HYDROGEOLOGIC, WATER-QUALITY, AND SEDIMENT-QUALITY DATA FOR A FRESHWATER TIDAL WETLAND, WEST BRANCH CANAL CREEK, ABERDEEN PROVING GROUND, MARYLAND, 1992-96

by Lisa D. Olsen, Michelle M. Lorah, Elizabeth H. Marchand, Barrett L. Smith, and Mark A. Johnson

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ABERDEEN PROVING GROUND, MARYLAND

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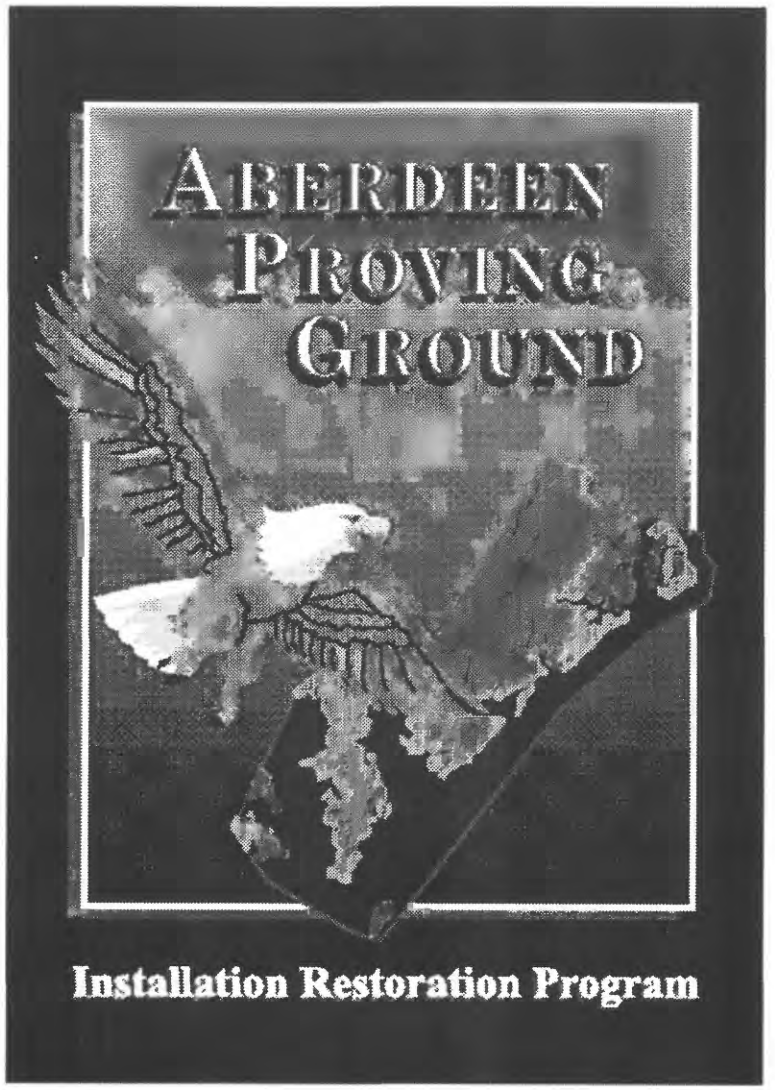

1997

Aberdeen Proving Ground, Edgewood Area

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CONVERSION FACTORS, ABBREVIATIONS, AND VERTICAL DATUM

Multiply	By	To obtain
inch (in.)	2.54	centimeter
inch (in.)	25,400	micrometer
inch per year (in/yr)	0.02540	meter per year
foot (ft)	0.3048	meter
foot per day (ft/d)	0.3048	meter per day
foot per year (ft/yr)	0.3048	meter per year
food squared per day (ft^2/d)	0.09290	meter squared per day
mile (mi)	1.609	kilometer

Sea Level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929--a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canda, formerly called Sea Level Datum of 1929.

Other abbreviated units of measure: Water temperature, chemical concentration, and other chemical and physical properties of constituents are given in metric units. Water temperature in degrees Celsius (^0C) can be converted to degrees Fahrenheit (^0F) by use of the following equation:

$$^0F = 1.8\ (\ ^0C) + 32$$

Chemical concentration in water is expressed in milligrams per liter (mg/L), micrograms per liter (µg/L), millimoles per liter (mmol/L), or micromoles per liter (µmol/L). Chemical concentration in soil is expressed as micrograms per kilogram of dry soil (µg/kg), and ratios of aqueous concentrations in soil are expressed as liters per kilogram (L/kg).

Molecular weight and other mass expressions are expressed in grams (g), and density is given in grams per cubic centimeter (g/cm^3). Other abbreviations used include milliliter (mL) or liter (L) for volume measurements and micrometer (µm), which equals 1×10^{-6} meter, for length.

HYDROGEOLOGIC, WATER-QUALITY, AND SEDIMENT-QUALITY DATA FOR A FRESHWATER TIDAL WETLAND, WEST BRANCH CANAL CREEK, ABERDEEN PROVING GROUND, MARYLAND, 1992-96

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ABSTRACT

This report presents data collected by the U.S. Geological Survey from October 1992 to August 1996 as part of a study of the distribution, fate, and movement of volatile organic contaminants in a selected area of a freshwater tidal wetland along West Branch Canal Creek, Aberdeen Proving Ground, Maryland. The primary contaminants in the study area are chlorinated volatile organic compounds, including 1,1,2,2-tetrachloroethane, trichloroethene, carbon tetrachloride, and their degradation products. An extensive ground-water-monitoring network of 127 wells, augmented by soil-sampling and surface-water-sampling sites, was installed to collect the data required by the study. Geologic data were collected from multiple depth intervals at 17 sites. Water levels were measured by tape and/or by pressure transducer in 111 wells. Ground-water-quality samples were collected from 108 wells. Surface-water-quality samples were collected from 4 sites. Sediment-quality samples were collected at several depth intervals from 19 sites. This report presents the hydrogeologic, water-quality, and sediment-quality data that were collected and explains the methods that were used to install the monitoring network, the methods used to collect and analyze the data, and an evaluation of the quality-assurance data.

INTRODUCTION

The U.S. Geological Survey (USGS), under a contract with the U.S. Army Environmental Conservation and Restoration Division, began a study in October 1992 to determine the distribution, fate, and movement of the chlorinated volatile organic contaminants (VOC's) in a selected area of the wetlands along the West Branch Canal Creek, Aberdeen Proving Ground, Maryland. Partial funding for this study was obtained under the Strategic Environmental Research and Development Program (SERDP), a multi-agency effort that supports environmental research, development, demonstration, and applications programs. The objectives of the USGS study were to (1) define major ground-water flowpaths and hydrologic interactions between the aquifer, wetland, and surface water; (2) determine the distribution of contaminants along ground-water flowpaths; (3) determine the major geochemical and microbial processes affecting the VOC's; and (4) evaluate the effect and significance of other natural attenuation processes, including sorption and volatilization, on the fate and mobility of the VOC's in the wetland. Biodegradation processes were investigated most thoroughly because they are commonly the primary destructive process for organic contaminants. Information gained through this study may be transferable to similar wetland areas at APG and elsewhere.

Purpose and Scope

This report provides a compilation of the data collected by the USGS from October 1992 through August 1996 to support the study of chlorinated VOC's in the West Branch Canal Creek study area. The report includes (1) geologic data from soil cores that were collected from 17 sites during piezometer installation; (2) hydrologic data from synoptic water-level measurements from 104 piezometers and from pressure transducers in selected piezometers; (3) ground-water-quality data from reconnaissance-phase sampling, comprehensive-phase sampling of the final monitoring network, and seasonal-phase sampling of a subgroup of piezometers from the final monitoring network; (4) ground-water-quality data from porous-membrane sampling devices known as "peepers"; (5) surface-water-quality data from four sites, one of which is equipped with an automatic sampler; and (6) sediment-quality data from soil cores from 19 sites, including the 17 sites from which cores were collected for geologic data. Methods and techniques for piezometer installation, sample collection, and sample analysis are discussed. Quality-assurance data are also presented and evaluated. This report has been prepared as a companion report to an interpretive report (Lorah and others, 1997) that discusses the results of the study of the distribution, fate, and movement of chlorinated VOC's, with an emphasis on natural attenuation processes.

Site History

Since 1917, Aberdeen Proving Ground (APG), a U.S. Army base in Maryland (fig.1), has been the primary chemical-warfare research and development center for the United States. Most of APG's plants for chemical manufacturing and munitions filling were concentrated in the area between the West and East Branches of Canal Creek (fig. 2). After World War II, large-scale production and filling operations declined sharply, and many of the plants have since been demolished or abandoned.

Chlorinated organic solvents, which were used as raw materials, decontaminating agents, and degreasers, were common waste products from the manufacturing and filling plants and from other miscellaneous activities in the study area (Lorah and Vroblesky, 1989; Lorah and Clark, 1996). Until the late 1970's, wastes from the manufacturing and filling plants were discharged directly into the East and West Branches of Canal Creek through sewerlines that had been constructed of vitrified clay during World War I. Some of these old sewerlines discharged into areas that are now covered with fill material. Leaks from the sewerlines into the surrounding wetland were probably common. Wastes that could not be put through the sewer systems were often dumped or buried in the wetland areas along Canal Creek. In the late 1960's, potentially contaminated construction materials, including large pieces of debris from the demolition of a chlorine plant, were pushed

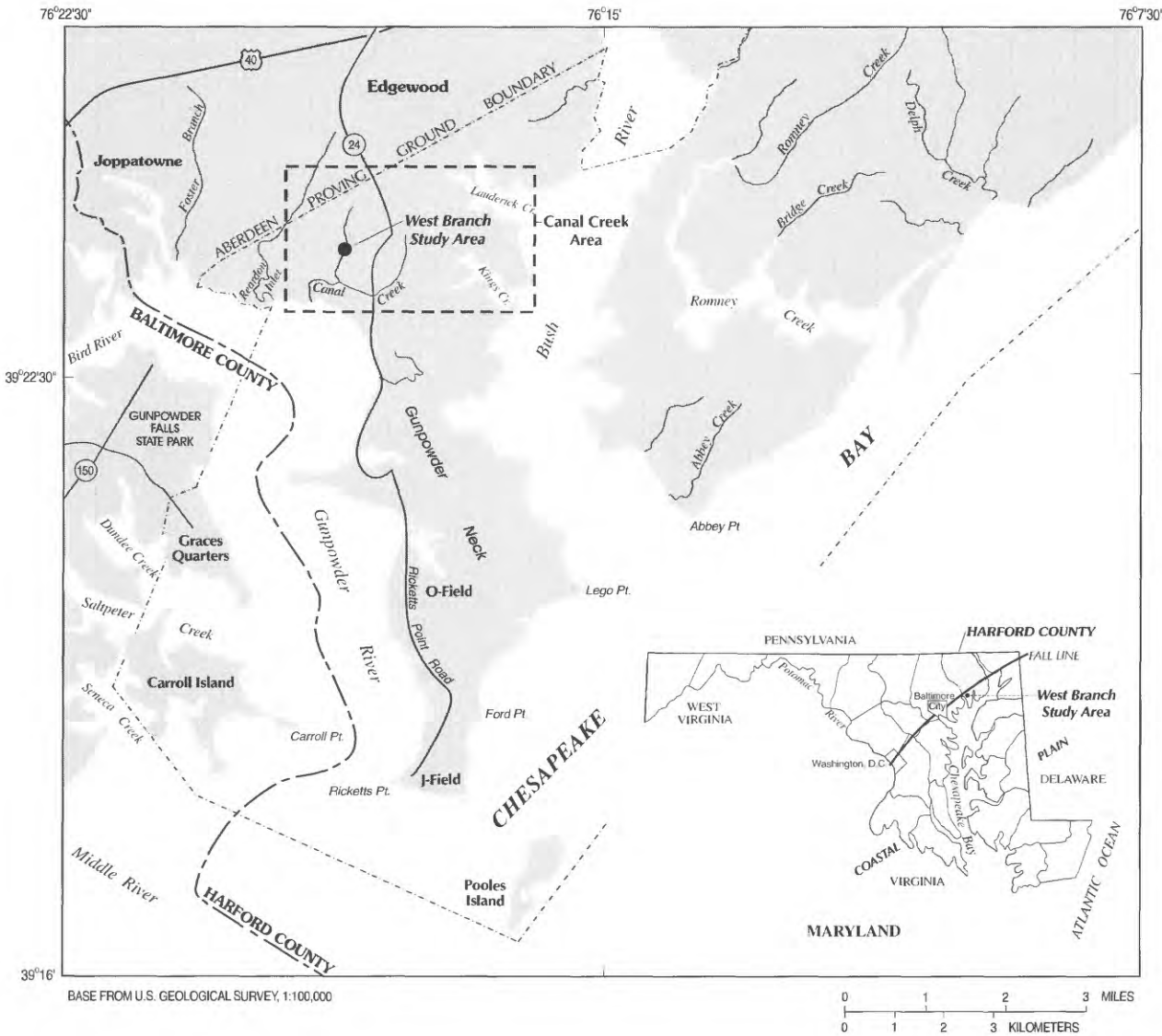
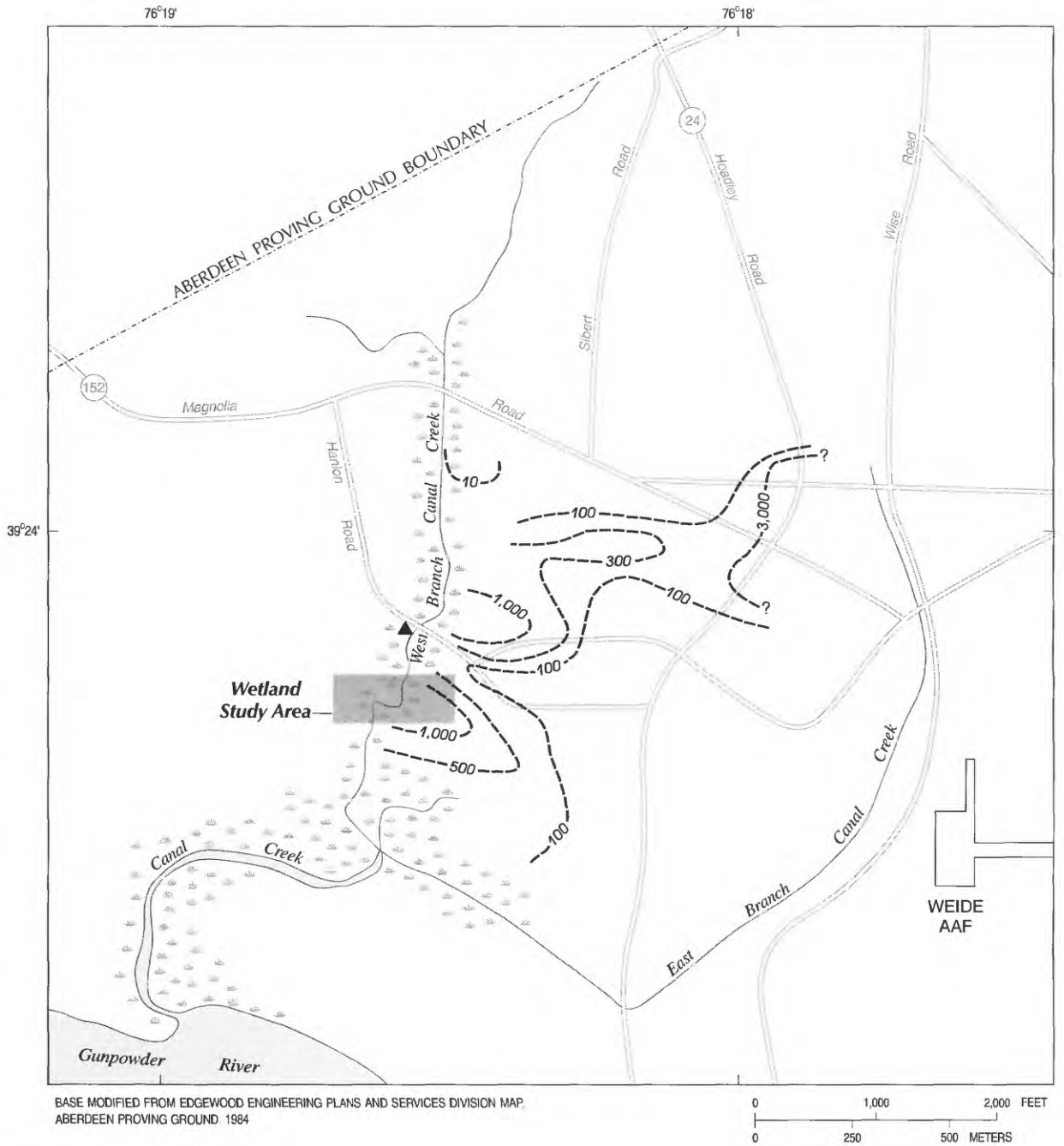


Figure 1. Location of Canal Creek area and West Branch study area, Aberdeen Proving Ground, Maryland (from Lorah and Clark, 1996).



EXPLANATION

?--10-- APPROXIMATE LINE OF EQUAL TOTAL ORGANIC HALOGEN CONCENTRATION -- Interval, in micrograms per liter, is variable. Queried where uncertain. Sampled in July-September 1988.

▲ TIDE GAGE

Figure 2. Location of the wetland study area along the West Branch Canal Creek, Aberdeen Proving Ground, Maryland, and the distribution of total organic halogen in the Canal Creek aquifer upgradient from the wetland (modified from Lorah and Clark, 1996, p.106).

out into the wetland study area. These disposal activities resulted in ground-water contamination, including the plume along the West Branch Canal Creek (Lorah and Clark, 1996) (fig. 2). None of the known contaminant sources that could have contributed to ground-water contamination near the wetland study area have been active in two or more decades. Dissolution of residual DNAPL's (dense non-aqueous-phase liquids) from previous disposal activities, however, is a likely source of current contamination (Lorah and Clark, 1996, p. 169).

Previous Investigations

An investigation conducted by the U.S. Geological Survey (USGS) during 1985-92 showed that a large ground-water contaminant plume was present in a shallow sand aquifer along the West Branch Canal Creek and that the contaminated ground water was probably discharging to the creek and its surrounding freshwater wetlands (Lorah and Clark, 1996) (fig. 2). Major contaminants detected in the ground water immediately upgradient from the wetlands included the chlorinated volatile organic compounds 1,1,2,2-tetrachloroethane, trichloroethylene, and carbon tetrachloride, which are commonly used as industrial solvents. No hydrologic or water-quality data were collected from the wetland area itself during this investigation.

A risk assessment was conducted in the wetland study area by the U.S. Army Center for Environmental Health Research (USACEHR) (formerly the U.S. Army Biomedical Research and Development Laboratory) and the University of Maryland. Terrestrial and aquatic biota were identified as the primary receptors along the West Branch Canal Creek. In 1990, APG was placed on the National Priorities List established under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the U.S. Army and U.S. Environmental Protection Agency Region III signed an Interagency Agreement for investigation and remediation of the Canal Creek area and other areas at APG.

Description of Study Area

The study area is located in the Canal Creek area of Aberdeen Proving Ground, near the head of the Chesapeake Bay in the Coastal Plain Physiographic Province of Maryland (fig. 1). Canal Creek, for which the study area is named, flows southward from the confluence of its East and West Branches into the Gunpowder River, an estuary located at the southwestern edge of the study area (figs. 1 and 2). The creeks and estuaries in the study area are tidally influenced, and the tidal amplitude ranges from about 0.5 to 2.0 ft. Freshwater wetlands surround much of the West Branch Canal Creek study area, though landfilling activities have decreased the areas of some of these wetlands.

The geology of the Canal Creek area is characterized by thick, wedge-shaped deposits of unconsolidated Coastal Plain sediments that dip southeastward (fig. 3). The Canal Creek aquifer, which is the contaminated aquifer of interest, ranges from 30 to 70 ft thick in the Canal Creek area (Lorah and Clark, 1996). The Canal Creek aquifer is confined in the East Branch Canal Creek area, and is semi-confined or unconfined near the West Branch Canal Creek (fig. 3). The lower confined aquifer, which underlies the approximately 60-ft-thick lower confining unit (fig. 3) is not known to be contaminated (Lorah and Vroblesky, 1989; Lorah and Clark, 1996).

Within the West Branch Canal Creek study area, the aquifer sediments consist of medium- to coarse-grained sand and gravel, interfingered with thin layers or lenses of clay and silt. Upgradient from the wetland, the aquifer is overlain by fill material and the sediments of the upper confining unit. Within the wetland, the Canal Creek aquifer is overlain by wetland sediments, which are about 6 to 12 ft thick in the study area. The wetland sediments consist of peat, clay, silt, sandy clay, and clayey sand.

Shallow ground water on both sides of the West Branch Canal Creek generally flows laterally and upward toward the creek channel. Recharge, in the form of rainfall infiltration,

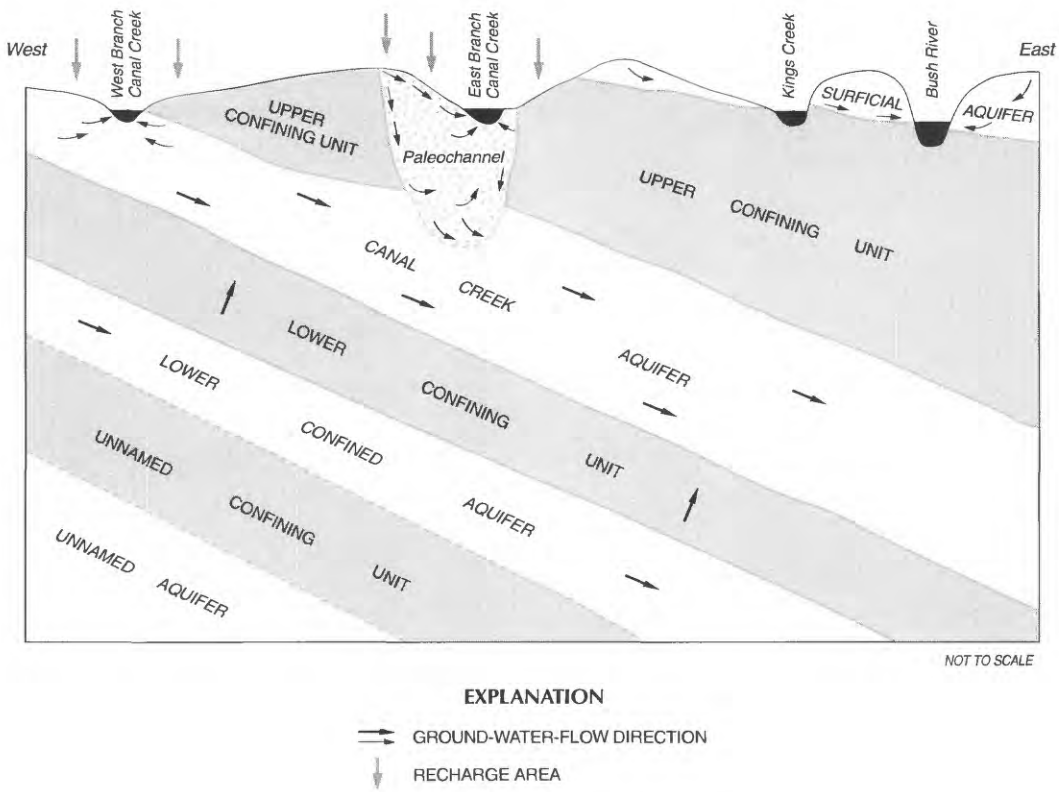


Figure 3. Generalized hydrogeologic section showing directions of ground-water flow in the Canal Creek area, Aberdeen Proving Ground, Maryland (modified from Lorah and Clark, 1996, p.11.).

occurs upgradient from the creek. Discharge occurs from the Canal Creek aquifer through the wetland sediments into the creek and marsh areas. Deep flow in the aquifer may enter the regional flow system, which flows toward the southeast (Lorah and Clark, 1996).

Acknowledgments

The authors thank the following people and agencies for their important contributions to this study. John Wrobel, of the U.S. Army Environmental Conservation and Restoration Division, Aberdeen Proving Ground, coordinated many aspects of the project. The U.S. Army Corps of Engineers installed the piezometers and assisted in collection of sediment-core samples. A crew from the Army Testing Center, supervised by Peter Pritchard, provided technical support that included building walkways and a bridge through the wetland area, and building the gas-flux chambers. Thanks also go to Henry Gardner, Thomas Shedd, and Alan Rosencrance of USACEHR, Fort Detrick, Maryland, for providing the analytical chemistry trailer and technical support associated with its operation.

The authors are also grateful to colleagues that assisted in collection of hydrogeologic and water-quality data during this study--Peggy Nemoff and Colleen Donnelly, of the USGS Maryland-Delaware-D.C. District; Denise Coutlakis, formerly of the USGS Maryland-Delaware-D.C. District; and Allison O'Brien, Christopher Jacobs, Michael Johnson, Paul Harvey, and Gerald Garcia at the U.S. Army Environmental Conservation and Restoration Division, Aberdeen Proving Ground. James Dine of the USGS Maryland-Delaware-D.C. District assisted with methane analyses. Jonathan Haupt, a student intern from Goucher College, assisted with preparing data tables for publication. Edward Miller, a volunteer with the USGS, provided valuable support in the on-site analytical chemistry trailer. Edward also performed the data verification and assisted in editing the data tables

for publication. Thanks also go to the Publications Section of the Maryland-Delaware-D.C. District of the USGS for their assistance in preparing this report.

METHODS OF INVESTIGATION

A network of 127 wells, 4 surface-water sampling sites, and 19 sediment-sampling sites was installed and utilized to collect hydrogeologic, water-quality, and sediment-quality data to support the study of contaminant fate and movement in the West Branch Canal Creek area. Data were collected and analyzed using standard methods and appropriate quality-assurance protocols.

Network Design and Well Installation

Network design was accomplished in two steps. The first step was the installation of 17 reconnaissance wells, which were used to gather the hydrogeologic and ground-water-quality data needed to select appropriate well sites for the final monitoring network. After evaluation of the reconnaissance data, the second step commenced with the installation of 115 additional wells to complete the final monitoring network. Both the reconnaissance wells and the final monitoring network wells were installed using methods that were selected to avoid the use of heavy mechanical equipment and major disturbance of the wetland sediment and vegetation. The wells installed for this study were 2-in.- and 0.75-in.-diameter drive-point piezometers, which were manually driven using a gas-powered vibrating hammer operated by two people. No drilling was necessary. These narrow-diameter drive-point piezometers did not significantly disturb the marsh sediment or aquifer material during their installation, and therefore did not require bentonite fill or cement grout sealing, nor did they require any well development to stabilize the material surrounding the wells.

Reconnaissance Wells

In April 1993, as a part of the initial reconnaissance phase, 17 drive-point piezometers were installed at 13 sites to collect preliminary hydrogeologic and ground-water-quality data that would assist in placing the final ground-water-monitoring network (fig. 4). These piezometers, designated as "DP-" in the well-numbering system, have a 2-in.-diameter casing made of stainless steel and a 1-ft screened interval made of stainless-steel mesh with 60-micrometer (μm) pore diameter.

Twelve of the 17 reconnaissance-phase piezometers are screened in the marsh sediment at depths less than 5 ft, and are referred to as "shallow". Five deeper piezometers, screened at depths between 5 and 10 ft, were installed with the intention of placing the screens within the Canal Creek aquifer, below the marsh sediment. Four of the "deep" piezometers were co-located with shallow piezometers. The letters "A" and "B" were used to designate the shallow and deep wells, respectively. Of the five deep piezometers, only three (DP-2, DP-4B, and DP-8B) were later determined to be screened in sand near the top of the aquifer (fig. 4). The other two deep piezometers (DP-1B and DP-3B) were later determined to be screened in the marsh sediment. Well-construction data for the reconnaissance-phase piezometers are listed in table 1.

The reconnaissance-phase piezometers were sampled in June and August 1993, except for DP-13, which was not sampled until May 1994. Two 4-in.-diameter observation wells, CC-27A and CC-27B, which had been installed during the previous (1985-92) investigation of the Canal Creek area by the USGS (Lorah and Clark, 1996), are located upgradient from the marsh and were also sampled in July 1993 during the reconnaissance phase.

Final Monitoring Network

The final monitoring network was installed from July 1994 to February 1995. Seventeen piezometer nest sites were selected along two transects, A-A' and C-C' (fig. 4). These transects were aligned with the general direction of ground-water flow in the aquifer as was determined from the reconnaissance-phase data, and are perpendicular to the creek channel (fig. 4). Piezometer sites on these transects were designated with the prefix "WB" in their site numbers. Two additional piezometer sites were selected parallel to the creek channel near transect A-A' (WB-30 and WB-31 in fig. 4). Walkways and a bridge across the creek at site WB27 were completed along the

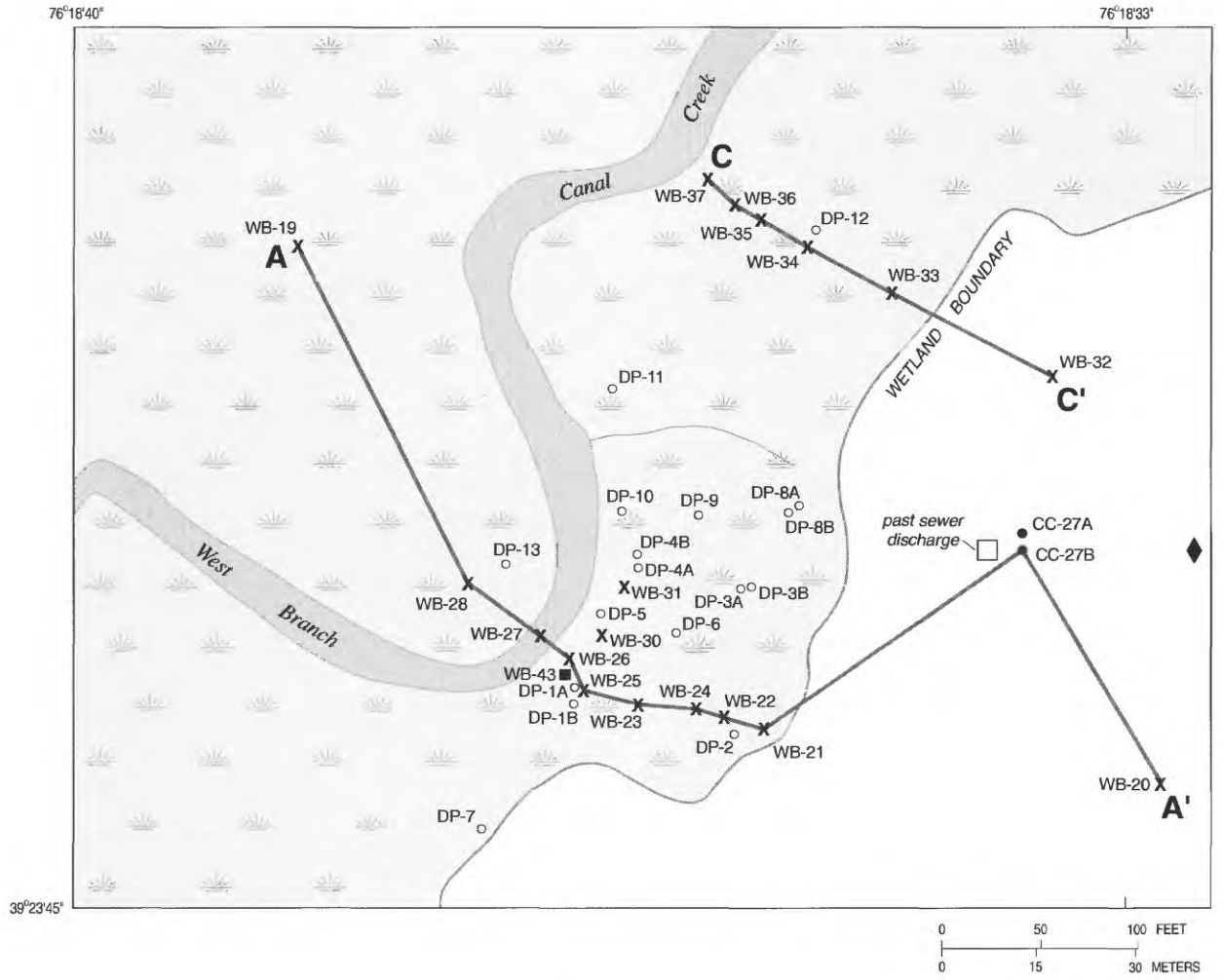


Figure 4. Locations of sampling sites and transects A-A' and C-C' in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland.

transects before installation of the final monitoring network to minimize disturbance of the wetland sediments and to allow access to the sites at high tide.

Before the piezometers were installed along the transects, continuous sediment cores were collected at each new piezometer site to determine the lithology in the wetland study area. Sediment cores (2-ft long and 3-in. diameter) were collected using a split-spoon sampler driven by a 150-lb hammer and 5-horsepower cathead mounted on a 15-ft-high tripod. Polyvinyl chloride (PVC) casing was driven ahead of the split-spoon sampler to help keep the borehole open, and bentonite mud was sometimes used to prevent sand from filling the borehole. Lithologic descriptions of the sediment cores were recorded, and selected samples were stored in small plastic containers. Some samples were later sent to the USGS Geologic Division, Branch of Geochemistry, for mineralogic and elemental analyses, and to the U.S. Army Corps of Engineers Waterways Experiment Station for sieve analysis and analysis of total organic carbon. Sediment cores were collected to the bottom of the Canal Creek aquifer in about half of the sites and to the middle of the aquifer in the remaining sites. The boreholes were then backfilled to land surface with grout placed inside the PVC casing.

At each of the piezometer sites, a "nest" of three to seven piezometers was installed with screens placed at different depth intervals, some in the marsh sediments and some in the aquifer. The individual piezometers in these nests were designated with a letter (beginning with "A" for the shallowest screen) after the site number.

The drive-point piezometers installed for collection of water samples in the final monitoring network had 0.75-in.-diameter casing made of stainless steel and 6-in.-long screened intervals made of stainless-steel mesh with 150-μm pore diameter. An inner tube made of Teflon-lined polyethylene was connected to the top of the screened interval, allowing withdrawal of samples that had minimal contact with the stainless steel. A total of 115 of the 0.75-in.-diameter drive-point piezometers were installed during this final phase; however, some of these piezometers were later found to have been damaged during installation, and only 89 could be used for sampling. Fourteen additional 2-in.-diameter drive-point piezometers were installed for the final monitoring network and equipped with pressure transducers to measure water levels continuously. Wells equipped with pressure transducers were designated with a ".1" at the end of the well site number.

The piezometers used for the final monitoring network, their land-surface elevations, and the depths of their screened intervals are listed in table 1. The piezometers in the final monitoring network will remain in place for ongoing and future work. In addition to the nested piezometers, the final monitoring network included a tide gage located near the bridge on Hanlon Road north of the study area, and a rain gage located upgradient of the wetland (fig. 4).

Hydrologic Data-Collection Methods

Synoptic water levels were measured from an arbitrary measuring point at the top of the piezometer and were calculated in feet above or below sea level (fig. 5). Pressure transducers measured water levels continuously. The electronic signals generated by the pressure transducers were recorded by automatic data loggers, which stored the data for approximately 6-week intervals, until the data could be downloaded in the field to a laptop computer. The following table lists the numbers and types of wells that were used for measuring water levels and for collecting ground-water-quality samples:

Well type	Well diameter (inches)	Total number of wells	Number of wells used for water-level measurements	Number of wells used for ground-water-quality sampling			
				All sampling phases	Reconnaissance phase	Comprehensive phase	Seasonal phase
CC-XX	4.0 [1]	2	0	2	2	0	2
DP-XX	2.0	17	3	17	17	0	1
WBXX-A, B,...H	.75	89	89	89	0	89	27
WBXX-W	.75	5	5	0	0	0	0
WBXX.1 [2]	2.0	14	14	0	0	0	0
All well types:		127	111	108	19	89	30

[1] All wells except CC-XX wells are drive-point piezometers. Well construction of CC-XX wells is described in Lorah and Clark (1996).

[2] WBXX.1 wells were equipped with pressure transducers.

Ground-Water and Surface-Water Sampling Methods

Ground-water samples were collected in three phases. The reconnaissance phase, from June to August 1993, included seventeen 2-in.-diameter drive-point piezometers, and two 4-in. wells, CC-27A and CC-27B, from the previous (1985-92) investigation (Lorah and Clark, 1996). The comprehensive sampling phase, from June to October 1995, included 89 of the 0.75-in.-diameter piezometers in the final monitoring network. The seasonal sampling phase, from November 1995 to August 1996, included approximately 27 of the 0.75-in.-diameter piezometers selected from the final monitoring network and one of the 2-in. reconnaissance-phase piezometers, DP-1A. These seasonal phase wells were sampled four times between November 1995 and August 1996 to evaluate seasonal effects on ground-water quality. Wells CC-27A and CC-27B were also sampled once in August 1996 during the seasonal sampling.

Surface-water samples were collected periodically during all phases of ground-water sampling. During the reconnaissance phase, surface-water samples were collected at sites near piezometers DP-9 and DP-10 (fig. 4), and from a site at the Hanlon Street Bridge. During the comprehensive and seasonal sampling phases, surface-water samples were collected from a site along transect A-A', near piezometer site WB27 (fig. 4).

Well Purging and Ground-Water Sample-Collection Methods

The method used for purging wells and collecting water samples depended upon the recovery rate for each well. Piezometers screened in the aquifer were generally purged and sampled using a peristaltic pump and tygon tubing. The piezometers screened in the wetland sediments generally had very low recovery rates, which made pumping impractical, and therefore, the 0.75-in.-diameter and 2-in.-diameter piezometers that were screened in the wetland sediments were

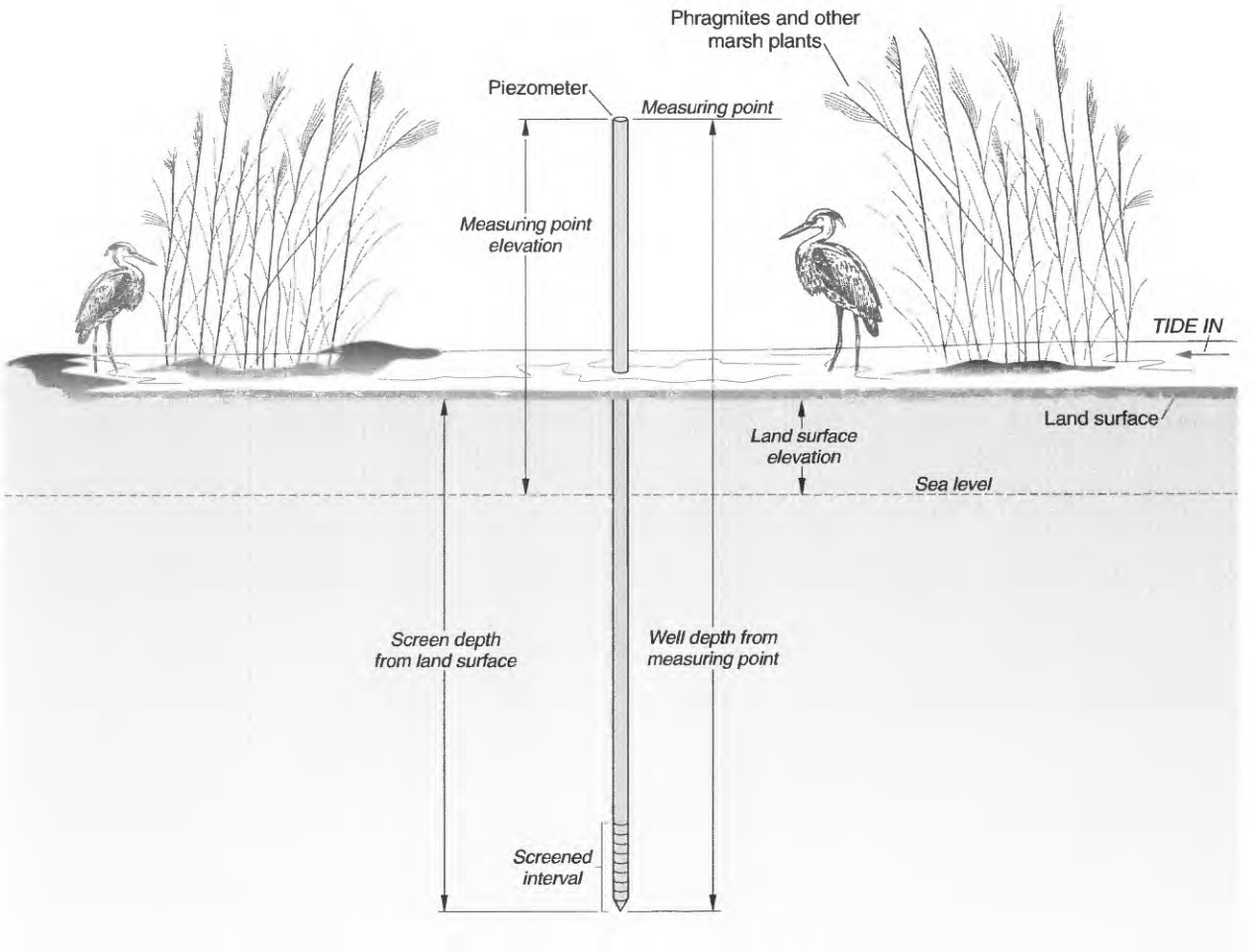


Figure 5. Schematic of a drive-point piezometer and reference points for measurement.

purged and sampled using stainless-steel or Teflon bailers, respectively.

