.83	54.85	33.99	21.49	21.92	1104.12	1099.13	1088.65	1089.26	1087.23	1083.26	1076.44
4/11/03	12:00	34.81	42.03	43.81	54.83	33.98	21.47	21.90	1104.13	1099.14	1088.67	1089.28	1087.25	1083.28	1076.46
4/11/03	16:00	34.80	42.01	43.78	54.79	33.97	21.44	21.89	1104.14	1099.16	1088.70	1089.32	1087.26	1083.32	1076.47
4/11/03	20:00	34.80	42.00	43.80	54.82	33.99	21.43	21.91	1104.14	1099.17	1088.68	1089.29	1087.23	1083.32	1076.45
4/12/03	0:00	34.79	42.00	43.82	54.85	33.99	21.45	21.91	1104.15	1099.17	1088.66	1089.26	1087.23	1083.30	1076.45
4/12/03	4:00	34.79	42.00	43.85	54.88	34.01	21.47	21.92	1104.15	1099.17	1088.63	1089.23	1087.22	1083.28	1076.44
4/12/03	8:00	34.80	42.01	43.89	54.94	34.02	21.51	21.93	1104.14	1099.16	1088.59	1089.18	1087.20	1083.24	1076.43
4/12/03	12:00	34.80	42.02	43.88	54.93	34.00	21.51	21.92	1104.14	1099.15	1088.60	1089.18	1087.22	1083.24	1076.44
4/12/03	16:00	34.80	42.01	43.82	54.86	33.98	21.46	21.90	1104.14	1099.16	1088.66	1089.25	1087.24	1083.29	1076.46
4/12/03	20:00	34.80	42.01	43.85	54.89	34.01	21.48	21.92	1104.14	1099.16	1088.63	1089.22	1087.22	1083.27	1076.44
4/13/03	0:00	34.80	42.01	43.88	54.93	34.01	21.52	21.94	1104.14	1099.16	1088.60	1089.18	1087.21	1083.23	1076.43
4/13/03	4:00	34.80	42.01	43.87	54.92	34.00	21.52	21.92	1104.14	1099.16	1088.61	1089.19	1087.22	1083.23	1076.44
4/13/03	8:00	34.81	42.02	43.90	54.96	34.02	21.54	21.94	1104.13	1099.15	1088.58	1089.15	1087.20	1083.21	1076.42
4/13/03	12:00	34.81	42.03	43.87	54.92	33.99	21.50	21.92	1104.13	1099.15	1088.61	1089.19	1087.23	1083.25	1076.44
4/13/03	16:00	34.80	42.01	43.81	54.85	33.97	21.46	21.90	1104.14	1099.16	1088.67	1089.26	1087.25	1083.29	1076.46
4/13/03	20:00	34.80	42.00	43.83	54.86	34.00	21.46	21.91	1104.14	1099.17	1088.65	1089.26	1087.22	1083.29	1076.45
4/14/03	0:00	34.80	41.99	43.84	54.87	34.00	21.47	21.92	1104.14	1099.18	1088.64	1089.24	1087.22	1083.28	1076.44
4/14/03	4:00	34.79	41.98	43.82	54.84	34.00	21.45	21.91	1104.15	1099.19	1088.66	1089.27	1087.22	1083.30	1076.45
4/14/03	8:00	34.79	41.97	43.83	54.84	34.00	21.47	21.92	1104.15	1099.20	1088.65	1089.27	1087.22	1083.28	1076.44

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
4/14/03	12:00	34.78	41.96	43.79	54.79	33.97	21.41	21.89	1104.16	1099.21	1088.69	1089.32	1087.25	1083.34	1076.47
4/14/03	16:00	34.77	41.93	43.75	54.73	33.97	21.38	21.88	1104.18	1099.25	1088.73	1089.38	1087.25	1083.37	1076.48
4/14/03	20:00	34.76	41.92	43.80	54.78	34.01	21.39	21.91	1104.18	1099.25	1088.68	1089.33	1087.22	1083.36	1076.45
4/15/03	0:00	34.76	41.92	43.81	54.80	34.00	21.39	21.90	1104.18	1099.25	1088.67	1089.31	1087.22	1083.36	1076.46
4/15/03	4:00	34.75	41.90	43.77	54.76	33.98	21.37	21.89	1104.19	1099.27	1088.71	1089.36	1087.24	1083.38	1076.47
4/15/03	8:00	34.74	41.88	43.76	54.74	33.98	21.34	21.89	1104.20	1099.29	1088.72	1089.37	1087.24	1083.41	1076.47
4/15/03	12:00	34.73	41.84	43.72	54.68	33.95	21.31	21.87	1104.21	1099.33	1088.76	1089.44	1087.27	1083.44	1076.49
4/15/03	16:00	34.70	41.80	43.69	54.62	33.95	21.26	21.87	1104.24	1099.37	1088.80	1089.49	1087.27	1083.49	1076.49
4/15/03	20:00	34.68	41.78	43.70	54.63	33.96	21.23	21.88	1104.26	1099.39	1088.78	1089.48	1087.26	1083.52	1076.48
4/16/03	0:00	34.66	41.73	43.65	54.57	33.93	21.20	21.85	1104.28	1099.44	1088.83	1089.54	1087.29	1083.55	1076.51
4/16/03	4:00	34.62	41.66	43.60	54.50	33.92	21.14	21.84	1104.32	1099.51	1088.89	1089.61	1087.30	1083.61	1076.52
4/16/03	8:00	34.61	41.65	43.64	54.53	33.95	21.13	21.87	1104.33	1099.52	1088.84	1089.58	1087.27	1083.62	1076.49
4/16/03	12:00	34.61	41.66	43.70	54.61	33.98	21.16	21.89	1104.33	1099.51	1088.78	1089.50	1087.24	1083.59	1076.47
4/16/03	16:00	34.62	41.68	43.77	54.71	34.01	21.22	21.93	1104.32	1099.49	1088.71	1089.40	1087.21	1083.53	1076.44
4/16/03	20:00	34.65	41.73	43.87	54.86	34.06	21.33	21.96	1104.29	1099.44	1088.61	1089.25	1087.16	1083.42	1076.40
4/17/03	0:00	34.69	41.81	43.98	55.02	34.08	21.43	21.99	1104.25	1099.36	1088.50	1089.09	1087.14	1083.32	1076.37
4/17/03	4:00	34.72	41.86	44.00	55.08	34.07	21.49	21.99	1104.22	1099.31	1088.48	1089.03	1087.15	1083.26	1076.37
4/17/03	8:00	34.76	41.91	44.04	55.14	34.07	21.58	21.99	1104.18	1099.26	1088.44	1088.97	1087.15	1083.17	1076.37
4/17/03	12:00	34.79	41.95	44.03	55.15	34.05	21.60	21.98	1104.15	1099.22	1088.45	1088.96	1087.17	1083.16	1076.38
4/17/03	16:00	34.80	41.96	43.97	55.08	34.02	21.57	21.95	1104.14	1099.21	1088.51	1089.03	1087.20	1083.18	1076.41
4/17/03	20:00	34.82	41.97	43.96	55.06	34.02	21.59	21.95	1104.13	1099.20	1088.52	1089.05	1087.20	1083.17	1076.41
4/18/03	0:00	34.82	41.98	43.93	55.01	34.01	21.57	21.94	1104.12	1099.19	1088.55	1089.10	1087.21	1083.18	1076.42
4/18/03	4:00	34.82	41.97	43.87	54.94	33.98	21.52	21.92	1104.12	1099.20	1088.61	1089.17	1087.24	1083.23	1076.44
4/18/03	8:00	34.83	41.98	43.94	55.02	34.05	21.57	21.96	1104.11	1099.19	1088.54	1089.10	1087.17	1083.19	1076.40
4/18/03	12:00	34.80	41.92	43.76	54.76	33.90	21.42	21.86	1104.14	1099.25	1088.73	1089.35	1087.32	1083.33	1076.51
4/18/03	16:00	34.78	41.88	43.72	54.71	33.94	21.35	21.86	1104.16	1099.29	1088.77	1089.40	1087.29	1083.40	1076.50
4/18/03	20:00	34.76	41.86	43.76	54.75	33.99	21.33	21.90	1104.18	1099.31	1088.72	1089.36	1087.23	1083.42	1076.46
4/19/03	0:00	34.78	41.89	43.87	54.88	34.05	21.41	21.94	1104.16	1099.28	1088.61	1089.23	1087.17	1083.34	1076.42
4/19/03	4:00	34.79	41.90	43.88	54.91	34.03	21.44	21.94	1104.15	1099.27	1088.60	1089.20	1087.19	1083.31	1076.43
4/19/03	8:00	34.79	41.91	43.93	54.98	34.04	21.51	21.94	1104.15	1099.26	1088.55	1089.13	1087.18	1083.24	1076.42
4/19/03	12:00	34.73	41.85	44.03	54.86	33.97	21.41	21.89	1104.21	1099.32	1088.45	1089.25	1087.25	1083.34	1076.47
4/19/03	16:00	34.74	41.87	43.86	54.94	34.04	21.42	21.94	1104.20	1099.30	1088.62	1089.17	1087.18	1083.33	1076.42
4/19/03	20:00	34.75	41.90	43.79	55.01	34.07	21.49	21.97	1104.19	1099.27	1088.69	1089.10	1087.15	1083.26	1076.39
4/20/03	0:00	34.72	41.90	43.75	55.06	34.07	21.51	21.96	1104.22	1099.28	1088.73	1089.05	1087.15	1083.24	1076.40
4/20/03	4:00	34.73	41.92	43.70	55.05	34.05	21.53	21.95	1104.21	1099.25	1088.78	1089.06	1087.17	1083.22	1076.41
4/20/03	8:00	34.74	41.94	43.98	55.08	34.06	21.56	21.97	1104.20	1099.23	1088.50	1089.03	1087.16	1083.20	1076.39
4/20/03	12:00	34.75	41.98	44.02	55.10	34.05	21.58	21.97	1104.19	1099.19	1088.47	1089.01	1087.17	1083.17	1076.39
4/20/03	16:00	34.75	41.99	43.99	55.09	34.05	21.58	21.95	1104.20	1099.18	1088.49	1089.02	1087.17	1083.17	1076.41
4/20/03	20:00	34.74	42.00	43.99	55.09	34.04	21.58	21.96	1104.20	1099.17	1088.49	1089.02	1087.18	1083.17	1076.40

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
4/21/03	0:00	34.73	42.01	43.97	55.09	34.04	21.58	21.95	1104.21	1099.16	1088.51	1089.02	1087.18	1083.17	1076.41
4/21/03	4:00	34.71	42.02	43.98	55.09	34.05	21.57	21.96	1104.23	1099.15	1088.50	1089.02	1087.17	1083.18	1076.40
4/21/03	8:00	34.71	42.04	44.03	55.13	34.06	21.60	21.97	1104.23	1099.13	1088.45	1088.98	1087.16	1083.15	1076.39
4/21/03	12:00	34.71	42.06	44.03	55.14	34.05	21.63	21.97	1104.23	1099.11	1088.45	1088.97	1087.17	1083.12	1076.39
4/21/03	16:00	34.69	42.06	43.97	55.08	34.03	21.59	21.94	1104.25	1099.11	1088.52	1089.03	1087.19	1083.16	1076.42
4/21/03	20:00	34.67	42.05	43.95	55.07	34.04	21.56	21.95	1104.27	1099.12	1088.53	1089.05	1087.18	1083.19	1076.41
4/22/03	0:00	34.66	42.06	43.99	55.11	34.06	21.58	21.96	1104.28	1099.12	1088.49	1089.00	1087.17	1083.17	1076.40
4/22/03	4:00	34.64	42.05	43.98	55.10	34.05	21.58	21.95	1104.30	1099.12	1088.50	1089.02	1087.17	1083.17	1076.41
4/22/03	8:00	34.64	42.07	44.02	55.14	34.06	21.61	21.97	1104.30	1099.10	1088.46	1088.97	1087.16	1083.14	1076.39
4/22/03	12:00	34.62	42.06	43.97	55.08	34.02	21.58	21.94	1104.32	1099.11	1088.51	1089.03	1087.20	1083.17	1076.42
4/22/03	16:00	34.60	42.04	43.91	55.01	34.00	21.51	21.92	1104.34	1099.13	1088.57	1089.10	1087.22	1083.24	1076.44
4/22/03	20:00	34.57	42.02	43.89	54.98	34.02	21.49	21.93	1104.37	1099.15	1088.60	1089.13	1087.20	1083.26	1076.44
4/23/03	0:00	34.55	42.01	43.92	55.01	34.03	21.49	21.93	1104.39	1099.16	1088.56	1089.10	1087.19	1083.26	1076.43
4/23/03	4:00	34.53	41.99	43.90	54.98	34.02	21.45	21.93	1104.41	1099.18	1088.58	1089.13	1087.20	1083.30	1076.43
4/23/03	8:00	34.51	41.97	43.89	54.97	34.02	21.44	21.93	1104.43	1099.20	1088.59	1089.14	1087.20	1083.31	1076.43
4/23/03	12:00	34.48	41.94	43.84	54.90	34.00	21.40	21.91	1104.46	1099.23	1088.64	1089.21	1087.23	1083.35	1076.45
4/23/03	16:00	34.44	41.90	43.78	54.82	34.00	21.29	21.90	1104.50	1099.28	1088.70	1089.29	1087.22	1083.46	1076.46
4/23/03	20:00	34.37	41.83	43.78	54.84	34.01	21.27	21.91	1104.57	1099.34	1088.70	1089.27	1087.21	1083.48	1076.45
4/24/03	0:00	34.34	41.80	43.72	54.76	33.96	21.21	21.88	1104.61	1099.37	1088.76	1089.35	1087.26	1083.54	1076.48
4/24/03	4:00	34.29	41.75	43.70	54.68	33.95	21.13	21.86	1104.65	1099.43	1088.78	1089.43	1087.27	1083.62	1076.50
4/24/03	8:00	34.27	41.72	43.71	54.68	33.94	21.12	21.86	1104.67	1099.45	1088.77	1089.43	1087.28	1083.63	1076.50
4/24/03	12:00	34.22	41.68	43.71	54.68	33.96	21.10	21.87	1104.72	1099.49	1088.77	1089.44	1087.26	1083.65	1076.49
4/24/03	16:00	34.19	41.66	43.71	54.68	33.97	21.06	21.88	1104.75	1099.51	1088.77	1089.44	1087.25	1083.69	1076.48
4/24/03	20:00	34.17	41.66	43.77	54.75	34.01	21.12	21.91	1104.77	1099.51	1088.71	1089.36	1087.21	1083.63	1076.45
4/25/03	0:00	34.15	41.65	43.76	54.79	34.01	21.13	21.92	1104.79	1099.52	1088.72	1089.32	1087.21	1083.62	1076.45
4/25/03	4:00	34.12	41.65	43.73	54.83	34.01	21.13	21.92	1104.82	1099.53	1088.75	1089.28	1087.21	1083.62	1076.44
4/25/03	8:00	34.12	41.66	43.67	54.92	34.05	21.18	21.95	1104.82	1099.51	1088.81	1089.20	1087.17	1083.57	1076.41
4/25/03	12:00	34.12	41.69	43.90	54.97	34.05	21.24	21.96	1104.83	1099.49	1088.58	1089.14	1087.17	1083.51	1076.40
4/25/03	16:00	34.10	41.69	43.87	54.96	34.03	21.22	21.95	1104.84	1099.49	1088.61	1089.15	1087.19	1083.53	1076.41
4/25/03	20:00	34.09	41.70	43.89	55.00	34.05	21.26	21.96	1104.85	1099.47	1088.59	1089.11	1087.17	1083.49	1076.40
4/26/03	0:00	34.08	41.71	43.90	55.02	34.04	21.28	21.96	1104.86	1099.46	1088.58	1089.09	1087.18	1083.47	1076.40
4/26/03	4:00	34.06	41.71	43.91	55.04	34.05	21.29	21.97	1104.88	1099.46	1088.57	1089.07	1087.17	1083.46	1076.40
4/26/03	8:00	34.05	41.73	43.95	55.07	34.06	21.32	21.98	1104.89	1099.44	1088.53	1089.04	1087.16	1083.43	1076.38
4/26/03	12:00	34.04	41.72	43.90	55.03	34.02	21.30	21.95	1104.90	1099.45	1088.58	1089.08	1087.20	1083.45	1076.41
4/26/03	16:00	34.01	41.70	43.84	54.96	34.00	21.26	21.93	1104.93	1099.47	1088.64	1089.15	1087.22	1083.49	1076.43
4/26/03	20:00	33.98	41.68	43.84	54.95	34.03	21.26	21.94	1104.96	1099.49	1088.64	1089.16	1087.19	1083.49	1076.42

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
4/27/03	0:00	33.97	41.68	43.86	54.97	34.03	21.26	21.94	1104.98	1099.50	1088.62	1089.14	1087.20	1083.49	1076.42
4/27/03	4:00	33.94	41.66	43.86	54.97	34.03	21.27	21.95	1105.00	1099.51	1088.62	1089.14	1087.19	1083.48	1076.41
4/27/03	8:00	33.94	41.68	43.92	55.03	34.06	21.30	21.98	1105.00	1099.50	1088.56	1089.08	1087.16	1083.45	1076.39
4/27/03	12:00	33.93	41.66	43.87	54.98	34.01	21.26	21.94	1105.02	1099.51	1088.61	1089.13	1087.21	1083.49	1076.42
4/27/03	16:00	33.90	41.64	43.84	54.95	34.02	21.21	21.94	1105.04	1099.53	1088.64	1089.16	1087.20	1083.54	1076.42
4/27/03	20:00	33.89	41.64	43.87	54.98	34.04	21.25	21.96	1105.05	1099.53	1088.61	1089.13	1087.18	1083.50	1076.40
4/28/03	0:00	33.88	41.63	43.87	54.99	34.03	21.25	21.95	1105.07	1099.54	1088.61	1089.13	1087.19	1083.50	1076.41
4/28/03	4:00	33.82	41.58	43.85	54.97	34.05	21.22	21.95	1105.12	1099.59	1088.63	1089.15	1087.17	1083.53	1076.41
4/28/03	8:00	33.81	41.59	43.93	55.04	34.08	21.26	21.99	1105.13	1099.58	1088.55	1089.07	1087.14	1083.49	1076.37
4/28/03	12:00	33.82	41.62	43.93	55.07	34.05	21.29	21.97	1105.12	1099.56	1088.55	1089.04	1087.17	1083.46	1076.39
4/28/03	16:00	33.81	41.61	43.89	55.02	34.03	21.27	21.95	1105.13	1099.56	1088.59	1089.09	1087.20	1083.48	1076.41
4/28/03	20:00	33.79	41.60	43.90	55.02	34.04	21.25	21.96	1105.15	1099.57	1088.59	1089.09	1087.18	1083.50	1076.40
4/29/03	0:00	33.77	41.60	43.91	55.05	34.05	21.28	21.97	1105.17	1099.57	1088.57	1089.07	1087.17	1083.47	1076.39
4/29/03	4:00	33.74	41.59	43.87	55.01	34.04	21.25	21.96	1105.20	1099.59	1088.61	1089.10	1087.18	1083.50	1076.40
4/29/03	8:00	33.72	41.59	43.90	55.03	34.03	21.26	21.96	1105.22	1099.59	1088.59	1089.08	1087.19	1083.49	1076.41
4/29/03	12:00	33.70	41.57	43.83	54.97	33.99	21.22	21.93	1105.24	1099.60	1088.65	1089.14	1087.23	1083.53	1076.43
4/29/03	16:00	33.64	41.52	43.74	54.84	33.96	21.14	21.90	1105.30	1099.65	1088.74	1089.27	1087.26	1083.61	1076.46
4/29/03	20:00	33.60	41.48	43.74	54.82	33.99	21.10	21.91	1105.34	1099.69	1088.74	1089.29	1087.23	1083.65	1076.45
4/30/03	0:00	33.56	41.44	43.72	54.79	33.97	21.06	21.90	1105.38	1099.73	1088.76	1089.32	1087.25	1083.70	1076.46
4/30/03	4:00	33.51	41.40	43.72	54.78	34.00	21.02	21.92	1105.43	1099.77	1088.76	1089.33	1087.22	1083.73	1076.44
4/30/03	8:00	33.48	41.38	43.73	54.79	33.98	21.02	21.91	1105.46	1099.79	1088.75	1089.32	1087.24	1083.73	1076.45
4/30/03	12:00	33.45	41.35	43.69	54.74	33.97	20.99	21.90	1105.49	1099.82	1088.79	1089.37	1087.25	1083.76	1076.47
4/30/03	16:00	33.41	41.31	43.68	54.71	33.97	20.94	21.90	1105.53	1099.86	1088.80	1089.40	1087.25	1083.81	1076.46
4/30/03	20:00	33.39	41.30	43.77	54.81	34.03	20.98	21.95	1105.55	1099.87	1088.72	1089.30	1087.19	1083.77	1076.41
5/1/03	0:00	33.41	41.32	43.82	54.90	34.02	21.06	21.96	1105.53	1099.85	1088.66	1089.21	1087.20	1083.69	1076.41
5/1/03	4:00	33.42	41.35	43.89	55.00	34.06	21.10	21.98	1105.53	1099.82	1088.59	1089.12	1087.16	1083.65	1076.38
5/1/03	8:00	33.42	41.35	43.88	55.01	34.05	21.11	21.98	1105.52	1099.82	1088.60	1089.10	1087.17	1083.64	1076.38
5/1/03	12:00	33.44	41.38	43.93	55.07	34.05	21.17	21.99	1105.50	1099.79	1088.56	1089.04	1087.17	1083.58	1076.37
5/1/03	16:00	33.44	41.38	43.90	55.05	34.04	21.18	21.98	1105.50	1099.79	1088.59	1089.06	1087.18	1083.57	1076.38
5/1/03	20:00	33.44	41.39	43.91	55.07	34.05	21.18	21.99	1105.50	1099.78	1088.57	1089.04	1087.17	1083.57	1076.37
5/2/03	0:00	33.45	41.41	43.94	55.10	34.05	21.22	21.99	1105.49	1099.76	1088.54	1089.01	1087.17	1083.53	1076.37
5/2/03	4:00	33.45	41.41	43.93	55.10	34.06	21.23	21.99	1105.49	1099.76	1088.55	1089.01	1087.16	1083.52	1076.37
5/2/03	8:00	33.46	41.43	43.97	55.14	34.07	21.27	22.00	1105.48	1099.74	1088.51	1088.97	1087.15	1083.48	1076.36
5/2/03	12:00	33.47	41.44	43.95	55.12	34.05	21.28	21.98	1105.47	1099.73	1088.53	1088.99	1087.18	1083.47	1076.38
5/2/03	16:00	33.46	41.42	43.89	55.04	34.03	21.23	21.96	1105.48	1099.75	1088.60	1089.07	1087.19	1083.52	1076.40
5/2/03	20:00	33.44	41.40	43.89	55.04	34.05	21.22	21.98	1105.50	1099.77	1088.59	1089.07	1087.17	1083.53	1076.39

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
5/3/03	0:00	33.44	41.41	43.92	55.07	34.06	21.25	21.98	1105.50	1099.76	1088.56	1089.04	1087.16	1083.50	1076.38
5/3/03	4:00	33.44	41.40	43.90	55.05	34.04	21.24	21.97	1105.50	1099.77	1088.58	1089.06	1087.18	1083.51	1076.39
5/3/03	8:00	33.44	41.40	43.95	55.09	34.06	21.27	21.99	1105.50	1099.77	1088.53	1089.02	1087.16	1083.49	1076.37
5/3/03	12:00	33.44	41.40	43.90	55.03	34.03	21.24	21.96	1105.50	1099.77	1088.58	1089.08	1087.20	1083.52	1076.40
5/3/03	16:00	33.41	41.36	43.80	54.92	33.99	21.15	21.93	1105.53	1099.81	1088.68	1089.19	1087.23	1083.60	1076.43
5/3/03	20:00	33.38	41.32	43.78	54.87	34.00	21.10	21.93	1105.56	1099.85	1088.70	1089.24	1087.22	1083.65	1076.43
5/4/03	0:00	33.35	41.28	43.75	54.83	33.98	21.07	21.92	1105.59	1099.89	1088.73	1089.28	1087.24	1083.68	1076.44
5/4/03	4:00	33.29	41.20	43.64	54.68	33.94	20.95	21.87	1105.65	1099.97	1088.85	1089.44	1087.29	1083.80	1076.49
5/4/03	8:00	33.24	41.14	43.63	54.62	33.94	20.88	21.87	1105.70	1100.03	1088.85	1089.49	1087.28	1083.87	1076.49
5/4/03	12:00	33.19	41.07	43.55	54.50	33.92	20.77	21.85	1105.75	1100.10	1088.93	1089.61	1087.30	1083.98	1076.51
5/4/03	16:00	33.12	40.98	43.43	54.33	33.88	20.65	21.81	1105.82	1100.19	1089.05	1089.79	1087.34	1084.11	1076.55
5/4/03	20:00	33.10	40.96	43.61	54.54	34.02	20.69	21.92	1105.84	1100.21	1088.87	1089.57	1087.20	1084.06	1076.44
5/5/03	0:00	33.10	40.96	43.70	54.65	34.05	20.73	21.96	1105.84	1100.21	1088.78	1089.46	1087.17	1084.02	1076.40
5/5/03	4:00	33.11	40.97	43.76	54.74	34.05	20.80	21.96	1105.83	1100.20	1088.73	1089.37	1087.17	1083.95	1076.40
5/5/03	8:00	33.12	40.99	43.79	54.80	34.03	20.85	21.96	1105.82	1100.18	1088.69	1089.31	1087.20	1083.90	1076.40
5/5/03	12:00	33.14	41.02	43.83	54.87	34.04	20.90	21.97	1105.80	1100.15	1088.65	1089.24	1087.18	1083.85	1076.39
5/5/03	16:00	33.16	41.03	43.81	54.89	34.03	20.92	21.97	1105.78	1100.15	1088.67	1089.23	1087.19	1083.84	1076.39
5/5/03	20:00	33.17	41.03	43.84	54.93	34.05	20.93	21.99	1105.78	1100.14	1088.64	1089.18	1087.17	1083.82	1076.37
5/6/03	0:00	33.19	41.06	43.88	54.99	34.06	20.99	22.00	1105.75	1100.11	1088.60	1089.12	1087.16	1083.76	1076.36
5/6/03	4:00	33.21	41.09	43.90	55.02	34.07	21.03	22.00	1105.73	1100.09	1088.58	1089.09	1087.15	1083.72	1076.36
5/6/03	8:00	33.23	41.11	43.92	55.05	34.07	21.07	22.01	1105.71	1100.06	1088.56	1089.06	1087.15	1083.68	1076.35
5/6/03	12:00	33.24	41.12	43.91	55.00	34.01	21.10	21.95	1105.70	1100.05	1088.57	1089.11	1087.21	1083.65	1076.41
5/6/03	16:00	33.24	41.11	43.86	55.00	34.05	21.06	21.98	1105.71	1100.06	1088.62	1089.11	1087.17	1083.69	1076.38
5/6/03	20:00	33.25	41.13	43.92	55.06	34.08	21.10	22.01	1105.69	1100.04	1088.56	1089.05	1087.14	1083.66	1076.35
5/7/03	0:00	33.27	41.16	43.95	55.10	34.08	21.14	22.01	1105.67	1100.01	1088.53	1089.01	1087.14	1083.61	1076.35
5/7/03	4:00	33.29	41.18	43.95	55.10	34.08	21.17	22.00	1105.66	1100.00	1088.53	1089.01	1087.14	1083.58	1076.36
5/7/03	8:00	33.30	41.20	43.99	55.14	34.09	21.19	22.02	1105.64	1099.97	1088.49	1088.97	1087.13	1083.56	1076.35
5/7/03	12:00	33.32	41.22	43.94	55.09	34.05	21.19	21.98	1105.62	1099.95	1088.54	1089.02	1087.18	1083.56	1076.38
5/7/03	16:00	33.32	41.22	43.90	55.05	34.04	21.16	21.97	1105.62	1099.96	1088.58	1089.07	1087.18	1083.59	1076.39
5/7/03	20:00	33.32	41.21	43.90	55.04	34.08	21.15	21.99	1105.62	1099.97	1088.58	1089.07	1087.14	1083.61	1076.37
5/8/03	0:00	33.32	41.20	43.90	55.02	34.05	21.15	21.98	1105.63	1099.97	1088.59	1089.09	1087.17	1083.60	1076.38
5/8/03	4:00	33.30	41.18	43.83	54.94	34.01	21.10	21.96	1105.64	1099.99	1088.65	1089.17	1087.21	1083.65	1076.40
5/8/03	8:00	33.25	41.12	43.77	54.84	33.94	21.06	21.90	1105.69	1100.05	1088.71	1089.27	1087.28	1083.69	1076.46
5/8/03	12:00	33.20	41.08	43.82	54.83	33.99	20.99	21.92	1105.74	1100.09	1088.66	1089.29	1087.23	1083.76	1076.44
5/8/03	16:00	33.16	41.02	43.68	54.66	33.92	20.88	21.87	1105.78	1100.15	1088.80	1089.45	1087.30	1083.87	1076.49
5/8/03	20:00	33.05	40.93	43.77	54.68	33.99	20.79	21.89	1105.90	1100.24	1088.71	1089.43	1087.23	1083.96	1076.47

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
5/9/03	0:00	33.04	40.94	43.73	54.78	34.05	20.83	21.96	1105.90	1100.23	1088.75	1089.33	1087.17	1083.93	1076.40
5/9/03	4:00	33.04	40.97	43.71	54.91	34.07	20.90	21.99	1105.90	1100.20	1088.77	1089.20	1087.15	1083.85	1076.37
5/9/03	8:00	33.04	41.00	43.94	55.00	34.08	20.97	22.00	1105.90	1100.17	1088.54	1089.11	1087.15	1083.78	1076.36
5/9/03	12:00	33.03	41.03	43.94	55.04	34.06	21.00	21.99	1105.92	1100.14	1088.54	1089.07	1087.17	1083.75	1076.37
5/9/03	16:00	32.99	41.03	43.84	54.95	34.02	20.96	21.97	1105.95	1100.14	1088.64	1089.16	1087.20	1083.79	1076.39
5/9/03	20:00	32.95	41.02	43.82	54.95	34.03	20.95	21.98	1105.99	1100.15	1088.66	1089.16	1087.19	1083.80	1076.38
5/10/03	0:00	32.91	41.01	43.82	54.95	34.01	20.95	21.96	1106.03	1100.16	1088.66	1089.16	1087.21	1083.80	1076.40
5/10/03	4:00	32.85	40.97	43.73	54.82	33.97	20.89	21.92	1106.09	1100.20	1088.75	1089.29	1087.25	1083.86	1076.44
5/10/03	8:00	32.79	40.94	43.71	54.79	33.96	20.84	21.93	1106.15	1100.24	1088.77	1089.32	1087.26	1083.91	1076.43
5/10/03	12:00	32.74	40.90	43.69	54.74	33.94	20.79	21.91	1106.20	1100.27	1088.80	1089.37	1087.28	1083.96	1076.45
5/10/03	16:00	32.70	40.88	43.73	54.81	34.02	20.82	21.97	1106.24	1100.29	1088.75	1089.30	1087.20	1083.93	1076.39
5/10/03	20:00	32.71	40.92	43.91	55.03	34.08	20.95	22.03	1106.23	1100.25	1088.57	1089.08	1087.14	1083.80	1076.33
5/11/03	0:00	32.73	40.97	43.94	55.11	34.06	21.04	22.02	1106.21	1100.21	1088.54	1089.00	1087.16	1083.71	1076.34
5/11/03	4:00	32.73	40.99	43.95	55.13	34.05	21.06	22.02	1106.21	1100.18	1088.53	1088.98	1087.17	1083.69	1076.35
5/11/03	8:00	32.73	41.01	43.97	55.15	34.05	21.10	22.02	1106.21	1100.16	1088.51	1088.96	1087.18	1083.65	1076.34
5/11/03	12:00	32.75	41.04	44.00	55.21	34.06	21.16	22.03	1106.19	1100.13	1088.48	1088.90	1087.16	1083.59	1076.33
5/11/03	16:00	32.75	41.06	43.97	55.19	34.05	21.16	22.02	1106.19	1100.11	1088.51	1088.92	1087.18	1083.59	1076.34
5/11/03	20:00	32.75	41.07	43.97	55.20	34.05	21.20	22.02	1106.19	1100.10	1088.51	1088.91	1087.17	1083.55	1076.34
5/12/03	0:00	32.75	41.09	44.01	55.24	34.07	21.24	22.03	1106.19	1100.08	1088.47	1088.87	1087.15	1083.51	1076.33
5/12/03	4:00	32.75	41.10	44.01	55.24	34.06	21.26	22.03	1106.19	1100.07	1088.47	1088.87	1087.16	1083.49	1076.33
5/12/03	8:00	32.75	41.12	44.04	55.26	34.08	21.28	22.04	1106.19	1100.06	1088.44	1088.85	1087.14	1083.47	1076.32
5/12/03	12:00	32.75	41.12	43.99	55.21	34.03	21.26	22.01	1106.19	1100.05	1088.49	1088.90	1087.19	1083.49	1076.35
5/12/03	16:00	32.72	41.09	43.89	55.09	34.00	21.19	21.98	1106.22	1100.08	1088.59	1089.02	1087.23	1083.56	1076.38
5/12/03	20:00	32.69	41.06	43.86	55.04	34.01	21.16	21.98	1106.25	1100.11	1088.62	1089.07	1087.21	1083.59	1076.38
5/13/03	0:00	32.66	41.03	43.85	55.01	34.00	21.14	21.97	1106.28	1100.14	1088.64	1089.10	1087.22	1083.61	1076.39
5/13/03	4:00	32.63	41.00	43.82	54.97	34.00	21.09	21.97	1106.31	1100.17	1088.66	1089.14	1087.22	1083.66	1076.39
5/13/03	8:00	32.61	40.97	43.83	54.97	34.01	21.10	21.98	1106.33	1100.20	1088.65	1089.15	1087.21	1083.65	1076.38
5/13/03	12:00	32.58	40.94	43.78	54.89	33.97	21.04	21.95	1106.36	1100.23	1088.70	1089.22	1087.25	1083.71	1076.41
5/13/03	16:00	32.54	40.89	43.74	54.83	33.97	20.99	21.94	1106.40	1100.28	1088.74	1089.28	1087.25	1083.76	1076.42
5/13/03	20:00	32.51	40.86	43.79	54.89	34.02	20.98	21.98	1106.43	1100.31	1088.69	1089.22	1087.20	1083.77	1076.38
5/14/03	0:00	32.50	40.85	43.80	54.90	34.00	21.01	21.97	1106.44	1100.32	1088.68	1089.21	1087.22	1083.74	1076.39
5/14/03	4:00	32.48	40.83	43.80	54.91	34.01	20.99	21.98	1106.46	1100.34	1088.68	1089.20	1087.21	1083.76	1076.38
5/14/03	8:00	32.47	40.81	43.81	54.92	34.01	20.99	21.98	1106.47	1100.36	1088.67	1089.19	1087.21	1083.76	1076.38
5/14/03	12:00	32.47	40.81	43.82	54.93	34.01	20.98	21.98	1106.47	1100.36	1088.66	1089.18	1087.21	1083.77	1076.38
5/14/03	16:00	32.44	40.77	43.74	54.85	33.98	20.93	21.96	1106.50	1100.40	1088.74	1089.26	1087.24	1083.82	1076.40
5/14/03	20:00	32.43	40.75	43.78	54.90	34.03	20.92	22.00	1106.51	1100.42	1088.70	1089.21	1087.19	1083.83	1076.37

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
5/15/03	0:00	32.43	40.75	43.83	54.95	34.03	20.97	22.00	1106.51	1100.42	1088.65	1089.16	1087.19	1083.78	1076.36
5/15/03	4:00	32.42	40.75	43.82	54.95	34.02	20.97	21.99	1106.52	1100.43	1088.66	1089.16	1087.20	1083.78	1076.37
5/15/03	8:00	32.43	40.76	43.88	55.01	34.04	21.04	22.01	1106.51	1100.41	1088.60	1089.10	1087.18	1083.72	1076.35
5/15/03	12:00	32.44	40.76	43.85	54.98	34.01	21.01	21.99	1106.50	1100.41	1088.64	1089.13	1087.21	1083.75	1076.37
5/15/03	16:00	32.43	40.74	43.83	54.97	34.02	21.00	22.00	1106.51	1100.43	1088.65	1089.14	1087.20	1083.75	1076.37
5/15/03	20:00	32.42	40.72	43.82	54.95	34.02	20.97	22.00	1106.52	1100.45	1088.66	1089.16	1087.20	1083.78	1076.37
5/16/03	0:00	32.42	40.73	43.87	55.00	34.05	20.99	22.02	1106.52	1100.44	1088.61	1089.11	1087.17	1083.76	1076.34
5/16/03	4:00	32.42	40.71	43.81	54.94	34.00	20.99	21.98	1106.53	1100.46	1088.67	1089.17	1087.22	1083.76	1076.38
5/16/03	8:00	32.41	40.71	43.84	54.96	34.02	20.98	22.00	1106.53	1100.46	1088.64	1089.15	1087.20	1083.77	1076.36
5/16/03	12:00	32.42	40.71	43.85	54.97	34.03	21.00	21.99	1106.53	1100.46	1088.63	1089.14	1087.19	1083.75	1076.37
5/16/03	16:00	32.41	40.69	43.82	54.94	34.00	21.01	21.97	1106.53	1100.48	1088.66	1089.17	1087.22	1083.74	1076.39
5/16/03	20:00	32.41	40.69	43.85	54.97	34.05	20.99	22.01	1106.53	1100.48	1088.63	1089.14	1087.18	1083.76	1076.36
5/17/03	0:00	32.41	40.69	43.87	55.01	34.05	21.01	22.01	1106.53	1100.48	1088.61	1089.10	1087.17	1083.74	1076.35
5/17/03	4:00	32.42	40.70	43.89	55.04	34.05	21.03	22.01	1106.52	1100.47	1088.59	1089.07	1087.17	1083.72	1076.35
5/17/03	8:00	32.43	40.71	43.90	55.04	34.05	21.05	22.02	1106.51	1100.46	1088.58	1089.07	1087.17	1083.70	1076.34
5/17/03	12:00	32.45	40.72	43.92	55.06	34.05	21.09	22.02	1106.50	1100.45	1088.56	1089.05	1087.17	1083.66	1076.34
5/17/03	16:00	32.45	40.72	43.86	55.00	34.02	21.04	22.00	1106.50	1100.46	1088.62	1089.11	1087.20	1083.71	1076.36
5/17/03	20:00	32.43	40.70	43.85	54.99	34.04	21.03	22.01	1106.51	1100.47	1088.63	1089.13	1087.18	1083.72	1076.36
5/18/03	0:00	32.44	40.70	43.87	55.01	34.05	21.06	22.01	1106.50	1100.47	1088.61	1089.10	1087.17	1083.69	1076.35
5/18/03	4:00	32.43	40.69	43.85	54.99	34.05	21.02	22.00	1106.51	1100.48	1088.63	1089.13	1087.18	1083.73	1076.36
5/18/03	8:00	32.44	40.69	43.87	54.99	34.04	21.05	22.00	1106.50	1100.49	1088.61	1089.12	1087.18	1083.70	1076.36
5/18/03	12:00	32.43	40.68	43.84	54.94	34.01	21.00	21.98	1106.51	1100.49	1088.64	1089.17	1087.21	1083.75	1076.38
5/18/03	16:00	32.42	40.64	43.76	54.86	34.00	20.95	21.97	1106.53	1100.53	1088.72	1089.25	1087.22	1083.81	1076.39
5/18/03	20:00	32.40	40.63	43.81	54.91	34.04	20.95	22.00	1106.54	1100.55	1088.67	1089.20	1087.18	1083.80	1076.36
5/19/03	0:00	32.41	40.63	43.85	54.95	34.05	20.99	22.00	1106.53	1100.54	1088.64	1089.16	1087.17	1083.76	1076.36
5/19/03	4:00	32.41	40.63	43.85	54.97	34.06	21.00	22.01	1106.53	1100.54	1088.63	1089.14	1087.16	1083.75	1076.35
5/19/03	8:00	32.42	40.63	43.91	55.04	34.09	21.04	22.04	1106.52	1100.54	1088.57	1089.07	1087.13	1083.71	1076.32
5/19/03	12:00	32.43	40.64	43.92	55.05	34.07	21.06	22.02	1106.51	1100.53	1088.56	1089.06	1087.15	1083.70	1076.34
5/19/03	16:00	32.45	40.67	43.98	55.14	34.12	21.12	22.06	1106.49	1100.50	1088.50	1088.97	1087.10	1083.63	1076.30
5/19/03	20:00	32.47	40.69	44.05	55.24	34.14	21.20	22.07	1106.48	1100.48	1088.43	1088.87	1087.08	1083.55	1076.30
5/20/03	0:00	32.50	40.74	43.95	55.29	34.13	21.24	22.08	1106.44	1100.43	1088.53	1088.82	1087.09	1083.51	1076.29
5/20/03	4:00	32.54	40.79	44.10	55.33	34.13	21.31	22.07	1106.40	1100.38	1088.38	1088.78	1087.09	1083.44	1076.29
5/20/03	8:00	32.58	40.83	44.12	55.35	34.13	21.34	22.08	1106.36	1100.34	1088.36	1088.76	1087.09	1083.41	1076.28
5/20/03	12:00	32.61	40.88	44.12	55.34	34.11	21.38	22.06	1106.33	1100.30	1088.36	1088.77	1087.11	1083.37	1076.30
5/20/03	16:00	32.62	40.88	44.02	55.24	34.07	21.32	22.02	1106.32	1100.29	1088.47	1088.87	1087.15	1083.43	1076.34
5/20/03	20:00	32.61	40.87	43.96	55.16	34.07	21.29	22.02	1106.33	1100.30	1088.52	1088.95	1087.15	1083.46	1076.34

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
5/21/03	0:00	32.60	40.87	43.98	55.16	34.08	21.29	22.02	1106.34	1100.30	1088.50	1088.95	1087.14	1083.46	1076.34
5/21/03	4:00	32.59	40.85	43.95	55.11	34.06	21.27	22.00	1106.35	1100.32	1088.53	1089.00	1087.16	1083.48	1076.36
5/21/03	8:00	32.59	40.85	43.97	55.12	34.08	21.25	22.02	1106.36	1100.32	1088.52	1088.99	1087.14	1083.50	1076.34
5/21/03	12:00	32.57	40.84	43.93	55.05	34.06	21.22	22.00	1106.37	1100.33	1088.55	1089.06	1087.16	1083.53	1076.36
5/21/03	16:00	32.55	40.80	43.85	54.97	34.03	21.15	21.98	1106.39	1100.37	1088.63	1089.14	1087.19	1083.60	1076.38
5/21/03	20:00	32.53	40.78	43.86	54.97	34.06	21.14	22.00	1106.41	1100.39	1088.62	1089.14	1087.16	1083.61	1076.36
5/22/03	0:00	32.52	40.76	43.89	55.00	34.07	21.15	22.00	1106.43	1100.41	1088.59	1089.11	1087.15	1083.60	1076.36
5/22/03	4:00	32.50	40.75	43.90	55.01	34.08	21.12	22.01	1106.44	1100.42	1088.58	1089.10	1087.14	1083.63	1076.35
5/22/03	8:00	32.50	40.75	43.94	55.05	34.09	21.16	22.02	1106.44	1100.42	1088.55	1089.07	1087.13	1083.59	1076.34
5/22/03	12:00	32.50	40.74	43.90	55.00	34.06	21.13	21.99	1106.44	1100.43	1088.58	1089.11	1087.16	1083.62	1076.37
5/22/03	16:00	32.48	40.72	43.85	54.95	34.06	21.08	22.00	1106.46	1100.45	1088.64	1089.16	1087.16	1083.67	1076.36
5/22/03	20:00	32.46	40.69	43.85	54.94	34.07	21.05	22.00	1106.48	1100.48	1088.64	1089.17	1087.15	1083.70	1076.36
5/23/03	0:00	32.45	40.68	43.87	54.96	34.08	21.06	22.01	1106.49	1100.49	1088.61	1089.15	1087.15	1083.69	1076.35
5/23/03	4:00	32.45	40.67	43.89	54.99	34.08	21.08	22.02	1106.49	1100.50	1088.60	1089.12	1087.14	1083.67	1076.34
5/23/03	8:00	32.45	40.67	43.91	55.01	34.09	21.10	22.02	1106.49	1100.50	1088.57	1089.10	1087.13	1083.65	1076.34
5/23/03	12:00	32.44	40.66	43.87	54.97	34.07	21.06	22.01	1106.50	1100.51	1088.61	1089.14	1087.15	1083.69	1076.35
5/23/03	16:00	32.43	40.63	43.83	54.91	34.05	21.02	21.99	1106.51	1100.54	1088.65	1089.20	1087.17	1083.73	1076.37
5/23/03	20:00	32.42	40.62	43.84	54.92	34.07	21.02	22.00	1106.52	1100.55	1088.64	1089.19	1087.15	1083.73	1076.36
5/24/03	0:00	32.41	40.60	43.84	54.92	34.07	21.02	22.01	1106.53	1100.57	1088.64	1089.19	1087.15	1083.73	1076.35
5/24/03	4:00	32.39	40.57	43.78	54.85	34.03	20.97	21.98	1106.55	1100.60	1088.70	1089.26	1087.19	1083.78	1076.38
5/24/03	8:00	32.37	40.55	43.81	54.86	34.07	20.96	21.99	1106.57	1100.62	1088.68	1089.25	1087.15	1083.79	1076.37
5/24/03	12:00	32.36	40.53	43.81	54.85	34.05	20.98	21.99	1106.58	1100.64	1088.67	1089.26	1087.17	1083.77	1076.37
5/24/03	16:00	32.35	40.52	43.82	54.86	34.07	20.94	22.00	1106.59	1100.65	1088.67	1089.25	1087.15	1083.81	1076.36
5/24/03	20:00	32.36	40.52	43.86	54.92	34.10	20.97	22.02	1106.58	1100.65	1088.62	1089.19	1087.12	1083.79	1076.34
5/25/03	0:00	32.37	40.52	43.89	54.97	34.11	20.99	22.02	1106.58	1100.65	1088.59	1089.14	1087.12	1083.76	1076.34
5/25/03	4:00	32.37	40.52	43.88	54.97	34.09	21.00	22.01	1106.57	1100.65	1088.60	1089.15	1087.13	1083.75	1076.35
5/25/03	8:00	32.38	40.54	43.92	55.02	34.11	21.03	22.03	1106.56	1100.63	1088.56	1089.10	1087.11	1083.72	1076.33
5/25/03	12:00	32.39	40.55	43.92	55.02	34.09	21.04	22.03	1106.55	1100.62	1088.56	1089.10	1087.13	1083.71	1076.33
5/25/03	16:00	32.40	40.54	43.86	54.97	34.07	21.02	22.01	1106.55	1100.63	1088.62	1089.14	1087.15	1083.74	1076.35
5/25/03	20:00	32.40	40.54	43.88	54.98	34.09	21.01	22.02	1106.54	1100.63	1088.60	1089.13	1087.13	1083.74	1076.34
5/26/03	0:00	32.41	40.55	43.91	55.02	34.11	21.04	22.04	1106.53	1100.62	1088.57	1089.10	1087.12	1083.71	1076.32
5/26/03	4:00	32.41	40.55	43.90	55.01	34.10	21.05	22.04	1106.53	1100.62	1088.58	1089.10	1087.12	1083.70	1076.33
5/26/03	8:00	32.43	40.57	43.96	55.08	34.12	21.12	22.06	1106.51	1100.60	1088.52	1089.03	1087.10	1083.63	1076.30
5/26/03	12:00	32.44	40.58	43.94	55.07	34.10	21.10	22.05	1106.50	1100.59	1088.54	1089.04	1087.12	1083.65	1076.32
5/26/03	16:00	32.44	40.58	43.91	55.03	34.09	21.10	22.03	1106.50	1100.59	1088.57	1089.08	1087.13	1083.65	1076.33
5/26/03	20:00	32.45	40.57	43.91	55.03	34.11	21.08	22.04	1106.49	1100.60	1088.57	1089.08	1087.12	1083.67	1076.32

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
5/27/03	0:00	32.46	40.59	43.96	55.09	34.12	21.16	22.06	1106.48	1100.58	1088.52	1089.02	1087.10	1083.59	1076.30
5/27/03	4:00	32.47	40.60	43.97	55.10	34.12	21.16	22.06	1106.47	1100.57	1088.51	1089.01	1087.10	1083.59	1076.30
5/27/03	8:00	32.49	40.62	44.01	55.14	34.13	21.18	22.07	1106.45	1100.55	1088.47	1088.97	1087.09	1083.57	1076.29
5/27/03	12:00	32.50	40.64	43.98	55.11	34.10	21.21	22.05	1106.44	1100.53	1088.50	1089.00	1087.12	1083.54	1076.31
5/27/03	16:00	32.50	40.63	43.91	55.04	34.08	21.15	22.04	1106.44	1100.55	1088.57	1089.07	1087.14	1083.60	1076.33
5/27/03	20:00	32.50	40.61	43.90	55.01	34.10	21.12	22.04	1106.44	1100.56	1088.58	1089.10	1087.13	1083.64	1076.32
5/28/03	0:00	32.49	40.61	43.89	54.99	34.08	21.13	22.03	1106.45	1100.56	1088.60	1089.12	1087.14	1083.62	1076.33
5/28/03	4:00	32.48	40.58	43.87	54.96	34.08	21.11	22.02	1106.46	1100.59	1088.61	1089.15	1087.15	1083.64	1076.34
5/28/03	8:00	32.48	40.58	43.88	54.97	34.09	21.08	22.04	1106.46	1100.59	1088.60	1089.15	1087.13	1083.67	1076.32
5/28/03	12:00	32.48	40.57	43.88	54.95	34.08	21.08	22.02	1106.46	1100.60	1088.60	1089.16	1087.14	1083.67	1076.34
5/28/03	16:00	32.47	40.55	43.83	54.91	34.07	21.07	22.02	1106.47	1100.62	1088.65	1089.21	1087.15	1083.68	1076.34
5/28/03	20:00	32.46	40.54	43.83	54.90	34.08	21.05	22.03	1106.48	1100.63	1088.65	1089.21	1087.14	1083.70	1076.33
5/29/03	0:00	32.46	40.53	43.86	54.92	34.09	21.05	22.03	1106.48	1100.64	1088.62	1089.19	1087.13	1083.70	1076.33
5/29/03	4:00	32.46	40.52	43.84	54.91	34.09	21.04	22.03	1106.48	1100.65	1088.64	1089.20	1087.13	1083.71	1076.33
5/29/03	8:00	32.46	40.52	43.87	54.94	34.10	21.08	22.04	1106.48	1100.65	1088.61	1089.18	1087.12	1083.67	1076.32
5/29/03	12:00	32.46	40.51	43.83	54.88	34.07	21.03	22.02	1106.48	1100.66	1088.65	1089.23	1087.15	1083.72	1076.34
5/29/03	16:00	32.44	40.48	43.74	54.78	34.04	20.97	22.00	1106.50	1100.69	1088.74	1089.34	1087.18	1083.78	1076.36
5/29/03	20:00	32.42	40.45	43.75	54.76	34.07	20.94	22.02	1106.52	1100.72	1088.73	1089.35	1087.15	1083.81	1076.34
5/30/03	0:00	32.40	40.41	43.68	54.68	34.02	20.89	21.98	1106.55	1100.76	1088.80	1089.43	1087.20	1083.86	1076.38
5/30/03	4:00	32.37	40.38	43.68	54.65	34.04	20.86	21.99	1106.57	1100.79	1088.80	1089.46	1087.19	1083.89	1076.37
5/30/03	8:00	32.36	40.36	43.72	54.69	34.07	20.88	22.01	1106.58	1100.81	1088.76	1089.42	1087.16	1083.87	1076.35
5/30/03	12:00	32.36	40.35	43.73	54.70	34.07	20.85	22.02	1106.58	1100.82	1088.75	1089.41	1087.15	1083.90	1076.34
5/30/03	16:00	32.36	40.35	43.75	54.73	34.08	20.87	22.03	1106.58	1100.83	1088.73	1089.38	1087.14	1083.88	1076.33
5/30/03	20:00	32.37	40.35	43.79	54.80	34.11	20.90	22.06	1106.57	1100.82	1088.69	1089.31	1087.11	1083.85	1076.30
5/31/03	0:00	32.40	40.38	43.90	54.94	34.15	21.00	22.09	1106.54	1100.79	1088.58	1089.17	1087.07	1083.75	1076.27
5/31/03	4:00	32.43	40.42	43.95	55.02	34.16	21.07	22.10	1106.51	1100.75	1088.53	1089.09	1087.06	1083.68	1076.26
5/31/03	8:00	32.47	40.46	43.97	55.07	34.14	21.15	22.09	1106.48	1100.71	1088.51	1089.04	1087.08	1083.61	1076.27
5/31/03	12:00	32.49	40.49	43.93	55.05	34.12	21.13	22.07	1106.45	1100.68	1088.55	1089.07	1087.10	1083.62	1076.29
5/31/03	16:00	32.51	40.50	43.93	55.04	34.11	21.15	22.07	1106.43	1100.67	1088.56	1089.07	1087.11	1083.60	1076.29
5/31/03	20:00	32.51	40.50	43.90	55.00	34.10	21.15	22.06	1106.43	1100.67	1088.58	1089.11	1087.12	1083.60	1076.30
6/1/03	0:00	32.53	40.52	43.94	55.04	34.12	21.20	22.07	1106.41	1100.65	1088.54	1089.07	1087.10	1083.55	1076.29
6/1/03	4:00	32.54	40.53	43.91	55.02	34.10	21.20	22.06	1106.40	1100.65	1088.57	1089.09	1087.13	1083.55	1076.30
6/1/03	8:00	32.55	40.54	43.95	55.05	34.13	21.22	22.08	1106.39	1100.63	1088.53	1089.06	1087.10	1083.53	1076.28
6/1/03	12:00	32.56	40.55	43.92	55.02	34.10	21.21	22.06	1106.38	1100.62	1088.56	1089.09	1087.12	1083.54	1076.30
6/1/03	16:00	32.56	40.54	43.85	54.94	34.07	21.17	22.04	1106.38	1100.63	1088.63	1089.17	1087.16	1083.58	1076.32
6/1/03	20:00	32.55	40.52	43.84	54.92	34.08	21.15	22.05	1106.39	1100.65	1088.64	1089.20	1087.14	1083.60	1076.31

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
6/2/03	0:00	32.56	40.52	43.88	54.95	34.10	21.17	22.06	1106.39	1100.65	1088.60	1089.16	1087.12	1083.58	1076.30
6/2/03	4:00	32.55	40.51	43.80	54.86	34.05	21.12	22.02	1106.39	1100.67	1088.68	1089.25	1087.17	1083.63	1076.34
6/2/03	8:00	32.49	40.44	43.85	54.84	34.05	21.10	22.02	1106.45	1100.73	1088.64	1089.27	1087.17	1083.65	1076.34
6/2/03	12:00	32.49	40.45	43.86	54.86	34.09	21.10	22.03	1106.45	1100.72	1088.63	1089.25	1087.13	1083.65	1076.33
6/2/03	16:00	32.49	40.44	43.82	54.85	34.08	21.09	22.03	1106.45	1100.73	1088.67	1089.26	1087.14	1083.66	1076.33
6/2/03	20:00	32.50	40.44	43.84	54.89	34.11	21.09	22.05	1106.44	1100.73	1088.64	1089.22	1087.12	1083.66	1076.31
6/3/03	0:00	32.51	40.46	43.88	54.95	34.13	21.13	22.07	1106.43	1100.71	1088.60	1089.16	1087.09	1083.62	1076.29
6/3/03	4:00	32.52	40.48	43.91	55.00	34.14	21.16	22.08	1106.42	1100.69	1088.57	1089.11	1087.08	1083.59	1076.28
6/3/03	8:00	32.54	40.50	43.94	55.04	34.14	21.19	22.08	1106.41	1100.67	1088.54	1089.07	1087.08	1083.56	1076.28
6/3/03	12:00	32.55	40.52	43.95	55.05	34.13	21.21	22.07	1106.39	1100.65	1088.53	1089.06	1087.09	1083.54	1076.29
6/3/03	16:00	32.56	40.54	43.92	55.02	34.12	21.21	22.06	1106.38	1100.64	1088.56	1089.09	1087.10	1083.54	1076.30
6/3/03	20:00	32.56	40.54	43.92	55.02	34.12	21.21	22.06	1106.38	1100.63	1088.56	1089.09	1087.10	1083.54	1076.30
6/4/03	0:00	32.57	40.55	43.94	55.05	34.13	21.25	22.07	1106.38	1100.62	1088.54	1089.06	1087.09	1083.50	1076.29
6/4/03	4:00	32.57	40.56	43.96	55.07	34.14	21.25	22.08	1106.37	1100.61	1088.52	1089.04	1087.08	1083.51	1076.28
6/4/03	8:00	32.58	40.57	43.95	55.06	34.12	21.26	22.06	1106.36	1100.60	1088.53	1089.05	1087.10	1083.49	1076.30
6/4/03	12:00	32.59	40.59	43.95	55.05	34.12	21.27	22.06	1106.35	1100.58	1088.53	1089.06	1087.10	1083.48	1076.30
6/4/03	16:00	32.59	40.59	43.91	55.02	34.11	21.23	22.04	1106.35	1100.58	1088.57	1089.09	1087.11	1083.52	1076.32
6/4/03	20:00	32.59	40.59	43.93	55.03	34.13	21.23	22.07	1106.35	1100.58	1088.56	1089.08	1087.10	1083.52	1076.29
6/5/03	0:00	32.60	40.60	43.96	55.07	34.14	21.30	22.09	1106.34	1100.57	1088.52	1089.04	1087.08	1083.45	1076.27
6/5/03	4:00	32.60	40.61	43.94	55.05	34.12	21.28	22.08	1106.34	1100.56	1088.54	1089.06	1087.10	1083.47	1076.28
6/5/03	8:00	32.61	40.62	43.97	55.08	34.14	21.31	22.08	1106.33	1100.55	1088.51	1089.03	1087.08	1083.44	1076.28
6/5/03	12:00	32.62	40.63	43.94	55.05	34.11	21.29	22.06	1106.32	1100.55	1088.54	1089.07	1087.11	1083.46	1076.30
6/5/03	16:00	32.61	40.61	43.87	54.97	34.09	21.22	22.05	1106.33	1100.56	1088.61	1089.14	1087.13	1083.53	1076.31
6/5/03	20:00	32.61	40.60	43.89	54.99	34.12	21.24	22.07	1106.33	1100.57	1088.59	1089.12	1087.10	1083.51	1076.29
6/6/03	0:00	32.61	40.60	43.90	55.00	34.12	21.24	22.07	1106.34	1100.57	1088.58	1089.11	1087.10	1083.51	1076.29
6/6/03	4:00	32.58	40.57	43.85	54.93	34.09	21.20	22.05	1106.36	1100.60	1088.63	1089.18	1087.13	1083.55	1076.31
6/6/03	8:00	32.58	40.57	43.87	54.94	34.11	21.22	22.05	1106.36	1100.60	1088.61	1089.17	1087.11	1083.53	1076.31
6/6/03	12:00	32.58	40.57	43.86	54.92	34.10	21.19	22.04	1106.36	1100.61	1088.62	1089.19	1087.13	1083.56	1076.32
6/6/03	16:00	32.58	40.56	43.83	54.89	34.09	21.15	22.04	1106.36	1100.61	1088.65	1089.23	1087.13	1083.60	1076.32
6/6/03	20:00	32.58	40.56	43.85	54.92	34.12	21.19	22.07	1106.36	1100.61	1088.63	1089.19	1087.10	1083.56	1076.29
6/7/03	0:00	32.58	40.56	43.89	54.96	34.13	21.20	22.07	1106.36	1100.61	1088.59	1089.15	1087.09	1083.55	1076.29
6/7/03	4:00	32.58	40.56	43.89	54.97	34.13	21.23	22.07	1106.36	1100.61	1088.59	1089.14	1087.09	1083.52	1076.29
6/7/03	8:00	32.59	40.57	43.91	54.98	34.13	21.23	22.08	1106.35	1100.60	1088.57	1089.13	1087.09	1083.52	1076.28
6/7/03	12:00	32.59	40.57	43.90	54.97	34.12	21.23	22.06	1106.35	1100.60	1088.59	1089.14	1087.10	1083.52	1076.30
6/7/03	16:00	32.59	40.57	43.89	54.97	34.12	21.23	22.07	1106.35	1100.60	1088.60	1089.15	1087.10	1083.52	1076.29
6/7/03	20:00	32.60	40.58	43.90	54.99	34.13	21.26	22.07	1106.34	1100.59	1088.58	1089.12	1087.09	1083.49	1076.29

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
6/8/03	0:00	32.61	40.59	43.92	55.01	34.12	21.26	22.07	1106.33	1100.58	1088.56	1089.10	1087.10	1083.49	1076.29
6/8/03	4:00	32.61	40.58	43.88	54.96	34.11	21.24	22.06	1106.33	1100.59	1088.60	1089.15	1087.11	1083.51	1076.30
6/8/03	8:00	32.61	40.58	43.90	54.97	34.12	21.25	22.06	1106.33	1100.59	1088.58	1089.14	1087.10	1083.50	1076.30
6/8/03	12:00	32.62	40.59	43.92	55.00	34.13	21.27	22.07	1106.32	1100.58	1088.56	1089.12	1087.09	1083.49	1076.29
6/8/03	16:00	32.63	40.60	43.90	54.99	34.13	21.27	22.07	1106.31	1100.58	1088.58	1089.13	1087.10	1083.49	1076.29
6/8/03	20:00	32.64	40.60	43.92	55.01	34.13	21.30	22.07	1106.31	1100.57	1088.56	1089.10	1087.09	1083.45	1076.29
6/9/03	0:00	32.64	40.61	43.93	55.02	34.13	21.31	22.08	1106.30	1100.56	1088.55	1089.09	1087.09	1083.44	1076.28
6/9/03	4:00	32.65	40.61	43.93	55.02	34.13	21.33	22.08	1106.29	1100.56	1088.55	1089.09	1087.09	1083.42	1076.28
6/9/03	8:00	32.66	40.63	43.95	55.05	34.13	21.35	22.08	1106.28	1100.54	1088.53	1089.07	1087.09	1083.40	1076.28
6/9/03	12:00	32.66	40.62	43.90	54.98	34.10	21.29	22.06	1106.28	1100.55	1088.58	1089.13	1087.12	1083.46	1076.30
6/9/03	16:00	32.65	40.61	43.85	54.92	34.09	21.25	22.05	1106.29	1100.56	1088.64	1089.20	1087.13	1083.50	1076.31
6/9/03	20:00	32.64	40.59	43.81	54.86	34.09	21.22	22.06	1106.30	1100.58	1088.67	1089.25	1087.13	1083.53	1076.30
6/10/03	0:00	32.62	40.56	43.76	54.80	34.07	21.19	22.03	1106.32	1100.61	1088.72	1089.31	1087.16	1083.56	1076.33
6/10/03	4:00	32.62	40.55	43.81	54.85	34.10	21.23	22.06	1106.32	1100.62	1088.68	1089.26	1087.12	1083.52	1076.30
6/10/03	8:00	32.62	40.56	43.86	54.89	34.13	21.23	22.08	1106.32	1100.61	1088.62	1089.22	1087.09	1083.52	1076.28
6/10/03	12:00	32.64	40.57	43.90	54.94	34.13	21.28	22.09	1106.30	1100.60	1088.58	1089.17	1087.09	1083.47	1076.27
6/10/03	16:00	32.64	40.57	43.86	54.92	34.11	21.25	22.07	1106.30	1100.60	1088.63	1089.20	1087.11	1083.50	1076.29
6/10/03	20:00	32.65	40.58	43.87	54.94	34.11	21.29	22.08	1106.29	1100.59	1088.61	1089.17	1087.11	1083.46	1076.28
6/11/03	0:00	32.67	40.60	43.95	55.04	34.18	21.36	22.12	1106.27	1100.57	1088.53	1089.07	1087.05	1083.39	1076.24
6/11/03	4:00	32.67	40.60	43.91	54.99	34.13	21.35	22.09	1106.27	1100.57	1088.57	1089.12	1087.09	1083.40	1076.27
6/11/03	8:00	32.69	40.61	43.92	54.99	34.13	21.35	22.09	1106.26	1100.56	1088.56	1089.12	1087.09	1083.41	1076.28
6/11/03	12:00	32.69	40.62	43.92	55.00	34.14	21.36	22.10	1106.25	1100.55	1088.56	1089.11	1087.08	1083.39	1076.27
6/11/03	16:00	32.69	40.61	43.88	54.95	34.11	21.33	22.08	1106.25	1100.56	1088.60	1089.16	1087.11	1083.42	1076.28
6/11/03	20:00	32.69	40.61	43.86	54.93	34.12	21.32	22.08	1106.25	1100.56	1088.62	1089.18	1087.10	1083.43	1076.28
6/12/03	0:00	32.70	40.61	43.90	54.97	34.14	21.36	22.10	1106.24	1100.56	1088.58	1089.14	1087.08	1083.39	1076.27
6/12/03	4:00	32.70	40.61	43.87	54.94	34.13	21.35	22.08	1106.24	1100.56	1088.61	1089.17	1087.09	1083.40	1076.28
6/12/03	8:00	32.70	40.61	43.87	54.93	34.11	21.36	22.07	1106.24	1100.56	1088.61	1089.18	1087.11	1083.39	1076.29
6/12/03	12:00	32.71	40.62	43.90	54.97	34.13	21.37	22.08	1106.23	1100.55	1088.58	1089.14	1087.09	1083.39	1076.28
6/12/03	16:00	32.70	40.61	43.92	54.99	34.15	21.37	22.10	1106.24	1100.56	1088.56	1089.12	1087.07	1083.39	1076.26
6/12/03	20:00	32.72	40.63	43.93	55.01	34.15	21.41	22.10	1106.22	1100.55	1088.56	1089.10	1087.08	1083.34	1076.27
6/13/03	0:00	32.73	40.65	43.97	55.06	34.16	21.46	22.10	1106.21	1100.52	1088.51	1089.05	1087.06	1083.30	1076.26
6/13/03	4:00	32.75	40.66	43.97	55.07	34.16	21.47	22.11	1106.19	1100.51	1088.51	1089.04	1087.06	1083.28	1076.25
6/13/03	8:00	32.77	40.68	43.99	55.10	34.17	21.50	22.12	1106.17	1100.49	1088.49	1089.02	1087.05	1083.25	1076.24
6/13/03	12:00	32.79	40.71	44.01	55.12	34.16	21.52	22.11	1106.15	1100.46	1088.47	1088.99	1087.07	1083.23	1076.25
6/13/03	16:00	32.80	40.72	43.96	55.07	34.14	21.51	22.10	1106.14	1100.45	1088.52	1089.04	1087.08	1083.24	1076.26
6/13/03	20:00	32.81	40.73	43.98	55.10	34.16	21.54	22.12	1106.13	1100.44	1088.50	1089.01	1087.06	1083.21	1076.24
6/14/03	0:00	32.83	40.75	44.02	55.14	34.17	21.58	22.13	1106.11	1100.42	1088.47	1088.97	1087.05	1083.17	1076.23
6/14/03	4:00	32.85	40.77	44.02	55.15	34.16	21.61	22.12	1106.10	1100.40	1088.46	1088.96	1087.06	1083.14	1076.24
6/14/03	8:00	32.87	40.80	44.06	55.20	34.18	21.66	22.14	1106.07	1100.37	1088.42	1088.91	1087.04	1083.09	1076.22
6/14/03	12:00	32.89	40.83	44.05	55.20	34.16	21.64	22.12	1106.05	1100.34	1088.43	1088.91	1087.06	1083.11	1076.24

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
6/14/03	16:00	32.90	40.83	43.99	55.14	34.14	21.62	22.11	1106.04	1100.34	1088.49	1088.97	1087.08	1083.13	1076.25
6/14/03	20:00	32.91	40.84	44.00	55.15	34.16	21.67	22.13	1106.03	1100.33	1088.48	1088.97	1087.06	1083.09	1076.23
6/15/03	0:00	32.92	40.86	44.03	55.17	34.16	21.71	22.14	1106.02	1100.31	1088.45	1088.94	1087.06	1083.04	1076.22
6/15/03	4:00	32.93	40.87	44.02	55.17	34.16	21.69	22.13	1106.01	1100.30	1088.46	1088.94	1087.06	1083.06	1076.23
6/15/03	8:00	32.95	40.89	44.06	55.21	34.18	21.73	22.13	1105.99	1100.28	1088.42	1088.90	1087.04	1083.02	1076.23
6/15/03	12:00	32.97	40.91	44.03	55.19	34.16	21.73	22.13	1105.97	1100.26	1088.45	1088.92	1087.06	1083.02	1076.23
6/15/03	16:00	32.98	40.91	44.00	55.15	34.15	21.70	22.13	1105.96	1100.26	1088.48	1088.97	1087.07	1083.05	1076.23
6/15/03	20:00	32.98	40.91	43.99	55.14	34.16	21.72	22.13	1105.96	1100.26	1088.49	1088.97	1087.06	1083.04	1076.23
6/16/03	0:00	32.99	40.93	44.01	55.15	34.16	21.75	22.13	1105.95	1100.24	1088.47	1088.96	1087.06	1083.00	1076.23
6/16/03	4:00	33.00	40.94	44.04	55.18	34.18	21.78	22.14	1105.94	1100.23	1088.44	1088.93	1087.04	1082.97	1076.22
6/16/03	8:00	33.02	40.96	44.06	55.20	34.18	21.80	22.13	1105.92	1100.21	1088.43	1088.91	1087.05	1082.95	1076.23
6/16/03	12:00	33.04	40.97	44.03	55.17	34.16	21.79	22.13	1105.91	1100.20	1088.45	1088.94	1087.06	1082.96	1076.23
6/16/03	16:00	33.04	40.97	43.97	55.11	34.14	21.75	22.12	1105.90	1100.20	1088.51	1089.00	1087.08	1083.00	1076.24
6/16/03	20:00	33.04	40.96	43.98	55.11	34.16	21.75	22.13	1105.91	1100.21	1088.50	1089.00	1087.06	1083.00	1076.23
6/17/03	0:00	33.04	40.97	43.99	55.12	34.16	21.78	22.13	1105.90	1100.20	1088.49	1088.99	1087.06	1082.97	1076.23
6/17/03	4:00	33.05	40.97	43.99	55.13	34.16	21.78	22.13	1105.89	1100.20	1088.49	1088.99	1087.06	1082.97	1076.23
6/17/03	8:00	33.06	40.97	44.00	55.13	34.16	21.78	22.14	1105.88	1100.20	1088.48	1088.99	1087.06	1082.97	1076.22
6/17/03	12:00	33.06	40.98	43.98	55.09	34.15	21.76	22.12	1105.88	1100.19	1088.51	1089.02	1087.07	1082.99	1076.24
6/17/03	16:00	33.06	40.97	43.93	55.04	34.13	21.72	22.11	1105.88	1100.20	1088.56	1089.07	1087.09	1083.03	1076.25
6/17/03	20:00	33.05	40.95	43.91	55.02	34.15	21.72	22.13	1105.89	1100.22	1088.57	1089.10	1087.08	1083.04	1076.23
6/18/03	0:00	33.05	40.95	43.93	55.03	34.15	21.74	22.12	1105.89	1100.22	1088.55	1089.08	1087.08	1083.01	1076.24
6/18/03	4:00	33.05	40.94	43.94	55.03	34.15	21.73	22.13	1105.89	1100.23	1088.55	1089.08	1087.07	1083.02	1076.23
6/18/03	8:00	33.06	40.94	43.96	55.05	34.16	21.76	22.13	1105.88	1100.23	1088.52	1089.06	1087.06	1082.99	1076.23
6/18/03	12:00	33.06	40.94	43.93	55.01	34.14	21.73	22.12	1105.88	1100.23	1088.56	1089.10	1087.08	1083.02	1076.24
6/18/03	16:00	33.05	40.93	43.89	54.97	34.13	21.69	22.12	1105.89	1100.24	1088.60	1089.14	1087.09	1083.06	1076.24
6/18/03	20:00	33.05	40.92	43.92	55.00	34.15	21.72	22.13	1105.89	1100.25	1088.56	1089.11	1087.07	1083.03	1076.23
6/19/03	0:00	33.05	40.92	43.94	55.03	34.16	21.76	22.12	1105.89	1100.25	1088.54	1089.08	1087.06	1082.99	1076.24
6/19/03	4:00	33.06	40.92	43.95	55.04	34.16	21.78	22.13	1105.88	1100.25	1088.53	1089.07	1087.06	1082.97	1076.23
6/19/03	8:00	33.07	40.94	44.00	55.09	34.19	21.79	22.15	1105.87	1100.24	1088.48	1089.02	1087.03	1082.96	1076.22
6/19/03	12:00	33.09	40.95	44.00	55.10	34.17	21.81	22.14	1105.85	1100.22	1088.48	1089.01	1087.05	1082.94	1076.22
6/19/03	16:00	33.10	40.95	43.96	55.07	34.16	21.79	22.14	1105.84	1100.22	1088.52	1089.04	1087.06	1082.96	1076.22
6/19/03	20:00	33.11	40.96	43.99	55.10	34.18	21.84	22.16	1105.83	1100.21	1088.49	1089.02	1087.04	1082.91	1076.21
6/20/03	0:00	33.12	40.97	44.02	55.13	34.18	21.87	22.16	1105.82	1100.20	1088.46	1088.98	1087.04	1082.88	1076.21
6/20/03	4:00	33.14	40.99	44.03	55.15	34.18	21.89	22.16	1105.81	1100.18	1088.45	1088.96	1087.04	1082.86	1076.21
6/20/03	8:00	33.15	41.01	44.07	55.20	34.20	21.94	22.17	1105.79	1100.16	1088.41	1088.92	1087.02	1082.82	1076.19
6/20/03	12:00	33.17	41.02	44.02	55.15	34.16	21.91	22.14	1105.77	1100.15	1088.46	1088.96	1087.06	1082.84	1076.22
6/20/03	16:00	33.17	41.02	43.95	55.07	34.14	21.86	22.13	1105.77	1100.15	1088.53	1089.04	1087.08	1082.89	1076.23
6/20/03	20:00	33.16	41.00	43.92	55.02	34.14	21.85	22.13	1105.78	1100.17	1088.56	1089.09	1087.08	1082.91	1076.23
6/21/03	0:00	33.15	40.99	43.94	55.02	34.15	21.88	22.15	1105.79	1100.18	1088.54	1089.09	1087.07	1082.88	1076.22
6/21/03	4:00	33.15	40.99	43.93	55.02	34.15	21.84	22.13	1105.79	1100.18	1088.55	1089.10	1087.07	1082.91	1076.23

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
6/21/03	8:00	33.15	40.98	43.94	55.03	34.17	21.84	22.14	1105.79	1100.19	1088.54	1089.08	1087.05	1082.91	1076.22
6/21/03	12:00	33.15	40.97	43.91	54.98	34.14	21.85	22.12	1105.79	1100.20	1088.57	1089.13	1087.08	1082.90	1076.24
6/21/03	16:00	33.15	40.96	43.89	54.96	34.14	21.83	22.13	1105.79	1100.21	1088.59	1089.15	1087.08	1082.93	1076.23
6/21/03	20:00	33.15	40.95	43.90	54.97	34.16	21.86	22.15	1105.79	1100.22	1088.58	1089.15	1087.06	1082.89	1076.21
6/22/03	0:00	33.15	40.95	43.90	54.96	34.15	21.84	22.14	1105.79	1100.22	1088.58	1089.15	1087.07	1082.91	1076.22
6/22/03	4:00	33.14	40.94	43.90	54.95	34.16	21.83	22.14	1105.80	1100.23	1088.58	1089.16	1087.06	1082.92	1076.22
6/22/03	8:00	33.15	40.94	43.92	54.96	34.15	21.85	22.13	1105.79	1100.23	1088.56	1089.15	1087.07	1082.90	1076.23
6/22/03	12:00	33.14	40.93	43.87	54.91	34.13	21.82	22.11	1105.80	1100.24	1088.61	1089.20	1087.09	1082.93	1076.25
6/22/03	16:00	33.14	40.92	43.88	54.91	34.15	21.82	22.11	1105.80	1100.25	1088.60	1089.20	1087.08	1082.93	1076.25
6/22/03	20:00	33.13	40.91	43.86	54.90	34.15	21.80	22.14	1105.81	1100.26	1088.62	1089.21	1087.07	1082.96	1076.22
6/23/03	0:00	33.14	40.91	43.90	54.94	34.16	21.85	22.14	1105.80	1100.26	1088.58	1089.18	1087.06	1082.90	1076.22
6/23/03	4:00	33.03	40.81	44.02	55.02	34.19	21.90	22.16	1105.91	1100.36	1088.47	1089.09	1087.03	1082.85	1076.20
6/23/03	8:00	33.03	40.82	43.95	55.01	34.18	21.87	22.15	1105.91	1100.35	1088.53	1089.10	1087.04	1082.88	1076.21
6/23/03	12:00	33.05	40.84	43.92	54.97	34.14	21.84	22.12	1105.89	1100.33	1088.56	1089.14	1087.08	1082.91	1076.24
6/23/03	16:00	33.05	40.84	43.88	54.93	34.15	21.82	22.13	1105.89	1100.33	1088.60	1089.18	1087.07	1082.93	1076.23
6/23/03	20:00	33.04	40.85	43.89	54.93	34.16	21.83	22.14	1105.90	1100.33	1088.59	1089.18	1087.06	1082.92	1076.22
6/24/03	0:00	33.03	40.85	43.93	54.98	34.19	21.87	22.16	1105.91	1100.32	1088.55	1089.13	1087.03	1082.88	1076.20
6/24/03	4:00	33.02	40.86	43.95	55.01	34.19	21.89	22.15	1105.92	1100.31	1088.53	1089.10	1087.03	1082.86	1076.21
6/24/03	8:00	33.02	40.88	44.01	55.08	34.21	21.94	22.17	1105.92	1100.29	1088.47	1089.03	1087.01	1082.81	1076.19
6/24/03	12:00	33.02	40.90	44.00	55.07	34.18	21.93	22.16	1105.92	1100.27	1088.48	1089.04	1087.04	1082.82	1076.21
6/24/03	16:00	33.01	40.90	43.97	55.05	34.17	21.92	22.16	1105.93	1100.27	1088.52	1089.06	1087.05	1082.83	1076.20
6/24/03	20:00	32.99	40.90	43.95	55.02	34.16	21.91	22.15	1105.96	1100.27	1088.53	1089.09	1087.06	1082.84	1076.21
6/25/03	0:00	32.97	40.90	43.99	55.08	34.21	21.93	22.18	1105.97	1100.27	1088.49	1089.03	1087.01	1082.82	1076.18
6/25/03	4:00	32.95	40.90	43.96	55.04	34.17	21.95	22.15	1105.99	1100.27	1088.52	1089.07	1087.05	1082.80	1076.21
6/25/03	8:00	32.94	40.90	43.98	55.07	34.18	21.96	22.16	1106.00	1100.27	1088.50	1089.05	1087.04	1082.79	1076.20
6/25/03	12:00	32.92	40.89	43.94	55.01	34.15	21.92	22.13	1106.02	1100.28	1088.54	1089.10	1087.08	1082.83	1076.23
6/25/03	16:00	32.91	40.89	44.02	55.12	34.22	21.96	22.19	1106.03	1100.28	1088.46	1088.99	1087.00	1082.79	1076.17
6/25/03	20:00	32.92	40.92	44.08	55.20	34.24	22.03	22.20	1106.02	1100.25	1088.40	1088.91	1086.99	1082.72	1076.16
6/26/03	0:00	32.93	40.95	44.12	55.26	34.22	22.09	22.18	1106.01	1100.22	1088.36	1088.85	1087.00	1082.66	1076.18
6/26/03	4:00	32.93	40.96	44.09	55.24	34.20	22.09	22.16	1106.01	1100.21	1088.39	1088.87	1087.02	1082.67	1076.20
6/26/03	8:00	32.94	40.99	44.13	55.29	34.22	22.10	22.18	1106.00	1100.18	1088.35	1088.83	1087.00	1082.66	1076.18
6/26/03	12:00	32.95	41.00	44.09	55.24	34.19	22.07	22.17	1105.99	1100.18	1088.39	1088.87	1087.03	1082.68	1076.20
6/26/03	16:00	32.94	40.99	44.02	55.17	34.17	22.03	22.16	1106.00	1100.18	1088.46	1088.94	1087.05	1082.72	1076.21
6/26/03	20:00	32.92	40.97	44.00	55.14	34.18	22.02	22.16	1106.02	1100.20	1088.48	1088.97	1087.04	1082.73	1076.20
6/27/03	0:00	32.91	40.97	44.02	55.15	34.18	22.03	22.16	1106.03	1100.20	1088.47	1088.97	1087.04	1082.72	1076.20
6/27/03	4:00	32.90	40.96	43.99	55.11	34.18	22.03	22.15	1106.04	1100.21	1088.49	1089.00	1087.04	1082.72	1076.21
6/27/03	8:00	32.89	40.95	43.99	55.10	34.17	22.01	22.15	1106.05	1100.22	1088.49	1089.01	1087.05	1082.74	1076.21
6/27/03	12:00	32.88	40.94	43.97	55.07	34.16	21.96	22.15	1106.06	1100.23	1088.51	1089.05	1087.06	1082.79	1076.21
6/27/03	16:00	32.86	40.91	43.91	55.00	34.15	21.92	22.14	1106.08	1100.26	1088.57	1089.11	1087.07	1082.83	1076.22
6/27/03	20:00	32.84	40.89	43.90	54.98	34.15	21.91	22.15	1106.10	1100.28	1088.58	1089.13	1087.07	1082.84	1076.21

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
6/28/03	0:00	32.83	40.88	43.94	55.05	34.22	21.93	22.19	1106.11	1100.29	1088.54	1089.06	1087.00	1082.82	1076.17
6/28/03	4:00	32.82	40.87	43.96	55.05	34.18	21.95	22.16	1106.12	1100.30	1088.52	1089.06	1087.04	1082.80	1076.20
6/28/03	8:00	32.82	40.87	43.98	55.07	34.18	21.98	22.16	1106.12	1100.30	1088.50	1089.05	1087.04	1082.78	1076.20
6/28/03	12:00	32.83	40.88	44.01	55.10	34.20	21.97	22.18	1106.11	1100.29	1088.47	1089.02	1087.02	1082.78	1076.18
6/28/03	16:00	32.82	40.87	43.97	55.07	34.19	21.96	22.18	1106.12	1100.30	1088.51	1089.04	1087.03	1082.79	1076.18
6/28/03	20:00	32.82	40.86	43.98	55.09	34.20	21.98	22.20	1106.13	1100.31	1088.50	1089.02	1087.02	1082.78	1076.16
6/29/03	0:00	32.83	40.88	44.04	55.15	34.22	22.04	22.20	1106.11	1100.30	1088.44	1088.96	1087.00	1082.71	1076.16
6/29/03	4:00	32.83	40.88	44.06	55.19	34.24	22.06	22.21	1106.11	1100.29	1088.42	1088.92	1086.98	1082.69	1076.15
6/29/03	8:00	32.83	40.89	44.08	55.21	34.23	22.09	22.21	1106.11	1100.28	1088.40	1088.90	1086.99	1082.67	1076.15
6/29/03	12:00	32.86	40.92	44.11	55.25	34.23	22.12	22.21	1106.08	1100.25	1088.37	1088.86	1086.99	1082.63	1076.15
6/29/03	16:00	32.87	40.93	44.07	55.22	34.20	22.08	22.19	1106.07	1100.24	1088.41	1088.89	1087.02	1082.67	1076.17
6/29/03	20:00	32.87	40.92	44.06	55.21	34.21	22.11	22.19	1106.08	1100.25	1088.42	1088.90	1087.01	1082.64	1076.17
6/30/03	0:00	32.88	40.94	44.09	55.24	34.22	22.12	22.20	1106.06	1100.23	1088.39	1088.87	1087.00	1082.63	1076.16
6/30/03	4:00	32.88	40.94	44.06	55.21	34.20	22.13	22.18	1106.06	1100.23	1088.42	1088.90	1087.02	1082.62	1076.18
6/30/03	8:00	32.88	40.95	44.08	55.22	34.21	22.12	22.18	1106.06	1100.22	1088.40	1088.89	1087.01	1082.63	1076.18
6/30/03	12:00	32.89	40.95	44.04	55.18	34.19	22.10	22.18	1106.05	1100.22	1088.44	1088.93	1087.03	1082.65	1076.18
6/30/03	16:00	32.88	40.94	43.99	55.12	34.17	22.08	22.17	1106.06	1100.23	1088.49	1088.99	1087.05	1082.67	1076.19
6/30/03	20:00	32.87	40.92	43.98	55.10	34.19	22.05	22.18	1106.07	1100.25	1088.50	1089.01	1087.03	1082.70	1076.18
7/1/03	0:00	32.87	40.91	43.99	55.10	34.19	22.07	22.18	1106.08	1100.26	1088.49	1089.01	1087.03	1082.68	1076.18
7/1/03	4:00	32.85	40.90	43.98	55.08	34.19	22.05	22.17	1106.09	1100.27	1088.51	1089.03	1087.03	1082.70	1076.19
7/1/03	8:00	32.86	40.90	44.00	55.10	34.20	22.07	22.18	1106.08	1100.27	1088.48	1089.01	1087.03	1082.68	1076.18
7/1/03	12:00	32.86	40.89	43.97	55.06	34.18	22.03	22.17	1106.08	1100.28	1088.51	1089.05	1087.04	1082.72	1076.19
7/1/03	16:00	32.84	40.88	43.91	55.00	34.16	22.00	22.16	1106.10	1100.30	1088.57	1089.11	1087.06	1082.75	1076.20
7/1/03	20:00	32.82	40.85	43.90	54.97	34.17	21.99	22.18	1106.12	1100.32	1088.58	1089.14	1087.06	1082.76	1076.18
7/2/03	0:00	32.82	40.84	43.93	54.99	34.18	22.01	22.18	1106.13	1100.33	1088.56	1089.12	1087.04	1082.74	1076.18
7/2/03	4:00	32.81	40.82	43.92	54.98	34.18	22.02	22.17	1106.13	1100.35	1088.56	1089.13	1087.04	1082.73	1076.19
7/2/03	8:00	32.81	40.82	43.95	55.00	34.19	22.02	22.18	1106.13	1100.35	1088.53	1089.11	1087.03	1082.73	1076.18
7/2/03	12:00	32.81	40.82	43.92	54.98	34.17	22.01	22.17	1106.13	1100.36	1088.56	1089.13	1087.05	1082.74	1076.19
7/2/03	16:00	32.80	40.79	43.88	54.92	34.16	21.95	22.16	1106.14	1100.38	1088.60	1089.19	1087.06	1082.80	1076.20
7/2/03	20:00	32.78	40.77	43.88	54.91	34.17	21.98	22.19	1106.16	1100.40	1088.60	1089.20	1087.05	1082.77	1076.17
7/3/03	0:00	32.78	40.76	43.90	54.93	34.18	21.99	22.17	1106.17	1100.41	1088.59	1089.18	1087.04	1082.76	1076.19
7/3/03	4:00	32.77	40.75	43.89	54.92	34.18	22.01	22.17	1106.17	1100.42	1088.60	1089.19	1087.04	1082.75	1076.19
7/3/03	8:00	32.77	40.75	43.92	54.95	34.20	22.02	22.19	1106.17	1100.42	1088.56	1089.16	1087.02	1082.73	1076.17
7/3/03	12:00	32.78	40.75	43.92	54.95	34.19	22.01	22.18	1106.16	1100.42	1088.56	1089.16	1087.03	1082.75	1076.18
7/3/03	16:00	32.78	40.74	43.88	54.92	34.18	22.01	22.19	1106.16	1100.43	1088.60	1089.19	1087.04	1082.74	1076.17
7/3/03	20:00	32.77	40.74	43.91	54.95	34.20	22.02	22.22	1106.17	1100.43	1088.57	1089.16	1087.02	1082.73	1076.14
7/4/03	0:00	32.78	40.75	43.96	55.01	34.22	22.09	22.22	1106.16	1100.43	1088.52	1089.10	1087.00	1082.66	1076.14
7/4/03	4:00	32.79	40.75	43.96	55.02	34.21	22.12	22.21	1106.15	1100.42	1088.52	1089.09	1087.01	1082.64	1076.15
7/4/03	8:00	32.80	40.76	43.99	55.05	34.21	22.12	22.21	1106.14	1100.41	1088.49	1089.06	1087.01	1082.63	1076.15
7/4/03	12:00	32.82	40.78	44.01	55.09	34.23	22.14	22.23	1106.12	1100.40	1088.47	1089.02	1086.99	1082.61	1076.13

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
7/4/03	16:00	32.83	40.78	43.96	55.03	34.19	22.15	22.22	1106.11	1100.39	1088.52	1089.08	1087.03	1082.60	1076.14
7/4/03	20:00	32.83	40.78	43.96	55.04	34.20	22.14	22.23	1106.11	1100.39	1088.52	1089.07	1087.02	1082.61	1076.13
7/5/03	0:00	32.83	40.78	43.98	55.06	34.21	22.20	22.23	1106.11	1100.39	1088.50	1089.05	1087.01	1082.55	1076.13
7/5/03	4:00	32.85	40.80	44.02	55.10	34.22	22.23	22.22	1106.10	1100.37	1088.46	1089.01	1087.00	1082.52	1076.14
7/5/03	8:00	32.86	40.81	44.04	55.13	34.21	22.24	22.22	1106.08	1100.36	1088.44	1088.98	1087.01	1082.51	1076.14
7/5/03	12:00	32.87	40.82	44.03	55.13	34.22	22.23	22.23	1106.07	1100.35	1088.45	1088.99	1087.01	1082.52	1076.13
7/5/03	16:00	32.88	40.83	43.98	55.07	34.19	22.22	22.22	1106.06	1100.34	1088.50	1089.04	1087.04	1082.53	1076.14
7/5/03	20:00	32.87	40.82	43.98	55.06	34.21	22.23	22.24	1106.07	1100.35	1088.51	1089.05	1087.01	1082.52	1076.12
7/6/03	0:00	32.88	40.82	43.99	55.07	34.21	22.26	22.23	1106.06	1100.35	1088.49	1089.04	1087.01	1082.49	1076.13
7/6/03	4:00	32.88	40.82	43.96	55.03	34.17	22.25	22.20	1106.06	1100.35	1088.52	1089.08	1087.05	1082.50	1076.16
7/6/03	8:00	32.89	40.82	44.00	55.07	34.21	22.26	22.21	1106.05	1100.35	1088.48	1089.05	1087.01	1082.49	1076.15
7/6/03	12:00	32.89	40.82	43.98	55.04	34.20	22.26	22.22	1106.05	1100.35	1088.50	1089.07	1087.03	1082.49	1076.15
7/6/03	16:00	32.89	40.82	43.94	55.01	34.19	22.24	22.23	1106.05	1100.35	1088.54	1089.10	1087.03	1082.51	1076.14
7/6/03	20:00	32.89	40.82	43.94	55.00	34.19	22.25	22.23	1106.05	1100.36	1088.54	1089.11	1087.03	1082.50	1076.13
7/7/03	0:00	32.89	40.82	43.99	55.06	34.22	22.29	22.23	1106.05	1100.35	1088.49	1089.05	1087.00	1082.46	1076.14
7/7/03	4:00	32.90	40.82	43.97	55.04	34.20	22.30	22.22	1106.04	1100.35	1088.51	1089.07	1087.02	1082.45	1076.15
7/7/03	8:00	32.92	40.84	44.04	55.15	34.29	22.35	22.28	1106.02	1100.33	1088.44	1088.96	1086.94	1082.40	1076.08
7/7/03	12:00	32.94	40.86	44.06	55.15	34.23	22.38	22.25	1106.00	1100.31	1088.42	1088.96	1086.99	1082.37	1076.11
7/7/03	16:00	32.95	40.88	44.04	55.14	34.22	22.37	22.26	1105.99	1100.29	1088.44	1088.97	1087.00	1082.38	1076.10
7/7/03	20:00	32.96	40.89	44.04	55.15	34.23	22.40	22.27	1105.98	1100.28	1088.44	1088.96	1086.99	1082.35	1076.09
7/8/03	0:00	32.98	40.91	44.10	55.22	34.24	22.47	22.26	1105.96	1100.26	1088.38	1088.89	1086.98	1082.29	1076.10
7/8/03	4:00	32.99	40.92	44.04	55.16	34.21	22.45	22.23	1105.95	1100.26	1088.44	1088.95	1087.01	1082.30	1076.13
7/8/03	8:00	33.00	40.92	44.05	55.16	34.21	22.45	22.23	1105.94	1100.25	1088.43	1088.95	1087.01	1082.30	1076.13
7/8/03	12:00	33.01	40.93	44.04	55.14	34.21	22.44	22.24	1105.93	1100.24	1088.44	1088.97	1087.01	1082.31	1076.13
7/8/03	16:00	33.00	40.92	43.97	55.06	34.18	22.38	22.23	1105.94	1100.25	1088.51	1089.05	1087.04	1082.37	1076.13
7/8/03	20:00	32.99	40.91	43.96	55.05	34.20	22.39	22.24	1105.95	1100.26	1088.52	1089.06	1087.02	1082.36	1076.12
7/9/03	0:00	33.00	40.91	43.98	55.07	34.20	22.42	22.24	1105.94	1100.26	1088.50	1089.04	1087.02	1082.33	1076.13
7/9/03	4:00	33.00	40.91	44.00	55.09	34.23	22.44	22.25	1105.94	1100.26	1088.48	1089.02	1087.00	1082.31	1076.11
7/9/03	8:00	33.03	40.93	44.06	55.15	34.23	22.49	22.24	1105.91	1100.24	1088.42	1088.96	1086.99	1082.26	1076.12
7/9/03	12:00	33.03	40.92	43.95	55.04	34.17	22.41	22.21	1105.91	1100.25	1088.53	1089.07	1087.05	1082.34	1076.15
7/9/03	16:00	33.02	40.91	43.90	54.99	34.17	22.39	22.22	1105.92	1100.26	1088.58	1089.12	1087.05	1082.36	1076.14
7/9/03	20:00	33.02	40.91	44.00	55.08	34.25	22.43	22.28	1105.92	1100.26	1088.48	1089.03	1086.97	1082.32	1076.08
7/10/03	0:00	33.03	40.92	44.02	55.11	34.24	22.49	22.26	1105.91	1100.25	1088.46	1089.00	1086.98	1082.26	1076.10
7/10/03	4:00	33.04	40.93	44.04	55.14	34.23	22.51	22.25	1105.90	1100.24	1088.44	1088.97	1086.99	1082.24	1076.11
7/10/03	8:00	33.06	40.96	44.08	55.18	34.25	22.53	22.26	1105.88	1100.21	1088.40	1088.93	1086.97	1082.22	1076.10
7/10/03	12:00	33.08	40.98	44.08	55.19	34.24	22.53	22.25	1105.86	1100.19	1088.40	1088.92	1086.98	1082.22	1076.11
7/10/03	16:00	33.09	40.98	44.05	55.17	34.22	22.53	22.27	1105.85	1100.19	1088.43	1088.94	1087.00	1082.22	1076.09
7/10/03	20:00	33.10	40.99	44.05	55.17	34.24	22.56	22.28	1105.84	1100.18	1088.43	1088.94	1086.98	1082.19	1076.08
7/11/03	0:00	33.11	41.00	44.09	55.21	34.24	22.60	22.27	1105.83	1100.17	1088.39	1088.90	1086.98	1082.15	1076.09
7/11/03	4:00	33.13	41.02	44.09	55.22	34.24	22.62	22.27	1105.81	1100.15	1088.39	1088.89	1086.98	1082.13	1076.09

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
7/11/03	8:00	33.15	41.04	44.09	55.22	34.23	22.62	22.25	1105.79	1100.13	1088.39	1088.89	1086.99	1082.13	1076.11
7/11/03	12:00	33.16	41.05	44.06	55.18	34.21	22.59	22.25	1105.78	1100.12	1088.42	1088.93	1087.01	1082.16	1076.11
7/11/03	16:00	33.16	41.04	44.01	55.13	34.20	22.56	22.25	1105.79	1100.13	1088.47	1088.98	1087.02	1082.19	1076.11
7/11/03	20:00	33.16	41.04	44.02	55.13	34.22	22.58	22.28	1105.79	1100.14	1088.47	1088.98	1087.00	1082.17	1076.08
7/12/03	0:00	33.17	41.06	44.08	55.20	34.25	22.64	22.28	1105.77	1100.12	1088.40	1088.91	1086.98	1082.11	1076.08
7/12/03	4:00	33.18	41.06	44.07	55.19	34.24	22.64	22.26	1105.76	1100.11	1088.41	1088.92	1086.98	1082.11	1076.10
7/12/03	8:00	33.20	41.09	44.15	55.27	34.27	22.69	22.29	1105.74	1100.08	1088.33	1088.84	1086.95	1082.06	1076.07
7/12/03	12:00	33.23	41.11	44.10	55.23	34.23	22.68	22.27	1105.72	1100.06	1088.38	1088.88	1086.99	1082.07	1076.09
7/12/03	16:00	33.23	41.11	44.05	55.19	34.23	22.65	22.27	1105.71	1100.06	1088.43	1088.92	1086.99	1082.10	1076.09
7/12/03	20:00	33.23	41.11	44.06	55.18	34.23	22.67	22.28	1105.71	1100.06	1088.43	1088.93	1086.99	1082.08	1076.08
7/13/03	0:00	33.24	41.12	44.07	55.20	34.23	22.68	22.27	1105.70	1100.05	1088.41	1088.91	1086.99	1082.07	1076.09
7/13/03	4:00	33.24	41.11	44.04	55.16	34.22	22.67	22.25	1105.70	1100.06	1088.44	1088.95	1087.01	1082.08	1076.11
7/13/03	8:00	33.25	41.12	44.06	55.18	34.24	22.68	22.27	1105.69	1100.05	1088.42	1088.94	1086.98	1082.07	1076.09
7/13/03	12:00	33.26	41.13	44.04	55.15	34.21	22.68	22.27	1105.68	1100.04	1088.44	1088.96	1087.01	1082.07	1076.09
7/13/03	16:00	33.25	41.11	43.98	55.08	34.19	22.62	22.26	1105.69	1100.06	1088.50	1089.03	1087.03	1082.13	1076.10
7/13/03	20:00	33.24	41.09	43.97	55.06	34.21	22.63	22.28	1105.70	1100.08	1088.51	1089.05	1087.01	1082.13	1076.08
7/14/03	0:00	33.24	41.10	44.01	55.10	34.22	22.64	22.28	1105.70	1100.08	1088.47	1089.01	1087.00	1082.11	1076.08
7/14/03	4:00	33.24	41.08	43.97	55.05	34.20	22.60	22.25	1105.70	1100.09	1088.51	1089.06	1087.02	1082.15	1076.11
7/14/03	8:00	33.24	41.07	43.97	55.05	34.22	22.62	22.25	1105.70	1100.10	1088.51	1089.06	1087.00	1082.13	1076.11
7/14/03	12:00	33.24	41.07	43.95	55.01	34.19	22.60	22.25	1105.70	1100.10	1088.53	1089.10	1087.03	1082.15	1076.11
7/14/03	16:00	33.23	41.05	43.91	54.96	34.20	22.58	22.26	1105.71	1100.12	1088.57	1089.15	1087.02	1082.17	1076.10
7/14/03	20:00	33.22	41.03	43.93	54.97	34.22	22.59	22.27	1105.72	1100.14	1088.55	1089.14	1087.01	1082.16	1076.09
7/15/03	0:00	33.22	41.04	43.97	55.02	34.24	22.63	22.29	1105.72	1100.14	1088.51	1089.09	1086.98	1082.12	1076.07
7/15/03	4:00	33.24	41.05	44.05	55.13	34.28	22.69	22.31	1105.70	1100.12	1088.43	1088.99	1086.94	1082.06	1076.06
7/15/03	8:00	33.27	41.09	44.12	55.22	34.29	22.75	22.31	1105.67	1100.08	1088.36	1088.89	1086.93	1082.00	1076.05
7/15/03	12:00	33.31	41.13	44.13	55.24	34.27	22.79	22.31	1105.64	1100.05	1088.35	1088.87	1086.95	1081.96	1076.06
7/15/03	16:00	33.32	41.14	44.09	55.21	34.25	22.78	22.31	1105.62	1100.03	1088.39	1088.90	1086.97	1081.97	1076.05
7/15/03	20:00	33.33	41.14	44.08	55.20	34.25	22.77	22.31	1105.61	1100.03	1088.40	1088.91	1086.98	1081.98	1076.05
7/16/03	0:00	33.34	41.17	44.11	55.24	34.26	22.83	22.31	1105.60	1100.01	1088.37	1088.87	1086.96	1081.92	1076.05
7/16/03	4:00	33.36	41.18	44.12	55.25	34.26	22.84	22.30	1105.58	1099.99	1088.36	1088.86	1086.96	1081.91	1076.06
7/16/03	8:00	33.38	41.19	44.12	55.26	34.26	22.85	22.30	1105.56	1099.98	1088.36	1088.85	1086.96	1081.90	1076.07
7/16/03	12:00	33.39	41.21	44.09	55.22	34.24	22.82	22.30	1105.55	1099.96	1088.39	1088.89	1086.98	1081.93	1076.07
7/16/03	16:00	33.39	41.21	44.03	55.15	34.21	22.80	22.29	1105.55	1099.96	1088.45	1088.96	1087.01	1081.95	1076.07
7/16/03	20:00	33.39	41.20	44.04	55.15	34.25	22.78	22.32	1105.55	1099.97	1088.44	1088.96	1086.98	1081.97	1076.04
7/17/03	0:00	33.40	41.21	44.07	55.18	34.25	22.81	22.31	1105.54	1099.96	1088.41	1088.93	1086.97	1081.94	1076.05
7/17/03	4:00	33.41	41.22	44.08	55.20	34.24	22.82	22.29	1105.53	1099.95	1088.40	1088.91	1086.98	1081.93	1076.07
7/17/03	8:00	33.42	41.22	44.08	55.19	34.24	22.84	22.29	1105.52	1099.95	1088.40	1088.92	1086.98	1081.91	1076.07
7/17/03	12:00	33.43	41.24	44.08	55.20	34.24	22.83	22.30	1105.51	1099.93	1088.40	1088.92	1086.98	1081.92	1076.07
7/17/03	16:00	33.43	41.24	44.03	55.13	34.22	22.79	22.29	1105.51	1099.93	1088.45	1088.98	1087.00	1081.96	1076.07
7/17/03	20:00	33.43	41.22	44.00	55.10	34.21	22.79	22.30	1105.51	1099.95	1088.48	1089.01	1087.01	1081.97	1076.07

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
7/18/03	0:00	33.42	41.21	44.01	55.10	34.23	22.79	22.30	1105.52	1099.96	1088.47	1089.01	1086.99	1081.96	1076.06
7/18/03	4:00	33.42	41.21	44.00	55.09	34.23	22.79	22.28	1105.52	1099.96	1088.48	1089.02	1086.99	1081.96	1076.08
7/18/03	8:00	33.42	41.20	43.99	55.07	34.22	22.79	22.27	1105.52	1099.97	1088.49	1089.04	1087.00	1081.96	1076.09
7/18/03	12:00	33.43	41.20	44.02	55.08	34.24	22.77	22.30	1105.52	1099.98	1088.46	1089.03	1086.98	1081.98	1076.06
7/18/03	16:00	33.43	41.20	44.01	55.08	34.24	22.79	22.31	1105.51	1099.97	1088.47	1089.03	1086.98	1081.96	1076.05
7/18/03	20:00	33.44	41.20	44.05	55.12	34.26	22.82	22.33	1105.50	1099.97	1088.43	1088.99	1086.96	1081.93	1076.03
7/19/03	0:00	33.45	41.22	44.08	55.17	34.26	22.87	22.33	1105.49	1099.95	1088.40	1088.94	1086.96	1081.89	1076.04
7/19/03	4:00	33.46	41.23	44.08	55.18	34.25	22.88	22.31	1105.48	1099.94	1088.40	1088.93	1086.97	1081.87	1076.06
7/19/03	8:00	33.49	41.25	44.12	55.23	34.27	22.89	22.31	1105.45	1099.92	1088.36	1088.88	1086.95	1081.86	1076.05
7/19/03	12:00	33.50	41.26	44.10	55.21	34.25	22.91	22.30	1105.44	1099.91	1088.38	1088.90	1086.97	1081.84	1076.07
7/19/03	16:00	33.50	41.26	44.05	55.15	34.23	22.88	22.30	1105.44	1099.91	1088.43	1088.96	1086.99	1081.88	1076.07
7/19/03	20:00	33.50	41.25	44.02	55.11	34.23	22.86	22.30	1105.44	1099.92	1088.47	1089.00	1086.99	1081.89	1076.07
7/20/03	0:00	33.50	41.25	44.03	55.12	34.24	22.85	22.30	1105.44	1099.92	1088.45	1088.99	1086.98	1081.90	1076.06
7/20/03	4:00	33.50	41.24	43.99	55.07	34.22	22.83	22.27	1105.44	1099.93	1088.49	1089.04	1087.01	1081.92	1076.09
7/20/03	8:00	33.50	41.24	44.01	55.08	34.24	22.84	22.28	1105.44	1099.93	1088.47	1089.03	1086.99	1081.91	1076.08
7/20/03	12:00	33.50	41.22	43.97	55.01	34.21	22.80	22.27	1105.45	1099.95	1088.52	1089.10	1087.01	1081.95	1076.09
7/20/03	16:00	33.48	41.20	43.93	54.97	34.20	22.78	22.29	1105.46	1099.97	1088.55	1089.15	1087.02	1081.97	1076.07
7/20/03	20:00	33.47	41.18	43.92	54.94	34.22	22.74	22.30	1105.47	1099.99	1088.56	1089.17	1087.00	1082.01	1076.06
7/21/03	0:00	33.47	41.17	43.94	54.97	34.23	22.77	22.30	1105.47	1100.00	1088.54	1089.15	1086.99	1081.98	1076.06
7/21/03	4:00	33.47	41.17	43.97	55.00	34.25	22.79	22.31	1105.47	1100.00	1088.51	1089.11	1086.97	1081.96	1076.05
7/21/03	8:00	33.49	41.19	44.05	55.10	34.28	22.85	22.33	1105.45	1099.98	1088.43	1089.01	1086.94	1081.90	1076.03
7/21/03	12:00	33.51	41.21	44.04	55.10	34.26	22.87	22.33	1105.43	1099.96	1088.44	1089.02	1086.96	1081.89	1076.03
7/21/03	16:00	33.52	41.22	44.06	55.13	34.26	22.90	22.34	1105.42	1099.95	1088.42	1088.98	1086.96	1081.86	1076.02
7/21/03	20:00	33.53	41.22	44.04	55.12	34.27	22.90	22.34	1105.41	1099.95	1088.44	1088.99	1086.96	1081.86	1076.02
7/22/03	0:00	33.54	41.24	44.09	55.17	34.27	22.93	22.33	1105.40	1099.93	1088.39	1088.94	1086.95	1081.83	1076.03
7/22/03	4:00	33.56	41.26	44.11	55.19	34.27	22.96	22.32	1105.38	1099.91	1088.38	1088.92	1086.95	1081.80	1076.04
7/22/03	8:00	33.59	41.29	44.15	55.25	34.29	23.00	22.33	1105.35	1099.88	1088.33	1088.86	1086.93	1081.75	1076.03
7/22/03	12:00	33.61	41.31	44.14	55.24	34.27	23.01	22.33	1105.33	1099.86	1088.34	1088.87	1086.95	1081.75	1076.04
7/22/03	16:00	33.62	41.32	44.09	55.21	34.25	22.98	22.32	1105.32	1099.85	1088.39	1088.91	1086.97	1081.77	1076.04
7/22/03	20:00	33.63	41.33	44.11	55.23	34.27	22.99	22.35	1105.31	1099.84	1088.37	1088.88	1086.95	1081.76	1076.01
7/23/03	0:00	33.65	41.35	44.14	55.27	34.28	23.04	22.34	1105.29	1099.82	1088.34	1088.84	1086.94	1081.72	1076.02
7/23/03	4:00	33.67	41.37	44.15	55.29	34.28	23.07	22.32	1105.27	1099.80	1088.33	1088.82	1086.94	1081.69	1076.04
7/23/03	8:00	33.69	41.40	44.17	55.31	34.28	23.08	22.33	1105.25	1099.77	1088.31	1088.80	1086.94	1081.67	1076.03
7/23/03	12:00	33.71	41.41	44.14	55.28	34.26	23.09	22.32	1105.23	1099.76	1088.34	1088.83	1086.96	1081.66	1076.04
7/23/03	16:00	33.71	41.41	44.07	55.21	34.24	23.05	22.32	1105.23	1099.76	1088.41	1088.90	1086.98	1081.70	1076.04
7/23/03	20:00	33.71	41.41	44.06	55.18	34.25	23.02	22.34	1105.23	1099.76	1088.43	1088.93	1086.97	1081.73	1076.02
7/24/03	0:00	33.71	41.41	44.08	55.20	34.26	23.03	22.34	1105.23	1099.76	1088.40	1088.91	1086.96	1081.72	1076.02
7/24/03	4:00	33.72	41.41	44.05	55.17	34.25	23.02	22.31	1105.23	1099.76	1088.43	1088.94	1086.97	1081.73	1076.05
7/24/03	8:00	33.73	41.42	44.10	55.21	34.28	23.05	22.33	1105.21	1099.75	1088.38	1088.90	1086.94	1081.70	1076.03
7/24/03	12:00	33.73	41.42	44.05	55.15	34.24	23.02	22.31	1105.21	1099.75	1088.43	1088.96	1086.98	1081.73	1076.05

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
7/24/03	16:00	33.72	41.40	43.99	55.08	34.22	22.96	22.31	1105.22	1099.77	1088.49	1089.03	1087.00	1081.79	1076.05
7/24/03	20:00	33.71	41.38	43.99	55.08	34.25	22.94	22.33	1105.23	1099.79	1088.49	1089.03	1086.98	1081.81	1076.03
7/25/03	0:00	33.71	41.38	44.02	55.10	34.25	22.98	22.33	1105.23	1099.79	1088.47	1089.01	1086.97	1081.78	1076.03
7/25/03	4:00	33.71	41.38	44.01	55.09	34.25	22.98	22.32	1105.23	1099.79	1088.47	1089.02	1086.97	1081.77	1076.04
7/25/03	8:00	33.73	41.39	44.05	55.13	34.27	23.00	22.33	1105.21	1099.78	1088.43	1088.98	1086.95	1081.75	1076.03
7/25/03	12:00	33.74	41.39	44.04	55.12	34.25	22.99	22.33	1105.21	1099.78	1088.44	1088.99	1086.97	1081.76	1076.03
7/25/03	16:00	33.73	41.38	44.00	55.07	34.25	22.99	22.34	1105.21	1099.79	1088.48	1089.04	1086.98	1081.76	1076.02
7/25/03	20:00	33.73	41.38	44.02	55.10	34.27	22.99	22.36	1105.21	1099.79	1088.46	1089.01	1086.95	1081.76	1076.00
7/26/03	0:00	33.74	41.39	44.07	55.15	34.27	23.03	22.34	1105.20	1099.78	1088.41	1088.96	1086.95	1081.72	1076.02
7/26/03	4:00	33.75	41.40	44.07	55.16	34.27	23.04	22.34	1105.19	1099.77	1088.41	1088.95	1086.95	1081.71	1076.02
7/26/03	8:00	33.77	41.42	44.10	55.19	34.29	23.08	22.34	1105.17	1099.75	1088.38	1088.92	1086.93	1081.67	1076.02
7/26/03	12:00	33.78	41.43	44.08	55.16	34.26	23.05	22.35	1105.16	1099.74	1088.40	1088.95	1086.96	1081.70	1076.01
7/26/03	16:00	33.78	41.42	44.04	55.12	34.25	23.03	22.35	1105.16	1099.75	1088.44	1088.99	1086.97	1081.72	1076.01
7/26/03	20:00	33.78	41.42	44.04	55.12	34.27	23.03	22.36	1105.16	1099.75	1088.44	1088.99	1086.95	1081.72	1076.00
7/27/03	0:00	33.79	41.43	44.08	55.16	34.28	23.07	22.36	1105.15	1099.74	1088.40	1088.95	1086.94	1081.68	1076.00
7/27/03	4:00	33.80	41.44	44.07	55.16	34.27	23.08	22.35	1105.14	1099.73	1088.41	1088.95	1086.95	1081.67	1076.01
7/27/03	8:00	33.82	41.45	44.11	55.19	34.29	23.09	22.35	1105.12	1099.72	1088.37	1088.92	1086.93	1081.66	1076.01
7/27/03	12:00	33.84	41.47	44.11	55.20	34.27	23.11	22.35	1105.11	1099.70	1088.38	1088.91	1086.95	1081.64	1076.01
7/27/03	16:00	33.84	41.46	44.05	55.14	34.25	23.08	22.36	1105.11	1099.71	1088.43	1088.97	1086.97	1081.67	1076.00
7/27/03	20:00	33.83	41.45	44.04	55.13	34.27	23.07	22.37	1105.11	1099.72	1088.44	1088.99	1086.96	1081.68	1075.99
7/28/03	0:00	33.84	41.46	44.08	55.18	34.29	23.11	22.37	1105.10	1099.71	1088.40	1088.94	1086.93	1081.64	1075.99
7/28/03	4:00	33.84	41.46	44.05	55.14	34.26	23.08	22.34	1105.10	1099.71	1088.43	1088.97	1086.96	1081.67	1076.02
7/28/03	8:00	33.86	41.48	44.09	55.18	34.29	23.13	22.34	1105.08	1099.69	1088.39	1088.93	1086.93	1081.62	1076.02
7/28/03	12:00	33.87	41.49	44.10	55.19	34.28	23.12	22.35	1105.07	1099.68	1088.38	1088.92	1086.94	1081.63	1076.01
7/28/03	16:00	33.87	41.49	44.06	55.15	34.26	23.11	22.33	1105.07	1099.68	1088.42	1088.97	1086.96	1081.64	1076.03
7/28/03	20:00	33.87	41.48	44.06	55.14	34.27	23.12	22.36	1105.07	1099.69	1088.42	1088.97	1086.95	1081.64	1076.00
7/29/03	0:00	33.88	41.49	44.09	55.18	34.28	23.13	22.36	1105.06	1099.68	1088.39	1088.94	1086.94	1081.62	1076.00
7/29/03	4:00	33.89	41.50	44.08	55.17	34.27	23.14	22.34	1105.05	1099.68	1088.40	1088.94	1086.95	1081.62	1076.02
7/29/03	8:00	33.90	41.51	44.11	55.20	34.29	23.17	22.35	1105.04	1099.66	1088.37	1088.91	1086.93	1081.58	1076.01
7/29/03	12:00	33.91	41.52	44.09	55.17	34.27	23.13	22.34	1105.03	1099.65	1088.39	1088.94	1086.96	1081.62	1076.02
7/29/03	16:00	33.91	41.51	44.04	55.12	34.24	23.12	22.34	1105.03	1099.66	1088.44	1088.99	1086.98	1081.63	1076.02
7/29/03	20:00	33.91	41.50	44.05	55.13	34.27	23.11	22.37	1105.03	1099.67	1088.43	1088.98	1086.95	1081.64	1075.99
7/30/03	0:00	33.92	41.51	44.08	55.16	34.29	23.15	22.36	1105.02	1099.66	1088.40	1088.95	1086.93	1081.61	1076.00
7/30/03	4:00	33.92	41.51	44.08	55.15	34.28	23.15	22.35	1105.02	1099.66	1088.40	1088.96	1086.94	1081.60	1076.01
7/30/03	8:00	33.94	41.53	44.12	55.20	34.29	23.18	22.35	1105.00	1099.64	1088.36	1088.91	1086.93	1081.57	1076.01
7/30/03	12:00	33.95	41.54	44.09	55.18	34.27	23.18	22.35	1104.99	1099.63	1088.39	1088.94	1086.95	1081.58	1076.01
7/30/03	16:00	33.94	41.53	44.02	55.10	34.24	23.12	22.33	1105.00	1099.64	1088.46	1089.01	1086.99	1081.63	1076.04
7/30/03	20:00	33.94	41.52	44.04	55.12	34.27	23.14	22.37	1105.00	1099.65	1088.44	1088.99	1086.95	1081.61	1075.99
7/31/03	0:00	33.95	41.53	44.08	55.16	34.29	23.17	22.37	1104.99	1099.64	1088.40	1088.95	1086.93	1081.58	1075.99
7/31/03	4:00	33.96	41.53	44.06	55.13	34.27	23.17	22.34	1104.99	1099.64	1088.42	1088.98	1086.96	1081.58	1076.02

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
7/31/03	8:00	33.96	41.53	44.07	55.14	34.29	23.15	22.35	1104.98	1099.64	1088.41	1088.97	1086.93	1081.60	1076.01
7/31/03	12:00	33.97	41.54	44.15	55.21	34.31	23.20	22.37	1104.97	1099.63	1088.33	1088.90	1086.91	1081.55	1075.99
7/31/03	16:00	33.95	41.52	44.00	55.07	34.23	23.11	22.31	1104.99	1099.65	1088.48	1089.04	1086.99	1081.64	1076.05
7/31/03	20:00	33.94	41.50	44.00	55.06	34.26	23.10	22.35	1105.00	1099.67	1088.48	1089.05	1086.96	1081.65	1076.01
8/1/03	0:00	33.95	41.51	44.03	55.09	34.27	23.12	22.34	1104.99	1099.66	1088.45	1089.02	1086.96	1081.64	1076.02
8/1/03	4:00	33.95	41.51	44.03	55.09	34.27	23.14	22.34	1104.99	1099.66	1088.45	1089.02	1086.95	1081.61	1076.02
8/1/03	8:00	33.96	41.52	44.06	55.13	34.28	23.17	22.33	1104.98	1099.65	1088.42	1088.99	1086.94	1081.58	1076.03
8/1/03	12:00	33.97	41.54	44.09	55.17	34.28	23.18	22.33	1104.97	1099.64	1088.39	1088.94	1086.94	1081.57	1076.03
8/1/03	16:00	33.98	41.54	44.06	55.13	34.25	23.16	22.31	1104.97	1099.63	1088.42	1088.98	1086.97	1081.59	1076.05
8/1/03	20:00	33.97	41.53	44.04	55.11	34.27	23.12	22.33	1104.97	1099.64	1088.44	1089.00	1086.95	1081.64	1076.03
8/2/03	0:00	33.98	41.54	44.09	55.16	34.29	23.17	22.34	1104.96	1099.63	1088.39	1088.95	1086.93	1081.58	1076.02
8/2/03	4:00	33.99	41.54	44.07	55.14	34.28	23.15	22.32	1104.95	1099.63	1088.41	1088.97	1086.94	1081.60	1076.04
8/2/03	8:00	34.00	41.55	44.10	55.17	34.30	23.18	22.31	1104.94	1099.62	1088.38	1088.94	1086.92	1081.57	1076.05
8/2/03	12:00	34.01	41.57	44.10	55.16	34.28	23.18	22.33	1104.93	1099.60	1088.38	1088.95	1086.94	1081.57	1076.03
8/2/03	16:00	34.02	41.57	44.05	55.12	34.27	23.15	22.34	1104.92	1099.60	1088.43	1088.99	1086.95	1081.61	1076.02
8/2/03	20:00	34.02	41.57	44.06	55.14	34.29	23.16	22.37	1104.92	1099.61	1088.42	1088.97	1086.93	1081.59	1075.99
8/3/03	0:00	34.03	41.58	44.10	55.18	34.29	23.19	22.37	1104.91	1099.59	1088.38	1088.93	1086.93	1081.56	1075.99
8/3/03	4:00	34.04	41.59	44.10	55.18	34.29	23.21	22.35	1104.90	1099.58	1088.38	1088.93	1086.93	1081.54	1076.01
8/3/03	8:00	34.05	41.60	44.10	55.18	34.29	23.20	22.34	1104.89	1099.57	1088.38	1088.93	1086.93	1081.55	1076.02
8/3/03	12:00	34.06	41.60	44.09	55.17	34.28	23.20	22.35	1104.88	1099.57	1088.39	1088.94	1086.94	1081.56	1076.01
8/3/03	16:00	34.06	41.60	44.05	55.13	34.27	23.18	22.36	1104.88	1099.57	1088.43	1088.98	1086.95	1081.57	1076.00
8/3/03	20:00	34.06	41.59	44.03	55.10	34.28	23.17	22.37	1104.89	1099.59	1088.45	1089.01	1086.94	1081.58	1075.99
8/4/03	0:00	34.06	41.60	44.08	55.15	34.29	23.21	22.38	1104.88	1099.57	1088.40	1088.96	1086.93	1081.54	1075.98
8/4/03	4:00	34.07	41.60	44.07	55.15	34.28	23.21	22.36	1104.87	1099.57	1088.41	1088.97	1086.94	1081.54	1076.00
8/4/03	8:00	34.08	41.61	44.11	55.19	34.31	23.24	22.37	1104.86	1099.56	1088.37	1088.92	1086.91	1081.51	1075.99
8/4/03	12:00	34.09	41.61	44.06	55.13	34.27	23.19	22.36	1104.85	1099.56	1088.42	1088.98	1086.95	1081.56	1076.00
8/4/03	16:00	34.09	41.61	44.03	55.10	34.27	23.19	22.37	1104.85	1099.56	1088.45	1089.01	1086.96	1081.56	1075.99
8/4/03	20:00	34.08	41.60	44.05	55.12	34.28	23.19	22.38	1104.86	1099.57	1088.43	1088.99	1086.94	1081.56	1075.98
8/5/03	0:00	34.09	41.61	44.07	55.13	34.29	23.21	22.36	1104.85	1099.56	1088.41	1088.98	1086.94	1081.54	1076.00
8/5/03	4:00	34.10	41.61	44.05	55.12	34.28	23.21	22.35	1104.84	1099.56	1088.43	1088.99	1086.94	1081.54	1076.01
8/5/03	8:00	34.11	41.62	44.05	55.11	34.26	23.22	22.33	1104.83	1099.55	1088.43	1089.00	1086.96	1081.53	1076.03
8/5/03	12:00	34.11	41.62	44.07	55.13	34.29	23.22	22.37	1104.83	1099.55	1088.41	1088.98	1086.94	1081.53	1075.99
8/5/03	16:00	34.11	41.62	44.03	55.09	34.27	23.19	22.37	1104.83	1099.55	1088.45	1089.02	1086.95	1081.56	1075.99
8/5/03	20:00	34.12	41.62	44.07	55.14	34.30	23.22	22.40	1104.82	1099.55	1088.41	1088.97	1086.92	1081.53	1075.97
8/6/03	0:00	34.13	41.64	44.11	55.18	34.30	23.26	22.38	1104.81	1099.53	1088.38	1088.93	1086.92	1081.49	1075.98
8/6/03	4:00	34.15	41.66	44.13	55.22	34.32	23.29	22.39	1104.80	1099.52	1088.35	1088.89	1086.90	1081.47	1075.97
8/6/03	8:00	34.17	41.69	44.19	55.28	34.34	23.33	22.39	1104.77	1099.49	1088.30	1088.83	1086.88	1081.42	1075.97
8/6/03	12:00	34.19	41.70	44.16	55.27	34.31	23.33	22.38	1104.75	1099.47	1088.32	1088.84	1086.91	1081.42	1075.98
8/6/03	16:00	34.20	41.71	44.12	55.23	34.29	23.33	22.39	1104.75	1099.46	1088.36	1088.88	1086.93	1081.42	1075.97
8/6/03	20:00	34.20	41.71	44.12	55.24	34.31	23.31	22.41	1104.74	1099.46	1088.36	1088.87	1086.91	1081.44	1075.95