Specific conductance, salinity, water temperature, and turbidity were monitored during purging. Water samples were collected once these parameters had stabilized within 10 percent (usually after 1.5 to 2 casing volumes of water had been removed in piezometers with rapid water-level recovery rates). During purging and sampling, sufficient water was left in the wells to keep water levels above the top of the screened interval to avoid introducing air into the marsh sediments or aquifer. If recovery took more than 8 hours after removal of one casing volume of water, sampling was begun the next day or as soon as water levels had risen at least 1 ft above the screen. Samples were collected over several days, and sometimes over more than a week, in piezometers that had very slow recovery rates.

Surface-Water Sample-Collection Methods

During the reconnaissance phase, surface-water samples were collected by dipping the sample vials about 3 to 5 in. below the water surface. Special care was taken to minimize aeration of samples to be analyzed for VOC's. Filtered surface-water samples were obtained by collecting water from the stream in containers that had been rinsed with deionized water and then filtering the water into the sample vials, or by placing the intake tube from a peristaltic pump into the stream and filtering the water directly into the sample containers. Surface-water samples were analyzed for many of the same constituents as ground-water samples, using similar analytical techniques.

During the comprehensive and seasonal sampling phases, surface-water samples were collected using an ISCO automatic water sampler with the pump intake located near the bottom of the creek by site WB27 (fig. 4). Samples were collected primarily to evaluate the effects of surface-water infiltration and dilution on ground-water chemistry. Because previous surface-water sampling along West Branch Canal Creek had showed low or undetectable concentrations of VOC's (Lorah and Clark, 1996), VOC analyses were not performed on surface-water samples during this study. Surface-water samples were collected every 2 or 4 hours over a 3-day period a total of six times between June 1995 and March 1996 to obtain tidal and yearly average concentrations of major inorganic constituents. At the end of each 3-day period, the samples were unloaded from the automatic sampler and filtered through 0.45-µm membrane filters into polyethylene bottles for determination of major ions and selected trace metals. Samples for major anions, major cations, and trace metals were treated as described above for the ground- water samples and sent to the USGS National Water Quality Laboratory (NWQL) for analysis. Alkalinity (as bicarbonate), specific conductance, and salinity were measured in the field several times during the initial surface-water sampling periods, using the same methods that were described previously for the ground-water samples.

Porous-Membrane Sampling Devices

In addition to ground-water samples collected from the piezometers, ground-water samples were also obtained over 1-in.-depth intervals in the wetland sediments by use of porous-membrane sampling devices, which are also known as "peepers." Six peepers were built of Lexan following the general design originated by Hesslein (1976) for studies in bottom sediments of lakes. The peepers were constructed of three sheets of Lexan, each cut with regularly-spaced windows. The middle Lexan sheet was 0.6 in. thick, and its windows formed the sample chambers. Two thinner sheets (0.12 in. thick) were used to fasten the porous membrane over the sample chambers. The porous membrane (HT Tuffryn, Gelman Sciences, Ann Arbor, Michigan) was made of polysulfone and had a pore size of 0.2 µm. Each peeper was 24 in. long (excluding a handle used for installation) by 7.5 in. wide and contained 21 rows of sample chambers with 2 chambers in each row. The sample chambers were filled with deionized water that was held inside the chambers by the porous membrane. Before installation in the anaerobic wetland sediments, the prepared peepers were placed in a large container filled with deionized water and bubbled continuously with nitrogen gas for 12 to 18 hours to remove oxygen from the water inside the peeper chambers.

The peepers were manually pushed vertically into the wetland sediment and allowed to equilibrate with surrounding porewater for approximately 3 weeks. In theory, constituents in the surrounding porewater diffuse into the peeper chambers until concentrations inside and outside the chambers are equal. After equilibration with the porewater in the sediment, the peepers were removed from the sediment, and samples were immediately collected from the chambers with glass syringes. Because sample sizes obtained from the peepers were very small (about 11 mL from each chamber), only VOC's and methane were measured. These analyses were done at the on-site laboratory using the same methods that were used for the ground-water samples collected from the piezometers. The peepers were installed near selected piezometer sites during each sampling period except August 1996.

Quality-Assurance Samples

During each phase of sampling, approximately 10 percent of the ground-water samples were collected in duplicate for quality assurance purposes. A greater number of duplicate samples were collected for organic constituents than for inorganic constituents because the organic constituents are typically volatile compounds that exhibit a greater degree of variability than inorganic compounds. The number of duplicate samples collected for redox-sensitive constituents generally exceeded 20 percent of the number of samples collected, depending on the individual constituent and its stability. Duplicate samples for methane, the most volatile of the redox constituents, were collected for nearly 100 percent of the ground-water samples.

Blanks, which totaled approximately 10 percent of the number of ground-water samples, were also analyzed for quality assurance purposes. Equipment blanks were collected using either a peristaltic pump or a Teflon or stainless-steel bailer immediately after the sample collection, and after the equipment had undergone the decontamination procedures that were typically done between wells. Blanks collected for organic constituents used unfiltered organic-free water. Blanks collected for inorganic constituents used inorganic-free water passed through the same filters that were used for the collection of samples for inorganic analyses. Trip blanks were collected by pouring the appropriate type of blank water (inorganic-free water for inorganic trip blanks and organic-free water for organic trip blanks) directly into the sample vials and shipping the vials along with the other samples to be analyzed, to verify that no cross-contamination of samples occurred in transit. Ambient blanks were collected for VOC's only. Organic-free water was poured into a sample vial, and the vial was left open to the atmosphere for about 90 minutes before the vial was capped and shipped to be analyzed. A more detailed discussion of the number of blanks collected during each sampling period and the analytical results for those blanks appears in the section on evaluation of quality-assurance sample data.

Ground-Water and Surface-Water Analytical Methods

Ground-water and surface-water samples were analyzed in the field for unstable constituents such as temperature, specific conductance, and pH, using standard water-quality techniques (Wood, 1976). Major ions, metals, VOC's, and redox-sensitive constituents were analyzed either at NWQL or at an on-site laboratory, using standard analytical methods.

Field Parameters

Water temperature, specific conductance, salinity, turbidity, pH, and dissolved oxygen were measured in the field immediately after collection of unfiltered sample. Alkalinity (as bicarbonate) was measured in the field immediately after collection and filtration of sample through a 0.45-µm membrane filter. Water temperature was measured using thermistor thermometers that had a precision of ± 0.2 °C or alcohol-filled thermometers marked in increments of 0.5 °C. Specific conductance and salinity were measured with a YSI Model 30 salinity-conductivity-temperature meter that was checked daily with at least one standard reference solution. Turbidity was measured using a Hach Model 2100P turbidimeter that was checked daily with three standards. The pH was determined with an Orion 290A pH meter equipped with a gel-filled combination pH electrode and temperature-compensation probe and calibrated with two pH buffers. Alkalinity (as

bicarbonate) was determined by potentiometric titration of continuously stirred samples using 0.16 N sulfuric acid to titrate to a pH of about 3.8. Alkalinity was calculated by locating the maximum of the first derivative of the curve generated from pH as a function of the titrant volume. Dissolved-oxygen concentrations were measured using a modified Winkler colorimetric method (Baedecker and Cozzarelli, 1992) for those piezometers that contained sufficient water volume to fill a 60-mL bottle and allow it to overflow at least 1.5 times its volume. For many piezometers screened in the wetland sediment, dissolved oxygen was not measured because of insufficient water volumes.

Major Ions and Metals

Samples collected for major cations and trace metals were filtered through 0.45-µm membrane filters into polyethylene bottles and acidified immediately to pH less than 2.0 with ultrapure nitric acid. Samples collected for major anions were filtered through 0.45-µm membrane filters but were not treated with preservatives. Analyses of major ions and metals were performed by NWQL. Methods for the NWQL analyses are explained in detail in Fishman (1993). Concentrations of major anions were determined by ion chromatography at NWQL. Concentrations of major cations and trace metals were determined at NWQL by inductively coupled argon plasma spectroscopy, except for the following constituents: potassium and arsenic (atomic absorption), aluminum and boron (direct-current plasma), and lead (graphite furnace atomic absorption).

Volatile Organic Compounds

Samples for analyses of redox-sensitive constituents and VOC's were generally collected before samples for major ions and trace metals. For collection of VOC's, two or three vials were filled for each piezometer with a slow, steady stream of water from the sampling device to minimize aeration. The vials were allowed to overflow with about three volumes of water and then immediately sealed with caps lined with a Teflon septum. Concentrations of VOC's were determined by purge and trap capillary gas chromatography/mass spectrometry (GC-MS). During the reconnaissance phase and the comprehensive phase, VOC samples were collected in 40-mL vials and shipped to NWQL for analysis. During the seasonal sampling phase, VOC's were collected in 8- or 12-mL glass vials and analyzed at the on-site laboratory. The analytical method used at both laboratories is equivalent to USEPA Method 524.2 and is given in Rose and Schroeder (1995). Duplicate samples that were analyzed at the two laboratories showed excellent repeatability, generally agreeing within 20 percent.

Additional samples were collected for analysis of total dissolved organic carbon (DOC) during the summer 1995 sampling period. Samples were filtered through 0.1-µm membrane filters into 12-mL glass vials that contained mercuric chloride as a preservative and were sealed with Teflon-lined septa. Samples were then analyzed at the University of Virginia on an organic carbon analyzer. The method used requires acidification and sparging of the sample to remove inorganic carbon, which also removes VOC's. VOC's are therefore not incorporated into the DOC analyses.

Redox-Sensitive Constituents

Redox-sensitive constituents are molecular or ionic species in which the oxidation number of the central atom increases or decreases depending upon the oxidative or reductive nature of the immediate environment. Redox-sensitive constituents analyzed for this study include manganese, ferrous and ferric iron, sulfide, and methane. In addition, ammonia was determined during the March 1996 seasonal sampling period. Samples were analyzed either by project staff at an on-site laboratory that was located in a mobile trailer built by USACEHR, or at NWQL. All samples were stored on ice in the field and during shipping to NWQL, and then refrigerated until analyzed.

Manganese analyses were performed on filtered samples (0.45 µm) that had been collected in polyethylene bottles and acidified immediately with ultrapure nitric acid to pH less than 2.0. Manganese concentrations were determined at NWQL using inductively coupled argon plasma spectroscopy as described in Fishman (1993).

Samples for the analysis of total dissolved iron were collected and analyzed by NWQL in the same manner as manganese. Ferrous iron and total dissolved iron concentrations, however, also were determined in samples filtered through 0.1-μm filters and immediately treated in the field with reagents specified by the colorimetric bipyridine technique (Brown and others, 1970; Baedecker and Cozzarelli, 1992). Dissolved ferrous and total iron samples were refrigerated for as long as 2 weeks, at which time the absorbance was measured at the on-site laboratory on a Bausch and Lomb Spectronic 21 spectrophotometer at a wavelength of 520 nanometers. Ferric iron concentrations were calculated by subtracting the total ferrous iron concentration from the total iron concentration. In cases in which the ferrous iron concentration was larger than the total dissolved iron concentration, the ferric iron concentration was assumed to be zero.

Initially during the summer of 1995, unfiltered sulfide samples were collected in 10-mL glass syringes and analyzed using the colorimetric method outlined by Baedecker and Cozzarelli (1992). Sulfide samples were reacted in the field with diamine and ferric chloride in an acidic reagent solution to form a methylene blue color complex and were then analyzed within 1 week on a Bausch and Lomb Spectronic 21 spectrophotometer at a wavelength of 670 nm. During the later half of the 1995 comprehensive sampling phase, and in subsequent sampling periods, sulfide was determined on unfiltered samples by a similar colorimetric method, but reagents were obtained in sealed ampules from CHEMetrics (Calverton, Virginia). Samples were analyzed in the field using the CHEMetrics System 1000 kit that includes a portable spectrophotometer. Analyses of duplicate samples showed that the two sulfide methods gave concentrations that agreed within 10 percent. During the March 1996 sampling period, ammonia concentrations also were determined on unfiltered samples from selected piezometers using a CHEMetrics System 1000 colorimetric method.

Methane analyses were performed on unfiltered water samples following the method outlined by Baedecker and Cozzarelli (1992). Unfiltered water was drawn directly from the sampling device (peristaltic pump or bailer) into a 10-mL glass syringe fitted with a three-way stopcock. The methane samples were immediately transferred to sealed serum bottles that contained mercuric chloride as a preservative and that had been flushed with nitrogen gas prior to sample collection. Care was taken during sample collection to minimize contact of the water sample with the atmosphere. Methane samples were analyzed at the on-site laboratory, on a Hewlett Packard 5890 Series II gas chromatograph, using a flame ionization detector.

HYDROGEOLOGIC, WATER-QUALITY, AND SEDIMENT-QUALITY DATA

Hydrogeologic, water-quality, and sediment-quality data were collected by the USGS from October 1992 through August 1996 as part of an investigation of the distribution, fate, and movement of chlorinated VOC's in the wetland study area along the West Branch Canal Creek. Geologic data and sediment-quality data were obtained from soil cores that were collected from the study area during piezometer installation, and hydrologic data were obtained from synoptic water-level measurements and from pressure transducers in selected piezometers. Ground-water- and surface-water-quality data were obtained during an initial sampling of reconnaissance wells, during a comprehensive sampling of the final monitoring network, and during seasonal sampling of a subgroup of piezometers from the network.

Hydrogeologic Data

Between July 1994 and February 1995, before the installation of the final ground-water monitoring network, 3-in.-diameter continuous sediment cores were collected at 18 of the piezometer sites (fig. 4) to determine the lithology and mineralogy of the wetland study area. Lithologic descriptions of the sediment cores were recorded, and selected samples were stored in small plastic containers. The lithologic descriptions for sediment samples collected at selected piezometer sites are presented in tables 2A-2Q. Some sediment samples were later sent to the USGS Geologic Division, Branch of Geochemistry, for mineralogic and elemental analyses, and to the U.S. Army Corps of

Engineers Waterways Experiment Station for sieve analysis and analysis of total organic carbon. Grain-size distributions obtained from the sieve analyses are shown in table 3. Mineralogy was analyzed by X-ray diffraction. The mineralogy of the Canal Creek aquifer and wetland sediments is presented in table 4. The total organic carbon content of selected sediment samples from the aquifer and wetland sediments is shown in table 5.

Hydrologic data were collected to evaluate the effects of advection and dispersion on contaminant concentrations in the ground water in the aquifer and wetland sediments and to estimate the ground-water flux rates from the aquifer to the wetland sediments and to the creek. Synoptic water-level measurements were taken approximately monthly in the piezometers of the final monitoring network between March 1995 and October 1996. Synoptic water-level data are presented in table 6. Water levels were measured at high and low tides to determine the tidal influence on ground-water movement. No water-level measurements were made during most of December 1995 and January 1996 due to the Government shutdown and furlough.

Pressure transducers were installed in several 2-in.-diameter piezometers to record continuous water-level data. These pressure transducer wells are located in the piezometer nests and are named after the nearest 0.75-in. piezometer followed by ".1" after the well name; for example, WB25C.1 is the pressure transducer well located alongside piezometer WB25C. Representative hydrographs from the pressure transducers, along with tide gage and rainfall data, are on file in the USGS Maryland-Delaware-D.C. District office in Baltimore, Md.

Ground-Water-Quality Data

Ground-water samples were collected in three phases--the reconnaissance phase (June to August 1993); the comprehensive sampling phase (June to October 1995), which included 89 of the 0.75-in.-diameter piezometers of the final monitoring network; and the seasonal sampling phase (November 1995 to August 1996), which included selected piezometers from the final monitoring network. Data from the analysis of ground-water samples collected throughout this study are presented in tables 7 through 15.

Reconnaissance Sampling Phase

Ground-water and surface-water samples collected during the reconnaissance phase (June to August 1993) were analyzed for field parameters (such as pH and temperature), inorganic constituents, organic constituents, and redox-sensitive constituents. Results of the reconnaissance phase sampling were used to plan the placement of the piezometers for the final monitoring network.

Field Parameters and Inorganic Constituents

Data for field parameters and inorganic constituents in ground-water and surface-water samples collected in June and July 1993 for the reconnaissance phase are presented in table 7A. Data for field parameters and inorganic constituents in ground-water and surface-water samples collected in August 1993 for the reconnaissance phase are presented in table 7B. Unstable field parameters measured during the reconnaissance phase included specific conductance, pH, air temperature (June and July only), water temperature, dissolved oxygen, and alkalinity (as bicarbonate). Major ions, including calcium, magnesium, sodium, potassium, sulfate, chloride, and fluoride, were analyzed in June and July (table 7A), and in August (table 7B). Trace metals were only analyzed in samples collected in June and July (table 7A). Nitrogen species and phosphate were only analyzed in samples collected in August (table 7B).

Organic Constituents

Data for the organic constituents in ground-water and surface-water samples collected in June and July 1993 are presented in table 8A. Data for the organic constituents in ground-water and surface-water samples collected in August 1993 are presented in table 8B. The chlorinated solvents and their degradation products are grouped together at the beginning of these tables. The chlorinated ethanes appear first, with the most heavily-substituted compounds preceding the lighter compounds, so that 1,1,2,2-tetrachloroethane appears first, followed by 1,1,2-trichloroethane. The chlorinated ethenes appear next, starting with tetrachloroethene and ending with vinyl chloride, followed by the chlorinated

methanes, carbon tetrachloride and chloroform. The non-chlorinated VOC's, methane and toluene, are listed last in the tables.

Redox-Sensitive Constituents

Concentration data for individual redox-sensitive constituents were necessary to determine the degree to which the ground water sampled was aerobic or anaerobic, and if anaerobic, to determine the predominant redox processes (for example, methanogenesis, sulfate reduction, or iron reduction) in the ground water. Data for redox-sensitive constituents in ground-water and surface-water samples collected in June and July 1993 are presented in table 9A. Data for redox-sensitive constituents in ground-water and surface-water samples collected in August 1993 are presented in table 9B. Redox-sensitive constituents analyzed during the reconnaissance phase included bicarbonate, dissolved oxygen, iron species, sulfide, and methane.

Comprehensive Sampling Phase

Ground-water samples were collected from June to October 1995 from the 89 drive-point piezometers of the final monitoring network located along transects A-A' and C-C' (fig. 4), to determine the distribution of chlorinated solvents and other contaminants throughout the marsh sediment and the underlying aquifer, and to characterize the factors and processes that influence the environmental fate of those contaminants. Samples were analyzed for field parameters, such as pH, temperature, specific conductance; inorganic constituents, including major ions and trace metals; organic constituents, including chlorinated solvents, their degradation products, and non-chlorinated VOC's; and redox-sensitive constituents, such as methane, ferric and ferrous iron, and sulfide.

Field Parameters and Inorganic Constituents

Data for field parameters and inorganic constituents in ground-water and surface-water samples collected during the comprehensive sampling phase are presented in table 10. Field parameters are listed first, followed by major cations and major anions, and then trace metals are listed in alphabetical order. Dissolved oxygen was not analyzed for many of the shallowest wells (those with well numbers ending in A or B) (table 10) because their well volumes were insufficient to allow collection of an unaerated 60-mL sample needed for the Winkler titration.

Organic Constituents

Data for the organic constituents in ground-water samples collected during the comprehensive sampling phase are presented in table 11. The chlorinated solvents of interest and their degradation products are grouped together at the beginning of the table. The chlorinated ethanes appear first, with the most heavily-substituted compounds preceding the lighter compounds, so that 1,1,2,2-tetrachloroethane appears first, followed by 1,1,1,2-tetrachloroethane, 1,1,2-trichloroethane, and so on, ending with chloroethane. The chlorinated ethenes appear next, starting with tetrachloroethene and ending with vinyl chloride, followed by the chlorinated methanes, carbon tetrachloride and ending with methyl chloride. The remaining VOC's of lesser interest are listed after the groups of chlorinated solvents. Many analytes were not detected in any of the samples and therefore were not included in table 11. The following table lists the compounds that were analyzed but not detected, and their reporting limits in micrograms per liter:

Compounds that were analyzed but not detected, and their reporting limits in micrograms per liter:

Compound	Reporting limit (µg/L)	Compound	Reporting limit (µg/L)
Dibromomethane	0.2	Dibromochloropropane	1.0
Bromoform	.2	Isopropylbenzene	.2
Methyl bromide	.2	*N*-propylbenzene	.2
1,3-Dichlorobenzene	.2	2-Chlorotoluene	.2
2-Chloroethyl Vinyl Ether*	1.0	4-Chlorotoluene	.2
Dichlorodifluromethane	.2	Bromochloromethane	.2
trans-1,3-Dichloropropene	.2	*N*-Butylbenzene	.2
cis-1,3-Dichloropropene	.2	*sec*-Butylbenzene	.2
Styrene	.2	t*ert*-Butylbenzene	.2
1,1-Dichloropropene	.2	1,2-Dibromoethane	.2
2,2-Dichloropropene	.2	Freon-113*	.2
1,3-Dichloropropane	.2	Bromobenzene	.2

* These two compounds were only analyzed in samples sent to NWQL.

Of the 88 wells sampled for organic constituents during the comprehensive sampling phase, samples collected from 78 of the wells were analyzed by NWQL, using EPA Method 524.2 as described by Rose and Schroeder (1995). The remaining 10 wells were shallow and had very small well volumes, which necessitated the use of a much smaller sample vial than was required by NWQL. Samples from these 10 wells were analyzed in the on-site laboratory trailer, using the same method as was used by NWQL. Four of the 78 wells sampled for organic constituents had split samples analyzed by both laboratories so that the results from the on-site laboratory could be compared to the results from NWQL. The letters "N" and "O" are used on table 11 to differentiate samples analyzed at NWQL and at the on-site laboratory, respectively. A comparison of relative percent differences (RPD's) of each laboratory, and of split samples between the two laboratories is presented in the section on evaluation of quality-assurance sample data.

The reporting limits used in the tables are the method detection limits that have been reached by both laboratories. VOC's that are not detected in a sample are considered to be lower in concentration than the method detection limit of 0.02 µg/L, with the exception of dibromochloropropane, 2-chloroethyl vinyl ether, and p-isopropyltoluene, which have method detection limits of 1.0 µg/L. For VOC concentrations greater than the method detection limit but lower than the lowest standard of calibration, the concentration is reported as less than the concentration of the lowest calibration standard. For VOC concentrations greater than the range of calibration, the concentration is reported with an "E" code to indicate that the concentration is estimated.

Redox-Sensitive Constituents

Data for redox-sensitive constituents in groundwater samples collected during the comprehensive sampling phase are presented in table 12. Sulfide samples were analyzed on site, using two different

methods that were described previously. The letters "s" and "k" are used on table 12 to designate which samples were analyzed using the generic colorimetric (syringe) method and the CHEMetrics method, respectively. Methane samples were collected in duplicate and analyzed at the on-site laboratory. For each duplicate pair, the higher of the two methane concentrations was reported.

Seasonal Sampling Phase

During the seasonal sampling phase, ground-water samples were collected from 28 to 30 selected piezometers in four sampling periods--November to December 1995, March to April 1996, June 1996, and August 1996--to characterize seasonal effects on contaminant concentrations. The wells sampled during the seasonal phase were 0.75-in.-diameter piezometers selected from the final monitoring network, plus one of the reconnaissance-phase piezometers, DP-1A.

The first seasonal sampling period took place in November to December 1995. Sample collection and analysis was interrupted by the Government shutdown and furlough, which took place from December 18, 1995 to January 5, 1996. Most of the seasonal-phase wells in the A-A' transect (sites WB19, and WB20 through WB27) were sampled for all constituents. Some of the wells in the C-C' transect (sites WB30 through WB37) were sampled for all constituents, some were sampled for only a few constituents, and some were not sampled at all. Only a small percentage of the ground-water samples that had been collected were analyzed before the onset of the Government shutdown. Of the 28 piezometers that were to have been sampled during the first seasonal sampling period, only 2 piezometers (WB25C and WB26F) have complete data for all of the constituents that were sampled for. Heavy snowfall and freezing conditions following the Government shutdown prevented resumption of sampling activities until spring.

The second seasonal sampling period took place from March to April 1996. The third sampling period took place in June 1996. The fourth sampling period took place during August 1996 and included two 4-in.-diameter wells, CC-27A and CC-27B, that had been installed during the previous (1985-92) investigation of the Canal Creek area by the USGS (Lorah and Clark, 1996).

Field Parameters and Inorganic Constituents

Data for field parameters and inorganic constituents in ground water collected during the seasonal sampling phase are presented in table 13. Field parameters are listed first, followed by major cations and major anions, and then trace metals are listed in alphabetical order. Dissolved oxygen was not analyzed in many of the shallowest wells (those with well numbers ending in A or B) (table 13) because their well volumes were insufficient to allow collection of an unaerated 60-mL sample needed for the Winkler titration.

Data for the first sampling period (November to December 1995) include field parameters for the 20 piezometers that were at least partially sampled before the Government shutdown, and for major ions and trace metals for wells WB25C and WB26F (table 13). Data for the second, third, and fourth seasonal sampling periods include field parameters and major ions (but not trace metals) for all 28 of the seasonal-phase piezometers, and for CC-27A and CC27B in the fourth seasonal sampling period (August 1996) (table 13).

Organic Constituents

Data for the organic constituents in ground-water samples collected during the seasonal sampling phase are presented in table 14. The chlorinated solvents of interest and their degradation products are grouped together at the beginning of the table. The chlorinated ethanes are listed first, with heavier compounds preceding the lighter ones, so that 1,1,2,2-tetrachloroethane appears first, followed by 1,1,1,2-tetrachloroethane, 1,1,2-trichloroethane, and so on, ending with chloroethane. The chlorinated ethenes are listed next, starting with tetrachloroethene and ending with vinyl chloride, followed by the chlorinated methanes, starting with carbon tetrachloride and ending with methyl chloride. The remaining VOC's of lesser interest are listed after the groups of chlorinated solvents. Many of the compounds that were analyzed were not detected in any of the samples and therefore were not included in table 14.

The following table lists the compounds that were analyzed but not detected, and their reporting limits in micrograms per liter:

Compound	Reporting limit (µg/L)	Compound	Reporting limit (µg/L)
Dibromochloromethane	0.2	1,2,4-Trimethylbenzene	0.2
Dibromomethane	.2	Isopropylbenzene	.2
Bromoform	.2	*N*-propylbenzene	.2
Ethyl benzene	.2	1,3,5-Trimethylbenzene	.2
Methyl bromide	.2	2-Chlorotoluene	.2
1,2-Dichlorobenzene	.2	4-Chlorotoluene	.2
1,2-Dichloropropane	.2	Bromochloromethane	.2
1,2,4-Trichlorobenzene	.2	*N*-Butylbenzene	.2
1,3-Dichlorobenzene	.2	*sec*-Butylbenzene	.2
Dichlorodifluromethane	.2	*p*-Isopropyltoluene	1.0
Napthalene	.2	1,2,3-Trichloropropane	.2
trans-1,3-Dichloropropene	.2	1,2-Dibromoethane	.2
cis-1,3-Dichloropropene	.2	Freon-113*	.2
Styrene	.2	Methyl tert-butyl ether*	.2
1,1-Dichloropropene	.2	Xylene	.2
2,2-Dichloropropene	.2	Bromobenzene	.2
1,3-Dichloropropane	.2	1,2,3-Trichlorobenzene	.2
Dibromochloropropane	1.0		

* These two compounds were only analyzed in samples sent to NWQL.

During the first seasonal sampling period (November to December 1995), ground-water samples from 13 piezometers were analyzed for VOC's in the on-site laboratory, and two split-samples were analyzed by NWQL for comparison (table 14). During the second seasonal sampling period (March to April 1996), ground-water samples from 28 piezometers were analyzed for VOC's in the on-site laboratory, and one split-sample was analyzed by NWQL. During the third seasonal sampling period (June 1996), ground-water samples from 28 piezometers were analyzed for VOC's in the on-site laboratory, and two split-samples were analyzed by NWQL. During the fourth seasonal sampling period (August 1996), ground-water samples from 28 piezometers and two 4-in.- diameter wells (CC-27A and CC-27B) were analyzed for VOC's in the on-site laboratory, and three split-samples were analyzed by NWQL. The letters "N" and "O" are used in table 14 to differentiate samples analyzed at NWQL and at the on-site laboratory, respectively. A

comparison of RPD's between duplicate sample pairs analyzed at the on-site laboratory, and of split samples between the on-site laboratory and NWQL is presented in the section on evaluation of quality-assurance sample data.

Redox-Sensitive Constituents

Data for redox-sensitive constituents in ground-water samples collected during the seasonal sampling phase are presented in table 15. All sulfide samples were analyzed on-site, using the CHEMetrics method, described previously. Iron, sulfide, and methane were analyzed during all four seasonal sampling periods. In addition, ammonia was determined during the March 1996 seasonal sampling period. Methane samples were collected in duplicate and analyzed at the on-site laboratory. For each duplicate pair, the higher of the two methane concentrations was reported.

Porous-Membrane Sampling Devices

In addition to the ground-water samples collected from the network of drive-point piezometers, porous-membrane sampling devices, or "peepers," were used to obtain ground-water samples over 1-in.-depth intervals in the shallow wetland sediment. Peepers were installed near specific piezometers nests along transects A-A' and C-C' (fig. 4) and were allowed to equilibrate with the surrounding pore water for about 3 weeks before sampling. The peeper site numbers are designated by the letter "P", followed by the corresponding piezometer site number, so that P35 is the peeper site near the piezometer cluster WB35. Sometimes two peepers were installed at the same time and at the same peeper site, a few feet apart from each other. These peepers are differentiated by the letters "a" and "b" in the site number. The following table lists the sites at which peepers were installed and the dates on which they were sampled.

Peeper sites	Date sampled
P26	10/04/1995
P24, P25, P26	10/25/1995
P35a, P35b, P37	11/03/1995
P25, P26a, P26b	12/15/1995
P35a, P35b	03/26/1996
P36, P37	04/03/1996
P36	06/26/1996
P35a, P35b	06/28/1996

Peeper samples were analyzed for VOC's and methane only, and all samples were analyzed at the on-site laboratory. Data from the June 28, 1996, sampling of peeper P35b appear in table 16. Data from the remaining peepers are on file at the USGS Maryland-Delaware-D.C. District office in Baltimore, Md.

Evaluation of Quality-Assurance Sample Data

Throughout all phases of ground-water sampling, quality-assurance samples were collected to determine the degree to which the data were reproducible and unbiased by systematic error.

The number of blanks and duplicate samples collected are shown in the following table:

Sampling phase	Analyte group	Number of well samples	Duplicate pairs	Split samples	Equipment blanks		Trip blanks	Ambient blanks
					Pump	Bailer		
Reconnaissance phase:								
June-July 1993	Inorganic	18	2	n/a	n/a	1	0	n/a
	Organics	18	2	n/a	n/a	1	1	1
August 1993	Inorganics	16	2	n/a	n/a	1	0	n/a
	Organics	16	2	n/a	n/a	1	1	0
Comprehensive sampling phase:								
June-October 1995	Inorganics	83	10	n/a	8	4	6	n/a
	Organics	89	12	4	8	4	6	3
Seasonal sampling phase:								
November-December 1995 [interrupted by Government downtown]	Inorganics	2	1	n/a	1*	1*	0	n/a
	Organics	13	1	2	0	0	0	0
March-April 1996	Inorganics	28	2	n/a	2	0	0	n/a
	Organics	28	6	1	2	1	1	1
June 1996	Inorganics	30	3	n/a	1	2	0	n/a
	Organics	28	4	2	1	2	0	0
August 1996	Inorganics	31	3	n/a	1	2	0	n/a
	Organics	30	9	3	1	2	1	0
Summary	Inorganics	208	23	n/a	13	11	6	n/a
	Organics	222	36	12	12	11	10	5

[n/a, not applicable; *, blanks were collected but not analyzed due to Government shutdown and furlough].

Quality-Assurance Blanks

Throughout all phases of ground-water sampling (with the exception of the November to December 1995 seasonal sampling period cut short by the Government shutdown and furlough), the number of blanks collected was at least 10 percent of the number of ground-water samples collected. Chemical data for the inorganic and organic blanks are given at the end of the data tables (tables 7, 8, 10, 11, 13, and 14) for each sampling period, immediately following the sample data. An explanation of each type of blank and description of how each was collected was presented earlier in the section on ground-water and surface-water sampling methods. Blanks were evaluated by identifying all occurrences of analyte concentrations exceeding the reporting limit and then assessing these occurrences for patterns that may indicate bias in the data.

Data for quality-assurance blanks for the redox-sensitive constituents varied widely in format and are not presented in this report. No redox-sensitive constituents were detected above the reporting limits in any of the blanks.

Inorganic Constituents

For the inorganic constituents, an appraisal of the blank data indicates no gross overall patterns of bias with respect to sampling period or sampling date. Several of the inorganic constituents were detected infrequently in blanks, and these detections were typically near or at the reporting limit. Bias was discovered, however, with respect to seven inorganic constituents--specifically sulfate, chloride, bromide, silica, dissolved cadmium, dissolved iron, and dissolved manganese.

Sulfate, which has a reporting limit of 0.1 mg/L was detected in 4 of 28 blanks, with concentrations ranging from 0.1 to 1.7 mg/L, including a detection of 0.8 mg/L in a trip blank. Chloride, with a reporting limit of 0.1 mg/L, was detected in 6 of 28 blanks, with concentrations ranging from 0.1 to 1.0 mg/L. Bromide, with a reporting limit of 0.01 mg/L, was detected in 6 of 28 blanks, at concentrations ranging from 0.03 to 0.10 mg/L. Silica, with a reporting limit of 0.01 mg/L, was pervasive, with detections in 20 of 28 blanks (including 3 trip blanks), with concentrations ranging from 0.01 to 0.20 mg/L. Dissolved cadmium, with a reporting limit of 1 µg/L, was detected in 5 of 19 blanks (including 2 trip blanks) in which it was analyzed, with concentrations ranging from 1 to 3 µg/L. Dissolved iron, with a reporting limit of 3 µg/L, was also common, with detections in 14 blanks, ranging from 3 to 22 µg/L, including detections of 7 and 9 µg/L in 2 trip blanks. Dissolved manganese, with a reporting limit of 1 µg/L, was detected in 7 of 28 blanks (including 1 trip blank), with concentrations ranging from 1 µg/L to 10 µg/L. The detections of inorganic constituents in equipment blanks may have been caused in part by cross-contamination from the equipment (bailer or peristaltic pump) used to collect both the ground-water samples and the blanks. The fact that some of the inorganic constituents were detected in trip blanks, however, suggests the possibility of inorganic contaminants in the inorganic-free water that was used for the blanks, or contamination during sample handling, or laboratory contamination during sample analysis at NWQL.

Organic Constituents

Organic constituents for the reconnaissance phase and the comprehensive sampling phase were primarily analyzed by NWQL. Organic constituents for the seasonal sampling phase were primarily analyzed by the on-site laboratory. With the exception of five individual compounds that are discussed later in more detail, VOC's were rarely detected in the blanks, and detections were usually at or near the reporting limit. The five VOC's that demonstrated noticeable positive bias were methylene chloride, 1,1,2,2-tetrachloroethane (PCA), trichloroethane (TCE), carbon tetrachloride, and chloroform. For all but methylene chloride, contamination appeared most frequently in the pump blanks, although some bailer blanks were also affected. Methylene chloride was detected in almost all of the blanks analyzed by NWQL, including most of the ambient and trip blanks, in concentrations ranging from 0.4 to 2.1 µg/L, and in two of the blanks analyzed at the on-site laboratory, both with concentrations of 0.6 µg/L. Methylene chloride is

a common laboratory contaminant, and therefore, methylene chloride detections in samples analyzed by NWQL may have a positive bias of up to 2.1 µg/L, and detections in samples analyzed by the on-site laboratory may have a positive bias of up to 0.6 µg/L.

The other four organic compounds that were frequently detected in blanks are more likely the result of cross-contamination from the sampling equipment, although laboratory contamination may also have contributed somewhat to the positive bias. Cross-contamination from sampling equipment was more apparent in blanks that had been collected using the peristaltic pumps, which were used to sample the deeper and more heavily contaminated piezometers, than those collected by the bailers. Water samples collected with the peristaltic pumps were in contact with a very large surface area of the several feet of tygon tubing used to collect the sample, compared to the much smaller surface area of stainless steel of the bailers. Where cross-contamination was suspected, percent "carry-over" was calculated using the following formula:

$$\text{Percent carry-over} = \frac{\text{Concentration in blank}}{\text{Concentration in previous sample}} \times 100 \text{ percent.} \quad (1)$$

PCA was detected in 7 of 26 blanks analyzed by NWQL, in concentrations ranging from 0.7 to 4.0 µg/L, and in 6 of 12 blanks analyzed by the on-site laboratory, with concentrations ranging from 1.3 to 35 µg/L. The detection of 35 µg/L of PCA occurred in a pump blank that was collected on March 14, 1996, immediately following the sampling of piezometer WB35C, which had a PCA concentration of 170 µg/L (average of duplicate samples) (table 14), and the percent of carry-over of PCA from the sampling equipment to the blank was calculated to be about 20 percent. The percentages of carry-over for other detections of PCA in pump blanks were less than 10 percent.

TCE was detected at very low levels in three blanks from the comprehensive sampling phase that were analyzed by NWQL (table 11). TCE was also detected at concentrations ranging from 3.4 to 15 µg/L in 4 of 12 blanks analyzed by the on-site laboratory (table 14). The detection of 15 µg/L occurred in a pump blank taken on August 14, 1996, immediately following the sampling of piezometer WB25C, which had a TCE concentration of 136 µg/L (average of duplicate samples) (table 14), and the percent of carry-over from the pump to the blank was calculated to be about 11 percent. Percentages of carry-over for other detections of TCE in pump blanks were lower than 10 percent.

Carbon tetrachloride was detected in 3 of 26 blanks analyzed by NWQL and in 4 of 12 blanks analyzed at the on-site laboratory, with concentrations ranging from 0.3 to 9.5 µg/L (tables 11 and 14). Chloroform was detected in 4 of 26 blanks analyzed by NWQL and in 4 of 12 blanks analyzed by the on-site laboratory, with concentrations ranging from 1.0 to 23 µg/L. The highest detections of both carbon tetrachloride (9.5 µg/L) and chloroform (23 µg/L) in a blank occurred in the pump blank taken on August 14, 1996, immediately following the sampling of piezometer WB25C (table 11), which had 125 µg/L of carbon tetrachloride and 225 µg/L of chloroform (average concentrations of the duplicates). The percent of carry-over from the well sample into the blank was calculated to be 7.6 percent for carbon tetrachloride and 9.8 percent for chloroform. The percentages of carry-over for carbon tetrachloride and chloroform in other pump blanks were generally less than 7 percent.

Cross-contamination associated with the peristaltic pump primarily affected pump blanks collected during the seasonal sampling phase. The pump blanks collected during the comprehensive phase generally showed only very low concentrations or no detections of VOC's, and detections were not necessarily attributable to cross-contamination from the equipment. Bailer blanks in all phases showed only near detection-limit concentrations or no detections of organic constituents.

Quality-Assurance Duplicates and Split Samples

For each analyte, duplicate pairs were divided into three categories: (1) pairs in which the analyte concentrations were below either the detection or reporting limit for both samples, (2)

pairs in which the analyte concentrations were below the detection or reporting limit for one sample but not the other, and (3) pairs in which the analyte concentrations were above the detection limit for both samples. Only pairs in which analyte concentrations were above the detection limit for both samples were used for further statistical analyses. For samples that were analyzed in triplicate, a duplicate pair was randomly selected for statistical analysis. RPD's were calculated for each analyte in each duplicate pair using the following formula:

$$RPD = \frac{C_1 - C_2}{(C_1 + C_2)/2} \quad X \ 100 \ percent, \ (2)$$

where:

RPD is the relative percent difference,

C_1 is the concentration in the first sample, and

C_2 is the concentration in the duplicate.