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
8/7/03	0:00	34.22	41.74	44.16	55.28	34.31	23.37	22.40	1104.72	1099.43	1088.32	1088.83	1086.91	1081.38	1075.97
8/7/03	4:00	34.23	41.74	44.13	55.26	34.30	23.34	22.37	1104.71	1099.43	1088.35	1088.85	1086.92	1081.42	1075.99
8/7/03	8:00	34.25	41.77	44.17	55.30	34.32	23.37	22.37	1104.69	1099.40	1088.31	1088.81	1086.90	1081.38	1075.99
8/7/03	12:00	34.26	41.78	44.14	55.27	34.30	23.36	22.39	1104.68	1099.39	1088.34	1088.84	1086.92	1081.39	1075.97
8/7/03	16:00	34.26	41.77	44.11	55.23	34.29	23.35	22.39	1104.68	1099.40	1088.38	1088.88	1086.93	1081.40	1075.97
8/7/03	20:00	34.26	41.77	44.09	55.21	34.30	23.33	22.41	1104.68	1099.40	1088.39	1088.90	1086.92	1081.42	1075.96
8/8/03	0:00	34.27	41.78	44.14	55.26	34.32	23.37	22.41	1104.67	1099.39	1088.34	1088.85	1086.90	1081.38	1075.95
8/8/03	4:00	34.28	41.79	44.15	55.27	34.31	23.39	22.38	1104.66	1099.38	1088.34	1088.84	1086.91	1081.36	1075.98
8/8/03	8:00	34.30	41.81	44.17	55.30	34.32	23.40	22.38	1104.64	1099.36	1088.31	1088.81	1086.90	1081.35	1075.98
8/8/03	12:00	34.31	41.82	44.13	55.25	34.29	23.39	22.38	1104.63	1099.35	1088.35	1088.86	1086.93	1081.36	1075.98
8/8/03	16:00	34.31	41.81	44.09	55.21	34.29	23.34	22.40	1104.63	1099.36	1088.39	1088.90	1086.93	1081.41	1075.97
8/8/03	20:00	34.31	41.81	44.09	55.21	34.30	23.34	22.41	1104.63	1099.36	1088.39	1088.90	1086.92	1081.41	1075.95
8/9/03	0:00	34.31	41.81	44.12	55.24	34.32	23.37	22.40	1104.63	1099.36	1088.36	1088.87	1086.91	1081.38	1075.96
8/9/03	4:00	34.32	41.82	44.13	55.25	34.31	23.38	22.39	1104.62	1099.35	1088.35	1088.86	1086.91	1081.37	1075.97
8/9/03	8:00	34.34	41.84	44.17	55.29	34.33	23.40	22.40	1104.60	1099.33	1088.31	1088.82	1086.89	1081.35	1075.96
8/9/03	12:00	34.35	41.85	44.14	55.26	34.31	23.40	22.39	1104.59	1099.32	1088.34	1088.85	1086.91	1081.35	1075.97
8/9/03	16:00	34.35	41.84	44.09	55.21	34.29	23.35	22.39	1104.59	1099.33	1088.39	1088.90	1086.93	1081.40	1075.97
8/9/03	20:00	34.35	41.83	44.11	55.23	34.32	23.38	22.42	1104.59	1099.34	1088.37	1088.89	1086.90	1081.37	1075.94
8/10/03	0:00	34.36	41.85	44.15	55.28	34.32	23.41	22.42	1104.58	1099.32	1088.33	1088.83	1086.90	1081.34	1075.95
8/10/03	4:00	34.37	41.86	44.15	55.28	34.33	23.43	22.40	1104.58	1099.31	1088.33	1088.83	1086.89	1081.32	1075.96
8/10/03	8:00	34.38	41.88	44.16	55.29	34.32	23.42	22.38	1104.56	1099.30	1088.32	1088.82	1086.90	1081.34	1075.98
8/10/03	12:00	34.39	41.88	44.13	55.26	34.30	23.41	22.39	1104.55	1099.29	1088.35	1088.85	1086.92	1081.34	1075.97
8/10/03	16:00	34.39	41.86	44.07	55.19	34.28	23.37	22.39	1104.55	1099.31	1088.41	1088.92	1086.94	1081.38	1075.97
8/10/03	20:00	34.38	41.85	44.06	55.17	34.29	23.38	22.41	1104.56	1099.32	1088.42	1088.94	1086.94	1081.37	1075.96
8/11/03	0:00	34.37	41.85	44.13	55.25	34.33	23.43	22.42	1104.57	1099.32	1088.35	1088.86	1086.89	1081.32	1075.95
8/11/03	4:00	34.38	41.85	44.12	55.24	34.32	23.40	22.40	1104.56	1099.32	1088.36	1088.87	1086.90	1081.35	1075.96
8/11/03	8:00	34.40	41.88	44.16	55.28	34.33	23.44	22.39	1104.54	1099.30	1088.32	1088.84	1086.89	1081.31	1075.97
8/11/03	12:00	34.42	41.89	44.16	55.28	34.32	23.45	22.38	1104.53	1099.28	1088.32	1088.83	1086.90	1081.30	1075.98
8/11/03	16:00	34.42	41.89	44.12	55.24	34.30	23.41	22.39	1104.52	1099.28	1088.36	1088.87	1086.92	1081.34	1075.97
8/11/03	20:00	34.42	41.89	44.13	55.25	34.32	23.41	22.41	1104.52	1099.28	1088.35	1088.86	1086.90	1081.34	1075.95
8/12/03	0:00	34.43	41.91	44.16	55.29	34.33	23.45	22.41	1104.51	1099.26	1088.32	1088.82	1086.89	1081.30	1075.95
8/12/03	4:00	34.44	41.92	44.17	55.30	34.33	23.45	22.40	1104.50	1099.25	1088.31	1088.81	1086.89	1081.30	1075.96
8/12/03	8:00	34.46	41.94	44.19	55.33	34.34	23.49	22.41	1104.48	1099.23	1088.29	1088.78	1086.88	1081.26	1075.96
8/12/03	12:00	34.48	41.96	44.19	55.34	34.33	23.51	22.41	1104.46	1099.21	1088.29	1088.78	1086.89	1081.25	1075.95
8/12/03	16:00	34.48	41.96	44.15	55.29	34.31	23.46	22.41	1104.46	1099.21	1088.33	1088.82	1086.91	1081.29	1075.95
8/12/03	20:00	34.49	41.96	44.17	55.31	34.34	23.48	22.43	1104.45	1099.21	1088.31	1088.80	1086.88	1081.27	1075.93
8/13/03	0:00	34.51	41.98	44.20	55.35	34.34	23.51	22.43	1104.44	1099.19	1088.28	1088.76	1086.88	1081.24	1075.94
8/13/03	4:00	34.51	41.99	44.20	55.36	34.34	23.54	22.40	1104.43	1099.18	1088.28	1088.76	1086.88	1081.21	1075.96
8/13/03	8:00	34.53	42.01	44.23	55.39	34.35	23.54	22.41	1104.41	1099.16	1088.26	1088.72	1086.87	1081.21	1075.95
8/13/03	12:00	34.55	42.03	44.19	55.35	34.32	23.54	22.40	1104.39	1099.14	1088.29	1088.76	1086.90	1081.22	1075.96

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
8/13/03	16:00	34.55	42.02	44.14	55.29	34.30	23.49	22.41	1104.39	1099.15	1088.34	1088.82	1086.92	1081.26	1075.96
8/13/03	20:00	34.55	42.02	44.15	55.30	34.33	23.50	22.43	1104.39	1099.15	1088.34	1088.81	1086.89	1081.25	1075.93
8/14/03	0:00	34.56	42.04	44.20	55.36	34.35	23.54	22.43	1104.38	1099.14	1088.28	1088.76	1086.87	1081.22	1075.93
8/14/03	4:00	34.57	42.04	44.19	55.35	34.34	23.56	22.41	1104.37	1099.13	1088.30	1088.76	1086.88	1081.19	1075.95
8/14/03	8:00	34.59	42.06	44.23	55.39	34.35	23.58	22.41	1104.35	1099.11	1088.25	1088.72	1086.87	1081.17	1075.95
8/14/03	12:00	34.60	42.07	44.19	55.36	34.33	23.58	22.42	1104.34	1099.10	1088.29	1088.75	1086.89	1081.17	1075.95
8/14/03	16:00	34.60	42.07	44.15	55.30	34.31	23.52	22.42	1104.34	1099.10	1088.34	1088.81	1086.91	1081.23	1075.94
8/14/03	20:00	34.59	42.06	44.15	55.30	34.33	23.51	22.44	1104.35	1099.11	1088.34	1088.81	1086.89	1081.24	1075.93
8/15/03	0:00	34.61	42.07	44.17	55.32	34.34	23.53	22.43	1104.34	1099.10	1088.31	1088.79	1086.88	1081.22	1075.93
8/15/03	4:00	34.61	42.07	44.17	55.32	34.33	23.55	22.41	1104.33	1099.10	1088.31	1088.79	1086.89	1081.20	1075.95
8/15/03	8:00	34.62	42.08	44.20	55.35	34.35	23.57	22.41	1104.32	1099.09	1088.28	1088.76	1086.87	1081.18	1075.95
8/15/03	12:00	34.63	42.09	44.17	55.31	34.32	23.54	22.41	1104.31	1099.08	1088.31	1088.80	1086.90	1081.22	1075.95
8/15/03	16:00	34.62	42.07	44.08	55.23	34.29	23.46	22.41	1104.32	1099.11	1088.40	1088.88	1086.93	1081.29	1075.95
8/15/03	20:00	34.60	42.03	44.05	55.18	34.29	23.45	22.42	1104.34	1099.14	1088.43	1088.94	1086.93	1081.30	1075.95
8/16/03	0:00	34.59	42.02	44.06	55.18	34.30	23.46	22.41	1104.35	1099.15	1088.42	1088.94	1086.92	1081.30	1075.95
8/16/03	4:00	34.59	42.01	44.04	55.15	34.30	23.44	22.39	1104.35	1099.16	1088.44	1088.96	1086.92	1081.31	1075.97
8/16/03	8:00	34.58	42.00	44.07	55.17	34.32	23.44	22.40	1104.36	1099.17	1088.41	1088.94	1086.90	1081.31	1075.96
8/16/03	12:00	34.58	41.99	44.02	55.11	34.29	23.43	22.39	1104.36	1099.18	1088.46	1089.00	1086.94	1081.33	1075.97
8/16/03	16:00	34.56	41.94	43.95	55.02	34.26	23.36	22.39	1104.38	1099.23	1088.53	1089.09	1086.96	1081.39	1075.97
8/16/03	20:00	34.53	41.91	43.93	54.99	34.27	23.35	22.41	1104.41	1099.26	1088.55	1089.12	1086.95	1081.40	1075.95
8/17/03	0:00	34.53	41.90	43.97	55.02	34.30	23.37	22.42	1104.41	1099.27	1088.51	1089.09	1086.92	1081.38	1075.94
8/17/03	4:00	34.53	41.89	43.98	55.03	34.30	23.38	22.40	1104.41	1099.28	1088.50	1089.08	1086.92	1081.37	1075.96
8/17/03	8:00	34.53	41.89	44.02	55.06	34.32	23.40	22.41	1104.41	1099.28	1088.47	1089.05	1086.91	1081.35	1075.95
8/17/03	12:00	34.53	41.89	44.00	55.04	34.29	23.39	22.41	1104.41	1099.28	1088.48	1089.07	1086.93	1081.36	1075.95
8/17/03	16:00	34.53	41.88	43.97	55.01	34.29	23.37	22.43	1104.41	1099.30	1088.51	1089.10	1086.93	1081.38	1075.93
8/17/03	20:00	34.52	41.86	43.97	55.01	34.31	23.34	22.45	1104.42	1099.31	1088.51	1089.10	1086.91	1081.41	1075.92
8/18/03	0:00	34.53	41.87	44.03	55.07	34.33	23.42	22.44	1104.41	1099.30	1088.45	1089.04	1086.89	1081.33	1075.92
8/18/03	4:00	34.54	41.88	44.05	55.10	34.33	23.44	22.43	1104.40	1099.29	1088.43	1089.01	1086.89	1081.31	1075.93
8/18/03	8:00	34.55	41.90	44.09	55.15	34.34	23.48	22.43	1104.39	1099.27	1088.39	1088.97	1086.88	1081.27	1075.94
8/18/03	12:00	34.56	41.91	44.07	55.13	34.32	23.47	22.44	1104.38	1099.27	1088.41	1088.98	1086.90	1081.28	1075.93
8/18/03	16:00	34.56	41.90	44.02	55.08	34.31	23.44	22.44	1104.38	1099.27	1088.46	1089.03	1086.91	1081.31	1075.92
8/18/03	20:00	34.57	41.91	44.11	55.17	34.36	23.52	22.48	1104.37	1099.26	1088.37	1088.94	1086.86	1081.23	1075.88
8/19/03	0:00	34.59	41.93	44.12	55.19	34.34	23.54	22.45	1104.35	1099.24	1088.36	1088.92	1086.88	1081.21	1075.91
8/19/03	4:00	34.60	41.94	44.12	55.20	34.34	23.54	22.44	1104.34	1099.23	1088.36	1088.91	1086.88	1081.21	1075.93
8/19/03	8:00	34.62	41.96	44.13	55.22	34.32	23.55	22.42	1104.32	1099.21	1088.35	1088.89	1086.90	1081.20	1075.94
8/19/03	12:00	34.62	41.96	44.10	55.18	34.32	23.52	22.43	1104.32	1099.21	1088.38	1088.93	1086.90	1081.23	1075.93
8/19/03	16:00	34.61	41.94	44.02	55.09	34.29	23.45	22.43	1104.33	1099.23	1088.46	1089.02	1086.93	1081.30	1075.93
8/19/03	20:00	34.61	41.95	44.12	55.19	34.37	23.55	22.49	1104.33	1099.22	1088.36	1088.92	1086.85	1081.20	1075.87
8/20/03	0:00	34.62	41.95	44.09	55.16	34.33	23.51	22.45	1104.32	1099.22	1088.39	1088.95	1086.89	1081.24	1075.92
8/20/03	4:00	34.62	41.95	44.07	55.13	34.32	23.49	22.41	1104.32	1099.22	1088.41	1088.98	1086.90	1081.26	1075.95

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
8/20/03	8:00	34.63	41.95	44.08	55.15	34.34	23.54	22.42	1104.31	1099.22	1088.40	1088.97	1086.89	1081.22	1075.94
8/20/03	12:00	34.63	41.95	44.07	55.13	34.32	23.51	22.44	1104.31	1099.22	1088.41	1088.98	1086.90	1081.24	1075.93
8/20/03	16:00	34.62	41.93	44.01	55.07	34.30	23.47	22.44	1104.32	1099.24	1088.47	1089.05	1086.92	1081.28	1075.92
8/20/03	20:00	34.62	41.93	44.04	55.09	34.33	23.47	22.46	1104.32	1099.24	1088.44	1089.02	1086.89	1081.28	1075.90
8/21/03	0:00	34.63	41.94	44.08	55.14	34.34	23.52	22.46	1104.31	1099.23	1088.40	1088.97	1086.88	1081.23	1075.90
8/21/03	4:00	34.64	41.95	44.08	55.14	34.34	23.52	22.44	1104.30	1099.22	1088.40	1088.97	1086.89	1081.23	1075.93
8/21/03	8:00	34.65	41.97	44.11	55.17	34.35	23.55	22.44	1104.29	1099.21	1088.37	1088.94	1086.87	1081.20	1075.92
8/21/03	12:00	34.67	41.98	44.12	55.18	34.34	23.57	22.46	1104.27	1099.19	1088.36	1088.93	1086.89	1081.18	1075.90
8/21/03	16:00	34.67	41.98	44.09	55.15	34.33	23.54	22.46	1104.27	1099.20	1088.39	1088.96	1086.89	1081.22	1075.90
8/21/03	20:00	34.68	41.99	44.13	55.20	34.36	23.59	22.48	1104.26	1099.18	1088.35	1088.91	1086.86	1081.16	1075.88
8/22/03	0:00	34.70	42.02	44.19	55.28	34.37	23.64	22.47	1104.24	1099.15	1088.29	1088.84	1086.85	1081.11	1075.89
8/22/03	4:00	34.72	42.04	44.20	55.29	34.37	23.64	22.46	1104.22	1099.14	1088.28	1088.82	1086.85	1081.11	1075.90
8/22/03	8:00	34.74	42.07	44.22	55.33	34.36	23.68	22.45	1104.20	1099.11	1088.26	1088.78	1086.86	1081.07	1075.91
8/22/03	12:00	34.75	42.07	44.17	55.28	34.34	23.64	22.44	1104.19	1099.10	1088.31	1088.83	1086.88	1081.11	1075.92
8/22/03	16:00	34.75	42.07	44.11	55.22	34.32	23.61	22.45	1104.19	1099.11	1088.37	1088.89	1086.90	1081.14	1075.91
8/22/03	20:00	34.75	42.06	44.11	55.21	34.33	23.58	22.46	1104.19	1099.11	1088.37	1088.91	1086.89	1081.17	1075.90
8/23/03	0:00	34.76	42.07	44.15	55.24	34.35	23.64	22.47	1104.18	1099.10	1088.34	1088.87	1086.87	1081.11	1075.89
8/23/03	4:00	34.77	42.08	44.16	55.26	34.36	23.63	22.45	1104.17	1099.09	1088.32	1088.85	1086.86	1081.12	1075.91
8/23/03	8:00	34.79	42.11	44.19	55.30	34.37	23.66	22.45	1104.15	1099.06	1088.29	1088.81	1086.85	1081.09	1075.91
8/23/03	12:00	34.80	42.11	44.16	55.27	34.34	23.65	22.45	1104.14	1099.06	1088.32	1088.84	1086.88	1081.10	1075.91
8/23/03	16:00	34.80	42.10	44.11	55.21	34.32	23.61	22.46	1104.14	1099.07	1088.37	1088.90	1086.90	1081.14	1075.90
8/23/03	20:00	34.80	42.10	44.13	55.23	34.35	23.62	22.48	1104.14	1099.07	1088.35	1088.88	1086.87	1081.13	1075.88
8/24/03	0:00	34.81	42.11	44.17	55.27	34.36	23.65	22.47	1104.13	1099.06	1088.31	1088.84	1086.86	1081.10	1075.89
8/24/03	4:00	34.82	42.12	44.15	55.26	34.35	23.64	22.45	1104.12	1099.05	1088.33	1088.85	1086.87	1081.11	1075.91
8/24/03	8:00	34.83	42.13	44.17	55.28	34.35	23.65	22.45	1104.11	1099.04	1088.31	1088.84	1086.87	1081.10	1075.91
8/24/03	12:00	34.84	42.13	44.13	55.23	34.32	23.64	22.45	1104.10	1099.04	1088.35	1088.88	1086.90	1081.11	1075.91
8/24/03	16:00	34.82	42.10	44.06	55.15	34.31	23.58	22.45	1104.12	1099.07	1088.42	1088.96	1086.91	1081.17	1075.91
8/24/03	20:00	34.82	42.09	44.07	55.16	34.34	23.60	22.47	1104.13	1099.08	1088.41	1088.95	1086.89	1081.15	1075.89
8/25/03	0:00	34.82	42.10	44.11	55.20	34.35	23.63	22.47	1104.12	1099.08	1088.37	1088.91	1086.87	1081.13	1075.89
8/25/03	4:00	34.83	42.10	44.09	55.17	34.34	23.61	22.45	1104.11	1099.08	1088.39	1088.94	1086.89	1081.14	1075.92
8/25/03	8:00	34.84	42.10	44.12	55.19	34.35	23.65	22.45	1104.10	1099.07	1088.36	1088.92	1086.87	1081.10	1075.91
8/25/03	12:00	34.85	42.11	44.10	55.17	34.32	23.62	22.45	1104.10	1099.06	1088.39	1088.94	1086.90	1081.13	1075.91
8/25/03	16:00	34.83	42.07	44.04	55.11	34.32	23.57	22.46	1104.11	1099.10	1088.44	1089.00	1086.90	1081.19	1075.90
8/25/03	20:00	34.82	42.06	44.06	55.12	34.34	23.57	22.48	1104.12	1099.11	1088.43	1088.99	1086.88	1081.18	1075.88
8/26/03	0:00	34.83	42.07	44.10	55.16	34.35	23.61	22.48	1104.11	1099.10	1088.39	1088.95	1086.87	1081.14	1075.88
8/26/03	4:00	34.84	42.08	44.09	55.16	34.34	23.60	22.45	1104.10	1099.09	1088.39	1088.95	1086.88	1081.15	1075.91
8/26/03	8:00	34.86	42.10	44.14	55.21	34.36	23.66	22.46	1104.08	1099.08	1088.35	1088.91	1086.86	1081.09	1075.91
8/26/03	12:00	34.87	42.10	44.11	55.16	34.33	23.63	22.46	1104.08	1099.07	1088.38	1088.95	1086.89	1081.12	1075.91
8/26/03	16:00	34.85	42.08	44.11	55.18	34.37	23.61	22.49	1104.09	1099.09	1088.37	1088.93	1086.86	1081.14	1075.87
8/26/03	20:00	34.85	42.08	44.08	55.15	34.34	23.62	22.46	1104.09	1099.09	1088.40	1088.97	1086.88	1081.13	1075.91

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
8/27/03	0:00	34.87	42.10	44.14	55.21	34.37	23.65	22.46	1104.08	1099.07	1088.35	1088.90	1086.85	1081.10	1075.90
8/27/03	4:00	34.88	42.10	44.14	55.21	34.35	23.66	22.44	1104.06	1099.07	1088.35	1088.90	1086.87	1081.09	1075.93
8/27/03	8:00	34.89	42.12	44.15	55.23	34.36	23.67	22.43	1104.05	1099.05	1088.33	1088.88	1086.86	1081.08	1075.93
8/27/03	12:00	34.90	42.14	44.13	55.21	34.34	23.66	22.43	1104.04	1099.03	1088.35	1088.90	1086.89	1081.09	1075.93
8/27/03	16:00	34.89	42.09	44.05	55.11	34.30	23.61	22.43	1104.05	1099.08	1088.43	1089.00	1086.92	1081.14	1075.93
8/27/03	20:00	34.88	42.08	44.07	55.13	34.33	23.61	22.44	1104.06	1099.09	1088.41	1088.98	1086.89	1081.14	1075.92
8/28/03	0:00	34.89	42.10	44.11	55.18	34.36	23.66	22.45	1104.05	1099.07	1088.37	1088.93	1086.86	1081.09	1075.91
8/28/03	4:00	34.89	42.10	44.09	55.15	34.34	23.63	22.43	1104.05	1099.08	1088.39	1088.96	1086.88	1081.12	1075.93
8/28/03	8:00	34.90	42.10	44.12	55.18	34.36	23.66	22.43	1104.04	1099.07	1088.36	1088.93	1086.86	1081.09	1075.93
8/28/03	12:00	34.91	42.11	44.12	55.17	34.35	23.68	22.43	1104.03	1099.06	1088.36	1088.94	1086.87	1081.08	1075.93
8/28/03	16:00	34.89	42.07	44.04	55.10	34.31	23.61	22.41	1104.05	1099.10	1088.44	1089.01	1086.91	1081.14	1075.95
8/28/03	20:00	34.89	42.07	44.11	55.17	34.38	23.66	22.47	1104.05	1099.10	1088.38	1088.94	1086.84	1081.10	1075.89
8/29/03	0:00	34.90	42.09	44.11	55.17	34.36	23.66	22.44	1104.04	1099.08	1088.37	1088.94	1086.86	1081.09	1075.92
8/29/03	4:00	34.92	42.11	44.15	55.21	34.37	23.69	22.44	1104.03	1099.06	1088.34	1088.90	1086.85	1081.06	1075.92
8/29/03	8:00	34.93	42.13	44.19	55.26	34.38	23.73	22.44	1104.01	1099.04	1088.29	1088.85	1086.84	1081.02	1075.92
8/29/03	12:00	34.96	42.16	44.19	55.27	34.37	23.75	22.45	1103.98	1099.01	1088.29	1088.84	1086.85	1081.00	1075.92
8/29/03	16:00	34.95	42.15	44.16	55.26	34.37	23.72	22.45	1104.00	1099.02	1088.32	1088.85	1086.85	1081.03	1075.91
8/29/03	20:00	34.96	42.18	44.23	55.33	34.40	23.77	22.47	1103.98	1098.99	1088.25	1088.78	1086.82	1080.98	1075.89
8/30/03	0:00	34.97	42.20	44.25	55.38	34.40	23.81	22.45	1103.97	1098.97	1088.23	1088.73	1086.82	1080.94	1075.91
8/30/03	4:00	35.00	42.23	44.26	55.39	34.39	23.81	22.44	1103.95	1098.94	1088.22	1088.72	1086.83	1080.94	1075.92
8/30/03	8:00	35.01	42.25	44.27	55.41	34.39	23.82	22.43	1103.93	1098.92	1088.21	1088.70	1086.83	1080.93	1075.93
8/30/03	12:00	35.04	42.28	44.25	55.40	34.37	23.83	22.42	1103.91	1098.89	1088.23	1088.71	1086.86	1080.92	1075.94
8/30/03	16:00	35.04	42.29	44.21	55.37	34.37	23.80	22.43	1103.90	1098.88	1088.27	1088.75	1086.86	1080.95	1075.93
8/30/03	20:00	35.05	42.29	44.22	55.37	34.38	23.81	22.43	1103.89	1098.88	1088.26	1088.74	1086.84	1080.94	1075.93
8/31/03	0:00	35.04	42.28	44.20	55.34	34.36	23.78	22.41	1103.90	1098.89	1088.28	1088.77	1086.86	1080.97	1075.95
8/31/03	4:00	34.94	42.17	44.10	55.22	34.31	23.71	22.36	1104.00	1099.00	1088.38	1088.89	1086.91	1081.04	1076.00
8/31/03	8:00	34.88	42.13	44.13	55.24	34.35	23.68	22.38	1104.06	1099.04	1088.35	1088.87	1086.87	1081.07	1075.98
8/31/03	12:00	34.89	42.15	44.14	55.26	34.35	23.71	22.37	1104.05	1099.02	1088.34	1088.86	1086.87	1081.04	1075.99
8/31/03	16:00	34.89	42.16	44.13	55.23	34.35	23.66	22.37	1104.05	1099.02	1088.35	1088.88	1086.87	1081.09	1075.99
8/31/03	20:00	34.89	42.16	44.17	55.27	34.37	23.67	22.38	1104.05	1099.01	1088.31	1088.84	1086.85	1081.09	1075.98
9/1/03	0:00	34.90	42.19	44.18	55.29	34.37	23.68	22.37	1104.05	1098.99	1088.30	1088.82	1086.85	1081.07	1075.99
9/1/03	4:00	34.90	42.19	44.17	55.28	34.36	23.66	22.36	1104.05	1098.98	1088.31	1088.83	1086.86	1081.09	1076.00
9/1/03	8:00	34.90	42.21	44.20	55.32	34.39	23.68	22.37	1104.05	1098.96	1088.28	1088.79	1086.83	1081.07	1075.99
9/1/03	12:00	34.90	42.22	44.19	55.31	34.36	23.67	22.37	1104.04	1098.95	1088.29	1088.80	1086.86	1081.08	1076.00
9/1/03	16:00	34.89	42.22	44.15	55.27	34.35	23.63	22.36	1104.05	1098.95	1088.33	1088.84	1086.87	1081.12	1076.00
9/1/03	20:00	34.88	42.22	44.17	55.28	34.37	23.62	22.38	1104.06	1098.96	1088.31	1088.83	1086.85	1081.13	1075.98
9/2/03	0:00	34.88	42.23	44.20	55.31	34.38	23.63	22.37	1104.06	1098.94	1088.28	1088.80	1086.84	1081.12	1075.99
9/2/03	4:00	34.87	42.23	44.18	55.29	34.36	23.60	22.36	1104.07	1098.94	1088.31	1088.82	1086.86	1081.15	1076.00
9/2/03	8:00	34.87	42.23	44.20	55.32	34.38	23.61	22.36	1104.07	1098.94	1088.28	1088.79	1086.84	1081.14	1076.00
9/2/03	12:00	34.86	42.23	44.18	55.29	34.36	23.60	22.35	1104.08	1098.94	1088.31	1088.82	1086.86	1081.15	1076.01

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
9/2/03	16:00	34.85	42.22	44.13	55.23	34.34	23.54	22.36	1104.09	1098.96	1088.35	1088.88	1086.88	1081.21	1076.00
9/2/03	20:00	34.84	42.20	44.14	55.24	34.37	23.53	22.38	1104.10	1098.97	1088.34	1088.87	1086.85	1081.23	1075.99
9/3/03	0:00	34.83	42.20	44.15	55.24	34.36	23.54	22.36	1104.11	1098.97	1088.34	1088.87	1086.86	1081.21	1076.00
9/3/03	4:00	34.82	42.20	44.16	55.26	34.37	23.54	22.35	1104.12	1098.97	1088.32	1088.86	1086.85	1081.21	1076.01
9/3/03	8:00	34.82	42.21	44.19	55.29	34.38	23.54	22.36	1104.12	1098.96	1088.29	1088.82	1086.84	1081.21	1076.00
9/3/03	12:00	34.83	42.21	44.18	55.28	34.37	23.53	22.36	1104.12	1098.96	1088.30	1088.84	1086.86	1081.22	1076.00
9/3/03	16:00	34.82	42.20	44.15	55.24	34.36	23.48	22.37	1104.12	1098.97	1088.33	1088.87	1086.86	1081.27	1075.99
9/3/03	20:00	34.82	42.20	44.19	55.29	34.40	23.51	22.40	1104.12	1098.97	1088.29	1088.82	1086.82	1081.24	1075.96
9/4/03	0:00	34.83	42.22	44.24	55.34	34.40	23.57	22.39	1104.12	1098.95	1088.24	1088.77	1086.82	1081.18	1075.97
9/4/03	4:00	34.83	42.23	44.24	55.36	34.40	23.57	22.38	1104.11	1098.94	1088.24	1088.75	1086.83	1081.18	1075.98
9/4/03	8:00	34.85	42.26	44.29	55.41	34.41	23.59	22.39	1104.10	1098.92	1088.19	1088.70	1086.81	1081.16	1075.98
9/4/03	12:00	34.85	42.26	44.25	55.37	34.37	23.58	22.37	1104.09	1098.91	1088.23	1088.74	1086.85	1081.17	1075.99
9/4/03	16:00	34.84	42.25	44.17	55.30	34.35	23.52	22.37	1104.10	1098.92	1088.31	1088.81	1086.87	1081.23	1075.99
9/4/03	20:00	34.83	42.24	44.17	55.29	34.36	23.51	22.38	1104.11	1098.93	1088.31	1088.83	1086.86	1081.24	1075.98
9/5/03	0:00	34.83	42.23	44.18	55.29	34.37	23.52	22.37	1104.11	1098.94	1088.30	1088.82	1086.85	1081.23	1075.99
9/5/03	4:00	34.84	42.24	44.19	55.30	34.38	23.51	22.36	1104.10	1098.93	1088.29	1088.81	1086.84	1081.24	1076.00
9/5/03	8:00	34.85	42.24	44.22	55.33	34.39	23.53	22.37	1104.10	1098.93	1088.26	1088.78	1086.83	1081.22	1075.99
9/5/03	12:00	34.85	42.24	44.19	55.29	34.36	23.49	22.36	1104.09	1098.93	1088.29	1088.82	1086.86	1081.26	1076.00
9/5/03	16:00	34.84	42.21	44.11	55.22	34.34	23.43	22.37	1104.10	1098.96	1088.37	1088.89	1086.88	1081.32	1075.99
9/5/03	20:00	34.83	42.20	44.13	55.23	34.37	23.44	22.38	1104.11	1098.97	1088.35	1088.89	1086.85	1081.31	1075.99
9/6/03	0:00	34.83	42.20	44.15	55.24	34.38	23.46	22.37	1104.11	1098.97	1088.34	1088.87	1086.84	1081.29	1075.99
9/6/03	4:00	34.83	42.20	44.16	55.25	34.38	23.46	22.36	1104.11	1098.97	1088.32	1088.86	1086.84	1081.29	1076.00
9/6/03	8:00	34.84	42.21	44.20	55.29	34.39	23.49	22.37	1104.10	1098.96	1088.28	1088.82	1086.83	1081.26	1075.99
9/6/03	12:00	34.85	42.22	44.19	55.29	34.38	23.46	22.37	1104.09	1098.95	1088.29	1088.83	1086.84	1081.29	1075.99
9/6/03	16:00	34.85	42.20	44.14	55.23	34.37	23.42	22.38	1104.09	1098.97	1088.34	1088.88	1086.86	1081.33	1075.98
9/6/03	20:00	34.84	42.19	44.14	55.23	34.38	23.42	22.39	1104.10	1098.98	1088.34	1088.88	1086.84	1081.33	1075.97
9/7/03	0:00	34.85	42.19	44.15	55.24	34.38	23.44	22.37	1104.10	1098.98	1088.33	1088.87	1086.84	1081.31	1075.99
9/7/03	4:00	34.85	42.19	44.16	55.24	34.38	23.42	22.37	1104.09	1098.98	1088.32	1088.87	1086.84	1081.33	1075.99
9/7/03	8:00	34.86	42.20	44.19	55.28	34.40	23.47	22.37	1104.08	1098.97	1088.29	1088.84	1086.83	1081.28	1075.99
9/7/03	12:00	34.86	42.20	44.17	55.25	34.37	23.43	22.38	1104.08	1098.97	1088.31	1088.86	1086.86	1081.32	1075.98
9/7/03	16:00	34.86	42.18	44.11	55.19	34.36	23.39	22.38	1104.08	1098.99	1088.37	1088.92	1086.86	1081.36	1075.98
9/7/03	20:00	34.85	42.16	44.12	55.19	34.37	23.39	22.39	1104.09	1099.01	1088.36	1088.92	1086.85	1081.36	1075.97
9/8/03	0:00	34.85	42.17	44.14	55.21	34.38	23.43	22.38	1104.09	1099.00	1088.34	1088.90	1086.84	1081.32	1075.98
9/8/03	4:00	34.85	42.17	44.15	55.22	34.38	23.43	22.37	1104.09	1099.00	1088.33	1088.89	1086.84	1081.32	1075.99
9/8/03	8:00	34.87	42.18	44.18	55.25	34.39	23.44	22.38	1104.07	1098.99	1088.30	1088.86	1086.83	1081.31	1075.98
9/8/03	12:00	34.87	42.18	44.15	55.22	34.37	23.43	22.37	1104.07	1098.99	1088.33	1088.89	1086.85	1081.32	1075.99
9/8/03	16:00	34.87	42.15	44.10	55.17	34.36	23.36	22.38	1104.08	1099.02	1088.38	1088.94	1086.87	1081.39	1075.98
9/8/03	20:00	34.86	42.14	44.11	55.18	34.38	23.37	22.40	1104.08	1099.03	1088.37	1088.94	1086.84	1081.38	1075.96
9/9/03	0:00	34.86	42.15	44.14	55.20	34.39	23.42	22.39	1104.08	1099.02	1088.34	1088.91	1086.83	1081.33	1075.97
9/9/03	4:00	34.87	42.15	44.14	55.21	34.40	23.40	22.38	1104.08	1099.02	1088.34	1088.90	1086.82	1081.35	1075.98

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
9/9/03	8:00	34.88	42.16	44.18	55.24	34.40	23.43	22.38	1104.06	1099.01	1088.30	1088.87	1086.82	1081.33	1075.98
9/9/03	12:00	34.89	42.18	44.18	55.25	34.39	23.42	22.39	1104.05	1098.99	1088.30	1088.86	1086.83	1081.33	1075.97
9/9/03	16:00	34.88	42.14	44.09	55.16	34.34	23.35	22.37	1104.06	1099.03	1088.39	1088.95	1086.88	1081.40	1075.99
9/9/03	20:00	34.87	42.12	44.10	55.17	34.38	23.35	22.39	1104.07	1099.05	1088.38	1088.94	1086.84	1081.40	1075.97
9/10/03	0:00	34.88	42.13	44.12	55.18	34.38	23.39	22.38	1104.06	1099.04	1088.36	1088.93	1086.84	1081.36	1075.98
9/10/03	4:00	34.88	42.13	44.12	55.17	34.37	23.37	22.36	1104.06	1099.04	1088.36	1088.94	1086.85	1081.38	1076.00
9/10/03	8:00	34.88	42.13	44.14	55.19	34.38	23.39	22.36	1104.06	1099.04	1088.34	1088.92	1086.84	1081.36	1076.00
9/10/03	12:00	34.89	42.13	44.11	55.16	34.37	23.38	22.37	1104.05	1099.05	1088.37	1088.95	1086.86	1081.38	1075.99
9/10/03	16:00	34.88	42.10	44.07	55.11	34.36	23.33	22.38	1104.06	1099.08	1088.41	1089.00	1086.87	1081.42	1075.98
9/10/03	20:00	34.87	42.08	44.09	55.14	34.40	23.35	22.41	1104.08	1099.09	1088.39	1088.97	1086.82	1081.41	1075.95
9/11/03	0:00	34.87	42.09	44.10	55.14	34.38	23.37	22.39	1104.07	1099.08	1088.38	1088.97	1086.84	1081.38	1075.97
9/11/03	4:00	34.87	42.09	44.10	55.15	34.39	23.38	22.38	1104.07	1099.08	1088.38	1088.96	1086.84	1081.37	1075.98
9/11/03	8:00	34.88	42.09	44.10	55.13	34.37	23.35	22.37	1104.06	1099.08	1088.39	1088.98	1086.85	1081.40	1075.99
9/11/03	12:00	34.86	42.07	44.11	55.14	34.38	23.37	22.36	1104.08	1099.10	1088.37	1088.97	1086.84	1081.38	1076.00
9/11/03	16:00	34.85	42.05	44.06	55.10	34.36	23.31	22.35	1104.09	1099.12	1088.42	1089.02	1086.86	1081.44	1076.01
9/11/03	20:00	34.85	42.06	44.13	55.17	34.40	23.36	22.36	1104.09	1099.11	1088.35	1088.94	1086.82	1081.39	1076.00
9/12/03	0:00	34.87	42.08	44.15	55.19	34.40	23.37	22.36	1104.08	1099.09	1088.33	1088.92	1086.82	1081.38	1076.00
9/12/03	4:00	34.87	42.09	44.14	55.19	34.40	23.36	22.35	1104.07	1099.08	1088.34	1088.92	1086.83	1081.39	1076.01
9/12/03	8:00	34.87	42.10	44.15	55.19	34.39	23.36	22.35	1104.07	1099.08	1088.33	1088.92	1086.83	1081.39	1076.01
9/12/03	12:00	34.88	42.11	44.14	55.18	34.38	23.35	22.35	1104.06	1099.06	1088.34	1088.93	1086.84	1081.40	1076.01
9/12/03	16:00	34.87	42.06	44.06	55.11	34.35	23.29	22.35	1104.07	1099.11	1088.42	1089.00	1086.87	1081.46	1076.01
9/12/03	20:00	34.85	42.07	44.10	55.14	34.40	23.30	22.37	1104.09	1099.11	1088.38	1088.97	1086.83	1081.45	1075.99
9/13/03	0:00	34.85	42.07	44.10	55.13	34.38	23.31	22.36	1104.09	1099.10	1088.38	1088.98	1086.84	1081.44	1076.00
9/13/03	4:00	34.85	42.07	44.13	55.17	34.41	23.35	22.37	1104.09	1099.10	1088.35	1088.94	1086.81	1081.40	1075.99
9/13/03	8:00	34.84	42.08	44.17	55.22	34.43	23.38	22.37	1104.10	1099.09	1088.31	1088.89	1086.80	1081.37	1075.99
9/13/03	12:00	34.86	42.11	44.23	55.28	34.43	23.41	22.38	1104.08	1099.06	1088.26	1088.83	1086.79	1081.34	1075.98
9/13/03	16:00	34.87	42.12	44.24	55.30	34.43	23.42	22.38	1104.08	1099.05	1088.24	1088.81	1086.79	1081.33	1075.98
9/13/03	20:00	34.88	42.15	44.28	55.36	34.44	23.44	22.39	1104.06	1099.02	1088.20	1088.75	1086.78	1081.31	1075.97
9/14/03	0:00	34.90	42.19	44.32	55.43	34.44	23.49	22.39	1104.04	1098.98	1088.16	1088.68	1086.78	1081.26	1075.97
9/14/03	4:00	34.92	42.22	44.31	55.44	34.42	23.49	22.37	1104.03	1098.95	1088.17	1088.67	1086.80	1081.26	1075.99
9/14/03	8:00	34.93	42.24	44.33	55.47	34.44	23.52	22.39	1104.01	1098.93	1088.15	1088.64	1086.78	1081.24	1075.97
9/14/03	12:00	34.95	42.27	44.32	55.49	34.42	23.54	22.39	1104.00	1098.90	1088.16	1088.62	1086.80	1081.21	1075.97
9/14/03	16:00	34.95	42.28	44.25	55.41	34.39	23.47	22.39	1104.00	1098.89	1088.23	1088.70	1086.83	1081.28	1075.97
9/14/03	20:00	34.94	42.28	44.26	55.41	34.41	23.49	22.39	1104.00	1098.89	1088.23	1088.70	1086.81	1081.26	1075.97
9/15/03	0:00	34.94	42.29	44.25	55.39	34.40	23.46	22.38	1104.00	1098.88	1088.23	1088.72	1086.82	1081.29	1075.98
9/15/03	4:00	34.94	42.29	44.23	55.37	34.39	23.46	22.36	1104.00	1098.88	1088.25	1088.75	1086.83	1081.29	1076.00
9/15/03	8:00	34.94	42.29	44.24	55.38	34.41	23.48	22.37	1104.00	1098.88	1088.24	1088.73	1086.81	1081.27	1075.99
9/15/03	12:00	34.94	42.29	44.20	55.33	34.38	23.44	22.36	1104.00	1098.88	1088.28	1088.78	1086.84	1081.31	1076.00
9/15/03	16:00	34.92	42.26	44.12	55.25	34.36	23.38	22.37	1104.02	1098.91	1088.36	1088.86	1086.86	1081.37	1075.99
9/15/03	20:00	34.91	42.25	44.15	55.27	34.40	23.40	22.40	1104.03	1098.92	1088.33	1088.84	1086.82	1081.35	1075.96

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
9/16/03	0:00	34.91	42.25	44.16	55.27	34.39	23.40	22.38	1104.03	1098.92	1088.32	1088.84	1086.83	1081.35	1075.98
9/16/03	4:00	34.90	42.24	44.15	55.25	34.39	23.39	22.36	1104.04	1098.93	1088.33	1088.86	1086.83	1081.36	1076.00
9/16/03	8:00	34.90	42.24	44.18	55.28	34.40	23.39	22.37	1104.04	1098.93	1088.31	1088.83	1086.82	1081.36	1075.99
9/16/03	12:00	34.90	42.23	44.15	55.24	34.38	23.37	22.37	1104.04	1098.94	1088.34	1088.87	1086.84	1081.38	1075.99
9/16/03	16:00	34.88	42.18	44.07	55.16	34.36	23.31	22.38	1104.06	1098.99	1088.41	1088.95	1086.86	1081.44	1075.98
9/16/03	20:00	34.87	42.17	44.10	55.18	34.39	23.35	22.39	1104.07	1099.00	1088.39	1088.93	1086.83	1081.40	1075.97
9/17/03	0:00	34.86	42.17	44.10	55.18	34.39	23.36	22.38	1104.08	1099.00	1088.38	1088.93	1086.83	1081.39	1075.98
9/17/03	4:00	34.86	42.15	44.08	55.15	34.37	23.32	22.36	1104.08	1099.02	1088.40	1088.96	1086.85	1081.43	1076.00
9/17/03	8:00	34.85	42.13	44.07	55.13	34.37	23.31	22.35	1104.09	1099.04	1088.41	1088.98	1086.85	1081.44	1076.01
9/17/03	12:00	34.84	42.12	44.06	55.12	34.37	23.31	22.37	1104.10	1099.05	1088.42	1088.99	1086.85	1081.44	1075.99
9/17/03	16:00	34.83	42.10	44.05	55.10	34.38	23.29	22.40	1104.11	1099.07	1088.43	1089.01	1086.84	1081.47	1075.96
9/17/03	20:00	34.83	42.11	44.11	55.16	34.42	23.33	22.42	1104.11	1099.06	1088.37	1088.95	1086.81	1081.42	1075.94
9/18/03	0:00	34.84	42.12	44.13	55.19	34.41	23.37	22.40	1104.10	1099.05	1088.35	1088.92	1086.81	1081.39	1075.96
9/18/03	4:00	34.86	42.14	44.19	55.26	34.44	23.40	22.41	1104.08	1099.03	1088.29	1088.85	1086.78	1081.35	1075.95
9/18/03	8:00	34.87	42.16	44.23	55.31	34.46	23.43	22.42	1104.07	1099.01	1088.25	1088.81	1086.76	1081.32	1075.94
9/18/03	12:00	34.88	42.18	44.31	55.40	34.46	23.50	22.41	1104.06	1098.99	1088.17	1088.71	1086.76	1081.26	1075.95
9/18/03	16:00	34.90	42.21	44.33	55.44	34.45	23.53	22.40	1104.05	1098.96	1088.15	1088.67	1086.77	1081.22	1075.96
9/18/03	20:00	34.92	42.24	44.33	55.47	34.45	23.54	22.41	1104.03	1098.93	1088.15	1088.65	1086.77	1081.21	1075.95
9/19/03	0:00	34.93	42.27	44.35	55.49	34.44	23.56	22.40	1104.01	1098.90	1088.14	1088.62	1086.78	1081.19	1075.96
9/19/03	4:00	34.94	42.29	44.31	55.46	34.42	23.54	22.38	1104.00	1098.89	1088.17	1088.65	1086.80	1081.21	1075.98
9/19/03	8:00	34.95	42.31	44.33	55.48	34.43	23.55	22.39	1103.99	1098.86	1088.15	1088.63	1086.79	1081.20	1075.97
9/19/03	12:00	34.96	42.32	44.31	55.46	34.42	23.53	22.39	1103.98	1098.85	1088.17	1088.65	1086.80	1081.22	1075.97
9/19/03	16:00	34.96	42.32	44.23	55.38	34.39	23.48	22.38	1103.98	1098.86	1088.25	1088.73	1086.83	1081.27	1075.98
9/19/03	20:00	34.96	42.32	44.26	55.41	34.43	23.51	22.41	1103.98	1098.85	1088.22	1088.70	1086.79	1081.24	1075.95
9/20/03	0:00	34.96	42.33	44.24	55.38	34.40	23.49	22.38	1103.98	1098.84	1088.24	1088.73	1086.82	1081.26	1075.98
9/20/03	4:00	34.96	42.33	44.24	55.38	34.42	23.48	22.37	1103.98	1098.84	1088.24	1088.73	1086.81	1081.27	1075.99
9/20/03	8:00	34.97	42.34	44.27	55.41	34.42	23.50	22.38	1103.97	1098.83	1088.21	1088.70	1086.80	1081.25	1075.98
9/20/03	12:00	34.97	42.34	44.23	55.37	34.39	23.51	22.36	1103.97	1098.83	1088.25	1088.75	1086.83	1081.25	1076.00
9/20/03	16:00	34.96	42.31	44.15	55.27	34.37	23.40	22.37	1103.98	1098.86	1088.33	1088.84	1086.85	1081.35	1075.99
9/20/03	20:00	34.95	42.30	44.18	55.29	34.41	23.42	22.39	1103.99	1098.87	1088.31	1088.82	1086.81	1081.33	1075.97
9/21/03	0:00	34.95	42.29	44.17	55.28	34.39	23.42	22.37	1103.99	1098.88	1088.31	1088.84	1086.83	1081.33	1075.99
9/21/03	4:00	34.94	42.27	44.14	55.24	34.38	23.39	22.36	1104.00	1098.90	1088.34	1088.87	1086.84	1081.36	1076.00
9/21/03	8:00	34.92	42.23	44.14	55.24	34.39	23.40	22.35	1104.02	1098.94	1088.34	1088.87	1086.83	1081.35	1076.01
9/21/03	12:00	34.92	42.23	44.12	55.22	34.40	23.37	22.36	1104.03	1098.95	1088.36	1088.89	1086.82	1081.38	1076.01
9/21/03	16:00	34.90	42.20	44.09	55.17	34.38	23.32	22.36	1104.04	1098.97	1088.39	1088.94	1086.84	1081.44	1076.01
9/21/03	20:00	34.90	42.20	44.14	55.21	34.42	23.37	22.38	1104.04	1098.97	1088.34	1088.90	1086.80	1081.38	1075.98
9/22/03	0:00	34.91	42.21	44.16	55.23	34.41	23.40	22.37	1104.03	1098.96	1088.32	1088.88	1086.81	1081.35	1076.00
9/22/03	4:00	34.91	42.21	44.16	55.24	34.41	23.40	22.36	1104.03	1098.96	1088.32	1088.87	1086.81	1081.35	1076.00
9/22/03	8:00	34.93	42.23	44.22	55.31	34.45	23.43	22.38	1104.01	1098.94	1088.26	1088.80	1086.77	1081.32	1075.98
9/22/03	12:00	34.94	42.25	44.25	55.35	34.43	23.46	22.40	1104.00	1098.92	1088.23	1088.76	1086.79	1081.29	1075.96

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
9/22/03	16:00	34.94	42.25	44.20	55.29	34.42	23.44	22.40	1104.00	1098.92	1088.28	1088.82	1086.80	1081.31	1075.96
9/22/03	20:00	34.95	42.27	44.26	55.36	34.45	23.48	22.44	1103.99	1098.90	1088.22	1088.75	1086.77	1081.27	1075.93
9/23/03	0:00	34.97	42.28	44.25	55.35	34.42	23.48	22.40	1103.98	1098.89	1088.23	1088.76	1086.80	1081.28	1075.96
9/23/03	4:00	34.97	42.28	44.23	55.33	34.42	23.47	22.38	1103.97	1098.89	1088.26	1088.78	1086.80	1081.28	1075.98
9/23/03	8:00	34.97	42.28	44.21	55.30	34.41	23.45	22.37	1103.97	1098.89	1088.27	1088.81	1086.81	1081.30	1075.99
9/23/03	12:00	34.96	42.24	44.12	55.20	34.36	23.39	22.36	1103.98	1098.93	1088.36	1088.91	1086.86	1081.36	1076.01
9/23/03	16:00	34.90	42.14	43.99	55.05	34.32	23.29	22.36	1104.04	1099.03	1088.49	1089.06	1086.90	1081.46	1076.00
9/23/03	20:00	34.88	42.11	44.00	55.04	34.36	23.29	22.38	1104.06	1099.06	1088.48	1089.07	1086.86	1081.46	1075.98
9/24/03	0:00	34.87	42.10	44.02	55.05	34.38	23.30	22.38	1104.07	1099.07	1088.47	1089.06	1086.84	1081.45	1075.99
9/24/03	4:00	34.87	42.09	44.03	55.06	34.39	23.30	22.37	1104.07	1099.08	1088.45	1089.05	1086.83	1081.45	1075.99
9/24/03	8:00	34.89	42.11	44.14	55.18	34.45	23.38	22.41	1104.05	1099.06	1088.34	1088.94	1086.77	1081.37	1075.95
9/24/03	12:00	34.92	42.16	44.23	55.28	34.47	23.45	22.43	1104.02	1099.01	1088.25	1088.83	1086.75	1081.30	1075.93
9/24/03	16:00	34.94	42.19	44.26	55.33	34.46	23.51	22.45	1104.00	1098.99	1088.23	1088.78	1086.76	1081.25	1075.91
9/24/03	20:00	34.97	42.23	44.33	55.42	34.48	23.58	22.47	1103.97	1098.94	1088.15	1088.69	1086.74	1081.17	1075.89
9/25/03	0:00	35.00	42.27	44.36	55.48	34.47	23.61	22.45	1103.94	1098.90	1088.12	1088.63	1086.75	1081.14	1075.91
9/25/03	4:00	35.02	42.29	44.35	55.47	34.45	23.62	22.43	1103.92	1098.88	1088.14	1088.64	1086.77	1081.13	1075.93
9/25/03	8:00	35.04	42.32	44.37	55.51	34.46	23.66	22.43	1103.90	1098.85	1088.11	1088.60	1086.76	1081.09	1075.93
9/25/03	12:00	35.05	42.33	44.27	55.41	34.40	23.59	22.41	1103.89	1098.84	1088.21	1088.70	1086.82	1081.16	1075.95
9/25/03	16:00	35.04	42.29	44.15	55.27	34.36	23.51	22.39	1103.91	1098.88	1088.34	1088.84	1086.86	1081.24	1075.97
9/25/03	20:00	35.01	42.26	44.11	55.21	34.39	23.47	22.41	1103.93	1098.91	1088.37	1088.90	1086.84	1081.28	1075.95
9/26/03	0:00	34.99	42.22	44.05	55.14	34.35	23.42	22.38	1103.95	1098.95	1088.43	1088.97	1086.87	1081.33	1075.99
9/26/03	4:00	34.95	42.15	43.98	55.04	34.33	23.36	22.35	1103.99	1099.02	1088.50	1089.07	1086.89	1081.39	1076.01
9/26/03	8:00	34.91	42.08	43.94	54.97	34.33	23.30	22.34	1104.03	1099.09	1088.54	1089.14	1086.89	1081.45	1076.02
9/26/03	12:00	34.90	42.08	44.00	55.02	34.39	23.32	22.40	1104.04	1099.09	1088.48	1089.09	1086.83	1081.43	1075.96
9/26/03	16:00	34.92	42.09	44.05	55.07	34.41	23.36	22.43	1104.02	1099.08	1088.43	1089.04	1086.81	1081.39	1075.93
9/26/03	20:00	34.94	42.12	44.16	55.20	34.46	23.47	22.47	1104.00	1099.05	1088.32	1088.91	1086.76	1081.28	1075.89
9/27/03	0:00	34.97	42.16	44.21	55.27	34.45	23.52	22.46	1103.97	1099.01	1088.27	1088.84	1086.77	1081.23	1075.91
9/27/03	4:00	34.99	42.18	44.21	55.28	34.44	23.54	22.43	1103.95	1098.99	1088.27	1088.84	1086.78	1081.21	1075.93
9/27/03	8:00	35.01	42.20	44.26	55.34	34.46	23.60	22.44	1103.93	1098.97	1088.22	1088.77	1086.76	1081.15	1075.92
9/27/03	12:00	35.03	42.23	44.24	55.33	34.44	23.58	22.44	1103.91	1098.94	1088.24	1088.78	1086.78	1081.17	1075.92
9/27/03	16:00	35.05	42.24	44.25	55.34	34.45	23.60	22.48	1103.89	1098.93	1088.23	1088.77	1086.77	1081.15	1075.88
9/27/03	20:00	35.07	42.28	44.31	55.42	34.48	23.66	22.49	1103.87	1098.90	1088.17	1088.69	1086.74	1081.10	1075.87
9/28/03	0:00	35.10	42.31	44.35	55.46	34.47	23.71	22.48	1103.84	1098.86	1088.14	1088.65	1086.75	1081.05	1075.89
9/28/03	4:00	35.12	42.34	44.35	55.49	34.47	23.73	22.46	1103.82	1098.83	1088.13	1088.62	1086.75	1081.02	1075.90
9/28/03	8:00	35.15	42.38	44.40	55.55	34.49	23.76	22.46	1103.79	1098.80	1088.08	1088.56	1086.73	1080.99	1075.90
9/28/03	12:00	35.17	42.41	44.38	55.54	34.46	23.78	22.45	1103.77	1098.77	1088.10	1088.57	1086.76	1080.97	1075.91
9/28/03	16:00	35.18	42.41	44.32	55.49	34.45	23.74	22.47	1103.76	1098.76	1088.16	1088.62	1086.78	1081.01	1075.90
9/28/03	20:00	35.19	42.43	44.35	55.52	34.47	23.78	22.48	1103.75	1098.74	1088.13	1088.59	1086.75	1080.97	1075.88
9/29/03	0:00	35.21	42.45	44.33	55.50	34.44	23.77	22.45	1103.73	1098.72	1088.15	1088.61	1086.78	1080.98	1075.91
9/29/03	4:00	35.22	42.47	44.34	55.51	34.45	23.79	22.44	1103.72	1098.71	1088.14	1088.60	1086.77	1080.96	1075.92

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
9/29/03	8:00	35.24	42.48	44.37	55.54	34.47	23.79	22.45	1103.71	1098.69	1088.11	1088.57	1086.75	1080.96	1075.91
9/29/03	12:00	35.25	42.51	44.35	55.53	34.45	23.80	22.44	1103.69	1098.67	1088.13	1088.58	1086.77	1080.95	1075.92
9/29/03	16:00	35.25	42.51	44.31	55.48	34.44	23.76	22.46	1103.69	1098.67	1088.18	1088.63	1086.78	1080.99	1075.91
9/29/03	20:00	35.26	42.51	44.35	55.52	34.48	23.79	22.48	1103.68	1098.66	1088.13	1088.59	1086.74	1080.96	1075.88
9/30/03	0:00	35.28	42.53	44.37	55.55	34.47	23.82	22.46	1103.66	1098.64	1088.11	1088.56	1086.75	1080.93	1075.90
9/30/03	4:00	35.30	42.55	44.36	55.55	34.46	23.83	22.45	1103.64	1098.62	1088.12	1088.56	1086.76	1080.92	1075.91
9/30/03	8:00	35.31	42.57	44.42	55.61	34.51	23.86	22.48	1103.63	1098.60	1088.06	1088.50	1086.71	1080.89	1075.89
9/30/03	12:00	35.32	42.58		55.60	34.46	23.88	22.44	1103.62	1098.59		1088.51	1086.76	1080.87	1075.92
9/30/03	16:00	35.42	42.57	44.31	55.53	34.44	23.82	22.41	1103.52	1098.60	1088.17	1088.59	1086.78	1080.94	1075.95
9/30/03	20:00	35.33	42.58	44.32	55.54	34.46	23.83	22.42	1103.62	1098.59	1088.16	1088.57	1086.76	1080.92	1075.94
10/1/03	0:00	35.33	42.59	44.31	55.52	34.45	23.85	22.41	1103.61	1098.58	1088.17	1088.59	1086.77	1080.91	1075.95
10/1/03	4:00	35.33	42.59	44.29	55.50	34.46	23.80	22.40	1103.61	1098.58	1088.19	1088.62	1086.76	1080.95	1075.96
10/1/03	8:00	35.33	42.59	44.28	55.47	34.44	23.78	22.40	1103.62	1098.58	1088.20	1088.64	1086.78	1080.97	1075.96
10/1/03	12:00	35.28	42.58	44.25	55.44	34.43	23.75	22.39	1103.66	1098.59	1088.23	1088.67	1086.79	1081.00	1075.97
10/1/03	16:00	35.29	42.55	44.18	55.34	34.51	23.71	22.41	1103.65	1098.62	1088.30	1088.78	1086.71	1081.04	1075.95
10/1/03	20:00	35.29	42.54	44.21	55.37	34.45	23.72	22.43	1103.65	1098.63	1088.27	1088.74	1086.77	1081.03	1075.93
10/2/03	0:00	35.31	42.55	44.25	55.41	34.46	23.76	22.43	1103.64	1098.62	1088.23	1088.70	1086.76	1080.99	1075.93
10/2/03	4:00	35.31	42.55	44.24	55.39	34.44	23.75	22.41	1103.63	1098.62	1088.24	1088.72	1086.78	1081.00	1075.95
10/2/03	8:00	35.31	42.55	44.25	55.40	34.45	23.77		1103.63	1098.62	1088.23	1088.71	1086.77	1080.99	
10/2/03	12:00	35.30	42.54	44.21	55.34	34.40	23.73	22.41	1103.64	1098.63	1088.27	1088.77	1086.82	1081.02	1075.95
10/2/03	16:00	35.26	42.48	44.10	55.23	34.37	23.69	22.41	1103.69	1098.69	1088.38	1088.88	1086.85	1081.06	1075.96
10/2/03	20:00	35.23	42.43	44.10	55.20	34.39	23.64	22.42	1103.71	1098.74	1088.38	1088.91	1086.83	1081.11	1075.94
10/3/03	0:00	35.21	42.39	44.07	55.15	34.38	23.62	22.40	1103.73	1098.78	1088.41	1088.96	1086.84	1081.13	1075.96
10/3/03	4:00	35.17	42.32	44.00	55.07	34.36	23.55	22.36	1103.77	1098.85	1088.48	1089.05	1086.87	1081.20	1076.00
10/3/03	8:00	35.15	42.30	44.03	55.09	34.39	23.56	22.38	1103.79	1098.87	1088.45	1089.02	1086.83	1081.19	1075.98
10/3/03	12:00	35.13	42.26	43.99	55.04	34.37	23.51	22.38	1103.81	1098.91	1088.49	1089.07	1086.85	1081.24	1075.98
10/3/03	16:00	35.11	42.22	43.97	55.00	34.37	23.50	22.41	1103.83	1098.95	1088.51	1089.11	1086.85	1081.25	1075.95
10/3/03	20:00	35.12	42.23	44.05	55.08	34.42	23.57	22.46	1103.82	1098.95	1088.43	1089.03	1086.80	1081.18	1075.90
10/4/03	0:00	35.14	42.25	44.13	55.17	34.44	23.64	22.46	1103.80	1098.92	1088.35	1088.94	1086.78	1081.11	1075.90
10/4/03	4:00	35.16	42.26	44.14	55.20	34.43	23.66	22.44	1103.78	1098.91	1088.34	1088.92	1086.79	1081.09	1075.92
10/4/03	8:00	35.18	42.29	44.20	55.27	34.46	23.71	22.45	1103.76	1098.88	1088.28	1088.84	1086.76	1081.04	1075.91
10/4/03	12:00	35.20	42.31	44.19	55.26	34.43	23.72	22.45	1103.74	1098.86	1088.29	1088.85	1086.79	1081.03	1075.91
10/4/03	16:00	35.20	42.30	44.13	55.19	34.41	23.68	22.46	1103.74	1098.87	1088.35	1088.92	1086.81	1081.07	1075.90
10/4/03	20:00	35.21	42.31	44.17	55.23	34.44	23.71	22.48	1103.74	1098.86	1088.31	1088.89	1086.78	1081.04	1075.89
10/5/03	0:00	35.21	42.31	44.16	55.22	34.42	23.71	22.46	1103.73	1098.86	1088.32	1088.89	1086.80	1081.04	1075.90
10/5/03	4:00	35.21	42.31	44.16	55.22	34.43	23.74	22.44	1103.73	1098.86	1088.32	1088.89	1086.79	1081.01	1075.92
10/5/03	8:00	35.22	42.33	44.19	55.25	34.44	23.74	22.44	1103.72	1098.84	1088.29	1088.86	1086.78	1081.01	1075.92
10/5/03	12:00	35.23	42.33	44.17	55.23	34.43	23.74	22.45	1103.71	1098.84	1088.31	1088.88	1086.79	1081.01	1075.91
10/5/03	16:00	35.21	42.32	44.14	55.20	34.42	23.70	22.48	1103.73	1098.86	1088.34	1088.91	1086.80	1081.05	1075.88
10/5/03	20:00	35.22	42.32	44.19	55.24	34.45	23.75	22.50	1103.72	1098.85	1088.29	1088.87	1086.77	1081.00	1075.86

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
10/6/03	0:00	35.23	42.34	44.21	55.27	34.45	23.78	22.48	1103.71	1098.83	1088.27	1088.84	1086.77	1080.97	1075.89
10/6/03	4:00	35.24	42.34	44.21	55.28	34.44	23.77	22.46	1103.70	1098.83	1088.27	1088.84	1086.78	1080.98	1075.90
10/6/03	8:00	35.26	42.36	44.25	55.32	34.46	23.81	22.46	1103.68	1098.81	1088.23	1088.79	1086.76	1080.94	1075.90
10/6/03	12:00	35.27	42.38	44.23	55.31	34.44	23.81	22.46	1103.67	1098.80	1088.25	1088.80	1086.78	1080.94	1075.90
10/6/03	16:00	35.25	42.36	44.18	55.25	34.42	23.77	22.48	1103.69	1098.81	1088.30	1088.86	1086.81	1080.98	1075.88
10/6/03	20:00	35.25	42.36	44.19	55.26	34.44	23.76	22.50	1103.69	1098.81	1088.29	1088.85	1086.78	1081.00	1075.86
10/7/03	0:00	35.26	42.37	44.22	55.29	34.45	23.81	22.49	1103.68	1098.80	1088.26	1088.82	1086.77	1080.94	1075.88
10/7/03	4:00	35.27	42.37	44.22	55.29	34.45	23.81	22.47	1103.67	1098.80	1088.26	1088.82	1086.78	1080.95	1075.89
10/7/03	8:00	35.28	42.39	44.25	55.33	34.46	23.83	22.45	1103.66	1098.79	1088.23	1088.78	1086.76	1080.92	1075.91
10/7/03	12:00	35.29	42.39	44.23	55.30	34.43	23.82	22.45	1103.65	1098.78	1088.26	1088.81	1086.79	1080.93	1075.91
10/7/03	16:00	35.26	42.35	44.15	55.22	34.41	23.76	22.47	1103.69	1098.82	1088.33	1088.89	1086.81	1080.99	1075.89
10/7/03	20:00	35.26	42.35	44.19	55.26	34.45	23.79	22.50	1103.68	1098.82	1088.29	1088.85	1086.77	1080.96	1075.87
10/8/03	0:00	35.28	42.37	44.23	55.30	34.45	23.82	22.49	1103.67	1098.80	1088.25	1088.81	1086.77	1080.93	1075.87
10/8/03	4:00	35.28	42.37	44.21	55.28	34.44	23.80	22.46	1103.66	1098.80	1088.27	1088.83	1086.78	1080.95	1075.90
10/8/03	8:00	35.30	42.39	44.24	55.32	34.46	23.84	22.46	1103.65	1098.79	1088.24	1088.79	1086.76	1080.91	1075.90
10/8/03	12:00	35.30	42.39	44.21	55.29	34.43	23.81	22.46	1103.64	1098.78	1088.27	1088.83	1086.79	1080.94	1075.90
10/8/03	16:00	35.28	42.37	44.19	55.27	34.45	23.78	22.49	1103.66	1098.80	1088.29	1088.84	1086.77	1080.97	1075.88
10/8/03	20:00	35.27	42.35	44.16	55.22	34.42	23.78	22.46	1103.67	1098.82	1088.32	1088.89	1086.80	1080.97	1075.90
10/9/03	0:00	35.26	42.34	44.17	55.23	34.45	23.79	22.46	1103.68	1098.83	1088.31	1088.88	1086.78	1080.96	1075.90
10/9/03	4:00	35.26	42.33	44.15	55.22	34.43	23.76	22.44	1103.68	1098.84	1088.33	1088.89	1086.79	1080.99	1075.92
10/9/03	8:00	35.28	42.35	44.21	55.27	34.47	23.81	22.45	1103.66	1098.83	1088.27	1088.84	1086.75	1080.95	1075.91
10/9/03	12:00	35.30	42.36	44.22	55.28	34.45	23.81	22.46	1103.64	1098.81	1088.26	1088.83	1086.77	1080.94	1075.90
10/9/03	16:00	35.28	42.35	44.16	55.23	34.43	23.77	22.47	1103.66	1098.83	1088.32	1088.89	1086.79	1080.98	1075.89
10/9/03	20:00	35.28	42.35	44.19	55.25	34.45	23.79	22.49	1103.66	1098.82	1088.29	1088.86	1086.77	1080.96	1075.87
10/10/03	0:00	35.30	42.36	44.22	55.28	34.46	23.83	22.47	1103.64	1098.81	1088.27	1088.84	1086.76	1080.92	1075.89
10/10/03	4:00	35.30	42.36	44.20	55.26	34.45	23.81	22.46	1103.64	1098.81	1088.28	1088.85	1086.78	1080.95	1075.90
10/10/03	8:00	35.31	42.38	44.24	55.31	34.47	23.84	22.46	1103.63	1098.80	1088.24	1088.80	1086.75	1080.91	1075.90
10/10/03	12:00	35.32	42.39	44.23	55.29	34.44	23.83	22.45	1103.62	1098.78	1088.26	1088.82	1086.78	1080.92	1075.91
10/10/03	16:00	35.28	42.32	44.13	55.19	34.42	23.75	22.44	1103.66	1098.85	1088.35	1088.92	1086.81	1081.00	1075.92
10/10/03	20:00	35.28	42.33	44.16	55.21	34.45	23.77	22.47	1103.66	1098.84	1088.32	1088.90	1086.77	1080.98	1075.89
10/11/03	0:00	35.29	42.33	44.15	55.20	34.43	23.77	22.45	1103.65	1098.84	1088.33	1088.91	1086.79	1080.98	1075.91
10/11/03	4:00	35.27	42.30	44.12	55.18	34.43	23.75	22.44	1103.67	1098.87	1088.36	1088.94	1086.79	1081.00	1075.92
10/11/03	8:00	35.28	42.31	44.18	55.22	34.46	23.80	22.45	1103.66	1098.86	1088.31	1088.89	1086.76	1080.95	1075.91
10/11/03	12:00	35.29	42.32	44.23	55.29	34.49	23.82	22.46	1103.65	1098.85	1088.25	1088.82	1086.73	1080.93	1075.90
10/11/03	16:00	35.32	42.36	44.31	55.38	34.51	23.88	22.48	1103.62	1098.81	1088.17	1088.73	1086.71	1080.87	1075.88
10/11/03	20:00	35.35	42.41	44.37	55.46	34.51	23.95	22.49	1103.59	1098.76	1088.11	1088.65	1086.71	1080.81	1075.87
10/12/03	0:00	35.38	42.45	44.40	55.52	34.51	23.97	22.49	1103.56	1098.72	1088.08	1088.60	1086.71	1080.78	1075.87
10/12/03	4:00	35.41	42.48	44.38	55.51	34.48	23.97	22.46	1103.53	1098.69	1088.10	1088.60	1086.74	1080.78	1075.90
10/12/03	8:00	35.42	42.50	44.37	55.51	34.48	23.99	22.46	1103.52	1098.67	1088.11	1088.60	1086.74	1080.76	1075.90
10/12/03	12:00	35.43	42.51	44.32	55.46	34.45	23.94	22.45	1103.51	1098.66	1088.16	1088.65	1086.78	1080.81	1075.91

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
10/12/03	16:00	35.40	42.48	44.19	55.32	34.41	23.85	22.44	1103.54	1098.69	1088.29	1088.79	1086.81	1080.90	1075.92
10/12/03	20:00	35.38	42.46	44.20	55.31	34.44	23.84	22.46	1103.56	1098.71	1088.28	1088.80	1086.78	1080.91	1075.90
10/13/03	0:00	35.38	42.45	44.19	55.29	34.44	23.84	22.45	1103.56	1098.72	1088.29	1088.82	1086.78	1080.91	1075.91
10/13/03	4:00	35.36	42.42	44.15	55.25	34.43	23.81	22.43	1103.58	1098.75	1088.33	1088.86	1086.79	1080.94	1075.93
10/13/03	8:00	35.36	42.41	44.16	55.24	34.43	23.81	22.43	1103.58	1098.76	1088.32	1088.87	1086.79	1080.94	1075.94
10/13/03	12:00	35.33	42.36	44.10	55.17	34.40	23.77	22.40	1103.61	1098.81	1088.38	1088.94	1086.82	1080.99	1075.96
10/13/03	16:00	35.27	42.27	44.03	55.08	34.39	23.68	22.41	1103.67	1098.90	1088.45	1089.03	1086.83	1081.07	1075.95
10/13/03	20:00	35.28	42.30	44.19	55.23	34.50	23.80	22.47	1103.66	1098.87	1088.29	1088.88	1086.72	1080.95	1075.89
10/14/03	0:00	35.31	42.34	44.24	55.31	34.50	23.85	22.47	1103.63	1098.83	1088.24	1088.80	1086.72	1080.91	1075.89
10/14/03	4:00	35.33	42.36	44.26	55.34	34.49	23.86	22.46	1103.61	1098.81	1088.22	1088.78	1086.73	1080.89	1075.90
10/14/03	8:00	35.35	42.39	44.29	55.38	34.49	23.87	22.45	1103.59	1098.78	1088.19	1088.73	1086.73	1080.88	1075.91
10/14/03	12:00	35.38	42.42	44.30	55.41	34.48	23.91	22.45	1103.56	1098.75	1088.18	1088.70	1086.74	1080.84	1075.91
10/14/03	16:00	35.39	42.43	44.27	55.36	34.46	23.87	22.46	1103.55	1098.74	1088.22	1088.75	1086.76	1080.88	1075.90
10/14/03	20:00	35.40	42.44	44.26	55.36	34.47	23.86	22.45	1103.54	1098.73	1088.22	1088.75	1086.75	1080.89	1075.91
10/15/03	0:00	35.41	42.46	44.29	55.39	34.48	23.88	22.47	1103.53	1098.71	1088.19	1088.72	1086.75	1080.87	1075.89
10/15/03	4:00	35.43	42.48	44.30	55.41	34.47	23.91	22.45	1103.51	1098.69	1088.18	1088.70	1086.75	1080.85	1075.91
10/15/03	8:00	35.43	42.48	44.28	55.39	34.47	23.88	22.44	1103.51	1098.69	1088.20	1088.72	1086.75	1080.87	1075.92
10/15/03	12:00	35.43	42.48	44.24	55.35	34.44	23.86	22.43	1103.51	1098.69	1088.24	1088.76	1086.78	1080.89	1075.93
10/15/03	16:00	35.39	42.45	44.17	55.25	34.43	23.79	22.44	1103.55	1098.73	1088.31	1088.86	1086.79	1080.96	1075.92
10/15/03	20:00	35.39	42.44	44.19	55.27	34.45	23.79	22.46	1103.55	1098.74	1088.29	1088.84	1086.77	1080.96	1075.90
10/16/03	0:00	35.40	42.44	44.22	55.30	34.47	23.81	22.45	1103.54	1098.73	1088.26	1088.81	1086.75	1080.94	1075.91
10/16/03	4:00	35.41	42.46	44.27	55.36	34.49	23.85	22.46	1103.53	1098.71	1088.21	1088.75	1086.73	1080.90	1075.90
10/16/03	8:00	35.43	42.48	44.29	55.38	34.48	23.86	22.45	1103.51	1098.69	1088.19	1088.73	1086.74	1080.89	1075.91
10/16/03	12:00	35.45	42.49	44.30	55.40	34.48	23.88	22.45	1103.50	1098.68	1088.19	1088.71	1086.75	1080.87	1075.91
10/16/03	16:00	35.47	42.53	44.41	55.51	34.55	23.96	22.49	1103.47	1098.64	1088.07	1088.60	1086.67	1080.80	1075.87
10/16/03	20:00	35.48	42.56	44.42	55.56	34.53	23.99	22.48	1103.46	1098.61	1088.06	1088.55	1086.69	1080.76	1075.88
10/17/03	0:00	35.51	42.59	44.41	55.57	34.48	23.99	22.45	1103.43	1098.58	1088.07	1088.54	1086.74	1080.77	1075.92
10/17/03	4:00	35.53	42.63	44.44	55.61	34.52	24.02	22.46	1103.41	1098.55	1088.04	1088.50	1086.70	1080.74	1075.90
10/17/03	8:00	35.55	42.66	44.45	55.65	34.52	24.04	22.46	1103.39	1098.52	1088.03	1088.46	1086.70	1080.71	1075.90
10/17/03	12:00	35.56	42.67	44.38	55.58	34.46	24.02	22.44	1103.38	1098.50	1088.10	1088.53	1086.76	1080.73	1075.93
10/17/03	16:00	35.55	42.65	44.30	55.47	34.45	23.92	22.43	1103.39	1098.52	1088.19	1088.64	1086.77	1080.83	1075.93
10/17/03	20:00	35.53	42.64	44.25	55.41	34.44	23.89	22.42	1103.41	1098.54	1088.23	1088.70	1086.78	1080.86	1075.94
10/18/03	0:00	35.52	42.62	44.23	55.38	34.45	23.86	22.41	1103.42	1098.55	1088.25	1088.73	1086.77	1080.89	1075.95
10/18/03	4:00	35.50	42.59	44.19	55.32	34.44	23.82	22.40	1103.44	1098.58	1088.29	1088.79	1086.78	1080.93	1075.96
10/18/03	8:00	35.49	42.58	44.22	55.34	34.47	23.82	22.42	1103.45	1098.59	1088.26	1088.77	1086.75	1080.93	1075.94
10/18/03	12:00	35.49	42.57	44.20	55.32	34.44	23.81	22.41	1103.45	1098.60	1088.28	1088.79	1086.78	1080.94	1075.95
10/18/03	16:00	35.47	42.54	44.17	55.28	34.45	23.78	22.44	1103.47	1098.64	1088.31	1088.83	1086.77	1080.97	1075.93
10/18/03	20:00	35.48	42.54	44.22	55.32	34.48	23.81	22.46	1103.46	1098.64	1088.27	1088.79	1086.74	1080.94	1075.90
10/19/03	0:00	35.49	42.54	44.23	55.34	34.47	23.83	22.43	1103.45	1098.63	1088.25	1088.77	1086.75	1080.92	1075.93
10/19/03	4:00	35.49	42.54	44.22	55.33	34.46	23.81	22.43	1103.45	1098.63	1088.26	1088.78	1086.76	1080.94	1075.93

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
10/19/03	8:00	35.50	42.56	44.28	55.39	34.50	23.85	22.45	1103.44	1098.61	1088.20	1088.72	1086.72	1080.90	1075.91
10/19/03	12:00	35.51	42.56	44.26	55.37	34.47	23.85	22.44	1103.43	1098.61	1088.22	1088.74	1086.75	1080.90	1075.92
10/19/03	16:00	35.48	42.53	44.19	55.29	34.45	23.79	22.45	1103.46	1098.64	1088.29	1088.82	1086.78	1080.96	1075.91
10/19/03	20:00	35.47	42.51	44.18	55.27	34.46	23.76	22.46	1103.47	1098.66	1088.30	1088.84	1086.76	1080.99	1075.91
10/20/03	0:00	35.47	42.50	44.18	55.26	34.46	23.78	22.44	1103.48	1098.67	1088.30	1088.85	1086.76	1080.98	1075.92
10/20/03	4:00	35.45	42.47	44.15	55.23	34.45	23.73	22.42	1103.49	1098.70	1088.33	1088.88	1086.78	1081.02	1075.94
10/20/03	8:00	35.45	42.47	44.18	55.25	34.47	23.75	22.44	1103.49	1098.70	1088.30	1088.86	1086.75	1081.01	1075.92
10/20/03	12:00	35.46	42.48	44.20	55.27	34.47	23.77	22.46	1103.48	1098.69	1088.28	1088.84	1086.75	1080.98	1075.91
10/20/03	16:00	35.47	42.48	44.23	55.31	34.49	23.81	22.50	1103.47	1098.69	1088.25	1088.81	1086.73	1080.95	1075.86
10/20/03	20:00	35.49	42.51	44.29	55.38	34.52	23.85	22.51	1103.45	1098.66	1088.19	1088.73	1086.70	1080.90	1075.85
10/21/03	0:00	35.51	42.53	44.31	55.41	34.50	23.88	22.48	1103.43	1098.64	1088.17	1088.70	1086.72	1080.87	1075.88
10/21/03	4:00	35.52	42.55	44.31	55.42	34.50	23.86	22.47	1103.42	1098.62	1088.17	1088.69	1086.72	1080.89	1075.89
10/21/03	8:00	35.54	42.57	44.32	55.43	34.50	23.88	22.47	1103.40	1098.60	1088.16	1088.68	1086.72	1080.87	1075.89
10/21/03	12:00	35.54	42.56	44.26	55.37	34.46	23.83	22.45	1103.40	1098.61	1088.22	1088.74	1086.76	1080.92	1075.91
10/21/03	16:00	35.49	42.51	44.19	55.28	34.45	23.75	22.47	1103.45	1098.66	1088.30	1088.84	1086.78	1081.00	1075.90
10/21/03	20:00	35.50	42.51	44.21	55.29	34.48	23.78	22.48	1103.45	1098.66	1088.27	1088.82	1086.75	1080.97	1075.88
10/22/03	0:00	35.51	42.52	44.25	55.34	34.49	23.81	22.48	1103.43	1098.65	1088.23	1088.78	1086.73	1080.94	1075.88
10/22/03	4:00	35.52	42.53	44.27	55.36	34.50	23.82	22.47	1103.42	1098.64	1088.21	1088.75	1086.72	1080.93	1075.89
10/22/03	8:00	35.54	42.56	44.33	55.42	34.52	23.86	22.48	1103.40	1098.62	1088.15	1088.69	1086.70	1080.89	1075.88
10/22/03	12:00	35.55	42.56	44.28	55.37	34.47	23.84	22.46	1103.39	1098.61	1088.20	1088.74	1086.75	1080.91	1075.90
10/22/03	16:00	35.50	42.51	44.17	55.26	34.44	23.78	22.46	1103.44	1098.67	1088.31	1088.85	1086.78	1080.97	1075.91
10/22/03	20:00	35.49	42.48	44.16	55.23	34.45	23.74	22.46	1103.45	1098.69	1088.32	1088.89	1086.77	1081.01	1075.91
10/23/03	0:00	35.48	42.47	44.16	55.22	34.45	23.73	22.44	1103.46	1098.71	1088.32	1088.89	1086.77	1081.02	1075.92
10/23/03	4:00	35.49	42.47	44.21	55.27	34.49	23.76	22.46	1103.45	1098.70	1088.27	1088.84	1086.73	1080.99	1075.90
10/23/03	8:00	35.51	42.49	44.27	55.34	34.51	23.79	22.47	1103.43	1098.68	1088.22	1088.78	1086.71	1080.96	1075.90
10/23/03	12:00	35.52	42.50	44.24	55.31	34.47	23.77	22.46	1103.42	1098.67	1088.24	1088.80	1086.75	1080.98	1075.91
10/23/03	16:00	35.50	42.47	44.17	55.24	34.45	23.74	22.45	1103.44	1098.70	1088.31	1088.87	1086.77	1081.01	1075.91
10/23/03	20:00	35.49	42.46	44.18	55.24	34.47	23.74	22.47	1103.45	1098.71	1088.30	1088.87	1086.75	1081.02	1075.90
10/24/03	0:00	35.49	42.45	44.17	55.22	34.46	23.72	22.45	1103.45	1098.72	1088.31	1088.89	1086.76	1081.03	1075.91
10/24/03	4:00	35.46	42.40	44.11	55.15	34.43	23.68	22.42	1103.48	1098.77	1088.37	1088.96	1086.79	1081.07	1075.94
10/24/03	8:00	35.45	42.40	44.14	55.17	34.47	23.68	22.43	1103.49	1098.77	1088.34	1088.94	1086.75	1081.07	1075.93
10/24/03	12:00	35.47	42.41	44.18	55.21	34.49	23.71	22.46	1103.48	1098.76	1088.31	1088.90	1086.73	1081.04	1075.90
10/24/03	16:00	35.49	42.43	44.25	55.29	34.52	23.76	22.49	1103.45	1098.74	1088.23	1088.82	1086.70	1080.99	1075.87
10/24/03	20:00	35.52	42.48	44.36	55.43	34.55	23.87	22.50	1103.42	1098.69	1088.12	1088.68	1086.67	1080.88	1075.86
10/25/03	0:00	35.56	42.53	44.39	55.48	34.53	23.90	22.48	1103.38	1098.64	1088.09	1088.63	1086.69	1080.86	1075.88
10/25/03	4:00	35.59	42.58	44.47	55.60	34.56	23.97	22.50	1103.35	1098.59	1088.01	1088.51	1086.66	1080.78	1075.86
10/25/03	8:00	35.63	42.65	44.54	55.70	34.58	24.06	22.51	1103.31	1098.52	1087.94	1088.41	1086.64	1080.69	1075.85
10/25/03	12:00	35.66	42.69	44.50	55.69	34.53	24.08	22.49	1103.28	1098.48	1087.98	1088.42	1086.69	1080.67	1075.87
10/25/03	16:00	35.67	42.70	44.45	55.65	34.52	24.02	22.48	1103.27	1098.47	1088.03	1088.46	1086.70	1080.73	1075.88
10/25/03	20:00	35.70	42.74	44.50	55.71	34.55	24.08	22.50	1103.24	1098.43	1087.98	1088.40	1086.67	1080.67	1075.86

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
10/26/03	0:00	35.72	42.78	44.47	55.69	34.52	24.07	22.49	1103.22	1098.39	1088.01	1088.42	1086.70	1080.68	1075.88
10/26/03	4:00	35.73	42.78	44.42	55.64	34.50	24.03	22.46	1103.21	1098.39	1088.06	1088.47	1086.72	1080.72	1075.90
10/26/03	8:00	35.73	42.79	44.41	55.62	34.51	24.03	22.45	1103.21	1098.38	1088.07	1088.49	1086.72	1080.72	1075.91
10/26/03	12:00	35.71	42.77	44.28	55.46	34.43	23.92	22.40	1103.23	1098.40	1088.20	1088.65	1086.79	1080.83	1075.96
10/26/03	16:00	35.65	42.68	44.13	55.28	34.40	23.80	22.38	1103.29	1098.49	1088.35	1088.83	1086.82	1080.95	1075.98
10/26/03	20:00	35.61	42.61	44.10	55.21	34.40	23.73	22.37	1103.33	1098.56	1088.38	1088.90	1086.82	1081.02	1075.99
10/27/03	0:00	35.59	42.58	44.09	55.18	34.43	23.72	22.38	1103.35	1098.59	1088.39	1088.93	1086.79	1081.03	1075.98
10/27/03	4:00	35.58	42.55	44.11	55.19	34.45	23.70	22.40	1103.36	1098.62	1088.37	1088.92	1086.78	1081.05	1075.97
10/27/03	8:00	35.58	42.54	44.14	55.21	34.46	23.71	22.40	1103.36	1098.63	1088.34	1088.90	1086.76	1081.04	1075.96
10/27/03	12:00	35.57	42.51	44.09	55.16	34.42	23.69	22.37	1103.38	1098.66	1088.39	1088.95	1086.80	1081.06	1075.99
10/27/03	16:00	35.49	42.39	43.95	55.00	34.38	23.55	22.34	1103.45	1098.78	1088.53	1089.11	1086.84	1081.20	1076.02
10/27/03	20:00	35.45	42.33	43.93	54.94	34.39	23.50	22.36	1103.49	1098.84	1088.55	1089.17	1086.83	1081.25	1076.00
10/28/03	0:00	35.45	42.33	44.00	55.01	34.45	23.57	22.39	1103.50	1098.84	1088.48	1089.10	1086.78	1081.18	1075.97
10/28/03	4:00	35.45	42.33	44.02	55.02	34.45	23.58	22.39	1103.49	1098.84	1088.47	1089.09	1086.77	1081.17	1075.98
10/28/03	8:00	35.47	42.35	44.14	55.15	34.51	23.65	22.44	1103.47	1098.82	1088.34	1088.96	1086.71	1081.10	1075.92
10/28/03	12:00	35.49	42.38	44.15	55.17	34.47	23.65	22.42	1103.45	1098.80	1088.33	1088.94	1086.75	1081.10	1075.94
10/28/03	16:00	35.50	42.38	44.12	55.14	34.46	23.63	22.43	1103.44	1098.79	1088.36	1088.97	1086.76	1081.12	1075.93
10/28/03	20:00	35.51	42.39	44.16	55.19	34.48	23.66	22.43	1103.43	1098.78	1088.32	1088.92	1086.74	1081.09	1075.93
10/29/03	0:00	35.53	42.41	44.16	55.20	34.48	23.66	22.42	1103.41	1098.76	1088.32	1088.92	1086.74	1081.09	1075.94
10/29/03	4:00	35.53	42.41	44.16	55.19	34.46	23.67	22.42	1103.41	1098.76	1088.32	1088.92	1086.76	1081.08	1075.95
10/29/03	8:00	35.52	42.39	44.10	55.13	34.44	23.62	22.40	1103.43	1098.78	1088.38	1088.98	1086.78	1081.13	1075.96
10/29/03	12:00	35.47	42.32	44.01	55.01	34.40	23.55	22.37	1103.47	1098.85	1088.47	1089.10	1086.82	1081.20	1075.99
10/29/03	16:00	35.41	42.25	43.96	54.94	34.41	23.48	22.40	1103.53	1098.92	1088.52	1089.17	1086.81	1081.28	1075.97
10/29/03	20:00	35.42	42.25	44.02	54.99	34.46	23.51	22.43	1103.52	1098.92	1088.46	1089.12	1086.76	1081.24	1075.93
10/30/03	0:00	35.42	42.25	44.02	54.99	34.44	23.51	22.40	1103.52	1098.92	1088.46	1089.12	1086.78	1081.24	1075.96
10/30/03	4:00	35.41	42.24	44.02	54.99	34.45	23.51	22.41	1103.53	1098.93	1088.47	1089.13	1086.77	1081.24	1075.95
10/30/03	8:00	35.42	42.25	44.09	55.06	34.49	23.56	22.44	1103.52	1098.93	1088.40	1089.05	1086.73	1081.20	1075.92
10/30/03	12:00	35.45	42.29	44.19	55.19	34.53	23.66	22.47	1103.49	1098.88	1088.29	1088.92	1086.69	1081.09	1075.89
10/30/03	16:00	35.49	42.34	44.27	55.30	34.54	23.73	22.48	1103.45	1098.83	1088.21	1088.81	1086.68	1081.02	1075.88
10/30/03	20:00	35.53	42.41	44.36	55.42	34.56	23.80	22.50	1103.41	1098.76	1088.12	1088.69	1086.66	1080.95	1075.87
10/31/03	0:00	35.58	42.48	44.43	55.53	34.58	23.88	22.50	1103.36	1098.70	1088.05	1088.58	1086.64	1080.87	1075.86
10/31/03	4:00	35.62	42.53	44.46	55.58	34.57	23.91	22.50	1103.32	1098.64	1088.02	1088.53	1086.65	1080.84	1075.86
10/31/03	8:00	35.67	42.60	44.54	55.70	34.60	24.00	22.51	1103.27	1098.57	1087.94	1088.41	1086.62	1080.75	1075.85
10/31/03	12:00	35.72	42.67	44.57	55.76	34.57	24.08	22.50	1103.23	1098.50	1087.91	1088.35	1086.65	1080.67	1075.86
10/31/03	16:00	35.74	42.71	44.53	55.74	34.56	24.07	22.49	1103.20	1098.46	1087.95	1088.37	1086.66	1080.68	1075.88
10/31/03	20:00	35.77	42.75	44.54	55.76	34.55	24.09	22.48	1103.17	1098.42	1087.94	1088.35	1086.67	1080.66	1075.88
11/1/03	0:00	35.79	42.79	44.54	55.78	34.55	24.11	22.48	1103.15	1098.38	1087.94	1088.33	1086.67	1080.64	1075.88
11/1/03	4:00	35.81	42.82	44.48	55.72	34.52	24.07	22.46	1103.13	1098.36	1088.00	1088.39	1086.70	1080.68	1075.90
11/1/03	8:00	35.82	42.83	44.45	55.68	34.52	24.04	22.45	1103.12	1098.34	1088.03	1088.43	1086.70	1080.71	1075.91
11/1/03	12:00	35.81	42.82	44.37	55.58	34.47	23.98	22.41	1103.13	1098.35	1088.11	1088.53	1086.75	1080.77	1075.95

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
11/1/03	16:00	35.79	42.79	44.27	55.46	34.46	23.92	22.40	1103.15	1098.38	1088.21	1088.65	1086.76	1080.83	1075.96
11/1/03	20:00	35.78	42.78	44.26	55.43	34.49	23.88	22.41	1103.16	1098.39	1088.22	1088.68	1086.74	1080.87	1075.95
11/2/03	0:00	35.78	42.77	44.25	55.40	34.47	23.84	22.40	1103.16	1098.40	1088.23	1088.71	1086.75	1080.91	1075.96
11/2/03	4:00	35.78	42.76	44.26	55.40	34.49	23.82	22.40	1103.16	1098.41	1088.23	1088.71	1086.73	1080.93	1075.96
11/2/03	8:00	35.79	42.77	44.29	55.43	34.50	23.85	22.41	1103.16	1098.40	1088.19	1088.68	1086.72	1080.90	1075.95
11/2/03	12:00	35.79	42.77	44.28	55.42	34.49	23.84	22.39	1103.16	1098.40	1088.20	1088.70	1086.73	1080.91	1075.97
11/2/03	16:00	35.78	42.76	44.27	55.41	34.50	23.81	22.41	1103.16	1098.41	1088.22	1088.70	1086.72	1080.94	1075.95
11/2/03	20:00	35.78	42.76	44.28	55.42	34.51	23.83	22.42	1103.16	1098.41	1088.20	1088.69	1086.71	1080.92	1075.94
11/3/03	0:00	35.78	42.75	44.26	55.39	34.49	23.80	22.40	1103.16	1098.42	1088.22	1088.72	1086.74	1080.95	1075.96
11/3/03	4:00	35.76	42.73	44.24	55.36	34.49	23.77	22.40	1103.18	1098.44	1088.24	1088.75	1086.73	1080.98	1075.96
11/3/03	8:00	35.74	42.71	44.21	55.33	34.49	23.74	22.40	1103.20	1098.46	1088.27	1088.78	1086.73	1081.01	1075.96
11/3/03	12:00	35.72	42.66	44.15	55.24	34.45	23.70	22.37	1103.22	1098.51	1088.33	1088.87	1086.77	1081.06	1075.99
11/3/03	16:00	35.68	42.59	44.10	55.17	34.44	23.62	22.36	1103.26	1098.58	1088.39	1088.94	1086.78	1081.13	1076.00
11/3/03	20:00	35.65	42.56	44.14	55.21	34.48	23.65	22.38	1103.29	1098.61	1088.34	1088.90	1086.74	1081.10	1075.98
11/4/03	0:00	35.65	42.55	44.12	55.18	34.46	23.60	22.37	1103.29	1098.62	1088.36	1088.93	1086.77	1081.16	1075.99
11/4/03	4:00	35.63	42.52	44.12	55.17	34.47	23.60	22.37	1103.31	1098.65	1088.36	1088.94	1086.75	1081.16	1075.99
11/4/03	8:00	35.65	42.55	44.22	55.30	34.54	23.68	22.42	1103.29	1098.62	1088.26	1088.81	1086.68	1081.07	1075.94
11/4/03	12:00	35.68	42.59	44.30	55.38	34.54	23.73	22.42	1103.26	1098.58	1088.19	1088.73	1086.68	1081.02	1075.94
11/4/03	16:00	35.70	42.61	44.31	55.41	34.54	23.75	22.43	1103.24	1098.56	1088.17	1088.70	1086.68	1081.00	1075.94
11/4/03	20:00	35.74	42.66	44.41	55.53	34.57	23.83	22.45	1103.21	1098.51	1088.07	1088.58	1086.65	1080.92	1075.91
11/5/03	0:00	35.77	42.70	44.44	55.58	34.56	23.87	22.44	1103.17	1098.47	1088.04	1088.53	1086.66	1080.88	1075.92
11/5/03	4:00	35.79	42.73	44.45	55.61	34.56	23.88	22.45	1103.15	1098.44	1088.03	1088.50	1086.66	1080.87	1075.91
11/5/03	8:00	35.82	42.79	44.50	55.68	34.57	23.94	22.46	1103.12	1098.39	1087.98	1088.43	1086.65	1080.81	1075.90
11/5/03	12:00	35.85	42.82	44.48	55.68	34.53	23.93	22.44	1103.09	1098.35	1088.00	1088.44	1086.69	1080.82	1075.92
11/5/03	16:00	35.85	42.82	44.43	55.62	34.53	23.89	22.43	1103.09	1098.35	1088.05	1088.49	1086.69	1080.86	1075.93
11/5/03	20:00	35.87	42.85	44.47	55.66	34.56	23.94	22.45	1103.07	1098.32	1088.01	1088.45	1086.66	1080.81	1075.91
11/6/03	0:00	35.89	42.88	44.49	55.69	34.56	23.97	22.45	1103.05	1098.29	1087.99	1088.42	1086.66	1080.78	1075.91
11/6/03	4:00	35.90	42.90	44.47	55.68	34.54	23.97	22.44	1103.04	1098.27	1088.01	1088.44	1086.68	1080.78	1075.93
11/6/03	8:00	35.92	42.93	44.52	55.73	34.57	24.00	22.46	1103.02	1098.24	1087.97	1088.38	1086.65	1080.75	1075.90
11/6/03	12:00	35.93	42.94	44.47	55.69	34.53	23.97	22.43	1103.01	1098.23	1088.01	1088.42	1086.69	1080.78	1075.93
11/6/03	16:00	35.93	42.94	44.42	55.63	34.53	23.93	22.43	1103.01	1098.23	1088.06	1088.48	1086.69	1080.82	1075.93
11/6/03	20:00	35.93	42.95	44.42	55.61	34.53	23.92	22.42	1103.01	1098.22	1088.06	1088.50	1086.69	1080.83	1075.94
11/7/03	0:00	35.94	42.96	44.43	55.63	34.54	23.95	22.42	1103.00	1098.21	1088.05	1088.48	1086.69	1080.80	1075.94
11/7/03	4:00	35.94	42.96	44.39	55.58	34.52	23.88	22.42	1103.00	1098.21	1088.10	1088.53	1086.70	1080.87	1075.94
11/7/03	8:00	35.95	42.97	44.43	55.63	34.55	23.92	22.43	1102.99	1098.20	1088.05	1088.49	1086.67	1080.83	1075.93
11/7/03	12:00	35.96	42.99	44.43	55.63	34.53	23.93	22.42	1102.98	1098.18	1088.05	1088.48	1086.69	1080.82	1075.94
11/7/03	16:00	35.95	42.97	44.39	55.58	34.52	23.88	22.41	1102.99	1098.20	1088.09	1088.54	1086.70	1080.87	1075.95
11/7/03	20:00	35.96	42.99	44.43	55.61	34.55	23.92	22.43	1102.98	1098.18	1088.06	1088.50	1086.67	1080.83	1075.93
11/8/03	0:00	35.98	43.01	44.46	55.65	34.56	23.95	22.44	1102.96	1098.16	1088.02	1088.46	1086.66	1080.81	1075.93
11/8/03	4:00	35.98	43.02	44.47	55.66	34.56	23.95	22.44	1102.96	1098.15	1088.02	1088.45	1086.66	1080.80	1075.92

TABLE S1.1 (Cont.)

Date	Time	Depth to Water (ft below reference point)							Water Elevation (ft AMSL)						
		SB09	SB16	SB49	SB60	SB62	SB63	SB64	SB09	SB16	SB49	SB60	SB62	SB63	SB64
11/8/03	8:00	36.00	43.03	44.47	55.67	34.55	23.94	22.44	1102.94	1098.14	1088.02	1088.44	1086.67	1080.81	1075.93
11/8/03	12:00	36.01	43.05	44.48	55.69	34.54	23.96	22.43	1102.93	1098.12	1088.00	1088.43	1086.68	1080.79	1075.93
11/8/03	16:00	36.01	43.04	44.42	55.63	34.53	23.91	22.42	1102.94	1098.13	1088.06	1088.49	1086.69	1080.84	1075.94
11/8/03	20:00	36.01	43.04	44.41	55.61	34.53	23.92	22.42	1102.93	1098.13	1088.07	1088.50	1086.69	1080.83	1075.94
11/9/03	0:00	36.02	43.05	44.43	55.62	34.53	23.92	22.41	1102.92	1098.12	1088.06	1088.49	1086.69	1080.83	1075.95
11/9/03	4:00	36.01	43.04	44.39	55.58	34.52	23.89	22.41	1102.93	1098.13	1088.09	1088.53	1086.70	1080.86	1075.95
11/9/03	8:00	36.00	43.03	44.39	55.57	34.53	23.88	22.41	1102.94	1098.14	1088.09	1088.54	1086.69	1080.87	1075.95
11/9/03	12:00	36.00	43.02	44.34	55.51	34.49	23.85	22.38	1102.94	1098.15	1088.14	1088.60	1086.73	1080.91	1075.98
11/9/03	16:00	35.94	42.95	44.23	55.37	34.47	23.73	22.36	1103.00	1098.22	1088.26	1088.74	1086.75	1081.02	1076.00
11/9/03	20:00	35.93	42.91	44.22	55.34	34.48	23.71	22.36	1103.01	1098.26	1088.26	1088.77	1086.74	1081.04	1076.00
11/10/03	0:00	35.91	42.87	44.20	55.31	34.48	23.67	22.36	1103.03	1098.30	1088.28	1088.80	1086.74	1081.08	1076.00
11/10/03	4:00	35.87	42.80	44.15	55.25	34.48	23.62	22.36	1103.07	1098.37	1088.33	1088.86	1086.74	1081.13	1076.01
11/10/03	8:00	35.83	42.74	44.12	55.19	34.47	23.55	22.35	1103.11	1098.43	1088.36	1088.92	1086.75	1081.20	1076.02
11/10/03	12:00		42.69	44.09	55.15	34.47	23.52	22.34		1098.48	1088.40	1088.96	1086.75	1081.23	1076.02

TABLE S1.2 Water levels in temporary piezometers for the period of automated monitoring from November 12, 2003, to December 4, 2003, at Everest, Kansas.

Date	Time	Depth to Water (ft below reference point)					Water Elevation (ft AMSL)				
		SB66t	SB67t	SB69t	SB70t	SB71t	SB66t	SB67t	SB69t	SB70t	SB71t
11/12/03	20:00	49.07					1095.87				
11/13/03	0:00	49.10					1095.84				
11/13/03	4:00	49.13					1095.81				
11/13/03	8:00	49.16					1095.78				
11/13/03	12:00	49.14					1095.80				
11/13/03	16:00	55.13					1089.81				
11/13/03	20:00	48.96	52.16				1095.98	1096.21			
11/14/03	0:00	48.88	52.08				1096.06	1096.28			
11/14/03	4:00	48.81	52.03				1096.13	1096.34			
11/14/03	8:00	48.72	51.94				1096.22	1096.42			
11/14/03	12:00	48.61	51.83				1096.31	1096.53			
11/14/03	16:00	48.52	51.74				1096.42	1096.62			
11/14/03	20:00	48.54	51.74				1096.40	1096.62			
11/15/03	0:00	48.55	51.74				1096.39	1096.62			
11/15/03	4:00	48.54	51.73				1096.40	1096.64			
11/15/03	8:00	48.56	51.73				1096.38	1096.63			
11/15/03	12:00	48.57	51.73	18.38			1096.38	1096.63	1081.75		
11/15/03	16:00	48.57	51.67	18.40	18.57		1096.37	1096.69	1081.73	1082.66	
11/15/03	20:00	48.65	51.76	18.47	18.59	39.42	1096.29	1096.60	1081.66	1082.64	1082.43
11/16/03	0:00	48.69	51.80	18.50	18.60	39.42	1096.26	1096.56	1081.63	1082.63	1082.43
11/16/03	4:00	48.72	51.84	18.53	18.61	39.42	1096.22	1096.52	1081.60	1082.63	1082.43
11/16/03	8:00	48.77	51.88	18.58	18.63	39.44	1096.18	1096.48	1081.55	1082.60	1082.42
11/16/03	12:00	48.78	51.92	18.56	18.61	39.39	1096.17	1096.44	1081.57	1082.63	1082.46
11/16/03	16:00	48.75	62.92	18.53	18.60	39.37	1096.19	1085.44	1081.60	1082.64	1082.48
11/16/03	20:00	48.74	51.84	18.53	18.61	39.37	1096.20	1096.52	1081.61	1082.62	1082.49
11/17/03	0:00	48.71	51.81	18.50	18.59	39.35	1096.23	1096.55	1081.63	1082.64	1082.51
11/17/03	4:00	48.64	51.73	18.44	18.56	39.30	1096.31	1096.63	1081.69	1082.68	1082.55
11/17/03	8:00	48.56	51.65	18.40	18.53	39.29	1096.38	1096.71	1081.73	1082.70	1082.56
11/17/03	12:00	48.49	62.93	18.36	18.51	39.27	1096.46	1085.43	1081.77	1082.73	1082.58
11/17/03	16:00	55.21	51.33	18.33	18.50	39.25	1089.73	1097.03	1081.80	1082.73	1082.60
11/17/03	20:00	48.39	51.37	18.36	18.52	39.31	1096.55	1096.99	1081.77	1082.71	1082.54
11/18/03	0:00	48.39	51.36	18.37	18.52	39.32	1096.55	1097.00	1081.76	1082.71	1082.53
11/18/03	4:00	48.42	51.37	18.40	18.54	39.35	1096.52	1096.99	1081.73	1082.69	1082.50
11/18/03	8:00	48.55	51.52	18.52	18.62	39.45	1096.39	1096.84	1081.61	1082.62	1082.40
11/18/03	12:00	48.64	51.64	18.57	18.64	39.44	1096.30	1096.72	1081.57	1082.59	1082.41
11/18/03	16:00	48.68	51.69	18.58	18.64	39.43	1096.26	1096.67	1081.55	1082.59	1082.43
11/18/03	20:00	48.76	51.80	18.62	18.66	39.44	1096.18	1096.56	1081.51	1082.57	1082.42
11/19/03	0:00	48.82	51.89	18.65	18.68	39.43	1096.12	1096.47	1081.48	1082.55	1082.42
11/19/03	4:00	48.84	51.92	18.64	18.67	39.40	1096.10	1096.45	1081.49	1082.56	1082.45
11/19/03	8:00	48.86	51.96	18.65	18.67	39.41	1096.08	1096.40	1081.48	1082.56	1082.44
11/19/03	12:00	48.89	52.01	18.65	18.67	39.39	1096.05	1096.35	1081.48	1082.56	1082.46
11/19/03	16:00	48.83	51.93	18.58	18.63	39.34	1096.12	1096.43	1081.55	1082.60	1082.51
11/19/03	20:00	48.81	51.91	18.56	18.63	39.34	1096.13	1096.45	1081.57	1082.61	1082.51
11/20/03	0:00	48.76	51.85	18.52	18.60	39.32	1096.18	1096.51	1081.61	1082.63	1082.53
11/20/03	4:00	48.71	51.80	18.49	18.59	39.32	1096.23	1096.56	1081.64	1082.64	1082.53
11/20/03	8:00	48.68	51.75	18.48	18.59	39.33	1096.26	1096.61	1081.65	1082.64	1082.52
11/20/03	12:00	48.65	51.71	18.45	18.57	39.31	1096.29	1096.65	1081.68	1082.66	1082.54
11/20/03	16:00	48.61	51.66	18.45	18.57	39.32	1096.33	1096.70	1081.69	1082.66	1082.53
11/20/03	20:00	48.69	51.75	18.53	18.62	39.40	1096.25	1096.61	1081.60	1082.61	1082.45
11/21/03	0:00	48.76	51.84	18.59	18.65	39.43	1096.18	1096.52	1081.54	1082.58	1082.42
11/21/03	4:00	48.81	51.91	18.61	18.65	39.41	1096.13	1096.45	1081.52	1082.58	1082.45
11/21/03	8:00	48.85	51.95	18.63	18.66	39.40	1096.09	1096.41	1081.51	1082.57	1082.45
11/21/03	12:00	48.80	51.88	18.55	18.61	39.32	1096.14	1096.48	1081.58	1082.62	1082.53
11/21/03	16:00	48.74	51.81	18.51	18.60	39.32	1096.20	1096.55	1081.62	1082.63	1082.53

TABLE S1.2 (Cont.)

Date	Time	Depth to Water (ft below reference point)					Water Elevation (ft AMSL)				
		SB66t	SB67t	SB69t	SB70t	SB71t	SB66t	SB67t	SB69t	SB70t	SB71t
11/21/03	20:00	48.76	51.85	18.54	18.62	39.37	1096.18	1096.51	1081.59	1082.61	1082.48
11/22/03	0:00	48.77	51.86	18.55	18.62	39.37	1096.17	1096.50	1081.58	1082.61	1082.48
11/22/03	4:00	48.75	51.83	18.53	18.61	39.35	1096.19	1096.53	1081.60	1082.62	1082.51
11/22/03	8:00	48.76	51.84	18.54	18.62	39.36	1096.18	1096.52	1081.59	1082.61	1082.49
11/22/03	12:00	48.71	51.79	18.49	18.59	39.31	1096.23	1096.58	1081.65	1082.65	1082.54
11/22/03	16:00	48.64	51.72	18.47	18.58	39.32	1096.30	1096.65	1081.67	1082.65	1082.53
11/22/03	20:00	48.64	51.73	18.49	18.59	39.35	1096.30	1096.63	1081.65	1082.64	1082.50
11/23/03	0:00	48.59	51.66	18.46	18.58	39.32	1096.35	1096.70	1081.67	1082.65	1082.53
11/23/03	4:00	48.63	51.72	18.51	18.61	39.37	1096.31	1096.65	1081.62	1082.63	1082.48
11/23/03	8:00	48.74	51.84	18.61	18.67	39.45	1096.20	1096.52	1081.52	1082.56	1082.40
11/23/03	12:00	48.85	51.98	18.67	18.70	39.45	1096.09	1096.38	1081.47	1082.54	1082.40
11/23/03	16:00	48.92	52.07	18.71	18.71	39.46	1096.02	1096.29	1081.42	1082.52	1082.39
11/23/03	20:00	48.99	52.16	18.73	18.72	39.44	1095.95	1096.20	1081.40	1082.51	1082.41
11/24/03	0:00	49.02	52.22	18.73	18.71	39.42	1095.92	1096.14	1081.40	1082.52	1082.43
11/24/03	4:00	49.04	52.26	18.74	18.72	39.42	1095.90	1096.10	1081.40	1082.52	1082.43
11/24/03	8:00	49.07	52.30	18.74	18.71	39.42	1095.87	1096.06	1081.39	1082.52	1082.43
11/24/03	12:00	49.03	52.26	18.67	18.66	39.35	1095.91	1096.10	1081.46	1082.57	1082.50
11/24/03	16:00	48.91	52.11	18.57	18.60	39.29	1096.03	1096.25	1081.56	1082.63	1082.56
11/24/03	20:00	48.82	52.02	18.52	18.58	39.29	1096.12	1096.34	1081.61	1082.65	1082.56
11/25/03	0:00	48.74	51.93	18.49	18.56	39.29	1096.20	1096.43	1081.64	1082.67	1082.56
11/25/03	4:00	48.69	51.86	18.47	18.56	39.31	1096.25	1096.50	1081.66	1082.67	1082.54
11/25/03	8:00	48.69	51.85	18.49	18.58	39.35	1096.25	1096.51	1081.64	1082.65	1082.50
11/25/03	12:00	48.71	51.86	18.50	18.58	39.35	1096.23	1096.50	1081.63	1082.65	1082.50
11/25/03	16:00	48.71	51.85	18.51	18.59	39.37	1096.23	1096.52	1081.62	1082.64	1082.48
11/25/03	20:00	48.75	51.89	18.54	18.62	39.40	1096.19	1096.47	1081.59	1082.61	1082.46
11/26/03	0:00	48.77	51.90	18.55	18.61	39.38	1096.17	1096.46	1081.59	1082.62	1082.47
11/26/03	4:00	48.76	51.88	18.53	18.59	39.36	1096.19	1096.48	1081.61	1082.64	1082.50
11/26/03	8:00	48.74	51.85	18.52	18.60	39.36	1096.20	1096.51	1081.61	1082.63	1082.50
11/26/03	12:00	48.72	51.83	18.50	18.58	39.33	1096.22	1096.53	1081.63	1082.65	1082.52
11/26/03	16:00	48.70	51.80	18.51	18.59	39.37	1096.24	1096.56	1081.62	1082.64	1082.48
11/26/03	20:00	48.79	51.90	18.59	18.64	39.43	1096.15	1096.46	1081.55	1082.59	1082.42
11/27/03	0:00	48.86	51.98	18.62	18.65	39.42	1096.08	1096.38	1081.51	1082.58	1082.43
11/27/03	4:00	48.93	52.07	18.67	18.68	39.44	1096.01	1096.30	1081.46	1082.55	1082.41
11/27/03	8:00	49.05	52.23	18.77	18.73	39.51	1095.89	1096.13	1081.36	1082.50	1082.34
11/27/03	12:00	49.14	52.35	18.78	18.73	39.47	1095.80	1096.01	1081.35	1082.51	1082.38
11/27/03	16:00	49.11	52.33	18.74	18.69	39.41	1095.83	1096.03	1081.39	1082.54	1082.44
11/27/03	20:00	49.18	52.44	18.79	18.73	39.45	1095.76	1095.92	1081.34	1082.51	1082.40
11/28/03	0:00	49.18	52.46	18.77	18.70	39.41	1095.76	1095.90	1081.36	1082.53	1082.44
11/28/03	4:00	49.16	52.46	18.74	18.69	39.39	1095.78	1095.90	1081.39	1082.54	1082.46
11/28/03	8:00	49.18	52.51	18.77	18.71	39.43	1095.76	1095.85	1081.36	1082.52	1082.43
11/28/03	12:00	49.19	52.53	18.76	18.70	39.40	1095.75	1095.83	1081.37	1082.53	1082.45
11/28/03	16:00	49.13	52.47	18.70	18.67	39.37	1095.81	1095.89	1081.43	1082.56	1082.48
11/28/03	20:00	49.11	52.44	18.68	18.66	39.37	1095.84	1095.92	1081.45	1082.57	1082.48
11/29/03	0:00	49.01	52.34	18.60	18.62	39.31	1095.94	1096.02	1081.53	1082.61	1082.54
11/29/03	4:00	48.92	52.23	18.55	18.59	39.31	1096.02	1096.13	1081.58	1082.64	1082.54
11/29/03	8:00	48.77	52.07	18.46	18.54	39.26	1096.17	1096.30	1081.67	1082.69	1082.59
11/29/03	12:00	48.67	51.95	18.42	18.52	39.26	1096.27	1096.41	1081.71	1082.71	1082.59
11/29/03	16:00	48.63	51.85	18.43	18.53	39.31	1096.32	1096.51	1081.70	1082.70	1082.54
11/29/03	20:00	48.67	51.87	18.47	18.57	39.37	1096.27	1096.49	1081.66	1082.66	1082.48
11/30/03	0:00	48.69	51.87	18.48	18.57	39.37	1096.25	1096.50	1081.65	1082.66	1082.48
11/30/03	4:00	48.70	51.85	18.48	18.57	39.36	1096.24	1096.51	1081.65	1082.66	1082.49
11/30/03	8:00	48.78	51.93	18.55	18.62	39.43	1096.17	1096.43	1081.58	1082.61	1082.42
11/30/03	12:00	48.86	52.02	18.60	18.64	39.44	1096.08	1096.34	1081.53	1082.59	1082.41
11/30/03	16:00	48.98	52.15	18.69	18.69	39.49	1095.96	1096.21	1081.44	1082.54	1082.36
11/30/03	20:00	49.14	52.36	18.80	18.75	39.54	1095.80	1096.00	1081.34	1082.48	1082.31

TABLE S1.2 (Cont.)

Date	Time	Depth to Water (ft below reference point)					Water Elevation (ft AMSL)				
		SB66t	SB67t	SB69t	SB70t	SB71t	SB66t	SB67t	SB69t	SB70t	SB71t
12/1/03	0:00	49.26	52.54	18.84	18.76	39.52	1095.68	1095.82	1081.29	1082.47	1082.33
12/1/03	4:00	49.33	52.64	18.84	18.75	39.49	1095.62	1095.72	1081.29	1082.48	1082.36
12/1/03	8:00	49.36	52.71	18.85	18.75	39.47	1095.59	1095.66	1081.28	1082.48	1082.38
12/1/03	12:00	49.34	52.72	18.79	18.71	39.41	1095.60	1095.64	1081.34	1082.52	1082.44
12/1/03	16:00	49.27	52.66	18.74	18.68	39.38	1095.67	1095.70	1081.39	1082.55	1082.47
12/1/03	20:00	49.23	52.63	18.71	18.67	39.38	1095.71	1095.73	1081.42	1082.56	1082.47
12/2/03	0:00	49.19	52.59	18.69	18.66	39.37	1095.75	1095.77	1081.44	1082.57	1082.48
12/2/03	4:00	49.11	52.50	18.63	18.63	39.34	1095.83	1095.86	1081.50	1082.60	1082.51
12/2/03	8:00	49.06	52.44	18.61	18.63	39.35	1095.88	1095.93	1081.52	1082.60	1082.50
12/2/03	12:00	48.94	52.29	18.53	18.58	39.29	1096.00	1096.07	1081.60	1082.65	1082.56
12/2/03	16:00	48.80	52.12	18.47	18.55	39.28	1096.14	1096.24	1081.66	1082.68	1082.57
12/2/03	20:00	48.79	52.08	18.47	18.57	39.34	1096.15	1096.28	1081.66	1082.66	1082.51
12/3/03	0:00	48.77	52.05	18.37	18.57	39.36	1096.17	1096.31	1081.76	1082.66	1082.49
12/3/03	4:00	48.77	52.02	18.33	18.57	39.36	1096.17	1096.35	1081.80	1082.66	1082.49
12/3/03	8:00	48.82	52.05	18.32	18.61	39.41	1096.12	1096.31	1081.81	1082.63	1082.45
12/3/03	12:00	48.85	52.07	18.42	18.60	39.39	1096.09	1096.29	1081.71	1082.63	1082.46
12/3/03	16:00	48.85	52.05	18.54	18.61	39.39	1096.09	1096.31	1081.59	1082.62	1082.46
12/3/03	20:00	48.91	52.11	18.58	18.63	39.41	1096.03	1096.25	1081.55	1082.60	1082.44
12/4/03	0:00	48.89	52.08	18.56	18.62	39.39	1096.05	1096.28	1081.57	1082.61	1082.46
12/4/03	4:00	48.88	52.07	18.56	18.62	39.39	1096.06	1096.30	1081.57	1082.61	1082.46
12/4/03	8:00	48.92	52.10	18.60	18.64	39.42	1096.02	1096.26	1081.53	1082.59	1082.43

Supplement 2:

Complete Slug Test Data

TABLE S2.1 Slug test data for boring SB01 (effective saturated thickness = 12 ft; length of well = 12 ft; length of screen = 12 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $K_z/K_r = 1$).

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 9 Step 0	Test 9 Step 1
0	0.012	0.214	0.037	0.05	0.61
0.0033	2.16	5.902	5.228	2.429	3.059
0.0066	4.422	11.941	12.507	7.036	7.024
0.01	5.883	11.097	14.875	7.383	7.169
0.0133	6.141	9.088	10.631	5.501	5.161
0.0166	5.662	8.263	9.63	4.878	4.431
0.02	5.051	7.797	9.34	4.664	4.211
0.0233	4.529	7.451	9.038	4.525	4.091
0.0266	4.107	7.161	8.88	4.399	3.997
0.03	3.754	6.878	8.736	4.305	3.915
0.0333	3.458	6.638	8.521	4.204	3.827
0.0366	3.193	6.38	8.364	4.11	3.751
0.04	2.954	6.135	8.188	4.016	3.682
0.0433	2.746	5.914	8.024	3.934	3.6
0.0466	2.551	5.694	7.885	3.846	3.525
0.05	2.368	5.492	7.734	3.764	3.462
0.0533	2.198	5.297	7.608	3.688	3.392
0.0566	2.047	5.108	7.47	3.6	3.329
0.06	1.902	4.925	7.331	3.518	3.266
0.0633	1.77	4.749	7.218	3.462	3.191
0.0666	1.644	4.585	7.092	3.386	3.141
0.07	1.53	4.422	6.96	3.311	3.084
0.0733	1.423	4.264	6.84	3.241	3.021
0.0766	1.322	4.119	6.708	3.172	2.964
0.08	1.234	3.974	6.607	3.109	2.914
0.0833	1.146	3.836	6.506	3.04	2.857
0.0866	1.064	3.697	6.387	2.977	2.801
0.09	0.988	3.565	6.267	2.92	2.75
0.0933	0.919	3.439	6.16	2.857	2.7
0.0966	0.856	3.313	6.065	2.795	2.65
0.1	0.793	3.193	5.952	2.744	2.599
0.1033	0.737	3.08	5.857	2.681	2.555
0.1066	0.686	2.973	5.757	2.631	2.505
0.11	0.636	2.866	5.656	2.574	2.461
0.1133	0.592	2.765	5.555	2.524	2.417
0.1166	0.554	2.664	5.461	2.467	2.373
0.12	0.516	2.57	5.366	2.417	2.329
0.1233	0.478	2.475	5.278	2.366	2.285
0.1266	0.447	2.381	5.177	2.316	2.24
0.13	0.415	2.292	5.089	2.272	2.203
0.1333	0.39	2.211	5.007	2.222	2.159
0.1366	0.365	2.129	4.925	2.178	2.121
0.14	0.34	2.053	4.837	2.133	2.083
0.1433	0.321	1.971	4.749	2.09	2.045
0.1466	0.302	1.902	4.667	2.045	2.008
0.15	0.283	1.833	4.585	2.008	1.97
0.1533	0.264	1.763	4.51	1.964	1.932
0.1566	0.251	1.694	4.428	1.92	1.901
0.16	0.239	1.631	4.359	1.876	1.863
0.1633	0.226	1.568	4.277	1.838	1.831
0.1666	0.207	1.511	4.207	1.812	1.8

TABLE S2.1 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 9 Step 0	Test 9 Step 1
0.17	0.201	1.455	4.132	1.769	1.762
0.1733	0.188	1.398	4.062	1.731	1.731
0.1766	0.182	1.348	3.993	1.693	1.699
0.18	0.17	1.291	3.924	1.662	1.668
0.1833	0.163	1.241	3.861	1.623	1.643
0.1866	0.157	1.196	3.792	1.592	1.611
0.19	0.151	1.152	3.729	1.561	1.58
0.1933	0.144	1.108	3.666	1.523	1.554
0.1966	0.138	1.064	3.603	1.492	1.523
0.2	0.132	1.02	3.54	1.466	1.498
0.2033	0.126	0.982	3.477	1.435	1.466
0.2066	0.119	0.944	3.414	1.403	1.441
0.21	0.119	0.907	3.357	1.372	1.416
0.2133	0.113	0.875	3.3	1.347	1.391
0.2166	0.113	0.837	3.244	1.315	1.366
0.22	0.107	0.806	3.187	1.29	1.34
0.2233	0.107	0.774	3.13	1.259	1.315
0.2266	0.1	0.749	3.08	1.233	1.29
0.23	0.1	0.718	3.023	1.208	1.265
0.2333	0.094	0.693	2.973	1.183	1.246
0.2366	0.094	0.661	2.922	1.158	1.221
0.24	0.094	0.636	2.872	1.133	1.202
0.2433	0.088	0.617	2.822	1.114	1.177
0.2466	0.088	0.592	2.771	1.089	1.158
0.25	0.088	0.566	2.727	1.063	1.133
0.2533	0.081	0.548	2.677	1.045	1.114
0.2566	0.081	0.529	2.633	1.02	1.095
0.26	0.081	0.51	2.582	1.001	1.076
0.2633	0.081	0.485	2.538	0.981	1.057
0.2666	0.075	0.472	2.494	0.956	1.038
0.27	0.075	0.453	2.45	0.937	1.02
0.2733	0.075	0.434	2.412	0.919	1.001
0.2766	0.075	0.422	2.368	0.9	0.981
0.28	0.075	0.403	2.324	0.881	0.963
0.2833	0.075	0.39	2.286	0.862	0.944
0.2866	0.075	0.378	2.248	0.843	0.931
0.29	0.069	0.365	2.204	0.824	0.912
0.2933	0.069	0.352	2.166	0.812	0.893
0.2966	0.069	0.34	2.129	0.793	0.881
0.3	0.069	0.327	2.091	0.774	0.862
0.3033	0.069	0.314	2.053	0.761	0.85
0.3066	0.069	0.302	2.022	0.742	0.831
0.31	0.069	0.296	1.984	0.73	0.818
0.3133	0.069	0.283	1.946	0.711	0.806
0.3166	0.063	0.277	1.915	0.698	0.787
0.32	0.063	0.264	1.877	0.686	0.774
0.3233	0.063	0.258	1.845	0.667	0.761
0.3266	0.063	0.245	1.814	0.654	0.749
0.33	0.063	0.239	1.782	0.642	0.736
0.3333	0.063	0.233	1.751	0.629	0.723
0.35	0.063	0.201	1.599	0.566	0.661
0.3666	0.056	0.17	1.461	0.51	0.604
0.3833	0.056	0.151	1.335	0.459	0.553

TABLE S2.1 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 9 Step 0	Test 9 Step 1
0.4	0.056	0.132	1.222	0.415	0.503
0.4166	0.056	0.119	1.115	0.377	0.465
0.4333	0.05	0.107	1.02	0.339	0.428
0.45	0.05	0.1	0.932	0.308	0.39
0.4666	0.05	0.088	0.85	0.283	0.358
0.4833	0.05	0.088	0.774	0.258	0.333
0.5	0.05	0.081	0.705	0.233	0.308
0.5166	0.05	0.075	0.648	0.214	0.283
0.5333	0.05	0.069	0.592	0.195	0.264
0.55	0.05	0.069	0.541	0.182	0.245
0.5666	0.05	0.063	0.497	0.163	0.226
0.5833	0.05	0.063	0.453	0.151	0.207
0.6	0.05	0.063	0.415	0.138	0.195
0.6166	0.05	0.056	0.378	0.132	0.182
0.6333	0.05	0.056	0.346	0.119	0.17
0.65	0.05	0.056	0.321	0.113	0.157
0.6666	0.044	0.056	0.296	0.107	0.151
0.6833	0.044	0.056	0.27	0.1	0.138
0.7	0.044	0.056	0.251	0.094	0.132
0.7166	0.044	0.056	0.233	0.088	0.125
0.7333	0.044	0.056	0.214	0.081	0.119
0.75	0.044	0.056	0.195	0.075	0.107
0.7666	0.044	0.056	0.182	0.075	0.107
0.7833	0.044	0.05	0.17	0.069	0.1
0.8	0.044	0.056	0.157	0.069	0.094
0.8166	0.044	0.05	0.151	0.063	0.088
0.8333	0.044	0.05	0.138	0.063	0.088
0.85	0.044	0.05	0.132	0.056	0.081
0.8666	0.044	0.05	0.119	0.056	0.081
0.8833	0.044	0.05	0.113	0.056	0.081
0.9	0.044	0.05	0.107	0.05	0.075
0.9166	0.044	0.05	0.1	0.05	0.075
0.9333	0.044	0.05	0.1	0.05	0.075
0.95	0.044	0.05	0.094	0.05	0.075
0.9666	0.044	0.05	0.088	0.044	0.075
0.9833	0.044	0.05	0.088	0.044	0.069
1	0.037	0.05	0.088	0.044	0.069
1.2	0.037	0.044	0.075	0.037	0.056
1.4	0.037	0.044	0.075	0.031	0.056
1.6	0.037	0.044	0.075	0.031	0.044
1.8	0.037	0.044	0.075	0.025	0.044
2	0.037	0.044	0.069	0.025	0.037
2.2	0.037	0.044	0.069	0.025	0.031
2.4	0.037	0.044	0.075	0.025	0.031
2.6	0.031	0.044	0.075	0.018	0.025
2.8	0.031	0.044	0.075	0.018	0.025
3	0.031	0.044	0.075	0.018	0.025
3.2	0.031	0.044	0.081	0.018	0.025
3.4	0.031	0.044	0.075	0.018	0.018
3.6	0.031	0.044	0.075	0.012	0.018
3.8	0.031	0.044	0.075	0.012	0.018
4	0.031	0.044	0.075	0.012	0.018
4.2	0.031	0.044	0.075	0.012	0.012