During each phase of sampling, approximately 10 percent of the ground-water samples were collected in duplicate. A greater number of duplicate samples were collected for organic constituents than for inorganic constituents because the organic constituents typically exhibit a greater degree of variability than the inorganic constituents. The number of duplicate samples collected for redox-sensitive constituents generally exceeded 20 percent of the number of samples collected, depending on the individual constituent and its stability. Duplicate samples for methane, the most volatile of the redox constituents, were collected for nearly all of the ground-water samples.

Inorganic Constituents

The RPD's between duplicate samples were calculated for each inorganic constituent, and the results were evaluated to determine which factors, if any, affected the reproducibility of the analyses.

Overall, RPD's of inorganic duplicate pairs showed no bias with respect to sampling period or sampling date. RPD's were also not dependent upon analyte concentrations or sampling method. Mean RPD's, however, varied in range and distribution among individual inorganic constituents. For most of the inorganic constituents, RPD's were less than 10 percent for all of the duplicate pairs. Sulfate, fluoride, aluminum, cobalt, and zinc had RPD's less than 10 percent for all but one or two duplicate pairs (fig. 6). Arsenic, beryllium, cadmium, and silver each had one duplicate pair with an RPD greater than 10 percent, but had too few duplicate pairs for a meaningful evaluation of reproducibility (fig. 6). Five inorganic constituents--bromide, iron, lithium, nickel, and zinc--each had several duplicate pairs with RPD's greater than 10 percent, and the mean RPD's for these constituents also exceeded 10 percent (fig. 6). The poor reproducibility of bromide, iron, lithium, nickel, and zinc concentrations in samples may be the result of natural variability in the concentrations of these compounds in the ground water, or from chemical processes that may have acted upon the sample water during handling or analysis. Any evaluation of the sample data should be done with the understanding that the concentrations of these five constituents may not be absolutely representative of the concentrations in the ground water.

Organic Constituents

The RPD's between duplicate samples for each organic constituent were evaluated to determine which factors affected the reproducibility of the analyses. Because two different laboratories were used to analyze the organic compounds, the mean RPD's for each laboratory and for split samples between them were calculated and are presented in the following table:

Analysis of duplicate pairs	Mean RPD
NWQL	17.5
On-site laboratory	14.6
Split samples between laboratories	20.1

A comparison of mean RPD's between the on-site laboratory and NWQL indicates that reproducibilities within sample pairs analyzed at the on-site laboratory are better than those analyzed at NWQL, although reproducibilities for organic compounds for both laboratories were generally good (less than 20 percent).

The lower RPD achieved by the on-site laboratory may have been an artifact of the sampling strategy, which can be seen by plotting the distribution of RPD's for organic constituents for each laboratory, and for the split samples between laboratories (fig. 7). The comprehensive sampling phase is the grouping of points on the left, from June to late November 1995, during which most of the samples were analyzed by NWQL (symbolized by X's in figure 7). The seasonal sampling phase had one duplicate pair in the first seasonal sampling period in December 1995, followed on the right by three groups of points for the other three seasonal sampling periods. Most of the samples analyzed during the seasonal sampling phase were analyzed by the on-site laboratory (symbolized by triangles in figure 7). The piezometers that were sampled during the four seasonal periods were selected based on criteria that included reasonably short recovery times, and therefore the duplicate pairs collected during the seasonal phase may have a lower degree of variability between duplicates due to sampling bias, and not laboratory performance. Split samples, which were analyzed by both laboratories, were collected throughout the comprehensive and seasonal sampling phases (symbolized by the black circles in figure 7), and the concentrations of organic analytes in the split samples were usually in agreement.

Another source of reproducibility bias between duplicate pairs, which is indicated by high RPD's, is low analyte concentration. Instrument precision usually decreases with decreasing analyte concentration. Sample pairs that had very high RPD's (greater than 40 percent) tended to be samples in which analyte concentrations were less than 10 µg/L (fig. 8).

Redox-Sensitive Constituents

Redox-sensitive constituents analyzed for this study included manganese, ferrous and ferric iron, sulfide, and methane. In addition, ammonia was determined during the March 1996 seasonal sampling period. Manganese, ferrous and ferric iron, and sulfide were reported in the tables of field parameters and inorganic constituents (tables 9A, 9B, 12, and 15), and the RPD's between sample pairs of these constituents were evaluated in the previous section on inorganic constituents.

Methane samples were generally collected in duplicate and were analyzed at the on-site laboratory. Methane samples were analyzed by headspace methods to avoid error associated with methane gas leaving the liquid phase of the sample. Care was taken during sample collection to minimize contact of the water sample with the atmosphere. RPD's between methane duplicate pairs were typically less than 20 percent. A few sample pairs differed by more than 100 percent, due to loss of methane gas from one of the samples of the pair during sample collection, or from variations in the ground-water chemistry. For each duplicate pair of methane analyses, the higher concentration was reported.

Surface-Water-Quality Data

Water-quality data for surface-water samples collected by an ISCO automatic sampler near piezometer site WB27 from June 1995 to March 1996 are presented in table 17. Specific conductance and pH were measured in these samples, and major ions were analyzed by NWQL. Quality-assurance samples specific to surface water were not collected, but the analyses were performed over the same time period and used the same methods that were used for the ground-water samples, and therefore, the previous discussion of positive bias for chloride, bromide,

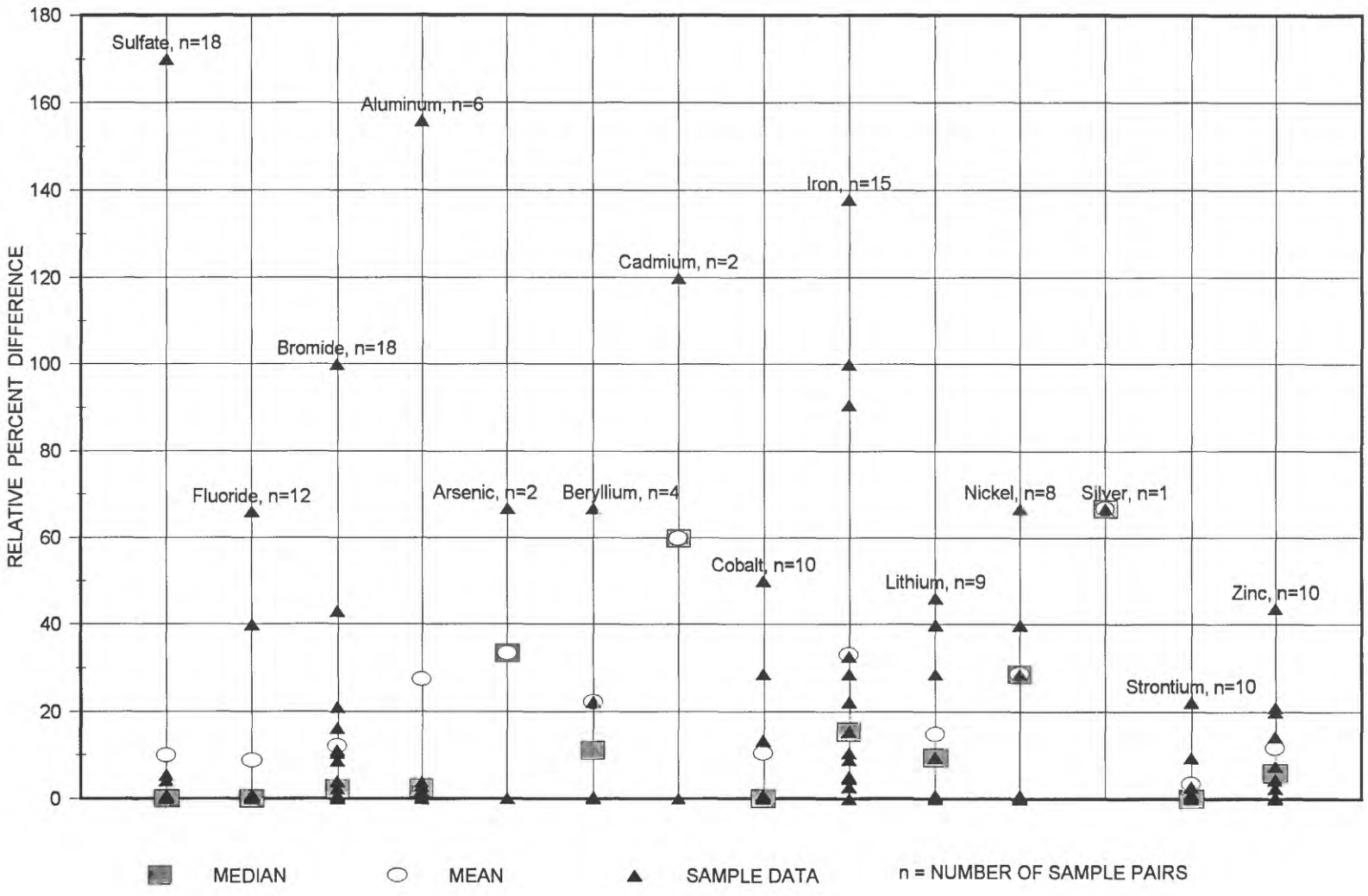


Figure 6. Inorganic constituents with relative percent differences greater than 10 percent for at least 1 duplicate sample pair

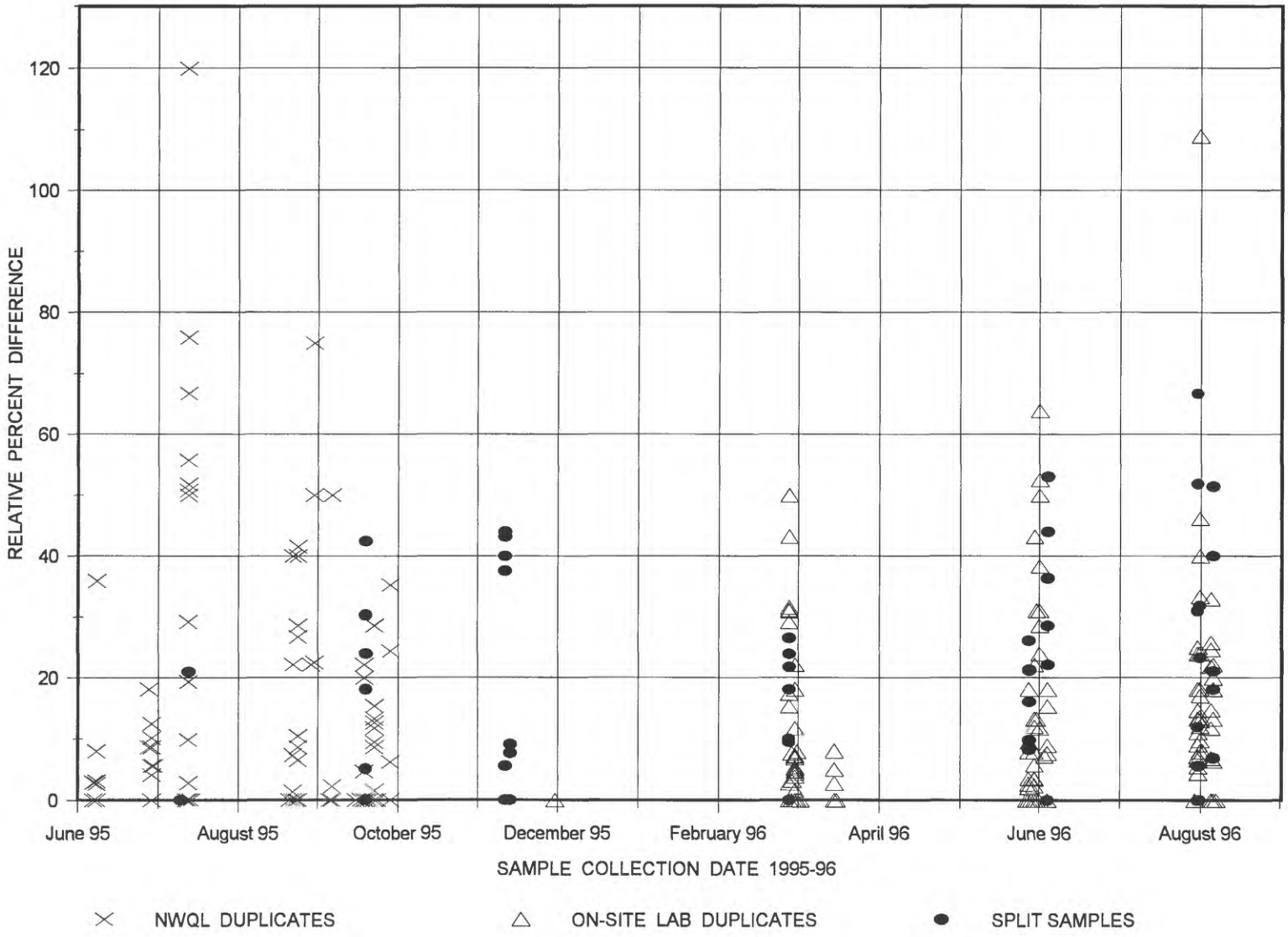


Figure 7. Relative percent differences between duplicate pairs for each laboratory and between split samples for organic constituents.

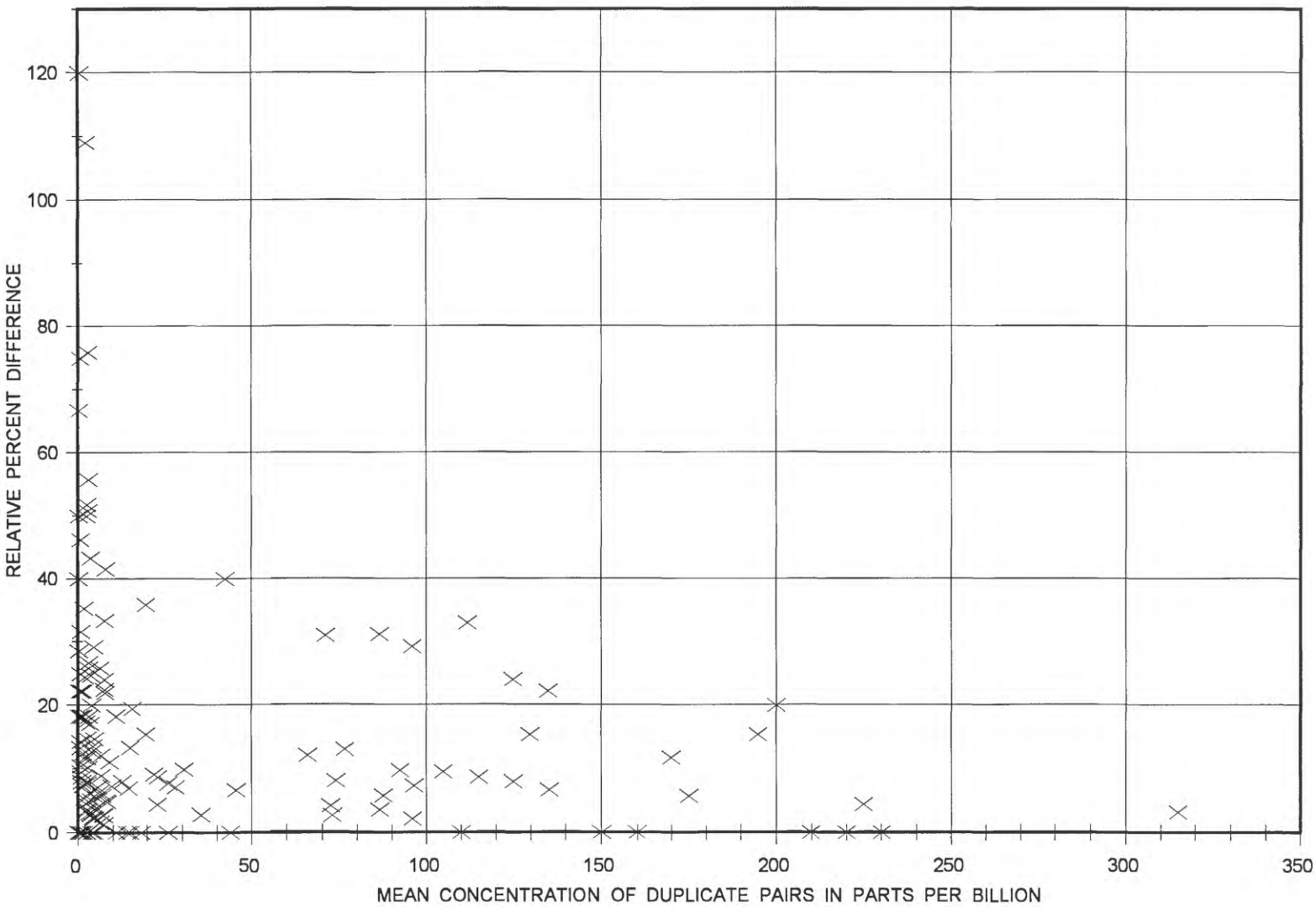


Figure 8. Relative percent differences and mean concentrations of duplicate pairs of organic constituents.

silica, dissolved iron, and dissolved manganese is probably applicable to analyses of these constituents in surface-water samples.

Sediment-Quality Data

Selected sediment samples were collected as continuous soil cores during the installation of the final monitoring network. Seventeen of the nineteen sediment-quality sampling sites were the same piezometer nest sites from which soil cores were collected for geologic data. One sediment-quality sampling site, WB21.4, was added at piezometer nest site WB21. Another site, WB43, was added between DP-1A and WB26 (fig 4). Sediment samples were analyzed for inorganic constituents and also for VOC's to determine sorbed concentrations. Chemical data for major ions and trace metals in sediment samples collected from each of the hydrogeologic units are presented in table 18.

Percentage of moisture and concentrations of VOC's for selected sediment samples are presented in table 19. Approximately 10 percent of the number of sediment samples were collected in duplicate for VOC analyses. Duplicates of sediment VOC analyses generally agreed within 20 percent.

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TABLES 1 THROUGH 19 FOLLOW

Table 1. Well-construction data for reconnaissance wells and monitoring wells in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[MSL, mean sea level; e, estimated; pressure transducers were installed in wells ending in ".1"]

Well no.	Site identification	Hydrogeologic unit	Well diameter (inches)	Screened interval (feet below land surface)	Land surface elevation (feet above MSL)
		Wells used for reconnaissance-phase sampling			
CC-27A	392343076183301	Canal Creek aquifer	4.0	18.0-23.0	11.2
CC-27B	392343076183302	Canal Creek aquifer	4.0	35.0-40.0	11.4
DP-1A	392346076183501	Wetland sediments, upper peat unit	2.0	1.9- 2.9	1.20
DP-1B	392346076183502	Wetland sediments, lower clayey unit	2.0	6.5- 7.5	1.23
DP-2	392346076183401	Canal Creek aquifer	2.0	5.6- 6.6	1.49
DP-3A	392346076183402	Wetland sediments	2.0	1.6- 2.6	2.11
DP-3B	392346076183403	Wetland sediments	2.0	6.2- 7.2	2.13
DP-4A	392346076183404	Wetland sediments	2.0	3.7- 4.7	1.70
DP-4B	392346076183405	Canal Creek aquifer	2.0	6.6- 7.6	1.76
DP-5	392346076183503	Wetland sediments	2.0	3.7- 4.7	1.36
DP-6	392346076183408	Wetland sediments	2.0	2.6- 3.6	1.78
DP-7	392345076183501	Wetland sediments	2.0	2.7- 3.7	1.70
DP-8A	392347076183301	Wetland sediments	2.0	2.6- 3.6	2.75
DP-8B	392347076183302	Canal Creek aquifer	2.0	7.6- 8.6	2.49
DP-9	392347076183401		2.0	1.6- 2.6	1.65
DP-10	392347076183501	Wetland sediments	2.0	2.8- 3.8	1.37
DP-11	392347076183502	Wetland sediments	2.0	2.8- 3.8	1.48
DP-12	392348076183401	Wetland sediments	2.0	2.6- 3.6	1.05
DP-13	392346076183504	Wetland sediments	2.0	6.6- 7.6	1.50 e
		Wells used in final monitoring network			
WB19A	392354076183701	Wetland sediments, upper peat unit	0.75	1.3- 1.8	1.52
WB19B	392354076183702	Wetland sediments, upper peat unit	.75	4.2- 4.7	1.50
WB19D	392354076183704	Canal Creek aquifer	.75	13.5-14.0	1.51
WB19E	392354076183705	Canal Creek aquifer	.75	28.5-29.0	1.46
WB19F	392354076183706	Canal Creek aquifer	.75	45.0-45.5	1.33
WB20A	392345076183101	Canal Creek aquifer	.75	15.5-16.0	12.18
WB20B	392345076183102	Canal Creek aquifer	.75	21.0-21.5	12.32
WB20E	392345076183105	Canal Creek aquifer	.75	45.0-45.5	12.28
WB21A	392346076183301	Wetland sediments, lower clayey unit	.75	1.5- 2.0	3.00
WB21B	392346076183302	Canal Creek aquifer	.75	6.5- 7.0	3.10

Table 1. Well-construction data for reconnaissance wells and monitoring wells in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Well no.	Site identification	Hydrogeologic unit	Well diameter (inches)	Screened interval (feet below land surface)	Land surface elevation (feet above MSL)
		Wells used in final monitoring network--Continued			
WB21C	392346076183303	Canal Creek aquifer	0.75	13.5-14.0	2.74
WB21D	392346076183304	Canal Creek aquifer	.75	17.5-18.0	3.14
WB21E	392346076183305	Canal Creek aquifer	.75	29.5-30.0	3.10
WB21F	392346076183306	Canal Creek aquifer	.75	36.0-36.5	3.10
WB21G	392346076183307	Canal Creek aquifer	.75	45.0-45.5	3.25
WB22A	392342076183401	Wetland sediments, upper peat unit	.75	1.5- 2.0	2.52
WB22B	392342076183402	Wetland sediments, upper peat unit	.75	7.0- 7.5	2.62
WB22C	392342076183403	Canal Creek aquifer	.75	13.0-13.5	2.52
WB22D	392342076183404	Canal Creek aquifer	.75	17.0-17.5	2.47
WB22E	392342076183405	Canal Creek aquifer	.75	22.0-22.5	2.53
WB23A	392341076183401	Wetland sediments, upper peat unit	.75	0.5- 1.0	1.05
WB23B	392341076183402	Wetland sediments, lower clayey unit	.75	2.2- 2.7	.77
WB23C	392341076183403	Wetland sediments, lower clayey unit	.75	8.5- 9.0	1.06
WB23D	392341076183404	Canal Creek aquifer	.75	12.5-13.0	1.01
WB23E	392341076183405	Canal Creek aquifer	.75	16.0-16.5	.92
WB23F	392341076183406	Canal Creek aquifer	.75	21.0-21.5	1.00
WB24A	392343076183401	Wetland sediments, upper peat unit	.75	0.9- 1.4	1.85
WB24B	392343076183402	Wetland sediments, upper peat unit	.75	3.0- 3.5	1.77
WB24E	392343076183405	Canal Creek aquifer	.75	16.5-17.0	1.85
WB24F	392343076183406	Canal Creek aquifer	.75	28.0-28.5	1.80
WB24C.1	392343076183409	Wetland sediments, upper peat unit	2.0	5.0- 6.0	1.76
WB24D.1	392343076183410	Canal Creek aquifer	2.0	13.0-14.0	1.77
WB25A	392342076183502	Wetland sediments, upper peat unit	.75	0.5- 1.0	1.23
WB25B	392342076183503	Canal Creek aquifer	.75	13.5-14.0	1.20
WB25C	392342076183504	Canal Creek aquifer	.75	15.5-16.0	1.12
WB25C.1	392342076183505	Wetland sediments, upper peat unit	2.0	0.4- 1.4	1.21
WB25D.1	392342076183506	Canal Creek aquifer	2.0	12.0-13.0	1.16
WB26A	392343076183502	Wetland sediments, upper peat unit	.75	1.0- 1.5	.38
WB26B	392343076183503	Wetland sediments, upper peat unit	.75	2.5- 3.0	.47
WB26C	392343076183504	Wetland sediments, upper peat unit	.75	4.0- 4.5	.20
WB26D	392343076183505	Wetland sediments, lower clayey unit	.75	5.5- 6.0	.33
WB26E	392343076183506	Paleochannel	.75	8.8- 9.3	.28
WB26F	392343076183507	Canal Creek aquifer	.75	15.0-15.5	.33
WB26G	392343076183508	Canal Creek aquifer	.75	19.5-20.0	.40
WB26H	392343076183509	Canal Creek aquifer	.75	27.0-27.5	.50

Table 1. Well-construction data for reconnaissance wells and monitoring wells in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Well no.	Site identification	Hydrogeologic unit	Well diameter (inches)	Screened interval (feet below land surface)	Land surface elevation (feet above MSL)
		Wells used in final monitoring network--Continued			
WB26B.1	392343076183511	Wetland sediments, upper peat unit	2.0	2.0- 3.0	0.45
WB27A	392343076183521	Wetland sediments, upper peat unit	.75	1.0- 1.5	- .92
WB27B	392343076183522	Wetland sediments, upper peat unit	.75	3.2- 3.7	- .97
WB27C	392343076183523	Wetland sediments, upper peat unit	.75	4.5- 5.0	- .98
WB27D	392343076183524	Paleochannel	.75	8.2- 8.7	- .88
WB27E	392343076183525	Canal Creek aquifer	.75	15.0-15.5	- .96
WB27F	392343076183526	Canal Creek aquifer	.75	18.0-18.5	- .90
WB27G	392343076183527	Canal Creek aquifer	.75	26.0-26.5	- .90
WB27A.1	392343076183528	Wetland sediments, upper peat unit	2.0	0.7- 1.7	- .94
WB27B.1	392343076183529	Wetland sediments, upper peat unit	2.0	4.5- 5.5	-1.00
WB27D.1	392343076183530	Paleochannel	2.0	9.0-10.0	- .95
WB27E.1	392343076183531	Canal Creek aquifer	2.0	11.8-12.8	- .94
WB28A	392345076183511	Wetland sediments, upper peat unit	.75	1.2- 1.7	.83
WB28B	392345076183512	Wetland sediments, upper peat unit	.75	4.5- 5.0	.84
WB28C	392345076183513	Wetland sediments, upper peat unit	.75	9.0- 9.5	.82
WB28D	392345076183514	Canal Creek aquifer	.75	14.5-15.0	.89
WB28F	392345076183516	Canal Creek aquifer	.75	34.5-35.0	.73
WB28C.1	392345076183517	Wetland sediments, upper peat unit	2.0	9.0-10.0	.75
WB28D.1	392345076183518	Canal Creek aquifer	2.0	14.0-15.0	.81
WB30A	392344076183401	Wetland sediments, upper peat unit	.75	0.9- 1.4	1.45
WB30B	392344076183402	Wetland sediments, lower clayey unit	.75	2.0- 2.5	1.44
WB30C	392344076183403	Wetland sediments, lower clayey unit	.75	4.5- 5.0	1.49
WB30D	392344076183404	Wetland sediments, lower clayey unit	.75	6.5- 7.0	1.41
WB30E	392344076183405	Canal Creek aquifer	.75	12.5-13.0	1.45
WB31A	392345076183401	Wetland sediments, upper peat unit	.75	1.0- 1.5	1.60
WB31B	392345076183402	Wetland sediments, lower clayey unit	.75	3.5- 4.0	1.61
WB31C	392345076183403	Wetland sediments, lower clayey unit	.75	5.5- 6.0	1.61
WB31D	392345076183404	Wetland sediments, lower clayey unit	.75	7.0- 7.5	1.54
WB31E	392345076183405	Canal Creek aquifer	.75	12.8-13.3	1.52
WB32B	392347076183202	Canal Creek aquifer	.75	26.5-27.0	10.77
WB33A	392353076183301	Canal Creek aquifer	.75	8.7- 9.2	2.96
WB33B	392353076183302	Canal Creek aquifer	.75	14.0-14.5	2.95
WB33F	392353076183306	Canal Creek aquifer	.75	42.5-43.0	2.95
WB34A	392348076183411	Wetland sediments, upper peat unit	.75	1.5- 2.0	1.43
WB34B	392348076183412	Canal Creek aquifer	.75	7.3- 7.8	1.37

Table 1. Well-construction data for reconnaissance wells and monitoring wells in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Well no.	Site identification	Hydrogeologic unit	Well diameter (inches)	Screened interval (feet below land surface)	Land surface elevation (feet above MSL)
		Wells used in final monitoring network--Continued			
WB34C	392348076183413	Canal Creek aquifer	0.75	15.0-15.5	1.36
WB34D	392348076183414	Canal Creek aquifer	.75	18.3-18.8	1.35
WB34E	392348076183415	Canal Creek aquifer	.75	26.5-27.0	1.35
WB35A	392354076183402	Wetland sediments, upper peat unit	.75	1.5- 2.0	1.19
WB35B	392354076183403	Wetland sediments, upper peat unit	.75	2.8- 3.3	1.29
WB35C	392354076183404	Canal Creek aquifer	.75	7.2- 7.7	1.27
WB35D	392354076183405	Canal Creek aquifer	.75	13.0-13.5	1.27
WB35E	392354076183406	Canal Creek aquifer	.75	18.0-18.5	1.27
WB35F	392354076183407	Canal Creek aquifer	.75	27.5-28.0	1.31
WB35C.1	392354076183408	Canal Creek aquifer	2.0	6.5- 7.5	1.26
WB36A	392355076183402	Wetland sediments, upper peat unit	.75	1.7- 2.2	1.27
WB36B	392355076183403	Wetland sediments, upper peat unit	.75	2.7- 3.2	.99
WB36C	392355076183404	Canal Creek aquifer	.75	7.1- 7.6	1.04
WB36D	392355076183405	Canal Creek aquifer	.75	13.0-13.5	.98
WB36E	392355076183406	Canal Creek aquifer	.75	18.0-18.5	1.03
WB36F	392355076183407	Canal Creek aquifer	.75	27.5-28.0	1.00
WB36G	392355076183408	Canal Creek aquifer	.75	32.0-32.5	1.09
WB37A	392356076183402	Wetland sediments, upper peat unit	.75	1.7- 2.2	.76
WB37B	392356076183403	Wetland sediments, upper peat unit	.75	2.5- 3.0	.71
WB37C	392356076183404	Canal Creek aquifer	.75	7.1- 7.6	.72
WB37D	392356076183405	Canal Creek aquifer	.75	13.5-14.0	.75
WB37B.1	392356076183409	Wetland sediments, upper peat unit	2.0	2.0- 3.0	.77
WB37C.1	392356076183410	Canal Creek aquifer	2.0	6.3- 7.3	.55

Table 2A. Lithologic log for site WB19 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of the specified interval; alphanumeric codes enclosed in brackets at selected horizons refer to color designations as specified in the Munsell Soil Color Charts (1975) example (2.5Y3/1)]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB19		
Peat, clayey to silty: very wet with abundant fine roots	2.0	2.0
No sample reported	4.0	2.0
Peat, clayey, very dark gray (2.5Y3/1); with common fine roots	10.6	6.6
Sand, clayey, gray, (2.5Y6/1), (fL-mU); with abundant fine roots, minor fine gravel	12.0	1.4
Sand, light gray (10YR7/1), (mU-cU); with common very pale brown (10YR7/4) mottles	14.0	2.0
Sand, very pale brown (10YR/3), (cL-cU); with fine gravel	14.5	.5
Clay, white (10YR8/1); with reddish yellow (7.5YR6/8) clayey sand at top of layer, trace of coarse gravel	15.0	.5
Sand, reddish-yellow (7.5YR6/6), (mL-mU); with common coarse gravel	15.6	.6
No sample reported	18.0	2.4
Sand, pale yellow (2.5Y7.3), (fL-fU); with gray to yellow laminations, trace of iron nodules	19.3	1.3
Sand, reddish-yellow, (fl-fU); with very pale brown laminations	20.0	.7
Sand, white (10YR8/1), (fL-mL); with varying amounts of yellow mottling, trace of coarse gravel and iron nodules	22.6	2.6
No sample reported	26.0	3.4
Sand, reddish-yellow (7.5YR6/8), (mL-vcU); with minor fine to coarse gravel, one clay lamination	28.0	2.0
Sand, white (10YR8/1), (mU-vcL); with minor fine to coarse gravel	29.2	1.2
No sample reported	30.0	.8
Sand, white (10YR8/1), (mU-vcL); with minor fine to coarse gravel, minor red (2.5YR6/6) to dark red (2.5YR4/8) iron concentrations and poorly cemented concretions	34.0	4.0
Sand, white (10YR8/1), (mU-vcU)	36.0	2.0
Sand, white (10YR8/1), (mL-mU); with minor fine to coarse gravel, two large clasts -- 0.2-ft diameter	37.0	1.0
No sample reported	38.0	1.0
Sand, very pale brown (10YR8/3) to white (10YR8/1), (mL-cL) with minor fine gravel	38.9	.9
Gravel, sandy, white (10YR8/1); clasts are fine to coarse subangular, some red staining (10YR5/8)	39.2	.3
No sample reported	40.0	.8
Sand, white (10YR8/1), (mL-mU); with minor to fine coarse gravel, minor yellowish-red (5YR4/6) mottling	46.8	6.8
Clay, gravelly, light gray (10YR7/2); most gravel in lower portion of core	46.9	.1
Sand, white (10YR8/1), (ml-mU)	47.4	.5
Sand, strong brown (7.5YR7/8), (mL-mU); with common fine gravel	48.2	.8
Sand, very pale brown (10YR8/2), (mL-cU); with common fine to coarse gravel	48.8	.6
Clay, sandy, light gray (10YR7/1); with common strong brown mottles	50.0	.2

Table 2A. Lithologic log for site WB19 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB19--Continued		
Sand, yellowish-brown (10YR6/4), (ml-vcU); with abundant fine gravel	52.0	2.0
Gravel and clay mixture, purple, clay is white (10YR8/1)	52.3	.3
Clay, sandy, white (10YR8/1) to gray (10YR6/1); with dark red (10R3/6) laminations throughout, minor strong brown (7.5YR6/8) mottling; minor fine to coarse gravel	52.7	.4
Sand, strong brown (7.5YR6/8) to black (7.5YR2.5/1); with bladed concretions	53.3	.6
No sample reported	53.5	.2
Sand, gravelly, strong brown (7.5YR6/8) to reddish-brown (7.5YR6/8); with gray (10YR6/1) clay	54.0	.5
Gravel, dark reddish-brown (5YR3/3); indurated quartz layer	54.1	.1

Table 2B. Lithologic log for site WB20 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ~, approximately; %, percent; ft, feet; <, less than]

Description	Depth (ft)	Thickness (ft)
SITE WB20		
No sample reported	2.0	2.0
Peat, black, fibric (~50% coarse fibers); mixed with light brownish-yellow medium sand	2.2	.2
Silt, clayey, light olive-brown, with multicolored mottling; occasional gravel-sized grains and iron concretions	3.1	.9
Sand, silty very pale brown; with many coarse, reddish concretions	3.6	.5
No sample reported	4.0	.4
Clay, medium, brown, silty; with distinct, reddish-orange and gray mottles	6.0	2.0
Silt, clayey, light olive-brown; as above 2.2 - 3.1-ft interval	6.6	.6
Sand, silt, and subrounded gravel; with many fine faint distinct black mottles and many fine faint light gray mottles	7.0	.4
Silt, clayey, light olive-brown; as above 2.2 - 3.1-ft interval	7.2	.2
No sample recovered	8.0	.8
No sample reported	8.4	.4
Silt, gray; with many coarse, distinct, strong brown mottles (material is dry)	9.5	1.1
Iron layer, indurated dusky red with embedded gravel	9.7	.2
No sample reported	10.0	.3
Silt, clayey, light olive-brown; as above 2.2 - 3.1-ft interval	10.6	.6
Sand, medium light gray to pale brown; with <3% subrounded gravel	11.8	1.2
Clay, silty, medium consistence, olive yellow; with interbedded subrounded gravels. Few fine distinct dark red mottles and few strong brown concretions	11.9	.1
No sample recovered	12.0	.1
Peat, fibric, very dark gray grading into yellowish-brown silty clay; with some sand and ~15% fibric to hemic material. Some fine subrounded gravel.	12.6	.6
Silt, pale brown; with ~10 - 15% clay and ~10 % sand (<5% fine subangular gravel). Few fine dark red concretions	13.5	.9
No sample recovered	14.0	.5
Silt, pale brown; with ~10 - 15% clay and ~10 % sand (<5% fine subangular gravel). Few fine dark red concretions	14.8	.8
No sample recovered	18.0	3.2
Sand, fine, white; with few coarse, faint light-brown mottles	18.7	.7
No sample reported	20.0	1.3
Sand, fine, pale brown; with sparse (<5%) organic matter. Few coarse, distinct black mottles associated with the organic rich layer.	21.0	1.0
Sand, fine, white; with few coarse faint light brown mottles as above 18.0-18.7-ft interval	23.4	2.4
Clay, white, stiff to very stiff consistence; with many coarse, distinct reddish-yellow mottles and few fine distinct dusky red mottles	24.0	.6
Sand, fine, white; with few coarse, faint light-brown mottles, as above 18.0-18.7-ft interval	25.1	1.1
Clay, white; of stiff consistence with ~10% fine sand. Many fine faint reddish-yellow mottles	25.4	.3
Sand, fine, very pale brown to brownish-yellow; with many coarse, distinct reddish-brown mottles and few fine distinct dark-red mottles in 25.4 - 26.0-ft interval	29.1	3.7
Clay, very pale brown; with medium stiff consistence	29.2	.1
Sand, fine to medium, brownish-yellow; with strongly oxidized layer at base of above clay lens.	30.0	.8
Sand, fine, very pale brown to brownish-yellow; as above 25.4-29.1-ft interval	33.4	3.4
Gravel, fine subangular and coarse sand; reddish-yellow	34.0	.6
Sand, fine to medium, brownish-yellow, as above 25.4-29.1-ft interval; with increasing subangular gravel content at the base of core.	37.4	3.4
Sand, medium, yellow; with some gravel. Gravel content varies slightly with depth. Dark yellowish-brown to brown nodules are common throughout this interval	54.0	16.6

Table 2B. Lithologic log for site WB20 at West Branch Canal Creek study area Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB20--Continued		
Sand, medium, very pale brown; with ~15% fine to coarse rounded gravel and many coarse faint weak red mottles	55.3	1.3
Sand, medium, light brown; with about 25% fine subrounded gravel	55.9	.6
Sand, clayey, maroon; directly underlain by coarse iron-stained gravel. This layer was probably indurated	56.0	.1
Sand, medium, very pale brown; with no gravel	57.2	1.2
Gravel sand and clay mixture, coarse; light brown	57.5	.3
Clay, mixed with subrounded to rounded fine to coarse gravel, gray; with many fine faint reddish-yellow mottles	57.6	.1
No sample recovered	58.0	.4
Clay, mixed with subrounded to rounded fine to coarse gravel, gray; with many fine faint reddish-yellow mottles	58.7	.7
No sample recovered	60.0	1.3
Clay, mixed with subrounded to rounded fine to coarse gravel, gray; with many fine faint reddish-yellow mottles	61.0	1.0
Clay, gray, very stiff consistence; with <5% interbedded lenses of medium sand	61.5	.5