TABLE S2.1 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 9 Step 0	Test 9 Step 1
4.4	0.031	0.044	0.075	0.012	0.012
4.6	0.031	0.044	0.075	0.012	0.012
4.8	0.031	0.044	0.075	0.012	0.012
5	0.031	0.044	0.075	0.012	0.012
5.2	0.025	0.044	0.075	0.012	0.012
5.4	0.031	0.044	0.069	0.012	0.012
5.6	0.031	0.044	0.075	0.006	0.006
5.8	0.031	0.044	0.069	0.006	0.006
6	0.025	0.044	0.069	0.006	0.006
6.2	0.025	0.044	0.069	0.006	0.006
6.4	0.025	0.044	0.069	0.006	0.006
6.6	0.025	0.044	0.069	0.006	0.006
6.8	0.025	0.044	0.069	0.006	0.006
7	0.025	0.044	0.063	0.006	0.006
7.2	0.025	0.044	0.063	0.006	0.006
7.4	0.025	0.044	0.063	0.006	0.006
7.6	0.025	0.044	0.063	0.006	0.006
7.8	0.025	0.044	0.063	0.006	0.006
8	0.025	0.044	0.056	0.006	0.006
8.2	0.025	0.037	0.056	0.006	0.006
8.4	0.025	0.037	0.056	0.006	0.006
8.6	0.025	0.037	0.056	0.006	0.006
8.8	0.025	0.037	0.056	0.006	0.006
9	0.025	0.037	0.056	0.006	0.006
9.2	0.025	0.037	0.056	0.006	0.006
9.4	0.025	0.037	0.05	0.006	0
9.6	0.025	0.037	0.05	0.006	0
9.8	0.025	0.037	0.05	0.006	0.006
10	0.025	0.037	0.05	0.006	0

TABLE S2.2 Slug test data for boring SB09 (effective saturated thickness = 6 ft; length of well = 6 ft; length of screen = 6 ft; casing radius = 0.04167 ft; borehole radius = 0.09375 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 2 Step 0	Test 3 Step 0	Test 3 Step 1
0	-0.976	0.635	10.934
0.0033	9.965	10.116	7.147
0.0066	6.695	6.373	7.996
0.01	6.556	7.135	8.147
0.0133	7.261	7.298	7.72
0.0166	6.682	6.902	7.864
0.02	6.833	7.103	7.776
0.0233	6.808	6.958	7.751
0.0266	6.695	6.927	7.694
0.03	6.707	6.921	7.657
0.0333	6.663	6.858	7.619
0.0366	6.613	6.839	7.581
0.04	6.594	6.801	7.55
0.0433	6.556	6.77	7.512
0.0466	6.525	6.738	7.481
0.05	6.493	6.713	7.449
0.0533	6.468	6.682	7.418
0.0566	6.443	6.656	7.386
0.06	6.418	6.625	7.361
0.0633	6.393	6.606	7.336
0.0666	6.368	6.581	7.304
0.07	6.342	6.556	7.279
0.0733	6.317	6.537	7.254
0.0766	6.298	6.505	7.229
0.08	6.279	6.493	7.204
0.0833	6.254	6.468	7.185
0.0866	6.235	6.449	7.16
0.09	6.217	6.43	7.141
0.0933	6.198	6.411	7.122
0.0966	6.179	6.399	7.097
0.1	6.166	6.373	7.078
0.1033	6.147	6.361	7.059
0.1066	6.129	6.342	7.046
0.11	6.116	6.323	7.021
0.1133	6.097	6.31	7.002
0.1166	6.084	6.292	6.984
0.12	6.066	6.279	6.971
0.1233	6.053	6.26	6.946
0.1266	6.04	6.247	6.933
0.13	6.021	6.235	6.914
0.1333	6.009	6.216	6.902
0.1366	5.996	6.203	6.883
0.14	5.984	6.191	6.87
0.1433	5.965	6.178	6.851
0.1466	5.959	6.153	6.839
0.15	5.946	6.147	6.82
0.1533	5.933	6.134	6.807
0.1566	5.908	6.122	6.795
0.16	5.902	6.109	6.782
0.1633	5.889	6.097	6.77

TABLE S2.2 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 2 Step 0	Test 3 Step 0	Test 3 Step 1
0.1666	5.877	6.084	6.751
0.17	5.864	6.071	6.738
0.1733	5.858	6.059	6.726
0.1766	5.839	6.052	6.713
0.18	5.833	6.04	6.7
0.1833	5.82	6.027	6.688
0.1866	5.808	6.021	6.675
0.19	5.801	6.008	6.669
0.1933	5.789	5.996	6.65
0.1966	5.782	5.99	6.638
0.2	5.77	5.977	6.625
0.2033	5.757	5.964	6.619
0.2066	5.751	5.958	6.606
0.21	5.738	5.946	6.594
0.2133	5.732	5.933	6.581
0.2166	5.72	5.927	6.575
0.22	5.713	5.914	6.562
0.2233	5.701	5.908	6.549
0.2266	5.694	5.895	6.537
0.23	5.682	5.883	6.531
0.2333	5.676	5.876	6.518
0.2366	5.669	5.864	6.505
0.24	5.657	5.857	6.493
0.2433	5.65	5.845	6.487
0.2466	5.644	5.839	6.474
0.25	5.631	5.826	6.468
0.2533	5.625	5.82	6.461
0.2566	5.613	5.807	6.449
0.26	5.606	5.801	6.436
0.2633	5.6	5.788	6.424
0.2666	5.587	5.782	6.417
0.27	5.581	5.769	6.411
0.2733	5.575	5.763	6.399
0.2766	5.562	5.75	6.386
0.28	5.556	5.744	6.38
0.2833	5.55	5.738	6.367
0.2866	5.537	5.725	6.361
0.29	5.531	5.719	6.348
0.2933	5.525	5.706	6.342
0.2966	5.518	5.7	6.329
0.3	5.506	5.694	6.323
0.3033	5.499	5.681	6.31
0.3066	5.493	5.675	6.304
0.31	5.487	5.662	6.292
0.3133	5.481	5.656	6.285
0.3166	5.468	5.65	6.273
0.32	5.462	5.644	6.266
0.3233	5.455	5.631	6.26
0.3266	5.449	5.625	6.247
0.33	5.436	5.618	6.241
0.3333	5.43	5.606	6.229
0.35	5.399	5.568	6.191
0.3666	5.361	5.53	6.147
0.3833	5.323	5.493	6.103

TABLE S2.2 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 2 Step 0	Test 3 Step 0	Test 3 Step 1
0.4	5.292	5.455	6.065
0.4166	5.26	5.417	6.027
0.4333	5.223	5.379	5.983
0.45	5.191	5.348	5.946
0.4666	5.16	5.31	5.908
0.4833	5.128	5.272	5.87
0.5	5.097	5.241	5.832
0.5166	5.065	5.203	5.795
0.5333	5.034	5.172	5.763
0.55	5.002	5.14	5.725
0.5666	4.971	5.109	5.688
0.5833	4.939	5.071	5.656
0.6	4.914	5.04	5.618
0.6166	4.883	5.008	5.581
0.6333	4.851	4.977	5.549
0.65	4.826	4.945	5.518
0.6666	4.795	4.914	5.48
0.6833	4.77	4.882	5.449
0.7	4.738	4.857	5.417
0.7166	4.713	4.826	5.379
0.7333	4.681	4.794	5.348
0.75	4.656	4.763	5.316
0.7666	4.631	4.738	5.285
0.7833	4.6	4.706	5.253
0.8	4.574	4.681	5.222
0.8166	4.549	4.65	5.191
0.8333	4.524	4.624	5.159
0.85	4.499	4.593	5.134
0.8666	4.474	4.568	5.103
0.8833	4.449	4.536	5.071
0.9	4.423	4.511	5.04
0.9166	4.398	4.486	5.014
0.9333	4.373	4.461	4.983
0.95	4.348	4.436	4.951
0.9666	4.323	4.404	4.926
0.9833	4.298	4.379	4.895
1	4.279	4.354	4.87
1.2	4.033	4.077	4.58
1.4	3.782	3.8	4.285
1.6	3.543	3.548	4.008
1.8	3.322	3.309	3.75
2	3.121	3.089	3.511
2.2	2.932	2.888	3.284
2.4	2.756	2.699	3.077
2.6	2.586	2.523	2.888
2.8	2.429	2.366	2.705
3	2.284	2.221	2.535
3.2	2.158	2.082	2.372
3.4	2.039	1.957	2.227
3.6	1.926	1.837	2.089
3.8	1.819	1.724	1.957
4	1.718	1.617	1.837
4.2	1.617	1.522	1.736

TABLE S2.2 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 2 Step 0	Test 3 Step 0	Test 3 Step 1
4.4	1.529	1.428	1.629
4.6	1.441	1.34	1.529
4.8	1.359	1.258	1.441
5	1.284	1.183	1.352
5.2	1.215	1.113	1.271
5.4	1.145	1.044	1.195
5.6	1.082	0.981	1.12
5.8	1.019	0.925	1.057
6	0.969	0.874	0.994
6.2	0.912	0.818	0.931
6.4	0.862	0.774	0.881
6.6	0.818	0.729	0.83
6.8	0.774	0.685	0.786
7	0.73	0.648	0.736
7.2	0.692	0.61	0.692
7.4	0.654	0.578	0.654
7.6	0.623	0.547	0.616
7.8	0.585	0.516	0.585
8	0.56	0.484	0.547
8.2	0.529	0.459	0.516
8.4	0.503	0.434	0.49
8.6	0.472	0.409	0.465
8.8	0.453	0.39	0.434
9	0.428	0.371	0.409
9.2	0.403	0.352	0.39
9.4	0.384	0.333	0.371
9.6	0.365	0.314	0.346
9.8	0.346	0.295	0.333
10	0.327	0.283	0.314
12	0.195	0.169	0.188
14	0.12	0.106	0.119
16	0.076	0.069	0.075
18	0.05		
20	0.031		
22	0.019		
24	0.013		
26	0.006		
28	0.006		
30	0.006		
32	0		

TABLE S2.3 Slug test data for boring SB16 (effective saturated thickness = 15 ft; length of well = 15 ft; length of screen = 15 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $K_z/K_r = 1$).

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 1 Step 0	Test 2 Step 0	Test 2 Step 1
0	5.979	4.721	7.993
0.0033	4.909	4.639	6.854
0.0066	4.651	4.57	6.521
0.01	4.469	4.5	6.269
0.0133	4.4	4.431	6.074
0.0166	4.349	4.362	5.948
0.02	4.293	4.299	5.86
0.0233	4.223	4.236	5.778
0.0266	4.142	4.173	5.696
0.03	4.066	4.11	5.608
0.0333	3.997	4.053	5.52
0.0366	3.928	3.997	5.438
0.04	3.865	3.94	5.35
0.0433	3.808	3.884	5.268
0.0466	3.745	3.827	5.193
0.05	3.682	3.777	5.117
0.0533	3.625	3.726	5.042
0.0566	3.569	3.676	4.972
0.06	3.518	3.625	4.897
0.0633	3.462	3.575	4.828
0.0666	3.411	3.531	4.765
0.07	3.361	3.487	4.695
0.0733	3.311	3.437	4.633
0.0766	3.267	3.393	4.57
0.08	3.223	3.348	4.507
0.0833	3.172	3.311	4.444
0.0866	3.128	3.267	4.387
0.09	3.084	3.229	4.33
0.0933	3.046	3.185	4.274
0.0966	3.002	3.147	4.217
0.1	2.965	3.109	4.16
0.1033	2.92	3.071	4.11
0.1066	2.883	3.034	4.053
0.11	2.845	2.996	4.003
0.1133	2.807	2.965	3.953
0.1166	2.769	2.927	3.902
0.12	2.738	2.889	3.852
0.1233	2.7	2.858	3.808
0.1266	2.669	2.826	3.758
0.13	2.631	2.795	3.714
0.1333	2.599	2.757	3.669
0.1366	2.568	2.725	3.625
0.14	2.536	2.694	3.581
0.1433	2.505	2.669	3.537
0.1466	2.474	2.637	3.493
0.15	2.442	2.606	3.455
0.1533	2.411	2.574	3.411
0.1566	2.385	2.549	3.374
0.16	2.354	2.524	3.336
0.1633	2.329	2.492	3.298

TABLE S2.3 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 1 Step 0	Test 2 Step 0	Test 2 Step 1
0.1666	2.304	2.461	3.26
0.17	2.272	2.436	3.223
0.1733	2.247	2.411	3.185
0.1766	2.222	2.385	3.153
0.18	2.197	2.36	3.116
0.1833	2.171	2.335	3.078
0.1866	2.146	2.31	3.046
0.19	2.121	2.285	3.015
0.1933	2.102	2.26	2.977
0.1966	2.077	2.241	2.946
0.2	2.052	2.215	2.914
0.2033	2.033	2.19	2.883
0.2066	2.008	2.171	2.851
0.21	1.989	2.146	2.82
0.2133	1.97	2.127	2.795
0.2166	1.945	2.102	2.763
0.22	1.926	2.083	2.738
0.2233	1.907	2.064	2.706
0.2266	1.888	2.039	2.675
0.23	1.869	2.02	2.65
0.2333	1.85	2.001	2.625
0.2366	1.831	1.982	2.593
0.24	1.813	1.964	2.568
0.2433	1.794	1.945	2.543
0.2466	1.775	1.926	2.518
0.25	1.756	1.907	2.492
0.2533	1.743	1.888	2.467
0.2566	1.724	1.869	2.442
0.26	1.706	1.857	2.417
0.2633	1.693	1.838	2.392
0.2666	1.674	1.819	2.373
0.27	1.655	1.806	2.348
0.2733	1.643	1.787	2.322
0.2766	1.63	1.769	2.304
0.28	1.611	1.756	2.278
0.2833	1.599	1.737	2.26
0.2866	1.58	1.724	2.234
0.29	1.567	1.706	2.215
0.2933	1.554	1.693	2.197
0.2966	1.542	1.674	2.171
0.3	1.523	1.661	2.153
0.3033	1.51	1.649	2.134
0.3066	1.498	1.636	2.115
0.31	1.485	1.617	2.096
0.3133	1.473	1.605	2.077
0.3166	1.46	1.592	2.058
0.32	1.447	1.58	2.039
0.3233	1.435	1.561	2.02
0.3266	1.422	1.548	2.001
0.33	1.41	1.536	1.982
0.3333	1.397	1.523	1.964
0.35	1.34	1.466	1.882
0.3666	1.29	1.41	1.806
0.3833	1.24	1.353	1.737

TABLE S2.3 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 1 Step 0	Test 2 Step 0	Test 2 Step 1
0.4	1.196	1.303	1.668
0.4166	1.152	1.259	1.605
0.4333	1.114	1.208	1.542
0.45	1.076	1.17	1.485
0.4666	1.038	1.126	1.435
0.4833	1.007	1.089	1.384
0.5	0.975	1.057	1.334
0.5166	0.944	1.019	1.29
0.5333	0.912	0.988	1.246
0.55	0.887	0.963	1.208
0.5666	0.862	0.931	1.164
0.5833	0.837	0.9	1.133
0.6	0.818	0.875	1.095
0.6166	0.793	0.849	1.063
0.6333	0.774	0.831	1.032
0.65	0.755	0.805	1.001
0.6666	0.736	0.78	0.969
0.6833	0.717	0.761	0.944
0.7	0.698	0.742	0.919
0.7166	0.686	0.724	0.893
0.7333	0.667	0.705	0.868
0.75	0.654	0.686	0.843
0.7666	0.635	0.667	0.824
0.7833	0.623	0.654	0.805
0.8	0.61	0.635	0.78
0.8166	0.598	0.623	0.761
0.8333	0.585	0.61	0.742
0.85	0.572	0.591	0.724
0.8666	0.56	0.579	0.711
0.8833	0.547	0.566	0.692
0.9	0.541	0.554	0.673
0.9166	0.528	0.541	0.661
0.9333	0.516	0.528	0.648
0.95	0.51	0.516	0.629
0.9666	0.497	0.503	0.617
0.9833	0.491	0.497	0.604
1	0.484	0.484	0.591
1.2	0.402	0.396	0.478
1.4	0.333	0.321	0.384
1.6	0.283	0.264	0.314
1.8	0.245	0.22	0.258
2	0.22	0.188	0.214
2.2	0.195	0.163	0.182
2.4	0.17	0.138	0.151
2.6	0.157	0.119	0.132
2.8	0.138	0.1	0.113
3	0.126	0.088	0.094
3.2	0.119	0.075	0.081
3.4	0.107	0.069	0.069
3.6	0.1	0.063	0.063
3.8	0.094	0.05	0.05
4	0.088	0.044	0.044
4.2	0.081	0.044	0.037

TABLE S2.3 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 1 Step 0	Test 2 Step 0	Test 2 Step 1
4.4	0.075	0.037	0.031
4.6	0.069	0.031	0.025
4.8	0.069	0.025	0.025
5	0.063	0.025	0.019
5.2	0.063	0.019	0.012
5.4	0.056	0.019	0.012
5.6	0.056	0.019	0.006
5.8	0.05	0.012	0.006
6	0.05	0.012	0
6.2	0.05	0.006	0
6.4	0.044	0.006	0
6.6	0.044	0.006	
6.8	0.044	0.006	
7	0.037	0	
7.2	0.037	0	
7.4	0.037	0	
7.6	0.031	0	
7.8	0.031	0	
8	0.031		
8.2	0.031		
8.4	0.031		
8.6	0.031		
8.8	0.025		
9	0.025		
9.2	0.025		
9.4	0.025		
9.6	0.025		
9.8	0.019		
10	0.019		
12	0.012		
14	0.006		

TABLE S2.4 Slug test data for boring SB18 (effective saturated thickness = 10 ft; length of well = 10 ft; length of screen = 10 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)	
	Slug In	Slug Out
0	0.014	0
2	0.472	0.41
4	0.383	0.226
6	0.309	0.185
8	0.26	0.152
10	0.221	0.127
12	0.186	0.103
14	0.159	0.086
16	0.136	0.07
18	0.118	0.059
20	0.103	0.048
22	0.091	0.039
24	0.08	0.031
26	0.072	0.025
28	0.064	0.019
30	0.056	0.017
32	0.054	0.014
34	0.048	0.011
36	0.043	0.008
38	0.039	0.006
40	0.037	0.004
42	0.033	0.004
44	0.031	0.002
46	0.029	
48	0.027	
50	0.027	
52	0.025	
54	0.023	
56	0.023	
58	0.023	
60	0.021	
62	0.021	
64	0.019	
66	0.019	
68	0.017	
70	0.015	
72	0.017	
74	0.015	
76	0.015	
78	0.015	
80	0.013	
82	0.015	
84	0.012	
86	0.013	
88	0.012	
90	0.012	
92	0.01	
94	0.01	
96	0.01	
98	0.01	

TABLE S2.4 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)	
	Slug In	Slug Out
100	0.008	
102	0.006	
104	0.006	
106	0.004	
108	0.004	
110	0.004	
112	0.002	
114	0.002	
116	0.002	

TABLE S2.5 Slug test data for boring SB19 (effective saturated thickness = 6 ft; length of well = 6 ft; length of screen = 5 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
0	8.586	10.418	9.027
0.0033	10.266	9.31	9.983
0.0066	9.845	9.568	9.253
0.01	9.209	9.75	8.617
0.0133	9.14	9.555	8.693
0.0166	9.178	9.291	8.699
0.02	9.064	9.178	8.555
0.0233	8.926	9.096	8.422
0.0266	8.831	8.995	8.341
0.03	8.75	8.882	8.259
0.0333	8.662	8.781	8.164
0.0366	8.573	8.693	8.076
0.04	8.485	8.605	8.001
0.0433	8.403	8.517	7.919
0.0466	8.322	8.441	7.837
0.05	8.24	8.353	7.749
0.0533	8.158	8.278	7.68
0.0566	8.089	8.208	7.61
0.06	8.007	8.127	7.529
0.0633	7.931	8.051	7.459
0.0666	7.862	7.982	7.396
0.07	7.787	7.913	7.321
0.0733	7.717	7.843	7.245
0.0766	7.667	7.774	7.17
0.08	7.585	7.705	7.082
0.0833	7.51	7.642	7.038
0.0866	7.434	7.573	6.981
0.09	7.371	7.51	6.887
0.0933	7.308	7.447	6.836
0.0966	7.239	7.384	6.773
0.1	7.176	7.321	6.698
0.1033	7.113	7.258	6.641
0.1066	7.05	7.195	6.584
0.11	6.994	7.132	6.534
0.1133	6.937	7.082	6.471
0.1166	6.874	7.012	6.421
0.12	6.811	6.956	6.389
0.1233	6.767	6.899	6.295
0.1266	6.685	6.83	6.238
0.13	6.654	6.786	6.175
0.1333	6.578	6.723	6.138
0.1366	6.503	6.691	6.068
0.14	6.459	6.622	6.018
0.1433	6.408	6.566	5.968
0.1466	6.358	6.509	5.923
0.15	6.308	6.446	5.854
0.1533	6.251	6.402	5.81
0.1566	6.2	6.364	5.754
0.16	6.156	6.289	5.709
0.1633	6.1	6.251	5.678
0.1666	6.087	6.194	5.609

TABLE S2.5 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
0.17	5.999	6.163	5.565
0.1733	5.949	6.093	5.483
0.1766	5.892	6.049	5.451
0.18	5.873	5.999	5.401
0.1833	5.798	5.955	5.357
0.1866	5.754	5.905	5.313
0.19	5.703	5.873	5.263
0.1933	5.653	5.817	5.219
0.1966	5.609	5.766	5.181
0.2	5.571	5.728	5.124
0.2033	5.514	5.678	5.086
0.2066	5.489	5.64	5.036
0.21	5.426	5.596	4.998
0.2133	5.382	5.552	4.96
0.2166	5.338	5.514	4.923
0.22	5.288	5.47	4.879
0.2233	5.256	5.426	4.835
0.2266	5.206	5.389	4.797
0.23	5.162	5.344	4.74
0.2333	5.118	5.307	4.715
0.2366	5.08	5.263	4.677
0.24	5.036	5.225	4.639
0.2433	4.992	5.2	4.595
0.2466	4.954	5.149	4.564
0.25	4.91	5.118	4.526
0.2533	4.866	5.067	4.482
0.2566	4.828	5.023	4.444
0.26	4.79	4.986	4.419
0.2633	4.753	4.954	4.381
0.2666	4.715	4.91	4.344
0.27	4.671	4.872	4.312
0.2733	4.639	4.835	4.281
0.2766	4.602	4.809	4.236
0.28	4.583	4.765	4.211
0.2833	4.526	4.721	4.18
0.2866	4.495	4.696	4.136
0.29	4.444	4.658	4.111
0.2933	4.413	4.627	4.079
0.2966	4.381	4.595	4.035
0.3	4.35	4.564	4.004
0.3033	4.299	4.545	3.978
0.3066	4.262	4.495	3.947
0.31	4.243	4.463	3.922
0.3133	4.205	4.432	3.89
0.3166	4.174	4.4	3.859
0.32	4.148	4.369	3.827
0.3233	4.104	4.337	3.827
0.3266	4.079	4.293	3.771
0.33	4.041	4.268	3.739
0.3333	4.01	4.236	3.714
0.35	3.859	4.079	3.575
0.3666	3.714	3.934	3.437
0.3833	3.575	3.79	3.317

TABLE S2.5 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
0.4	3.443	3.657	3.192
0.4166	3.311	3.519	3.072
0.4333	3.192	3.393	2.965
0.45	3.078	3.273	2.858
0.4666	2.959	3.154	2.757
0.4833	2.852	3.034	2.656
0.5	2.751	2.927	2.562
0.5166	2.65	2.82	2.474
0.5333	2.556	2.713	2.386
0.55	2.461	2.612	2.304
0.5666	2.373	2.512	2.228
0.5833	2.291	2.411	2.146
0.6	2.209	2.323	2.071
0.6166	2.128	2.235	2.002
0.6333	2.058	2.146	1.932
0.65	1.983	2.065	1.869
0.6666	1.914	1.983	1.8
0.6833	1.844	1.907	1.744
0.7	1.781	1.832	1.681
0.7166	1.718	1.762	1.624
0.7333	1.662	1.693	1.567
0.75	1.599	1.624	1.517
0.7666	1.542	1.561	1.46
0.7833	1.492	1.498	1.41
0.8	1.441	1.435	1.366
0.8166	1.391	1.378	1.315
0.8333	1.341	1.328	1.271
0.85	1.297	1.278	1.227
0.8666	1.252	1.227	1.189
0.8833	1.208	1.177	1.152
0.9	1.164	1.133	1.108
0.9166	1.127	1.089	1.07
0.9333	1.082	1.051	1.038
0.95	1.051	1.013	1.001
0.9666	1.013	0.975	0.969
0.9833	0.975	0.938	0.938
1	0.944	0.9	0.906
1.2	0.654	0.617	0.629
1.4	0.434	0.402	0.421
1.6	0.289	0.27	0.283
1.8	0.195	0.176	0.195
2	0.125	0.119	0.132
2.2	0.088	0.075	0.088
2.4	0.056	0.05	0.056
2.6	0.037	0.018	0.037
2.8	0.025		0.025
3	0.018		0.012
3.2	0.012		0.006
3.4	0.012		0.006
3.6	0.006		
3.8	0.006		
4	0.006		

TABLE S2.6 Slug test data for boring SB22 (effective saturated thickness = 2 ft; length of well = 2f t; length of screen = 2 ft; casing radius = 0.04167ft; borehole radius = 0.0937 5ft; Kz/Kr = 1).

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
0	-0.226	12.58	1.749
0.0033	11.096	10.303	4.957
0.0066	7.171	9.555	6.712
0.01	7.108	9.14	6.618
0.0133	7.19	8.913	6.448
0.0166	7.272	8.756	6.291
0.02	7.347	8.668	6.152
0.0233	7.416	8.624	6.083
0.0266	7.429	8.586	6.045
0.03	7.429	8.568	6.026
0.0333	7.442	8.542	6.014
0.0366	7.429	8.53	6.008
0.04	7.423	8.511	6.008
0.0433	7.404	8.498	6.001
0.0466	7.391	8.486	5.982
0.05	7.385	8.473	5.982
0.0533	7.372	8.461	5.976
0.0566	7.36	8.448	5.963
0.06	7.354	8.435	5.957
0.0633	7.335	8.417	5.945
0.0666	7.328	8.404	5.938
0.07	7.316	8.398	5.926
0.0733	7.31	8.379	5.919
0.0766	7.297	8.366	5.907
0.08	7.284	8.354	5.901
0.0833	7.272	8.341	5.894
0.0866	7.266	8.335	5.888
0.09	7.253	8.31	5.875
0.0933	7.247	8.31	5.869
0.0966	7.234	8.297	5.863
0.1	7.222	8.284	5.857
0.1033	7.215	8.272	5.844
0.1066	7.203	8.259	5.838
0.11	7.196	8.247	5.831
0.1133	7.184	8.24	5.825
0.1166	7.171	8.222	5.813
0.12	7.165	8.215	5.806
0.1233	7.152	8.203	5.8
0.1266	7.146	8.19	5.794
0.13	7.133	8.178	5.781
0.1333	7.127	8.165	5.775
0.1366	7.115	8.152	5.762
0.14	7.108	8.146	5.762
0.1433	7.096	8.134	5.756
0.1466	7.089	8.127	5.75
0.15	7.077	8.115	5.743
0.1533	7.071	8.102	5.731
0.1566	7.058	8.089	5.724
0.16	7.052	8.077	5.718
0.1633	7.039	8.071	5.712

TABLE S2.6 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
0.1666	7.027	8.058	5.706
0.17	7.02	8.045	5.699
0.1733	7.008	8.039	5.693
0.1766	7.001	8.027	5.687
0.18	6.995	8.014	5.674
0.1833	6.982	8.008	5.668
0.1866	6.97	7.995	5.662
0.19	6.964	7.983	5.655
0.1933	6.951	7.976	5.649
0.1966	6.945	7.964	5.643
0.2	6.932	7.957	5.636
0.2033	6.926	7.945	5.63
0.2066	6.92	7.932	5.624
0.21	6.907	7.926	5.618
0.2133	6.901	7.913	5.611
0.2166	6.888	7.907	5.605
0.22	6.876	7.895	5.599
0.2233	6.857	7.888	5.592
0.2266	6.863	7.876	5.586
0.23	6.85	7.863	5.58
0.2333	6.838	7.857	5.573
0.2366	6.832	7.844	5.567
0.24	6.819	7.832	5.561
0.2433	6.813	7.825	5.555
0.2466	6.8	7.819	5.542
0.25	6.794	7.806	5.542
0.2533	6.781	7.794	5.536
0.2566	6.775	7.788	5.523
0.26	6.762	7.775	5.517
0.2633	6.75	7.769	5.511
0.2666	6.743	7.756	5.504
0.27	6.731	7.75	5.498
0.2733	6.725	7.737	5.492
0.2766	6.718	7.725	5.492
0.28	6.706	7.718	5.479
0.2833	6.699	7.712	5.473
0.2866	6.687	7.7	5.473
0.29	6.681	7.693	5.467
0.2933	6.668	7.681	5.46
0.2966	6.662	7.674	5.454
0.3	6.655	7.662	5.448
0.3033	6.643	7.656	5.441
0.3066	6.63	7.643	5.435
0.31	6.624	7.637	5.429
0.3133	6.611	7.624	5.423
0.3166	6.605	7.618	5.416
0.32	6.599	7.611	5.404
0.3233	6.586	7.599	5.391
0.3266	6.58	7.586	5.397
0.33	6.567	7.58	5.391
0.3333	6.561	7.574	5.378
0.35	6.517	7.53	5.353
0.3666	6.479	7.486	5.322
0.3833	6.435	7.448	5.297

TABLE S2.6 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
0.4	6.397	7.404	5.265
0.4166	6.353	7.36	5.234
0.4333	6.309	7.322	5.209
0.45	6.272	7.278	5.177
0.4666	6.234	7.24	5.152
0.4833	6.19	7.196	5.121
0.5	6.152	7.159	5.095
0.5166	6.114	7.121	5.064
0.5333	6.077	7.083	5.039
0.55	6.039	7.045	5.014
0.5666	6.001	6.995	4.988
0.5833	5.963	6.964	4.957
0.6	5.926	6.932	4.932
0.6166	5.888	6.894	4.907
0.6333	5.85	6.863	4.882
0.65	5.813	6.825	4.856
0.6666	5.781	6.794	4.831
0.6833	5.743	6.756	4.806
0.7	5.712	6.725	4.781
0.7166	5.674	6.693	4.756
0.7333	5.643	6.655	4.731
0.75	5.605	6.624	4.705
0.7666	5.573	6.593	4.68
0.7833	5.542	6.561	4.655
0.8	5.504	6.53	4.63
0.8166	5.473	6.492	4.605
0.8333	5.441	6.46	4.58
0.85	5.404	6.429	4.561
0.8666	5.372	6.397	4.536
0.8833	5.341	6.372	4.51
0.9	5.309	6.341	4.485
0.9166	5.278	6.309	4.466
0.9333	5.246	6.278	4.441
0.95	5.215	6.247	4.422
0.9666	5.183	6.215	4.397
0.9833	5.152	6.19	4.372
1	5.121	6.158	4.353
1.2	4.793	5.869	4.108
1.4	4.46	5.542	3.869
1.6	4.152	5.24	3.636
1.8	3.869	4.951	3.422
2	3.605	4.68	3.221
2.2	3.365	4.429	3.038
2.4	3.145	4.183	2.856
2.6	2.944	3.963	2.692
2.8	2.755	3.749	2.535
3	2.573	3.548	2.384
3.2	2.409	3.359	2.246
3.4	2.252	3.177	2.114
3.6	2.107	3.007	1.994
3.8	1.975	2.843	1.874
4	1.849	2.692	1.768
4.2	1.73	2.548	1.667

TABLE S2.6 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 0 Step 0	Test 0 Step 1	Test 0 Step 2
4.4	1.623	2.416	1.566
4.6	1.522	2.283	1.472
4.8	1.428	2.164	1.384
5	1.34	2.044	1.302
5.2	1.258	1.937	1.226
5.4	1.182	1.83	1.157
5.6	1.107	1.736	1.088
5.8	1.038	1.642	1.025
6	0.975	1.554	0.962
6.2	0.918	1.472	0.906
6.4	0.862	1.39	0.849
6.6	0.805	1.315	0.799
6.8	0.755	1.245	0.755
7	0.711	1.176	0.711
7.2	0.666	1.113	0.666
7.4	0.622	1.057	0.629
7.6	0.585	1	0.591
7.8	0.547	0.943	0.553
8	0.515	0.893	0.522
8.2	0.484	0.849	0.49
8.4	0.453	0.799	0.459
8.6	0.427	0.761	0.427
8.8	0.396	0.717	0.402
9	0.371	0.679	0.377
9.2	0.352	0.641	0.358
9.4	0.327	0.61	0.333
9.6	0.308	0.572	0.314
9.8	0.289	0.541	0.295
10	0.27	0.515	0.276
12	0.138	0.289	0.138
14	0.075	0.163	

TABLE S2.7 Slug test data for boring SB31 (effective saturated thickness = 10 ft; length of well = 10 ft; length of screen = 10 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $K_z/K_r = 1$).

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 3 Step 0	Test 3 Step 1	Test 3 Step 2
0	-0.012	0.724	0.006
0.0033	1.788	8.686	2.526
0.0066	10.361	13.988	10.474
0.01	12.672	8.894	11.935
0.0133	8.736	8.075	8.012
0.0166	8.043	8.031	7.621
0.02	7.861	7.924	7.414
0.0233	7.678	7.766	7.275
0.0266	7.539	7.634	7.187
0.03	7.432	7.527	7.092
0.0333	7.319	7.42	6.979
0.0366	7.199	7.313	6.872
0.04	7.086	7.206	6.777
0.0433	6.979	7.105	6.683
0.0466	6.872	7.004	6.595
0.05	6.771	6.91	6.5
0.0533	6.67	6.815	6.412
0.0566	6.57	6.721	6.33
0.06	6.469	6.626	6.242
0.0633	6.374	6.538	6.16
0.0666	6.286	6.45	6.078
0.07	6.192	6.368	5.996
0.0733	6.103	6.28	5.921
0.0766	6.015	6.198	5.839
0.08	5.933	6.116	5.763
0.0833	5.845	6.034	5.694
0.0866	5.763	5.952	5.618
0.09	5.681	5.877	5.543
0.0933	5.606	5.801	5.474
0.0966	5.524	5.726	5.404
0.1	5.448	5.65	5.335
0.1033	5.373	5.581	5.266
0.1066	5.297	5.505	5.203
0.11	5.222	5.436	5.133
0.1133	5.152	5.366	5.07
0.1166	5.083	5.297	5.007
0.12	5.007	5.228	4.944
0.1233	4.944	5.165	4.881
0.1266	4.875	5.096	4.825
0.13	4.806	5.033	4.762
0.1333	4.743	4.97	4.705
0.1366	4.68	4.907	4.642
0.14	4.617	4.844	4.585
0.1433	4.554	4.787	4.529
0.1466	4.491	4.724	4.472
0.15	4.428	4.661	4.422
0.1533	4.365	4.604	4.365
0.1566	4.308	4.548	4.308
0.16	4.251	4.491	4.258
0.1633	4.195	4.434	4.201
0.1666	4.138	4.378	4.151

TABLE S2.7 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 3 Step 0	Test 3 Step 1	Test 3 Step 2
0.17	4.081	4.321	4.1
0.1733	4.025	4.27	4.05
0.1766	3.968	4.214	4
0.18	3.918	4.163	3.949
0.1833	3.861	4.107	3.899
0.1866	3.811	4.056	3.855
0.19	3.76	4.006	3.804
0.1933	3.71	3.956	3.76
0.1966	3.66	3.905	3.71
0.2	3.609	3.855	3.666
0.2033	3.559	3.811	3.622
0.2066	3.508	3.76	3.577
0.21	3.464	3.716	3.533
0.2133	3.414	3.666	3.489
0.2166	3.37	3.622	3.445
0.22	3.326	3.577	3.401
0.2233	3.282	3.533	3.363
0.2266	3.231	3.489	3.319
0.23	3.187	3.445	3.282
0.2333	3.149	3.401	3.237
0.2366	3.105	3.357	3.2
0.24	3.061	3.313	3.156
0.2433	3.017	3.275	3.118
0.2466	2.979	3.231	3.08
0.25	2.941	3.193	3.042
0.2533	2.897	3.149	3.004
0.2566	2.859	3.112	2.966
0.26	2.822	3.074	2.929
0.2633	2.784	3.036	2.897
0.2666	2.746	2.998	2.859
0.27	2.708	2.96	2.828
0.2733	2.67	2.922	2.79
0.2766	2.639	2.885	2.752
0.28	2.601	2.847	2.721
0.2833	2.563	2.816	2.689
0.2866	2.532	2.778	2.652
0.29	2.494	2.74	2.62
0.2933	2.463	2.708	2.589
0.2966	2.431	2.677	2.557
0.3	2.4	2.639	2.526
0.3033	2.368	2.608	2.494
0.3066	2.33	2.576	2.463
0.31	2.305	2.545	2.431
0.3133	2.274	2.513	2.406
0.3166	2.242	2.482	2.375
0.32	2.211	2.45	2.349
0.3233	2.179	2.419	2.318
0.3266	2.154	2.387	2.286
0.33	2.122	2.355	2.261
0.3333	2.097	2.33	2.229
0.35	1.959	2.185	2.097
0.3666	1.826	2.053	1.971
0.3833	1.713	1.927	1.851

TABLE S2.7 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 3 Step 0	Test 3 Step 1	Test 3 Step 2
0.4	1.6	1.808	1.744
0.4166	1.498	1.7	1.644
0.4333	1.404	1.6	1.543
0.45	1.31	1.505	1.455
0.4666	1.228	1.417	1.373
0.4833	1.152	1.328	1.291
0.5	1.077	1.253	1.215
0.5166	1.007	1.178	1.14
0.5333	0.944	1.108	1.077
0.55	0.888	1.039	1.014
0.5666	0.831	0.982	0.957
0.5833	0.781	0.919	0.9
0.6	0.73	0.869	0.85
0.6166	0.686	0.818	0.8
0.6333	0.642	0.768	0.755
0.65	0.604	0.724	0.711
0.6666	0.567	0.68	0.674
0.6833	0.535	0.642	0.636
0.7	0.503	0.604	0.598
0.7166	0.472	0.573	0.567
0.7333	0.44	0.541	0.535
0.75	0.415	0.51	0.503
0.7666	0.39	0.478	0.478
0.7833	0.365	0.453	0.447
0.8	0.346	0.428	0.421
0.8166	0.327	0.403	0.403
0.8333	0.308	0.377	0.377
0.85	0.289	0.358	0.358
0.8666	0.27	0.34	0.34
0.8833	0.258	0.321	0.321
0.9	0.245	0.302	0.302
0.9166	0.226	0.289	0.289
0.9333	0.214	0.27	0.27
0.95	0.207	0.258	0.258
0.9666	0.195	0.245	0.245
0.9833	0.182	0.233	0.233
1	0.176	0.22	0.22
1.2	0.087	0.119	0.119
1.4	0.05	0.069	0.069
1.6	0.031	0.043	0.043
1.8	0.025	0.025	0.025
2	0.018	0.018	0.018
2.2	0.012	0.012	0.012
2.4	0.012	0.012	0.012
2.6	0.006	0.006	0.012
2.8			0.006

TABLE S2.8 Slug test data for boring SB34 (effective saturated thickness = 9 ft; length of well = 9 ft; length of screen = 9 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 4 Step 0	Test 4 Step 1	Test 4 Step 2
0.0033	3.035	1.606	4.824
0.0066	6.354	8.671	8.967
0.01	6.65	9.962	8.527
0.0133	6.298	8.445	7.204
0.0166	5.819	7.519	6.486
0.02	5.391	7.085	6.146
0.0233	5.063	6.751	5.895
0.0266	4.774	6.474	5.662
0.03	4.534	6.222	5.454
0.0333	4.32	5.983	5.258
0.0366	4.125	5.75	5.07
0.04	3.936	5.542	4.893
0.0433	3.741	5.34	4.729
0.0466	3.564	5.145	4.572
0.05	3.407	4.969	4.421
0.0533	3.25	4.792	4.282
0.0566	3.098	4.629	4.144
0.06	2.96	4.471	4.012
0.0633	2.821	4.32	3.879
0.0666	2.695	4.175	3.76
0.07	2.576	4.03	3.64
0.0733	2.456	3.898	3.527
0.0766	2.343	3.766	3.413
0.08	2.242	3.64	3.313
0.0833	2.141	3.52	3.205
0.0866	2.04	3.401	3.105
0.09	1.952	3.287	3.01
0.0933	1.864	3.18	2.916
0.0966	1.782	3.079	2.828
0.1	1.7	2.979	2.739
0.1033	1.625	2.878	2.658
0.1066	1.549	2.783	2.576
0.11	1.486	2.695	2.5
0.1133	1.417	2.607	2.424
0.1166	1.354	2.525	2.349
0.12	1.297	2.443	2.273
0.1233	1.234	2.362	2.204
0.1266	1.184	2.286	2.141
0.13	1.133	2.21	2.078
0.1333	1.083	2.141	2.015
0.1366	1.033	2.072	1.952
0.14	0.988	2.002	1.895
0.1433	0.944	1.939	1.839
0.1466	0.9	1.883	1.788
0.15	0.862	1.82	1.732
0.1533	0.825	1.763	1.681
0.1566	0.793	1.706	1.631
0.16	0.755	1.65	1.58
0.1633	0.724	1.599	1.536
0.1666	0.692	1.549	1.486

TABLE S2.8 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 4 Step 0	Test 4 Step 1	Test 4 Step 2
0.17	0.661	1.499	1.448
0.1733	0.636	1.448	1.404
0.1766	0.604	1.404	1.36
0.18	0.579	1.36	1.322
0.1833	0.554	1.316	1.284
0.1866	0.535	1.278	1.247
0.19	0.51	1.234	1.209
0.1933	0.491	1.196	1.171
0.1966	0.466	1.158	1.14
0.2	0.447	1.127	1.108
0.2033	0.428	1.089	1.077
0.2066	0.415	1.058	1.045
0.21	0.396	1.026	1.014
0.2133	0.377	0.988	0.982
0.2166	0.365	0.957	0.957
0.22	0.346	0.932	0.925
0.2233	0.333	0.9	0.9
0.2266	0.321	0.875	0.875
0.23	0.308	0.844	0.85
0.2333	0.296	0.825	0.825
0.2366	0.283	0.799	0.799
0.24	0.27	0.774	0.781
0.2433	0.264	0.749	0.755
0.2466	0.251	0.724	0.736
0.25	0.239	0.705	0.718
0.2533	0.233	0.68	0.692
0.2566	0.22	0.661	0.674
0.26	0.214	0.642	0.655
0.2633	0.207	0.623	0.636
0.2666	0.201	0.604	0.623
0.27	0.188	0.585	0.604
0.2733	0.182	0.566	0.585
0.2766	0.176	0.554	0.573
0.28	0.17	0.535	0.554
0.2833	0.163	0.516	0.541
0.2866	0.157	0.503	0.522
0.29	0.151	0.491	0.51
0.2933	0.144	0.472	0.497
0.2966	0.138	0.459	0.485
0.3	0.132	0.447	0.472
0.3033	0.132	0.434	0.453
0.3066	0.125	0.422	0.44
0.31	0.119	0.409	0.434
0.3133	0.119	0.396	0.422
0.3166	0.113	0.384	0.409
0.32	0.107	0.377	0.396
0.3233	0.107	0.365	0.39
0.3266	0.1	0.352	0.377
0.33	0.1	0.346	0.365
0.3333	0.094	0.333	0.359
0.35	0.081	0.289	0.314
0.3666	0.069	0.251	0.27
0.3833	0.056	0.22	0.239

TABLE S2.8 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)		
	Test 4 Step 0	Test 4 Step 1	Test 4 Step 2
0.4	0.05	0.188	0.214
0.4166	0.044	0.163	0.188
0.4333	0.037	0.144	0.163
0.45	0.031	0.125	0.144
0.4666	0.031	0.113	0.132
0.4833	0.025	0.1	0.119
0.5	0.025	0.088	0.107
0.5166	0.018	0.081	0.094
0.5333	0.018	0.069	0.081
0.55	0.018	0.063	0.075
0.5666	0.012	0.056	0.069
0.5833	0.012	0.05	0.063
0.6	0.012	0.044	0.056
0.6166	0.012	0.044	0.05
0.6333	0.012	0.037	0.044
0.65	0.012	0.031	0.044
0.6666	0.012	0.031	0.037
0.6833	0.012	0.031	0.037
0.7	0.006	0.025	0.031
0.7166		0.025	0.031
0.7333		0.025	0.025
0.75		0.018	0.025
0.7666		0.018	0.018
0.7833		0.018	0.018
0.8		0.018	0.018
0.8166		0.018	0.018
0.8333		0.012	0.012
0.85		0.012	0.012
0.8666		0.012	0.012
0.8833		0.012	0.012
0.9		0.012	0.012
0.9166		0.012	0.012
0.9333		0.012	0.006
0.95		0.006	

TABLE S2.9 Slug test data for boring SB49 (effective saturated thickness = 4 ft; length of well = 4 ft; length of screen = 4 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $K_z/K_r = 1$).

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 7 Step 0	Test 8 Step 0
0	0.025	-0.006	-0.031	0.056	4.358
0.0033	5.83	4.799	2.515	4.571	4.666
0.0066	3.861	5.188	3.622	5.785	5.094
0.01	3.56	5.409	3.327	5.955	5.421
0.0133	3.553	5.704	3.05	5.949	5.509
0.0166	3.729	5.836	2.843	5.848	5.509
0.02	3.861	5.874	2.811	5.722	5.453
0.0233	3.893	5.868	2.836	5.64	5.396
0.0266	3.887	5.836	2.849	5.584	5.346
0.03	3.849	5.798	2.843	5.546	5.308
0.0333	3.824	5.761	2.824	5.527	5.283
0.0366	3.805	5.736	2.805	5.496	5.258
0.04	3.792	5.704	2.78	5.471	5.233
0.0433	3.786	5.679	2.767	5.445	5.214
0.0466	3.78	5.654	2.748	5.42	5.188
0.05	3.767	5.635	2.736	5.395	5.163
0.0533	3.755	5.61	2.723	5.364	5.138
0.0566	3.748	5.591	2.71	5.339	5.113
0.06	3.736	5.566	2.692	5.313	5.088
0.0633	3.729	5.541	2.679	5.288	5.069
0.0666	3.717	5.522	2.666	5.263	5.044
0.07	3.704	5.503	2.654	5.238	5.019
0.0733	3.698	5.484	2.641	5.213	5
0.0766	3.692	5.465	2.622	5.188	4.975
0.08	3.679	5.44	2.61	5.162	4.956
0.0833	3.673	5.415	2.597	5.137	4.931
0.0866	3.66	5.402	2.585	5.112	4.912
0.09	3.654	5.377	2.572	5.087	4.887
0.0933	3.641	5.358	2.56	5.068	4.861
0.0966	3.635	5.339	2.547	5.043	4.843
0.1	3.622	5.321	2.534	5.018	4.824
0.1033	3.616	5.302	2.522	4.999	4.799
0.1066	3.61	5.283	2.509	4.974	4.78
0.11	3.597	5.264	2.497	4.949	4.755
0.1133	3.591	5.239	2.484	4.93	4.736
0.1166	3.585	5.226	2.471	4.905	4.717
0.12	3.572	5.201	2.459	4.886	4.698
0.1233	3.566	5.188	2.453	4.861	4.673
0.1266	3.553	5.17	2.44	4.842	4.654
0.13	3.547	5.151	2.427	4.817	4.635
0.1333	3.541	5.126	2.415	4.798	4.616
0.1366	3.528	5.107	2.402	4.773	4.591
0.14	3.522	5.094	2.39	4.754	4.572
0.1433	3.516	5.069	2.383	4.735	4.553
0.1466	3.503	5.056	2.371	4.71	4.534
0.15	3.497	5.037	2.358	4.691	4.516
0.1533	3.49	5.019	2.346	4.672	4.497
0.1566	3.484	5.006	2.333	4.647	4.478
0.16	3.472	4.987	2.327	4.628	4.459
0.1633	3.465	4.968	2.314	4.609	4.44
0.1666	3.459	4.956	2.302	4.59	4.421

TABLE S2.9 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 7 Step 0	Test 8 Step 0
0.17	3.453	4.931	2.295	4.571	4.402
0.1733	3.44	4.918	2.283	4.546	4.383
0.1766	3.434	4.899	2.27	4.527	4.365
0.18	3.427	4.88	2.258	4.508	4.346
0.1833	3.421	4.861	2.251	4.49	4.327
0.1866	3.409	4.849	2.239	4.464	4.308
0.19	3.402	4.83	2.226	4.446	4.289
0.1933	3.396	4.811	2.22	4.427	4.27
0.1966	3.39	4.799	2.207	4.408	4.251
0.2	3.377	4.78	2.195	4.389	4.233
0.2033	3.371	4.761	2.188	4.37	4.214
0.2066	3.365	4.748	2.176	4.351	4.201
0.21	3.358	4.729	2.17	4.332	4.182
0.2133	3.346	4.71	2.157	4.313	4.163
0.2166	3.339	4.698	2.144	4.295	4.145
0.22	3.333	4.679	2.138	4.276	4.126
0.2233	3.327	4.666	2.126	4.257	4.113
0.2266	3.321	4.648	2.119	4.238	4.094
0.23	3.308	4.629	2.107	4.219	4.075
0.2333	3.302	4.616	2.094	4.207	4.056
0.2366	3.295	4.597	2.088	4.188	4.044
0.24	3.289	4.585	2.075	4.169	4.025
0.2433	3.283	4.566	2.069	4.15	4.012
0.2466	3.277	4.553	2.056	4.131	3.994
0.25	3.264	4.534	2.05	4.112	3.975
0.2533	3.258	4.522	2.037	4.093	3.956
0.2566	3.251	4.503	2.031	4.081	3.943
0.26	3.245	4.49	2.019	4.062	3.918
0.2633	3.232	4.472	2.012	4.043	3.906
0.2666	3.226	4.459	2	4.024	3.893
0.27	3.22	4.44	1.993	4.012	3.874
0.2733	3.214	4.427	1.987	3.993	3.861
0.2766	3.207	4.409	1.975	3.974	3.843
0.28	3.201	4.396	1.968	3.955	3.83
0.2833	3.188	4.377	1.956	3.942	3.811
0.2866	3.182	4.365	1.949	3.924	3.792
0.29	3.176	4.352	1.937	3.905	3.78
0.2933	3.17	4.333	1.931	3.892	3.761
0.2966	3.163	4.321	1.924	3.873	3.748
0.3	3.157	4.302	1.912	3.854	3.736
0.3033	3.151	4.289	1.905	3.842	3.717
0.3066	3.138	4.277	1.893	3.823	3.704
0.31	3.132	4.258	1.886	3.804	3.685
0.3133	3.126	4.239	1.88	3.791	3.667
0.3166	3.119	4.226	1.868	3.773	3.654
0.32	3.113	4.214	1.861	3.76	3.641
0.3233	3.107	4.201	1.855	3.741	3.622
0.3266	3.1	4.188	1.842	3.729	3.61
0.33	3.094	4.17	1.836	3.71	3.597
0.3333	3.082	4.157	1.83	3.691	3.578
0.35	3.05	4.088	1.786	3.615	3.509
0.3666	3.019	4.025	1.748	3.547	3.44
0.3833	2.987	3.956	1.71	3.478	3.371

TABLE S2.9 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 7 Step 0	Test 8 Step 0
0.4	2.956	3.893	1.679	3.403	3.308
0.4166	2.924	3.83	1.641	3.34	3.245
0.4333	2.893	3.767	1.603	3.27	3.182
0.45	2.861	3.704	1.572	3.201	3.113
0.4666	2.83	3.641	1.534	3.138	3.056
0.4833	2.799	3.585	1.503	3.075	3
0.5	2.767	3.528	1.471	3.013	2.937
0.5166	2.742	3.472	1.44	2.956	2.88
0.5333	2.71	3.415	1.408	2.899	2.824
0.55	2.679	3.365	1.377	2.836	2.773
0.5666	2.654	3.302	1.346	2.786	2.717
0.5833	2.622	3.251	1.32	2.73	2.666
0.6	2.597	3.201	1.289	2.673	2.61
0.6166	2.572	3.144	1.264	2.616	2.56
0.6333	2.541	3.094	1.239	2.566	2.509
0.65	2.515	3.044	1.207	2.516	2.465
0.6666	2.49	2.993	1.182	2.465	2.415
0.6833	2.459	2.943	1.157	2.415	2.371
0.7	2.434	2.893	1.132	2.371	2.327
0.7166	2.409	2.849	1.113	2.321	2.276
0.7333	2.383	2.811	1.088	2.277	2.232
0.75	2.358	2.754	1.063	2.226	2.195
0.7666	2.333	2.71	1.044	2.189	2.151
0.7833	2.308	2.673	1.018	2.145	2.107
0.8	2.283	2.629	1	2.101	2.069
0.8166	2.258	2.578	0.974	2.057	2.031
0.8333	2.239	2.541	0.956	2.019	1.993
0.85	2.214	2.497	0.937	1.981	1.949
0.8666	2.188	2.459	0.918	1.943	1.912
0.8833	2.163	2.415	0.899	1.906	1.88
0.9	2.138	2.377	0.88	1.868	1.843
0.9166	2.119	2.339	0.861	1.83	1.805
0.9333	2.094	2.302	0.842	1.792	1.773
0.95	2.069	2.264	0.823	1.755	1.742
0.9666	2.05	2.226	0.805	1.723	1.704
0.9833	2.025	2.188	0.786	1.692	1.673
1	2.006	2.157	0.773	1.654	1.641
1.2	1.792	1.824	0.622	1.346	1.346
1.4	1.578	1.503	0.484	1.069	1.075
1.6	1.383	1.239	0.371	0.849	0.855
1.8	1.22	1.018	0.289	0.673	0.685
2	1.069	0.836	0.22	0.541	0.553
2.2	0.943	0.685	0.169	0.434	0.446
2.4	0.823	0.566	0.132	0.352	0.358
2.6	0.729	0.465	0.094	0.283	0.289
2.8	0.641	0.377	0.069	0.232	0.239
3	0.559	0.314	0.05	0.188	0.194
3.2	0.49	0.251	0.037	0.151	0.157
3.4	0.434	0.207	0.025	0.125	0.132
3.6	0.383	0.163	0.012	0.107	0.106
3.8	0.333	0.138	0.006	0.088	0.088
4	0.295	0.106		0.075	0.075
4.2	0.257	0.088		0.063	0.056

TABLE S2.9 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)				
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 7 Step 0	Test 8 Step 0
4.4	0.226	0.069		0.05	0.05
4.6	0.194	0.05		0.044	0.044
4.8	0.176	0.037		0.037	0.037
5	0.15	0.025		0.031	0.031
5.2	0.132	0.018		0.031	0.025
5.4	0.113	0.012		0.025	0.018
5.6	0.1	0.006		0.025	0.018
5.8	0.088			0.019	0.012
6	0.075			0.019	0.012
6.2	0.069			0.019	0.012
6.4	0.056			0.012	0.006
6.6	0.05			0.012	0.006
6.8	0.044			0.012	0.006
7	0.037			0.012	0.006
7.2	0.031			0.012	0.006
7.4	0.025			0.006	0.006
7.6	0.018			0.012	0.006
7.8	0.018			0.006	0
8	0.012				0
8.2	0.006				0
8.4					0
8.6					0
8.8					0
9					0
9.2					0.006

TABLE S2.10 Slug test data for boring SB60 (effective saturated thickness = 5 ft; length of well = 5 ft; length of screen = 5 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $K_z/K_r = 1$).

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 4 Step 0	Test 4 Step 1	Test 4 Step 2	Test 4 Step 3
0	0.006	0.062	0	0.031
0.0033	1.32	0.66	0.264	1.308
0.0066	-1.044	1.1	2.126	0.113
0.01	0.798	1.069	2.736	0.27
0.0133	0.666	1.056	-0.502	1.144
0.0166	1.364	1.031	1.541	1.081
0.02	3.956	1.031	0.289	1.069
0.0233	-0.679	0.999	1.252	1.037
0.0266	1.1	0.993	0.805	1.025
0.03	0.861	0.981	0.969	1.018
0.0333	0.861	0.974	0.925	1.006
0.0366	0.867	0.968	0.855	0.999
0.04	0.874	0.962	0.855	0.993
0.0433	0.798	0.949	0.874	0.981
0.0466	0.817	0.943	0.855	0.974
0.05	0.748	0.937	0.843	0.968
0.0533	0.805	0.93	0.837	0.962
0.0566	0.761	0.924	0.83	0.955
0.06	0.874	0.918	0.824	0.949
0.0633	0.779	0.911	0.818	0.943
0.0666	0.685	0.905	0.818	0.937
0.07	0.742	0.899	0.811	0.93
0.0733	0.761	0.893	0.805	0.924
0.0766	0.742	0.886	0.799	0.918
0.08	0.735	0.88	0.793	0.911
0.0833	0.748	0.874	0.843	0.905
0.0866	0.786	0.867	0.767	0.911
0.09	0.717	0.861	0.824	0.899
0.0933	0.704	0.855	0.855	0.886
0.0966	0.635	0.855	0.774	0.886
0.1	0.704	0.849	0.723	0.88
0.1033	0.685	0.842	0.78	0.874
0.1066	0.691	0.836	0.755	0.867
0.11	0.691	0.83	0.837	0.861
0.1133	0.685	0.823	0.774	0.861
0.1166	0.679	0.817	0.73	0.849
0.12	0.672	0.811	0.742	0.849
0.1233	0.654	0.811	0.723	0.842
0.1266	0.66	0.805	0.736	0.836
0.13	0.654	0.798	0.73	0.836
0.1333	0.654	0.792	0.723	0.83
0.1366	0.654	0.786	0.723	0.823
0.14	0.616	0.786	0.717	0.823
0.1433	0.641	0.779	0.723	0.817
0.1466	0.635	0.773	0.742	0.805
0.15	0.628	0.767	0.705	0.805
0.1533	0.628	0.76	0.686	0.798
0.1566	0.622	0.76	0.717	0.798
0.16	0.628	0.754	0.692	0.792
0.1633	0.61	0.748	0.686	0.779
0.1666	0.603	0.742	0.679	0.779

TABLE S2.10 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 4 Step 0	Test 4 Step 1	Test 4 Step 2	Test 4 Step 3
0.17	0.603	0.735	0.679	0.773
0.1733	0.603	0.735	0.673	0.773
0.1766	0.597	0.729	0.673	0.767
0.18	0.591	0.723	0.667	0.76
0.1833	0.591	0.716	0.66	0.76
0.1866	0.591	0.71	0.66	0.754
0.19	0.534	0.71	0.654	0.748
0.1933	0.572	0.704	0.654	0.742
0.1966	0.578	0.698	0.648	0.742
0.2	0.553	0.691	0.648	0.729
0.2033	0.553	0.691	0.642	0.729
0.2066	0.566	0.685	0.635	0.723
0.21	0.54	0.679	0.635	0.729
0.2133	0.547	0.672	0.629	0.723
0.2166	0.509	0.672	0.629	0.71
0.22	0.54	0.666	0.623	0.71
0.2233	0.547	0.66	0.623	0.704
0.2266	0.534	0.66	0.616	0.698
0.23	0.54	0.654	0.616	0.698
0.2333	0.54	0.647	0.61	0.691
0.2366	0.534	0.647	0.604	0.691
0.24	0.528	0.641	0.604	0.691
0.2433	0.522	0.635	0.598	0.679
0.2466	0.515	0.628	0.598	0.679
0.25	0.515	0.628	0.591	0.672
0.2533	0.509	0.622	0.591	0.666
0.2566	0.509	0.622	0.585	0.66
0.26	0.509	0.616	0.585	0.66
0.2633	0.503	0.616	0.579	0.654
0.2666	0.509	0.61	0.579	0.647
0.27	0.496	0.603	0.572	0.647
0.2733	0.496	0.603	0.572	0.641
0.2766	0.49	0.597	0.566	0.641
0.28	0.49	0.591	0.566	0.635
0.2833	0.484	0.591	0.56	0.635
0.2866	0.484	0.584	0.56	0.635
0.29	0.478	0.584	0.554	0.622
0.2933	0.478	0.578	0.554	0.622
0.2966	0.471	0.572	0.547	0.616
0.3	0.471	0.572	0.547	0.616
0.3033	0.465	0.566	0.541	0.616
0.3066	0.465	0.566	0.541	0.603
0.31	0.465	0.559	0.535	0.603
0.3133	0.459	0.553	0.535	0.603
0.3166	0.459	0.553	0.528	0.597
0.32	0.452	0.547	0.528	0.597
0.3233	0.452	0.547	0.528	0.591
0.3266	0.446	0.54	0.522	0.584
0.33	0.446	0.54	0.522	0.584
0.3333	0.44	0.534	0.516	0.584
0.35	0.427	0.522	0.503	0.566
0.3666	0.415	0.503	0.491	0.547
0.3833	0.402	0.49	0.478	0.534

TABLE S2.10 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 4 Step 0	Test 4 Step 1	Test 4 Step 2	Test 4 Step 3
0.4	0.389	0.477	0.466	0.522
0.4166	0.383	0.459	0.453	0.503
0.4333	0.371	0.446	0.44	0.49
0.45	0.358	0.433	0.428	0.477
0.4666	0.352	0.421	0.422	0.465
0.4833	0.339	0.408	0.409	0.452
0.5	0.333	0.396	0.403	0.44
0.5166	0.32	0.383	0.39	0.427
0.5333	0.314	0.377	0.384	0.415
0.55	0.301	0.364	0.371	0.402
0.5666	0.295	0.352	0.365	0.396
0.5833	0.289	0.345	0.352	0.383
0.6	0.283	0.333	0.346	0.377
0.6166	0.27	0.327	0.34	0.364
0.6333	0.264	0.314	0.327	0.352
0.65	0.257	0.308	0.321	0.345
0.6666	0.251	0.295	0.315	0.333
0.6833	0.245	0.289	0.308	0.327
0.7	0.239	0.283	0.296	0.314
0.7166	0.232	0.27	0.289	0.308
0.7333	0.226	0.264	0.283	0.301
0.75	0.22	0.257	0.277	0.295
0.7666	0.213	0.251	0.271	0.283
0.7833	0.213	0.245	0.264	0.276
0.8	0.201	0.232	0.258	0.27
0.8166	0.201	0.226	0.252	0.264
0.8333	0.194	0.22	0.245	0.257
0.85	0.188	0.213	0.239	0.251
0.8666	0.182	0.207	0.239	0.239
0.8833	0.176	0.201	0.233	0.239
0.9	0.176	0.194	0.227	0.226
0.9166	0.169	0.194	0.22	0.22
0.9333	0.163	0.188	0.214	0.213
0.95	0.163	0.182	0.208	0.213
0.9666	0.157	0.176	0.208	0.207
0.9833	0.15	0.169	0.201	0.201
1	0.15	0.163	0.195	0.194
1.2	0.113	0.125	0.157	0.144
1.4	0.075	0.088	0.12	0.106
1.6	0.05	0.062	0.094	0.075
1.8	0.031	0.044	0.069	0.05
2	0.025	0.031	0.057	0.037
2.2	0.018	0.018	0.044	0.025
2.4	0.012	0.012	0.038	0.012
2.6	0.006	0.012	0.025	0.006
2.8		0.006	0.025	
3			0.019	
3.2			0.013	
3.4			0.013	
3.6			0.006	

TABLE S2.11 Slug test data for boring SB62 (effective saturated thickness = 13 ft; length of well = 13 ft; length of screen = 8 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 6 Step 0	Test 6 Step 1	Test 6 Step 2	Test 6 Step 3
0	0	0.007	0	0
0.0033	-0.013	0.598	0	0.044
0.0066	0.012	1.214	0	0.711
0.01	1.975	0.648	0	-0.125
0.0133	4.844	0.139	0.038	0.661
0.0166	-1.397	0.592	0.095	1.057
0.02	0.144	1.208	0.466	0.485
0.0233	0.723	1.051	1.686	0.717
0.0266	0.673	0.982	4.221	0.963
0.03	0.635	0.969	-0.711	0.944
0.0333	0.61	0.931	0.51	0.938
0.0366	0.604	0.925	0.843	0.906
0.04	0.591	0.906	0.761	0.887
0.0433	0.578	0.894	0.711	0.831
0.0466	0.56	0.881	0.692	0.862
0.05	0.547	0.868	0.68	0.849
0.0533	0.541	0.849	0.673	0.837
0.0566	0.528	0.843	0.661	0.824
0.06	0.522	0.831	0.642	0.812
0.0633	0.515	0.818	0.623	0.799
0.0666	0.503	0.818	0.61	0.793
0.07	0.49	0.793	0.604	0.78
0.0733	0.484	0.78	0.598	0.768
0.0766	0.478	0.768	0.592	0.755
0.08	0.471	0.761	0.579	0.749
0.0833	0.465	0.749	0.566	0.736
0.0866	0.453	0.743	0.56	0.73
0.09	0.453	0.73	0.554	0.717
0.0933	0.446	0.724	0.541	0.711
0.0966	0.44	0.711	0.535	0.699
0.1	0.434	0.705	0.529	0.686
0.1033	0.415	0.692	0.522	0.68
0.1066	0.415	0.686	0.516	0.673
0.11	0.409	0.673	0.51	0.667
0.1133	0.409	0.667	0.497	0.667
0.1166	0.427	0.661	0.491	0.648
0.12	0.409	0.648	0.485	0.636
0.1233	0.409	0.642	0.485	0.629
0.1266	0.402	0.636	0.472	0.623
0.13	0.402	0.623	0.472	0.61
0.1333	0.39	0.617	0.466	0.604
0.1366	0.39	0.61	0.453	0.598
0.14	0.383	0.604	0.453	0.585
0.1433	0.377	0.598	0.447	0.585
0.1466	0.371	0.585	0.441	0.579
0.15	0.371	0.579	0.434	0.548
0.1533	0.365	0.573	0.428	0.56
0.1566	0.365	0.566	0.422	0.548
0.16	0.358	0.56	0.415	0.554
0.1633	0.352	0.554	0.415	0.541
0.1666	0.352	0.548	0.409	0.522

TABLE S2.11 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 6 Step 0	Test 6 Step 1	Test 6 Step 2	Test 6 Step 3
0.17	0.346	0.541	0.403	0.529
0.1733	0.339	0.535	0.397	0.522
0.1766	0.333	0.529	0.397	0.516
0.18	0.333	0.522	0.39	0.504
0.1833	0.321	0.516	0.384	0.497
0.1866	0.321	0.51	0.384	0.497
0.19	0.314	0.497	0.378	0.491
0.1933	0.314	0.497	0.371	0.478
0.1966	0.308	0.491	0.365	0.472
0.2	0.308	0.485	0.365	0.466
0.2033	0.302	0.478	0.359	0.46
0.2066	0.302	0.472	0.353	0.46
0.21	0.295	0.466	0.353	0.453
0.2133	0.295	0.46	0.346	0.447
0.2166	0.289	0.453	0.346	0.441
0.22	0.289	0.453	0.34	0.434
0.2233	0.283	0.447	0.334	0.428
0.2266	0.283	0.441	0.334	0.428
0.23	0.276	0.434	0.327	0.415
0.2333	0.276	0.428	0.327	0.409
0.2366	0.276	0.428	0.321	0.409
0.24	0.27	0.422	0.321	0.403
0.2433	0.27	0.415	0.315	0.397
0.2466	0.264	0.409	0.315	0.397
0.25	0.264	0.403	0.309	0.39
0.2533	0.258	0.403	0.309	0.378
0.2566	0.258	0.397	0.302	0.384
0.26	0.251	0.39	0.302	0.378
0.2633	0.251	0.384	0.296	0.371
0.2666	0.251	0.384	0.29	0.371
0.27	0.245	0.378	0.29	0.359
0.2733	0.239	0.371	0.29	0.359
0.2766	0.239	0.371	0.283	0.353
0.28	0.239	0.365	0.283	0.346
0.2833	0.232	0.359	0.277	0.34
0.2866	0.232	0.353	0.277	0.34
0.29	0.232	0.353	0.271	0.334
0.2933	0.226	0.346	0.271	0.327
0.2966	0.226	0.346	0.264	0.327
0.3	0.226	0.34	0.264	0.327
0.3033	0.22	0.334	0.264	0.321
0.3066	0.22	0.334	0.258	0.315
0.31	0.22	0.327	0.258	0.309
0.3133	0.214	0.321	0.252	0.309
0.3166	0.214	0.321	0.252	0.302
0.32	0.214	0.315	0.246	0.296
0.3233	0.207	0.315	0.246	0.296
0.3266	0.207	0.309	0.246	0.29
0.33	0.207	0.309	0.239	0.29
0.3333	0.207	0.302	0.239	0.29
0.35	0.195	0.283	0.227	0.265
0.3666	0.182	0.265	0.214	0.252
0.3833	0.176	0.246	0.208	0.233

TABLE S2.11 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 6 Step 0	Test 6 Step 1	Test 6 Step 2	Test 6 Step 3
0.4	0.17	0.233	0.195	0.22
0.4166	0.157	0.22	0.183	0.214
0.4333	0.151	0.208	0.176	0.195
0.45	0.144	0.195	0.17	0.183
0.4666	0.132	0.183	0.158	0.17
0.4833	0.132	0.17	0.151	0.158
0.5	0.125	0.164	0.145	0.151
0.5166	0.113	0.151	0.139	0.139
0.5333	0.113	0.145	0.132	0.132
0.55	0.107	0.132	0.126	0.126
0.5666	0.1	0.126	0.12	0.12
0.5833	0.1	0.12	0.113	0.107
0.6	0.094	0.114	0.113	0.101
0.6166	0.088	0.107	0.107	0.095
0.6333	0.088	0.101	0.101	0.088
0.65	0.081	0.095	0.095	0.088
0.6666	0.075	0.088	0.095	0.082
0.6833	0.075	0.082	0.082	0.076
0.7	0.069	0.076	0.082	0.07
0.7166	0.069	0.07	0.082	0.07
0.7333	0.063	0.07	0.076	0.063
0.75	0.063	0.063	0.069	0.057
0.7666	0.056	0.063	0.069	0.057
0.7833	0.056	0.057	0.069	0.051
0.8	0.05	0.057	0.063	0.051
0.8166	0.05	0.051	0.057	0.051
0.8333	0.05	0.044	0.057	0.044
0.85	0.044	0.044	0.057	0.044
0.8666	0.044	0.044	0.051	0.038
0.8833	0.037	0.044	0.051	0.038
0.9	0.037	0.038	0.044	0.032
0.9166	0.031	0.038	0.044	0.032
0.9333	0.037	0.032	0.044	0.025
0.95	0.031	0.032	0.038	0.025
0.9666	0.031	0.032	0.038	0.025
0.9833	0.031	0.025	0.038	0.025
1	0.031	0.025	0.038	0.019
1.2	0.019	0.007	0.019	0.007
1.4	0.012	0.007	0.007	
1.6	0.006		0.007	
1.8	0.006			

TABLE S2.12 Slug test data for boring SB64 (effective saturated thickness = 10 ft; length of well = 10 ft; length of screen = 5 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $K_z/K_r = 1$).

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 5 Step 3
0	0.006	0.207	0.018	0.138
0.0033	0.006	0.962	0.018	1.188
0.0066	0	0.195	0.025	0.484
0.01	0.006	0.433	0.402	0.05
0.0133	0.245	0.792	1.062	0.754
0.0166	1.044	0.685	1.497	0.823
0.02	1.037	0.823	1.44	0.798
0.0233	2.352	0.786	0.031	0.729
0.0266	0.119	0.704	0.232	0.679
0.03	0.169	0.666	0.522	0.635
0.0333	0.421	0.622	0.584	0.591
0.0366	0.553	0.578	0.522	0.559
0.04	0.509	0.547	0.465	0.515
0.0433	0.459	0.509	0.446	0.49
0.0466	0.427	0.478	0.427	0.459
0.05	0.408	0.452	0.408	0.433
0.0533	0.389	0.427	0.383	0.415
0.0566	0.371	0.408	0.371	0.389
0.06	0.352	0.383	0.352	0.377
0.0633	0.333	0.364	0.333	0.352
0.0666	0.32	0.352	0.314	0.339
0.07	0.308	0.333	0.301	0.32
0.0733	0.289	0.314	0.289	0.308
0.0766	0.276	0.301	0.276	0.301
0.08	0.257	0.289	0.264	0.283
0.0833	0.245	0.276	0.251	0.27
0.0866	0.239	0.264	0.239	0.264
0.09	0.226	0.251	0.232	0.257
0.0933	0.213	0.239	0.226	0.232
0.0966	0.207	0.232	0.213	0.239
0.1	0.201	0.22	0.207	0.207
0.1033	0.188	0.213	0.194	0.201
0.1066	0.182	0.201	0.188	0.195
0.11	0.176	0.195	0.182	0.182
0.1133	0.163	0.188	0.169	0.176
0.1166	0.157	0.182	0.163	0.169
0.12	0.15	0.176	0.157	0.163
0.1233	0.144	0.169	0.15	0.157
0.1266	0.138	0.163	0.15	0.15
0.13	0.132	0.157	0.144	0.144
0.1333	0.125	0.15	0.138	0.138
0.1366	0.125	0.144	0.138	0.132
0.14	0.119	0.138	0.132	0.125
0.1433	0.113	0.132	0.125	0.125
0.1466	0.106	0.132	0.119	0.119
0.15	0.106	0.125	0.119	0.113
0.1533	0.1	0.119	0.113	0.106
0.1566	0.094	0.119	0.106	0.106
0.16	0.094	0.113	0.106	0.106
0.1633	0.088	0.113	0.1	0.1
0.1666	0.088	0.106	0.1	0.1

TABLE S2.12 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 5 Step 3
0.17	0.081	0.106	0.094	0.094
0.1733	0.081	0.1	0.094	0.094
0.1766	0.075	0.1	0.088	0.088
0.18	0.075	0.094	0.088	0.088
0.1833	0.069	0.094	0.081	0.081
0.1866	0.069	0.094	0.081	0.081
0.19	0.062	0.088	0.081	0.075
0.1933	0.062	0.088	0.075	0.075
0.1966	0.062	0.081	0.075	0.075
0.2	0.056	0.081	0.075	0.069
0.2033	0.056	0.081	0.069	0.069
0.2066	0.056	0.075	0.069	0.069
0.21	0.05	0.075	0.069	0.062
0.2133	0.05	0.075	0.062	0.062
0.2166	0.05	0.069	0.062	0.056
0.22	0.044	0.069	0.056	0.056
0.2233	0.044	0.069	0.056	0.056
0.2266	0.044	0.069	0.056	0.05
0.23	0.037	0.062	0.056	0.05
0.2333	0.037	0.062	0.056	0.05
0.2366	0.037	0.062	0.056	0.05
0.24	0.037	0.062	0.05	0.05
0.2433	0.037	0.056	0.05	0.044
0.2466	0.031	0.056	0.05	0.044
0.25	0.031	0.056	0.05	0.044
0.2533	0.031	0.056	0.044	0.044
0.2566	0.031	0.056	0.044	0.044
0.26	0.031	0.05	0.044	0.044
0.2633	0.031	0.05	0.044	0.037
0.2666	0.025	0.05	0.044	0.037
0.27	0.025	0.05	0.037	0.037
0.2733	0.025	0.05	0.037	0.037
0.2766	0.025	0.037	0.037	0.037
0.28	0.025	0.044	0.037	0.037
0.2833	0.025	0.044	0.037	0.037
0.2866	0.025	0.044	0.037	0.031
0.29	0.018	0.037	0.037	0.031
0.2933	0.018	0.037	0.031	0.031
0.2966	0.018	0.037	0.031	0.031
0.3	0.018	0.037	0.031	0.031
0.3033	0.018	0.037	0.031	0.031
0.3066	0.018	0.037	0.031	0.031
0.31	0.018	0.037	0.031	0.025
0.3133	0.018	0.037	0.031	0.025
0.3166	0.012	0.037	0.031	0.025
0.32	0.012	0.037	0.031	0.025
0.3233	0.012	0.037	0.025	0.025
0.3266	0.012	0.031	0.025	0.025
0.33	0.012	0.031	0.025	0.025
0.3333	0.012	0.031	0.025	0.025
0.35	0.012	0.031	0.025	0.018
0.3666	0.006	0.025	0.025	0.018
0.3833	0.006	0.025	0.018	0.018

TABLE S2.12 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 5 Step 0	Test 5 Step 1	Test 5 Step 2	Test 5 Step 3
0.4	0.006	0.025	0.018	0.012
0.4166		0.018	0.018	0.012
0.4333		0.018	0.012	0.012
0.45		0.018	0.012	0.012
0.4666		0.018	0.012	0.006
0.4833		0.012	0.012	0.006
0.5		0.012	0.012	
0.5166		0.012	0.012	
0.5333		0.012	0.006	
0.55		0.012	0.006	
0.5666		0.012		
0.5833		0.012		
0.6		0.012		
0.6166		0.012		
0.6333		0.012		
0.65		0.006		
0.6666		0.012		
0.6833		0.006		
0.7		0.006		

TABLE S2.13 Slug test data for boring SB66 (effective saturated thickness = 10 ft; length of well = 10 ft; length of screen = 10 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 3 Step 0	Test 3 Step 1	Test 3 Step 2	Test 3 Step 3
0	2.516	1.635	2.277	0.817
0.0033	8.09	-0.383	8.26	0.559
0.0066	-2.157	1.1	-0.717	1.069
0.01	1.22	0.817	0.352	0.471
0.0133	1.314	1.169	0.792	1.169
0.0166	0.389	1.081	1.132	1.044
0.02	0.61	1.012	0.861	1.044
0.0233	1.125	1.069	0.974	1.031
0.0266	0.886	1.012	0.993	1.025
0.03	0.767	1.031	0.522	1.019
0.0333	0.93	1.006	0.849	1.006
0.0366	0.83	1.006	0.981	0.993
0.04	0.823	1	0.798	1
0.0433	0.723	0.987	0.855	0.987
0.0466	1.289	0.987	0.88	0.981
0.05	0.874	0.981	0.83	0.974
0.0533	0.427	0.974	0.849	0.968
0.0566	0.786	0.968	0.849	0.962
0.06	0.956	0.962	0.836	0.956
0.0633	0.742	0.956	0.836	0.949
0.0666	0.798	0.949	0.83	0.943
0.07	0.842	0.943	0.83	0.943
0.0733	0.786	0.937	0.823	0.937
0.0766	0.805	0.937	0.817	0.93
0.08	0.805	0.93	0.817	0.924
0.0833	0.786	0.924	0.811	0.918
0.0866	0.792	0.918	0.811	0.912
0.09	0.786	0.912	0.805	0.905
0.0933	0.779	0.905	0.798	0.905
0.0966	0.779	0.899	0.798	0.899
0.1	0.773	0.893	0.792	0.893
0.1033	0.767	0.886	0.792	0.886
0.1066	0.761	0.88	0.786	0.88
0.11	0.761	0.88	0.779	0.88
0.1133	0.754	0.874	0.779	0.874
0.1166	0.748	0.868	0.773	0.868
0.12	0.748	0.861	0.767	0.861
0.1233	0.742	0.855	0.767	0.861
0.1266	0.735	0.849	0.767	0.855
0.13	0.735	0.849	0.761	0.849
0.1333	0.729	0.842	0.754	0.842
0.1366	0.723	0.836	0.754	0.842
0.14	0.723	0.83	0.748	0.836
0.1433	0.717	0.824	0.748	0.83
0.1466	0.71	0.824	0.742	0.824
0.15	0.71	0.817	0.742	0.824
0.1533	0.704	0.811	0.735	0.817
0.1566	0.704	0.811	0.729	0.811
0.16	0.698	0.805	0.729	0.811
0.1633	0.691	0.798	0.723	0.805
0.1666	0.691	0.792	0.723	0.798

TABLE S2.13 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 3 Step 0	Test 3 Step 1	Test 3 Step 2	Test 3 Step 3
0.17	0.685	0.792	0.717	0.798
0.1733	0.685	0.786	0.717	0.792
0.1766	0.679	0.78	0.71	0.786
0.18	0.673	0.78	0.71	0.786
0.1833	0.673	0.773	0.704	0.78
0.1866	0.666	0.767	0.704	0.773
0.19	0.666	0.767	0.698	0.773
0.1933	0.66	0.761	0.698	0.767
0.1966	0.654	0.754	0.691	0.767
0.2	0.654	0.748	0.691	0.761
0.2033	0.647	0.748	0.685	0.754
0.2066	0.647	0.742	0.685	0.754
0.21	0.641	0.742	0.679	0.748
0.2133	0.641	0.735	0.679	0.748
0.2166	0.635	0.729	0.673	0.742
0.22	0.635	0.729	0.673	0.735
0.2233	0.629	0.723	0.666	0.735
0.2266	0.629	0.723	0.666	0.735
0.23	0.622	0.717	0.66	0.729
0.2333	0.622	0.71	0.66	0.723
0.2366	0.616	0.71	0.654	0.723
0.24	0.616	0.704	0.654	0.717
0.2433	0.61	0.704	0.647	0.71
0.2466	0.61	0.698	0.647	0.704
0.25	0.603	0.698	0.647	0.704
0.2533	0.603	0.691	0.641	0.704
0.2566	0.597	0.685	0.641	0.698
0.26	0.597	0.685	0.635	0.698
0.2633	0.591	0.679	0.635	0.691
0.2666	0.591	0.679	0.629	0.685
0.27	0.584	0.673	0.629	0.685
0.2733	0.578	0.673	0.622	0.679
0.2766	0.578	0.666	0.622	0.679
0.28	0.578	0.66	0.616	0.673
0.2833	0.572	0.66	0.616	0.673
0.2866	0.572	0.66	0.616	0.666
0.29	0.566	0.654	0.61	0.666
0.2933	0.566	0.647	0.61	0.66
0.2966	0.559	0.647	0.603	0.66
0.3	0.559	0.641	0.603	0.654
0.3033	0.553	0.641	0.597	0.654
0.3066	0.553	0.635	0.597	0.647
0.31	0.553	0.635	0.597	0.647
0.3133	0.547	0.629	0.591	0.641
0.3166	0.547	0.629	0.591	0.641
0.32	0.54	0.622	0.584	0.635
0.3233	0.54	0.622	0.584	0.635
0.3266	0.534	0.616	0.578	0.635
0.33	0.534	0.616	0.578	0.622
0.3333	0.528	0.61	0.578	0.629
0.35	0.515	0.597	0.566	0.61
0.3666	0.503	0.578	0.553	0.591
0.3833	0.49	0.566	0.54	0.578

TABLE S2.13 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 3 Step 0	Test 3 Step 1	Test 3 Step 2	Test 3 Step 3
0.4	0.478	0.553	0.528	0.566
0.4166	0.465	0.54	0.515	0.553
0.4333	0.452	0.522	0.503	0.54
0.45	0.44	0.509	0.49	0.528
0.4666	0.427	0.496	0.484	0.515
0.4833	0.421	0.484	0.471	0.503
0.5	0.408	0.471	0.459	0.49
0.5166	0.396	0.459	0.452	0.478
0.5333	0.389	0.452	0.44	0.465
0.55	0.377	0.44	0.434	0.452
0.5666	0.371	0.427	0.421	0.44
0.5833	0.358	0.421	0.415	0.434
0.6	0.352	0.408	0.402	0.421
0.6166	0.339	0.396	0.396	0.415
0.6333	0.333	0.389	0.389	0.402
0.65	0.32	0.377	0.377	0.389
0.6666	0.314	0.371	0.371	0.383
0.6833	0.308	0.358	0.364	0.371
0.7	0.301	0.352	0.358	0.364
0.7166	0.295	0.339	0.345	0.358
0.7333	0.283	0.333	0.339	0.345
0.75	0.276	0.327	0.333	0.339
0.7666	0.27	0.32	0.327	0.333
0.7833	0.264	0.308	0.32	0.327
0.8	0.257	0.301	0.314	0.314
0.8166	0.251	0.295	0.308	0.308
0.8333	0.245	0.289	0.301	0.301
0.85	0.239	0.276	0.295	0.289
0.8666	0.232	0.283	0.289	0.289
0.8833	0.226	0.276	0.283	0.276
0.9	0.22	0.264	0.276	0.27
0.9166	0.22	0.257	0.27	0.264
0.9333	0.213	0.251	0.264	0.257
0.95	0.207	0.245	0.257	0.251
0.9666	0.201	0.239	0.251	0.245
0.9833	0.194	0.232	0.251	0.239
1	0.194	0.226	0.245	0.232
1.2	0.138	0.163	0.182	0.169
1.4	0.106	0.119	0.144	0.125
1.6	0.075	0.088	0.113	0.094
1.8	0.062	0.069	0.088	0.069
2	0.05	0.05	0.075	0.05
2.2	0.037	0.037	0.062	0.037
2.4	0.031	0.031	0.05	0.025
2.6	0.025	0.025	0.044	0.018
2.8	0.018	0.018	0.037	0.012
3	0.018	0.012	0.031	0.006
3.2	0.018	0.012	0.031	0.006
3.4	0.012	0.006	0.025	0.006
3.6	0.012	0.006	0.025	0.006
3.8	0.012	0.006	0.025	
4	0.012	0.006	0.018	

TABLE S2.14 Slug test data for boring SB67 (effective saturated thickness = 10 ft; length of well = 10 ft; length of screen = 10 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 2 Step 0	Test 2 Step 1	Test 2 Step 2	Test 2 Step 3
0	7.26	1.176	5.24	0.289
0.0033	13.95	2.006	17.078	0.559
0.0066	-2.843	0.629	7.398	2.924
0.01	-0.415	-0.742	-5.736	-1.981
0.0133	4.611	2.899	3.749	1.434
0.0166	-0.767	-0.61	3.233	1.163
0.02	0.308	1.704	-2.723	-0.201
0.0233	2.736	0.905	1.975	1.937
0.0266	0.201	0.861	2.837	0.389
0.03	0.849	1.352	-0.213	1.27
0.0333	1.843	0.679	1.667	0.962
0.0366	0.49	1.314	2.05	0.855
0.04	0.981	0.842	-0.169	1.151
0.0433	1.415	1.107	1.377	0.811
0.0466	0.78	0.975	2.145	1.107
0.05	1.037	1.012	0.685	0.886
0.0533	1.189	1.037	1.113	1.012
0.0566	0.937	0.975	1.503	0.956
0.06	1.075	1.05	0.975	0.962
0.0633	1.088	0.987	1.207	0.981
0.0666	1	1.025	1.321	0.949
0.07	1.069	1.006	1.075	0.975
0.0733	1.056	1.012	1.22	0.949
0.0766	1.037	1.006	1.232	0.968
0.08	1.056	1	1.138	0.949
0.0833	1.05	1.012	1.22	0.968
0.0866	1.037	1	1.201	0.949
0.09	1.05	1.012	1.17	0.956
0.0933	1.044	1.006	1.207	0.956
0.0966	1.044	1.006	1.189	0.943
0.1	1.044	1	1.182	0.956
0.1033	1.044	1.006	1.195	0.949
0.1066	1.037	1.006	1.195	0.956
0.11	1.037	1	1.189	0.949
0.1133	1.056	0.993	1.195	0.949
0.1166	1.037	1.006	1.195	0.949
0.12	1.044	0.987	1.195	0.956
0.1233	1.056	1	1.195	0.949
0.1266	1.037	0.993	1.189	0.949
0.13	1.037	0.993	1.189	0.949
0.1333	1.044	0.993	1.189	0.943
0.1366	1.037	1	1.189	0.943
0.14	1.044	0.987	1.189	0.943
0.1433	1.044	0.987	1.182	0.943
0.1466	1.037	0.987	1.189	0.943
0.15	1.05	0.987	1.189	0.937
0.1533	1.044	0.981	1.182	0.937
0.1566	1.037	0.993	1.182	0.937
0.16	1.044	0.987	1.182	0.943
0.1633	1.044	0.981	1.182	0.937
0.1666	1.044	0.987	1.182	0.93

TABLE S2.14 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 2 Step 0	Test 2 Step 1	Test 2 Step 2	Test 2 Step 3
0.17	1.044	0.981	1.182	0.937
0.1733	1.037	0.975	1.182	0.93
0.1766	1.044	0.987	1.182	0.93
0.18	1.037	0.981	1.182	0.937
0.1833	1.037	0.981	1.176	0.924
0.1866	1.044	0.987	1.182	0.937
0.19	1.037	0.975	1.176	0.93
0.1933	1.037	0.975	1.176	0.93
0.1966	1.037	0.981	1.182	0.93
0.2	1.037	0.975	1.176	0.93
0.2033	1.037	0.975	1.176	0.93
0.2066	1.037	0.981	1.176	0.93
0.21	1.037	0.975	1.176	0.924
0.2133	1.037	0.981	1.182	0.93
0.2166	1.037	0.975	1.176	0.924
0.22	1.031	0.968	1.17	0.93
0.2233	1.031	0.975	1.182	0.924
0.2266	1.037	0.975	1.176	0.918
0.23	1.031	0.968	1.17	0.924
0.2333	1.031	0.975	1.176	0.918
0.2366	1.037	0.975	1.17	0.924
0.24	1.031	0.968	1.17	0.918
0.2433	1.031	0.975	1.176	0.924
0.2466	1.031	0.968	1.17	0.918
0.25	1.031	0.962	1.176	0.924
0.2533	1.031	0.975	1.17	0.924
0.2566	1.031	0.975	1.17	0.924
0.26	1.031	0.968	1.17	0.924
0.2633	1.031	0.975	1.17	0.918
0.2666	1.031	0.968	1.17	0.924
0.27	1.031	0.962	1.17	0.918
0.2733	1.031	0.981	1.17	0.918
0.2766	1.031	0.968	1.17	0.918
0.28	1.031	0.962	1.176	0.918
0.2833	1.031	0.975	1.17	0.924
0.2866	1.031	0.962	1.17	0.924
0.29	1.031	0.962	1.17	0.918
0.2933	1.031	0.968	1.17	0.912
0.2966	1.031	0.962	1.176	0.924
0.3	1.031	0.962	1.176	0.918
0.3033	1.031	0.968	1.163	0.918
0.3066	1.031	0.962	1.17	0.912
0.31	1.031	0.962	1.17	0.918
0.3133	1.025	0.962	1.17	0.918
0.3166	1.025	0.962	1.17	0.912
0.32	1.031	0.962	1.17	0.912
0.3233	1.025	0.962	1.163	0.912
0.3266	1.031	0.956	1.163	0.912
0.33	1.031	0.968	1.163	0.918
0.3333	1.025	0.962	1.163	0.912
0.35	1.025	0.968	1.163	0.912
0.3666	1.025	0.962	1.163	0.905
0.3833	1.025	0.949	1.163	0.905

TABLE S2.14 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 2 Step 0	Test 2 Step 1	Test 2 Step 2	Test 2 Step 3
0.4	1.025	0.956	1.157	0.912
0.4166	1.025	0.956	1.157	0.905
0.4333	1.019	0.956	1.163	0.899
0.45	1.019	0.949	1.157	0.905
0.4666	1.019	0.949	1.157	0.899
0.4833	1.019	0.943	1.157	0.899
0.5	1.019	0.943	1.151	0.899
0.5166	1.019	0.943	1.151	0.893
0.5333	1.019	0.943	1.151	0.893
0.55	1.012	0.937	1.151	0.886
0.5666	1.012	0.937	1.144	0.893
0.5833	1.012	0.937	1.151	0.886
0.6	1.006	0.937	1.144	0.88
0.6166	1.012	0.93	1.144	0.886
0.6333	1.006	0.93	1.144	0.886
0.65	1.006	0.937	1.144	0.886
0.6666	1.006	0.93	1.144	0.88
0.6833	1.006	0.93	1.138	0.886
0.7	1.006	0.93	1.138	0.874
0.7166	1.006	0.93	1.144	0.874
0.7333	1	0.924	1.138	0.88
0.75	1	0.924	1.138	0.88
0.7666	1	0.924	1.138	0.874
0.7833	1	0.924	1.132	0.874
0.8	1	0.924	1.132	0.874
0.8166	1	0.918	1.132	0.874
0.8333	0.993	0.918	1.132	0.868
0.85	0.993	0.918	1.132	0.868
0.8666	0.993	0.918	1.132	0.868
0.8833	0.993	0.918	1.126	0.868
0.9	0.993	0.912	1.126	0.868
0.9166	0.987	0.912	1.126	0.868
0.9333	0.993	0.912	1.126	0.861
0.95	0.987	0.912	1.126	0.861
0.9666	0.987	0.912	1.126	0.861
0.9833	0.987	0.912	1.119	0.861
1	0.987	0.912	1.119	0.861
1.2	0.968	0.893	1.107	0.842
1.4	0.956	0.88	1.094	0.83
1.6	0.949	0.868	1.082	0.817
1.8	0.937	0.855	1.069	0.805
2	0.924	0.849	1.056	0.792
2.2	0.905	0.836	1.044	0.78
2.4	0.899	0.824	1.031	0.773
2.6	0.893	0.811	1.025	0.761
2.8	0.88	0.798	1.012	0.748
3	0.868	0.792	1	0.735
3.2	0.861	0.78	1	0.723
3.4	0.849	0.773	0.981	0.71
3.6	0.836	0.761	0.968	0.704
3.8	0.83	0.748	0.962	0.691
4	0.817	0.735	0.956	0.679
4.2	0.811	0.729	0.943	0.666

TABLE S2.14 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 2 Step 0	Test 2 Step 1	Test 2 Step 2	Test 2 Step 3
4.4	0.798	0.723	0.931	0.66
4.6	0.792	0.71	0.924	0.654
4.8	0.78	0.698	0.918	0.641
5	0.773	0.691	0.912	0.629
5.2	0.761	0.685	0.899	0.616
5.4	0.754	0.673	0.886	0.61
5.6	0.742	0.666	0.88	0.597
5.8	0.736	0.654	0.874	0.591
6	0.729	0.647	0.861	0.578
6.2	0.717	0.635	0.849	0.572
6.4	0.71	0.629	0.842	0.559
6.6	0.704	0.622	0.836	0.553
6.8	0.691	0.61	0.824	0.547
7	0.685	0.603	0.817	0.534
7.2	0.679	0.597	0.811	0.528
7.4	0.666	0.591	0.805	0.522
7.6	0.66	0.578	0.798	0.509
7.8	0.654	0.572	0.792	0.509
8	0.641	0.559	0.78	0.496
8.2	0.635	0.553	0.773	0.49
8.4	0.629	0.547	0.767	0.478
8.6	0.622	0.54	0.761	0.471
8.8	0.616	0.534	0.754	0.465
9	0.61	0.522	0.742	0.452
9.2	0.597	0.515	0.736	0.446
9.4	0.591	0.509	0.729	0.44
9.6	0.585	0.509	0.723	0.434
9.8	0.578	0.496	0.717	0.427
10	0.572	0.49	0.71	0.415
12	0.509	0.427	0.647	0.345
14	0.459	0.364	0.591	0.289
16	0.402	0.314	0.54	0.239
18	0.364	0.27	0.496	0.188
20	0.327	0.232	0.459	0.144
22	0.295	0.195	0.421	0.113
24	0.264	0.163	0.396	0.075
26	0.245	0.138	0.364	0.044
28	0.22	0.113	0.339	0.018
30	0.201	0.088	0.32	
32	0.182	0.062	0.301	
34	0.169	0.044	0.289	
36	0.157	0.031	0.27	
38	0.144	0.018	0.257	
40		0.006	0.245	
42			0.239	
44			0.226	
46			0.22	
48			0.207	
50			0.207	
52			0.201	
54			0.195	
56			0.188	
58			0.188	
60			0.188	

TABLE S2.15 Slug test data for boring SB68 (effective saturated thickness = 9.24 ft; length of well = 9.24 ft; length of screen = 9.24 ft; casing radius = 0.04167 ft; borehole radius = 0.05469 ft; $Kz/Kr = 1$).

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 1 Step 3
0	1.069	3.975	0.805	1.352
0.0033	0.937	-2.937	1.232	3.761
0.0066	0.981	1.44	0.987	-1.817
0.01	1.107	1.063	1.094	3.239
0.0133	1.081	0.006	1.056	-0.616
0.0166	1.069	-0.327	1.056	0.213
0.02	1.05	0.742	1.031	0.289
0.0233	1.037	-0.408	1.025	0.276
0.0266	1.031	0.257	1.012	0.176
0.03	1.006	0.169	1	0.534
0.0333	1.006	0.157	0.993	0.415
0.0366	1	0.157	0.981	0.125
0.04	0.993	0.169	0.974	0.125
0.0433	0.987	0.157	0.962	0.264
0.0466	0.974	0.213	0.962	0.232
0.05	0.974	0.182	0.949	0.245
0.0533	0.968	0.194	0.949	0.245
0.0566	0.956	0.194	0.943	0.245
0.06	0.956	0.194	0.937	0.245
0.0633	0.949	0.194	0.93	0.245
0.0666	0.943	0.194	0.924	0.245
0.07	0.937	0.201	0.918	0.245
0.0733	0.93	0.22	0.905	0.245
0.0766	0.924	0.213	0.905	0.245
0.08	0.918	0.213	0.899	0.251
0.0833	0.912	0.22	0.893	0.245
0.0866	0.905	0.22	0.886	0.251
0.09	0.899	0.22	0.88	0.245
0.0933	0.893	0.22	0.874	0.245
0.0966	0.893	0.22	0.868	0.245
0.1	0.886	0.22	0.861	0.245
0.1033	0.88	0.22	0.855	0.245
0.1066	0.874	0.22	0.849	0.245
0.11	0.868	0.22	0.842	0.245
0.1133	0.868	0.22	0.83	0.245
0.1166	0.861	0.22	0.83	0.245
0.12	0.855	0.213	0.824	0.245
0.1233	0.849	0.22	0.817	0.245
0.1266	0.842	0.22	0.811	0.245
0.13	0.836	0.22	0.805	0.239
0.1333	0.83	0.213	0.798	0.239
0.1366	0.83	0.22	0.792	0.239
0.14	0.824	0.213	0.786	0.239
0.1433	0.817	0.213	0.786	0.239
0.1466	0.811	0.213	0.78	0.239
0.15	0.811	0.213	0.773	0.239
0.1533	0.805	0.213	0.767	0.239
0.1566	0.798	0.213	0.761	0.239
0.16	0.792	0.213	0.754	0.232
0.1633	0.786	0.213	0.748	0.232
0.1666	0.786	0.207	0.742	0.232

TABLE S2.15 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 1 Step 3
0.17	0.78	0.207	0.742	0.232
0.1733	0.773	0.207	0.735	0.232
0.1766	0.773	0.207	0.729	0.232
0.18	0.767	0.207	0.723	0.232
0.1833	0.761	0.207	0.717	0.232
0.1866	0.761	0.207	0.717	0.232
0.19	0.754	0.207	0.71	0.232
0.1933	0.748	0.207	0.704	0.232
0.1966	0.748	0.207	0.698	0.226
0.2	0.742	0.207	0.698	0.226
0.2033	0.735	0.207	0.691	0.226
0.2066	0.735	0.201	0.685	0.226
0.21	0.729	0.201	0.685	0.226
0.2133	0.723	0.201	0.679	0.226
0.2166	0.717	0.201	0.673	0.226
0.22	0.71	0.207	0.666	0.226
0.2233	0.71	0.201	0.666	0.226
0.2266	0.704	0.201	0.66	0.22
0.23	0.698	0.201	0.654	0.226
0.2333	0.691	0.201	0.654	0.22
0.2366	0.691	0.201	0.647	0.22
0.24	0.685	0.201	0.647	0.22
0.2433	0.685	0.201	0.641	0.22
0.2466	0.679	0.201	0.635	0.22
0.25	0.673	0.201	0.635	0.22
0.2533	0.666	0.201	0.629	0.22
0.2566	0.666	0.201	0.622	0.22
0.26	0.66	0.201	0.622	0.22
0.2633	0.66	0.201	0.616	0.22
0.2666	0.654	0.194	0.616	0.22
0.27	0.647	0.201	0.61	0.213
0.2733	0.647	0.194	0.61	0.213
0.2766	0.641	0.194	0.603	0.213
0.28	0.635	0.194	0.597	0.213
0.2833	0.635	0.194	0.591	0.213
0.2866	0.629	0.194	0.591	0.213
0.29	0.622	0.194	0.591	0.213
0.2933	0.622	0.194	0.585	0.213
0.2966	0.616	0.194	0.585	0.213
0.3	0.616	0.194	0.578	0.213
0.3033	0.61	0.194	0.572	0.213
0.3066	0.603	0.194	0.572	0.213
0.31	0.603	0.194	0.566	0.207
0.3133	0.597	0.194	0.566	0.213
0.3166	0.597	0.194	0.559	0.207
0.32	0.591	0.194	0.559	0.207
0.3233	0.591	0.194	0.553	0.207
0.3266	0.585	0.194	0.553	0.207
0.33	0.585	0.188	0.547	0.207
0.3333	0.578	0.188	0.547	0.207
0.35	0.559	0.194	0.528	0.207
0.3666	0.54	0.194	0.509	0.201
0.3833	0.522	0.194	0.49	0.201

TABLE S2.15 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 1 Step 3
0.4	0.509	0.194	0.478	0.201
0.4166	0.496	0.194	0.465	0.201
0.4333	0.484	0.194	0.452	0.201
0.45	0.465	0.194	0.434	0.201
0.4666	0.452	0.188	0.421	0.201
0.4833	0.44	0.188	0.408	0.201
0.5	0.427	0.188	0.396	0.201
0.5166	0.415	0.188	0.383	0.194
0.5333	0.402	0.188	0.377	0.194
0.55	0.389	0.188	0.364	0.194
0.5666	0.383	0.188	0.352	0.194
0.5833	0.371	0.182	0.345	0.194
0.6	0.358	0.182	0.339	0.194
0.6166	0.352	0.182	0.327	0.194
0.6333	0.339	0.182	0.32	0.194
0.65	0.339	0.182	0.314	0.188
0.6666	0.333	0.182	0.314	0.188
0.6833	0.32	0.182	0.308	0.188
0.7	0.314	0.182	0.301	0.188
0.7166	0.314	0.182	0.301	0.188
0.7333	0.314	0.182	0.295	0.188
0.75	0.308	0.176	0.283	0.188
0.7666	0.301	0.176	0.276	0.188
0.7833	0.295	0.176	0.27	0.182
0.8	0.289	0.176	0.264	0.182
0.8166	0.283	0.176	0.257	0.182
0.8333	0.276	0.176	0.251	0.182
0.85	0.27	0.176	0.245	0.182
0.8666	0.264	0.176	0.239	0.182
0.8833	0.257	0.176	0.232	0.182
0.9	0.251	0.176	0.226	0.182
0.9166	0.245	0.176	0.22	0.182
0.9333	0.239	0.169	0.213	0.182
0.95	0.232	0.176	0.207	0.182
0.9666	0.226	0.176	0.201	0.176
0.9833	0.22	0.169	0.195	0.176
1	0.213	0.169	0.188	0.176
1.2	0.151	0.163	0.125	0.169
1.4	0.106	0.15	0.094	0.157
1.6	0.081	0.138	0.062	0.144
1.8	0.056	0.113	0.044	0.119
2	0.044	0.1	0.031	0.106
2.2	0.031	0.081	0.025	0.088
2.4	0.025	0.069	0.018	0.069
2.6	0.018	0.056	0.012	0.056
2.8	0.012	0.044	0.006	0.044
3	0.012	0.031	0.012	0.037
3.2	0.006	0.025	0.006	0.031
3.4	0.006	0.025	0.006	0.025
3.6	0.006	0.018	0.006	0.025
3.8	0.006	0.012	0.006	0.018
4		0.012		0.012
4.2		0.012		0.012

TABLE S2.15 (Cont.)

Elapsed Time (min)	Residual Drawdown (ft)			
	Test 1 Step 0	Test 1 Step 1	Test 1 Step 2	Test 1 Step 3
4.4		0.006		0.012
4.6		0.006		0.012
4.8				0.006
5				0.006

Supplement 3:

**Drawdown and Recovery Data
for the MW1 Pumping Test**

TABLE S3.1 Measured water level and barometric pressure data for the aquifer test at Everest, Kansas.

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
<i>Pumping Phase, February 17–18, 2004</i>						
0	0.919	-0.006	0.000	0	0.000	-0.012
0.0083	1.039	-0.006	0.000	0.0033	0.000	-0.012
0.0166	1.127	-0.006	0.000	0.0066	0.000	-0.006
0.025	1.146	-0.012	0.000	0.01	0.000	-0.012
0.0333	1.146	-0.006	0.000	0.0133	0.000	-0.012
0.0416	1.121	-0.012	0.000	0.0166	0.000	-0.006
0.05	1.153	-0.012	0.000	0.02	0.000	-0.006
0.0583	1.134	-0.012	0.000	0.0233	0.000	-0.006
0.0666	1.121	-0.012	-0.002	0.0266	0.000	-0.006
0.075	1.134	-0.012	-0.002	0.03	0.000	-0.006
0.0833	1.146	-0.012	-0.002	0.0333	0.000	-0.012
0.0916	1.102	-0.012	0.000	0.0366	0.000	-0.012
0.1	1.083	-0.012	-0.002	0.04	0.000	-0.012
0.1083	1.108	-0.012	-0.002	0.0433	0.000	-0.006
0.1166	1.077	-0.012	0.000	0.0466	0.000	-0.006
0.125	1.115	-0.012	-0.002	0.05	0.000	-0.006
0.1333	1.052	-0.012	-0.002	0.0533	0.000	-0.012
0.1416	1.045	-0.012	-0.002	0.0566	0.000	-0.006
0.15	1.045	-0.012	0.000	0.06	0.000	-0.012
0.1583	0.982	-0.012	-0.002	0.0633	0.000	-0.012
0.1666	1.039	-0.012	-0.002	0.0666	0.000	-0.012
0.175	1.045	-0.012	-0.002	0.07	0.000	-0.012
0.1833	1.039	-0.006	-0.002	0.0733	0.000	-0.012
0.1916	1.052	-0.006	-0.002	0.0766	0.000	-0.006
0.2	1.058	-0.006	0.000	0.08	0.000	-0.012
0.2083	1.058	-0.006	-0.002	0.0833	0.000	-0.006
0.2166	1.039	-0.006	0.000	0.0866	0.000	-0.006
0.225	1.014	-0.012	-0.002	0.09	0.000	-0.012
0.2333	1.033	-0.012	-0.002	0.0933	0.000	-0.012
0.2416	1.045	-0.012	-0.002	0.0966	0.000	-0.012
0.25	0.995	-0.012	-0.002	0.1	0.000	-0.012
0.2583	0.989	-0.012	-0.002	0.1033	0.000	-0.006
0.2666	1.014	-0.012	-0.002	0.1066	0.000	-0.012
0.275	0.945	-0.012	-0.002	0.11	0.000	-0.012
0.2833	0.945	-0.012	-0.002	0.1133	0.000	-0.012
0.2916	0.957	-0.018	-0.002	0.1166	0.000	-0.012
0.3	0.964	-0.018	-0.002	0.12	0.000	-0.012
0.3083	0.989	-0.012	-0.002	0.1233	0.000	-0.006
0.3166	0.982	-0.012	-0.002	0.1266	0.000	-0.012
0.325	0.982	-0.012	0.000	0.13	0.000	-0.012
0.3333	1.008	-0.012	-0.002	0.1333	0.000	-0.012
0.35	0.989	-0.012	0.000	0.1366	0.000	-0.012
0.3666	0.951	-0.012	-0.002	0.14	0.000	-0.012

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
0.3833	0.926	-0.012	0.000	0.1433	0.000	-0.012
0.4	0.907	-0.012	-0.002	0.1466	0.000	-0.012
0.4166	0.938	-0.012	-0.002	0.15	0.000	-0.012
0.4333	0.932	-0.012	-0.002	0.1533	0.000	-0.012
0.45	0.938	-0.012	-0.002	0.1566	0.000	-0.012
0.4666	0.932	-0.018	0.000	0.16	0.000	-0.012
0.4833	0.926	-0.012	0.000	0.1633	0.000	-0.012
0.5	0.913	-0.012	0.000	0.1666	0.000	-0.012
0.5166	0.863	-0.012	0.000	0.17	0.000	-0.012
0.5333	0.819	-0.012	0.000	0.1733	0.000	-0.012
0.55	0.667	-0.012	0.000	0.1766	0.000	-0.012
0.5666	0.894	-0.012	0.000	0.18	0.000	-0.012
0.5833	0.901	-0.012	0.000	0.1833	0.000	-0.012
0.6	0.894	-0.012	-0.002	0.1866	0.000	-0.012
0.6166	0.863	-0.012	0.000	0.19	0.000	-0.012
0.6333	0.945	-0.012	0.000	0.1933	0.000	-0.012
0.65	0.888	-0.012	0.000	0.1966	0.000	-0.012
0.6666	0.875	-0.012	0.000	0.2	0.000	-0.012
0.6833	0.964	-0.012	-0.002	0.2033	0.000	-0.012
0.7	0.951	-0.012	0.000	0.2066	0.000	-0.012
0.7166	0.926	-0.012	0.000	0.21	0.000	-0.012
0.7333	0.932	-0.012	0.000	0.2133	0.000	-0.012
0.75	0.945	-0.006	0.000	0.2166	0.000	-0.012
0.7666	0.989	-0.006	0.000	0.22	0.000	-0.012
0.7833	0.913	-0.006	0.000	0.2233	0.000	-0.012
0.8	0.913	-0.006	0.000	0.2266	0.000	-0.012
0.8166	0.951	-0.012	0.000	0.23	0.000	-0.012
0.8333	0.951	-0.012	0.000	0.2333	0.000	-0.012
0.85	0.989	-0.012	0.000	0.2366	0.000	-0.012
0.8666	0.913	-0.012	0.000	0.24	0.000	-0.012
0.8833	0.919	-0.012	0.000	0.2433	0.000	-0.012
0.9	0.938	-0.012	0.000	0.2466	0.000	-0.012
0.9166	0.907	-0.012	0.000	0.25	0.000	-0.012
0.9333	0.938	-0.006	0.000	0.2533	0.000	-0.012
0.95	0.957	-0.006	0.000	0.2566	0.000	-0.012
0.9666	0.932	-0.006	0.000	0.26	0.000	-0.012
0.9833	0.970	-0.006	0.000	0.2633	0.000	-0.012
1	0.964	-0.012	0.000	0.2666	0.000	-0.012
1.2	0.919	-0.012	0.000	0.27	0.000	-0.012
1.4	1.108	-0.012	0.003	0.2733	0.000	-0.012
1.6	1.222	-0.012	0.003	0.2766	0.000	-0.012
1.8	1.329	-0.012	0.000	0.28	0.000	-0.012
2	1.423	-0.012	0.000	0.2833	0.000	-0.012
2.2	1.524	-0.012	0.000	0.2866	0.000	-0.012
2.4	1.682	-0.012	0.000	0.29	0.000	-0.012
2.6	1.669	-0.012	0.000	0.2933	0.000	-0.012

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
2.8	1.713	-0.006	0.000	0.2966	0.000	-0.012
3	1.776	-0.012	-0.002	0.3	0.000	-0.012
3.2	1.846	-0.006	-0.002	0.3033	0.000	-0.012
3.4	1.858	-0.006	0.000	0.3066	0.000	-0.012
3.6	1.909	0.000	0.000	0.31	0.000	-0.012
3.8	1.946	-0.006	0.000	0.3133	0.000	-0.012
4	1.990	-0.006	0.000	0.3166	0.000	-0.012
4.2	2.028	-0.006	0.000	0.32	0.000	-0.012
4.4	2.079	-0.006	0.000	0.3233	0.000	-0.012
4.6	2.129	-0.006	0.000	0.3266	0.000	-0.012
4.8	2.116	-0.006	0.000	0.33	0.000	-0.012
5	2.098	0.000	-0.002	0.3333	0.000	-0.012
5.2	2.173	-0.006	0.000	0.35	0.000	-0.012
5.4	2.211	-0.006	0.000	0.3666	0.000	-0.012
5.6	2.192	-0.006	-0.002	0.3833	0.000	-0.012
5.8	2.249	-0.006	0.000	0.4	0.000	-0.012
6	2.249	-0.006	-0.002	0.4166	0.000	-0.018
6.2	2.299	-0.006	-0.002	0.4333	0.000	-0.018
6.4	2.312	-0.006	0.000	0.45	0.000	-0.018
6.6	2.350	0.000	-0.002	0.4666	0.000	-0.018
6.8	2.305	-0.006	-0.002	0.4833	0.000	-0.012
7	2.400	-0.006	-0.002	0.5	0.000	-0.018
7.2	2.381	-0.006	-0.002	0.5166	0.000	-0.018
7.4	2.400	0.000	-0.002	0.5333	0.000	-0.012
7.6	2.400	0.000	-0.002	0.55	0.000	-0.012
7.8	2.463	0.000	-0.002	0.5666	0.000	-0.012
8	2.438	0.000	-0.002	0.5833	0.000	-0.012
8.2	2.494	0.006	-0.002	0.6	0.000	-0.012
8.4	2.501	0.000	-0.002	0.6166	0.000	-0.012
8.6	2.614	0.000	-0.002	0.6333	0.000	-0.012
8.8	2.539	0.000	-0.002	0.65	0.000	-0.012
9	2.677	0.006	-0.002	0.6666	0.000	-0.018
9.2	2.677	0.000	-0.005	0.6833	0.000	-0.018
9.4	2.702	0.006	-0.002	0.7	0.000	-0.012
9.6	2.759	0.006	-0.002	0.7166	0.000	-0.012
9.8	2.728	0.006	-0.002	0.7333	0.000	-0.012
10	2.772	0.006	-0.002	0.75	0.000	-0.018
12	2.986	0.012	-0.005	0.7666	0.000	-0.012
14	3.093	0.018	-0.005	0.7833	0.000	-0.018
16	3.181	0.018	-0.005	0.8	0.000	-0.018
18	3.389	0.025	-0.007	0.8166	0.000	-0.018
20	3.332	0.031	-0.007	0.8333	0.000	-0.012
22	3.389	0.025	-0.007	0.85	0.000	-0.012
24	3.685	0.031	-0.010	0.8666	0.000	-0.012
26	3.824	0.031	-0.010	0.8833	0.000	-0.012
28	3.893	0.031	-0.012	0.9	0.000	-0.012

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
30	3.994	0.037	-0.012	0.9166	0.000	-0.012
32	4.088	0.037	-0.015	0.9333	0.000	-0.012
34	4.195	0.044	-0.017	0.95	0.000	-0.012
36	4.359	0.037	-0.017	0.9666	0.000	-0.012
38	4.598	0.044	-0.017	0.9833	0.000	-0.012
40	4.762	0.044	-0.017	1	0.000	-0.012
42	4.812	0.050	-0.020	1.2	0.000	-0.012
44	4.932	0.050	-0.020	1.4	0.000	-0.012
46	4.926	0.050	-0.020	1.6	0.000	-0.006
48	5.008	0.056	-0.020	1.8	0.000	0.000
50	4.964	0.063	-0.020	2	0.000	0.000
52	5.077	0.056	-0.020	2.2	0.000	0.000
54	5.058	0.056	-0.020	2.4	0.000	0.006
56	5.052	0.056	-0.025	2.6	0.000	0.006
58	5.146	0.063	-0.023	2.8	0.000	0.006
60	5.178	0.063	-0.025	3	0.000	0.006
62	5.266	0.069	-0.023	3.2	0.000	0.000
64	5.411	0.069	-0.025	3.4	0.000	0.000
66	5.449	0.069	-0.028	3.6	0.000	0.000
68	5.537	0.081	-0.028	3.8	0.000	0.000
70	5.518	0.069	-0.028	4	0.000	-0.006
72	5.442	0.075	-0.025	4.2	0.000	-0.012
74	5.442	0.075	-0.025	4.4	0.000	-0.018
76	5.411	0.075	-0.023	4.6	0.000	-0.025
78	5.430	0.075	-0.023	4.8	0.000	-0.018
80	5.455	0.075	-0.025	5	0.000	-0.018
82	5.279	0.075	-0.028	5.2	0.000	-0.018
84	5.304	0.075	-0.025	5.4	0.000	-0.018
86	5.342	0.075	-0.028	5.6	0.000	-0.012
88	5.323	0.081	-0.025	5.8	0.000	-0.012
90	5.247	0.075	-0.028	6	0.000	-0.012
92	5.455	0.075	-0.025	6.2	0.000	-0.012
94	5.682	0.081	-0.025	6.4	0.000	-0.006
96	5.833	0.075	-0.023	6.6	0.000	-0.012
98	6.009	0.081	-0.023	6.8	0.000	-0.012
100	6.047	0.081	-0.020	7	0.000	-0.012
115	6.431	0.088	-0.030	7.2	0.000	-0.018
130	6.903	0.094	-0.040	7.4	0.000	-0.025
145	7.143	0.100	-0.053	7.6	0.000	-0.025
160	7.300	0.100	-0.063	7.8	0.000	-0.025
175	7.451	0.107	-0.065	8	0.000	-0.025
190	7.243	0.107	-0.068	8.2	0.000	-0.025
205	7.363	0.113	-0.071	8.4	0.000	-0.025
220	7.388	0.113	-0.068	8.6	0.000	-0.025
235	7.432	0.113	-0.068	8.8	0.000	-0.025
250	7.621	0.119	-0.076	9	0.000	-0.018

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
265	7.564	0.119	-0.078	9.2	0.000	-0.012
280	7.898	0.126	-0.083	9.4	0.000	-0.006
295	7.879	0.132	-0.086	9.6	0.000	-0.006
310	7.993	0.132	-0.091	9.8	0.000	-0.006
325	7.936	0.132	-0.088	10	0.000	-0.006
340	7.942	0.138	-0.091	12	0.000	0.006
355	8.112	0.138	-0.101	14	0.000	0.000
370	8.056	0.138	-0.093	16	0.006	0.000
385	7.590	0.138	-0.093	18	0.006	-0.012
400	7.590	0.138	-0.103	20	0.006	-0.012
415	9.711	0.145	-0.108	22	0.006	-0.018
430	9.151	0.151	-0.111	24	0.006	-0.006
445	8.603	0.151	-0.114	26	0.012	0.006
460	8.433	0.145	-0.114	28	0.006	-0.006
475	8.289	0.145	-0.114	30	0.012	-0.025
490	9.019	0.151	-0.119	32	0.012	-0.012
505	8.673	0.151	-0.116	34	0.012	0.000
520	8.540	0.157	-0.119	36	0.012	0.012
535	8.610	0.157	-0.119	38	0.012	-0.012
550	7.999	0.151	-0.124	40	0.012	0.000
565	7.747	0.157	-0.121	42	0.012	0.000
580	9.220	0.157	-0.119	44	0.018	0.006
595	9.227	0.163	-0.129	46	0.018	-0.006
610	9.239	0.163	-0.129	48	0.018	-0.025
625	9.170	0.163	-0.129	50	0.018	-0.025
640	9.107	0.163	-0.129	52	0.018	-0.018
655	9.202	0.163	-0.126	54	0.018	-0.012
670	9.069	0.170	-0.134	56	0.018	0.000
685	8.969	0.170	-0.136	58	0.018	-0.006
700	8.943	0.170	-0.141	60	0.025	0.006
715	9.032	0.170	-0.139	62	0.025	-0.006
730	9.057	0.170	-0.141	64	0.025	0.000
745	8.843	0.170	-0.144	66	0.025	-0.006
760	9.586	0.170	-0.149	68	0.025	0.012
775	9.894	0.176	-0.151	70	0.025	0.006
790	10.051	0.170	-0.156	72	0.025	0.006
805	9.957	0.176	-0.162	74	0.025	-0.006
820	9.970	0.176	-0.167	76	0.025	-0.018
835	9.800	0.176	-0.179	78	0.025	0.000
850	9.774	0.176	-0.194	80	0.031	-0.018
865	9.831	0.176	-0.202	82	0.031	0.006
880	9.932	0.176	-0.212	84	0.031	0.012
895	9.963	0.176	-0.212	86	0.031	0.000
910	9.944	0.176	-0.215	88	0.031	-0.006
925	9.800	0.176	-0.212	90	0.031	0.006
940	9.730	0.176	-0.212	92	0.031	-0.006

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
955	9.674	0.182	-0.212	94	0.031	0.012
970	9.592	0.176	-0.220	96	0.031	-0.006
985	9.453	0.176	-0.232	98	0.031	-0.006
1000	9.453	0.176	-0.237	100	0.031	-0.006
1015	9.516	0.176	-0.247	115	0.037	0.006
1030	9.529	0.176	-0.258	130	0.037	0.012
1045	9.604	0.176	-0.263	145	0.043	0.000
1060	9.617	0.176	-0.265	160	0.050	0.006
1075	9.523	0.176	-0.265	175	0.050	-0.006
1090	9.529	0.176	-0.270	190	0.056	0.012
1105	9.529	0.176	-0.275	205	0.056	0.006
1120	9.510	0.176	-0.288	220	0.062	-0.006
1135	9.523	0.176	-0.303	235	0.062	0.000
1150	9.510	0.176	-0.311	250	0.062	0.000
1165	9.535	0.176	-0.313	265	0.068	0.006
1180	9.516	0.176	-0.313	280	0.068	0.000
1195	9.554	0.182	-0.321	295	0.068	0.006
1210	9.579	0.176	-0.328	310	0.075	0.012
1225	9.541	0.176	-0.331	325	0.075	0.006
1240	9.642	0.176	-0.323	340	0.075	0.012
1255	9.636	0.182	-0.326	355	0.075	0.006
1270	9.636	0.176	-0.323	370	0.081	0.012
1285	9.541	0.182	-0.328	385	0.081	0.012
1300	9.466	0.176	-0.326	400	0.081	0.012
1315	9.491	0.182	-0.336	415	0.081	0.012
1330	9.460	0.182	-0.333	430	0.087	0.012
1345	9.504	0.176	-0.333	445	0.087	0.012
1360	9.598	0.182	-0.331	460	0.087	0.012
1375	9.711	0.176	-0.349	475	0.087	0.018
1390	9.787	0.189	-0.376	490	0.093	0.018
1405	9.787	0.189	-0.374	505	0.093	0.018
1420	9.831	0.189	-0.381	520	0.093	0.018
1435	9.850	0.189	-0.392	535	0.093	0.018
1450	9.869	0.189	-0.397	550	0.093	0.018
				565	0.100	0.018
				580	0.100	0.018
				595	0.100	0.025
				610	0.100	0.025
				625	0.106	0.018
				640	0.106	0.018
				655	0.106	0.025
				670	0.106	0.025
				685	0.106	0.025
				700	0.106	0.018
				715	0.106	0.018
				730	0.106	0.025

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
				745	0.112	0.018
				760	0.112	0.018
				775	0.112	0.018
				790	0.112	0.018
				805	0.112	0.018
				820	0.112	0.012
				835	0.112	0.012
				850	0.112	0.012
				865	0.112	0.006
				880	0.112	0.006
				895	0.112	0.000
				910	0.112	0.000
				925	0.112	0.000
				940	0.112	0.000
				955	0.112	0.000
				970	0.112	0.000
				985	0.112	0.000
				1000	0.112	-0.006
				1015	0.112	-0.006
				1030	0.112	-0.012
				1045	0.112	-0.012
				1060	0.112	-0.012
				1075	0.112	-0.012
				1090	0.112	-0.018
				1105	0.112	-0.018
				1120	0.112	-0.018
				1135	0.112	-0.025
				1150	0.112	-0.031
				1165	0.112	-0.025
				1180	0.112	-0.031
				1195	0.112	-0.031
				1210	0.112	-0.037
				1225	0.112	-0.037
				1240	0.112	-0.037
				1255	0.112	-0.037
				1270	0.112	-0.037
				1285	0.112	-0.044
				1300	0.112	-0.037
				1315	0.112	-0.044
				1330	0.112	-0.037
				1345	0.112	-0.044
				1360	0.112	-0.050
				1375	0.112	-0.050
				1390	0.112	-0.050
				1405	0.112	-0.056

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
<i>Recovery Phase, February 18–19, 2004</i>						
0	9.888	0.182	35.986	0	0.112	-0.063
0.0083	9.617	0.176	35.986	0.0033	0.112	-0.063
0.0166	9.818	0.176	35.986	0.0066	0.112	-0.063
0.025	9.844	0.17	35.983	0.01	0.112	-0.063
0.0333	9.831	0.17	35.986	0.0133	0.112	-0.063
0.0416	9.818	0.17	35.986	0.0166	0.112	-0.063
0.05	9.806	0.17	35.986	0.02	0.112	-0.063
0.0583	9.787	0.17	35.986	0.0233	0.112	-0.063
0.0666	9.774	0.163	35.986	0.0266	0.112	-0.063
0.075	9.762	0.163	35.988	0.03	0.112	-0.063
0.0833	9.749	0.163	35.986	0.0333	0.112	-0.063
0.0916	9.73	0.163	35.986	0.0366	0.112	-0.063
0.1	9.718	0.163	35.986	0.04	0.112	-0.063
0.1083	9.705	0.163	35.988	0.0433	0.112	-0.063
0.1166	9.693	0.163	35.986	0.0466	0.112	-0.063
0.125	9.674	0.157	35.983	0.05	0.112	-0.063
0.1333	9.661	0.157	35.986	0.0533	0.112	-0.063
0.1416	9.649	0.157	35.986	0.0566	0.112	-0.063
0.15	9.63	0.157	35.988	0.06	0.112	-0.056
0.1583	9.617	0.157	35.986	0.0633	0.112	-0.056
0.1666	9.604	0.157	35.986	0.0666	0.112	-0.063
0.175	9.592	0.157	35.988	0.07	0.112	-0.063
0.1833	9.579	0.157	35.988	0.0733	0.112	-0.056
0.1916	9.56	0.151	35.986	0.0766	0.112	-0.056
0.2	9.548	0.151	35.986	0.08	0.112	-0.056
0.2083	9.535	0.157	35.988	0.0833	0.112	-0.056
0.2166	9.523	0.151	35.986	0.0866	0.112	-0.056
0.225	9.51	0.151	35.986	0.09	0.112	-0.056
0.2333	9.491	0.151	35.986	0.0933	0.112	-0.063
0.2416	9.479	0.151	35.986	0.0966	0.112	-0.056
0.25	9.466	0.151	35.983	0.1	0.112	-0.056
0.2583	9.453	0.151	35.986	0.1033	0.112	-0.056
0.2666	9.434	0.151	35.983	0.1066	0.112	-0.063
0.275	9.422	0.151	35.986	0.11	0.112	-0.056
0.2833	9.409	0.145	35.988	0.1133	0.112	-0.063
0.2916	9.397	0.145	35.986	0.1166	0.112	-0.056
0.3	9.384	0.145	35.983	0.12	0.112	-0.056
0.3083	9.365	0.145	35.986	0.1233	0.112	-0.063
0.3166	9.353	0.145	35.983	0.1266	0.112	-0.056
0.325	9.34	0.145	35.983	0.13	0.112	-0.056
0.3333	9.327	0.145	35.986	0.1333	0.112	-0.056
0.35	9.296	0.145	35.986	0.1366	0.112	-0.063
0.3666	9.271	0.145	35.988	0.14	0.112	-0.063
0.3833	9.246	0.145	35.986	0.1433	0.112	-0.063