Table 2C. Lithologic log for site WB21 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; Mn, Magnesium; ft, feet; ~, approximately; %, percent]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB21		
Clay, silty, dark olive gray; of very soft consistence with many fine roots. Orange brown and dark red mottling along root channels	0.6	0.6
No sample recovered	2.0	1.4
Clay, silty, dark olive gray; of very soft consistence with many fine roots. Orange brown and dark red mottling along root channels	4.0	2.0
Clay, dark gray to gray; mixed very soft fines	5.5	1.5
Sand, medium, yellowish-brown; with thin layers of light gray clayey silt and fine sand with sparse, coarse gravel	14.0	8.5
Sand, medium, very pale brown; with some very fine gravel, dark red mottles, small dark red concretions, and black material (lignite or Mn nodules)	14.7	.7
Sand, medium (mU-cL), very pale brown; interbedded with gray to yellowish-brown clay; some fine gravel	15.3	.6
Sand, medium (mL-mU), yellow to brownish-yellow; with fine gravel. Strong brown to dark-red mottles and concretions	17.1	1.8
No sample reported	18.0	.9
Sand, medium, brownish-yellow, with fine gravel; but mottling is not present. No gravel at base of stratum	18.9	.9
Silt, soft, clayey, light gray to yellowish-brown; with lenses of very fine sand	19.3	.4
Sand, medium (mL-mU), yellow to brownish-yellow; with fine gravel. Strong brown to dark-red mottles and concretions, as above 15.3-17.1-ft interval	20.0	.7
Sand, medium (mL), very pale brown; with fine to coarse, sparse red mottling	20.6	.6
No sample reported	22.0	1.4
Sand, medium, white to pale yellow, with ~15% fine gravel; white to pale yellow clay laminations	23.0	.8
Clay, white to pale yellow; very soft to soft consistence with sparse fine gravel. Black, purple and brownish-yellow mottling	23.9	.9
Sand, medium (mL), reddish-yellow; with thin layers of white clay	24.0	.1
Sand, medium (mL-mU), reddish-yellow to pale yellow; nodular black to gray iron concretions in the 24.2 - 24.5-ft interval	27.7	3.7
Sand, silty, very coarse (vcL-vcU), brownish-yellow; with fine gravel and small lenses of soft clay	28.0	.3
Gravel, coarse with sand, brownish-yellow; some grains are coated with white clay	30.8	2.8
No sample reported	32.0	1.2
Sand, coarse with gravel (cU); white to yellow	32.6	.6
Clay, sandy (mU), white; with red nodules.	32.7	.1
Clay, white to light-brownish-gray, of stiff consistence; becoming less sandy at base of core	33.4	.7

Table 2C. Lithologic log for site WB21 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB21--Continued		
Sand, medium (mU), reddish-yellow; with dusky red concretions	33.5	0.1
No sample reported	34.0	.5
Sand, medium (mU), pale yellow to yellowish-brown; with some fine gravel	34.9	.9
Sand, coarse (cL), fine to coarse gravel; light gray to yellow	35.1	.2
No sample reported	36.0	.9
Sand, coarse (mU-vcU), and gravel, pale yellow to brownish-yellow; with gravel content increasing toward base of core.	37.3	1.3
No sample recovered	38.0	.7
Sand, coarse (mU-vcU), and gravel, pale yellow to brownish-yellow; with gravel content increasing toward base of core. Some red nodules at the base of this stratum	39.3	1.3
Clay, white; and black sand	39.4	.1
No sample reported	40.0	.6
Sand, coarse (mU-cL), pale yellow; with fine to coarse gravel and reddish-brown mottles	41.2	1.2
No sample reported	42.0	.8
Sand, very pale brown to brownish-yellow; and fine gravel. Gravel percentage increases toward base of core	42.6	.6
Clay, white; with brownish-yellow laminations	42.7	.1
Sand, medium (mU), multicolored; mostly strong brown	43.0	.3
No sample reported	44.0	1.0
Sand, medium (mU), light yellowish-brown to brownish-yellow; with some fine gravel	44.4	.4
Sand, very coarse (mL-vcU), mulitcolored; with fine to coarse gravel	44.7	.3
Clay, white; with brownish-yellow sand and gravel	44.9	.2
Gravel, fine to coarse angular, yellow brown; with fine sand	45.3	.4
No sample reported	46.0	.7
Sand, (mU-cL), dark yellow brown to yellow; and fine sand	46.7	.7
Clay, white; with yellowish-brown sand and gravel	46.8	.1
Clay, sandy, gray; with black organic laminations	47.4	.6
No sample reported	48.0	.6
Clay, dark gray; with black organic laminations	48.6	.6

Table 2D. Lithologic log for site WB22 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ft, feet; %, percent; ft, feet; ~, approximately]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB22		
Peat, fibric, dark brown to brown; grading into underlying silty-clay material with many coarse (0.05-ft diameter) phragmites roots	0.9	0.9
No sample reported	2.0	1.1
Clay, silty, very dark brown to very dark gray; with few fine roots	5.4	3.4
Clay, gray; with hard consistence and common distinct yellowish-brown mottles	7.1	1.7
Sand, fine; strong brown	7.3	.2
No sample reported	8.0	.7
Clay, sandy, gray; with common distinct strong brown mottles	9.0	1.0
Sand, fine to coarse with some gravel, strong brown color; zone of iron accumulation	9.1	.1
Clay, sandy, gray; with common, faint, reddish-yellow mottles and distinct reddish-brown mottles associated with the base of this stratum	11.0	1.9
Sand, medium; light yellowish-brown	11.3	.3
Clay, sandy, gray	12.0	.7
Sand, medium (mL-mU), brownish-yellow; gravel content increasing from 0% to 5% toward base of core. The upper portion of this stratum (1.2-1.6 ft) was very wet. Many coarse, distinct red mottles; few coarse, distinct strong brown mottles (degree of mottling varies with depth)	19.0	7.0
No sample reported	20.0	1.0
Sand, medium (mL-mU), brownish-yellow; (same as above), but includes some concretions 0.2 ft in diameter	20.9	.9
No sample reported	22.0	1.1
Sand, medium, brownish-yellow; with ~30% fine gravel	23.3	1.3
Sand, medium (mU-mL), light brownish-yellow; interbedded with white to gray clay of soft consistence. Few fine distinct red mottles associated with fine clay laminations	23.8	.5
Sand, fine to medium (fU-mU), pale yellow; with many fine, distinct strong brown mottles and many fine, distinct pale red mottles	23.9	.1
No sample reported	24.0	.1
Sand, medium (mL), yellow; micaceous, no gravel, no mottles	26.9	2.9
Sand, medium (mL), dusky red; with ~30% coarse gravel-sized, well-indurated concretions of the same color, some yellow material at base of core	27.2	.3
No sample reported	28.0	.8
Sand, medium (mL); brownish-yellow	28.3	.3
Gravel, fine to coarse, brownish-yellow; with ~40-50% fine to coarse sand (fU-vcU). There is a small amount of mottling at base of core	29.0	.7

Table 2E. Lithologic log for site WB23 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ft, feet; ~, approximately; %, percent]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB23		
Peat, sapric; black	0.2	0.2
Peat, grades into very dark gray silty clay	1.0	.8
No sample reported	2.0	1.0
Clay, dark grayish brown; with few well-degraded fibers interspersed throughout	2.5	.5
No sample reported	4.0	1.5
Clay, light gray; with many distinct strong brown mottles and reduced zones along root channels (may not have been complete recovery)	6.0	2.0
Clay, gray, very dense; with many distinct strong brown mottles, few or no roots (may not have been complete recovery)	8.0	2.0
Clay, gray; as above with little mottling	8.8	.8
Silt, or clay, yellowish-red; with fine sand-sized material (that are probably concretions)	8.9	.1
Clay, gray; as in 8.0-8.8-ft interval	9.0	.1
Clay, grades into brown fine sand	9.3	.3
No sample reported	10.0	.7
Clay, light brownish-gray; with interbedded layers of fine sand. There is one very distinct yellowish-red layer. Many faint, strong brown mottles	10.8	.8
Sand, fine; strong brown	11.0	.2
Clay, gray; as in 8.0-8.8-ft interval	11.2	.2
No sample reported	12.0	.8
Sand, medium to coarse (mL-cU), brownish-yellow to yellowish-brown; with fine gravel	13.7	1.7
No sample reported	14.0	.3
Sand, coarse (mU-cU), yellow; with fine gravel. Small gray clay lens found in this interval	15.4	1.4
Sand, medium to coarse (mL-cU), pinkish-white to light yellowish-brown; with fine gravel. Some yellowish-red concretions in the 15.9-16.2-ft interval. Abundant black material in the 16.6-16.9-ft interval (vcU)	17.8	2.4
No sample reported	18.0	.2
Sand, medium to coarse (mL-cL), light yellowish-brown; with fine gravel	18.5	.5
Sand, medium to coarse (mL-cL), brownish-yellow; with fine to coarse sand with black material as in the 16.6-16.9-ft interval, and dusky red mottles	19.7	1.2
No sample reported	20.0	.3
Sand, medium (mL); yellowish-brown	20.5	.5
Sand, medium (mL), pale yellow, with ~3% fine gravel; interbedded lenses of very pale brown clay of soft consistence and few coarse weak red mottles associated with gravels	22.9	1.5
Sand, medium, pale yellow; with many coarse faint yellow mottles	25.1	2.2

Table 2F. Lithologic log for site WB24 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ft, feet; ~, approximately; %, percent]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB24		
No sample recovered	2.0	2.0
Peat, dark-olive-brown to black; interbedded with silt and clay, (material is very wet)	6.6	4.6
Clay, silty, gray; with some sand and fine gravel. Many distinct yellowish-brown mottles and few strong brown concretions. Core is very wet in its upper portion, drying toward base	8.0	1.4
Clay, sandy, gray; with many fine distinct strong brown mottles. In the interval 8.7-8.8 ft, there is a fine oxidized layer with yellowish-brown color and containing more sand than the remainder of the core	10.1	2.1
Sand, coarse, reddish-yellow	10.5	.4
Clay, sandy, gray; as in 8.0-10.4-ft interval, but with many coarse, dark reddish-brown, poorly consolidated concretions	11.7	1.2
No sample reported	12.0	.3
Silt, clayey, light gray; grading to fine sand (fU-mL), with occasional gravel. Many coarse yellowish-red mottles	12.5	.5
Sand, medium (mL-mU), reddish-yellow; with fine gravel content increasing to ~20%; material is wet with reddish-yellow and black mottles	16.0	3.5
Sand, medium to coarse (mL-cU), yellowish-brown; with 15-20% fine to coarse gravel and variable coarse red to dark red mottles and concretions	17.6	1.6
No sample recovered	18.0	.4
Sand, medium to coarse (mL-cU), yellowish-brown; with 15-20% fine to coarse gravel and variable coarse red to dark red mottles and concretions	19.4	1.4
No sample recovered	20.0	.6
Sand, medium to coarse (mL-cU), yellowish-brown; with 15-20% fine to coarse gravel and variable coarse red to dark red mottles and concretions	21.5	1.5
No sample recovered	22.0	.5
Sand, medium to coarse (mL-cU), yellowish-brown; with 15-20% fine to coarse gravel and variable coarse red to dark red mottles and concretions	22.7	.7
Sand, medium (mU), yellow; with sparse, fine to coarse gravel and lenses of white to yellow clay of soft consistence. Black coatings on some gravels are associated with these clay lenses.	23.9	1.2
No sample recovered	24.0	.1

Table 2F. Lithologic log for site WB24 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB24--Continued		
Sand, medium (mU), yellow; with sparse fine to coarse gravel and lenses of white to yellow clay of soft consistence. Black coatings on some gravels are associated with these clay lenses. Color is more variable in the 24.0-25.7-ft interval; reddish-yellow to pale yellow. Reddish-yellow color in the 26.0-26.9-ft interval	26.9	2.9
Sand, poorly graded medium to coarse (mU-vcU), brownish-yellow to yellow; with varying amounts of fine to coarse gravel	27.6	.7
No sample recovered	28.0	.4
Sand, poorly graded medium to coarse (mU-vcU), brownish-yellow to yellow; with varying amounts of fine to coarse gravel. Many small black specks in 28.0-30.1-ft interval	29.4	1.4
No sample recovered	30.0	.6
Sand, poorly graded medium to coarse (mU-vcU), brownish-yellow to yellow; with varying amounts of fine to coarse gravel	30.1	.1
No sample reported	32.0	1.9
Clay, gray, with stiff consistence; interbedded with lenses of medium sand and gravel as in the 26.9-30.1-ft interval. Colors range from pale yellow to white to yellow to brownish-yellow.	32.7	.7
Sand, medium (mU), pale yellow; with fine to coarse gravel content ranging up to 15%. Some fine reddish-brown mottling	35.6	2.9
Clay, white; with soft consistence, interbedded with lenses of reddish-yellow and black medium sand (mU)	35.7	.1
Sand, medium (mL-cL), reddish-yellow to brownish-yellow; with 10-15% fine to coarse gravel and many coarse distinct black mottles	37.1	1.4
No sample recovered	38.0	.9
Sand, medium (mL-cL), reddish-yellow to brownish-yellow; with 10-15% fine to coarse gravel and many coarse distinct black mottles	39.1	1.1
Sand, medium (mL-mU), white; with fine to coarse gravel content increasing with depth up to ~20%. Many coarse distinct black mottles	42.7	3.6
Sand, poorly graded medium to coarse (mL-vcU), brownish-yellow to pale brow; with fine gravel content decreasing in size from top to base of stratum. Many coarse distinct black mottles and many fine distinct red mottles.	42.9	.2
No sample recovered	44.0	1.1
Sand, poorly graded medium to coarse (mL-vcU), brownish-yellow to pale brown; with fine gravel content decreasing in size from top to base of stratum. Many coarse distinct black mottles and many fine distinct red mottles	44.8	.8
Sand, medium to coarse (mU-vcU), white to dark gray; with 15% fine to coarse gravel. Many coarse distinct strong brown and black mottles	45.3	.5
No sample reported	46.0	.7
Sand, medium to coarse (mu-vcU), brown; with 15% fine gravel and clay lenses. Clay lenses appear to be associated with very pale brown mottling. Strong brown and black mottling as above	46.7	.7
Sand, fine to medium (fL-mL), white; with ~25% fine to coarse gravel. Many faint very pale brown mottles and many coarse, faint, pale-red mottles	47.0	.3
No sample reported	48.0	1.0
Sand, fine to coarse, red; mixed with strong brown silt through coarse sand (fU-vcU)	48.7	.7
Clay, sandy, gray; with stiff consistence. Many coarse black distinct mottles, and marbled appearance	49.2	.5

Table 2G. Lithologic log for site WB26 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; %, percent; ~, approximately; ft, feet; <, less than]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	**vcU**	**very coarse, upper end of grain size**
1,000 - 1,410	**vcL**	**very coarse, lower end of grain size**
710 - 1,000	**cU**	**coarse, upper end of grain size**
500 - 710	**cL**	**coarse, lower end of grain size**
350 - 500	**mU**	**medium, upper end of grain size**
250 - 350	**mL**	**medium, lower end of grain size**
177 - 250	**fU**	**fine, upper end of grain size**
125 - 177	**fL**	**fine, lower end of grain size**
88 - 125	**vfU**	**very fine, upper end of grain size**
62 - 88	**vfL**	**very fine lower end of grain size**

Description	Depth (ft)	Thickness (ft)
SITE WB26		
Clay, silty, black; with very soft consistence and 15-10% low fiber content	0.8	0.8
No sample reported	2.0	1.2
Clay, peaty, very dark gray; with 40-50% fibric to hemic fibers (clay has very soft consistence), fibers are dark reddish-brown	5.2	3.2
Peat, clayey, very dark gray; fibers are hemic to sapric (~60% fiber content)	6.0	.8
Clay, sandy, gray; (decreasing fiber content with depth) moderate stiff consistence	8.6	2.6
Sand, medium sand to fine gravel, light yellowish-brown; many coarse, distinct brownish-yellow mottles (strongly oxidized zone associated with the sand layer)	9.5	.9
No sample reported	10.0	.5
Sand, clayey, light yellowish-brown; with many coarse, distinct strong brown mottles and many coarse, distinct light-gray mottles	10.8	.8
No sample reported	12.0	1.2
Sand, sandy clay, light gray; with soft consistence and lenses of sand (many coarse brownish-yellow and pale red mottles)	14.0	2.0
Sand, medium (mU-cL), pale brown to brownish-yellow; with some silt and ~30% fine to coarse subangular to subrounded gravel	16.0	2.0
Sand, medium (mU), reddish-yellow; with ~10-15% fine gravel (many fine distinct yellow mottles)	17.3	1.3
No sample recovered	18.0	.7
Sand, medium (mU), reddish-yellow; with ~10-15% fine gravel (many fine distinct yellow mottles)	19.7	1.7
Clay, sandy (mL-mU), light gray, micaceous, of soft consistence; interbedded with lenses and thin layers of medium sand	20.0	.3
Sand, medium, reddish-yellow; as in 14.0-16.0 -ft interval but <10% fine gravel	21.5	1.5
No sample recorded	22.0	.5
Sand, medium (mU-cL), brownish-yellow; with ~15% fine subangular gravel and occasional lenses of sandy clay	23.2	1.2
Sand, clayey, white; with many fine distinct red mottles	23.4	.2
Clay, sandy, red; with white and purple mottles	23.6	.2
Sand, medium, light yellowish-brown; with many coarse distinct red mottles	24.0	.4
Sand, coarse (ml-mU), reddish-yellow; with ~15% fine subrounded gravel and some clay (white and red clay lenses at 24.0 ft)	24.8	.8
No sample recovered	26.0	1.2
Sand, coarse (mL-mU), reddish-yellow; with ~15% fine to subrounded gravel and some clay	28.0	2.0

Table 2G. Lithologic log for site WB26 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB26--Continued		
Sand, medium (mL-mU), yellow; with ~10% fine to coarse gravel (some good gravel at the base of the stratum is surrounded by black coatings in the sand-sized fraction, gravel content increases to 20% at 30 ft)	31.0	3.0
No sample recovered	32.0	1.0
Sand, medium (mL-mU), yellow; with ~10% fine to coarse gravel	34.0	2.0

Table 2H. Lithologic log for site WB27 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ~, approximately; %, percent; ft, feet; <, less than]

Description	Depth (ft)	Thickness (ft)
SITE WB27		
Clay, peaty, very dark gray; with very soft consistence (~30-40% organic fiber content)	0.5	0.5
No sample recovered	2.0	1.5
Clay, peaty, very dark gray; with very soft consistence (~30-40% organic fiber content), few coarse roots found below 2.0 ft	5.2	3.2
Clay, or sandy silt, dark gray; with ~10% organic fibers	5.8	.6
No sample reported	6.0	.2
Clay, sandy; with stiff consistence, <5% root fibers	6.5	.5
Gravel, with sand and fines, gray; with common distinct fine reddish-yellow mottles	7.0	.5
No sample reported	8.0	.5
Gravel, with medium sand, brownish-yellow; sub-rounded to rounded, poorly sorted, fine to coarse	9.6	1.6
No sample recovered	10.0	.4
Gravel, with medium sand, brownish-yellow; sub-rounded to rounded, poorly sorted, fine to coarse	10.7	.7
Sand, clayey; with many fine, faint yellow mottles	11.0	.3
Sand, medium, light olive-brown; well sorted, with many fine, faint brownish mottles	11.3	.3
No sample reported	12.0	.7
Sand, medium, yellowish-brown to light brownish-gray, mixed and interbedded with clay	13.7	.7
No sample recovered	14.0	.3
Sand, medium, yellowish-brown to light brownish-gray; mixed and interbedded with clay	14.6	.6
Gravel, fine to coarse, brownish-yellow to yellowish-brown; mixed with clayey sand	15.2	.6
Sand, with ~10-15% fine gravel, yellowish-brown; few coarse red mottles seem to be associated with lenses of clayey sand	15.6	.4
No sample recovered	16.0	.4
Sand, with ~10-15% fine gravel, yellowish-brown; few coarse red mottles seem to be associated with lenses of clayey sand	17.0	1.0
No sample recovered	18.0	1.0
Sand, with ~10-15% fine gravel, yellowish-brown; few coarse red mottles seem to be associated with lenses of clayey sand	18.9	.9
Gravel, fine, reddish-yellow; with medium to coarse sand and few fine, faint red mottles	19.2	.3
Clay, gray; with medium sand and fine gravel	19.3	.1
Sand, coarse, reddish-yellow; with ~10% fine gravel	19.4	.1
No sample reported	20.0	.6
Sand, medium; pale yellow to brownish-yellow	21.3	1.3
No sample recovered	22.0	.7
Sand, medium, pale yellow to brownish-yellow; with <10% subangular gravel at base of core	23.3	1.3
No sample reported	24.0	.7
Sand, coarse, reddish-yellow; with 35-40% fine subangular gravel	24.4	.4
Sand, medium, yellow; with ~25% rounded fine gravel	25.2	.8
No sample reported	26.0	.8
Gravel, fine, light yellowish-brown; subangular	27.2	1.2
Sand, medium, yellow; with ~35-40% fine to coarse subangular gravel	27.4	.2
No sample reported	28.0	.6
Sand, medium, white; with 5-10% fine subrounded gravel	28.5	.5
Clay, greenish-gray to light gray clay; with hard consistence	28.9	.4
Sand, medium, white; same as 28.0-28.5-ft interval, with varying gravel content	30.8	1.9
No sample reported	32.0	1.2
Gravel, with clay and sand, very pale brown; fine to coarse subangular	32.9	.9
Sand, medium, white; with <3% gravel	37.7	4.8
No sample recovered	40.0	2.3
Sand, medium, white; with <3% gravel	41.6	1.6
No sample recovered	42.0	.4

Table 2H. Lithologic log for site WB27 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB27--Continued		
Sand, medium, white; grades into very pale brown and weak red at the base of this stratum (32.9-44.0 ft) with <3% gravel	44.0	2.0
Sand, medium to coarse, very pale brown to pale yellow; sand and gravel with soft white clay throughout and interbedded with stiff white clay with olive-gray mottles	45.5	1.5
No sample reported	46.0	.5
Sand, medium to coarse, very pale brown; with sparse fine gravel with pale red mottles	46.4	.4
Sand, medium, pink to light brown to strong brown; clean	47.2	.8
Clay, soft clay and some sand, white and dark red to red; finely laminated	47.3	.1
No sample reported	48.0	.7
Sand, medium, strong brown; with sparse fine gravel	48.3	.3
Clay, (as in 47.2- 47.3-ft interval) also fine lenses of white clay below 48 ft	48.7	.4
No sample reported	50.0	.3
Sand, medium to coarse, brown; with some fine to coarse gravel (also some purple to black nodules and coarse reddish-brown mottles)	51.6	1.6
Clay, dark gray, clay lens embedded with gravel, concretions, sand and reddish-brown to weak red silty material (thickness unknown)	51.7	.1
Sand, medium to coarse, brown; as in 50.0-51.7-ft interval	52.0	.3
Clay, very stiff, weak red and light gray to dark gray; marbled/streaked	52.6	.6

Table 2I. Lithologic log for site WB28 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ~, approximately; %, percent; ft, feet; ", inches]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB28		
Peat, hemic, black; grading into very dark gray peaty clay	1.0	1.0
Clay, peaty, very dark gray; with ~30% hemic to sapric fiber content fiber content decreases to 10% at base of stratum. Few faint black reduced zones possibly associated with root channels (very soft material becoming harder with depth)	10.7	9.7
Sand, medium, very dark gray; mixed with fine gravel	10.9	.2
No sample reported	12.0	1.1
Sand, clayey, light brownish-gray; with fine to coarse gravel, yellowish-brown mottles associated with gravel-sized clasts and reduced zones around root channels	12.7	.7
Sand, medium to coarse, light olive brown; fine to coarse gravel and fine red mottles	15.0	2.3
Sand, medium to coarse, reddish-yellow; red mottling as above, friable silt and sand coating some of the grains	17.0	2.0
Sand, fine to medium, yellow; with brownish-yellow mottling	17.2	.2
Sand, sand and silt with some fine gravel, very pale brown to yellow (siltier than the overlying substrata; has a milky look); reddish-yellow mottling	17.5	.3
No sample reported	18.0	.5
Sand, medium to coarse sand and gravel; reddish-yellow	18.9	.9
No sample reported	20.0	1.1
Clay, sandy clay with ~15% fine to coarse gravel, light yellowish-brown; soft consistence (many fine faint yellowish-brown mottles)	20.7	.7
Gravel, sandy, fine; multicolored	21.5	.8
Sand, medium, white; with gravel content varying from none to 15%(color change from white to yellow to very pale brown at ~25 ft and ~26 ft, respectively)	26.6	5.1
Gravel, fine gravel with 5-10% medium to coarse sand, multicolored; mostly white to very pale brown (sand content increases toward the base of this stratum)	27.5	.9
Gravel, fine to coarse, very pale brown; with ~25-30% medium sand (many coarse distinct weak red mottles and gravels were cemented by interangular sands)	27.9	.2
Sand, medium, brownish-yellow to pale brown; with ~15% fine to coarse gravel (gravel content increases at the base of the stratum)	29.0	1.1
Gravel, as above, multicolored; with increasing amounts of medium sand (up to 30%) at base of core	30.0	1.0
Sand, medium, pale brown grading into brownish-yellow; more cemented material at the base of core (the bottom 0.1 ft of core is 0.05 inch of black medium sand with fine to coarse gravel and 0.05 inch white medium sand)	32.0	2.0

Table 2I. Lithologic log for site WB28 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB28--Continued		
Gravel, fine, very wet; fining upward to sand interface	33.3	1.3
Sand, medium (mL-mU), and fine gravel, light gray; with brownish-yellow mottles	33.4	.1
Clay, light gray; with very stiff consistence	33.5	.1
Sand, clean, medium (mL); very pale brown to light yellowish-brown	34.3	.8
Gravel, fine gravel mixed with medium sand (mU); pale brown	35.3	1.0
Sand, medium (mU), white; with some gravels	35.5	.2
Sand, light gray; with some gravel and dark red lenses of sandy clay	35.9	.4
Sand, medium (ml); light gray	36.2	.3
Clay, sandy, light gray; coarsening upward, sand is in (fL-mL) fraction	36.5	.3
Sand, medium (mL-uU), light gray; with occasional fine gravel	37.1	.6
No sample recovered	37.5	.4
Sand, medium (mL-uU), light gray; with occasional fine gravel	38.8	1.3
No sample recovered	39.5	.8
Sand, medium (mL-uU), light gray; with occasional fine gravel and brownish-yellow mottles and associated concretions below 39.5 ft	41.1	.6
No sample recovered	41.5	.4
No sample reported	45.5	4.0
Sand, medium (mL), very pale brown; with ~15%fine subrounded gravel. Few fine distinct yellowish-brown mottles	46.3	.8
Sand, medium (mL-mU), weak red; with ~25% fine to coarse subangular gravel	46.5	.2
Sand, medium (mL), white; with ~15% fine rounded gravel	46.9	.4
Sand, medium (as above in 46.3- 46.5-ft interval); weak red	47.1	.2
Sand, medium to coarse (mU-vcU), yellowish-red; with ~25% fine to coarse subangular gravel (there is also a small amount of light gray clay of soft consistence in this interval)	47.3	.2
Clay, mixture of clay through fine sand (vfL-mL) with ~30% fine to coarse subangular gravel grading into very dark gray material of similar grain size. In the upper part of the stratum there are many coarse, distinct strong brown mottles. Stratum is relatively dry.	47.8	.5
Clay, dark gray, marbled; with very stiff consistence	49.2	1.4

Table 2J. Lithologic log for site WB30 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; <, less than; %, percent; ft, feet]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB30		
Silt, clayey, dark olive-brown; and clayey fine sand with a large percentage of organic material	1.0	1.0
No sample reported	2.0	1.0
Sand, clayey medium, grayish-brown; with some roots, light orange mottling	3.1	1.1
No sample reported	4.0	.9
Clay, fine, sandy, gray, with very soft consistence; orange-brown mottling and black reduced zones along root channels	5.3	1.3
No sample reported	6.0	.7
Clay, sandy, light olive-gray, with layer of fine sand interspersed; many distinct yellowish-brown mottles and associated nodules (root channels still present)	6.8	.8
Sand, clayey; brownish-yellow	7.0	.2
Clay, sandy; light olive-gray	8.0	1.0
Clay, silty, gray; with few faint yellowish-brown mottles	8.5	.5
Clay, silty, black; extremely wet	9.0	.5
Clay, sandy, gray; with brownish-yellow concretions	11.3	2.3
Sand, medium, light yellowish-brown; interspersed with gray fine sand. Some coarse sand and fine gravel	12.0	.7
Sand, medium (mL-mU), brownish-yellow; with <3% fine gravel	12.6	.6
Sand, medium (mL-mU), very pale brown; with 3% fine gravel; few faint distinct red mottles and associated concretions	13.5	.9
No sample recovered	14.0	.5
Sand, medium (mL-mU), very pale brown, with 3% fine gravel; few faint distinct red mottles and associated concretions	15.8	1.8
No sample recovered	16.0	.2
Sand, medium (mL-mU), strong brown, with ~5% fine to coarse gravel and some interbedded clay; 30% gravel at base of core	17.2	1.2
No sample reported	18.0	.8
Sand, fine to medium (fU-mL), gray, with occasional clay rich layers; <3% fine gravel. Many coarse distinct strong brown mottles mostly in the upper part of core. Upper clay lens not well defined	18.7	.7
No sample recovered	20.0	1.3
Sand, fine to medium (fU-mL), gray, with occasional clay rich layers; <3% fine gravel. Many coarse distinct strong brown mottles mostly in the upper part of core, as in 18.0-18.7-ft interval	20.3	.3

Table 2J. Lithologic log for site WB30 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB30--Continued		
Sand, medium to coarse (mU-vcU), reddish-yellow; with 20% fine to coarse gravel. There is a thin clay lens at the base of this stratum associated with fine distinct weak red mottling.	20.7	0.4
Sand, medium (mL), brownish-yellow; grading into pale yellow material of the same size fraction.	21.7	1.0
No sample recovered	22.0	.3
Sand, medium (mL), brownish-yellow, grading into pale yellow material of the same size fraction; few fine faint reddish-yellow mottles below 22 ft as in 20.7-21.7- ft interval	23.5	1.5
No sample reported	24.0	.5
Sand, clayey (ufL-mL), white; with many fine to coarse distinct reddish-yellow mottles (some clay lenses up to 0.01-0.02 ft thick)	25.1	1.1
Sand, coarse (cU) to fine gravel; brownish-yellow	25.2	.1
No sample reported	26.0	.8
Sand, medium to coarse (mL-cU), brownish-yellow; with occasional fine gravel	26.7	.7
Gravel, fine; very pale brown	27.0	.3
Sand, medium to coarse (mL-vcU), yellow; with 15% fine to coarse rounded subspherical gravel	27.6	.6
No sample reported	28.0	.4
Sand, medium (mL-cL), light brownish-yellow to brownish-yellow; with 3% fine to coarse gravel	29.2	1.2
No sample reported	30.0	.8
Sand, medium (mL-cL), yellowish-brown; with 10-15% fine gravel	32.0	2.0

Table 2K. Lithologic log for site WB31 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ft, feet; %, percent; ~, approximately]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB31		
Peat, fibric, black, grading into dark gray silty clay; many roots, reduced zones along root channels	2.0	2.0
Clay, sandy, gray, with occasional gravel-sized clasts; many roots, reduced zones along root channels, oxidized zone at base of this stratum	5.6	3.6
Sand, fine to medium, brownish-yellow; no roots	6.0	.4
Clay, sandy, gray; as above 2-5.5-ft interval	6.6	.6
Sand, medium, yellowish-brown; with some gravel	8.1	1.5
Clay, sandy, gray; as above, with occasional fine gravel-sized clasts, many distinct strong brown mottles and few distinct dark red mottles	9.2	1.1
Sand, medium, reddish-yellow grading into yellowish-brown; with some fine gravel, few distinct, red poorly cemented nodules	11.2	2.0
Clay, sandy, gray; with fine gravels interbedded with yellowish-brown sand, few distinct dark red mottles	11.4	.2
Sand, medium (mU), brownish-yellow; mixed with very pale brown sandy clay and light gray clay of very stiff consistence, gravel associated with clay	11.5	.1
No sample recovered	12.0	.5
Sand, medium (mU-cL), reddish-yellow; with fine gravel (mU), brownish-yellow; mixed with very pale brown sandy clay and light gray clay of very stiff consistence, gravel associated with clay	12.4	.4
Sand, (mU-cL), reddish-yellow; with fine gravel	13.1	.7
Sand, clayey sand and gravel, reddish-yellow; grading into light-gray clay of soft consistence for about 0.07 ft, then back to clayey sand	13.5	.4
No sample reported	14.0	.5
Sand, medium (mU), brownish-yellow to yellowish-brown; with fine gravel; very wet	17.1	3.1
No sample reported	18.0	.9
Clay, very pale brown; with stiff consistence	19.0	1.0
Sand, medium (mU), brownish-yellow; and gravel up to 4 centimeters	19.7	.7
No sample reported	20.0	.3
Sand, medium (mL-mU), olive-yellow; mixed with and grading to pale yellow material of the same fraction	20.8	.8
Clay, sandy, brownish-yellow; clay concentrated in light-gray laminations. Clays range from soft to stiff in consistence. Sand is (mL) size	21.6	.8
No sample reported	22.0	.4
Sand, medium (fU-mU); very pale brown to yellow	23.2	1.2

Table 2L. Lithologic log for site WB32 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ft, feet; %, percent; <, less than; ~, approximately]

Description	Depth (ft)	Thickness (ft)
SITE WB32		
Mixed fill material, numerous root fragments	4.3	4.3
Silt, sandy, olive; few faint coarse very dark gray mottles	6.3	2.0
Sand, fine to medium, light olive-gray; many coarse, distinct strong brown mottles, few strong brown concretions	7.8	1.5
Data missing from 7.8 ft to 12.0 ft	12.0	4.2
Mixture, transitional layer grading from brownish-yellow mixture of sand, silt, clay, and gravel into very pale brown silt at 29.5 ft	14.0	2.0
Clay, silty, olive-brown; with 10% gravel, very soft consistence with many coarse, distinct reddish-yellow mottles	14.8	.8
Clay, sandy, light gray; with medium stiff consistence, many fine faint yellowish-brown mottles, few fine, distinct red mottles, and many fine distinct reddish-yellow mottles	14.9	.1
Sand, fine, light gray; many coarse, distinct reddish-yellow mottles	15.3	.4
Clay, gray; with very stiff consistence, interbedded with fine sand lenses; many coarse, distinct, reddish-yellow mottles associated with sand lenses	16.6	1.3
Sand, fine, light gray; many coarse, faint reddish-yellow mottles	17.3	.7
Clay, light gray; with stiff consistence	17.6	.3
Sand, fine, light gray; few coarse, distinct, yellow mottles	26.6	9.0
Sand, fine, reddish-yellow; many coarse, distinct light-gray mottles	27.6	1.0
Sand, fine, light gray; with fine (<0.01 ft) clay lenses and many coarse, distinct (and faint) reddish-yellow mottles	33.7	6.1
No sample reported	34.0	.3
Sand, fine to medium, reddish-yellow, with ~5% gravel in lower part of stratum; many coarse, distinct, strong brown mottles	36.5	2.5
Sand, clayey, reddish-yellow	36.9	.4
Sand, medium, strong brown grading to yellow, with <5% subspherical gravel; few coarse, distinct dark-brown mottles and associated concretions	47.8	10.9
Sand, medium, dark brown; with ~15% gravel in lower portion of stratum; many coarse, faint strong brown mottles; many coarse, distinct light-purple mottles	50.0	2.2
Sand, medium, grading from yellow to light-brown to white over a 1.1 ft distance	51.1	1.1
Mixture, sand, silt, clay and gravel, multicolored; this layer is highly indurated; color is predominantly purple with white, strong brown, and red mottles	51.2	.1
Sand, fine, brownish-yellow; interbedded with purplish indurated layer similar to 51.1-51.2-ft interval	52.7	1.5
Clay, gray to black marbled; with very stiff consistence	53.4	.7

Table 2M. Lithologic log for site WB33 at West Branch Canal Creek area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; %, percent; <, less than; ft, feet; ~, approximately]

Description	Depth (ft)	Thickness (ft)
SITE WB33		
No sample reported	0.5	0.5
Mixture, silt, clay, sand, and organics, dark brown; with many medium to coarse roots	0.9	.4
Clay, silty, yellowish-brown; with many coarse, faint strong brown mottles	1.9	1.0
No sample reported	2.0	.1
Clay, silty, yellowish-brown; of medium stiff consistence, interbedded with lenses of fine sand. Many coarse, distinct gray mottles	4.0	2.0
Clay, gray; of soft to medium stiff consistence; with many coarse, distinct yellowish-brown mottles	5.5	1.5
No sample reported	6.0	.5
Sand, fine to medium, strong brown	6.1	.1
Clay, gray; of stiff consistence; with sand and occasional fine gravel. Many coarse, distinct strong brown mottles; few fine, strong brown iron concretions	7.7	1.6
No sample recovered	8.0	.3
Clay, gray; of stiff consistence; with sand and occasional fine gravel. Many coarse, distinct, strong brown mottles; few fine, strong brown iron concretions	9.0	1.0
No sample reported	10.0	1.0
Sand, medium, yellowish-brown; with 5-10% fine gravel	10.3	.3
Clay, gray; of stiff consistence; with sand and occasional fine gravel. Many coarse, distinct, strong brown mottles; few fine, strong brown iron concretions and sand lenses	11.3	1.0
No sample reported	12.0	.7
Sand, medium, pale brown	12.4	.4
Clay, light brownish-gray; with medium stiff consistence; interbedded with pale brown lenses of medium sand <0.1 ft thick	13.7	1.3
No sample reported	14.0	.3
Sand, medium, light yellowish-brown; with <5% fine gravel	15.1	1.1
No sample reported	16.0	.9
Sand, medium, light yellowish-brown; with fine gray clay lenses ~0.01 ft thick	16.7	.7
Sand, medium, light brownish-gray; with 5-10% fine gravel and fine clay lenses. Many coarse, distinct brownish-yellow mottles	17.2	.5
No sample reported	18.0	.8
Sand, to fine gravel, brownish-yellow; with <5% fine interbedded clay lenses <0.02 ft thick. Clay lenses are reddish-gray to gray. Also few coarse, distinct, dark red and red mottles.	24.0	6.0
No sample recovered	25.6	1.6
Sand, silty fine, very pale brown to yellow; with some gravel	26.9	1.3
No sample reported	27.5	.6
Sand, clayey fine, brownish-yellow; with maroon laminations	27.7	.2
Clay, sandy to silty, brownish-yellow; with maroon laminations and iron concretions and with indurated layer at base of stratum	28.4	.7
Sand, medium, brownish-yellow; with ~20% fine to coarse gravel grading to pale yellow at base of core	30.5	2.1
Clay, silty, pale yellow; with pale yellow to light-gray lenses of fine sand. Sand content decreases toward the base of the core	30.9	.4
Sand, medium, brownish-yellow; as in 28.4-30.5 ft interval above, but no gravel	31.4	.5
No sample recovered	32.0	.6
Sand, medium, brownish-yellow	33.0	1.0
Sand, medium, brownish-yellow; with thin layers of clayey sand with some maroon mottling	33.2	.2
Sand, medium, brownish-yellow; as above	33.5	.3
No sample reported	34.0	.5
Sand, medium, brownish-yellow to pale yellow; with some gravel lenses; dark brown, poorly cemented concretions associated with gravel lenses.	35.0	1.0

Table 2M. Lithologic log for site WB33 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB33--Continued		
Data missing from 36.0-36.0-ft interval	36.0	1.0
Sand, medium, brownish-yellow to pale yellow; with some gravel lenses, and dark brown, poorly cemented concretions associated with gravel lenses. Concretions are well consolidated in the 36.8-37.5-ft interval; few coarse, distinct, red mottles in bottom 0.8 ft of stratum.	37.5	1.5
No sample reported	38.0	.5
Sand, medium, light yellowish-brown to yellowish-brown; with many fine black to yellowish-red concretions in upper 0.45 ft and as much as 30% of the volume of the 0.45-0.6-ft section of this core is made up of these concretions	38.8	.8
No sample reported	40.0	1.2
Sand, medium, yellowish-brown; with ~25% fine gravel; many coarse, faint brown mottles	40.3	.3
Sand, medium, yellowish-brown; with few fine black concretions	40.7	.4
Sand, medium, strong brown; with 20-25% brown concretions	40.8	.1
Sand, medium, light yellowish-brown; with many faint distinct yellowish-brown and black mottles	41.1	.3
Sand, medium, pale yellow; with many coarse, distinct light brownish-gray mottles and few coarse, distinct, strong brown mottles	41.5	.4
No sample recovered	42.0	.5
Sand, medium, pale yellow; with many coarse distinct light brownish-gray mottles and few coarse, distinct, strong brown mottles. Few strong brown concretions.	42.7	.7
Sand, coarse sand to fine gravel, pale yellow; some of the material is loosely consolidated by fines.	43.0	.3
Sand, medium, light yellowish-brown grading into brownish-yellow and pale yellow; there is a layer of fine gravel-sized black nodules at the base of this core	44.5	1.5
Sand, medium, weak-red grading into yellowish-red in the bottom 0.25 ft of core	46.2	1.7
Sand, medium, brownish-yellow; with few fine, distinct strong brown mottles	46.9	.7
Sand, medium, reddish-brown to strong brown; with ~50% coarse black concretions	47.3	.4
No sample reported	48.2	.9
Sand, medium, strong brown; with <5% coarse sand and fine gravel; few well indurated fine gravel-sized dark brown concretions	49.0	.8
No sample reported	50.2	1.2
Clay, gray, marbled; with stiff consistence; mixed with yellowish-brown medium sand; few coarse, distinct, dark red mottles	51.7	1.5
Clay, dark red; with many fine distinct gray mottles	51.8	.1