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
0.4	9.22	0.145	35.983	0.1466	0.112	-0.056
0.4166	9.189	0.145	35.986	0.15	0.112	-0.056
0.4333	9.157	0.145	35.988	0.1533	0.112	-0.056
0.45	9.139	0.145	35.988	0.1566	0.112	-0.056
0.4666	9.113	0.145	35.983	0.16	0.112	-0.063
0.4833	9.082	0.145	35.983	0.1633	0.112	-0.063
0.5	9.057	0.138	35.986	0.1666	0.112	-0.063
0.5166	9.032	0.138	35.988	0.17	0.112	-0.056
0.5333	9.006	0.138	35.986	0.1733	0.112	-0.063
0.55	8.975	0.138	35.988	0.1766	0.112	-0.063
0.5666	8.943	0.138	35.986	0.18	0.112	-0.063
0.5833	8.924	0.138	35.988	0.1833	0.112	-0.063
0.6	8.899	0.138	35.986	0.1866	0.119	-0.063
0.6166	8.874	0.132	35.986	0.19	0.112	-0.063
0.6333	8.843	0.132	35.988	0.1933	0.112	-0.063
0.65	8.817	0.132	35.988	0.1966	0.112	-0.063
0.6666	8.786	0.132	35.988	0.2	0.112	-0.063
0.6833	8.767	0.126	35.988	0.2033	0.112	-0.063
0.7	8.742	0.126	35.986	0.2066	0.112	-0.063
0.7166	8.71	0.126	35.986	0.21	0.112	-0.056
0.7333	8.679	0.126	35.988	0.2133	0.112	-0.063
0.75	8.666	0.126	35.986	0.2166	0.112	-0.063
0.7666	8.641	0.126	35.986	0.22	0.112	-0.063
0.7833	8.61	0.119	35.986	0.2233	0.112	-0.063
0.8	8.591	0.119	35.986	0.2266	0.112	-0.063
0.8166	8.559	0.119	35.986	0.23	0.112	-0.063
0.8333	8.54	0.119	35.983	0.2333	0.112	-0.063
0.85	8.515	0.119	35.988	0.2366	0.112	-0.063
0.8666	8.484	0.119	35.986	0.24	0.112	-0.063
0.8833	8.459	0.113	35.988	0.2433	0.112	-0.056
0.9	8.427	0.113	35.986	0.2466	0.112	-0.063
0.9166	8.408	0.113	35.986	0.25	0.112	-0.056
0.9333	8.389	0.113	35.986	0.2533	0.112	-0.056
0.95	8.364	0.113	35.986	0.2566	0.112	-0.056
0.9666	8.333	0.113	35.986	0.26	0.112	-0.056
0.9833	8.307	0.113	35.986	0.2633	0.112	-0.056
1	8.289	0.113	35.986	0.2666	0.112	-0.063
1.2	7.993	0.132	35.986	0.27	0.112	-0.056
1.4	7.697	0.132	35.986	0.2733	0.112	-0.063
1.6	7.432	0.132	35.986	0.2766	0.112	-0.063
1.8	7.161	0.145	35.986	0.28	0.112	-0.063
2	6.903	0.17	35.986	0.2833	0.112	-0.063
2.2	6.658	0.176	35.988	0.2866	0.119	-0.063
2.4	6.425	0.189	35.986	0.29	0.119	-0.063
2.6	6.192	0.17	35.988	0.2933	0.112	-0.063
2.8	5.971	0.151	35.986	0.2966	0.119	-0.063

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
3	5.751	0.145	35.986	0.3	0.112	-0.063
3.2	5.549	0.138	35.986	0.3033	0.119	-0.063
3.4	5.348	0.132	35.986	0.3066	0.119	-0.063
3.6	5.146	0.126	35.988	0.31	0.119	-0.063
3.8	4.957	0.126	35.988	0.3133	0.119	-0.063
4	4.781	0.189	35.986	0.3166	0.119	-0.063
4.2	4.605	0.189	35.988	0.32	0.119	-0.063
4.4	4.428	0.189	35.986	0.3233	0.119	-0.063
4.6	4.265	0.182	35.986	0.3266	0.119	-0.063
4.8	4.107	0.163	35.988	0.33	0.119	-0.063
5	3.994	0.138	35.986	0.3333	0.119	-0.063
5.2	3.805	0.17	35.988	0.35	0.112	-0.063
5.4	3.666	0.145	35.988	0.3666	0.112	-0.063
5.6	3.559	0.132	35.988	0.3833	0.112	-0.063
5.8	3.395	0.126	35.988	0.4	0.112	-0.063
6	3.263	0.119	35.988	0.4166	0.112	-0.063
6.2	3.137	0.119	35.986	0.4333	0.112	-0.063
6.4	3.017	0.119	35.988	0.45	0.112	-0.063
6.6	2.904	0.119	35.988	0.4666	0.112	-0.063
6.8	2.791	0.119	35.986	0.4833	0.112	-0.063
7	2.683	0.119	35.986	0.5	0.112	-0.069
7.2	2.576	0.113	35.986	0.5166	0.112	-0.063
7.4	2.476	0.113	35.988	0.5333	0.112	-0.069
7.6	2.381	0.113	35.988	0.55	0.112	-0.063
7.8	2.293	0.113	35.986	0.5666	0.112	-0.063
8	2.198	0.113	35.988	0.5833	0.112	-0.063
8.2	2.116	0.113	35.986	0.6	0.112	-0.069
8.4	2.028	0.113	35.988	0.6166	0.112	-0.063
8.6	1.946	0.107	35.988	0.6333	0.112	-0.063
8.8	1.871	0.107	35.988	0.65	0.112	-0.063
9	1.801	0.107	35.988	0.6666	0.112	-0.069
9.2	1.726	0.107	35.986	0.6833	0.112	-0.069
9.4	1.657	0.107	35.988	0.7	0.112	-0.069
9.6	1.594	0.107	35.986	0.7166	0.112	-0.069
9.8	1.531	0.107	35.988	0.7333	0.112	-0.063
10	1.474	0.119	35.988	0.75	0.112	-0.063
12	0.982	0.132	35.988	0.7666	0.112	-0.063
14	0.68	0.132	35.986	0.7833	0.112	-0.063
16	0.485	0.138	35.986	0.8	0.112	-0.069
18	0.371	0.138	35.983	0.8166	0.112	-0.063
20	0.302	0.138	35.978	0.8333	0.112	-0.063
22	0.27	0.132	35.971	0.85	0.112	-0.063
24	0.245	0.132	35.971	0.8666	0.112	-0.069
26	0.233	0.126	35.968	0.8833	0.112	-0.069
28	0.22	0.132	35.966	0.9	0.112	-0.069
30	0.214	0.126	35.963	0.9166	0.112	-0.069

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
32	0.207	0.126	35.961	0.9333	0.112	-0.069
34	0.207	0.119	35.956	0.95	0.112	-0.069
36	0.201	0.113	35.956	0.9666	0.112	-0.069
38	0.201	0.113	35.956	0.9833	0.112	-0.069
40	0.195	0.107	35.95	1	0.112	-0.063
42	0.195	0.113	35.95	1.2	0.112	-0.069
44	0.189	0.119	35.945	1.4	0.112	-0.069
46	0.189	0.113	35.943	1.6	0.112	-0.069
48	0.189	0.113	35.945	1.8	0.112	-0.069
50	0.189	0.113	35.943	2	0.112	-0.069
52	0.182	0.107	35.94	2.2	0.112	-0.069
54	0.182	0.107	35.938	2.4	0.112	-0.063
56	0.176	0.107	35.938	2.6	0.112	-0.063
58	0.176	0.107	35.935	2.8	0.112	-0.063
60	0.176	0.1	35.933	3	0.112	-0.063
62	0.176	0.1	35.93	3.2	0.112	-0.063
64	0.17	0.1	35.93	3.4	0.112	-0.063
66	0.17	0.088	35.928	3.6	0.112	-0.063
68	0.17	0.1	35.928	3.8	0.112	-0.063
70	0.17	0.1	35.925	4	0.112	-0.063
72	0.163	0.1	35.923	4.2	0.112	-0.063
74	0.163	0.1	35.92	4.4	0.106	-0.063
76	0.163	0.094	35.92	4.6	0.112	-0.069
78	0.163	0.094	35.918	4.8	0.112	-0.069
80	0.157	0.094	35.915	5	0.112	-0.069
82	0.157	0.088	35.915	5.2	0.112	-0.069
84	0.157	0.088	35.913	5.4	0.112	-0.063
86	0.157	0.088	35.913	5.6	0.112	-0.063
88	0.157	0.088	35.91	5.8	0.112	-0.063
90	0.157	0.088	35.91	6	0.112	-0.056
92	0.157	0.088	35.91	6.2	0.112	-0.056
94	0.151	0.088	35.908	6.4	0.112	-0.063
96	0.151	0.075	35.908	6.6	0.112	-0.063
98	0.151	0.081	35.908	6.8	0.112	-0.063
100	0.151	0.075	35.905	7	0.112	-0.063
115	0.144	0.088	35.892	7.2	0.112	-0.063
130	0.132	0.075	35.882	7.4	0.112	-0.063
145	0.138	0.075	35.875	7.6	0.112	-0.063
160	0.126	0.069	35.87	7.8	0.112	-0.063
175	0.119	0.063	35.854	8	0.112	-0.063
190	0.113	0.056	35.847	8.2	0.112	-0.063
205	0.113	0.05	35.839	8.4	0.112	-0.063
220	0.107	0.044	35.837	8.6	0.112	-0.063
235	0.1	0.044	35.829	8.8	0.112	-0.063
250	0.094	0.037	35.824	9	0.112	-0.063
265	0.094	0.031	35.819	9.2	0.112	-0.069

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
280	0.088	0.025	35.814	9.4	0.112	-0.063
295	0.088	0.025	35.806	9.6	0.112	-0.063
310	0.081	0.018	35.796	9.8	0.112	-0.063
325	0.075	0.012	35.784	10	0.112	-0.063
340	0.075	0.012	35.784	12	0.112	-0.069
355	0.069	0.006	35.781	14	0.112	-0.063
370	0.069	0.006	35.776	16	0.106	-0.069
385	0.069	0.006	35.779	18	0.106	-0.069
400	0.063	0	35.769	20	0.106	-0.069
415	0.063	0	35.758	22	0.106	-0.063
430	0.056	0	35.751	24	0.106	-0.063
445	0.056	-0.006	35.746	26	0.1	-0.075
460	0.056	-0.006	35.738	28	0.1	-0.063
475	0.05	-0.006	35.731	30	0.1	-0.069
490	0.05	-0.012	35.726	32	0.1	-0.063
505	0.05	-0.012	35.718	34	0.1	-0.069
520	0.044	-0.012	35.708	36	0.1	-0.069
535	0.044	-0.018	35.705	38	0.093	-0.069
550	0.037	-0.018	35.7	40	0.093	-0.063
565	0.037	-0.018	35.698	42	0.093	-0.069
580	0.037	-0.025	35.685	44	0.093	-0.075
595	0.031	-0.025	35.68	46	0.093	-0.069
610	0.031	-0.025	35.673	48	0.093	-0.069
625	0.031	-0.031	35.662	50	0.093	-0.069
640	0.025	-0.031	35.652	52	0.087	-0.069
655	0.025	-0.031	35.645	54	0.087	-0.069
670	0.025	-0.037	35.64	56	0.087	-0.063
685	0.018	-0.037	35.637	58	0.087	-0.075
700	0.018	-0.037	35.63	60	0.087	-0.069
715	0.018	-0.044	35.622	62	0.087	-0.075
730	0.012	-0.044	35.614	64	0.087	-0.081
745	0.012	-0.05	35.609	66	0.081	-0.075
760	0.006	-0.05	35.599	68	0.081	-0.069
775	0.006	-0.056	35.594	70	0.081	-0.075
790	0	-0.056	35.589	72	0.081	-0.069
805	0	-0.063	35.579	74	0.081	-0.069
820	0	-0.063	35.571	76	0.081	-0.069
835	-0.006	-0.063	35.564	78	0.081	-0.081
850	-0.006	-0.063	35.559	80	0.075	-0.081
865	-0.012	-0.069	35.554	82	0.075	-0.081
880	-0.012	-0.075	35.544	84	0.081	-0.081
895	-0.012	-0.075	35.539	86	0.075	-0.081
910	-0.018	-0.081	35.531	88	0.075	-0.081
925	-0.018	-0.081	35.523	90	0.075	-0.088
940	-0.025	-0.088	35.508	92	0.075	-0.081
955	-0.025	-0.088	35.498	94	0.075	-0.081

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
970	-0.031	-0.088	35.483	96	0.075	-0.088
985	-0.031	-0.094	35.473	98	0.075	-0.081
1000	-0.037	-0.1	35.465	100	0.068	-0.088
1015	-0.037	-0.1	35.455	115	0.068	-0.081
1030	-0.044	-0.107	35.455	130	0.062	-0.088
1045	-0.044	-0.107	35.45	145	0.062	-0.094
1060	-0.044	-0.113	35.443	160	0.056	-0.1
1075	-0.05	-0.113	35.425	175	0.05	-0.107
1090	-0.05	-0.113	35.41	190	0.05	-0.107
1105	-0.056	-0.119	35.402	205	0.043	-0.113
1120	-0.056	-0.126	35.41	220	0.043	-0.113
1135	-0.063	-0.126	35.402	235	0.037	-0.119
1150	-0.063	-0.126	35.402	250	0.037	-0.126
1165	-0.069	-0.132	35.39	265	0.031	-0.126
1180	-0.069	-0.132	35.374	280	0.025	-0.126
1195	-0.075	-0.138	35.357	295	0.025	-0.126
1210	-0.075	-0.138	35.362	310	0.025	-0.132
1225	-0.075	-0.138	35.379	325	0.018	-0.138
1240	-0.081	-0.145	35.367	340	0.018	-0.144
1255	-0.081	-0.145	35.349	355	0.012	-0.144
1270	-0.088	-0.151	35.349	370	0.012	-0.151
1285	-0.088	-0.151	35.349	385	0.012	-0.144
1300	-0.088	-0.151	35.347	400	0.006	-0.151
1315	-0.088	-0.157	35.339	415	0.006	-0.151
1330	-0.094	-0.151	35.339	430	0	-0.151
1345	-0.094	-0.163	35.334	445	0	-0.151
1360	-0.094	-0.163	35.342	460	0	-0.151
1375	-0.1	-0.163	35.329	475	-0.006	-0.151
1390	-0.1	-0.163	35.319	490	-0.006	-0.157
1405	-0.107	-0.17	35.311	505	-0.006	-0.163
1420	-0.107	-0.17	35.309	520	-0.006	-0.157
1435	-0.113	-0.176	35.304	535	-0.012	-0.157
1450	-0.113	-0.176	35.296	550	-0.012	-0.163
				565	-0.018	-0.17
				580	-0.018	-0.17
				595	-0.018	-0.17
				610	-0.025	-0.176
				625	-0.025	-0.176
				640	-0.025	-0.182
				655	-0.031	-0.182
				670	-0.031	-0.189
				685	-0.037	-0.189
				700	-0.037	-0.195
				715	-0.037	-0.195
				730	-0.043	-0.201
				745	-0.043	-0.201

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
				760	-0.05	-0.207
				775	-0.05	-0.214
				790	-0.05	-0.22
				805	-0.056	-0.22
				820	-0.056	-0.22
				835	-0.056	-0.226
				850	-0.062	-0.233
				865	-0.062	-0.233
				880	-0.068	-0.239
				895	-0.068	-0.239
				910	-0.075	-0.245
				925	-0.075	-0.245
				940	-0.081	-0.252
				955	-0.081	-0.252
				970	-0.087	-0.264
				985	-0.087	-0.264
				1000	-0.087	-0.271
				1015	-0.093	-0.277
				1030	-0.093	-0.277
				1045	-0.1	-0.283
				1060	-0.1	-0.283
				1075	-0.106	-0.289
				1090	-0.106	-0.296
				1105	-0.112	-0.302
				1120	-0.112	-0.302
				1135	-0.119	-0.308
				1150	-0.119	-0.308
				1165	-0.119	-0.315
				1180	-0.125	-0.315
				1195	-0.125	-0.321
				1210	-0.131	-0.321
				1225	-0.131	-0.321
				1240	-0.131	-0.334
				1255	-0.137	-0.334
				1270	-0.137	-0.34
				1285	-0.144	-0.34
				1300	-0.144	-0.334
				1315	-0.144	-0.346
				1330	-0.15	-0.346
				1345	-0.15	-0.346
				1360	-0.15	-0.346
				1375	-0.156	-0.352
				1390	-0.156	-0.352

TABLE S3.1 (Cont.)

Elapsed Time (min)	Deviation (ft of water) ^a			Elapsed Time (min)	Deviation (ft of water) ^a	
	MW1	SB34	Barometer		SB01	SB09
				1405	-0.162	-0.359
				1420	-0.162	-0.371
				1435	-0.162	-0.359
				1450	-0.162	-0.365

^a Positive values indicate drawdown (for water levels) or increased barometric pressure, relative to initial reference values arbitrarily set at 0.0.

TABLE S3.2 Ambient water level and barometric pressure variations at Everest, Kansas, on January 24–February 16, 2004.

Date	Time	Deviation from Initial Zero Reference (ft of water) ^a				
		MW1	SB01	SB09	SB34	Barometer
1/24/04	16:00	0	0	0	0	0.000
1/24/04	20:00	-0.009	-0.006	-0.007	-0.005	-0.021
1/25/04	0:00	-0.022	-0.012	-0.022	-0.01	-0.152
1/25/04	4:00	-0.035	-0.024	-0.053	-0.019	-0.247
1/25/04	8:00	-0.048	-0.024	-0.092	-0.036	-0.284
1/25/04	12:00	-0.065	-0.028	-0.114	-0.045	-0.300
1/25/04	16:00	-0.078	-0.016	-0.134	-0.059	-0.318
1/25/04	20:00	-0.076	-0.074	-0.129	-0.055	-0.263
1/26/04	0:00	-0.074	-0.09	-0.118	-0.045	-0.231
1/26/04	4:00	-0.067	-0.095	-0.107	-0.038	-0.196
1/26/04	8:00	-0.065	-0.097	-0.092	-0.033	-0.111
1/26/04	12:00	-0.054	-0.028	-0.072	-0.026	-0.092
1/26/04	16:00	-0.043	-0.036	-0.053	-0.012	-0.012
1/26/04	20:00	-0.024	-0.02	-0.018	0.007	0.097
1/27/04	0:00	-0.009	-0.004	0.013	0.023	0.182
1/27/04	4:00	0.009	0.014	0.043	0.047	0.235
1/27/04	8:00	0.024	0.022	0.076	0.061	0.328
1/27/04	12:00	0.041	0.078	0.109	0.075	0.376
1/27/04	16:00	0.05	0.062	0.115	0.082	0.346
1/27/04	20:00	0.054	0.068	0.126	0.089	0.344
1/28/04	0:00	0.063	0.074	0.135	0.096	0.341
1/28/04	4:00	0.065	0.082	0.141	0.103	0.330
1/28/04	8:00	0.078	0.076	0.159	0.117	0.404
1/28/04	12:00	0.091	0.138	0.185	0.129	0.434
1/28/04	16:00	0.093	0.118	0.181	0.129	0.337
1/28/04	20:00	0.093	0.118	0.174	0.134	0.328
1/29/04	0:00	0.096	0.122	0.172	0.134	0.274
1/29/04	4:00	0.091	0.13	0.161	0.129	0.198
1/29/04	8:00	0.093	0.11	0.159	0.134	0.208
1/29/04	12:00	0.106	0.15	0.183	0.146	0.277
1/29/04	16:00	0.113	0.144	0.191	0.155	0.302
1/29/04	20:00	0.126	0.126	0.191	0.167	0.394
1/30/04	0:00	0.133	0.148	0.209	0.174	0.399
1/30/04	4:00	0.137	0.163	0.213	0.181	0.348
1/30/04	8:00	0.141	0.175	0.218	0.186	0.325
1/30/04	12:00	0.146	0.201	0.237	0.188	0.309
1/30/04	16:00	0.143	0.173	0.222	0.181	0.226
1/30/04	20:00	0.143	0.165	0.196	0.186	0.219
1/31/04	0:00	0.141	0.169	0.189	0.188	0.178
1/31/04	4:00	0.141	0.171	0.185	0.186	0.141
1/31/04	8:00	0.146	0.173	0.181	0.188	0.120
1/31/04	12:00	0.146	0.189	0.19	0.195	0.081
1/31/04	16:00	0.14	0.172	0.159	0.186	-0.012
1/31/04	20:00	0.143	0.169	0.143	0.191	0.032
2/1/04	0:00	0.143	0.171	0.139	0.191	0.039
2/1/04	4:00	0.142	0.178	0.137	0.191	0.018
2/1/04	8:00	0.143	0.169	0.135	0.188	0.051
2/1/04	12:00	0.146	0.182	0.141	0.195	0.058
2/1/04	16:00	0.143	0.178	0.139	0.195	0.046
2/1/04	20:00	0.148	0.179	0.143	0.198	0.055
2/2/04	0:00	0.151	0.18	0.146	0.202	0.048
2/2/04	4:00	0.148	0.18	0.146	0.198	0.058
2/2/04	8:00	0.157	0.188	0.154	0.212	0.104
2/2/04	12:00	0.168	0.202	0.174	0.221	0.145

TABLE S3.2 (Cont.)

Date	Time	Deviation from Initial Zero Reference (ft of water) ^a				
		MW1	SB01	SB09	SB34	Barometer
2/2/04	16:00	0.179	0.209	0.185	0.233	0.201
2/2/04	20:00	0.194	0.225	0.207	0.245	0.242
2/3/04	0:00	0.207	0.237	0.228	0.254	0.325
2/3/04	4:00	0.216	0.243	0.244	0.247	0.351
2/3/04	8:00	0.229	0.257	0.266	0.276	0.422
2/3/04	12:00	0.244	0.275	0.303	0.292	0.487
2/3/04	16:00	0.244	0.275	0.305	0.299	0.406
2/3/04	20:00	0.248	0.287	0.298	0.304	0.385
2/4/04	0:00	0.257	0.287	0.307	0.313	0.399
2/4/04	4:00	0.263	0.293	0.32	0.318	0.404
2/4/04	8:00	0.263	0.297	0.322	0.32	0.367
2/4/04	12:00	0.27	0.309	0.329	0.327	0.353
2/4/04	16:00	0.27	0.297	0.316	0.318	0.286
2/4/04	20:00	0.272	0.297	0.307	0.323	0.284
2/5/04	0:00	0.272	0.305	0.305	0.328	0.263
2/5/04	4:00	0.266	0.299	0.275	0.318	0.155
2/5/04	8:00	0.261	0.295	0.25	0.313	0.108
2/5/04	12:00	0.255	0.285	0.233	0.304	0.072
2/5/04	16:00	0.242	0.273	0.204	0.295	0.039
2/5/04	20:00	0.248	0.281	0.209	0.306	0.090
2/6/04	0:00	0.259	0.291	0.218	0.313	0.097
2/6/04	4:00	0.263	0.295	0.224	0.318	0.127
2/6/04	8:00	0.274	0.307	0.244	0.337	0.205
2/6/04	12:00	0.283	0.317	0.261	0.342	0.235
2/6/04	16:00	0.292	0.315	0.268	0.346	0.245
2/6/04	20:00	0.303	0.273	0.283	0.356	0.311
2/7/04	0:00	0.316	0.259	0.305	0.37	0.339
2/7/04	4:00	0.32	0.353	0.316	0.377	0.353
2/7/04	8:00	0.333	0.363	0.333	0.386	0.406
2/7/04	12:00	0.348	0.381	0.366	0.405	0.505
2/7/04	16:00	0.357	0.389	0.384	0.415	0.524
2/7/04	20:00	0.366	0.399	0.388	0.422	0.531
2/8/04	0:00	0.374	0.405	0.403	0.434	0.514
2/8/04	4:00	0.379	0.408	0.403	0.436	0.475
2/8/04	8:00	0.37	0.401	0.383	0.436	0.344
2/8/04	12:00	0.363	0.389	0.336	0.429	0.161
2/8/04	16:00	0.342	0.367	0.259	0.391	0.018
2/8/04	20:00	0.34	0.367	0.252	0.391	0.085
2/9/04	0:00	0.357	0.385	0.281	0.408	0.235
2/9/04	4:00	0.366	0.395	0.294	0.422	0.288
2/9/04	8:00	0.372	0.405	0.307	0.427	0.332
2/9/04	12:00	0.383	0.417	0.34	0.448	0.358
2/9/04	16:00	0.385	0.415	0.344	0.448	0.298
2/9/04	20:00	0.392	0.421	0.351	0.453	0.348
2/10/04	0:00	0.398	0.431	0.36	0.455	0.369
2/10/04	4:00	0.403	0.435	0.37	0.462	0.364
2/10/04	8:00	0.409	0.437	0.379	0.462	0.394
2/10/04	12:00		0.468	0.399	0.535	0.314
2/10/04	16:00		0.472	0.392	0.521	0.242
2/10/04	20:00		0.453	0.362	0.488	0.161
2/11/04	0:00		0.451	0.347	0.478	0.159
2/11/04	4:00		0.447	0.34	0.478	0.129
2/11/04	8:00		0.447	0.336	0.476	0.182
2/11/04	12:00		0.498	0.366		0.261
2/11/04	16:00		0.548	0.392		0.300

TABLE S3.2 (Cont.)

Date	Time	Deviation from Initial Zero Reference (ft of water) ^a				
		MW1	SB01	SB09	SB34	Barometer
2/11/04	20:00		0.516	0.429	0.57	0.420
2/12/04	0:00		0.526	0.449	0.559	0.480
2/12/04	4:00		0.526	0.466	0.557	0.514
2/12/04	8:00		0.53	0.482	0.564	0.581
2/12/04	12:00		0.546	0.508	0.568	0.614
2/12/04	16:00		0.54	0.514	0.549	0.579
2/12/04	20:00		0.538	0.497	0.566	0.547
2/13/04	0:00		0.532	0.497	0.559	0.491
2/13/04	4:00		0.532	0.482	0.554	0.378
2/13/04	8:00		0.522	0.458	0.549	0.314
2/13/04	12:00		0.526	0.453	0.549	0.288
2/13/04	16:00		0.514	0.416	0.538	0.198
2/13/04	20:00		0.506	0.392	0.533	0.171
2/14/04	0:00		0.5	0.373	0.523	0.141
2/14/04	4:00		0.494	0.353	0.519	0.095
2/14/04	8:00		0.49	0.342	0.519	0.106
2/14/04	12:00		0.498	0.364	0.523	0.161
2/14/04	16:00		0.5	0.373	0.523	0.185
2/14/04	20:00		0.508	0.379	0.531	0.247
2/15/04	0:00		0.514	0.39	0.535	0.314
2/15/04	4:00		0.516	0.405	0.54	0.353
2/15/04	8:00		0.522	0.425	0.549	0.392
2/15/04	12:00		0.536	0.456	0.561	0.434
2/15/04	16:00		0.536	0.464	0.559	0.399
2/15/04	20:00		0.536	0.458	0.561	0.390
2/16/04	0:00		0.54	0.458	0.566	0.408
2/16/04	4:00		0.54	0.464	0.561	0.367
2/16/04	8:00		0.54	0.473	0.566	0.397
2/16/04	12:00		0.532	0.49	0.571	0.413

^a Positive values indicate drawdown for water levels or increased barometric pressure, relative to initial reference values arbitrarily set at 0.0.

TABLE S3.3 Correction factors and adjusted drawdown data for the pumping phase of the aquifer test at Everest, Kansas, February 17–18, 2004.

Elapsed Time (min)	BE Correction ^a		Adjusted Drawdown ^b		Elapsed Time (min)	BE Correction ^a SB01	Adjusted Drawdown ^b SB01
	MW1	SB34	MW1	SB34			
0	0.000	0.000	0.919	-0.006	0	0.000	0.000
0.0083	0.000	0.000	1.039	-0.006	0.0033	0.000	0.000
0.0166	0.000	0.000	1.127	-0.006	0.0066	0.000	0.000
0.025	0.000	0.000	1.146	-0.012	0.01	0.000	0.000
0.0333	0.000	0.000	1.146	-0.006	0.0133	0.000	0.000
0.0416	0.000	0.000	1.121	-0.012	0.0166	0.000	0.000
0.05	0.000	0.000	1.153	-0.012	0.02	0.000	0.000
0.0583	0.000	0.000	1.134	-0.012	0.0233	0.000	0.000
0.0666	0.000	0.000	1.121	-0.012	0.0266	0.000	0.000
0.075	0.000	0.000	1.134	-0.012	0.03	0.000	0.000
0.0833	0.000	0.000	1.146	-0.012	0.0333	0.000	0.000
0.0916	0.000	0.000	1.102	-0.012	0.0366	0.000	0.000
0.1	0.000	0.000	1.083	-0.012	0.04	0.000	0.000
0.1083	0.000	0.000	1.108	-0.012	0.0433	0.000	0.000
0.1166	0.000	0.000	1.077	-0.012	0.0466	0.000	0.000
0.125	0.000	0.000	1.115	-0.012	0.05	0.000	0.000
0.1333	0.000	0.000	1.052	-0.012	0.0533	0.000	0.000
0.1416	0.000	0.000	1.045	-0.012	0.0566	0.000	0.000
0.15	0.000	0.000	1.045	-0.012	0.06	0.000	0.000
0.1583	0.000	0.000	0.982	-0.012	0.0633	0.000	0.000
0.1666	0.000	0.000	1.039	-0.012	0.0666	0.000	0.000
0.175	0.000	0.000	1.045	-0.012	0.07	0.000	0.000
0.1833	0.000	0.000	1.039	-0.006	0.0733	0.000	0.000
0.1916	0.000	0.000	1.052	-0.006	0.0766	0.000	0.000
0.2	0.000	0.000	1.058	-0.006	0.08	0.000	0.000
0.2083	0.000	0.000	1.058	-0.006	0.0833	0.000	0.000
0.2166	0.000	0.000	1.039	-0.006	0.0866	0.000	0.000
0.225	0.000	0.000	1.014	-0.012	0.09	0.000	0.000
0.2333	0.000	0.000	1.033	-0.012	0.0933	0.000	0.000
0.2416	0.000	0.000	1.045	-0.012	0.0966	0.000	0.000
0.25	0.000	0.000	0.995	-0.012	0.1	0.000	0.000
0.2583	0.000	0.000	0.989	-0.012	0.1033	0.000	0.000
0.2666	0.000	0.000	1.014	-0.012	0.1066	0.000	0.000
0.275	0.000	0.000	0.945	-0.012	0.11	0.000	0.000
0.2833	0.000	0.000	0.945	-0.012	0.1133	0.000	0.000
0.2916	0.000	0.000	0.957	-0.018	0.1166	0.000	0.000
0.3	0.000	0.000	0.964	-0.018	0.12	0.000	0.000
0.3083	0.000	0.000	0.989	-0.012	0.1233	0.000	0.000
0.3166	0.000	0.000	0.982	-0.012	0.1266	0.000	0.000
0.325	0.000	0.000	0.982	-0.012	0.13	0.000	0.000
0.3333	0.000	0.000	1.008	-0.012	0.1333	0.000	0.000
0.35	0.000	0.000	0.989	-0.012	0.1366	0.000	0.000
0.3666	0.000	0.000	0.951	-0.012	0.14	0.000	0.000
0.3833	0.000	0.000	0.926	-0.012	0.1433	0.000	0.000
0.4	0.000	0.000	0.907	-0.012	0.1466	0.000	0.000
0.4166	0.000	0.000	0.938	-0.012	0.15	0.000	0.000
0.4333	0.000	0.000	0.932	-0.012	0.1533	0.000	0.000
0.45	0.000	0.000	0.938	-0.012	0.1566	0.000	0.000
0.4666	0.000	0.000	0.932	-0.018	0.16	0.000	0.000
0.4833	0.000	0.000	0.926	-0.012	0.1633	0.000	0.000
0.5	0.000	0.000	0.913	-0.012	0.1666	0.000	0.000
0.5166	0.000	0.000	0.863	-0.012	0.17	0.000	0.000
0.5333	0.000	0.000	0.819	-0.012	0.1733	0.000	0.000
0.55	0.000	0.000	0.667	-0.012	0.1766	0.000	0.000

TABLE S3.3 (Cont.)

Elapsed Time (min)	BE Correction ^a		Adjusted Drawdown ^b		Elapsed Time (min)	BE Correction ^a SB01	Adjusted Drawdown ^b SB01
	MW1	SB34	MW1	SB34			
0.5666	0.000	0.000	0.894	-0.012	0.18	0.000	0.000
0.5833	0.000	0.000	0.901	-0.012	0.1833	0.000	0.000
0.6	0.000	0.000	0.894	-0.012	0.1866	0.000	0.000
0.6166	0.000	0.000	0.863	-0.012	0.19	0.000	0.000
0.6333	0.000	0.000	0.945	-0.012	0.1933	0.000	0.000
0.65	0.000	0.000	0.888	-0.012	0.1966	0.000	0.000
0.6666	0.000	0.000	0.875	-0.012	0.2	0.000	0.000
0.6833	0.000	0.000	0.964	-0.012	0.2033	0.000	0.000
0.7	0.000	0.000	0.951	-0.012	0.2066	0.000	0.000
0.7166	0.000	0.000	0.926	-0.012	0.21	0.000	0.000
0.7333	0.000	0.000	0.932	-0.012	0.2133	0.000	0.000
0.75	0.000	0.000	0.945	-0.006	0.2166	0.000	0.000
0.7666	0.000	0.000	0.989	-0.006	0.22	0.000	0.000
0.7833	0.000	0.000	0.913	-0.006	0.2233	0.000	0.000
0.8	0.000	0.000	0.913	-0.006	0.2266	0.000	0.000
0.8166	0.000	0.000	0.951	-0.012	0.23	0.000	0.000
0.8333	0.000	0.000	0.951	-0.012	0.2333	0.000	0.000
0.85	0.000	0.000	0.989	-0.012	0.2366	0.000	0.000
0.8666	0.000	0.000	0.913	-0.012	0.24	0.000	0.000
0.8833	0.000	0.000	0.919	-0.012	0.2433	0.000	0.000
0.9	0.000	0.000	0.938	-0.012	0.2466	0.000	0.000
0.9166	0.000	0.000	0.907	-0.012	0.25	0.000	0.000
0.9333	0.000	0.000	0.938	-0.006	0.2533	0.000	0.000
0.95	0.000	0.000	0.957	-0.006	0.2566	0.000	0.000
0.9666	0.000	0.000	0.932	-0.006	0.26	0.000	0.000
0.9833	0.000	0.000	0.970	-0.006	0.2633	0.000	0.000
1	0.000	0.000	0.964	-0.012	0.2666	0.000	0.000
1.2	0.000	0.000	0.919	-0.012	0.27	0.000	0.000
1.4	0.000	0.000	1.108	-0.012	0.2733	0.000	0.000
1.6	0.000	0.000	1.222	-0.012	0.2766	0.000	0.000
1.8	0.000	0.000	1.329	-0.012	0.28	0.000	0.000
2	0.000	0.000	1.423	-0.012	0.2833	0.000	0.000
2.2	0.000	0.000	1.524	-0.012	0.2866	0.000	0.000
2.4	0.000	0.000	1.682	-0.012	0.29	0.000	0.000
2.6	0.000	0.000	1.669	-0.012	0.2933	0.000	0.000
2.8	0.000	0.000	1.713	-0.006	0.2966	0.000	0.000
3	0.000	0.000	1.776	-0.012	0.3	0.000	0.000
3.2	0.000	0.000	1.846	-0.006	0.3033	0.000	0.000
3.4	0.000	0.000	1.858	-0.006	0.3066	0.000	0.000
3.6	0.000	0.000	1.909	0.000	0.31	0.000	0.000
3.8	0.000	0.000	1.946	-0.006	0.3133	0.000	0.000
4	0.000	0.000	1.990	-0.006	0.3166	0.000	0.000
4.2	0.000	0.000	2.028	-0.006	0.32	0.000	0.000
4.4	0.000	0.000	2.079	-0.006	0.3233	0.000	0.000
4.6	0.000	0.000	2.129	-0.006	0.3266	0.000	0.000
4.8	0.000	0.000	2.116	-0.006	0.33	0.000	0.000
5	0.000	0.000	2.098	0.000	0.3333	0.000	0.000
5.2	0.000	0.000	2.173	-0.006	0.35	0.000	0.000
5.4	0.000	0.000	2.211	-0.006	0.3666	0.000	0.000
5.6	0.000	0.000	2.192	-0.006	0.3833	0.000	0.000
5.8	0.000	0.000	2.249	-0.006	0.4	0.000	0.000
6	0.000	0.000	2.249	-0.006	0.4166	0.000	0.000
6.2	0.000	0.000	2.299	-0.006	0.4333	0.000	0.000
6.4	0.000	0.000	2.312	-0.006	0.45	0.000	0.000
6.6	0.000	0.000	2.350	0.000	0.4666	0.000	0.000

TABLE S3.3 (Cont.)

Elapsed Time (min)	BE Correction ^a		Adjusted Drawdown ^b		Elapsed Time (min)	BE Correction ^a SB01	Adjusted Drawdown ^b SB01
	MW1	SB34	MW1	SB34			
6.8	0.000	0.000	2.305	-0.006	0.4833	0.000	0.000
7	0.000	0.000	2.400	-0.006	0.5	0.000	0.000
7.2	0.000	0.000	2.381	-0.006	0.5166	0.000	0.000
7.4	0.000	0.000	2.400	0.000	0.5333	0.000	0.000
7.6	0.000	0.000	2.400	0.000	0.55	0.000	0.000
7.8	0.000	0.000	2.463	0.000	0.5666	0.000	0.000
8	0.000	0.000	2.438	0.000	0.5833	0.000	0.000
8.2	0.000	0.000	2.494	0.006	0.6	0.000	0.000
8.4	0.000	0.000	2.501	0.000	0.6166	0.000	0.000
8.6	0.000	0.000	2.614	0.000	0.6333	0.000	0.000
8.8	0.000	0.000	2.539	0.000	0.65	0.000	0.000
9	0.000	0.000	2.677	0.006	0.6666	0.000	0.000
9.2	0.001	0.000	2.678	0.000	0.6833	0.000	0.000
9.4	0.000	0.000	2.702	0.006	0.7	0.000	0.000
9.6	0.000	0.000	2.759	0.006	0.7166	0.000	0.000
9.8	0.000	0.000	2.728	0.006	0.7333	0.000	0.000
10	0.000	0.000	2.772	0.006	0.75	0.000	0.000
12	0.001	0.000	2.987	0.012	0.7666	0.000	0.000
14	0.001	0.000	3.094	0.018	0.7833	0.000	0.000
16	0.001	0.000	3.182	0.018	0.8	0.000	0.000
18	0.001	0.001	3.390	0.026	0.8166	0.000	0.000
20	0.001	0.001	3.333	0.032	0.8333	0.000	0.000
22	0.001	0.001	3.390	0.026	0.85	0.000	0.000
24	0.001	0.001	3.686	0.032	0.8666	0.000	0.000
26	0.001	0.001	3.825	0.032	0.8833	0.000	0.000
28	0.001	0.001	3.894	0.032	0.9	0.000	0.000
30	0.001	0.001	3.995	0.038	0.9166	0.000	0.000
32	0.002	0.001	4.090	0.038	0.9333	0.000	0.000
34	0.002	0.002	4.197	0.046	0.95	0.000	0.000
36	0.002	0.002	4.361	0.039	0.9666	0.000	0.000
38	0.002	0.002	4.600	0.046	0.9833	0.000	0.000
40	0.002	0.002	4.764	0.046	1	0.000	0.000
42	0.002	0.002	4.814	0.052	1.2	0.000	0.000
44	0.002	0.002	4.934	0.052	1.4	0.000	0.000
46	0.002	0.002	4.928	0.052	1.6	0.000	0.000
48	0.002	0.002	5.010	0.058	1.8	0.000	0.000
50	0.002	0.002	4.966	0.065	2	0.000	0.000
52	0.002	0.002	5.079	0.058	2.2	0.000	0.000
54	0.002	0.002	5.060	0.058	2.4	0.000	0.000
56	0.003	0.002	5.055	0.058	2.6	0.000	0.000
58	0.002	0.002	5.148	0.065	2.8	0.000	0.000
60	0.003	0.002	5.181	0.065	3	0.000	0.000
62	0.002	0.002	5.268	0.071	3.2	0.000	0.000
64	0.003	0.002	5.414	0.071	3.4	0.000	0.000
66	0.003	0.003	5.452	0.072	3.6	0.000	0.000
68	0.003	0.003	5.540	0.084	3.8	0.000	0.000
70	0.003	0.003	5.521	0.072	4	0.000	0.000
72	0.003	0.002	5.445	0.077	4.2	0.000	0.000
74	0.003	0.002	5.445	0.077	4.4	0.000	0.000
76	0.002	0.002	5.413	0.077	4.6	0.000	0.000
78	0.002	0.002	5.432	0.077	4.8	0.000	0.000
80	0.003	0.002	5.458	0.077	5	0.000	0.000
82	0.003	0.003	5.282	0.078	5.2	0.000	0.000
84	0.003	0.002	5.307	0.077	5.4	0.000	0.000
86	0.003	0.003	5.345	0.078	5.6	0.000	0.000

TABLE S3.3 (Cont.)

Elapsed Time (min)	BE Correction ^a		Adjusted Drawdown ^b		Elapsed Time (min)	BE Correction ^a SB01	Adjusted Drawdown ^b SB01
	MW1	SB34	MW1	SB34			
88	0.003	0.002	5.326	0.083	5.8	0.000	0.000
90	0.003	0.003	5.250	0.078	6	0.000	0.000
92	0.003	0.002	5.458	0.077	6.2	0.000	0.000
94	0.003	0.002	5.685	0.083	6.4	0.000	0.000
96	0.002	0.002	5.835	0.077	6.6	0.000	0.000
98	0.002	0.002	6.011	0.083	6.8	0.000	0.000
100	0.002	0.002	6.049	0.083	7	0.000	0.000
115	0.003	0.003	6.434	0.091	7.2	0.000	0.000
130	0.004	0.004	6.907	0.098	7.4	0.000	0.000
145	0.006	0.005	7.149	0.105	7.6	0.000	0.000
160	0.007	0.006	7.307	0.106	7.8	0.000	0.000
175	0.007	0.006	7.458	0.113	8	0.000	0.000
190	0.007	0.007	7.250	0.114	8.2	0.000	0.000
205	0.007	0.007	7.370	0.120	8.4	0.000	0.000
220	0.007	0.007	7.395	0.120	8.6	0.000	0.000
235	0.007	0.007	7.439	0.120	8.8	0.000	0.000
250	0.008	0.008	7.629	0.127	9	0.000	0.000
265	0.008	0.008	7.572	0.127	9.2	0.000	0.000
280	0.009	0.008	7.907	0.134	9.4	0.000	0.000
295	0.009	0.009	7.888	0.141	9.6	0.000	0.000
310	0.010	0.009	8.003	0.141	9.8	0.000	0.000
325	0.009	0.009	7.945	0.141	10	0.000	0.000
340	0.010	0.009	7.952	0.147	12	0.000	0.000
355	0.011	0.010	8.123	0.148	14	0.000	0.000
370	0.010	0.009	8.066	0.147	16	0.000	0.006
385	0.010	0.009	7.600	0.147	18	0.001	0.007
400	0.011	0.010	7.601	0.148	20	0.001	0.007
415	0.011	0.011	9.722	0.156	22	0.001	0.007
430	0.012	0.011	9.163	0.162	24	0.001	0.007
445	0.012	0.011	8.615	0.162	26	0.001	0.013
460	0.012	0.011	8.445	0.156	28	0.001	0.007
475	0.012	0.011	8.301	0.156	30	0.001	0.013
490	0.012	0.012	9.031	0.163	32	0.001	0.013
505	0.012	0.012	8.685	0.163	34	0.001	0.013
520	0.012	0.012	8.552	0.169	36	0.001	0.013
535	0.012	0.012	8.622	0.169	38	0.001	0.013
550	0.013	0.012	8.012	0.163	40	0.001	0.013
565	0.013	0.012	7.760	0.169	42	0.002	0.014
580	0.012	0.012	9.232	0.169	44	0.002	0.020
595	0.013	0.013	9.240	0.176	46	0.002	0.020
610	0.013	0.013	9.252	0.176	48	0.002	0.020
625	0.013	0.013	9.183	0.176	50	0.002	0.020
640	0.013	0.013	9.120	0.176	52	0.002	0.020
655	0.013	0.013	9.215	0.176	54	0.002	0.020
670	0.014	0.013	9.083	0.183	56	0.002	0.020
685	0.014	0.014	8.983	0.184	58	0.002	0.020
700	0.015	0.014	8.958	0.184	60	0.002	0.027
715	0.015	0.014	9.047	0.184	62	0.002	0.027
730	0.015	0.014	9.072	0.184	64	0.002	0.027
745	0.015	0.014	8.858	0.184	66	0.002	0.027
760	0.016	0.015	9.602	0.185	68	0.002	0.027
775	0.016	0.015	9.910	0.191	70	0.002	0.027
790	0.016	0.016	10.067	0.186	72	0.002	0.027
805	0.017	0.016	9.974	0.192	74	0.002	0.027
820	0.017	0.017	9.987	0.193	76	0.002	0.027

TABLE S3.3 (Cont.)

Elapsed Time (min)	BE Correction ^a		Adjusted Drawdown ^b		Elapsed Time (min)	BE Correction ^a SB01	Adjusted Drawdown ^b SB01
	MW1	SB34	MW1	SB34			
835	0.019	0.018	9.819	0.194	78	0.002	0.027
850	0.020	0.019	9.794	0.195	80	0.002	0.033
865	0.021	0.020	9.852	0.196	82	0.002	0.033
880	0.022	0.021	9.954	0.197	84	0.002	0.033
895	0.022	0.021	9.985	0.197	86	0.002	0.033
910	0.022	0.021	9.966	0.197	88	0.002	0.033
925	0.022	0.021	9.822	0.197	90	0.002	0.033
940	0.022	0.021	9.752	0.197	92	0.002	0.033
955	0.022	0.021	9.696	0.203	94	0.002	0.033
970	0.023	0.022	9.615	0.198	96	0.002	0.033
985	0.024	0.023	9.477	0.199	98	0.002	0.033
1000	0.025	0.024	9.478	0.200	100	0.002	0.033
1015	0.026	0.025	9.542	0.201	115	0.002	0.039
1030	0.027	0.026	9.556	0.202	130	0.003	0.040
1045	0.027	0.026	9.631	0.202	145	0.004	0.047
1060	0.028	0.026	9.645	0.202	160	0.005	0.055
1075	0.028	0.026	9.551	0.202	175	0.005	0.055
1090	0.028	0.027	9.557	0.203	190	0.006	0.062
1105	0.029	0.027	9.558	0.203	205	0.006	0.062
1120	0.030	0.029	9.540	0.205	220	0.006	0.068
1135	0.032	0.030	9.555	0.206	235	0.006	0.068
1150	0.032	0.031	9.542	0.207	250	0.006	0.068
1165	0.033	0.031	9.568	0.207	265	0.006	0.074
1180	0.033	0.031	9.549	0.207	280	0.007	0.075
1195	0.034	0.032	9.588	0.214	295	0.007	0.075
1210	0.034	0.033	9.613	0.209	310	0.007	0.082
1225	0.035	0.033	9.576	0.209	325	0.007	0.082
1240	0.034	0.032	9.676	0.208	340	0.007	0.082
1255	0.034	0.033	9.670	0.215	355	0.008	0.083
1270	0.034	0.032	9.670	0.208	370	0.008	0.089
1285	0.034	0.033	9.575	0.215	385	0.008	0.089
1300	0.034	0.033	9.500	0.209	400	0.008	0.089
1315	0.035	0.033	9.526	0.215	415	0.009	0.090
1330	0.035	0.033	9.495	0.215	430	0.009	0.096
1345	0.035	0.033	9.539	0.209	445	0.009	0.096
1360	0.035	0.033	9.633	0.215	460	0.009	0.096
1375	0.036	0.035	9.747	0.211	475	0.009	0.096
1390	0.039	0.037	9.826	0.226	490	0.010	0.103
1405	0.039	0.037	9.826	0.226	505	0.009	0.102
1420	0.040	0.038	9.871	0.227	520	0.010	0.103
1435	0.041	0.039	9.891	0.228	535	0.010	0.103
1450	0.041	0.040	9.910	0.229	550	0.010	0.103
					565	0.010	0.110
					580	0.010	0.110
					595	0.010	0.110
					610	0.010	0.110
					625	0.010	0.116
					640	0.010	0.116
					655	0.010	0.116
					670	0.011	0.117
					685	0.011	0.117
					700	0.011	0.117
					715	0.011	0.117
					730	0.011	0.117
					745	0.012	0.124

TABLE S3.3 (Cont.)

Elapsed Time (min)	BE Correction ^a		Adjusted Drawdown ^b		Elapsed Time (min)	BE Correction ^a SB01	Adjusted Drawdown ^b SB01
	MW1	SB34	MW1	SB34			
					760	0.012	0.124
					775	0.012	0.124
					790	0.013	0.125
					805	0.013	0.125
					820	0.014	0.126
					835	0.015	0.127
					850	0.016	0.128
					865	0.016	0.128
					880	0.017	0.129
					895	0.017	0.129
					910	0.017	0.129
					925	0.017	0.129
					940	0.017	0.129
					955	0.017	0.129
					970	0.018	0.130
					985	0.019	0.131
					1000	0.019	0.131
					1015	0.020	0.132
					1030	0.021	0.133
					1045	0.021	0.133
					1060	0.022	0.134
					1075	0.022	0.134
					1090	0.022	0.134
					1105	0.022	0.134
					1120	0.023	0.135
					1135	0.025	0.137
					1150	0.025	0.137
					1165	0.025	0.137
					1180	0.025	0.137
					1195	0.026	0.138
					1210	0.027	0.139
					1225	0.027	0.139
					1240	0.026	0.138
					1255	0.026	0.138
					1270	0.026	0.138
					1285	0.027	0.139
					1300	0.026	0.138
					1315	0.027	0.139
					1330	0.027	0.139
					1345	0.027	0.139
					1360	0.027	0.139
					1375	0.028	0.140
					1390	0.031	0.143
					1405	0.030	0.142

^a Barometric efficiency corrections reported as feet of water, added to measured data in Table S3.1.

^b Positive values indicate feet of drawdown from an arbitrary initial reference level of 0.0 ft.

TABLE S3.4 Correction factors and adjusted drawdown data from well MW1 for the recovery phase of aquifer test at Everest, Kansas, February 18–19, 2004.

Elapsed Time (min)	BE Correction ^a	Background Correction ^a	Adjusted Residual Drawdown ^b
0	0.042	0.000	9.930
0.0083	0.042	0.000	9.659
0.0166	0.042	0.000	9.860
0.025	0.042	0.000	9.886
0.0333	0.042	0.000	9.873
0.0416	0.042	0.000	9.860
0.05	0.042	0.000	9.848
0.0583	0.042	0.000	9.829
0.0666	0.042	0.000	9.816
0.075	0.041	0.000	9.803
0.0833	0.042	0.000	9.791
0.0916	0.042	0.000	9.772
0.1	0.042	0.000	9.760
0.1083	0.041	0.000	9.746
0.1166	0.042	0.000	9.735
0.125	0.042	0.000	9.716
0.1333	0.042	0.000	9.703
0.1416	0.042	0.000	9.691
0.15	0.041	0.000	9.671
0.1583	0.042	0.000	9.659
0.1666	0.042	0.000	9.646
0.175	0.041	0.000	9.633
0.1833	0.041	0.000	9.620
0.1916	0.042	0.000	9.602
0.2	0.042	0.000	9.590
0.2083	0.041	0.000	9.576
0.2166	0.042	0.000	9.565
0.225	0.042	0.000	9.552
0.2333	0.042	0.000	9.533
0.2416	0.042	0.000	9.521
0.25	0.042	0.000	9.508
0.2583	0.042	0.000	9.495
0.2666	0.042	0.000	9.476
0.275	0.042	0.000	9.464
0.2833	0.041	0.000	9.450
0.2916	0.042	0.000	9.439
0.3	0.042	0.000	9.426
0.3083	0.042	0.000	9.407
0.3166	0.042	0.000	9.395
0.325	0.042	0.000	9.382
0.3333	0.042	0.000	9.369
0.35	0.042	0.000	9.338
0.3666	0.041	0.000	9.312
0.3833	0.042	0.000	9.288
0.4	0.042	0.000	9.262
0.4166	0.042	0.000	9.231
0.4333	0.041	0.000	9.198
0.45	0.041	0.000	9.180
0.4666	0.042	0.000	9.155
0.4833	0.042	0.000	9.124
0.5	0.042	0.000	9.099
0.5166	0.041	0.000	9.074
0.5333	0.042	0.000	9.048

TABLE S3.4 (Cont.)

Elapsed Time (min)	BE Correction ^a	Background Correction ^a	Adjusted Residual Drawdown ^b
0.55	0.041	0.000	9.017
0.5666	0.042	0.000	8.985
0.5833	0.041	0.000	8.966
0.6	0.042	0.000	8.941
0.6166	0.042	0.000	8.916
0.6333	0.041	0.000	8.885
0.65	0.041	0.000	8.859
0.6666	0.041	0.000	8.828
0.6833	0.041	0.000	8.809
0.7	0.042	0.000	8.784
0.7166	0.042	0.000	8.752
0.7333	0.041	0.000	8.721
0.75	0.042	0.000	8.708
0.7666	0.042	0.000	8.683
0.7833	0.042	0.000	8.652
0.8	0.042	0.000	8.633
0.8166	0.042	0.000	8.601
0.8333	0.042	0.000	8.582
0.85	0.041	0.000	8.557
0.8666	0.042	0.000	8.526
0.8833	0.041	0.000	8.501
0.9	0.042	0.000	8.469
0.9166	0.042	0.000	8.450
0.9333	0.042	0.000	8.431
0.95	0.042	0.000	8.406
0.9666	0.042	0.000	8.375
0.9833	0.042	0.000	8.349
1	0.042	0.000	8.331
1.2	0.042	0.000	8.035
1.4	0.042	0.000	7.739
1.6	0.042	0.000	7.474
1.8	0.042	0.000	7.203
2	0.042	0.000	6.945
2.2	0.041	0.000	6.700
2.4	0.042	0.000	6.467
2.6	0.041	0.000	6.234
2.8	0.042	0.000	6.013
3	0.042	0.000	5.793
3.2	0.042	0.000	5.591
3.4	0.042	0.000	5.390
3.6	0.041	0.000	5.188
3.8	0.041	0.000	4.999
4	0.042	0.000	4.823
4.2	0.041	0.000	4.647
4.4	0.042	0.000	4.470
4.6	0.042	0.000	4.307
4.8	0.041	0.001	4.149
5	0.042	0.001	4.036
5.2	0.041	0.001	3.847
5.4	0.041	0.001	3.708
5.6	0.041	0.001	3.601
5.8	0.041	0.001	3.437
6	0.041	0.001	3.305
6.2	0.042	0.001	3.179
6.4	0.041	0.001	3.059

TABLE S3.4 (Cont.)

Elapsed Time (min)	BE Correction ^a	Background Correction ^a	Adjusted Residual Drawdown ^b
6.6	0.041	0.001	2.946
6.8	0.042	0.001	2.833
7	0.042	0.001	2.725
7.2	0.042	0.001	2.618
7.4	0.041	0.001	2.518
7.6	0.041	0.001	2.423
7.8	0.042	0.001	2.335
8	0.041	0.001	2.240
8.2	0.042	0.001	2.159
8.4	0.041	0.001	2.070
8.6	0.041	0.001	1.988
8.8	0.041	0.001	1.913
9	0.041	0.001	1.843
9.2	0.042	0.001	1.769
9.4	0.041	0.001	1.699
9.6	0.042	0.001	1.637
9.8	0.041	0.001	1.573
10	0.041	0.001	1.516
12	0.041	0.001	1.025
14	0.042	0.001	0.723
16	0.042	0.002	0.528
18	0.042	0.002	0.415
20	0.042	0.002	0.347
22	0.043	0.002	0.316
24	0.043	0.003	0.291
26	0.044	0.003	0.279
28	0.044	0.003	0.267
30	0.044	0.003	0.261
32	0.044	0.003	0.255
34	0.045	0.004	0.255
36	0.045	0.004	0.250
38	0.045	0.004	0.250
40	0.045	0.004	0.245
42	0.045	0.004	0.245
44	0.046	0.005	0.240
46	0.046	0.005	0.240
48	0.046	0.005	0.240
50	0.046	0.005	0.240
52	0.046	0.005	0.234
54	0.047	0.006	0.234
56	0.047	0.006	0.229
58	0.047	0.006	0.229
60	0.047	0.006	0.229
62	0.048	0.006	0.230
64	0.048	0.007	0.224
66	0.048	0.007	0.225
68	0.048	0.007	0.225
70	0.048	0.007	0.225
72	0.048	0.008	0.219
74	0.049	0.008	0.219
76	0.049	0.008	0.219
78	0.049	0.008	0.220
80	0.049	0.008	0.214
82	0.049	0.009	0.215
84	0.049	0.009	0.215

TABLE S3.4 (Cont.)

Elapsed Time (min)	BE Correction ^a	Background Correction ^a	Adjusted Residual Drawdown ^b
86	0.049	0.009	0.215
88	0.050	0.009	0.216
90	0.050	0.009	0.216
92	0.050	0.010	0.216
94	0.050	0.010	0.211
96	0.050	0.010	0.211
98	0.050	0.010	0.211
100	0.050	0.010	0.212
115	0.051	0.012	0.207
130	0.053	0.014	0.198
145	0.053	0.015	0.206
160	0.054	0.017	0.196
175	0.055	0.018	0.193
190	0.056	0.020	0.189
205	0.057	0.021	0.191
220	0.057	0.023	0.187
235	0.058	0.024	0.183
250	0.059	0.026	0.179
265	0.059	0.028	0.181
280	0.060	0.029	0.177
295	0.060	0.031	0.179
310	0.061	0.032	0.175
325	0.063	0.034	0.172
340	0.063	0.035	0.173
355	0.063	0.037	0.169
370	0.064	0.039	0.171
385	0.063	0.040	0.172
400	0.064	0.042	0.169
415	0.065	0.043	0.172
430	0.066	0.045	0.167
445	0.067	0.046	0.169
460	0.068	0.048	0.171
475	0.068	0.049	0.168
490	0.069	0.051	0.170
505	0.070	0.053	0.172
520	0.071	0.054	0.169
535	0.071	0.056	0.171
550	0.072	0.057	0.166
565	0.072	0.059	0.168
580	0.073	0.060	0.170
595	0.074	0.062	0.167
610	0.074	0.064	0.169
625	0.075	0.065	0.172
640	0.077	0.067	0.168
655	0.077	0.068	0.170
670	0.078	0.070	0.173
685	0.078	0.071	0.167
700	0.079	0.073	0.170
715	0.080	0.074	0.172
730	0.080	0.076	0.169
745	0.081	0.078	0.171
760	0.082	0.079	0.167
775	0.083	0.081	0.169
790	0.083	0.082	0.165
805	0.084	0.084	0.168

TABLE S3.4 (Cont.)

Elapsed Time (min)	BE Correction ^a	Background Correction ^a	Adjusted Residual Drawdown ^b
820	0.085	0.085	0.170
835	0.086	0.087	0.167
850	0.086	0.089	0.169
865	0.087	0.090	0.165
880	0.088	0.092	0.167
895	0.088	0.093	0.170
910	0.089	0.095	0.166
925	0.090	0.096	0.168
940	0.092	0.098	0.164
955	0.093	0.099	0.167
970	0.094	0.101	0.164
985	0.095	0.103	0.167
1000	0.096	0.104	0.163
1015	0.097	0.106	0.166
1030	0.097	0.107	0.160
1045	0.098	0.109	0.162
1060	0.098	0.110	0.165
1075	0.100	0.112	0.162
1090	0.102	0.114	0.165
1105	0.103	0.115	0.162
1120	0.102	0.117	0.162
1135	0.103	0.118	0.158
1150	0.103	0.120	0.159
1165	0.104	0.121	0.156
1180	0.106	0.123	0.159
1195	0.107	0.124	0.157
1210	0.107	0.126	0.158
1225	0.105	0.128	0.158
1240	0.106	0.129	0.154
1255	0.108	0.131	0.158
1270	0.108	0.132	0.152
1285	0.108	0.134	0.154
1300	0.108	0.135	0.156
1315	0.109	0.137	0.158
1330	0.109	0.139	0.154
1345	0.110	0.140	0.156
1360	0.109	0.142	0.157
1375	0.110	0.143	0.153
1390	0.111	0.145	0.156
1405	0.112	0.146	0.151
1420	0.112	0.148	0.153
1435	0.113	0.149	0.149

^a Barometric efficiency corrections reported as feet of water, added to measured data in Table S3.1.

^b Positive values indicate feet of drawdown from an arbitrary initial reference level of 0.0 ft.

Supplement 4:

**Quality Control for Sample Collection,
Handling, and Analysis**

Supplement 4:

Quality Control for Sample Collection, Handling, and Analysis

Soil and groundwater sampling was conducted during the Phase III targeted investigation at Everest, Kansas, to (1) verify an association of carbon tetrachloride with the former CCC/USDA facility and (2) verify the contaminant migration pathway from the former facility. Quality assurance/quality control (QA/QC) samples were collected throughout the investigation to monitor sample collection, handling, and analysis activities. The QA/QC procedures for sample collection, handling, and analysis are described in detail in the *Master Work Plan* (Argonne 2002).¹ Evaluation of the analytical data was consistent with regulatory guidelines (EPA 1994a,b, 2002).

S4.1 Sampling to Monitor Sampling Collection, Handling, and Analysis Procedures

Sample collection and handling activities were monitored by the documentation of samples as they were collected and the use of chain-of-custody (COC) forms and custody seals to ensure sample integrity during the handling and shipment of samples. Transcription errors in identifiers for some samples as shown on the COC records, sample containers, or analytical data reports were resolved by comparison of the various records.