Table 2N. Lithologic log for site WB34 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth refers to the bottom of specified interval; ft, feet; %, percent; ~, approximately; <, less than]

Description	Depth (ft)	Thickness (ft)
SITE WB34		
No sample recovered	4.0	4.0
Silt, dark brownish-gray; with many fine roots and many distinct, dark brownish-gray mottles	4.6	.6
Sand, medium, light brownish-gray; with fines, few roots, and many distinct brown mottles	5.4	.8
No sample recovered	6.0	.6
Sand, medium, light brownish-gray; with fines, few roots, and many distinct brown mottles	6.3	.3
Sand, fine to medium, brownish-yellow; with varying amounts of silt and clay, many coarse, distinct strong brown mottles and many coarse, distinct gray mottles; occasional fine gravel	7.1	.8
No sample recovered	8.0	.9
Sand, fine to medium, brownish-yellow; with varying amounts of silt and clay, many coarse, distinct strong brown mottles, and many coarse, distinct gray mottles; occasional fine gravel	8.2	.2
Clay, light gray; with many fine, distinct reddish-yellow mottles	8.8	.6
Sand, medium, reddish-yellow; with fines	8.9	.1
No sample recovered	10.0	1.1
Sand, medium, reddish-yellow; with fines	10.1	.1
Clay, gray; (as above 8.2-8.8-ft interval) with stiff consistence. Few fine, strong brown concretions and occasional fine gravel	11.5	1.4
No sample recovered	12.0	.5
Clay, gray; (as above 8.2-8.8-ft interval) with stiff consistence. Few fine, strong brown concretions and occasional fine gravel	12.3	.3
Clay, gray; with soft consistence	12.8	.5
Sand, clayey, gray; with 10-15% fine gravel; many fine, distinct dark-red and many coarse, faint reddish-yellow mottles	13.1	.3
Sand, silty to clayey, gray; with many fine, distinct dark-brown mottles with associated sand-sized concretions	13.3	.2
No sample reported	14.0	.7
Clay, gray; with ~5% fine gravel; few coarse, distinct yellow mottles	14.5	.5
Sand, medium, gray, coarsening with depth; many very coarse, distinct strong brown mottles and few coarse, distinct dark-brown mottles	15.5	1.0
Sand, coarse, yellow; and fine gravel	15.7	.2
No sample reported	16.0	.3
Sand, medium, brownish-yellow; with <5% fine gravel with few faint coarse, light-brown mottles.	17.0	1.0
No sample recovered	18.0	1.0
Sand, medium, brownish -yellow; with <5% fine gravel with few faint, coarse, light-brown mottles. Gravel content increases to ~30% in the 18.0-18.6-ft interval	18.6	.6
No sample reported	20.0	1.4
Gravel, fine to coarse, yellow	20.8	.8
Clay, gray; with fine black laminations; medium stiff consistence; grades into brownish-yellow sandy clay at 22.9 ft	22.9	2.1
Sand, fine, light gray	23.2	.3
No sample reported	24.0	.8
Sand, fine, pale yellow to yellow	26.8	2.8
Sand, fine, light gray	26.9	.1
Sand, fine, brownish-yellow; with weak red concretions and black mottles	27.4	.5

Table 2O. Lithologic log for site WB35 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ~, approximately; %, percent; ft, feet]

Description	Depth (ft)	Thickness (ft)
SITE WB35		
Peat, fibric, very dark gray; mixed with silt and clay; ~60% organic material	4.9	4.9
No sample recovered	5.4	.5
Silt, sandy, gray; with occasional fine gravel; few fine roots	5.7	.3
Sand, fine to medium, brownish-yellow	6.0	.3
Silt, sandy gray; wet	6.4	.4
Clay, sandy, brownish-yellow; with stiff consistence; many coarse, distinct light-gray mottles	6.7	.3
Sand, medium, brownish-yellow; with few yellowish-red nodules	6.9	.2
Sand, silty, yellowish-brown; with many coarse, distinct, strong brown mottles	7.4	.5
No sample reported	8.0	.6
Sand, medium, light yellowish-brown; with many coarse, distinct, strong brown and light-gray mottles	8.8	.8
No sample reported	10.0	1.2
Sand, medium, light yellowish-brown to reddish-yellow; with increasing fine to coarse gravel contents with depth	13.0	3.0
No sample reported	14.0	1.0
Sand, medium, brownish-yellow; with ~15% fine gravel	15.6	1.6
No sample reported	16.0	.4
Gravel, fine to coarse, brownish-yellow; with ~30% medium to coarse sand and some clay	16.3	.3
Clay, light gray; with soft consistence	16.4	.1
Gravel, fine to coarse, brownish-yellow; as in 16.0-16.3-ft interval	16.8	.4
No sample reported	18.0	1.2
Sand, coarse, brownish-yellow; and fine to coarse gravel; some clay lenses	18.9	.9
No sample reported	20.0	1.1
Sand, coarse, brownish-yellow; and fine to coarse gravel; some clay lenses	20.2	.2
No sample recovered	22.0	1.8
Sand, coarse, brownish-yellow; and fine to coarse gravel; some clay lenses	22.1	.1
Sand, fine, light gray; with two thin clay lenses (0.02 ft thick) at 20.1 ft and 20.6 ft	22.8	.7
No sample reported	24.0	1.2
Gravel, with sand, silt, and clay; light brown, with many fine distinct red mottles	24.1	.1
Sand, fine, very pale brown; with many coarse, faint yellowish-brown mottles and few coarse, faint reddish-gray mottles	24.6	.5

Table 2P. Lithologic log for site WB36 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; ft, feet; <, less than]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB36		
Peat, clayey, black; fibric to hemic	0.3	0.3
No sample reported	2.0	1.7
No sample recovered	4.0	2.0
Peat, clayey, black	4.7	.7
Sand, medium, gray; with occasional gravel	4.9	.2
Silt, sandy, gray; becoming more sandy with depth, few fine roots, many coarse faint to distinct brownish- yellow mottles	5.9	1.0
Sand, fine, brownish-yellow; with many coarse, distinct dark-red mottles and many coarse gray mottles	7.0	1.1
Sand, medium sand to fine gravel, brownish-yellow; with many coarse, distinct dark-red mottles	8.7	1.7
Sand, medium, strong brown; with occasional gravel	9.3	.6
No sample reported	10.0	.7
Sand, medium, brownish-yellow; with some good gravel, few coarse, faint dark-red mottles, and poorly associated consolidated concretions	11.5	1.5
No sample reported	12.0	.5
Sand, medium to coarse (mU-cU), brownish-yellow; with some fine gravel and some distinct dark-red mottling. Lens of fine, yellow sand at 12.6-12.8-ft interval	18.9	6.9
No sample reported	20.0	1.1
Sand, fine (fU), light gray to yellow	20.8	.8
Sand, fine, gray; with fine sand	21.0	.2
No sample reported	22.0	1.0
Sands, fine to medium (fU-mL), multicolored; with colors ranging from yellow to brown with interbedded clay laminations. The clays are of medium stiff consistence and range in color from gray to pinkish gray	23.3	1.3
Sand, fine (fU), light gray; intermixed with wet yellow sand and fine gravel. Gravel is sometimes coated by light-gray clay at the base of this stratum	23.8	.5
No sample recovered	24.0	.2
Sand, fine (fU), light gray; intermixed with wet yellow sand and fine gravel Gravel is sometimes coated by light-gray clay at the base of this stratum	24.1	.1
Sand, fine, white; with some gravel and clay lenses in upper part of stratum. Pale yellow mottling in upper part and maroon mottling and concretions throughout.	24.4	.3
No sample recovered	26.0	1.6

Table 2P. Lithologic log for site WB36 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Description	Depth (ft)	Thickness (ft)
SITE WB36--Continued		
Sand, fine, white; maroon mottling and concretions throughout. At 26.0 ft and 27.2 ft there are thin layers of maroon color with concretions up to 5 millimeters; there is clayey fine sand in these layers.	27.5	1.5
No sample reported	28.0	.5
Sand, medium, yellow to strong brown to pale yellow; with layers of soft clay at 28.2-28.3 ft and 28.5-28.52 ft. Maroon mottling throughout; concretions of the same color in the 28.2-28.3-ft layer	29.2	1.2
No sample reported	30.0	.8
Sand, medium, brownish-yellow to pale yellow to white; with fine gravel; occasional maroon concretions	30.9	.9
Clay, light gray, of hard consistence; with streaks of orange and yellow and sparse maroon mottling with small friable concretions	31.4	.5
Sand, and coarse gravel, maroon to black; with small concretions up to 30 millimeters, surrounded by yellowish-brown medium sand	31.5	.1
Sand, medium, brownish-yellow; with some fine gravel	31.8	.3
No sample recovered	32.0	.2
Sand, medium, brownish-yellow; with some fine gravel	32.4	.4
Gravel, very coarse, brown to red; 60-70 millimeters along longest axis	32.6	.2
Sand, medium to coarse, yellow to brownish-yellow; with occasional cobble-sized grains; maroon to dark-brown mottling with small concretions	33.5	.9
No sample recovered	36.0	2.5
Sand, medium, pale yellow to yellow; with <15% fine gravel	36.4	.4
Gravel, fine; coated with light gray clay and fine sand	36.7	.3
Sand, medium, pale yellow to yellow; as in 36.0-36.4-ft interval; with maroon concretions and lenses of clayey sand	37.8	1.1
No sample recovered	38.0	.2
Sand, medium, pale yellow to yellow; as in 36.0-36.4-ft interval; with maroon concretions and lenses of clayey sand	41.4	3.4
Sand, medium to coarse (mU-cL), light gray to white	42.5	1.1
Sand, medium (mU), brownish-yellow to yellowish-brown; with some fine to coarse gravel and sparse iron concretions	42.8	.3
No sample reported	43.1	.3
Sand, medium, light gray; with dark reddish-brown and reddish-yellow mottles and black, coarse concretions	44.1	1.0
Black, highly indurated layer of iron concretions grading into reddish-brown silty sand interbedded with iron concretions	44.7	.6
No sample reported	45.0	.3
Sand, medium, light gray to brown; with dark reddish-brown mottles and associated black concretions	46.0	1.0
Sand, silty, brownish-yellow; with fine gravel cemented by purple and white clay at base of core	46.3	.3
No sample reported	47.0	.7
Sand, gravel, and clay, light gray; mixture, with many coarse, distinct yellowish-red mottles	47.3	.3
Clay, sandy, light gray to very dark gray; of medium consistence	47.7	.4
Clay, dark gray; with very stiff consistence	48.6	.9

Table 2Q. Lithologic log for site WB37 at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Depth, refers to the bottom of specified interval; %, percent; ~, approximately; ft, feet]

Sand grade scale and description

Grain size (in microns)	Term	Description
1,410 - 2,000	vcU	very coarse, upper end of grain size
1,000 - 1,410	vcL	very coarse, lower end of grain size
710 - 1,000	cU	coarse, upper end of grain size
500 - 710	cL	coarse, lower end of grain size
350 - 500	mU	medium, upper end of grain size
250 - 350	mL	medium, lower end of grain size
177 - 250	fU	fine, upper end of grain size
125 - 177	fL	fine, lower end of grain size
88 - 125	vfU	very fine, upper end of grain size
62 - 88	vfL	very fine, lower end of grain size

Description	Depth (ft)	Thickness (ft)
SITE WB37		
No data	4.0	4.0
Sand, medium, black; with some fines; many coarse to fine roots	4.4	.4
Silt, sandy, grayish-brown; with some gravel	6.8	2.4
Vertical permeability sample	7.3	.5
Sand, medium, gray grading into brownish-yellow; with fine gravel to coarse gravels. Gravels make up 15-20% of the cores; few fine, distinct dark-red mottles	11.4	4.1
Silty, sandy, light brownish-yellow; with occasional fine gravel grading into gravelly sand (sand content ranging from 25-40%); few coarse, distinct weak red mottles	14.2	2.8
Clay, sandy, gray; with ~10% fine gravel; many coarse, distinct black mottles and many coarse, distinct brownish-yellow mottles; occasional fine, strong brown, poorly indurated iron nodules; possibly some humified organic material associated with the black mottles	17.0	2.8
Sand, medium, gray; becoming silty at the base of the stratum	17.5	.5
No sample reported	18.0	.5
Silt, clayey, gray; with very fine layers of black organic material; some of the organics in this stratum have maintained some degree of structural integrity	19.5	1.5
Clay, dark gray; with medium stiff consistence; interbedded with fine sand	21.3	1.8
Sand, fine, gray; thin black laminations in the bottom 0.94 ft of stratum	23.1	1.8
Clay, yellowish-brown; with medium stiff consistence, interbedded with fine sand	23.8	.7
No sample reported	24.0	.2
Clay, gray; with very fine sand; medium stiff consistence; fine black laminations throughout section	24.4	.4
Silt, sandy, strong brown grading into light brown; few black laminations, brownish-yellow mottles	24.7	.3
Sand, very fine, light gray; interbedded with brown clay ranging from soft to medium stiff consistence; mottles in sand layer are very pale brown, red, and brownish-yellow	26.0	1.3
Sand, fine, light brownish-gray to light gray; black mottles in upper portion of core; very pale brown mottles in lower portion	28.3	2.3
Sand, fine to medium, pale yellow to brownish-yellow; micaceous, with occasional fine gravel in some substrata. Some black laminae and thin clay laminae; clayey sand lenses at 28.9 ft and 29.1 ft (0.02 ft thick)	34.0	5.7

Table 3. Grain-size distribution of selected sediment samples collected from the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1996

[i, insufficient sample for accurate gradation; --, not analyzed by this sieve]

Site no.	Depth interval (feet below land surface)	Percent finer than sieve size, in millimeters									
		50.0	37.5	25.0	19.1	12.5	9.50	6.35	4.75	3.35	2.00
WB21.4	8.0 to 10.0	--	--	--	--	--	100	99.9	99.4	99.4	98.4
WB27 (i)	8.0 to 10.0	100	92.7	90.0	87.4	82.0	77.8	77.3	71.5	66.9	62.2
WB35	6.9 to 10.0	--	--	--	--	--	--	--	100	100	100
WB35	10.1 to 11.7	--	--	--	--	100	99.3	98.3	97.7	96.8	95.7
WB36	10.0 to 12.0	--	--	100	98.3	97.3	95.4	92.8	90.5	88.4	85.3

Site no.	Depth interval (feet below land surface)	Percent finer than sieve size, in millimeters								
		1.18	0.850	0.600	0.425	0.300	0.212	0.150	0.106	0.075
WB21.4	8.0 to 10.0	96.5	94.3	88.2	67.9	34.1	14.4	7.4	5.6	4.5
WB27 (i)	8.0 to 10.0	57.9	54.7	49.2	37.5	20.5	9.7	6.4	5.8	5.3
WB35	6.9 to 10.0	99.9	99.5	98.4	92.3	77.5	64.5	54.4	48.5	40.7
WB35	10.1 to 11.7	94.0	92.4	88.7	73.4	44.4	25.5	15.2	11.6	9.4
WB36	10.0 to 12.0	81.4	77.5	69.1	48.6	24.5	12.6	8.2	6.8	5.7

Table 4. Mineralogy of sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Descriptors correspond to the following approximate percent by volume: "essentially," 98 percent; "major," 70-90 percent; " trace," mineral is present and is probably around 3 percent level; "possibly," mineral is present and is at 1 percent level or below]

Sample no.	Depth interval (in feet below land surface)	Description
		Fill material/upper confining unit
WB20-5	5.1 - 5.6	Major quartz; trace mica (probably muscovite), kaolinite.
WB20-7	6.60- 7.25	Major quartz; trace mica, feldspars (plagioclase and potassium feldspar), kaolinite.
WB20-9.6	9.5 - 9.7	Major quartz; trace mica, goethite, K-spar, kaolinite.
WB20-11	10.55-12.00	Major quartz, trace mica.
WB21-1	9.0 -22.0	Major quartz; trace mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB32-5	4.0 - 6.0	Major quartz; trace feldspars, mica, chlorite, and/or kaolinite and montmorillonite.
WB32-7	6.3 - 7.8	Major quartz; trace feldspars, mica, chlorite, and/or kaolinite and montmorillonite, and possibly trace siderite.
WB32-12	12.35-12.95	Major quartz; trace plagioclase, mica, chlorite, and/or kaolinite and montmorillonite.
WB32-13	12.75-14.00	Major quartz; trace mica, chlorite and/or kaolinite and montmorillonite.
WB32-14	14.0 -14.8	Major quartz; trace mica, plagioclase, and possibly akermanite or fayalite, manganoan.
WB33-3	2.0 - 4.0	Major quartz; trace mica, feldspars, chlorite and/or kaolinite and montmorillonite.
WB33-9	8.0 -10.0	Major quartz; trace mica, chlorite, and/or kaolinite and montmorillonite.
WB33-11	10.3 -12.0	Major quartz, trace plagioclase and mica.
		Wetland sediment- peat and peaty clay
WB21.4-5	4.0 - 5.0	Major quartz; minor amorphous organic material, trace mica, feldspars, chlorite and/or montmorillonite and kaolinite.
WB24-6	6.0 - 6.5	Major quartz, possibly trace goethite.
WB26-3	2.0 - 4.0	Major quartz and amorphous organic material, minor gypsum, pyrite, trace mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB27-1	0.0 - 2.0	Major quartz and amorphous organic material, minor pyrite, trace gypsum, mica, feldspars.
WB27-3	2.0 - 4.0	Major quartz and amorphous organic material, minor pyrite, trace gypsum, mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB27-5	4.0 - 5.5	Major quartz and amorphous organic material, minor pyrite, trace gypsum, mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB28-1	0.0 - 2.0	Major quartz and amorphous organic material, minor pyrite, trace gypsum, mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB28-3	2.0 - 4.0	Major quartz and amorphous organic material, minor pyrite, mica, trace feldspars, chlorite, and/or montmorillonite and kaolinite.
WB28-5	4.0 - 6.0	Major quartz and amorphous organic material, trace mica, pyrite, and feldspars.
WB28-7	6.0 - 8.0	Major quartz and amorphous organic material, trace mica, feldspars, chlorite and/or montmorillonite and kaolinite.
WB28-9	8.6 - 9.5	Essentially pure quartz.
WB28-11	10.0 -12.0	Major quartz, trace mica and feldspars.
WB35-1	0.4 - 2.0	Major quartz; trace feldspars, mica, pyrite, kaolinite.
WB35-4.5	4.0 - 4.9	Major quartz and amorphous organic material, trace mica, pyrite, feldspars, chlorite and/or kaolinite and montmorillonite, and possibly siderite.
WB36-1	0.0 - 2.0	Major quartz and amorphous organic material, minor pyrite, trace mica and feldspars.
WB36-4.5	4.0 - 4.7	Major quartz and amorphous organic material, minor pyrite and gypsum, trace feldspars, mica, and kaolinite.

Table 4. Mineralogy of sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Sample no.	Depth interval (in feet below land surface)	Description
		Wetland sediment- clay
WB22-2	2.0 - 3.0	Major quartz; trace mica, feldspars.
WB22-5	5.35- 5.55	Major quartz, trace feldspars.
WB22-6	6.0 - 7.1	Major quartz; trace mica, feldspars, kaolinite.
WB22-11	11.3 -12.0	Major quartz; trace mica and possibly montmorillonite.
WB23-5	4.0 - 6.0	Major quartz; trace mica, feldspars, chlorite, and/or montmorillonite and kaolinite, and possibly siderite.
WB24-7.2	7.0	Major quartz; trace mica, feldspars, kaolinite
WB26-7	6.0 - 8.0	Major quartz; trace mica, feldspars.
WB30-5	4.0 - 6.0	Major quartz; trace mica, feldspars.
WB30-9	9.0 - 9.5	Major quartz; trace mica, feldspars.
WB31-2.5	2.0 - 3.0	Major quartz; trace mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB31-5	4.0 - 5.5	Major quartz; minor mica (probably muscovite), trace potassium feldspar, plagioclase, kaolinite, montmorillonite, and possibly siderite.
WB31-6.2	6.00- 6.56	Major quartz; trace potassium feldspar, plagioclase, mica, siderite, chlorite, and/or montmorillonite and kaolinite.
WB31-9	8.0 - 9.2	Major quartz; trace feldspars, mica, chlorite, and/or kaolinite and montmorillonite.
WB35-6.5	6.4 - 6.7	Major quartz; trace mica, feldspars, chlorite, and/or kaolinite and montmorillonite, siderite.
		Wetland sediment- sand
WB23-11	10.8 -11.0	Essentially pure quartz.
WB24-10	10.35-10.50	Essentially pure quartz.
WB27-9	8.0 -10.0	Essentially pure quartz.
WB27-11	10.72-11.05	Essentially pure quartz.
WB30-3	2.0 - 4.0	Major quartz; trace mica, feldspars, chlorite, and/or montmorillonite and kaolinite.
WB30-7	6.75- 7.00	Essentially pure quartz with trace mica.
WB31-6.8	6.56- 6.90	Essentially pure quartz with trace mica.
WB35-5.6	5.4 - 5.7	Major quartz; trace feldspar, mica.
WB36-4.8	4.70- 4.85	Major quartz, trace mica and feldspars.
WB36-5	4.85- 5.90	Major quartz, trace mica and feldspars.
WB37-4	4.00- 4.42	Essentially pure quartz with trace mica.
WB37-4.5	4.42- 4.90	Major quartz; trace mica and feldspars.
		Canal Creek aquifer- sand
WB20-21	21.0 -22.0	Major quartz, trace mica and kaolinite.
WB20-29	28.0 -30.0	Major quartz, trace mica and kaolinite.
WB20-37	36.0 -37.3	Major quartz, trace goethite and mica.
WB21.4-9	8.0 -10.0	Essentially pure quartz.
WB30-11.7	11.3 -12.0	Major quartz, trace mica and plagioclase.
WB31-10	10.0 -11.2	Pure quartz.
WB32-36	36.00-36.45	Major quartz; trace mica, kaolinite, and goethite.
WB32-25	24.0 -26.6	Major quartz; trace mica, kaolinite, and possibly galena.
WB32-46	44.00-47.75	Major quartz; trace mica, goethite, and possibly kaolinite.
WB33-19	18.0 -20.0	Major quartz, trace mica and possibly goethite.
WB33-45	44.5 -45.1	Major quartz; trace mica, goethite, and possibly hematite.
WB34-5	4.55- 5.40	Major quartz, trace plagioclase and mica.

Table 4. Mineralogy of sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Sample no.	Depth interval (in feet below land surface)	Description
		Canal Creek aquifer- sand (Continued)
WB34-9.2	8.0 -10.0	Major quartz, trace plagioclase, mica.
WB34-11.2	10.0 -12.0	Major quartz, trace mica.
WB35-6.8	6.7 - 6.9	Major quartz, trace feldspars, mica.
WB35-9	8.0 -10.0	Essentially pure quartz, trace mica.
WB35-11	11.0 -11.7	Essentially pure quartz.
WB36-6.5	6.0 - 7.0	Major quartz, minor mica, trace feldspars.
WB36-9	8.7 - 9.3	Essentially pure quartz with trace mica.
WB36-11	10.0 -12.0	Essentially pure quartz with trace mica.
WB37-10	10.0 -11.4	Essentially pure quartz with trace mica.
		Canal Creek aquifer- clay
WB20-24	23.4 -24.0	Major quartz, trace mica (probably muscovite) and kaolinite.
WB34-9.1	8.0 -10.0	Major quartz; trace feldspars, mica, cnlorite, and/or kaolinite and montmorillonite.
WB34-11.1	10.0 -12.0	Major quartz; trace feldspars, mica, kaolinite, and possibly siderite.
		Cemented sand
WB24-7.1	6.0 - 8.0	Major quartz; trace mica, feldspars, kaolinite.
WB33-44.5	44.5	Major quartz; minor goethite, trace mica, and hematite.
WB26-3	2.0 - 4.0	Chlorite (both clinochlore and vermiculite), kaolinite, and trace of expandable smectite (probably montmorillonite).
WB35-1	0.4 - 2.0	Chlorite (same as above) and kaolinite.
WB30-3	2.0 - 4.0	Chlorite (same as above) and kaolinite.
WB21.4-5	4.0 - 5.0	Chlorite (vermiculite) and kaolinite.
WB32-25	24.0 -26.6	Kaolinite
WB35-4.5	4.0 - 4.9	Chlorite (clinochlore and vermiculite) and kaolinite.
WB32-5	4.0 - 6.0	Chlorite (clinochlore and vermiculite) and kaolinite.
WB31-6.2	6.00-6.56	Chlorite (clinochlore and vermiculite) and kaolinite.
WB31-2.5	2.0 -3.0	Chlorite (clinochlore and vermiculite) and kaolinite.

Table 5. Percent total organic carbon in selected sediment samples collected from the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[sed, sediment]

Site no.	Depth (feet below land surface)	Hydrogeologic unit	Total organic carbon (percent)
WB21.4	8.0 - 10.0	Canal Creek aquifer	0.3
WB22	4.0 - 5.4	wetland sed, upper peaty unit	10.1
WB22	8.0 - 10.0	wetland sed, lower clayey unit	1.6
WB24	3.0 - 6.0	wetland sed, upper peaty unit	20.9
WB25-1	0.0 - 1.0	wetland sed, upper peaty unit	6.9
WB26	2.0 - 4.0	wetland sed, upper peaty unit	16.6
WB26	4.0 - 6.0	wetland sed, upper peaty unit	19.7
WB26	6.0 - 8.0	wetland sed, lower clayey unit	2.5
WB27	4.0 - 5.5	wetland sed, upper peaty unit	18.5
WB27	8.0 - 10.0	wetland sed, lower clayey unit	.7
WB27-1	0.0 - 1.0	wetland sed, upper peaty unit	12.6
WB28	2.0 - 4.0	wetland sed, upper peaty unit	13.3
WB28	6.0 - 8.0	wetland sed, upper peaty unit	14.8
WB30	0.0 - 1.0	wetland sed, upper peaty unit	10.6
WB31	6.0 - 6.6	wetland sed, lower clayey unit	1.0
WB34	6.0 - 8.0	Canal Creek aquifer	.8
WB34	10.0 - 12.0	Canal Creek aquifer	1.5
WB35	0.0 - 0.4	wetland sed, upper peaty unit	32.6
WB35	0.4 - 2.0	wetland sed, upper peaty unit	27.1
WB35	4.0 - 4.9	wetland sed, upper peaty unit	25.2
WB35	6.9 - 10.0	wetland sed, lower clayey unit	1.1
WB35	10.0 - 11.7	Canal Creek aquifer	.3
WB36	4.0 - 4.7	wetland sed, upper peaty unit	22.4
WB36	4.8 - 5.9	wetland sed, lower clayey unit	1.6
WB36	10.0 - 12.0	Canal Creek aquifer	.5
WB43	0.0 - 1.4	wetland sed, upper peaty unit	20.4

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996

[Land surface elevation is in feet above or below (-) sea level; screen depth is in feet below land surface; sed., sediments; water levels in feet above or below (-) sea level; --, no data; <, less than; >, greater than]

Well: DP-1A
Land surface elevation: 1.20
Screen depth: 1.9-2.9
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	1059	1.32	1532	1.32
11/09/95	1416	1.32	0850	1.34
11/21/95	1227	1.38	0847	1.37
12/10/95	1444	1.03	1011	.44
03/06/96	1406	1.04	0924	1.08
03/20/96	1427	1.99	1028	1.82
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1107	1.47	1535	1.49
07/23/96	0904	1.29	1320	1.29
08/08/96	1007	1.52	1437	1.51
09/05/96	0854	1.71	1314	1.71
10/03/96	0803	1.81	1248	1.81

Well: DP-1B
Land surface elevation: 1.23
Screen depth: 6.5-7.5
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	1101	1.78	1535	1.53
11/09/95	1417	1.64	0853	1.65
11/21/95	1229	1.92	0851	1.94
12/10/95	1444	1.66	1013	1.71
03/06/96	1407	1.68	0928	1.70
03/20/96	1429	2.04	1029	1.95
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1108	1.72	1535	1.71
07/23/96	0905	1.67	1320	3.03
08/08/96	1008	1.79	1438	1.71
09/05/96	0855	1.79	1316	2.79
10/03/96	0804	3.06	1249	3.04

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: DP-2
Land surface elevation: 1.49
Screen depth: 5.6-6.6
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	1112	3.32	1545	3.31
11/09/95	1431	2.94	0907	3.15
11/21/95	1242	2.98	0852	2.96
12/10/95	1450	2.36	1051	2.36
03/06/96	1415	3.15	1036	3.18
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1032	3.83	1510	3.84
07/23/96	0901	3.88	1350	3.86
08/08/96	0938	3.94	1417	3.91
09/05/96	0825	3.94	1249	3.95
10/03/96	0739	4.06	1222	4.06

Well: WB19A
Land surface elevation: 1.52
Screen depth: 1.3-1.8
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0738	1.34	1254	1.93
03/31/95	--	--	--	--
04/05/95	0618	1.51	1035	1.50
04/13/95	1304	1.58	0842	1.63
04/20/95	0635	1.55	1109	1.52
04/26/95	1134	1.49	0627	1.50
05/02/95	1512	1.86	0913	2.05
05/18/95	0633	1.62	1106	1.73
06/12/95	1224	1.78	0919	1.90
08/29/95	--	--	--	--
10/03/95	0907	1.57	1420	1.63
10/17/95	0843	1.55	1311	1.49
10/25/95	1446	1.51	1036	1.54
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1042	1.47
03/20/96	--	--	--	--
04/17/96	1512	1.55	1047	1.79
05/02/96	1330	1.57	0803	2.00
06/10/96	1229	1.58	1605	1.73
07/23/96	0952	1.58	1407	1.65
08/08/96	1045	1.58	1510	1.58
09/05/96	0955	1.59	1414	1.86
10/03/96	0840	1.57	1318	1.59

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB19B
Land surface elevation: 1.50
Screen depth: 4.2-4.7
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0739	2.32	1256	2.30
03/31/95	--	--	--	--
04/05/95	0620	-.66	1038	1.68
04/13/95	1305	1.60	0843	1.61
04/20/95	0637	1.56	1110	1.56
04/26/95	1135	1.60	0628	1.59
05/02/95	1513	2.51	0913	--
05/18/95	0634	2.45	1107	2.48
06/12/95	1225	1.83	0920	1.81
08/29/95	--	--	--	5.20
10/03/95	0908	1.76	1421	1.79
10/17/95	0844	1.71	1313	1.70
10/25/95	1447	1.68	1036	1.64
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1043	1.53
03/20/96	--	--	--	--
04/17/96	1512	1.68	0948	1.71
05/02/96	1331	1.72	0804	1.74
06/10/96	1130	1.64	1606	1.69
07/23/96	0951	1.70	1408	1.64
08/08/96	1046	1.71	1511	1.71
09/05/96	0957	1.95	1414	1.91
10/03/96	0841	1.81	1319	1.79

Well: WB19D
Land surface elevation: 1.51
Screen depth: 13.5-14.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0741	2.81	1259	2.83
03/31/95	--	--	--	--
04/05/95	0626	2.92	1043	2.81
04/13/95	1307	1.90	0846	1.96
04/20/95	0640	1.97	1114	1.92
04/26/95	1137	1.89	0631	1.90
05/02/95	1517	2.12	0922	--
05/18/95	0638	2.04	1109	2.02
06/12/95	1227	2.05	0922	2.01
08/29/95	--	--	--	--
10/03/95	0911	3.32	1423	2.67
10/17/95	0847	3.16	1315	3.09
10/25/95	1447	2.65	1038	3.09
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1046	3.37
03/20/96	--	--	--	--
04/17/96	1513	4.95	0949	4.85
05/02/96	1333	4.23	0805	4.26
06/10/96	1232	3.05	1607	2.69
07/23/96	0949	3.12	1410	2.73
08/08/96	1048	3.47	1512	2.71
09/05/96	0959	3.54	1414	3.07
10/03/96	0843	3.62	1321	3.12

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB19E
Land surface elevation: 1.46
Screen depth: 28.5-29.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0744	3.61	1300	4.05
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0641	3.55	1115	3.93
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0638	3.81	1110	>4.21
06/12/95	1227	3.96	0918	>4.21
08/29/95	--	--	--	--
10/03/95	0912	3.56	1425	3.91
10/17/95	0849	3.26	1320	3.31
10/25/95	1448	3.51	1038	3.70
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	1513	4.11	--	--
05/02/96	--	--	--	--
06/10/96	1233	3.27	1608	3.46
07/23/96	0949	4.21	1411	>4.21
08/08/96	1047	4.21	1514	3.47
09/05/96	1005	3.37	1415	3.45
10/03/96	0844	3.33	1322	3.29

Well: WB19F
Land surface elevation: 1.33
Screen depth: 45.0-45.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0743	2.88	1300	2.75
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0643	2.94	1117	2.93
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0640	3.53	1110	3.48
06/12/95	1230	3.19	0923	3.19
08/29/95	--	--	--	--
10/03/95	0913	4.22	1426	4.21
10/17/95	0950	3.94	1321	3.90
10/25/95	1449	3.87	1039	4.04
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
04/17/96	--	--	0950	4.42
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	0845	3.32	--	--

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB20A
Land surface elevation: 12.18
Screen depth: 15.1-16.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0856	4.02	1452	4.19
03/31/95	--	--	--	--
04/05/95	0748	3.74	1202	3.74
04/13/95	1230	4.08	0800	4.08
04/20/95	0615	3.83	1043	3.83
04/26/95	1118	3.84	0614	3.84
05/02/95	1457	4.26	--	4.18
05/18/95	0503	4.52	0943	4.54
06/12/95	1239	4.51	0731	4.51
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	1040	3.78	1456	3.94
10/25/95	1340	4.48	0840	5.81
11/03/95	1119	4.40	1552	4.39
11/09/95	1440	4.04	0913	4.02
11/21/95	1258	4.74	0815	4.77
12/10/95	1555	4.41	1058	4.35
03/06/96	1422	4.95	0833	4.95
03/20/96	--	--	--	--
04/17/96	1354	5.28	0809	5.32
05/02/96	1146	5.15	0652	5.14
06/10/96	1240	4.88	1650	4.97
07/23/96	1038	5.05	1453	5.05
08/08/96	1139	5.01	1558	5.05
09/05/96	1009	4.87	1539	4.92
10/03/96	0936	5.10	1350	5.02

Well: WB20B
Land surface elevation: 12.32
Screen depth: 21.0-21.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0858	4.34	1454	4.38
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0618	4.09	1046	3.89
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0507	4.75	0946	4.77
06/12/95	1200	4.65	0733	4.75
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	1040	3.95	1459	4.04
10/25/95	1314	4.32	0839	4.13
11/03/95	1120	4.59	1554	4.61
11/09/95	1442	4.27	0915	4.24
11/21/95	1259	4.97	0815	4.95
12/10/95	1456	4.61	1059	4.52
03/06/96	1424	5.19	0833	5.18
03/20/96	--	--	--	--
04/17/96	1400	5.51	0812	5.56
05/02/96	1148	5.37	0653	5.39
06/10/96	1242	5.11	1652	5.20
07/23/96	1039	5.30	1454	5.35
08/08/96	1140	5.24	1559	5.29
09/05/96	1010	4.99	1539	5.15
10/03/96	0938	5.31	1351	5.24

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB20E
Land surface elevation: 12.28
Screen depth: 45.0-45.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0901	3.89	1501	3.62
03/31/95	--	--	--	--
04/05/95	0752	3.48	1205	3.45
04/13/95	1233	3.63	0803	3.63
04/20/95	0620	3.63	1052	3.62
04/26/95	1121	3.65	0617	3.66
05/02/95	1501	3.76	--	3.76
05/18/95	0513	3.87	0952	3.85
06/12/95	1244	4.07	0737	4.06
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1317	3.92	1556	4.41
11/03/95	1122	4.40	1559	5.34
11/09/95	1442	4.64	0915	4.64
11/21/95	1300	4.71	0815	4.69
12/10/95	1457	4.53	1100	4.55
03/06/96	1425	5.10	0834	5.07
03/20/96	--	--	--	--
04/17/96	1401	5.45	0814	5.46
05/02/96	1149	5.29	0654	5.29
06/10/96	1243	5.05	0653	5.05
07/23/96	1040	5.20	1455	5.20
08/08/96	1141	5.18	1559	5.18
09/05/96	1010	4.90	1540	4.90
10/03/96	--	--	1353	4.84

Well: WB21A
Land surface elevation: 3.00
Screen depth: 1.5-2.0
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0735	3.14	1300	3.29
03/31/95	--	--	--	--
04/05/95	0705	3.18	1113	3.15
04/13/95	1335	3.20	0917	3.27
04/20/95	0756	3.09	1158	3.11
04/26/95	1202	3.14	0700	3.21
05/02/95	--	--	--	--
05/18/95	0605	3.29	1043	3.34
06/12/95	1222	3.24	0727	3.28
08/29/95	1510	2.33	0914	2.34
10/03/95	1214	2.68	1524	2.69
10/17/95	1023	2.84	1443	2.84
10/25/95	1530	2.90	1000	2.89
11/03/95	1113	2.95	1546	2.47
11/09/95	1432	2.94	0907	2.94
11/21/95	1244	3.05	0810	3.05
12/10/95	1451	2.93	1053	2.93
03/06/96	1416	2.84	1017	2.86
03/20/96	1400	3.01	1003	3.01
04/17/96	1353	2.94	0807	2.96
05/02/96	1231	3.07	0724	3.10
06/10/96	1022	3.01	1503	3.01
07/23/96	0838	3.01	1254	3.01
08/08/96	0935	3.02	1410	3.01
09/05/96	0820	3.01	1245	2.99
10/03/96	0730	3.40	1215	3.38

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB21B
Land surface elevation: 3.10
Screen depth: 6.5-7.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0740	3.42	1301	3.59
03/31/95	--	--	--	--
04/05/95	0707	3.12	1115	3.11
04/13/95	1336	3.50	0918	3.61
04/20/95	0758	3.23	1159	3.45
04/26/95	1203	3.26	0700	3.41
05/02/95	--	--	--	--
05/18/95	0605	3.77	1045	4.00
06/12/95	1223	3.82	0729	4.11
08/29/95	1512	3.42	0916	3.59
10/03/95	1216	3.42	1526	3.58
10/17/95	1025	3.21	1443	3.25
10/25/95	1530	3.49	1001	3.59
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1018	3.99	--	--
03/20/96	1402	4.91	1006	5.34
04/17/96	1356	4.25	0814	4.55
05/02/96	1231	4.21	0725	4.46
06/10/96	1026	4.10	1504	4.20
07/23/96	0837	4.29	1253	4.35
08/08/96	0935	4.19	1111	4.23
09/05/96	0921	4.23	1245	4.24
10/03/96	0731	4.36	1216	4.17

Well: WB21C
Land surface elevation: 2.74
Screen depth: 13.5-14.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0742	4.55	1309	4.56
03/31/95	--	--	--	--
04/05/95	0708	4.32	1117	4.28
04/13/95	1338	4.25	0918	4.26
04/20/95	0800	4.22	1200	4.21
04/26/95	1205	4.17	0703	4.20
05/02/95	--	--	--	--
05/18/95	0612	4.13	1047	4.12
06/12/95	1223	4.18	0731	4.19
08/29/95	1513	3.41	0918	3.63
10/03/95	1218	3.45	1526	3.59
10/17/95	1027	3.17	1444	3.21
10/25/95	1532	3.44	1003	3.57
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1020	4.00
03/20/96	1404	4.91	1005	5.38
04/17/96	1357	4.24	0815	4.52
05/02/96	1232	4.19	0726	4.48
06/10/96	1031	3.77	1508	4.21
07/23/96	0838	4.26	1258	4.36
08/08/96	0936	4.18	1412	4.22
09/05/96	0823	4.22	1245	4.28
10/03/96	0732	4.30	1217	4.13

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB21D
Land surface elevation: 3.14
Screen depth: 17.5-18.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0744	4.46	1301	4.45
03/31/95	--		--	
04/05/95	0710	4.26	1119	4.22
04/13/95	1339	4.22	0922	4.22
04/20/95	0802	4.18	1201	4.18
04/26/95	1206	4.16	0703	4.18
05/02/95	--	--	--	--
05/18/95	0608	4.30	1048	4.30
06/12/95	1224	4.28	0730	4.27
08/29/95	1515	3.31	0919	3.55
10/03/95	1220	3.27	1528	3.49
10/17/95	1028	3.01	1445	3.06
10/25/95	1533	3.30	1004	3.44
11/03/95	1115	3.61	1547	3.78
11/09/95	1433	3.21	0909	3.27
11/21/95	1245	3.81	0811	4.02
12/10/95	1451	--	1053	--
03/06/96	1417	3.75	1024	3.81
03/20/96	1405	4.90	1007	5.35
04/17/96	1359	4.15	2018	4.43
05/02/96	1233	4.10	0727	4.39
06/10/96	1025	3.99	1505	4.04
07/23/96	0833	4.17	1252	4.23
08/08/96	0934	4.09	1413	4.08
09/05/96	0821	4.38	1246	4.22
10/03/96	0734	5.25	1218	5.26

Well: WB21E
Land surface elevation: 3.10
Screen depth: 29.5-30.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0802	4.55	1202	4.54
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0609	4.45	1048	4.44
06/12/95	1225	4.46	0732	3.96
08/29/95	1516	3.98	0920	3.98
10/03/95	1221	3.91	1529	3.91
10/17/95	1029	4.35	1446	4.35
10/25/95	1534	4.31	1005	4.31
11/03/95	1116	4.28	1548	4.30
11/09/95	1434	4.27	0910	4.27
11/21/95	1245	4.27	0811	3.57
12/10/95	1452	--	1054	--
03/06/96	1419	3.75	1028	3.74
03/20/96	--	--	--	--
04/17/96	1359	3.85	0820	3.84
05/02/96	1235	3.89	0727	3.91
06/10/96	1023	4.02	1505	4.01
07/23/96	0835	4.18	1252	4.17
08/08/96	0933	4.21	1414	4.19
09/05/96	0920	4.24	1247	4.24
10/03/96	0735	4.35	1219	4.35

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB21F
Land surface elevation: 3.10
Screen depth: 36.0-36.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0746	4.39	1305	4.39
03/31/95	--	--	--	--
04/05/95	0711	3.94	1122	3.93
04/13/95	1340	3.88	0922	3.87
04/20/95	0802	3.84	1202	3.86
04/26/95	1207	3.83	0704	3.84
05/02/95	--	--	--	--
05/18/95	0609	3.98	1049	3.98
06/12/95	1225	2.61	0733	2.57
08/29/95	1517	3.98	0921	4.03
10/03/95	1222	--	1530	--
10/17/95	1032	--	1447	--
10/25/95	1537	4.05	1007	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1030	4.43
03/20/96	--	--	--	--
04/17/96	1400	5.24	0820	5.30
05/02/96	1236	5.01	0728	5.03
06/10/96	1024	4.86	1506	4.83
07/23/96	0836	4.87	1251	4.88
08/08/96	0928	4.89	1415	4.88
09/05/96	0822	4.83	1248	4.83
10/03/96	0736	5.05	1220	5.05

Well: WB21G
Land surface elevation: 3.25
Screen depth: 45.0-45.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0748	5.49	1308	5.49
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0804	4.05	1203	4.03
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0610	4.05	1049	4.05
06/12/95	1227	4.13	0834	4.11
08/29/95	1518	3.97	0922	3.98
10/03/95	1223	3.97	1537	3.94
10/17/95	1033	3.95	1447	3.97
10/25/95	1538	4.08	1009	4.10
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1035	4.65
03/20/96	--	--	--	--
04/17/96	1400	4.98	0822	5.04
05/02/96	1237	4.95	0728	4.96
06/10/96	1030	4.90	1507	4.89
07/23/96	0836	4.90	1251	4.90
08/08/96	0937	4.95	1415	4.95
09/05/96	0822	4.78	1248	4.76
10/03/96	0737	5.10	1221	5.10

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB21W
Land surface elevation: 1.65
Screen depth: 0.0-2.0
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	1407	4.06	1008	4.83
04/17/96	1355	3.98	0809	4.00
05/02/96	1238	3.97	0729	3.98
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	0948	3.86	1415	3.54
09/05/96	0823	3.86	1248	3.96
10/03/96	0738	3.89	1222	3.91

Well: WB22A
Land surface elevation: 2.52
Screen depth: 1.5-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0750	1.94	1311	1.93
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0756	2.19	1152	2.19
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0613	2.40	1052	2.51
06/12/95	1229	2.53	0737	2.47
08/29/95	1522	1.71	0925	1.70
10/03/95	1207	1.97	1518	1.97
10/17/95	1011	2.28	1430	2.26
10/25/95	1524	2.44	0954	2.44
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1040	1.99
03/20/96	1412	2.38	1012	2.37
04/17/96	1403	2.55	0828	2.57
05/02/96	1240	2.60	0730	2.58
06/10/96	1040	2.58	1512	2.57
07/23/96	0843	2.49	1302	2.43
08/08/96	0940	2.31	1418	2.31
09/05/96	0829	2.26	1255	2.24
10/03/96	0740	2.75	1225	2.73

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB22B
Land surface elevation: 2.62
Screen depth: 7.0-7.5
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0755	3.45	3.45	3.43
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0757	3.18	3.18	3.18
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0614	3.58	3.58	3.66
06/12/95	1229	3.48	3.48	3.44
08/29/95	1523	3.15	3.15	3.14
10/03/95	1208	3.30	3.30	3.28
10/17/95	1013	3.31	3.31	3.27
10/25/95	1525	3.44	3.44	3.47
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1041	3.42
03/20/96	1414	3.43	1012	3.32
04/17/96	1405	3.97	0832	3.80
05/02/96	1241	3.88	0732	3.87
06/10/96	1042	3.77	1513	3.76
07/23/96	0842	3.76	1303	3.72
08/08/96	0940	3.79	1419	3.80
09/05/96	0829	3.09	1255	3.90
10/03/96	0741	4.08	1226	4.02

Well: WB22C
Land surface elevation: 2.52
Screen depth: 13.0-13.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	758	4.63	1313	4.63
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	758	4.43	1153	4.37
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	615	4.39	1054	4.38
06/12/95	1230	4.36	739	4.36
08/29/95	1324	3.38	928	3.56
10/03/95	1209	3.37	1520	3.47
10/17/95	1015	3.63	1439	3.62
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1043	3.56
03/20/96	1415	4.13	1014	4.11
04/17/96	1406	4.28	834	4.27
05/02/96	1242	3.94	732	3.95
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB22D
Land surface elevation: 2.47
Screen depth: 17.0-17.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0800	4.50	1314	4.42
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0759	4.03	1154	4.02
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0616	3.89	1054	3.88
06/12/95	1231	3.91	0739	3.90
08/29/95	1525	3.33	0929	3.62
10/03/95	1210	3.32	1521	3.53
10/17/95	1017	3.08	1440	3.12
10/25/95	1528	3.34	0958	3.48
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1050	3.79
03/20/96	1415	4.86	1015	5.33
04/17/96	1406	4.17	0835	4.48
05/02/96	1243	4.11	0723	4.44
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Well: WB22E
Land surface elevation: 2.53
Screen depth: 22.0-22.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0802	0.92	1314	6.26
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0800	1.65	1154	5.54
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0617	1.67	1054	5.51
06/12/95	1231	.08	0741	.07
08/29/95	1527	3.40	0930	3.81
10/03/95	1212	3.44	1522	3.77
10/17/95	1019	3.93	1441	3.93
10/25/95	1528	3.99	0959	3.98
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1056	3.38
03/20/96	--	--	--	--
04/17/96	1407	3.85	0836	3.87
05/02/96	1243	3.90	0733	3.89
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB22W
Land surface elevation: 2.48
Screen depth: 0.0-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	1416	2.42	1016	3.66
04/17/96	1404	2.45	0829	--
05/02/96	1240	2.19	0734	2.22
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Well: WB23A
Land surface elevation: 1.05
Screen depth: 0.5-1.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0830	0.93	1329	1.38
03/31/95	--	--	--	--
04/05/95	0657	.89	1104	.88
04/13/95	1328	.59	0907	1.14
04/20/95	0736	.88	1129	1.43
04/26/95	1155	.91	0652	1.30
05/02/95	--	--	--	--
05/18/95	0631	1.05	1128	.48
06/12/95	1246	1.12	0800	2.26
08/29/95	1530	1.08	0934	2.27
10/03/95	1152	1.00	1457	1.72
10/17/95	0949	.94	1403	.88
10/25/95	1511	.93	0935	.98
11/03/95	1105	.98	1538	1.66
11/09/95	1420	.96	0856	.96
11/21/95	1233	.99	0754	1.67
12/10/95	1446	.92	1045	.92
03/06/96	1410	.95	1036	.97
03/20/96	--	--	--	--
04/17/96	1416	1.00	0846	1.83
05/02/96	1251	.99	0738	2.00
06/10/96	1056	.98	1525	1.72
07/23/96	0853	1.22	1314	1.73
08/08/96	0956	1.12	1428	1.53
09/05/96	0843	1.47	1308	2.00
10/03/96	0752	1.30	1237	1.18

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB23B
Land surface elevation: 0.77
Screen depth: 2.2-2.7
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0832	1.42	1334	1.38
03/31/95	--	--	--	--
04/05/95	0659	1.32	1107	1.27
04/13/95	1331	1.30	0808	1.33
04/20/95	0737	1.26	1131	1.27
04/26/95	1157	1.28	0652	1.30
05/02/95	--	--	--	--
05/18/95	0633	1.69	1134	1.71
06/12/95	1247	1.64	0801	1.54
08/29/95	1531	1.40	0934	1.38
10/03/95	1153	1.57	1458	1.58
10/17/95	0950	1.52	1404	1.48
10/25/95	1512	1.49	0936	1.51
11/03/95	1105	1.44	1540	1.45
11/09/95	1421	1.45	0858	1.48
11/21/95	1234	1.42	0755	1.43
12/10/95	1447	--	1047	--
03/06/96	1410	1.29	1101	1.17
03/20/96	--	--	--	--
04/17/96	1417	1.15	0847	1.18
05/02/96	1252	1.55	0739	1.55
06/10/96	1057	1.46	1526	1.48
07/23/96	0856	1.43	1318	1.42
08/08/96	0957	1.49	1430	1.49
09/05/96	0844	1.02	1308	1.04
10/03/96	0753	1.75	1238	1.73

Well: WB23C
Land surface elevation: 1.06
Screen depth: 8.5-9.0
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0834	-1.80	1331	-1.81
03/31/95	--	--	--	--
04/05/95	0700	-1.41	1109	-1.43
04/13/95	1330	-1.23	0909	-1.19
04/20/95	0740	-1.07	1132	-1.06
04/26/95	1157	- .55	0653	- .54
05/02/95	--	--	--	--
05/18/95	0624	1.85	1133	1.78
06/12/95	1248	2.62	0806	2.67
08/29/95	1532	-4.65	0936	-4.67
10/03/95	1154	2.74	1459	2.74
10/17/95	0953	2.74	1405	2.73
10/25/95	1514	2.74	0938	2.74
11/03/95	1106	2.71	1541	2.76
11/09/95	1422	2.72	0859	2.74
11/21/95	1234	2.60	0756	2.55
12/10/95	1447	--	1047	--
03/06/96	--	--	1058	2.21
03/20/96	--	--	--	--
04/17/96	1417	-5.89	0848	-5.92
05/02/96	1254	-4.03	0740	-4.03
06/10/96	1058	-0.59	1527	- .58
07/23/96	0854	2.73	1316	2.71
08/08/96	0957	2.67	1431	2.66
09/05/96	--	2.71	1308	2.70
10/03/96	0754	2.74	1239	2.70

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB23D
Land surface elevation: 1.01
Screen depth: 12.5-13.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0831	3.91	1330	3.91
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0740	3.78	1133	3.78
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0635	3.86	1135	3.82
06/12/95	1249	3.93	0804	3.91
08/29/95	1534	3.17	0938	3.50
10/03/95	1155	3.15	1459	3.40
10/17/95	0955	2.92	1406	2.95
10/25/95	1515	3.19	0939	3.36
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1058	3.69
03/20/96	--	--	--	--
04/17/96	1419	3.96	0850	4.35
05/02/96	1255	3.91	0741	4.28
06/10/96	1059	3.86	1528	4.04
07/23/96	0854	4.05	1316	4.15
08/08/96	0959	3.87	1432	4.04
09/05/96	0846	4.05	1309	4.06
10/03/96	0755	4.01	1240	3.90

Well: WB23E
Land surface elevation: 0.92
Screen depth: 16.0-16.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0838	4.41	1332	4.35
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0742	4.17	1134	4.16
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0635	4.14	1135	4.11
06/12/95	1250	4.12	0802	4.11
08/29/95	1536	3.69	0939	3.69
10/03/95	1157	3.47	1500	3.46
10/17/95	0955	2.98	1407	3.00
10/25/95	1515	3.25	0940	3.41
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1107	4.03
03/20/96	--	--	--	--
04/17/96	1420	4.04	0851	4.41
05/02/96	1256	4.01	0742	4.35
06/10/96	1100	3.91	1529	4.09
07/23/96	0855	4.17	1315	4.18
08/08/96	1001	4.12	1432	4.09
09/05/96	0847	4.27	1309	4.15
10/03/96	0756	4.33	1241	4.05

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB23F
Land surface elevation: 1.00
Screen depth: 21.0-21.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0840	1.27	1333	1.27
03/31/95	--	--	--	--
04/05/95	0702	1.40	1111	1.38
04/13/95	1333	1.40	0912	1.40
04/20/95	0743	1.44	1136	1.42
04/26/95	1158	1.28	0655	1.25
05/02/95	--	--	--	--
05/18/95	0636	1.61	1137	1.50
06/12/95	1251	1.77	0807	1.75
08/29/95	1537	3.03	0941	3.38
10/03/95	1158	3.02	1501	3.26
10/17/95	0956	2.76	1408	2.80
10/25/95	1515	3.04	0941	3.20
11/03/95	1107	3.36	1541	3.59
11/09/95	1423	2.94	0900	3.02
11/21/95	1235	3.57	0759	--
12/10/95	1447	--	1047	--
03/06/96	1411	3.60	1109	3.52
03/20/96	--	--	--	--
04/17/96	1420	3.88	0851	4.26
05/02/96	1253	3.86	0743	4.22
06/10/96	1101	3.74	1530	4.00
07/23/96	0857	3.95	1318	4.10
08/08/96	1002	3.86	1433	3.98
09/05/96	0848	3.82	1311	3.91
10/03/96	0757	3.92	1242	3.79

Well: WB24A
Land surface elevation: 1.85
Screen depth: 0.9-1.4
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0809	1.69	1317	1.69
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0745	1.56	1139	1.46
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0620	1.96	1058	1.95
06/12/95	1234	1.72	0745	1.65
08/29/95	--	--	--	--
10/03/95	1200	1.60	1504	1.59
10/17/95	1003	1.85	1410	1.82
10/25/95	1518	1.83	0948	1.83
11/03/95	1109	1.87	1543	1.87
11/09/95	0902	1.81	0902	1.81
11/21/95	1239	1.80	0805	1.81
12/10/95	1448	1.48	1049	1.47
03/06/96	1412	1.72	1058	1.74
03/20/96	1418	1.38	1019	1.33
04/17/96	1409	1.89	0839	1.93
05/02/96	1244	1.85	0735	1.94
06/10/96	1045	1.71	1518	1.70
07/23/96	0848	1.65	1309	1.65
08/08/96	0949	1.65	1423	1.69
09/05/96	0837	1.59	1300	1.61
10/03/96	0746	2.04	1231	2.03

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB24B
Land surface elevation: 1.77
Screen depth: 3.0-3.5
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0810	1.71	1318	1.69
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0746	1.71	1140	1.68
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0621	1.87	1059	2.10
06/12/95	--	--	--	--
08/29/95	1235	1.84	0746	2.34
10/03/95	--	--	1516	1.77
10/17/95	1005	1.74	1450	1.71
10/25/95	1519	1.86	0948	1.87
11/03/95	1110	1.94	1544	1.94
11/09/95	1428	1.60	0904	1.91
11/21/95	1239	1.89	0808	1.93
12/10/95	1449	--	1050	--
03/06/96	1414	1.74	1059	1.72
03/20/96	1420	2.47	--	3.65
04/17/96	1411	1.82	0841	1.97
05/02/96	1246	1.89	0736	2.16
06/10/96	1048	1.90	1520	1.91
07/23/96	0848	1.75	1309	1.77
08/08/96	0950	1.82	1424	1.86
09/05/96	0837	2.02	1301	2.22
10/03/96	0747	2.10	1232	2.07

Well: WB24E
Land surface elevation: 1.85
Screen depth: 16.5-17.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0816	6.09	1322	6.02
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0749	5.12	1143	5.10
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0624	4.97	1102	4.96
06/12/95	1239	1.81	0750	1.69
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1520	3.49	0950	3.53
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1107	3.61
03/20/96	--	--	--	--
04/17/96	1412	4.01	0843	4.27
05/02/96	1247	3.96	0737	4.25
06/10/96	1050	3.84	1521	3.92
07/23/96	0849	4.03	1311	4.09
08/08/96	0953	3.92	1425	3.95
09/05/96	0839	3.99	1302	4.01
10/03/96	0749	4.08	1234	3.84

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB24F
Land surface elevation: 1.80
Screen depth: 28.0-28.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0818	5.64	1323	5.53
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0750	4.51	1144	4.51
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0625	4.43	1102	4.43
06/12/95	1239	4.41	0752	4.40
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	1008	4.68	1415	4.64
10/25/95	1521	4.79	0951	4.83
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1111	3.62
03/20/96	--	--	--	--
04/17/96	1413	3.87	0843	3.86
05/02/96	--	--	--	--
06/10/96	--	4.26	1521	4.24
07/23/96	--	4.46	1311	4.45
08/08/96	--	4.48	1426	4.44
09/05/96	--	4.59	1303	4.51
10/03/96	0750	4.81	1235	4.81

Well: WB24W
Land surface elevation: 1.80
Screen depth: 0.0-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	1422	2.30	1021	3.63
04/17/96	1410	2.16	0840	1.83
05/02/96	1245	1.76	0837	2.03
06/10/96	--	--	--	--
07/23/96	0851	1.72	1312	1.69
08/08/96	0954	1.69	1427	1.53
09/05/96	0840	1.73	1303	1.97
10/03/96	0751	1.76	1236	1.71

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB25A
Land surface elevation: 1.23
Screen depth: 0.5-1.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0843	1.10	1337	1.11
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0724	1.19	1121	1.15
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0640	1.42	1140	1.52
06/12/95	1254	1.64	0810	1.84
08/29/95	1539	1.64	0943	1.81
10/03/95	1147	1.39	1453	1.41
10/17/95	0938	--	0938	--
10/25/95	1505	1.13	1505	1.37
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0902	.94
03/20/96	1424	3.09	1024	3.69
04/17/96	1422	1.13	0854	1.55
05/02/96	1257	1.24	0744	1.81
06/10/96	1102	1.26	1531	1.34
07/23/96	0907	1.21	1321	4.49
08/08/96	1103	1.05	1435	1.24
09/05/96	0850	1.34	1312	1.63
10/03/96	0758	1.14	1243	1.12

Well: WB25B
Land surface elevation: 1.20
Screen depth: 13.5-14.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0846	3.06	1338	3.35
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0728	2.93	1122	3.22
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0641	3.43	1141	3.84
06/12/95	1254	3.41	0812	3.85
08/29/95	1540	3.11	0945	3.49
10/03/95	1148	3.12	1454	3.37
10/17/95	0942	2.85	1401	2.88
10/25/95	1506	3.09	0917	3.28
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0904	3.64
03/20/96	1425	4.52	1025	5.03
04/17/96	1423	3.81	0855	4.19
05/02/96	1258	3.79	0745	4.20
06/10/96	1105	3.71	1532	3.98
07/23/96	0908	3.97	1322	4.07
08/08/96	1004	3.82	1435	3.97
09/05/96	0851	3.83	1312	4.01
10/03/96	0759	3.88	1244	3.75

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB25C
Land surface elevation: 1.12
Screen depth: 15.5-16.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0849	6.27	1339	6.00
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0730	4.69	1123	4.71
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0642	4.69	1141	4.65
06/12/95	1255	4.60	0812	4.59
08/29/95	1541	3.10	0947	3.50
10/03/95	1148	3.13	1455	3.37
10/17/95	0945	2.85	1401	2.88
10/25/95	1508	3.10	0921	3.29
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0923	3.60
03/20/96	1426	4.60	1026	5.12
04/17/96	1424	3.90	0856	4.24
05/02/96	1259	3.81	0745	4.22
06/10/96	1103	3.75	1534	3.99
07/23/96	0909	3.95	1323	4.09
08/08/96	1005	3.83	1436	4.00
09/05/96	0851	3.88	1313	4.06
10/03/96	0800	3.91	1245	3.80

Well: WB25C.1
Land surface elevation: 1.21
Screen depth: 0.4-1.4
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0853	0.99	1341	1.38
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0730	1.06	1124	1.50
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0643	1.14	1143	2.03
06/12/95	1256	1.28	0814	2.31
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	1058	1.24	1532	1.77
11/09/95	1416	1.04	0850	1.03
11/21/95	1228	1.43	0849	1.85
12/10/95	1445	1.11	1044	1.15
03/06/96	1408	1.28	0927	1.28
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1109	1.41	1536	2.04
07/23/96	0910	1.48	1323	1.95
08/08/96	1007	1.49	1438	1.74
09/05/96	0853	1.73	1314	2.24
10/03/96	0801	1.52	1246	1.45

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB26A
Land surface elevation: 0.38
Screen depth: 1.0-1.5
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0911	0.45	1356	0.82
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0708	.65	1111	.83
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0646	.90	1145	1.16
06/12/95	1259	1.16	0816	1.34
08/29/95	1543	1.31	0950	1.89
10/03/95	1137	1.30	1445	1.59
10/17/95	0925	.40	1345	.37
10/25/95	1459	.46	0904	.73
11/03/95	1052	.74	1527	1.37
11/09/95	1409	.45	0844	.45
11/21/95	1220	.81	0741	1.75
12/10/95	1441	.43	1006	.44
03/06/96	1403	1.01	0850	.60
03/20/96	1431	2.84	1032	3.90
04/17/96	1403	.91	0858	1.96
05/02/96	1300	1.14	0747	2.10
06/10/96	1111	1.13	1539	1.66
07/23/96	0914	1.41	1327	1.68
08/08/96	1010	1.09	1440	1.36
09/05/96	0859	1.57	1322	1.98
10/03/96	0806	1.07	1250	.83

Well: WB26B
Land surface elevation: 0.47
Screen depth: 2.5-3.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0910	1.53	1357	1.51
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0710	1.13	1112	1.14
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0647	1.46	1146	1.43
06/12/95	1302	1.44	0817	1.41
08/29/95	1544	- .52	0951	- .51
10/03/95	1138	1.39	1445	1.39
10/17/95	0925	- .01	1346	- .01
10/25/95	1403	.24	0906	0.27
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1404	.79	0851	.77
03/20/96	--	--	--	--
04/17/96	1427	.59	0901	.57
05/02/96	1301	1.31	0747	1.35
06/10/96	1111	1.51	1540	1.50
07/23/96	0915	1.17	1327	1.20
08/08/96	1011	1.36	1441	1.40
09/05/96	0858	1.22	1322	1.10
10/03/96	0807	1.59	1251	1.58

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB26B.1
Land surface elevation: 0.45
Screen depth: 2.0-3.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0915	0.33	1356	0.33
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0721	.64	1118	.63
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0655	1.02	1154	1.00
06/12/95	--	--	0824	1.13
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	1056	1.34	1551	1.34
11/09/95	1413	1.27	0849	1.28
11/21/95	1224	1.29	0747	1.30
12/10/95	1442	--	1011	--
03/06/96	1405	.78	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1116	1.30	1544	1.29
07/23/96	0920	1.27	1332	1.25
08/08/96	1018	1.33	1449	1.32
09/05/96	1006	1.40	1327	1.43
10/03/96	0814	1.65	1258	1.65

Well: WB26C
Land surface elevation: 0.20
Screen depth: 4.0-4.5
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0910	1.91	1358	1.73
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0712	.91	1113	1.22
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0648	1.66	1145	1.63
06/12/95	1302	1.64	0817	1.61
08/29/95	1545	1.45	0925	1.47
10/03/95	1138	1.73	1446	1.72
10/17/95	0929	1.48	1348	1.45
10/25/95	1404	1.53	0908	1.76
11/03/95	1053	1.45	1529	1.46
11/09/95	1410	1.38	0846	1.41
11/21/95	1222	1.53	0742	1.54
12/10/95	1441	.51	1009	.51
03/06/96	1403	.90	0932	.86
03/20/96	--	--	--	--
04/17/96	1430	1.71	0902	1.84
05/02/96	1302	1.61	0747	1.64
06/10/96	1112	1.65	1540	1.64
07/23/96	0916	1.42	1327	1.46
08/08/96	1012	1.65	1442	1.62
09/05/96	0900	2.06	1323	2.06
10/03/96	0800	1.85	1252	1.77

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB26D
Land surface elevation: 0.33
Screen depth: 5.5-6.0
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0908	1.67	1359	2.50
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0713	.72	1114	1.46
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0648	1.70	1148	1.67
06/12/95	1304	1.79	0818	1.76
08/29/95	1546	1.80	0953	1.78
10/03/95	1140	1.94	1447	1.93
10/17/95	0929	1.92	1348	1.88
10/25/95	1405	1.86	0909	1.92
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0853	1.16
03/20/96	1432	- .39	1033	- .64
04/17/96	1432	2.00	0903	2.07
05/02/96	1303	2.02	0748	2.02
06/10/96	1113	2.03	1541	2.03
07/23/96	0917	1.81	1328	1.84
08/08/96	1012	1.99	1442	2.01
09/05/96	0900	2.21	1323	2.18
10/06/96	0809	2.22	1253	2.15

Well: WB26E
Land surface elevation: 0.28
Screen depth: 8.8-9.3
Hydrogeologic unit: old stream channel deposit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0907	2.78	1353	2.64
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0715	2.15	1115	1.88
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0649	2.20	1148	2.18
06/12/95	--	--	--	--
08/29/95	1548	-2.54	0819	-2.57
10/03/95	1141	1.15	0955	1.16
10/17/95	0931	1.96	1349	1.92
10/25/95	1408	2.20	0910	2.19
11/03/95	1054	2.38	1530	2.38
11/09/95	1411	2.42	0847	2.33
11/21/95	1223	2.56	0745	--
12/10/95	1442	--	1010	--
03/06/96	0854	.59	0935	2.44
03/20/96	--	--	--	--
04/17/96	1434	2.75	0904	2.79
05/02/96	1304	2.85	0749	2.89
06/10/96	1113	2.25	1542	2.24
07/23/96	0918	2.33	1329	2.24
08/08/96	1013	2.21	1445	2.21
09/05/96	0901	2.35	1324	2.33
10/03/96	0810	2.91	1254	2.88

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB26F
Land surface elevation: 0.33
Screen depth: 15.0-15.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0905	5.2	1351	5.19
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0716	4.56	1116	4.55
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0651	4.47	1150	4.47
06/12/95	--	--	0820	4.36
08/29/95	1549	2.90	0957	3.41
10/03/95	1141	2.91	1448	3.24
10/17/95	0932	2.58	0932	2.62
10/25/95	1409	2.79	1409	3.06
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	1433	4.32	1034	4.98
04/17/96	1435	3.47	0904	4.00
05/02/96	--	3.46	0749	4.01
06/10/96	1114	3.45	1542	3.80
07/23/96	0918	3.80	1329	3.87
08/08/96	1014	3.77	1445	3.72
09/05/96	0902	3.86	1324	3.86
10/03/96	0811	4.04	1255	3.80

Well: WB26G
Land surface elevation: 0.40
Screen depth: 19.5-20.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0902	6.56	1350	6.44
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0716	4.78	1116	4.77
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0653	4.61	1151	4.56
06/12/95	--	--	0822	4.49
08/29/95	1550	3.22	0959	3.65
10/03/95	1142	3.27	1352	3.54
10/17/95	0933	2.96	1353	3.01
10/25/95	1502	3.25	0913	3.45
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	1437	4.04	0905	4.49
05/02/96	1304	4.02	0750	4.45
06/10/96	1115	3.97	1543	4.28
07/23/96	0919	4.61	1330	4.34
08/08/96	1015	4.05	1446	4.44
09/05/96	0902	4.02	1324	4.17
10/03/96	0812	4.08	1256	4.01

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB26H
Land surface elevation: 0.50
Screen depth: 27.0-27.5
Hydrogeologic unit: Canal Creek aquifer

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	0914	4.11	1354	4.06
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0719	2.48	1117	2.49
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0654	.04	1152	.03
06/12/95	--	--	0822	.56
08/29/95	1555	3.61	1001	3.97
10/03/95	1143	3.60	1450	3.84
10/17/95	0935	3.36	1451	3.41
10/25/95	1503	3.65	0914	3.85
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1116	5.66	1544	>5.66
07/23/96	0919	--	1331	>5.66
08/08/96	1015	4.66	1447	4.77
09/05/96	1003	3.63	1327	4.75
10/03/96	0813	>4.34	1257	4.66

Well: WB26W
Land surface elevation: 0.63
Screen depth: 0.0-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	1436	2.22	1030	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	--	--	--	--
07/23/96	0921	1.14	1332	1.62
08/08/96	1016	.73	1448	1.45
09/05/96	1003	1.04	1329	2.23
10/03/96	0815	.47	1259	0.57

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB27A
Land surface elevation: -0.92
Screen depth: 1.0-1.5
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0918	0.86	1401	0.86
03/31/95	--	--	--	--
04/05/95	0644	.73	1055	.66
04/13/95	1317	.83	0855	.85
04/20/95	0658	.78	1056	.76
04/26/95	1147	.78	0642	.80
05/02/95	--	--	--	--
05/18/95	0658	1.50	1156	1.47
06/12/95	--	--	0826	1.28
08/29/95	1559	- .09	1007	- .14
10/03/95	1124	1.42	1436	1.40
10/17/95	0907	1.04	1332	.91
10/25/95	1345	1.19	0847	1.22
11/03/95	1046	1.06	1521	1.08
11/09/95	1404	1.10	0834	1.15
11/21/95	1214	1.02	0729	1.00
12/10/95	--	--	--	--
03/06/96	1357	.10	0955	.05
03/20/96	1437	1.05	1036	.99
04/17/96	1440	1.22	0908	1.27
05/02/96	1308	1.04	0753	1.04
06/10/96	1119	1.18	1547	1.15
07/23/96	0924	.85	1335	.85
08/08/96	1018	1.14	1449	1.17
09/05/96	0916	1.44	1335	1.46
10/03/96	0816	1.31	1300	1.28

Well: WB27B
Land surface elevation: -0.97
Screen depth: 3.2-3.7
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0926	0.65	1404	0.67
03/31/95	--	--	--	--
04/05/95	0646	.44	1056	.38
04/13/95	1320	1.02	0900	1.14
04/20/95	0639	.84	1057	.80
04/26/95	1148	.82	0638	.84
05/02/95	--	--	--	--
05/18/95	0659	1.38	1156	1.35
06/12/95	--	--	--	1.42
08/29/95	1601	.61	1009	.57
10/03/95	1127	1.37	1437	1.37
10/17/95	0909	.63	1334	.53
10/25/95	1347	1.07	0849	1.21
11/03/95	1047	.88	1522	.90
11/09/95	1405	.52	0835	.63
11/21/95	1216	.91	0729	.89
12/10/95	1437	- .43	--	--
03/06/96	1358	.39	1000	.35
03/20/96	1439	.78	1037	.68
04/17/96	1445	1.18	0910	1.26
05/02/96	1310	1.20	0755	1.20
06/10/96	1119	1.20	1547	1.22
07/23/96	0925	.92	1336	.95
08/08/96	1019	1.18	1451	1.19
09/05/96	0916	1.60	1336	1.61
10/03/96	0817	1.34	1301	1.26

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB27C
Land surface elevation: -0.98
Screen depth: 4.5-5.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0927	-0.11	1404	-0.11
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0640	1.10	1058	1.07
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0700	2.74	1158	2.73
06/12/95	--	--	0829	1.86
08/29/95	1602	-3.79	1010	-3.49
10/03/95	1128	- .01	1437	- .08
10/17/95	0915	-2.12	1336	-2.08
10/25/95	1349	-1.77	0850	-1.80
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0844	-1.06
03/20/96	1440	-2.98	1038	-3.03
04/17/96	1446	- .71	0912	-0.69
05/02/96	1310	-1.46	0757	-1.48
06/10/96	1120	.92	1548	.92
07/23/96	0925	- .31	1337	- .40
08/08/96	1020	.61	1451	.63
09/05/96	917	-2.11	1336	-2.09
10/03/96	0820	1.09	1302	1.05

Well: WB27D
Land surface elevation: -0.88
Screen depth: 8.2-8.7
Hydrogeologic unit: old stream channel deposit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0930	2.43	1406	2.81
03/31/95	--	--	--	--
04/05/95	0647	1.99	1058	1.99
04/13/95	1321	2.37	0901	2.66
04/20/95	0644	2.24	1058	2.78
04/26/95	1149	2.17	0639	2.66
05/02/95	--	--	--	--
05/18/95	0701	2.72	1159	3.38
06/12/95	--	--	0831	3.43
08/29/95	1605	2.49	1012	3.24
10/03/95	1129	2.54	1438	2.99
10/17/95	0915	2.09	1337	2.14
10/25/95	1351	2.28	0853	2.65
11/03/95	1048	2.69	1524	3.17
11/09/95	1405	2.18	0838	2.34
11/21/95	1217	2.81	0730	3.29
12/10/95	--	--	--	--
03/06/96	1400	2.49	1008	2.64
03/20/96	1441	3.82	--	--
04/17/96	1443	2.68	0913	3.52
05/02/96	1311	--	0757	3.60
06/10/96	1121	--	1549	--
07/23/96	0927	--	1338	--
08/08/96	1021	--	1452	--
09/05/96	0919	--	1338	--
10/03/96	0821	--	1303	--

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB27E
Land surface elevation: -0.96
Screen depth: 15.0-15.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0922	3.74	1407	3.61
03/31/95	--	--	--	--
04/05/95	0648	3.49	1101	3.47
04/13/95	1325	3.37	0856	3.44
04/20/95	0648	3.35	1059	3.33
04/26/95	1150	3.33	0641	3.34
05/02/95	--	--	--	--
05/18/95	0702	3.37	1200	3.39
06/12/95	--	--	0831	2.42
08/29/95	1605	2.63	1014	3.32
10/03/95	1131	2.69	1440	3.09
10/17/95	0917	2.26	1338	2.27
10/25/95	1352	2.50	0854	2.81
11/03/95	1049	2.87	1524	3.31
11/09/95	1406	2.39	0842	2.53
11/21/95	1218	2.99	0732	3.42
12/10/95	--	--	--	--
03/06/96	1401	2.76	1115	2.85
03/20/96	--	--	--	--
04/17/96	1441	2.95	0914	3.68
05/02/96	1312	3.02	0758	3.76
06/10/96	1121	3.08	1550	3.58
07/23/96	0928	3.37	1338	3.56
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Well: WB27F
Land surface elevation: -0.90
Screen depth: 18.0-18.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0924	3.71	1408	2.86
03/31/95	--	--	--	--
04/05/95	0654	2.82	1102	2.79
04/13/95	1322	2.77	0902	2.79
04/20/95	0650	2.79	1101	2.76
04/26/95	1152	2.74	0642	2.76
05/02/95	--	--	--	--
05/18/95	0703	2.85	1201	2.83
06/12/95	--	--	0833	1.88
08/29/95	1608	3.42	1015	3.62
10/03/95	1133	3.18	1441	3.43
10/17/95	0918	2.88	1339	2.89
10/25/95	1353	3.21	0855	3.41
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0846	3.72
03/20/96	--	--	--	--
04/17/96	1443	4.68	0915	4.73
05/02/96	1314	5.43	0759	5.63
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	1023	3.19	1454	3.19
09/05/96	0921	3.37	1341	3.38
10/03/96	--	--	--	--

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB27G
Land surface elevation: -0.90
Screen depth: 26.0-26.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0924	4.64	1408	4.54
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0651	4.08	1102	4.06
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0704	4.16	1202	4.14
06/12/95	--	--	0834	4.18
08/29/95	1610	3.56	1017	3.95
10/03/95	1134	3.59	1441	3.85
10/17/95	0919	3.32	1452	3.40
10/25/95	1354	3.64	0858	3.80
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	1315	4.51	0800	4.93
06/10/96	1124	4.40	1550	4.69
07/23/96	0930	4.66	1346	4.75
08/08/96	1024	4.53	1456	4.68
09/05/96	0922	4.40	1341	4.48
10/03/96	0824	4.58	1306	4.50

Well: WB28A
Land surface elevation: 0.83
Screen depth: 1.2-1.7
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0942	0.94	1424	1.30
03/31/95	--	--	--	--
04/05/95	0632	.86	1045	.69
04/13/95	1314	.98	0850	1.35
04/20/95	0618	.95	1045	1.17
04/26/95	1140	1.01	0638	1.43
05/02/95	--	--	--	--
05/18/95	0714	1.06	1221	2.02
06/12/95	--	--	0842	2.11
08/29/95	1613	1.16	1021	2.32
10/03/95	1118	1.15	1430	1.76
10/17/95	0854	.84	1325	.83
10/25/95	1334	1.06	0838	1.12
11/03/95	1037	1.11	1515	1.66
11/09/95	1354	.85	0827	.88
11/21/95	1207	1.13	0719	1.88
12/10/95	1431	.93	0956	.96
03/06/96	1351	.74	0832	.71
03/20/96	--	--	--	--
04/17/96	1450	1.60	0920	1.71
05/02/96	1322	1.04	--	--
06/10/96	1132	.99	1555	1.78
07/23/96	0936	1.15	1356	1.59
08/08/96	1032	1.06	1501	1.44
09/05/96	1033	1.41	1400	1.80
10/03/96	0830	1.13	1311	1.06

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB28B
Land surface elevation: 0.84
Screen depth: 4.5-5.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0944	1.94	1421	1.74
03/31/95	--	--	--	--
04/05/95	--	--	1049	1.16
04/13/95	1315	1.03	0851	1.04
04/20/95	0622	1.22	1046	1.19
04/26/95	1141	1.11	0638	1.13
05/02/95	--	--	--	--
05/18/95	0715	1.56	1220	1.49
06/12/95	--	--	0845	1.42
08/29/95	1614	1.47	1022	1.46
10/03/95	1119	1.52	1431	1.50
10/17/95	0855	1.13	1326	1.11
10/25/95	1337	1.34	0840	1.39
11/03/95	1038	1.25	1517	1.25
11/09/95	1356	1.11	0828	1.16
11/21/95	1208	1.26	0724	1.26
12/10/95	1433	.94	0957	1.01
03/06/96	1351	.85	0832	.88
03/20/96	--	--	--	--
04/17/96	1451	1.58	0922	1.65
05/02/96	1321	1.43	--	--
06/10/96	1133	1.37	1556	1.40
07/23/96	0937	2.07	1357	2.07
08/08/96	1033	1.37	1503	1.37
09/05/96	0934	1.78	1400	1.71
10/03/96	0831	1.54	1312	1.48

Well: WB28C
Land surface elevation: 0.82
Screen depth: 9.0-9.5
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0945	2.50	1417	2.10
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0625	1.24	1047	1.23
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0715	1.62	1218	1.64
06/12/95	--	--	0847	1.58
08/29/95	0616	- .86	1032	- .97
10/03/95	1120	1.75	1432	1.76
10/17/95	0856	1.67	1327	1.65
10/25/95	1338	1.63	1338	1.64
11/03/95	1039	1.57	1039	1.59
11/09/95	1358	1.57	0829	1.58
11/21/95	1210	1.55	0725	1.56
12/10/95	--	--	--	--
03/06/96	1358	.79	0834	.81
03/20/96	--	--	--	--
04/17/96	1451	1.60	0922	1.63
05/02/96	1320	1.50	--	--
06/10/96	1136	1.56	1557	1.59
07/23/96	0938	1.52	1358	1.54
08/08/96	1036	1.65	1503	1.69
09/05/96	0934	1.92	1401	1.89
10/03/96	0832	1.92	1313	1.88

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB28C.1
Land surface elevation: 0.75
Screen depth: 9.0-10.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0948	0.60	1419	1.05
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0632	.81	1051	.85
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0719	1.22	1212	1.19
06/12/95	--	--	0857	1.43
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1141	1.67	1602	1.39
07/23/96	0941	1.40	1401	1.40
08/08/96	1040	1.49	1507	1.48
09/05/96	0939	1.59	1402	1.49
10/03/96	0835	2.10	1316	2.10