The QA/QC samples collected included field blanks, equipment rinsates, and trip blanks. Blind field replicate samples were collected, and samples were selected for duplicate analyses as a measure of analytical precision. The QA/QC samples are listed in Table S4.1. Analytical results for carbon tetrachloride and chloroform in QA/QC samples collected to monitor sample collection and handling activities are in Table S4.2.

S4.1.1 Field Blanks

Field blanks were collected to ensure that water used for equipment decontamination and other activities would not introduce contamination to the collected samples. Neither carbon tetrachloride nor chloroform was detected in the field blanks.

¹ Reference list is in Section 7 of the main report.

S4.1.2 Equipment Rinsates

Rinsate samples were collected to ensure that decontamination procedures were adequate to prevent cross-contamination of samples during collection. Neither carbon tetrachloride nor chloroform was detected in the rinsate samples.

S4.1.3 Trip Blanks

Trip blanks were prepared and included in shipments of soil or water samples sent for organic analysis and in shipments of water samples sent for analysis of attenuation parameters, as an indicator of cross-contamination of samples during shipment. Contaminants of concern were not detected in the trip blanks.

S4.1.4 Replicate Samples and Duplicate Analyses

As an indicator of consistency of the sampling methodology and to provide a measure of analytical precision, blind replicate soil and groundwater samples were collected. In addition, samples were selected by the AGEM Laboratory for duplicate organic analyses and for shipment to a second laboratory for verification analysis. Blind replicate samples, samples selected for duplicate analysis, and samples selected for verification organic analysis are listed in Table S4.1.

S4.2 Quality Control for Organic Analysis of Soil Samples

Subsurface soil sampling was conducted at 4 soil boring locations (SB73–SB76), from which 33 soil samples (including 5 blind field replicate samples) were collected for organic analysis at the AGEM Laboratory with a modification of EPA Method 8260B (the purge-and-trap method), as referenced in the EPA's SW-846 (EPA 1998) to achieve a detection limit of 10 µg/kg. To verify the accuracy of these quantitative analytical results, random soil samples were split and prepared for verification analysis at Severn-Trent Laboratory, Colchester, Vermont, with the same analytical method.

The following sections describe QC measures followed during analysis of the soil samples and discuss the quality of the organic analytical data from each laboratory. Analytical data from the AGEM Laboratory are discussed in Section S4.2.1, and analytical data from Severn-Trent

Laboratory are discussed in Section S4.2.2. Results from the two laboratories are compared in Section S4.2.3.

S4.2.1 Organic Analysis of Soil Samples at the AGEM Laboratory

Soil samples were quick-frozen on dry ice as they were collected. At the laboratory, the VOCs in each soil sample were extracted with methanol from the sample matrix.

For the purge-and-trap soil analyses, an aliquot of the methanol extract was purged, and the volatile species were transferred to a sorbent tube. After purging, the sorbent tube was heated and backflushed with an inert gas to desorb the components into the gas chromatograph-mass spectrometer (GC-MS) system. The compounds eluting from the GC column were identified by retention time and by comparison with reference library spectra. The concentration of each component was calculated by comparison of the MS response for the quantitation ion to the response for internal standards.

At the AGEM Laboratory, soil samples were analyzed with the purge-and-trap method in three sample delivery groups (SDGs), as shown in Table S4.3. The QA/QC procedures followed included initial and continuing calibration of instruments, analysis of laboratory blanks, monitoring of surrogate spike recovery, analysis of replicate samples, and duplicate analyses of selected samples. Significant results include the following:

- Soil samples were received with custody seals intact and at the appropriate temperature. All samples were analyzed within required holding times.
- Contaminants of concern were not detected in the laboratory method blanks.
- For each SDG, analytical instrument calibration was monitored by the analysis of calibration check standards. Table S4.3 shows the relative percent difference (RPD) between the known and calculated concentrations of the standards. The concentrations of calibration check standards measured in all SDGs were within the acceptable range of $\pm 20\%$.
- Surrogate standard determinations were performed on the samples and blanks by using the surrogate spike compounds fluorobenzene,

4-bromofluorobenzene, and 1,2-dichlorobenzene-d₄. Table S4.3 shows the percent recoveries of these system-monitoring compounds for each of the analyses. Reanalysis was conducted when the surrogate recovery was outside the range of 80–120% in the initial analysis. Surrogate recovery was within acceptable limits for all samples.

- As a measure of the consistency in the sampling and analytical methodologies, five blind replicate soil samples were collected and analyzed. Other samples were selected by the laboratory for duplicate analyses. Table S4.4 summarizes the analytical results for the initial samples and their associated replicates or duplicate analyses. Agreement is excellent, indicating consistency in both the sampling and analytical methodologies. For samples in which no contaminants were detected, the associated QC analyses showed similar results. For samples in which carbon tetrachloride was detected, the RPD values between the initial analyses and the associated QC analyses were 0–12.3%. Chloroform results were also consistent, although in one sample (EVS76-S-15981) chloroform was detected at the estimated concentration of 5.5 µg/kg, while its replicate (EVQCDU-S-15973) showed no chloroform contamination.

The analytical data from the AGEM Laboratory are acceptable for quantitative determination of contaminant distribution in the near-surface and subsurface soils.

S4.2.2 Organic Analysis of Soil Samples at Severn-Trent Laboratory

In accordance with the QA/QC procedures defined in the *Master Work Plan* (Argonne 2002), selected soil samples analyzed for VOCs at the AGEM Laboratory with EPA Method 8260B were subjected to verification analysis at Severn-Trent Laboratory with the same analytical procedure. The analytical results from the two laboratories are compared in Section S4.2.3. Below is a discussion of the quality of the organic analytical data from Severn-Trent Laboratory.

Four replicate soil samples were shipped to Severn-Trent Laboratory for organic analysis with EPA Method 8260B. The samples were sent in one shipment with a trip blank. A complete CLP-level data package was provided. The QA/QC procedures followed included initial and

continuing calibration of instruments, analysis of laboratory blanks, monitoring of surrogate spike recovery, and spike analysis of QC samples. Significant results include the following:

- Soil samples shipped to the Severn-Trent Laboratory were received with custody seals intact and at the appropriate temperature. All samples were analyzed within required holding times.
- Analytical instruments were properly tuned; initial and continuing calibration checks remained within the allowable range.
- Neither carbon tetrachloride nor chloroform was detected in the methanol used for soil extraction or in the instrument blanks, though the compound 2-butanone was detected in the methanol at 32 µg/kg. Trace concentrations of hexachlorobutadiene, naphthalene, and 1,2,3-trichlorobenzene were identified in the instrument blank analyzed in association with the samples.
- Surrogate standard determinations were performed on samples and blanks by using the surrogate spike compounds toluene-d₈, 1,2-dichloroethane-d₄, 4-bromofluorobenzene, and 1,2-dichlorobenzene-d₄. Table S4.5 shows the percent recovery of these system-monitoring compounds for each of the analyses. The recovery of 1,2-dichloroethane-d₄ in the associated QC sample at 78% was below the acceptable limit of 80% for this compound. Two soil samples (EVS76-S-15980 and EVS75-S-15961) also showed recovery of this compound slightly below the target limit. Qualification of the data is not warranted.
- To evaluate the matrix effect of samples on the analytical methodology, matrix spike/matrix spike duplicate analyses of a soil sample and a QC sample were performed by using a suite of spike compounds including carbon tetrachloride and chloroform. Table S4.6 shows the percent recovery and RPD values for carbon tetrachloride and chloroform in the spike/spike duplicate analyses. The QC limits were met for these contaminants of concern.

The organic analytical data from Severn-Trent Laboratory for the replicate soil samples are acceptable for comparison with the AGEM Laboratory data.

S4.2.3 Verification Organic Analysis of Soil Samples

In accordance with the QA/QC procedures defined in the *Master Work Plan* (Argonne 2002), selected soil samples analyzed at the AGEM Laboratory with EPA Method 8260B were subjected to verification analysis at Severn-Trent Laboratory. Splits of 4 of the 28 soil samples analyzed at the AGEM Laboratory (14% of the soil samples) were subjected to the verification analysis.

Analysis of the soil samples at the AGEM Laboratory with EPA Method 8260B detected no carbon tetrachloride or chloroform at a quantitation limit of 10 µg/kg. Similar results were obtained during analysis at Severn-Trent Laboratory with the same analytical method. Table S4.7 compares the carbon tetrachloride and chloroform results for the soil samples analyzed at both laboratories.

S4.3 Quality Control for Organic Analysis of Water Samples

Forty-eight groundwater samples (including 7 blind replicate samples) were collected for organic analysis. These samples and the associated QC samples were shipped immediately to the AGEM Laboratory for analysis with EPA Method 524.2 (EPA 1998). To verify the accuracy of the results, duplicate (split) samples were collected for verification analysis at Clayton Laboratory, Novi, Michigan, with CLP methodology (EPA 1989). On the basis of its results, the AGEM Laboratory selected duplicate samples for the actual verification analysis.

The following sections describe QC measures followed during the analysis of the water samples and the quality of the organic analytical data from each laboratory. Analytical data from the AGEM Laboratory are discussed in Section S4.3.1, and analytical data from Clayton Laboratory are discussed in Section S4.3.2. The results from the two laboratories are compared in Section S4.3.3.

S4.3.1 Organic Analysis of Water Samples at the AGEM Laboratory

Water samples shipped to the AGEM Laboratory were analyzed by the purge-and-trap method with a GC-MS system. For these analyses, VOCs present in the groundwater sample were extracted (purged) from the sample matrix by bubbling an inert gas through the sample. The purged components were trapped in a specified sorbent tube. After the purging, the sorbent tube

was heated and backflushed with an inert gas to desorb the components into the GC-MS system. The compounds eluting from the GC column were identified by retention time and by comparison with reference library spectra. The concentration of each component was calculated by comparison of the MS response for the quantitation ion to the response for corresponding calibration curves, internal standards, or both. Calibration checks with each SDG were required to be within $\pm 20\%$ of the standard.

Water samples submitted to the AGEM Laboratory for organic analysis were analyzed in 10 SDGs. Table S4.8 identifies the groundwater and associated QC samples analyzed in the SDGs. The QA/QC procedures followed included analysis of instrument calibration check standards, analysis of laboratory blanks, monitoring of surrogate spike recovery, and duplicate laboratory analyses. Significant results include the following:

- Samples shipped to the AGEM Laboratory were received with custody seals intact and at the appropriate temperature. All samples were analyzed within required holding times.
- Contaminants of concern were not detected in laboratory method blanks analyzed with the samples.
- For each SDG, analytical instrument calibration was monitored by the analysis of calibration check standards. Table S4.8 shows the RPD between the known and calculated concentrations of the standards. The concentrations of calibration check standards measured in all SDGs were within the acceptable $\pm 20\%$ range.
- Surrogate standard determinations were performed on samples and blanks by using surrogate spike compounds fluorobenzene, 1,2-dichlorobenzene-d₄, and 4-bromofluorobenzene. Table S4.8 shows the percent recoveries of these system-monitoring compounds for each of the analyses. With the following

exceptions, the surrogate recoveries were within the acceptable range of 80–120% for all samples in the initial analysis or reanalysis:

1. In SDG 03-11-12, the analysis of equipment rinsate EVSB65BR-W-15898 achieved a 4-bromofluorobenzene recovery of 79%. The data are accepted without qualification.
 2. In SDG 03-11-13, the analysis of trip blank EVQCTB-W-15928 achieved a 4-bromofluorobenzene recovery of 78%. In the absence of evidence of cross-contamination of the associated samples, the data are accepted without qualification.
 3. In SDG 03-11-15, the analysis of trip blank EVQCTB-W-13196 achieved a 4-bromofluorobenzene recovery of 74% and a 1,2-dichlorobenzene-d₄ recovery of 76%. Contamination was not detected in any of the associated samples, and the data are accepted without qualification.
 4. In SDG 03-11-19, high surrogate recovery occurred for samples EVSB76-W-15970 and EVSB72-W-15913. Both samples were free of contamination, and the data are accepted without qualification.
- As a measure of consistency in the sampling and analytical methodologies, seven blind replicate groundwater samples were collected and analyzed. Other samples were selected by the laboratory for duplicate analyses. Table S4.9 summarizes the analytical results for the initial samples and the associated replicates or duplicate analyses. Agreement is excellent, indicating consistency in both the sampling and analytical methodologies. For samples in which no contamination was detected, the associated QC analysis showed similar results. For samples in which carbon tetrachloride was detected, the RPD values between the initial analyses and the associated QC analyses were 0–18%. Chloroform was detected in one sample and replicate, with an RPD of 5.5%.

The analytical data from the AGEM Laboratory are acceptable for quantitative determination of contaminant distribution in groundwater.

S4.3.2 Organic Analysis of Water Samples at Clayton Laboratory

In accordance with the QA/QC procedures defined in the *Master Work Plan* (Argonne 2002), the analyses of water samples at the AGEM Laboratory with EPA Method 524.2 were verified by using EPA-defined CLP methodology. On the basis of its results, the AGEM Laboratory selected replicate samples (identified in Table S4.1) for the verification analysis. The AGEM Laboratory and CLP analytical results for the replicate samples are compared in Section S4.3.3. Below is a discussion of the quality of the organic analytical data obtained with CLP methodology.

Three replicate groundwater samples were shipped to Clayton Laboratory for organic analysis with CLP methodology. The samples were sent in one shipment with a trip blank. A complete CLP data package was provided. The QA/QC procedures followed included initial and continuing calibration of instruments, analysis of laboratory blanks, monitoring of surrogate spike recovery, and matrix spike/matrix spike duplicate analyses. Significant results include the following:

- Samples shipped to the CLP laboratory were received with custody seals intact and at the appropriate temperature. All samples were analyzed within required holding times.
- Analytical instruments were properly tuned; initial and continuing calibration checks remained in the allowable range.
- Contaminants of concern were not detected in the trip blank or laboratory method blanks. Acetone and 2-butanone were present at low concentration (2 µg/L and 3 µg/L, respectively) in the trip blank. Acetone was present at low concentration (3 µg/L) in the laboratory blank.
- Surrogate standard determinations were performed on samples and blanks by using the surrogate spike compounds toluene-d₈, 4-bromofluorobenzene, and 1,2-dichloroethane-d₄. Table S4.10 shows the percent recoveries of the system-monitoring compounds for each of the CLP analyses. Recoveries of the surrogate spikes were within the acceptable range (identified in Table S4.10) specific to each surrogate for all analyses.

- To evaluate the matrix effect of samples on the analytical methodology, a matrix spike/matrix spike duplicate analysis was performed in accordance with CLP protocol by using matrix spike compounds 1,1-dichloroethene, trichloroethene, chlorobenzene, toluene, and benzene. Table S4.11 shows the percent recovery of each spike compound in this analysis, as well as the calculated RPD between the spike and spike duplicate analytical results. The QC parameters were acceptable for the analyses, although the recovery of benzene in the matrix spike analysis and the recovery of trichloroethene in the matrix spike duplicate analysis were slightly below their respective limits. Qualification of the data is not warranted.

Organic analytical data from Clayton Laboratory for the replicate groundwater samples are acceptable for comparison with the AGEM Laboratory data.

S4.3.3 Verification Organic Analysis of Water Samples

In accordance with the QA/QC procedures defined in the *Master Work Plan* (Argonne 2002), selected replicates of the water samples analyzed at the AGEM Laboratory with EPA Method 524.2 were subjected to verification analysis with EPA-defined CLP methodology. Three groundwater samples analyzed at the AGEM Laboratory were also analyzed according to CLP methodology. Table S4.12 compares the analytical results for carbon tetrachloride and chloroform obtained with EPA Method 524.2 and CLP methodology.

Analytical results for water samples analyzed at the AGEM Laboratory with EPA Method 524.2 are supported by the analytical results for replicate samples analyzed at Clayton Laboratory with EPA CLP methodology. The RPD values for carbon tetrachloride were 10–34%, and the RPD values for chloroform were 12–22%.

S4.4 Quality Control for Inorganic Analyses and Total Organic Carbon Analyses of Groundwater Samples

Thirteen groundwater samples (including one blind field replicate) were collected for inorganic analysis and total organic carbon analysis to aid in geochemical characterization of the water-bearing zone. Groundwater samples collected for geochemical analyses were shipped immediately to Severn-Trent Laboratory for filtration and analysis. Sample aliquots for nitrate

analysis and total organic carbon analysis were preserved prior to shipment by adjustment to pH < 2. The inorganic analyses included alkalinity by EPA Method 310, dissolved anion concentrations (chloride, sulfate, nitrate, and phosphate) by EPA Method 300, nitrate/nitrite nitrogen by EPA Method 353, and dissolved metals (aluminum, calcium, iron, magnesium, manganese, phosphorus, potassium, silicon, sodium, and zinc) by EPA Method 6010. Total organic carbon was determined with EPA Method 415.1.

Geochemical analyses of the groundwater samples were conducted in eight SDGs. The QA/QC procedures followed included instrument calibration through analysis of spiked calibration check standards, verification of interelement and background correction factors through the analysis of inductively coupled plasma (ICP) interference check samples, the analysis of QC samples, and the duplicate analysis of selected samples. Significant points are as follows:

- Initial and continuing calibration of analytical equipment was verified according to method protocol by the analysis of instrument check standards to determine instrument drift. Accuracy was measured by the percent recovery of known concentrations of the metals and anions of concern added to the calibration check standards.
- Interelement and background correction factors for ICP analyses were determined through the analysis of ICP interference check samples, with results falling within the control range of $\pm 20\%$ of the established mean value for each SDG.
- Accuracy in the analytical methodology followed was measured by the analysis of QC samples. The recovery of known concentrations of the metals and anions of concern in spiked QC samples, shown in Table S4.13, was within the desired range of 80–120%. Good precision is indicated by the low RPD values between the initial and secondary analyses.

The results of geochemical analyses on groundwater samples at Severn-Trent Laboratory are judged acceptable on the basis the recovery of known concentrations of the analytes of concern in a QC sample analyzed with the groundwater samples and RPD values for duplicate analyses (Table S4.14).

S4.5 Quality Control for Analyses of Groundwater Samples for Attenuation Parameters

Thirteen groundwater samples (including one blind field replicate) were analyzed at Severn-Trent Laboratory for dissolved methane, ethane, and ethene by Method RSK-175 (Kampbell and Vandegrift 1998) as an indicator of natural attenuation of the carbon tetrachloride contamination. In this method an inert gas is injected into the sample analysis vial to create headspace. After equilibration, the headspace gas is analyzed for the target compounds by using a GC equipped with a flame ionization detector. The concentrations of the gases in the water samples are calculated by using Henry's law. The concentration of the gas in the liquid is proportional to the partial pressure of the gas above the liquid.

Analysis of the groundwater samples for attenuation parameters was conducted in seven SDGs. The QA/QC procedures followed included initial and continuing calibration of instruments, analysis of laboratory blanks, and analysis of QC samples. Significant results include the following:

- Samples shipped to Severn-Trent Laboratory for analysis of attenuation parameters were received with custody seals intact and at the appropriate temperature. All samples were analyzed within required holding times.
- Analytical instruments were properly tuned; initial and continuing calibration checks remained within the allowable range.
- Contaminants of concern were not detected in the trip blanks or laboratory method blanks associated with the samples.
- A QC sample was prepared and analyzed in duplicate with the samples to evaluate the accuracy and precision of the analytical methodology. Table S4.15 shows the percent recovery of each spike compound in these analyses, as well as the calculated RPD value between the spike and spike duplicate results. Recovery of the target analytes was acceptable, and correlation of the results in the interanalysis comparison was good.

- The targeted analytes were not detected in groundwater sample EVSB62-W-13192 or blind replicate EVQCDU-W-13193.

Analytical data obtained by Severn-Trent Laboratory for the groundwater samples with Method RSK-175 are acceptable for determination of natural attenuation.

S4.6 Quality Control for Confirmation Analysis at Monitoring Well MW1

In sampling of monitoring well MW1 (screened at 41–51 ft BGL) in November 2003, carbon tetrachloride and chloroform were detected at 28 $\mu\text{g/L}$ and 2.8 $\mu\text{g/L}$, respectively. For comparison, higher carbon tetrachloride concentrations of 727 $\mu\text{g/L}$ (at 43.5–47.5 ft BGL) and 100 $\mu\text{g/L}$ (at 48.5–52.5 ft BGL) had been found in groundwater samples collected with the ECPT at this location (SB11) during the Phase I investigation in May 2000.

To verify the November 2003 result, well MW1 was resampled on June 4, 2004, and carbon tetrachloride and chloroform were detected at 14 $\mu\text{g/L}$ and 1.8 $\mu\text{g/L}$, respectively. All QC parameters were within the required ranges during this analysis on June 7, 2004, with EPA Method 524.2. The RPD values for carbon tetrachloride and chloroform in the associated calibration were 6.7% and 2.4%, respectively. Surrogate recoveries for verification sample EVMW01-W-12988 were 89–105%.

TABLE S4.1 Quality control samples collected during the targeted investigation at Everest.

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
<i>Field blank</i>				
QC	EVQCFB-W-13194	– ^a	11/14/03	Field blank of water used for equipment decontamination.
QC	EVQCFB-W-15916	–	11/16/03	Field blank of water from Co-op used for decontamination and mixing grout.
<i>Equipment rinsates</i>				
QC	EVSB65BR-W-15898	–	11/11/03	Rinsate of decontaminated bailer after collection of sample EVSB65-W-15895 and replicate EVSB65QC-W-15896.
QC	EVSB67BR-W-15901	–	11/13/03	Rinsate of decontaminated bailer after collection of sample EVSB67-W-15859.
QC	EVSB67BR-W-15903	–	11/14/03	Rinsate of decontaminated bailer after collection of sample EVSB67-W-15902.
QC	EVSB70BR-W-15908	–	11/15/03	Rinsate of decontaminated bailer after collection of sample EVSB70-W-15907.
QC	EVQCRI-W-15920	–	11/11/03	Rinsate of decontaminated foot valve and unused section of tubing for purge.
QC	EVQCRI-W-13195	–	11/14/03	Rinsate of decontaminated tubing used during collection of sample EVSB62-W-13192 and replicate EVQCDU-W-13193.
QC	EVQCRI-W-15959	–	11/17/03	Rinsate of decontaminated sampling bailer after collection of sample EVSB74-W-15952.
QC	EVQCRI-W-15969	–	11/18/03	Rinsate of decontaminated sampling bailer after collection of sample EVSB75-W-15968.
<i>Soil trip blanks</i>				
QC	EVQCTB-S-15953	–	11/19/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3014.
QC	EVQCTB-S-15954	–	11/19/03	Trip blank sent to AGEM Laboratory with samples listed on COCs 3227 and 3228.
QC	EV-Meoh blank	–	11/24/03	Trip blank sent to Severn-Trent Laboratory with samples listed on COC 4001.
<i>Water trip blanks</i>				
QC	EVQCTB-W-15915	–	11/16/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3011.
QC	EVQCTB-W-15922	–	11/11/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3005.
QC	EVQCTB-W-15928	–	11/12/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3006.
QC	EVQCTB-W-15929	–	11/12/03	Trip blank sent to Severn-Trent Laboratory for methane analysis with samples listed on COC 13968.
QC	EVQCTB-W-15933	–	11/13/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3015.
QC	EVQCTB-W-15934	–	11/13/03	Trip blank sent to Severn-Trent Laboratory for methane analysis with samples listed on COC 2147.
QC	EVQCTB-W-13196	–	11/14/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3008.
QC	EVQCTB-W-13197	–	11/14/03	Trip blank sent to Severn-Trent Laboratory with samples for methane analysis listed on COC 2148.

TABLE S4.1 (Cont.)

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
<i>Water trip blanks (Cont.)</i>				
QC	EVOCTB-W-12877	–	11/15/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3009.
QC	EVOCTB-W-15987	–	11/18/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3229.
QC	EVOCTB-W-15971	–	11/20/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3511.
QC	EVOCTB-W-15972	–	11/21/03	Trip blank sent to Severn-Trent Laboratory with samples for attenuation parameter analysis listed on COC 3513.
QC	EVOCTB-W-15988	–	11/22/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3514.
QC	EVOCTB-W-15989	–	11/22/03	Trip blank sent to Severn-Trent Laboratory with samples for attenuation parameter analysis listed on COC 3515.
QC	EVOCTB-W-15992	–	12/04/03	Trip blank sent to AGEM Laboratory with samples listed on COC 3103.
QC	EVOCTB-W-15993	–	12/04/03	Trip blank sent to Severn-Trent Laboratory with samples for attenuation parameter analysis listed on COC 3102.
QC	EV-TB-111403	–	11/14/03	Trip blank sent to Clayton Laboratory with samples listed on COC 132.
<i>Soil replicate samples</i>				
SB75	EVQCDU-S-15977	37.9–38.1	11/18/03	Replicate of sample EVSB75-S-15966.
SB76	EVQCDU-S-15976	12.9–13.1	11/19/03	Replicate of sample EVSB76-S-15979.
SB76	EVQCDU-S-15975	17.9–18.1	11/19/03	Replicate of sample EVSB76-S-15980.
SB76	EVQCDU-S-15974	22.9–23.1	11/19/03	Replicate of sample EVSB76-S-15981.
SB76	EVQCDU-S-15973	27.9–28.1	11/19/03	Replicate of sample EVSB76-S-15982.
<i>Water replicate samples for organic analysis</i>				
SB09	EVQCDU-W-15927	51–57	11/12/03	Replicate of sample EVSB09-W-15925.
SB62	EVQCDU-W-13193	33–41	11/14/03	Replicate of sample EVSB62-W-13192.
SB65	EVQCDU-W-15894	66–70	11/11/03	Replicate of sample EVSB65-W-15893.
SB65	EVS65QC-W-15896	62–66	11/11/03	Replicate of sample EVSB65-W-15895.
SB66	EVS66-W-15900	56–60	11/12/03	Replicate of sample EVSB66-W-15899.
SB69	EVS69-W-15905	21.2–26.2	11/14/03	Replicate of sample EVSB69-W-15904.
SB71	EVS71-W-15911	41–46	11/15/03	Replicate of sample EVSB71-W-15910.
<i>Soil samples selected for duplicate organic analysis at AGEM Laboratory</i>				
SB74	EVS74-S-15945	7.9–8.1	11/17/03	Grayish brown silty clay with minor sand.
SB75	EVS75-S-15960	7.9–8.1	11/18/03	Grayish brown silty clay.
SB76	EVS76-S-15984	37.9–38.1	11/19/03	Sandy clay, light brownish gray with caliche/calcareous inclusions.

TABLE S4.1 (Cont.)

Location	Sample	Depth (ft BGL)	Sample Date	Sample Description
<i>Water samples selected for duplicate organic analysis at AGEM Laboratory</i>				
SB66	EVSB66-W-15897	50–55	11/11/03	Sample location 1 ft east of SB66 ECPT sensor push. Water level at 50 ft BGL.
SB67	EVSB67-W-15902	54.1–59.1	11/14/03	Waited overnight for water to come in.
SB69	EVSB69-W-15906	29.5–34.5	11/14/03	ECPT sample.
SB72	EVSB72-W-15914	38.2–43.2	11/16/03	Depth to water = 37.2 ft below TOC with TOC 7.6 ft above ground (in ECPT truck). Target depth of 44.4 ft BGL could not be reached. Set screen at 43.2 ft BGL.
SB76	EVSB76-W-15970	43.3–48.3	11/18/03	Depth to water from TOC = 33 ft.
SB31	EVSB31-W-15918	57–67	11/11/03	Depth to water from TOC = 35.86 ft. Measured depth of well = 67 ft. Sample collected after purging 4.5 gal.
SB49	EVSB49-W-15930	51–55	11/13/03	Depth to water from TOC = 44.56 ft. Measured depth of well = 55 ft. Sample collected after purging 1.5 gal.
SELLAND1	EVSELLAND1-W-15955		11/20/03	
MW2	EVMW2-W-15985	59–79	11/22/03	4-in. monitoring well approximately 50 ft east of Nigh private well. Sampled after purging 52.7 gal. Depth to water from TOC = 55.89 ft. Measured well depth = 76.5 ft.
MW3	EVMW3-W-15991	56.5–71.5	12/04/03	2-in. well along 120th St. east of Prairie Road. Sampled after purging 12 gal. Depth to water from TOC = 47.5 ft. Measured well depth = 71 ft.
<i>Soil samples selected for verification organic analysis at Severn-Trent Laboratory</i>				
SB73	EVSB73-S-15942	27.9–28.1	11/16/03	Grayish brown clay, sand with silt, humic staining.
SB74	EVSB74-S-15945	7.9–8.1	11/17/03	Grayish brown silty clay with minor sand.
SB75	EVSB75-S-15961	12.9–13.1	11/18/03	Grayish brown silty clay.
SB76	EVSB76-S-15980	17.9–18.1	11/19/03	Grayish brown clay, sandy with silt.
<i>Water samples selected for verification organic analysis at Clayton Laboratory</i>				
SB09	EVSB09-W-15925	51–57	11/12/03	Depth to water from TOC = 35.5 ft. Depth of well not recorded. Sample collected after purging 3+ gal.
SB34	EVSB34-W-15921	46–53	11/11/03	Depth to water from TOC = 25.58 ft. Measured depth of well = 53 ft. Sample collected after purging 4 gal.
SB66	EVSB66-W-15897	50–55	11/11/03	Sample location 1 ft east of SB66 ECPT sensor push. Water level at 50 ft BGL.
<i>Water replicate sample for inorganic analysis and attenuation parameter analysis at Severn-Trent Laboratory</i>				
SB62	EVQCDU-W-13193	33–41	11/14/03	Replicate of sample EVSB62-W-13192.

^a Depth does not apply.

TABLE S4.2 Analytical results for quality control samples collected to monitor shipping and handling.

Sample	Sample Date	Concentration ($\mu\text{g}/\text{kg}$ in soil; $\mu\text{g}/\text{L}$ in water)		
		Carbon Tetrachloride	Chloroform	Quantitation Limit
<i>Field blanks</i>				
EVQCFB-W-13194	11/14/03	ND ^a	ND	1
EVQCFB-W-15916	11/16/03	ND	ND	1
<i>Equipment rinsates</i>				
EVQCRI-W-15920	11/11/03	ND	ND	1
EVSB65BR-W-15898	11/11/03	ND	ND	1
EVSB67BR-W-15901	11/13/03	ND	ND	1
EVQCRI-W-13195	11/14/03	ND	ND	1
EVSB67BR-W-15903	11/14/03	ND	ND	1
EVSB70BR-W-15908	11/15/03	ND	ND	1
EVQCRI-W-15959	11/17/03	ND	ND	1
EVQCRI-W-15969	11/18/03	ND	ND	1
<i>Trip blanks sent to AGEM Laboratory with soil samples for organic analysis</i>				
EVQCTB-S-15953	11/19/03	ND	ND	10
EVQCTB-S-15954	11/19/03	ND	ND	10
<i>Trip blanks sent to AGEM Laboratory with water samples for organic analysis</i>				
EVQCTB-W-15922	11/11/03	ND	ND	1
EVQCTB-W-15928	11/12/03	ND	ND	1
EVQCTB-W-15933	11/13/03	ND	ND	1
EVQCTB-W-13196	11/14/03	ND	ND	1
EVQCTB-W-12877	11/15/03	ND	ND	1
EVQCTB-W-15915	11/16/03	ND	ND	1
EVQCTB-W-15987	11/18/03	ND	ND	1
EVQCTB-W-15971	11/20/03	ND	ND	1
EVQCTB-W-15988	11/22/03	ND	ND	1
EVQCTB-W-15992	12/4/03	ND	ND	1
<i>Trip blank sent to Clayton Laboratory (CLTP) with water samples for verification organic analysis</i>				
EV-TB-111403	11/14/03	ND	ND	5
<i>Trip blank sent to Severn-Trent Laboratory (STL) with soil samples for verification organic analysis</i>				
EV-Meoh blank	11/24/03	ND	ND	10
<i>Trip blanks sent to Severn-Trent Laboratory with water samples for attenuation parameter analysis</i>				
EVQCTB-W-15929	11/12/03	NA ^b	NA	
EVQCTB-W-15934	11/13/03	NA	NA	
EVQCTB-W-13197	11/14/03	NA	NA	
EVQCTB-W-15972	11/21/03	NA	NA	
EVQCTB-W-15989	11/22/03	NA	NA	
EVQCTB-W-15993	12/4/03	NA	NA	

^a ND, not detected at the indicated quantitation limit.

^b NA, not analyzed for carbon tetrachloride and chloroform. Attenuation parameters not detected.

TABLE S4.3 Results of organic analyses on quality control samples collected to monitor soil analyses at the AGEM Laboratory by the purge-and-trap method.

Sample	Measured Values for Calibration Check Standards						
	Recovery of Surrogate Compounds ^a (%)			Carbon Tetrachloride		Chloroform	
	Fluorobenzene	1,2-Dichloro-benzene-d ₄	4-Bromo-fluorobenzene	Concentration (µg/kg)	RPD ^b	Concentration (µg/kg)	RPD ^b
<i>SDG 03-11-21, analysis date November 21, 2003</i>							
20-µg/kg standard	88	85	89	21.21	5.9	22.67	12.5
Methanol blank	110	107	107				
EVS75-S-15963	106	109	108				
EVQCDU-S-15976	103	107	108				
EVQCDU-S-15975	97	102	102				
EVS76-S-15981	97	97	99				
EVS76-S-15978	96	97	97				
EVS76-S-15984	66 ^c	76 ^c	75 ^c	Reanalyzed in SDG 03-11-24.			
EVQCDU-S-15974	93	97	97				
EVS76-S-15980	90	96	98				
EVQCDU-S-15973	92	96	98				
EVS75-S-15960	88	91	92				
EVS75-S-15960DUP	92	94	93				
<i>SDG 03-11-24, analysis date November 24, 2003</i>							
20-µg/kg standard	97	99	102	16.22	20.8	17.91	11
Methanol blank	100	100	100				
EVS75-S-15962	116	110	115				
EVQCDU-S-15977	113	109	116				
EVS75-S-15965	112	108	113				
EVS76-S-15983	112	111	115				
EVS75-S-15964	105	107	109				
EVS75-S-15966	107	108	111				
EVS76-S-15979	101	105	105				
EVS75-S-15961	105	105	105				
EVS76-S-15982	105	106	105				
EVS76-S-15984	106	107	111				

TABLE S4.3 (Cont.)

Sample	Measured Values for Calibration Check Standards						
	Recovery of Surrogate Compounds ^a (%)			Carbon Tetrachloride		Chloroform	
	Fluorobenzene	1,2-Dichloro- benzene-d ₄	4-Bromo- fluorobenzene	Concentration (µg/kg)	RPD ^b	Concentration (µg/kg)	RPD ^b
<i>SDG 03-11-24, analysis date November 24, 2003 (Cont.)</i>							
EVSB74-S-15948	104	112	111				
EVSB74-S-15946	101	106	108				
EVSB74-S-15950	99	104	106				
EVSB74-S-15951	100	104	108				
EVSB76-S-15984DUP	98	102	104				
EVSB74-S-15947	98	105	107				
EVSB73-S-15943	97	103	104				
<i>SDG 03-11-25, analysis date November 25, 2003</i>							
20-µg/kg standard	102	101	100	17.04	15.9	19.05	4.9
Methanol blank	91	86	88				
EVSB73-S-15939	102	99	99				
EVSB73-S-15940	99	102	102				
EVSB74-S-15945	99	100	99				
EVSB74-S-15945DUP	98	98	98				
EVSB74-S-15949	98	98	97				
EVSB73-S-15938	96	96	95				
EVSB73-S-15941	96	94	96				
EVSB73-S-15944	96	95	94				
EVSB73-S-15942	86	65 ^c	70 ^c	Use duplicate analysis below.			
EVSB73-S-15942DUP	94	95	96				
EVQCTB-S-15953	94	97	100				
EVQCTB-S-15954	97	104	108				

^a Quality control limits for recovery of surrogate compounds: 80–120%.

^b Quality control limits for RPD for calibration check standards: ±20%.

^c Surrogate recovery outside quality control limit.

TABLE S4.4 Results of dual analyses of soil samples at the AGEM Laboratory.

Location	Depth (ft BGL)	Sample Date	Sample	Analysis Type	Analysis Date	Concentration (µg/kg)	
						Carbon Tetrachloride	Chloroform
SB74	7.9–8.1	11/17/03	EVSB74-S-15945	Sample	11/25/03	ND ^a	ND
			EVSB74-S-15945DUP	Duplicate analysis	11/25/03	ND	ND
SB75	7.9–8.1	11/18/03	EVSB75-S-15960	Sample	11/21/03	ND	ND
			EVSB75-S-15960DUP	Duplicate analysis	11/21/03	ND	ND
SB75	37.9–38.1	11/18/03	EVSB75-S-15966	Sample	11/24/03	48	6.8 J ^b
			EVQCDU-S-15977	Blind replicate	11/24/03	48	6.8 J
SB76	12.9–13.1	11/19/03	EVSB76-S-15979	Sample	11/24/03	ND	ND
			EVQCDU-S-15976	Blind replicate	11/21/03	ND	ND
SB76	17.9–18.1	11/19/03	EVSB76-S-15980	Sample	11/21/03	ND	ND
			EVQCDU-S-15975	Blind replicate	11/21/03	ND	ND
SB76	22.9–23.1	11/19/03	EVSB76-S-15981	Sample	11/21/03	ND	ND
			EVQCDU-S-15974	Blind replicate	11/21/03	ND	ND
SB76	27.9–28.1	11/19/03	EVSB76-S-15982	Sample	11/24/03	8.6 J	5.5 J
			EVQCDU-S-15973	Blind replicate	11/21/03	7.6 J	ND
SB76	37.9–38.1	11/19/03	EVSB76-S-15984	Sample	11/24/03	57	10
			EVSB76-S-15984DUP	Duplicate analysis	11/24/03	59	10

^a ND, contaminant not detected.

^b J, estimated concentration below the quantitation limit of 10 µg/kg for purge-and-trap analysis.

TABLE S4.5 Recovery of system-monitoring compounds in verification organic analyses of soil samples at Severn-Trent Laboratory with EPA Method 8260B.

Sample	Analysis Date	Sample Delivery Group	Recovery ^a (%)			
			Toluene-d ₈	1,2-Dichloroethane-d ₄	Bromofluorobenzene	1,2-Dichlorobenzene-d ₄
MEOH LCS	12/4/03	97487	94	78 ^b	99	98
EV-Meohblank	12/4/03	97487	96	86	97	100
EVS74-S-15945	12/4/03	97487	112	94	106	112
EVS74-S-15945MS	12/4/03	97487	98	88	97	94
EVS74-S-15945MSD	12/4/03	97487	82	84	93	86
EVS73-S-15942	12/4/03	97487	104	87	112	106
EVS76-S-15980	12/4/03	97487	89	79 ^b	88	91
EVS75-S-15961	12/4/03	97487	83	77 ^b	81	85
NXCQ LCS	12/4/03	97487	101	82	102	104
NXCQ LCSD	12/4/03	97487	100	84	101	99
VBLKX4	12/4/03	97487	99	83	105	104

^a Quality control limits for recovery are as follows:

<u>Analyte</u>	<u>QC Limits (%)</u>
Toluene-d ₈	81–117
1,2-Dichloroethane-d ₄	80–120
Bromofluorobenzene	74–121
1,2-Dichlorobenzene-d ₄	80–120

^b Recovery outside quality control limit.

TABLE S4.6 Recovery and relative percent difference values for spike/spike duplicate organic analyses of soil samples at Severn-Trent Laboratory.

Compound	Concentration (µg/kg)			Recovery (%)			Difference (%)		
	Sample	Spike Added	Spike Analysis	Duplicate Analysis	Spike Analysis	Duplicate Analysis	QC Limit	R PD	QC Limit
<i>Spike/spike duplicate analysis of EVSB74-S-15945 for SDG 97487</i>									
Chloroform	0	91	77	70	85	77	74–106	10	40
Carbon tetrachloride	0	91	69	63	76	69	62–106	10	40
<i>Spike/spike duplicate analysis of NXCQ LCS in SDG 97487</i>									
Chloroform	0	10	8.8	8.8	88	88	74–106	0	40
Carbon tetrachloride	0	10	8.3	8.3	83	83	62–106	0	40
<i>Spike analysis of MEOH LCS in SDG 97487</i>									
Chloroform	0	100	95	NA ^a	95	NA	74–106	NA	40
Carbon tetrachloride	0	100	82	NA	82	NA	62–106	NA	40

^a NA, not analyzed.

TABLE S4.7 Results of soil verification analyses at the AGEM Laboratory and Severn-Trent Laboratory (STL).

Location	Sample	Depth (ft BGL)	Sample Date	Laboratory	Concentration (µg/kg)	
					Carbon Tetrachloride	Chloroform
SB73	EVSB73-S-15942	27.9–28.1	11/16/03	AGEM	ND ^a	ND
SB73	EVSB73-S-15942	27.9–28.1	11/16/03	STL	ND	ND
SB74	EVSB74-S-15945	7.9–8.1	11/17/03	AGEM	ND	ND
SB74	EVSB74-S-15945	7.9–8.1	11/17/03	STL	ND	ND
SB75	EVSB75-S-15961	12.9–13.1	11/18/03	AGEM	ND	ND
SB75	EVSB75-S-15961	12.9–13.1	11/18/03	STL	ND	ND
SB76	EVSB76-S-15980	17.9–18.1	11/19/03	AGEM	ND	ND
SB76	EVSB76-S-15980	17.9–18.1	11/19/03	STL	ND	ND

^a ND, contaminant not detected.

TABLE S4.8 Results of organic analyses on quality control water samples at the AGEM Laboratory by the purge-and-trap method.

Sample	Recovery of Surrogate Compounds ^a (%)			Measured Values for Calibration Check Standards			
	Fluorobenzene	1,2-Dichloro- benzene-d ₄	4-Bromo- fluorobenzene	Carbon Tetrachloride		Chloroform	
				Concentration (µg/L)	RPD ^b	Concentration (µg/L)	RPD ^b
<i>SDG 03-11-12, analysis date November 12, 2003</i>							
20-µg/kg standard	88	96	96	18.63	7.1	19.18	4.2
Laboratory blank	100	100	100				
EVSB31-W-15918	104	103	102				
EVSB31-W-15918DUP	95	97	92				
EVSB01-W-15919	93	93	89				
EVSB34-W-15921	95	96	91				
EVSB65-W-15893	92	96	91				
EVQCDU-W-15894	102	103	101				
EVSB65-W-15895	94	98	97				
EVSB65QC-W-15896	91	93	90				
EVSB65-W-15858	90	67 ^c	70 ^c	Use duplicate analysis below.			
EVSB65-W-15858DUP	106	108	104				
EVSB65BR-W-15898	89	80	79 ^c	Accepted. Reanalyzed in SDG 03-11-13.			
EVQCRI-W-15920	93	87	86				
EVQCTB-W-15922	89	82	80				
<i>SDG 03-11-13, analysis date November 13, 2003</i>							
20-µg/kg standard	90	87	88	20.36	1.8	21.23	5.9
Laboratory blank	100	100	100				
EVSB66-W-15897	95	94	92				
EVSB66-W-15897DUP	98	99	97				
EVSB66-W-15899	93	100	96				
EVSB66-W-15900	90	97	94				
EVSB16-W-15923	95	97	95				
EVSB22-W-15924	85	84	84				
EVSB09-W-15925	88	87	88				
EVQCDU-W-15927	83	83	80				

TABLE S4.8 (Cont.)

Sample	Recovery of Surrogate Compounds ^a (%)			Measured Values for Calibration Check Standards			
	Fluorobenzene	1,2-Dichloro- benzene-d ₄	4-Bromo- fluorobenzene	Carbon Tetrachloride		Chloroform	
				Concentration (µg/L)	RPD ^b	Concentration (µg/L)	RPD ^b
<i>SDG 03-11-13, analysis date November 13, 2003 (Cont.)</i>							
EVQCDU-W-15927DUP	77 ^c	60 ^c	62 ^c	Duplicate analysis not needed.			
EVQCTB-W-15928	80	80	78 ^c	Accepted. No indication of cross-contamination.			
EVS65BR-W-15898	80	78 ^c	75 ^c	Second analysis.			
<i>SDG 03-11-14, analysis date November 14, 2003</i>							
20-µg/kg standard	90	87	88	17.73	12	18.28	9
Laboratory blank	100	100	100				
EVS649-W-15930	87	87	87				
EVS649-W-15930DUP	92	96	95				
EVS660-W-15931	88	90	89				
EVS667-W-15859	85	89	86				
EVS667BR-W-15901	91	93	93				
EVQCTB-W-15933	82	81	80				
<i>SDG 03-11-15, analysis date November 15, 2003</i>							
20-µg/kg standard	94	94	96	19.62	1.9	20.14	0.7
Laboratory blank	100	100	100				
EVS667-W-15902	113	116	114				
EVS667-W-15902DUP	113	115	116				
EVS669-W-15904	108	108	108				
EVS669-W-15905	100	103	100				
EVS664-W-15937	106	106	105				
EVS662-W-13192	103	101	98				
EVS618-W-15935	97	95	93				
EVQCDU-W-13193	100	100	98				
EVS663-W-15936	92	71 ^c	74 ^c	Use duplicate analysis below.			
EVS663-W-15936DUP	100	100	101				
Laboratory Blank	97	97	93				

TABLE S4.8 (Cont.)

Sample	Recovery of Surrogate Compounds ^a (%)			Measured Values for Calibration Check Standards			
	Fluorobenzene	1,2-Dichloro- benzene-d ₄	4-Bromo- fluorobenzene	Carbon Tetrachloride		Chloroform	
				Concentration (µg/L)	RPD ^b	Concentration (µg/L)	RPD ^b
<i>SDG 03-11-15, analysis date November 15, 2003 (Cont.)</i>							
EVKNUDSON-W-15861	96	96	92	Accepted. No contamination in associated samples.			
EVLARSON-W-15862	98	93	92				
EVBUNCK-W-15863	96	92	91				
EVS67BR-W-15903	95	93	92				
EVQCTB-W-13196	85	76 ^c	74 ^c				
EVQCRI-W-13195	99	93	92				
EVQCFB-W-13194	95	92	90				
<i>SDG 03-11-17, analysis date November 17, 2003</i>							
20-µg/kg standard	90	99	99	18.04	10.3	18.55	7.5
Laboratory blank	100	100	100				
EVS69-W-15906	90	89	92				
EVS69-W-15906DUP	94	101	99				
EVS70-W-15907	88	90	90				
EVS70-W-15909	91	92	91				
EVS71-W-15910	91	93	92				
EVS19-W-12847	90	89	89				
EVQCTB-W-12877	89	85	85				
EVS70BR-W-15908	87	85	88				
<i>SDG 03-11-18, analysis date November 18, 2003</i>							
20-µg/kg standard	85	89	88	18.77	6.3	19.22	4
Laboratory blank	100	100	100				
EVS71-W-15911	89	87	88				
EVS71-W-15912	94	97	97				
EVS72-W-15914	88	86	83				
EVS72-W-15914DUP	91	93	89				
EVS72-W-15913	50 ^c	53 ^c	49 ^c	Reanalyzed in SDG 03-11-19.			

TABLE S4.8 (Cont.)

Sample	Recovery of Surrogate Compounds ^a (%)			Measured Values for Calibration Check Standards			
	Fluorobenzene	1,2-Dichloro- benzene-d ₄	4-Bromo- fluorobenzene	Carbon Tetrachloride		Chloroform	
				Concentration (µg/L)	RPD ^b	Concentration (µg/L)	RPD ^b
<i>SDG 03-11-18, analysis date November 18, 2003 (Cont.)</i>							
EVSB74-W-15952	84	83	82				
EVQCFB-W-15916	87	83	82				
EVQCRI-W-15959	85	81	81				
EVQCTB-W-15915	78 ^c	57 ^c	61 ^c	Use second analysis below.			
EVQCTB-W-15915	84	81	81				
<i>SDG 03-11-19, analysis date November 19, 2003</i>							
20-µg/kg standard	89	93	90	20.22	1.1	21.23	6
Laboratory blank	100	100	100				
EVSB75-W-15968	101	104	102				
EVSB76-W-15970	117	127 ^c	122 ^c	Accepted. Duplicate analysis below.			
EVSB76-W-15970DUP	104	108	107				
EVMILLER-W-15967	99	107	103				
EVSB72-W-15913	117	128 ^c	126 ^c	Second analysis. Accepted.			
EVQCRI-W-15969	100	103	101				
EVQCTB-W-15987	92	96	91				
<i>SDG 03-11-21, analysis date November 21, 2003</i>							
20-µg/kg standard	88	85	89	21.21	5.9	22.67	12.5
Laboratory blank	100	100	100				
EVSELLAND1-W-15955	97	93	97				
EVSELLAND1-W-15955DU	100	103	106				
EVSELLAND2-W-15956	99	98	99				
EVSELLAND3-W-15957	97	97	96				
EVQCTB-W-15971	90	84	85				

TABLE S4.8 (Cont.)

Sample	Recovery of Surrogate Compounds ^a (%)			Measured Values for Calibration Check Standards			
	Fluorobenzene	1,2-Dichloro- benzene-d ₄	4-Bromo- fluorobenzene	Carbon Tetrachloride		Chloroform	
				Concentration (µg/L)	RPD ^b	Concentration (µg/L)	RPD ^b
<i>SDG 03-11-24, analysis date November 24, 2003</i>							
20-µg/kg standard	97	99	102	16.22	20.8	17.91	11
Laboratory blank	100	100	100				
EVMW1-W-15986	107	107	107				
EVMW2-W-15985	106	108	115				
EVMW2-W-15985DUP	104	108	112				
EVOCTB-W-15988	103	102	105				
<i>SDG 03-12-5, analysis date December 5, 2003</i>							
20-µg/kg standard	88	94	93	18.44	8.1	20.3	1.5
Laboratory blank	100	100	100				
EVMW3-W-15991	94	94	92				
EVMW3-W-15991DUP	88	92	90				
EVOCTB-W-15992	88	91	88				

^a Quality control limits for recovery of surrogate compounds: 80–120%.

^b Quality control limits for RPD for calibration check standards: ±20%.

^c Surrogate recovery outside quality control limit.

TABLE S4.9 Results of dual analyses of water samples at the AGEM Laboratory.

Location	Depth (ft BGL)	Sample Date	Sample	Analysis	Concentration (µg/L)	
					Carbon Tetrachloride	Chloroform
MW2	59–79	11/22/03	EVMW2-W-15985	Sample	16	ND ^a
			EVMW2-W-15985DUP	Duplicate Analysis	15	ND
MW3	56.5–71.5	12/4/03	EVMW3-W-15991	Sample	2	ND
			EVMW3-W-15991DUP	Duplicate Analysis	2.2	ND
SB09	51–57	11/12/03	EWSB09-W-15925	Sample	57	5.3
			EVQCDU-W-15927	Blind Replicate	60	5.6
SB31	57–67	11/11/03	EWSB31-W-15918	Sample	ND	ND
			EWSB31-W-15918DUP	Duplicate Analysis	ND	ND
SB49	51–55	11/13/03	EWSB49-W-15930	Sample	ND	ND
			EWSB49-W-15930DUP	Duplicate Analysis	ND	ND
SB62	33–41	11/14/03	EWSB62-W-13192	Sample	ND	ND
			EVQCDU-W-13193	Blind Replicate	ND	ND
SB65	62–66	11/11/03	EWSB65-W-15895	Sample	0.8 J ^b	ND
			EWSB65QC-W-15896	Blind Replicate	0.8 J	ND
SB65	66–70	11/11/03	EWSB65-W-15893	Sample	ND	ND
			EVQCDU-W-15894	Blind Replicate	ND	ND
SB66	50–55	11/11/03	EWSB66-W-15897	Sample	1.8	ND
			EWSB66-W-15897DUP	Duplicate Analysis	1.7	ND
SB66	56–60	11/12/03	EWSB66-W-15899	Sample	1.2	ND
			EWSB66-W-15900	Blind Replicate	1	ND
SB67	54.1–59.1	11/14/03	EWSB67-W-15902	Sample	ND	ND
			EWSB67-W-15902DUP	Duplicate Analysis	ND	ND
SB69	21.2–26.2	11/14/03	EWSB69-W-15904	Sample	ND	ND
			EWSB69-W-15905	Blind Replicate	ND	ND
SB69	29.5–34.5	11/14/03	EWSB69-W-15906	Sample	ND	ND
			EWSB69-W-15906DUP	Duplicate Analysis	ND	ND
SB71	41–46	11/15/03	EWSB71-W-15910	Sample	ND	ND
			EWSB71-W-15911	Blind Replicate	ND	ND
SB72	38.2–43.2	11/16/03	EWSB72-W-15914	Sample	ND	ND
			EWSB72-W-15914DUP	Duplicate Analysis	ND	ND
SB76	43.3–48.3	11/18/03	EWSB76-W-15970	Sample	ND	ND
			EWSB76-W-15970DUP	Duplicate Analysis	ND	ND
SELLAND1	Unknown	11/20/03	EVSELLAND1-W-15955	Sample	ND	ND
			EVSELLAND1-W-15955DU	Duplicate Analysis	ND	ND

^a ND, contaminant not detected.

^b J, estimated concentration below the quantitation limit of 1 µg/L for purge-and-trap method.

TABLE S4.10 Recovery of system-monitoring compounds in organic analyses of water samples at Clayton Laboratory with CLP methodology.

Sample	Analysis Date	Sample Delivery Group	Recovery ^a (%)		
			Toluene-d ₈	Bromofluoro-benzene	1,2-Dichloro-ethane-d ₄
VBLKLC	11/19/03	3110531-AR173	94	98	96
EVS34-W-15921MS	11/19/03	3110531-AR173	106	90	104
EVS34-W-15921MSD	11/19/03	3110531-AR173	96	88	114
EVS34-W-15921	11/19/03	3110531-AR173	104	100	100
EV-TB-111403	11/19/03	3110531-AR173	94	92	94
EVS66-W-15897	11/19/03	3110531-AR173	100	100	96
VBLKLD	11/20/03	3110531-AR173	100	106	102
EVS09-W-15925	11/20/03	3110531-AR173	100	88	100
VHBLKLA	11/20/03	3110531-AR173	92	86	104

^a Quality control limits for recovery are as follows:

<u>Analyte</u>	<u>QC Limits (%)</u>
Toluene-d ₈	88–110
Bromofluorobenzene	86–115
1,2-Dichloroethane-d ₄	76–114

TABLE S4.11 Recovery and relative percent difference values for spike/spike duplicate organic analyses at Clayton Laboratory using CLP methodology.

Compound	Concentration (µg/L)			Recovery (%)			Difference (%)		
	Sample	Spike Added	Spike Analysis	Duplicate Analysis	Spike Analysis	Duplicate Analysis	QC Limit	RPD	QC Limit
<i>MS/MSD analysis of EVSB34-W-15921 with SDG 3110531-AR173</i>									
1,1-Dichloroethene	0	50	40	42	80	84	61–145	5	14
Trichloroethene	0	50	36	35	72	70	71–120	3	14
Benzene	0	50	37	39	74	78	76–127	5	11
Toluene	0	50	47	45	94	90	76–125	4	13
Chlorobenzene	0	50	46	48	92	96	75–130	4	13

TABLE S4.12 Results of verification analyses of water samples at Clayton Laboratory (CLTP).

Location	Sample	Depth (ft BGL)	Sample Date	Laboratory	Concentration (µg/L)	
					Carbon Tetrachloride	Chloroform
SB09	EVSB09-W-15925	51-57	11/12/03	AGEM	57	5.3
SB09	EVSB09-W-15925	51-57	11/12/03	CLTP	66	6
SB34	EVSB34-W-15921	46-53	11/11/03	AGEM	9.2	4
SB34	EVSB34-W-15921	46-53	11/11/03	CLTP	13	5
SB66	EVSB66-W-15897	50-55	11/11/03	AGEM	1.8	ND ^a
SB66	EVSB66-W-15897	50-55	11/11/03	CLTP	2	ND

^a ND, contaminant not detected.

TABLE S4.13 Percent recovery of known analyte concentrations during inorganic analysis of quality control samples at Severn-Trent Laboratory.

Compound	SDG 97200			SDG 97231			SDG 97254		
	Recovery ^a (%)		Relative Difference (%)	Recovery (%)		Relative Difference (%)	Recovery (%)		Relative Difference (%)
	Sample	Duplicate		Sample	Duplicate		Sample	Duplicate	
Chloride	100	104.6	4	100	104.6	4	100	104.6	4
Sulfate	95	111.7	16	95	111.7	16	95	111.7	16
Nitrate as N	94.7	94.7	0	94.7	94.7	0	96	97.3	1
Nitrite Nitrogen	100	100	0	100	100	0	105	100	5
Nitrate/Nitrite N	106.5	106.8	0	107.4	107.2	0	104.5	104.2	0
Phosphate	97	96	1	97	96	1	100.5	104	3
Total Organic Carbon	100.6	101.1	0	96.7	100.3	4	100.6	101.1	0
Aluminum	99.7	98.7	1	99.7	98.7	1	99.7	98.7	1
Calcium	99.1	98	1	99.1	98	1	99.1	98	1
Iron	99	97.8	1	99	97.8	1	99	97.8	1
Magnesium	97.2	96	1	97.2	96	1	97.2	96	1
Manganese	101.4	100.2	1	101.4	100.2	1	101.4	100.2	1
Phosphorus	101	95.4	6	101	95.4	6	101	95.4	6
Potassium	103.1	98.2	5	106	105	1	106	105	1
Silicon	105.9	104.4	1	105.9	104.4	1	105.9	104.4	1
Sodium	102.3	102.2	0	102.3	102.2	0	102.3	102.2	0
Zinc	101.7	100.2	1	101.7	100.2	1	101.7	100.2	1

TABLE S4.13 (Cont.)

Compound	SDG 97271			SDG 97410			SDG 97428		
	Recovery (%)		Relative Difference (%)	Recovery (%)		Relative Difference (%)	Recovery (%)		Relative Difference (%)
	Sample	Duplicate		Sample	Duplicate		Sample	Duplicate	
Total Alkalinity	107.6	98	9	NA ^b	NA	NA	NA	NA	NA
Chloride	99	98.4	1	97.6	NA	NA	NA	NA	NA
Sulfate	86.1	88.5	3	96.7	NA	NA	NA	NA	NA
Nitrite Nitrogen	100	100	0	100	95	5	NA	NA	NA
Nitrate/Nitrite N	104.5	104.2	0	104.5	104.2	0	NA	NA	NA
Nitrate as N	96	97.3	1	98	NA	NA	NA	NA	NA
Phosphate	100.5	104	3	87	NA	NA	NA	NA	NA
Total Organic Carbon	96.8	99.4	3	96.8	99.4	3	96.8	99.4	3
Aluminum	99.7	98.7	1	97.6	98.1	1	NA	NA	NA
Calcium	99.1	98	1	96.5	97.2	1	NA	NA	NA
Iron	99	97.8	1	97.4	97.8	0	NA	NA	NA
Magnesium	97.2	96	1	96.3	96.9	1	NA	NA	NA
Manganese	101.4	100.2	1	95.8	96.2	0	NA	NA	NA
Phosphorus	101	95.4	6	95	92.9	2	NA	NA	NA
Potassium	106	105	1	91.1	89	2	NA	NA	NA
Silicon	105.9	104.4	1	101.7	101.7	0	NA	NA	NA
Sodium	102.3	102.2	0	98.1	98.3	0	NA	NA	NA
Zinc	101.7	100.2	1	97.4	97.8	0	NA	NA	NA

TABLE S4.13 (Cont.)

Compound	SDG 97438			SDG 97621		
	Recovery (%)		Relative Difference (%)	Recovery (%)		Relative Difference (%)
	Sample	Duplicate		Sample	Duplicate	
Chloride	110	NA	NA	109	109.2	0
Sulfate	101.7	NA	NA	102.4	101.6	1
Nitrate as N	98	NA	NA	107	106.3	1
Nitrite Nitrogen	100	95	5	105	100	5
Nitrate/Nitrite N	98.6	94.7	4	96.6	NA	NA
Phosphate	87	NA	NA	124.5	125	0
Total Organic Carbon	NA	NA	NA	98.5	96.1	2
Aluminum	99.9	99.1	1	104.5	NA	NA
Calcium	100.2	99.7	1	101.2	NA	NA
Iron	101	100.4	1	100.8	NA	NA
Magnesium	99.1	98.6	1	100	NA	NA
Manganese	96.7	96.2	1	97.6	NA	NA
Phosphorus	97.2	95.8	1	94.4	NA	NA
Potassium	95.9	95.2	1	93.7	NA	NA
Silicon	101.7	101.7	0	101.4	NA	NA
Sodium	101.6	100.9	1	94.8	NA	NA
Zinc	94.9	94.4	1	98	NA	NA

^a Quality control limit for percent recovery = 80–120%

^b NA, not analyzed.

TABLE S4.14 Calculated relative percent difference in inorganic analysis of a groundwater sample and its replicate at Severn-Trent Laboratory.

Analyte	Concentration (µg/L)		Relative Difference (%)
	Sample EVSB62-W-13192	Replicate EVOCDU-W-13193	
Total Alkalinity	239,000	239,000	0
Aluminum	< 200	< 200	– ^a
Calcium	76,400	76,500	0.1
Chloride	21,400	21,000	1.9
Total Organic Carbon	< 1,000	1,900	NC ^b
Iron	< 100	< 100	–
Magnesium	18,200	18,100	0.6
Manganese	17	< 15	NC
Nitrate as N	17,900	17,900	0
Nitrite Nitrogen	< 5	< 5	–
Nitrate/Nitrite Nitrogen	18,300	18,300	0
Phosphate	< 200	< 200	–
Phosphorus	< 250	< 250	–
Potassium	< 5,000	< 5,000	–
Silicon	14,400	14,400	0
Sodium	48,100	48,100	0
Sulfate	25,300	22,100	13.5
Zinc	< 20	< 20	–

^a Analyte not detected at the indicated reporting limit in either the sample or the replicate.

^b NC, relative percent difference not calculated.

TABLE S4.15 Percent recovery of known analyte concentrations during attenuation analysis of quality control samples at Severn-Trent Laboratory.

Compound	SDG 97200			SDG 97231			SDG 97254		
	Recovery ^a (%)		Relative Difference ^b (%)	Recovery (%)		Relative Difference (%)	Recovery (%)		Relative Difference (%)
	Sample	Duplicate		Sample	Duplicate		Sample	Duplicate	
Methane	75	89	17	75	89	17	75	89	17
Ethane	100	107	7	100	107	7	100	107	7
Ethene	100	115	14	100	115	14	100	115	14
	SDG 97271			SDG 97410			SDG 97428		
Methane	75	89	17	116	115	1	116	115	1
Ethane	100	107	7	114	121	6	114	121	6
Ethene	100	115	14	108	115	6	108	115	6
	SDG 97621								
Methane	118	123	4						
Ethane	121	121	0						
Ethene	108	115	6						

^a Quality control limit for percent recovery = 70–130%.

^b Quality control limit for relative percent difference = 30%.