Well: WB28D
Land surface elevation: 0.89
Screen depth: 14.5-15.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0945	2.46	1416	2.79
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0628	2.20	1048	2.75
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0716	2.75	1217	3.40
06/12/95	--	--	0848	3.39
08/29/95	1617	2.46	1025	3.21
10/03/95	1121	2.53	1432	3.00
10/17/95	0857	2.08	1329	2.15
10/25/95	1341	2.28	0843	2.28
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1123	2.62
03/20/96	--	--	--	--
04/17/96	1452	2.71	0924	2.45
05/02/96	1323	2.78	--	--
06/10/96	1138	2.88	1557	3.44
07/23/96	0939	3.17	1359	3.36
08/08/96	1037	2.95	1504	3.30
09/05/96	0936	3.21	1401	3.44
10/03/96	0833	2.87	1314	2.87

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB28D.1
Land surface elevation: 0.81
Screen depth: 14.0-15.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0950	1.09	1420	1.99
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0634	2.09	1052	2.04
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0721	2.08	1219	2.32
06/12/95	--	--	0900	2.40
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1142	2.19	1602	2.47
07/23/96	0942	2.65	1400	2.65
08/08/96	1040	2.62	1506	2.57
09/05/96	0939	2.87	1403	2.76
10/03/96	0836	2.51	1317	2.45

Well: WB28F
Land surface elevation: 0.73
Screen depth: 34.5-35.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0947	4.66	1416	3.04
03/31/95	--	--	--	--
04/05/95	0635	2.43	1051	2.39
04/13/95	1316	2.22	0852	2.24
04/20/95	0631	2.12	1050	2.10
04/26/95	1442	2.07	0639	2.08
05/02/95	--	--	--	--
05/18/95	0718	2.07	1214	2.03
06/12/95	--	--	0852	2.12
08/29/95	1619	3.71	1027	3.71
10/03/95	1122	3.67	1444	3.66
10/17/95	0859	3.32	1330	3.31
10/25/95	1342	3.51	0844	3.53
11/03/95	1040	3.72	1519	3.73
11/09/95	1359	3.77	0839	3.78
11/21/95	1211	3.90	0726	3.92
12/10/95	1434	--	0959	--
03/06/96	1354	3.39	1124	3.41
03/20/96	--	--	--	--
04/17/96	1454	3.52	0924	.66
05/02/96	1324	3.62	--	--
06/10/96	1139	3.79	1600	3.79
07/23/96	0940	--	--	--
08/08/96	1037	-6.41	--	--
09/05/96	0938	-5.79	1402	-5.75
10/03/96	0834	- .60	1315	- .65

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB28W
Land surface elevation: 0.95
Screen depth: 0.0-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	1451	0.95	0921	1.67
05/02/96	1321	.97	--	--
06/10/96	--	--	--	--
07/23/96	0943	1.26	1401	1.55
08/08/96	1038	1.07	1505	1.56
09/05/96	0941	1.42	1404	1.84
10/03/96	0837	1.10	1318	1.04

Well: WB30A
Land surface elevation: 1.45
Screen depth: 0.9-1.4
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0742	1.44	1213	1.42
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0627	1.95	1057	1.96
06/12/95	--	--	0850	1.65
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1436	1.49	1022	1.50
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1037	1.38
03/20/96	--	--	--	--
04/17/96	1501	1.72	0935	1.80
05/02/96	1226	1.65	0721	1.68
06/10/96	1224	1.61	1613	1.60
07/23/96	0956	1.55	1416	1.56
08/08/96	1053	1.52	1518	1.55
09/05/96	1104	1.75	1419	1.78
10/03/96	0850	1.74	1323	1.66

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB30B
Land surface elevation: 1.44
Screen depth: 2.0-2.5
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0744	1.27	1214	1.26
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0627	2.45	1058	2.44
06/12/95	--	--	0850	2.87
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1439	-0.08	1023	- .12
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1033	2.68
03/20/96	--	--	--	--
04/17/96	1502	2.80	0937	2.80
05/02/96	1227	2.78	0721	2.81
06/10/96	1224	2.85	1513	2.82
07/23/96	0958	3.25	1416	3.24
08/08/96	1054	3.34	1518	3.35
09/05/96	1104	3.10	1419	2.91
10/03/96	0851	3.87	1324	3.88

Well: WB30C
Land surface elevation: 1.49
Screen depth: 4.5-5.0
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0745	2.29	1215	2.27
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0628	2.88	1059	2.88
06/12/95	--	--	0850	2.67
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1439	2.36	1025	2.35
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1034	2.10
03/20/96	--	--	--	--
04/17/96	1502	3.22	0938	3.24
05/02/96	1227	3.08	0722	3.09
06/10/96	1225	3.10	1614	3.09
07/23/96	0958	3.29	1417	3.29
08/08/96	1055	3.33	1519	3.34
09/05/96	1105	2.87	1419	2.88
10/03/96	0852	3.34	1325	3.33

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB30D
Land surface elevation: 1.41
Screen depth: 6.5-7.0
Hydrogeologic unit: wetland sediments, lower clayey unit

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0745	2.87	1216	2.86
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0629	2.96	1100	2.96
06/12/95	--	--	0851	2.96
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1440	2.88	1026	2.82
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1035	2.69
03/20/96	--	--	--	--
04/17/96	1508	3.03	0940	4.06
05/02/96	1228	3.06	0723	3.07
06/10/96	1226	3.00	1615	2.99
07/23/96	0959	3.08	1417	3.06
08/08/96	1056	3.16	1520	3.16
09/05/96	1105	3.20	1419	3.18
10/03/96	0853	3.42	1336	3.42

Well: WB30E
Land surface elevation: 1.45
Screen depth: 12.5-13.0
Hydrogeologic unit: Canal Creek aquifer

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0746	2.99	1216	2.98
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0630	3.06	1101	3.07
06/12/95	--	--	0851	3.12
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1440	3.00	1027	3.11
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1036	3.32
03/20/96	--	--	--	--
04/17/96	1509	3.52	0940	3.51
05/02/96	1229	3.64	0723	3.66
06/10/96	1227	3.65	1616	3.64
07/23/96	0959	3.64	1418	3.64
08/08/96	1056	3.80	1520	3.81
09/05/96	1105	3.70	1420	3.70
10/03/96	0854	3.81	1337	3.79

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB31A
Land surface elevation: 1.60
Screen depth: 1.0-1.5
Hydrogeologic unit: wetland sediments, upper peat unit

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0736	1.52	1215	1.51
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0618	1.70	1051	1.70
06/12/95	--	--	0845	1.64
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1427	.94	1008	.90
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1020	1.66
03/20/96	--	--	--	--
04/17/96	1454	1.78	0935	1.77
05/02/96	1222	1.74	0717	1.74
06/10/96	1220	1.74	1617	1.76
07/23/96	1001	1.78	1421	1.81
08/08/96	1059	1.75	1521	1.75
09/05/96	1047	1.71	1425	1.70
10/03/96	0855	2.14	1320	2.12

Well: WB31B
Land surface elevation: 1.61
Screen depth: 3.5-4.0
Hydrogeologic unit: wetland sediments, lower clayey unit

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0738	1.85	1214	1.85
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0622	2.26	1052	2.32
06/12/95	--	--	0854	2.15
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1428	1.80	1011	2.79
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1021	2.02
03/20/96	--	--	--	--
04/17/96	1456	2.27	0936	2.30
05/02/96	1222	2.27	0718	2.35
06/10/96	1221	2.29	1618	2.28
07/23/96	1001	2.29	1422	2.26
08/08/96	1100	2.38	1522	2.37
09/05/96	1059	2.52	1425	2.49
10/03/96	0856	2.64	1321	2.63

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB31C
Land surface elevation: 1.61
Screen depth: 5.5-6.0
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0740	1.89	1211	2.09
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0620	2.27	1054	2.57
06/12/95	--	--	0846	2.88
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1430	2.08	1013	2.28
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1022	2.10
03/20/96	--	--	--	--
04/17/96	1457	2.32	0936	2.90
05/02/96	1223	2.48	0718	2.95
06/10/96	1221	2.49	1619	2.72
07/23/96	1002	2.74	1422	2.91
08/08/96	1101	2.54	1525	2.70
09/05/96	1059	2.86	1425	2.99
10/03/96	0857	2.72	1322	2.50

Well: WB31D
Land surface elevation: 1.54
Screen depth: 7.0-7.5
Hydrogeologic unit: wetland sediments, lower clayey unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0739	2.29	1213	2.29
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0622	2.69	1054	2.73
06/12/95	--	--	0847	2.60
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1431	2.68	1012	2.69
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1024	2.63
03/20/96	--	--	--	--
04/17/96	1457	2.96	0938	2.98
05/02/96	1224	2.97	0719	2.98
06/10/96	1222	2.95	1620	2.89
07/23/96	1004	2.99	1423	2.96
08/08/96	1102	3.01	1525	3.01
09/05/96	1100	2.98	1425	2.97
10/03/96	0858	3.21	1323	3.22

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB31E
Land surface elevation: 1.52
Screen depth: 12.8-13.3
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0738	2.67	1213	2.69
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0622	1.69	1056	3.18
06/12/95	--	--	0847	2.99
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1432	2.61	1012	2.79
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	1025	3.04
03/20/96	--	--	--	--
04/17/96	1458	3.21	0939	3.71
05/02/96	1225	3.29	0720	3.84
06/10/96	1222	3.25	1621	3.58
07/23/96	1005	3.48	1424	3.57
08/08/96	1103	3.28	1525	3.49
09/05/96	1101	3.52	1426	3.60
10/03/96	0859	3.25	1324	3.22

Well: WB32B
Land surface elevation: 10.77
Screen depth: 26.5-27.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	--	--	--	--
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	--	--
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	--	--
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1427	4.55	0840	4.58
03/20/96	--	--	--	--
04/17/96	1406	5.00	0817	4.99
05/02/96	1151	5.03	0656	5.04
06/10/96	1238	5.05	1647	5.05
07/23/96	1034	5.02	1450	5.04
08/08/96	1136	5.41	1555	5.06
09/05/96	1015	4.85	1536	4.85
10/03/96	0935	5.12	1346	4.90

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB33A
Land surface elevation: 2.96
Screen depth: 8.7-9.2
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0802	2.68	1411	2.68
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0726	2.50	1200	2.51
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0522	.59	1000	2.71
06/12/95	--	--	0859	2.68
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1328	2.30	0900	2.29
11/03/95	1130	2.63	1601	2.64
11/09/95	1448	2.75	0923	2.77
11/21/95	1310	3.01	0820	3.01
12/10/95	1502	-2.66	1105	-2.72
03/06/96	1429	3.21	0843	3.16
03/20/96	1513	3.40	1116	3.39
04/17/96	1408	-2.73	0821	-2.81
05/02/96	1153	- .01	0658	- .04
06/10/96	1148	2.98	1643	2.99
07/23/96	1030	1.77	1448	1.70
08/08/96	1131	2.77	1552	2.77
09/05/96	1017	- .84	1527	- .80
10/03/96	0930	3.41	1340	3.35

Well: WB33B
Land surface elevation: 2.95
Screen depth: 14.0-14.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0803	2.59	1412	2.97
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0728	2.58	1203	2.92
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0524	3.06	1002	3.49
06/12/95	--	--	0900	3.47
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1329	2.68	0901	2.89
11/03/95	1129	3.02	1602	3.29
11/09/95	1449	2.59	0925	2.68
11/21/95	1311	3.19	0821	3.40
12/10/95	1502	2.76	1105	2.78
03/06/96	1430	3.09	0846	3.20
03/20/96	1514	4.06	1119	4.68
04/17/96	1412	3.35	0823	3.85
05/02/96	1155	3.40	0658	2.06
06/10/96	1148	3.26	1644	1.62
07/23/96	1031	3.50	1448	1.86
08/08/96	1132	3.30	1552	1.58
09/05/96	1018	3.44	1528	1.75
10/03/96	0931	3.28	1341	1.39

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB33F
Land surface elevation: 2.95
Screen depth: 42.5-43.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0811	3.19	1416	2.48
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0732	2.36	1206	2.36
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0529	2.31	1007	2.31
06/12/95	--	--	0903	2.26
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1332	4.27	0858	4.30
11/03/95	1130	4.94	1603	4.92
11/09/95	1450	4.86	0926	4.88
11/21/95	1313	4.83	0824	4.85
12/10/95	--	--	--	--
03/06/96	1430	4.77	0847	4.92
03/20/96	--	--	--	--
04/17/96	1412	5.10	0824	5.14
05/02/96	--	--	--	--
06/10/96	1150	4.68	--	--
07/23/96	--	--	--	--
08/08/96	1134	5.42	1552	5.44
09/05/96	1019	4.15	1530	4.15
10/03/96	0932	5.31	1342	5.31

Well: WB34A
Land surface elevation: 1.43
Screen depth: 1.5-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0815	1.49	1404	1.48
03/31/95	--	--	--	--
04/05/95	0715	1.37	1127	1.36
04/13/95	1241	1.42	0811	1.43
04/20/95	0718	1.37	1153	1.36
04/26/95	1230	1.37	0721	1.38
05/02/95	0412	1.45	1123	1.51
05/18/95	0534	1.59	1011	1.62
06/12/95	--	--	0750	1.55
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1336	1.49	0912	1.48
11/03/95	1134	1.48	1604	1.45
11/09/95	1453	1.49	0928	1.51
11/21/95	1315	1.58	0825	1.58
12/10/95	1504	1.07	1107	1.10
03/06/96	1432	1.26	0849	1.26
03/20/96	1507	1.21	1106	1.14
04/17/96	1415	1.45	0831	1.39
05/02/96	1202	1.58	0700	1.58
06/10/96	1153	1.58	1638	1.58
07/23/96	1025	1.48	1445	1.54
08/08/96	1127	1.60	1547	1.61
09/05/96	1025	1.58	1523	1.62
10/03/96	0925	1.84	1344	1.86

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB34B
Land surface elevation: 1.37
Screen depth: 7.3-7.8
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0815	2.05	1404	2.16
03/31/95	--	--	--	--
04/05/95	0717	1.89	1128	1.89
04/13/95	1243	1.95	0813	2.01
04/20/95	0720	1.95	1154	1.93
04/26/95	1230	1.91	0721	1.93
05/02/95	0413	2.54	1012	2.48
05/18/95	0537	2.39	1012	2.62
06/12/95	--	--	0751	2.01
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1340	1.81	0913	2.01
11/03/95	1136	2.10	1605	2.56
11/09/95	1453	1.72	0929	1.93
11/21/95	1316	2.19	0828	2.54
12/10/95	--	--	1107	--
03/06/96	1433	1.92	0851	1.98
03/20/96	1508	3.18	1106	4.10
04/17/96	1416	2.17	0833	2.91
05/02/96	1203	2.28	0701	3.02
06/10/96	1153	2.24	1639	2.70
07/23/96	1026	2.43	1445	2.53
08/08/96	1128	2.25	1547	2.46
09/05/96	1025	2.55	1523	2.63
10/03/96	0926	2.23	1345	2.22

Well: WB34C
Land surface elevation: 1.36
Screen depth: 15.0-15.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0816	2.27	1405	2.71
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0721	2.26	1155	2.72
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0538	2.72	1014	3.32
06/12/95	--	--	0853	3.40
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1342	2.28	0913	2.58
11/03/95	1137	2.67	1606	3.08
11/09/95	1454	2.21	0930	2.32
11/21/95	1317	2.84	--	--
12/10/95	--	--	--	--
03/06/96	1434	2.58	0907	2.76
03/20/96	1509	3.68	1109	4.40
04/17/96	1417	2.88	0836	3.49
05/02/96	1204	2.98	0702	3.58
06/10/96	--	--	--	--
07/23/96	1027	3.16	1446	3.19
08/08/96	1128	2.95	1548	3.13
09/05/96	1026	3.13	1524	3.23
10/03/96	0927	2.87	1346	2.87

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB34D
Land surface elevation: 1.35
Screen depth: 18.3-18.8
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0817	3.75	1406	2.93
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0723	2.76	1156	2.76
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0540	2.75	1014	2.75
06/12/95	--	--	0754	2.72
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1314	2.60	0914	2.65
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	0916	2.72
03/20/96	1511	3.11	1104	4.74
04/17/96	1421	3.28	0840	3.30
05/02/96	1205	3.17	0702	3.17
06/10/96	1157	3.10	1640	3.10
07/23/96	1027	3.01	1446	3.01
08/08/96	1129	3.13	1549	3.13
09/05/96	1027	3.19	1525	3.20
10/03/96	0928	3.27	1347	3.24

Well: WB34E
Land surface elevation: 1.35
Screen depth: 26.5-27.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0817	3.68	1408	3.27
03/31/95	--	--	--	--
04/05/95	0718	3.14	1130	3.13
04/13/95	1244	2.73	0814	2.81
04/20/95	0724	2.68	1157	2.66
04/26/95	1231	2.68	0722	2.66
05/02/95	1614	2.65	1128	2.64
05/18/95	0540	2.58	1015	2.57
06/12/95	--	--	0755	2.80
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1338	3.68	0914	3.95
11/03/95	1138	4.07	1607	4.29
11/09/95	1456	3.67	--	--
11/21/95	1310	4.32	--	--
12/10/95	--	--	--	--
03/06/96	1434	4.40	0904	4.31
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	1130	4.57	1549	4.44
09/05/96	1028	4.34	1525	4.33
10/03/96	0929	4.44	1348	4.45

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB35A
Land surface elevation: 1.19
Screen depth: 1.5-2.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0821	0.80	1350	0.79
03/31/95	1111	.77	--	--
04/05/95	0738	.86	1132	.81
04/13/95	1248	.83	0821	.88
04/20/95	0710	.79	1143	.77
04/26/95	1226	.74	0715	.74
05/02/95	1607	.98	1607	.96
05/18/95	0542	1.13	1016	1.16
06/12/95	--	--	0759	1.08
08/29/95	--	--	--	--
10/06/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1346	.90	0919	.94
11/03/95	1140	.83	1611	.83
11/09/95	1459	.82	0934	.84
11/21/95	1322	.87	0832	.87
12/10/95	1507	.62	1109	.63
03/06/96	1436	.58	0920	.54
03/20/96	--	--	--	--
04/17/96	1424	.91	0850	1.05
05/02/96	1206	1.06	0703	1.08
06/10/96	1100	.57	1632	1.14
07/23/96	1019	.62	1438	.84
08/08/96	1118	.58	1540	.80
09/05/96	1030	1.02	1517	1.21
10/03/96	0905	.74	1337	.68

Well: WB35B
Land surface elevation: 1.29
Screen depth: 2.8-3.3
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0822	0.98	1352	1.46
03/31/95	1113	1.25	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0710	1.14	1144	1.52
04/26/95	--	--	0721	1.29
05/02/95	--	--	1012	1.26
05/18/95	0544	1.29	1017	2.04
06/12/95	--	--	0800	2.38
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1350	1.19	0919	1.28
11/03/95	1141	1.35	1612	1.75
11/09/95	1500	1.07	0936	1.10
11/21/95	1323	1.34	0833	1.74
12/10/95	--	--	1116	1.12
03/06/96	1436	1.14	0921	1.12
03/20/96	--	--	--	--
04/17/96	1425	1.28	0852	1.96
05/02/96	1207	1.33	0704	1.16
06/10/96	1201	1.34	1633	1.86
07/23/96	1020	1.42	1439	1.66
08/08/96	1119	1.40	1541	1.58
09/05/96	1031	1.71	1517	1.92
10/03/96	0906	1.44	1338	1.39

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB35C
Land surface elevation: 1.27
Screen depth: 7.2-7.7
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0822	1.87	1353	2.39
03/31/95	1116	2.13	--	--
04/05/95	0739	1.63	1134	1.63
04/13/95	1249	2.00	0822	2.31
04/20/95	0712	1.86	1147	2.45
04/26/95	1225	1.84	0716	2.20
05/02/95	1608	2.23	1115	3.04
05/18/95	0545	2.26	1018	3.00
06/12/95	--	--	0800	3.12
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1402	1.85	0920	2.16
11/03/95	1142	2.26	1612	2.79
11/09/95	1501	1.80	0936	1.91
11/21/95	1325	2.40	0834	2.66
12/10/95	--	--	--	--
03/06/96	1437	2.00	0925	2.24
03/20/96	--	--	--	--
04/17/96	1427	2.27	0854	3.03
05/02/96	1208	2.43	0705	3.20
06/10/96	1202	2.43	1634	2.92
07/23/96	1020	2.67	1439	2.75
08/08/95	1120	2.47	1542	2.72
09/05/96	1032	2.80	1517	2.85
10/03/96	0907	2.35	1339	2.37

Well: WB35C.1
Land surface elevation: 1.26
Screen depth: 6.5-7.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0825	1.85	1359	2.22
03/31/95	1102	2.01	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0716	1.80	1146	2.29
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	0807	3.07
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	0958	1.80
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	1207	2.31	1637	2.80
07/23/96	1024	2.56	1442	2.63
08/08/96	1124	2.33	1545	2.59
09/05/96	1035	2.67	1520	2.72
10/03/96	0921	2.24	1343	2.27

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB35D
Land surface elevation: 1.27
Screen depth: 13.0-13.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0823	2.79	1355	2.69
03/31/95	1118	2.59	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0712	2.51	1148	2.52
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0545	2.49	1019	2.48
06/12/95	--	--	0802	2.47
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1404	2.00	0921	2.31
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1452	2.15	0926	2.15
03/20/96	--	--	--	--
04/17/96	1430	2.45	0855	3.21
05/02/96	1209	2.62	0706	3.36
06/10/96	1202	1.59	1634	3.07
07/23/96	1021	2.83	1440	2.92
08/08/96	1121	2.62	1543	2.86
09/05/96	1034	2.92	1518	2.19
10/03/96	0908	2.49	1340	2.53

Well: WB35E
Land surface elevation: 1.27
Screen depth: 18.0-18.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0823	1.77	1356	2.27
03/31/95	1106	2.03	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0714	2.39	1150	2.22
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0547	1.43	1022	1.42
06/12/95	--	--	0810	1.35
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1405	.91	0922	1.22
11/03/95	1144	1.32	1613	1.78
11/09/95	1502	.83	0937	.95
11/21/95	1325	1.46	0834	--
12/10/95	1509	--	1110	--
03/06/96	1439	1.12	0931	1.33
03/20/96	--	--	--	--
04/17/96	1432	1.39	0857	2.10
05/02/96	1211	1.54	0706	2.24
06/10/96	1203	1.52	1635	1.94
07/23/96	1021	1.77	1440	1.83
08/08/96	1122	1.54	1543	1.76
09/05/96	1034	1.81	1519	1.84
10/03/96	0909	1.44	1341	1.46

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB35F
Land surface elevation: 1.31
Screen depth: 27.5-28.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0824	4.11	1359	2.89
03/31/95	1109	2.87	--	--
04/05/95	0741	2.94	1136	2.81
04/13/95	1250	2.81	0824	2.83
04/20/95	0714	2.81	1150	2.79
04/26/95	1227	2.79	0719	2.78
05/02/95	1610	2.79	1119	2.82
05/18/95	0548	2.88	1022	2.80
06/12/95	--	--	0805	2.81
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1408	3.72	0924	3.73
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1439	2.63	0933	2.62
03/20/96	--	--	--	--
04/17/96	1433	2.70	0859	--
05/02/96	--	--	--	--
06/10/96	1205	--	1636	3.64
07/23/96	1022	4.33	1441	4.31
08/08/96	1122	4.42	1543	4.41
09/05/96	1035	4.26	--	4.26
10/03/96	0910	4.57	1342	4.50

Well: WB36A
Land surface elevation: 1.27
Screen depth: 1.7-2.2
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0829	0.30	1333	1.31
03/31/95	1026	.43	--	--
04/05/95	--	--	--	--
04/13/95	1252	.50	0825	1.58
04/20/95	0700	.48	1134	1.44
04/26/95	1221	.38	0725	1.40
05/02/95	1600	1.93	1103	1.93
05/18/95	0553	1.91	1026	1.89
06/12/95	--	--	0813	1.82
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1410	.57	0931	1.59
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1442	.03	0935	.04
03/20/96	--	--	--	--
04/17/96	1435	.54	0918	.58
05/02/96	1212	.46	0707	.45
06/10/96	1208	.42	1626	.43
07/23/96	1014	.23	1432	.30
08/08/96	1114	.35	1534	.37
09/05/96	1038	.70	1513	.76
10/03/96	0915	.63	1330	.56

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB36B
Land surface elevation: 0.99
Screen depth: 2.7-3.2
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0830	1.20	1333	1.19
03/31/95	1030	1.07	--	--
04/05/95	0724	1.29	--	--
04/13/95	1252	1.29	0826	1.33
04/20/95	0702	1.10	1135	1.10
04/26/95	1221	1.14	0726	1.14
05/02/95	1601	1.80	1106	1.80
05/18/95	0555	1.71	1028	1.71
06/12/95	--	--	0801	1.49
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1412	1.28	0934	1.28
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1442	.95	0936	.98
03/20/96	--	--	--	--
04/17/96	1437	1.49	0919	1.60
05/02/96	1213	1.43	0708	1.42
06/10/96	1210	1.36	1627	1.36
07/23/96	1014	1.20	1432	1.26
08/08/96	1115	1.29	1535	1.32
09/05/96	1138	1.78	1513	1.77
10/03/96	0916	1.59	1331	1.51

Well: WB36C
Land surface elevation: 1.04
Screen depth: 7.1-7.6
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0830	3.52	1335	3.44
03/31/95	1043	3.38	--	--
04/05/95	0725	3.37	--	--
04/13/95	1253	3.36	0929	3.36
04/20/95	0703	3.32	1136	3.31
04/26/95	1222	3.30	0727	3.31
05/02/95	--	--	--	--
05/18/95	--	--	--	--
06/12/95	--	--	0815	3.25
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1412	2.76	0935	2.76
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95				
03/06/96	1443	2.17	0952	2.23
03/20/96	--	--	--	--
04/17/96	1438	3.15	0923	3.23
05/02/96	1214	3.19	0708	3.27
06/10/96	1210	2.49	1628	2.95
07/23/96	1016	1.74	1433	2.81
08/08/96	1115	2.50	1536	2.76
09/05/96	1041	3.31	1513	3.26
10/03/96	0917	2.38	1332	2.42

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996-- Continued

Well: WB36D
Land surface elevation: 0.98
Screen depth: 13.0-13.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	--	--	1336	4.49
03/31/95	1052	4.39	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0704	4.28	1138	4.27
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0558	4.29	1030	4.29
06/12/95	--	--	0816	3.18
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1414	1.94	0936	2.25
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1444	2.08	--	--
03/20/96	--	--	--	--
04/17/96	1440	2.38	0925	3.14
05/02/96	1215	2.57	0709	3.35
06/10/96	1211	2.59	1628	3.06
07/23/96	1015	2.78	1434	2.94
08/08/96	1116	2.54	1536	2.85
09/05/96	1040	2.89	1514	2.99
10/03/96	0918	2.45	1333	2.49

Well: WB36E
Land surface elevation: 1.03
Screen depth: 18.0-18.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0832	4.39	1338	3.28
03/31/95	1033	3.26	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0704	3.23	1138	3.21
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0600	3.23	1033	3.21
06/12/95	--	--	0819	2.78
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1415	2.84	0936	2.99
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1445	2.63	0957	2.62
03/20/96	--	--	--	--
04/17/96	1445	4.25	0926	4.26
05/02/96	1215	4.16	0710	4.19
06/10/96	1212	4.09	1630	4.09
07/23/96	1016	3.69	1435	4.47
08/08/96	1117	4.41	1537	3.51
09/05/96	1139	4.19	1515	4.20
10/03/96	0919	4.41	1334	4.37

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB36F
Land surface elevation: 1.00
Screen depth: 27.5-28.0
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0833	4.34	1339	3.14
03/31/95	1049	3.10	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0706	3.13	1140	3.11
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0601	3.13	1035	3.12
06/12/95	--	--	0820	3.19
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1416	3.69	0940	3.70
11/03/95	1146	3.68	1617	3.68
11/09/95	1503	3.66	0940	3.68
11/21/95	1328	3.64	0835	3.67
12/10/95	--	--	--	--
03/06/96	1446	2.60	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	1335	4.31

Well: WB36G
Land surface elevation: 1.09
Screen depth: 32.0-32.5
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0834	4.43	1341	3.27
03/31/95	1046	3.22	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0707	3.18	1140	3.22
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0603	3.23	1037	3.22
06/12/95	--	--	0821	3.25
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1417	3.75	0942	3.84
11/03/95	1147	4.12	1617	4.20
11/09/95	1405	3.57	--	--
11/21/95	1328	4.23	0835	4.40
12/10/95	--	--	--	--
03/06/96	1447	4.30	0957	4.40
03/20/96	--	--	--	--
04/17/96	1443	4.71	--	--
05/02/96	1216	4.76	--	--
06/10/96	1214	4.48	1631	4.73
07/23/96	1017	4.72	1436	4.73
08/08/96	1117	4.58	1538	4.71
09/05/96	1041	4.55	1515	4.62
10/03/96	0920	5.18	1336	4.69

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB37A
Land surface elevation: 0.76
Screen depth: 1.7-2.2
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0839	0.47	1321	1.27
03/31/95	0933	1.32	--	--
04/05/95	0728	.38	1140	.43
04/13/95	1255	.65	0831	1.39
04/20/95	0649	.56	1230	1.38
04/26/95	1214	.58	0708	1.35
05/02/95	1550	1.39	1043	2.62
05/18/95	0606	.77	1038	1.82
06/12/95	--	--	0825	2.21
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1418	.64	0951	.78
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1448	.48	1002	.51
03/20/96	1456	2.38	1057	3.58
04/17/96	1447	.66	0928	1.78
05/02/96	1217	.92	0712	2.07
06/10/96	1215	.92	1623	1.67
07/23/96	1010	1.26	1427	1.57
08/08/96	1111	.88	1528	1.34
09/05/96	1045	1.56	1511	1.77
10/03/96	0900	.85	1325	.74

Well: WB37B
Land surface elevation: 0.71
Screen depth: 2.5-3.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0841	1.23	1321	1.27
03/31/95	0939	1.08	--	--
04/05/95	0730	1.10	1143	1.11
04/13/95	1256	1.41	0832	1.46
04/20/95	--	--	1123	1.07
04/26/95	1215	1.04	0708	1.06
05/02/95	1552	1.39	1046	1.38
05/18/95	0605	1.45	1039	1.45
06/12/95	--	--	0828	1.32
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1219	1.13	--	1.13
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1449	.77	1003	.84
03/20/96	1457	.41	1058	.52
04/17/96	1448	1.33	0930	1.41
05/02/96	1218	1.36	0713	1.38
06/10/96	1216	1.33	1623	1.34
07/23/96	1010	1.12	1428	1.11
08/08/96	1112	1.22	1529	1.23
09/05/96	1045	1.60	1511	1.61
10/03/96	0901	1.45	1326	1.39

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB37B.1
Land surface elevation: 0.77
Screen depth: 2.0-3.0
Hydrogeologic unit: wetland sediments, upper peat unit

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0847	-0.37	1345	0.66
03/31/95	1000	.66	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0653	.93	1130	.92
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0615	1.39	1046	1.41
06/12/95	--	--	0836	1.33
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	0955	1.06
11/03/95	1153	1.09	1620	1.08
11/09/95	1510	1.09	0945	1.09
11/21/95	1330	1.18	0841	1.16
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Well: WB37C
Land surface elevation: 0.72
Screen depth: 7.1-7.6
Hydrogeologic unit: Canal Creek aquifer

	Low tide		High tide	
Date	Time	Water level	Time	Water level
03/23/95	0959	2.07	1322	2.47
03/31/95	0940	2.37	--	--
04/05/95	0732	1.60	1147	1.63
04/13/95	1257	2.03	0833	2.36
04/20/95	0650	1.86	1125	2.44
04/26/95	1216	1.85	0709	2.28
05/02/95	1556	1.52	1049	3.15
05/18/95	0607	1.54	1040	3.08
06/12/95	--	--	0829	3.14
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1420	1.88	0952	2.14
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1449	1.98	1014	2.14
03/20/96	1458	3.32	1059	4.15
04/17/96	1449	2.24	0930	3.02
05/02/96	1219	2.45	0714	3.25
06/10/96	1217	2.51	1624	2.96
07/23/96	1010	2.72	1429	2.84
08/08/96	1112	2.50	1529	2.77
09/05/96	1046	2.85	1511	2.88
10/03/96	0902	2.35	1327	2.40

Table 6. Synoptic ground-water levels at West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 1995 to October 1996--Continued

Well: WB37C.1
Land surface elevation: 0.55
Screen depth: 6.3-7.3
Hydrogeologic unit: Canal Creek aquifer

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	0849	1.26	1346	2.00
03/31/95	1007	2.36	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0654	2.48	1132	2.47
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0617	2.83	1047	2.87
06/12/95	--	--	0837	2.82
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	--	--	0954	2.33
11/03/95	1153	2.18	1621	2.23
11/09/95	1510	1.74	0945	1.87
11/21/95	1331	2.26	0842	2.63
12/10/95	--	--	--	--
03/06/96	--	--	--	--
03/20/96	--	--	--	--
04/17/96	--	--	--	--
05/02/96	--	--	--	--
06/10/96	--	--	--	--
07/23/96	--	--	--	--
08/08/96	--	--	--	--
09/05/96	--	--	--	--
10/03/96	--	--	--	--

Well: WB37D
Land surface elevation: 0.75
Screen depth: 13.5-14.0
Hydrogeologic unit: Canal Creek aquifer

Date	Low tide Time	Low tide Water level	High tide Time	High tide Water level
03/23/95	--	--	--	--
03/31/95	--	--	--	--
04/05/95	--	--	--	--
04/13/95	--	--	--	--
04/20/95	0656	2.50	1126	1.61
04/26/95	--	--	--	--
05/02/95	--	--	--	--
05/18/95	0608	3.05	1041	3.05
06/12/95	--	--	0829	2.92
08/29/95	--	--	--	--
10/03/95	--	--	--	--
10/17/95	--	--	--	--
10/25/95	1422	2.22	0953	2.41
11/03/95	--	--	--	--
11/09/95	--	--	--	--
11/21/95	--	--	--	--
12/10/95	--	--	--	--
03/06/96	1450	3.01	1008	2.25
03/20/96	1459	3.85	1059	4.02
04/17/96	1451	2.73	0931	2.98
05/02/96	1220	2.84	0715	2.93
06/10/96	1217	2.71	1625	2.78
07/23/96	1011	2.83	1429	2.86
08/08/96	1112	2.74	1530	2.75
09/05/96	1047	3.01	1512	3.02
10/03/96	0903	2.85	1328	2.65

Table 7A. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June to July 1993

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; °C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; (d), duplicate sample;--, not analyzed; SW-DP10, surface-water sampling site near drive-point piezometer DP-10; SW-DP9, surface-water sampling site near drive-point piezometer DP-9; SW-BRIDGE, surface-water sampling site at Hanlon Street Bridge; <, less than]

Site no.	Date	Time	Specific conductance, field (µS/cm)	pH, field (standard units)	Air temperature, field (°C)	Water temperature, field (°C)	Oxygen, dissolved, field (mg/L)	Calcium, dissolved (mg/L as Ca)
			Ground-water samples					
CC-27A	07-08-93	1100	444	4.26	36.0	13.0	1.0	23
CC-27B	07-08-93	1230	420	4.98	36.0	13.5	1.9	27
DP-1A	06-04-93	1430	1,250	6.49	24.5	15.5	.0	21
DP-1B	06-02-93	1220	840	6.32	21.5	12.0	5.2	16
DP-2	06-02-93	1540	567	5.59	22.5	12.0	.0	9.1
DP-3A	06-08-93	1515	1,920	6.41	27.0	15.0	.0	--
DP-3B	06-08-93	1530	1,800	6.40	27.0	15.0	--	--
DP-4A	06-08-93	1330	1,130	6.40	26.5	15.5	.0	--
DP-4B	06-08-93	1100	878	4.94	23.5	14.0	.0	13
DP-4B (d)	06-08-93	1100	--	--	--	--	--	13
DP-5	06-11-93	1130	1,050	7.40	29.0	13.5	.0	--
DP-6	06-08-93	1600	1,160	6.31	27.0	14.5	.0	11
DP-7	06-04-93	1630	1,210	6.71	24.5	15.0	.0	--
DP-8A	06-04-93	1030	1,850	5.85	19.5	14.0	.0	3.3
DP-8B	06-03-93	1330	983	6.18	25.0	12.0	.0	1.3
DP-8B (d)	06-03-93	1330	--	--	--	--	--	1.3
DP-9	06-07-93	1130	1,300	6.46	26.0	17.0	.0	--
DP-10	06-10-93	1000	899	6.07	32.5	17.0	.0	2.2
DP-11	06-11-93	1000	1,820	6.48	--	14.0	.0	--
DP-12	06-11-93	1300	800	5.68	30.0	17.0	.0	27
			Surface-water samples					
SW-DP10	06-07-93	1200	416	6.65	26.0	21.0	8.2	14
SW-DP9	06-09-93	1200	--	--	--	--	--	--
SW-BRIDGE	06-10-93	1400	340	6.59	--	28.0	--	15
			Quality-control blank					
BAILER BLANK	06-07-93	1200	--	--	--	--	--	<0.02

Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfide, dissolved (µg/L as S)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Site no.
8.1	35	2.6	<1	11	100	71	CC-27A
8.0	40	1.9	5	13	110	58	CC-27B
21	110	1.9	202	67	--	--	DP-1A
12	51	3.4	73	<10	29	78	DP-1B
5.2	67	1.4	24	<10	100	84	DP-2
--	--	--	--	76	--	--	DP-3A
--	--	--	--	<10	--	--	DP-3B
--	--	--	--	120	--	--	DP-4A
12	110	1.7	5	25	140	150	DP-4B
12	120	1.7	--	--	140	140	DP-4B (d)
--	--	--	--	65	--	--	DP-5
21	120	1.3	27	<10	130	220	DP-6
--	--	--	--	<10	--	--	DP-7
10	250	.7	89	14	340	220	DP-8A
1.0	200	.4	114	11	180	110	DP-8B
1.0	200	.4	--	--	180	110	DP-8B (d)
--	--	--	--	89	--	4.0	DP-9
1.6	150	1.1	166	--	140	130	DP-10
--	--	--	--	42	--	--	DP-11
14	42	3.3	23	30	140	6.5	DP-12
10	46	3.8	--	--	17	75	SW-DP10
--	--	--	--	--	--	--	SW-DP9
8.8	37	--	49	--	20	61	SW-BRIDGE
<0.01	<0.20	<0.10	--	--	.4	.4	BAILER BLANK

Table 7A. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June to July 1993--Continued

Site no.	Date	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Total dissolved solids (mg/L)	Aluminum, total (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Arsenic, total (µg/L as As)
				Ground-water samples				
CC-27A	07-08-93	0.30	0.35	30	326	5,900	5,700	<1
CC-27B	07-08-93	.90	.32	18	301	5,500	1,900	<1
DP-1A	06-04-93	--	--	32	--	--	70	2
DP-1B	06-02-93	.20	.12	7.3	232	390	20	1
DP-2	06-02-93	< .10	.05	12	329	250	70	<1
DP-3A	06-08-93	--	--	--	--	--	--	--
DP-3B	06-08-93	--	--	--	--	--	--	--
DP-4A	06-08-93	--	--	--	--	1,300	--	--
DP-4B	06-08-93	.10	.11	13	493	2,000	230	2
DP-4B (d)	06-08-93	.10	.11	13	501	1,400	200	<1
DP-5	06-11-93	--	--	--	--	--	--	--
DP-6	06-08-93	.10	.03	25	618	400	<10	<1
DP-7	06-04-93	--	--	--	--	60	--	--
DP-8A	06-04-93	.20	< .01	16	952	70	<10	<1
DP-8B	06-03-93	.90	.03	12	580	3,400	70	6
DP-8B (d)	06-03-93	.90	.03	11	578	3,500	60	6
DP-9	06-07-93	--	--	--	--	--	--	--
DP-10	06-10-93	.20	.11	7.3	460	5,900	<10	2
DP-11	06-11-93	--	--	--	--	--	--	--
DP-12	06-11-93	1.3	.06	33	379	630	330	<1
				Surface-water samples				
SW-DP10	06-07-93	0.20	0.10	4.6	248	380	30	2
SW-DP9	06-09-93	--	--	--	--	--	--	--
SW-BRIDGE	06-10-93	.20	.07	6.8	215	40	290	3
				Quality-control blank				
BAILER BLANK	06-07-93	< 0.10	< 0.01	0.01	<1	<10	<10	<1

Arsenic, dis-solved (µg/L as As)	Barium, total (µg/L as Ba)	Barium, dis-solved (µg/L as Ba)	Beryl-lium, total (µg/L as Be)	Beryl-lium, dis-solved (µg/L as Be)	Boron, dis-solved (µg/L as B)	Cad-mium, total (µg/L as Cd)	Site no.
1	<100	39	<10	3.0	200	1	CC-27A
<1	<100	38	<10	3.0	30	2	CC-27B
--	--	17	--	< .5	--	--	DP-1A
2	<100	23	<10	< .5	50	<1	DP-1B
<1	<100	62	<10	< .5	10	<1	DP-2
--	--	--	--	--	--	--	DP-3A
--	--	--	--	--	--	--	DP-3B
1	<100	--	<10	--	--	<1	DP-4A
<1	<100	67	<10	< .5	50	<1	DP-4B
<1	<100	51	<10	< .5	40	<1	DP-4B (d)
--	--	--	--	--	--	--	DP-5
<1	<100	31	<10	.5	30	<1	DP-6
2	<100	--	<10	--	--	<1	DP-7
<1	<100	10	<10	< .5	30	<1	DP-8A
10	<100	8	<10	< .5	10	<1	DP-8B
10	<100	8	<10	< .5	10	<1	DP-8B (d)
<1	--	--	--	--	--	--	DP-9
1	<100	7	<10	.6	80	<1	DP-10
--	--	--	--	--	--	--	DP-11
<1	<100	15	<10	1.0	30	<1	DP-12
4	<100	20	<10	< 0.5	60	<1	SW-DP10
--	--	--	--	--	--	--	SW-DP9
3	<100	24	<10	.6	60	<1	SW-BRIDGE
<1	<100	<2	<10	0.5	<10	<1	BAILER BLANK

Table 7A. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June to July 1993--Continued

Site no.	Date	Cadmium, dissolved (µg/L as Cd)	Chromium, total (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, total (µg/L as Cu)	Copper, dissolved (µg/L as Cu)
			Ground-water samples				
CC-27A	07-08-93	2	<1	5	36	60	60
CC-27B	07-08-93	1	<1	<5	40	15	20
DP-1A	06-04-93	11	--	6	4	--	<10
DP-1B	06-02-93	4	52	<5	5	27	<10
DP-2	06-02-93	13	18	<5	5	7	<10
DP-3A	06-08-93	--	--	--	--	--	--
DP-3B	06-08-93	--	--	--	--	--	--
DP-4A	06-08-93	--	42	--	--	9	--
DP-4B	06-08-93	28	31	<5	50	6	<10
DP-4B (d)	06-08-93	6	24	<5	60	7	<10
DP-5	06-11-93	--	--	--	--	--	--
DP-6	06-08-93	8	28	<5	<3	4	<10
DP-7	06-04-93	--	8	--	--	1	--
DP-8A	06-04-93	8	14	<5	<3	1	<10
DP-8B	06-03-93	<1	15	<5	5	10	<10
DP-8B (d)	06-03-93	<1	16	<5	5	9	<10
DP-9	06-07-93	--	--	--	--	--	--
DP-10	06-10-93	4	11	<5	<3	5	<10
DP-11	06-11-93	--	--	--	--	--	--
DP-12	06-11-93	4	14	<5	10	7	<10
			Surface-water samples				
SW-DP10	06-07-93	<1	<1	<5	<3	4	<10
SW-DP9	06-09-93	--	--	--	--	--	--
SW-BRIDGE	06-10-93	<1	<1	<5	<3	2	<10
			Quality-control blank				
BAILER BLANK	06-07-93	<1	<1	<5	<3	<1	<10

Iron, total (µg/L as Fe)	Iron, dis-solved (µg/L as Fe)	Lead, total (µg/L as Pb)	Lead, dis-solved (µg/L as Pb)	Lithium, total (µg/L as Li)	Lithium, dis-solved (µg/L as Li)	Manga-nese, total (µg/L as Mn)	Site no.
600	88	19	16	10	7	330	CC-27A
790	31	2	<1	10	13	780	CC-27B
--	42,000	--	26	--	5	--	DP-1A
16,000	2,300	31	1	<10	4	1,100	DP-1B
15,000	28,000	200	420	<10	<4	950	DP-2
--	--	--	--	--	--	--	DP-3A
--	--	--	--	--	--	--	DP-3B
77,000	--	120	--	10	--	1,600	DP-4A
4,500	2,200	64	73	<10	<4	1,500	DP-4B
3,000	2,200	42	58	<10	<4	1,600	DP-4B (d)
--	--	--	--	--	--	--	DP-5
58,000	50,000	12	3	20	7	1,400	DP-6
59,000	--	17	--	10	--	1,200	DP-7
61,000	28,000	17	<1	10	<4	1,300	DP-8A
13,000	250	160	17	<10	<4	150	DP-8B
14,000	240	130	18	<10	<4	180	DP-8B (d)
--	--	--	--	--	--	--	DP-9
44,000	14,000	97	<1	10	<4	550	DP-10
--	--	--	--	--	--	--	DP-11
26,000	22,000	63	11	10	<4	2,600	DP-12
2,000	540	9	3	<10	<4	540	SW-DP10
--	--	--	--	--	--	--	SW-DP9
440	1,700	3	11	10	<4	200	SW-BRIDGE
<10	11	<1	<1	10	<4	<10	BAILER BLANK

Table 7A. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June to July 1993--Continued

Site no.	Date	Manganese, dissolved (µg/L as Mn)	Molybdenum, dissolved (µg/L as Mo)	Nickel, total (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)	Silver, total (µg/L as Ag)
			Ground-water samples				
CC-27A	07-08-93	330	--	55	60	<1	<1
CC-27B	07-08-93	780	<10	59	50	2	<1
DP-1A	06-04-93	1,300	<10	--	90	1	--
DP-1B	06-02-93	600	<10	450	190	<1	<1
DP-2	06-02-93	1,300	<10	150	210	<1	<1
DP-3A	06-08-93	--	--	--	--	--	--
DP-3B	06-08-93	--	--	--	--	--	--
DP-4A	06-08-93	--	--	120	--	--	<1
DP-4B	06-08-93	1,500	<10	70	60	<1	<1
DP-4B (d)	06-08-93	1,500	<10	50	60	<1	<1
DP-5	06-11-93	--	--	--	--	--	--
DP-6	06-08-93	1,100	<10	90	50	<1	<1
DP-7	06-04-93	--	--	100	--	--	<1
DP-8A	06-04-93	1,400	<10	57	70	<1	<1
DP-8B	06-03-93	110	<10	60	40	<1	<1
DP-8B (d)	06-03-93	110	<10	57	50	<1	<1
DP-9	06-07-93	--	--	--	--	--	--
DP-10	06-10-93	340	<10	32	<10	<1	<1
DP-11	06-11-93	--	--	--	--	--	--
DP-12	06-11-93	2,500	<10	38	30	<1	<1
			Surface-water samples				
SW-DP10	06-07-93	550	<10	3	<10	2	<1
SW-DP9	06-09-93	--	--	--	--	--	--
SW-BRIDGE	06-10-93	360	<10	4	<10	<1	<1
			Quality-control blank				
BAILER BLANK	06-07-93	<1	<10	<1	<10	<1	<1

Stron-tium, dis-solved (µg/L as Sr)	Stron-tium, total (µg/L as Sr)	Vana-dium, dis-solved (µg/L as V)	Zinc, dis-solved (µg/L as Zn)	Zinc, total (µg/L as Zn)	Site no.
130	130	<6	140	140	CC-27A
270	250	<6	290	270	CC-27B
190	--	10	59	--	DP-1A
110	120	<6	42	80	DP-1B
73	70	<6	72	70	DP-2
--	--	--	--	--	DP-3A
--	--	--	--	--	DP-3B
--	60	--	--	60	DP-4A
140	140	<6	92	80	DP-4B
140	140	<6	75	70	DP-4B (d)
--	--	--	--	--	DP-5
150	150	11	26	20	DP-6
--	160	--	--	20	DP-7
41	40	<6	19	20	DP-8A
12	<10	<6	33	60	DP-8B
12	20	<6	33	50	DP-8B (d)
--	--	--	--	--	DP-9
22	30	<6	10	20	DP-10
--	--	--	--	--	DP-11
250	250	<6	12	30	DP-12
99	90	<6	19	30	SW-DP10
--	--	--	--	--	SW-DP9
100	100	<6	32	<10	SW-BRIDGE
<1	<10	<6	<3	<10	BAILER BLANK

Table 7B. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, August 1993

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; °C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; (d), duplicate sample; --, not analyzed; SW-BRIDGE, surface-water sampling site at Hanlon Street Bridge; <, less than]

Site no.	Date	Time	Specific conductance (µS/cm)	pH, Field (standard units)	Water temperature, (°C)	Oxygen, dissolved (mg/L)	Calcium, dissolved (mg/L as Ca)
			Ground-water samples				
DP-1A	08-31-93	930	1,100	6.24	22.5	0.0	16
DP-1B	08-25-93	1100	2,430	6.19	21.0	.0	22
DP-2	08-27-93	830	580	5.87	17.0	.0	7.5
DP-2 (d)	08-27-93	830	--	--	--	--	--
DP-3A	08-24-93	1500	--	--	--	--	--
DP-3B	08-24-93	1530	--	--	--	--	--
DP-4A	08-31-93	1230	1,610	6.24	21.0	.0	4.8
DP-4B	08-24-93	900	877	4.90	19.5	.6	12
DP-4B (d)	08-24-93	930	--	--	--	--	12
DP-5	08-27-93	900	--	--	--	--	--
DP-6	08-23-93	1500	1,190	6.61	21.0	.0	11
DP-7	08-26-93	1000	1,200	6.38	21.0	--	16
DP-8A	08-31-93	900	1,760	--	20.5	--	--
DP-8B	08-31-93	1000	968	6.39	16.0	--	2.3
DP-9	08-24-93	1100	1,100	6.59	21.0	.0	--
DP-10	08-25-93	1000	1,350	6.23	21.0	.0	2.9
DP-11	08-26-93	900	--	--	--	--	--
DP-12	08-26-93	930	575	5.93	21.0	.0	27
			Surface-water sample				
WBSW-BRIDGE	08-27-93	1100	2,250	6.40	26.0	--	25
			Quality-control blank				
BAILER BLANK	08-26-93	1200	--	--	--	--	0.03

Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfide, dissolved (mg/L as S)	Sulfate, dissolved (mg/L as SO_4)	Well no.
21	120	2.4	283	0.078	1.8	DP-1A
48	350	10	73	< .010	590	DP-1B
4.9	62	1.5	43	< .010	86	DP-2
--	--	--	--	--	--	DP-2 (d)
--	--	--	--	--	--	DP-3A
--	--	--	--	--	--	DP-3B
4.9	170	4	117	.011	130	DP-4A
11	130	1.9	1	< .010	140	DP-4B
11	130	1.9	--	--	140	DP-4B (d)
--	--	--	--	--	--	DP-5
24	140	2.3	133	< .010	77	DP-6
12	130	2.8	236	--	2.2	DP-7
--	--	--	--	--	--	DP-8A
.77	190	0.5	102	--	170	DP-8B
--	--	--	234	< .010	--	DP-9
1.6	160	1.6	116	.023	130	DP-10
--	--	--	--	--	--	DP-11
13	42	3.7	50	< .010	120	DP-12
36	270	13	52	--	70	WBSW-BRIDGE
0.01	<0.2	<0.1	--	--	<0.1	BAILER BLANK

Table 7B. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, August 1993--Continued

Well no.	Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Silica, dissolved (mg/L as SiO_2)	Nitrite, dissolved (mg/L as N)	Nitrite plus nitrate, dissolved (mg/L as N)	Nitrogen, ammonia, dissolved (mg/L as N)
			Ground-water samples				
DP-1A	08-31-93	160	1	41	--	1.3	0.15
DP-1B	08-25-93	580	1	10	--	1.4	.07
DP-2	08-27-93	78	<.1	12	--	.61	.02
DP-2 (d)	08-27-93	--	--	--	--	--	--
DP-3A	08-24-93	--	--	--	--	--	--
DP-3B	08-24-93	--	--	--	--	--	--
DP-4A	08-31-93	190	1	13	--	3.2	.06
DP-4B	08-24-93	140	.3	14	--	.83	.01
DP-4B (d)	08-24-93	140	.3	14	--	.81	.01
DP-5	08-27-93	--	--	--	--	--	--
DP-6	08-23-93	230	.4	17	--	1.2	.07
DP-7	08-26-93	160	.3	40	--	.26	2.1
DP-8A	08-31-93	--	--	--	--	--	--
DP-8B	08-31-93	100	1.1	13	--	1.1	< .01
DP-9	08-24-93	--	--	--	--	--	--
DP-10	08-25-93	190	.5	7.0	--	25	.05
DP-11	08-26-93	--	--	--	--	--	--
DP-12	08-26-93	57	1.3	33	< 0.01	.68	.18
			Surface-water sample				
WBSW-BRIDGE	08-27-93	520	0.2	6.8	--	0.43	< .01
			Quality-control blank				
BAILER BLANK	08-26-93	1	< 0.1	0.13	< 0.01	0.88	< 0.01

Nitrogen, ammonia +organic, dis-solved (mg/L as N)	Phos-phorous, ortho-, dis-solved (mg/L as P)	Manga-nese, dis-solved (µg/L as Mn)	Iron, dis-solved (µg/L as Fe)	Well no.
0.3	<0.01	1,100	58,000	DP-1A
.2	.01	900	25,000	DP-1B
< .2	< .01	980	33,000	DP-2
--	--	--	--	DP-2 (d)
--	--	--	--	DP-3A
--	--	--	--	DP-3B
.3	< .01	1,300	1,400	DP-4A
< .2	< .01	1,300	680	DP-4B
< .2	< .01	1,300	670	DP-4B (d)
--	--	--	--	DP-5
.3	< .01	970	38,000	DP-6
2.3	.03	960	14,200	DP-7
--	--	--	--	DP-8A
< .2	.02	100	4,500	DP-8B
--	--	--	--	DP-9
.4	< .01	720	58,000	DP-10
--	--	--	--	DP-11
.3	.01	2,300	18,000	DP-12
0.3	0.01	630	270	WBSW-BRIDGE
< 0.2	< 0.01	2	11	BAILER BLANK

Table 8A. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Organic chemical data, June to July 1993

[µg/L, micrograms per liter; (d), duplicate sample; --, not analyzed; SW-DP10, surface-water sampling site near drive-point piezometer DP-10; SW-DP9, sample-water sampling site near drive-point piezometer DP-9; SW-BRIDGE, surface-water sampling site at Hanlon Street Bridge; <, less than]

Site no.	Date	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)
		Ground-water samples				
CC-27A	7-08-93	4,700	24	23	350	51
CC-27B	7-08-93	240	<3.0	<3.0	17	<3.0
DP-1A	6-07-93	<3.0	<3.0	<3.0	<3.0	40
DP-1B	6-02-93	6.0	<3.0	3.1	46	<3.0
DP-2	6-02-93	49	<3.0	13	250	7.6
DP-3A	6-08-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-3B	6-08-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-4A	6-08-93	<3.0	<3.0	<3.0	6.8	<3.0
DP-4B	6-08-93	35	<3.0	6.1	100	3.3
DP-4B (d)	6-08-93	35	<3.0	7.1	110	3.0
DP-5	6-08-93	<3.0	<3.0	<3.0	6.5	25
DP-6	6-08-93	40	<3.0	4.4	92	3.3
DP-7	6-04-93	<3.0	<3.0	<3.0	<3.0	8.8
DP-8A	6-04-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-8B	6-03-93	3.9	<3.0	<3.0	<3.0	<3.0
DP-8B (d)	6-03-93	4.3	<3.0	<3.0	<3.0	<3.0
DP-9	6-07-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-10	6-10-93	4.6	<3.0	<3.0	14	<3.0
DP-11	6-11-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-12	6-11-93	10	<3.0	<3.0	8.6	62
		Surface-water samples				
SW-DP10	6-07-93	<3.0	<3.0	<3.0	<3.0	<3.0
SW-DP9	6-09-93	<3.0	<3.0	<3.0	<3.0	<3.0
SW-BRIDGE	6-10-93	<3.0	<3.0	3.0	<3.0	<3.0
		Quality-control blanks				
BAILER BLANK	6-09-93	<3.0	<3.0	<3.0	<3.0	<3.0
TRIP BLANK	6-09-93	<3.0	<3.0	<3.0	<3.0	<3.0
AMBIENT BLANK	6-11-93	<3.0	<3.0	<3.0	<3.0	<3.0

trans-1,2-Dichloroethene (µg/L)	Vinyl chloride (µg/L)	Carbon tetrachloride (µg/L)	Chloroform (µg/L)	Methane (µg/L)	Toluene (µg/L)	Site no.
16	<1.0	<3.0	<3.0	120	<3.0	CC-27A
<3.0	<1.0	17	30	110	<3.0	CC-27B
<3.0	9.7	<3.0	<3.0	6,000	7.7	DP-1A
<3.0	<1.0	3.0	21	15	<3.0	DP-1B
<3.0	<1.0	26	110	31	<3.0	DP-2
<3.0	<1.0	<3.0	<3.0	37	<3.0	DP-3A
<3.0	<1.0	<3.0	<3.0	32	<3.0	DP-3B
<3.0	<1.0	<3.0	<3.0	52	<3.0	DP-4A
<3.0	<1.0	35	68	9	<3.0	DP-4B
<3.0	<1.0	39	70	6	<3.0	DP-4B (d)
<3.0	12	<3.0	<3.0	--	<3.0	DP-5
<3.0	<1.0	4.5	61	160	<3.0	DP-6
<3.0	7.2	<3.0	<3.0	8,700	<3.0	DP-7
<3.0	<1.0	<3.0	<3.0	27	<3.0	DP-8A
<3.0	<1.0	<3.0	<3.0	17	<3.0	DP-8B
<3.0	<1.0	<3.0	<3.0	16	<3.0	DP-8B (d)
<3.0	<1.0	<3.0	<3.0	530	<3.0	DP-9
<3.0	<1.0	<3.0	<3.0	71	<3.0	DP-10
<3.0	<1.0	<3.0	<3.0	690	<3.0	DP-11
12	<1.0	<3.0	<3.0	--	<3.0	DP-12
<3.0	<1.0	7.0	7.2	--	<3.0	SW-DP10
<3.0	<1.0	<3.0	4.4	--	<3.0	SW-DP9
<3.0	<1.0	16	22	--	<3.0	SW-BRIDGE
<3.0	<1.0	<3.0	<3.0	--	<3.0	BAILER BLANK
<3.0	<1.0	<3.0	<3.0	--	<3.0	TRIP BLANK
<3.0	<1.0	<3.0	<3.0	--	<3.0	AMBIENT BLANK

Table 8B. Reconnaissance-phase ground-water and surface-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Organic chemical data, August 1993

[µg/L, micrograms per liter; (d), duplicate sample; --, not analyzed; SW-BRIDGE, surface-water sampling site at Hanlon Street Bridge; <, less than]

Site no.	Date	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)
		Ground-water samples				
DP-1A	8-25-93	<3.0	<3.0	<3.0	13	11
DP-1B	8-25-93	6.5	<3.0	6.0	86	5.6
DP-2	8-27-93	32	3.1	13	150	7.0
DP-2 (d)	8-27-93	20	<3.0	8.3	130	4.7
DP-3A	8-24-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-3B	8-24-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-4A	8-23-93	<3.0	<3.0	<3.0	3.4	<3.0
DP-4B	8-24-93	48	<3.0	7.2	150	3.2
DP-4B (d)	8-24-93	52	<3.0	6.5	150	3.2
DP-5	8-27-93	<3.0	<3.0	<3.0	<3.0	34
DP-6	8-23-93	9.4	3.1	<3.0	44	<3.0
DP-7	8-26-93	--	--	--	--	--
DP-8A	8-31-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-8B	8-31-93	4.0	<3.0	<3.0	<3.0	<3.0
DP-9	8-24-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-10	8-25-93	<3.0	<3.0	<3.0	6.4	<3.0
DP-11	8-26-93	<3.0	<3.0	<3.0	<3.0	<3.0
DP-12	8-26-93	<3.0	<3.0	<3.0	4.0	35
		Surface-water sample				
SW-BRIDGE	8-27-93	6.0	<3.0	<3.0	<3.0	<3.0
		Quality-control blanks				
BAILER BLANK	8-26-93	<3.0	<3.0	<3.0	<3.0	<3.0
TRIP BLANK	8-26-93	<3.0	<3.0	<3.0	<3.0	<3.0

trans-1,2-Dichloroethene (µg/L)	Vinyl chloride (µg/L)	Carbon tetrachloride (µg/L)	Chloroform (µg/L)	Methane (µg/L)	Toluene (µg/L)	Site no.
<3.0	4.2	<3.0	<3.0	9,700	11	DP-1A
<3.0	<1.0	<3.0	5.9	38	<3.0	DP-1B
5.2	1.0	13	33	69	<3.0	DP-2
5.2	<1.0	<3.0	13	65	<3.0	DP-2 (d)
<3.0	<1.0	<3.0	<3.0	--	<3.0	DP-3A
<3.0	<1.0	<3.0	<3.0	--	<3.0	DP-3B
<3.0	<1.0	<3.0	<3.0	98	<3.0	DP-4A
<3.0	<1.0	49	57	71	<3.0	DP-4B
<3.0	<1.0	51	56	66	<3.0	DP-4B (d)
4.8	22	<3.0	<3.0	4,400	<3.0	DP-5
<3.0	1.0	<3.0	13	200	<3.0	DP-6
--	--	--	--	--	--	DP-7
<3.0	<1.0	<3.0	<3.0	--	<3.0	DP-8A
<3.0	<1.0	<3.0	<3.0	--	<3.0	DP-8B
<3.0	<1.0	<3.0	<3.0	3,000	<3.0	DP-9
<3.0	<1.0	<3.0	<3.0	140	<3.0	DP-10
<3.0	1.0	<3.0	<3.0	--	<3.0	DP-11
80	8.9	<3.0	<3.0	145	<3.0	DP-12
<3.0	<1.0	7.2	8.6	--	<3.0	SW-BRIDGE
<3.0	<1.0	<3.0	<3.0	--	<3.0	RINSE BLANK
<3.0	<1.0	<3.0	<3.0	--	<3.0	TRIP BLANK

Table 9A. Reconnaissance-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, June to July 1993

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, not analyzed for; (d), duplicate sample]

Well no.	Date	Bicar-bonate, field (mg/L as HCO_3)	Oxygen, dis-solved, field (mg/L)	Iron, ferrous, on-site (mg/L as Fe)	Iron, ferric on-site (mg/L as Fe)	Iron, ferrous + ferric, dis-solved, on-site (mg/L)	Iron, ferrous + ferric, dis-solved, NWQL (mg/L)	Sulfide, dis-solved, on-site (µg/L as S)	Methane, on-site (µg/L as CH_4)
CC-27A	07-08-93	<1	1.0	0.04	0.00	0.04	0.0	11	120
CC-27B	07-08-93	5	1.9	0	--	--	.03	13	110
DP-1A	06-04-93	202	.0	14	--	11	42	67	6,000
DP-1B	06-02-93	73	5.2	1.5	.65	2.2	2.3	0	15
DP-2	06-02-93	24	.0	11	.00	11	28	0	31
DP-3A	06-08-93	--	.0	--	--	--	--	76	37
DP-3B	06-08-93	--	--	--	--	--	--	<6	32
DP-4A	06-08-93	--	.0	--	--	--	--	98	52
DP-4A (d)	06-08-93	--	--	--	--	--	--	120	--
DP-4B	06-08-93	5	.0	2.2	.08	2.3	2.2	25	9
DP-4B (d)	06-08-93	--	--	2.3	.00	2.3	2.2	--	6
DP-5	06-09-93	--	.0	--	--	--	--	65	--
DP-6	06-08-93	27	.0	--	--	--	50	0	160
DP-7	06-04-93	--	.0	--	--	--	--	0	8,700
DP-8A	06-04-93	89	.0	15	.00	15	28	14	27
DP-8B	06-03-93	114	.0	.22	.00	.2	.25	110	17
DP-9	06-07-93	--	.0	--	--	--	--	89	530
DP-10	06-10-93	166	.0	11	.00	11	14		71
DP-11	06-11-93	--	.0	--	--	--	--	42	700
DP-12	06-11-93	23	.0	12	.00	12	22	30	--

Table 9B. Reconnaissance-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, August 1993

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, not analyzed for; (d), duplicate sample]

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved, field (mg/L)	Iron, ferrous on-site (mg/L as Fe)	Iron, ferric on-site (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
DP-1A	08-31-93	283	0.0	56	8.1	64	--	78	9,700
DP-1B	08-25-93	73	.0	30	0	30	--	0	38
DP-2	08-27-93	43	.0	31	0	31	33	0	69
DP-3A	08-24-93	--	--	--	--	--	--	--	--
DP-3B	08-24-93	--	--	--	--	--	--	--	--
DP-4A	08-31-93	117	.0	37	0	37	1.4	11	98
DP-4A (d)	08-31-93	--	--	--	--	--	--	--	--
DP-4B	08-24-93	1	.6	1.5	0	1	.68	0	71
DP-4B (d)	08-24-93	--	--	--	--	--	.67	--	66
DP-5	08-27-93	--	--	--	--	--	--	--	4,400
DP-6	08-23-93	133	.0	38	4.6	43	38	0	200
DP-7	08-26-93	236	--	--	--	--	14	--	--
DP-8A	08-31-93	--	--	--	--	--	--	--	--
DP-8B	08-31-93	102	--	--	--	--	4.5	--	--
DP-9	08-24-93	234	.0	12	2.8	15	--	0	3,000
DP-10	08-25-93	116	.0	65	0	65	58	23	140
DP-11	08-26-93	--	--	--	--	--	--	--	--
DP-12	08-26-93	50	.0	19	.7	20	18	0	145

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; ppt, parts per thousand; °C, degrees Celsius; NTU, nephelometric turbidity units; mg/L, milligrams per liter; µg/L, micrograms per liter; --, not analyzed; (d), duplicate sample; (t), triplicate sample; >, greater than; <, less than]

Well no.	Date	Time	Specific conductance, field (µS/cm)	pH, field (standard units)	Salinity, field (ppt)	Water temperature, field (°C)	Turbidity, field (NTU)	Oxygen, dissolved, field (mg/L)
WB19A	06-16-95	1000	488	6.15	0.2	28.0	322	--
WB19B	06-16-95	1000	1,470	6.18	.7	23.0	36.4	--
WB19D	06-19-95	1115	189	5.60	.1	20.3	94.3	3.20
WB19E	06-16-95	1430	156	4.58	.1	14.3	>1,000	5.96
WB19F	06-19-95	1130	184	4.54	.1	17.1	>1,000	5.44
WB20A	10-12-95	945	7,390	10.4	4.1	22.0	5.7	.00
WB20B	10-12-95	940	572	5.27	.3	21.0	19.7	7.07
WB20B (d)	10-12-95	940	--	--	--	--	--	--
WB20E	10-23-95	1220	623	4.86	.3	20.5	>1,000	3.50
WB21B	06-20-95	1330	1,160	5.97	.6	23.3	115	.00
WB21C	06-20-95	1430	699	4.60	.3	18.5	>1,000	.00
WB21D	06-21-95	900	604	5.58	.3	21.6	25.8	.00
WB21E	06-21-95	1400	482	4.73	.2	16.1	>1,000	.00
WB21F	06-22-95	1500	115	4.82	.1	18.4	>1,000	1.18
WB21F (d)	06-22-95	1500	273	--	.1	22.5	6.3	--
WB21G	06-26-95	900	332	4.71	.3	17.6	69.9	1.63
WB22B	06-26-95	1400	348	5.24	.1	24.5	32.1	--
WB22C	07-12-95	1100	559	4.81	.3	21.0	>1,000	1.67
WB22D	06-26-95	1330	423	4.92	.2	19.6	>1,000	.00
WB22E	07-26-95	1000	534	5.21	.3	27.5	>1,000	6.41
WB23B	07-24-95	1430	1,080	6.63	.5	25.4	67.5	--
WB23C	07-24-95	1430	3,690	6.89	1.9	21.1	14.2	--
WB23D	07-10-95	1530	860	4.85	.4	20.7	313	.46
WB23E	06-28-95	1515	807	4.81	.4	17.1	>1,000	.46
WB23F	07-11-95	1030	768	4.70	.4	18.0	>1,000	1.57
WB24B	07-11-95	1330	560	6.20	.3	23.0	33.5	.77
WB24E	08-01-95	1000	376	5.87	.2	21.6	11.6	5.91
WB24F	07-20-95	1130	569	4.51	.3	16.0	>1,000	1.54
WB25A	07-26-95	1100	--	--	--	--	--	--
WB25B	07-13-95	1300	736	4.53	.4	19.9	117	1.00

Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Well no.
14	16	79	1.1	166	0.7	120	0.3	WB19A
9.4	18	94	3.6	181	3.7	140	.1	WB19B
8.2	5.2	15	1.6	12	20	33	< .1	WB19D
5.6	5.8	11	1.4	6	31	18	<.1	WB19E
5.4	5.4	17	1.4	<1	28	30	<.1	WB19F
1.9	.3	1,900	.2	1,230	810	1,400	5.1	WB20A
16	6.4	78	1.8	7	100	93	.2	WB20B
16	6.4	78	1.8	--	100	92	.2	WB20B (d)
21	8.3	85	2.8	<1	160	88	<.1	WB20E
36	18	130	2.1	59	130	240	<.1	WB21B
25	10	95	2.5	5	160	110	.1	WB21C
23	10	68	2.2	3	140	76	.1	WB21D
18	6.2	60	2.5	4	100	71	.2	WB21E
3.4	1.4	11	.9	<1	23	10	<.1	WB21F
3.4	1.4	11	.9	--	23	10	<.1	WB21F (d)
6.7	2.8	44	1.4	<1	33	63	<.1	WB21G
4.1	6.6	44	1.3	20	40	65	.1	WB22B
13	6.0	80	2.0	1	100	84	.4	WB22C
11	4.6	58	1.5	5	82	58	<.1	WB22D
25	11	63	2.4	2	140	61	<.1	WB22E
9.1	11	200	2.1	381	1.6	120	.5	WB23B
9.7	16	80	3.6	34	15	48	.2	WB23C
28	11	120	2.2	<1	210	110	<.1	WB23D
19	11	120	1.8	4	150	110	<.1	WB23E
18	9.9	110	2.2	2	160	110	<.1	WB23F
7.5	8.4	97	.7	142	.9	100	.4	WB24B
8.4	5.9	46	1.4	31	51	54	<.1	WB24E
23	8.1	71	2.9	<1	140	74	.2	WB24F
110	90	340	47	--	6.7	530	.2	WB25A
34	13	79	2.4	1	190	96	.3	WB25B

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, total (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)
WB19A	06-16-95	1.1	31	--	20	--	2	33
WB19B	06-16-95	.54	54	--	20	--	<1	2
WB19D	06-19-95	.06	10	--	30	--	<1	34
WB19E	06-16-95	.05	8.0	--	120	--	<1	74
WB19F	06-19-95	.05	7.7	--	60	--	<1	73
WB20A	10-12-95	.39	340	<10	30	190	190	<100
WB20B	10-12-95	.02	25	--	130	--	9	34
WB20B (d)	10-12-95	.02	25	--	130	--	9	34
WB20E	10-23-95	.58	19	--	170	--	3	43
WB21B	06-20-95	.11	8.7	12,000	<10	1	1	32
WB21C	06-20-95	.1	13	11,000	270	1	<1	27
WB21D	06-21-95	.08	11	--	110	--	<1	22
WB21E	06-21-95	.81	14	--	160	--	2	24
WB21F	06-22-95	.19	8.3	--	10	--	<1	18
WB21F (d)	06-22-95	.19	8.2	--	80	--	<1	18
WB21G	06-26-95	.22	9.9	--	120	--	<1	36
WB22B	06-26-95	.05	13	--	20	--	<1	25
WB22C	07-12-95	.09	12	--	160	--	<1	54
WB22D	06-26-95	.38	11	--	70	--	<1	45
WB22E	07-26-95	1.7	14	--	90	--	<1	32
WB23B	07-24-95	1.1	12	--	60	--	<1	14
WB23C	07-24-95	.09	16	--	30	--	<1	22
WB23D	07-10-95	.11	12	3,400	--	2	<1	93
WB23E	06-28-95	1.2	12	--	110	--	<1	79
WB23F	07-11-95	.36	13	--	250	--	<1	23
WB24B	07-11-95	.12	25	600	110	<1	<1	8
WB24E	08-01-95	.09	11	930	10	1	<1	14
WB24F	07-20-95	.33	15	--	840	--	<1	31
WB25A	07-26-95	1.8	31	--	100	--	<5	140
WB25B	07-13-95	.4	14	--	770	--	<1	29

Beryllium, dissolved (µg/L as Be)	Cadmium, total (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, total (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Well no.
<0.5	--	3	--	<5	210	--	<10	WB19A
<.5	--	<1	--	<5	--	--	<10	WB19B
.5	--	<1	--	<5	9	--	<10	WB19D
<.5	--	<1	--	<5	6	--	<10	WB19E
<.5	--	1	--	<5	7	--	<10	WB19F
<10	<1	<1	9	6	1	20	4	WB20A
<.5	--	3	--	<5	20	--	<10	WB20B
<.5	--	3	--	<5	20	--	<10	WB20B (d)
<.5	--	<1	--	<5	370	--	<10	WB20E
<.5	<1	4	19	<5	350	--	<10	WB21B
.8	<1	<1	32	<5	60	20	<10	WB21C
.5	--	<1	--	<5	70	--	<10	WB21D
.7	--	<1	--	<5	50	--	50	WB21E
<.5	--	<1	--	<5	30	--	10	WB21F
<.5	--	<1	--	<5	30	--	<10	WB21F (d)
.6	--	<1	--	<5	160	--	<10	WB21G
<.5	--	11	--	<5	--	--	<10	WB22B
.8	--	<1	--	<5	80	--	<10	WB22C
.6	--	<1	--	<5	40	--	<10	WB22D
<.5	--	<1	--	<5	70	--	20	WB22E
<.5	--	1	--	<5	--	--	<10	WB23B
<.5	--	4	--	<5	30	--	<10	WB23C
.8	<1	<1	10	<5	60	10	<10	WB23D
.8	--	6	--	<5	50	--	<10	WB23E
.8	--	<1	--	<5	60	--	<10	WB23F
.7	<1	<1	12	<5	20	<10	<10	WB24B
<.5	<1	3	4	<5	20	<10	<10	WB24E
1.0	--	1	--	<5	60	--	<10	WB24F
<.5	--	4	--	<5	--	--	<10	WB25A
.8	--	1	--	<5	80	--	<10	WB25B

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lead, total (µg/L as Pb)	Iron, total (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
WB19A	06-16-95	--	--	20,000	<1	<4	--	860
WB19B	06-16-95	--	--	9,500	<1	<4	--	750
WB19D	06-19-95	--	--	55	<1	<4	--	93
WB19E	06-16-95	--	--	15	<1	<4	--	66
WB19F	06-19-95	26	--	--	--	<4	--	94
WB20A	10-12-95	2	280	270	<1	<10	50	<10
WB20B	10-12-95	--	--	12	<1	7	--	430
WB20B (d)	10-12-95	--	--	14	<1	7	--	430
WB20E	10-23-95	--	--	1,500	<1	<4	--	4,900
WB21B	06-20-95	16	41,000	29,000	<1	<4	2,400	2,300
WB21C	06-20-95	13	17,000	65	<1	<4	1,100	1,100
WB21D	06-21-95	--	--	790	<1	<4	--	1,600
WB21E	06-21-95	--	--	1,300	<1	<4	--	1,100
WB21F	06-22-95	--	--	27	<1	6	--	290
WB21F (d)	06-22-95	--	--	30	<1	8	--	300
WB21G	06-26-95	--	--	21	<1	13	--	1,600
WB22B	06-26-95	--	--	8,200	7	<4	--	670
WB22C	07-12-95	--	--	29	1	<4	--	990
WB22D	06-26-95	--	--	200	<1	<4	--	530
WB22E	07-26-95	--	--	17	<1	<4	--	1,100
WB23B	07-24-95	--	--	21,000	4	<4	--	620
WB23C	07-24-95	--	--	3,500	4	5	--	390
WB23D	07-10-95	5	7,300	43	<1	7	890	860
WB23E	06-28-95	--	--	330	<1	<4	--	760
WB23F	07-11-95	--	--	19	<1	<4	--	770
WB24B	07-11-95	7	5,100	4,200	4	<4	290	290
WB24E	08-01-95	4	4,800	1,100	<1	<4	350	310
WB24F	07-20-95	--	--	56	<1	7	--	750
WB25A	07-26-95	--	--	10,000	1	21	--	6,900
WB25B	07-13-95	--	--	<3	<1	8	--	960

Molybdenum, dissolved (µg/L as Mo)	Nickel, total (µg/L as Ni).	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)	Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, total (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Well no.
10	--	30	<1	130	<6	--	55	WB19A
10	--	20	<1	120	<6	--	26	WB19B
<10	--	30	2	71	<6	--	59	WB19D
<10	--	<10	<1	58	<6	--	<3	WB19E
10	--	20	<1	58	<6	--	<3	WB19F
28	31	34	<1	30	180	<10	<10	WB20A
<10	--	30	<1	150	9	--	90	WB20B
<10	--	40	<1	150	8	--	97	WB20B (d)
<10	--	150	<1	170	<6	--	160	WB20E
<10	24	20	<1	230	<6	1,100	3,600	WB21B
<10	45	40	<1	170	<6	80	59	WB21C
<10	--	50	<1	180	<6	--	59	WB21D
<10	--	80	<1	120	<6	--	52	WB21E
<10	--	10	<1	28	<6	--	21	WB21F
<10	--	<10	<1	28	<6	--	21	WB21F (d)
<10	--	50	<1	64	<6	--	54	WB21G
10	--	140	1	47	<6	--	140	WB22B
<10	--	40	<1	100	<6	--	170	WB22C
10	--	50	<1	91	<6	--	73	WB22D
<10	--	50	1	190	<6	--	74	WB22E
<10	--	30	<1	89	<6	--	85	WB23B
20	--	70	<1	99	<6	--	150	WB23C
<10	34	20	<1	170	<6	110	110	WB23D
<10	--	30	<1	150	<6	--	54	WB23E
<10	--	20	<1	160	<6	--	86	WB23F
<10	24	<10	<1	64	<6	30	43	WB24B
<10	10	<10	<1	35	<6	40	64	WB24E
<10	--	30	1	170	<6	--	60	WB24F
20	--	20	<1	750	<6	--	7,700	WB25A
<10	--	40	<1	200	<6	--	130	WB25B

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Time	Specific conductance, field (µS/cm)	pH, Field (standard units)	Salinity, field (ppt)	Water temperature, field (°C)	Turbidity, field (NTU)	Oxygen, dissolved, field (mg/L)
WB25B (d)	07-13-95	1300	--	--	--	--		--
WB25C	07-13-95	1030	776	4.62	0.4	24.9	212	1.26
WB26A	07-24-95	1000	2,570	6.76	1.3	26.0	70.9	--
WB26B	07-24-95	1030	--	6.67	--	--		--
WB26C	07-26-95	1130	524	6.26	.3	23.7	18.8	--
WB26D	07-26-95	1200	885	6.24	.4	23.1	18.1	--
WB26E	07-25-95	900	776	6.47	.4	20.6	19.5	--
WB26F	07-18-95	1400	589	4.81	.3	20.2	214	2.96
WB26G	07-14-95	1330	221	4.77	.1	14.9	876	.64
WB26H	07-18-95	1100	155	4.92	.1	18.8	613	1.66
WB27A	08-04-95	1500	549	4.37	.3	22.0	8.4	--
WB27B	08-04-95	1130	655	5.18	.3	26.2	13.1	--
WB27C	08-04-95	1030	836	3.84	.4	28.2	10.1	--
WB27D	07-20-95	1030	709	4.78	.3	22.2	68.8	1.52
WB27E	07-19-95	1130	414	4.92	.2	16.9	230	.78
WB27F	07-19-95	1130	352	4.72	.2	16.3	116	1.70
WB27G	07-21-95	1500	209	4.95	.1	19.3	>1,000	1.39
WB28A	07-24-95	1400	2,360	6.34	1.2	27.5	>1,000	.00
WB28B	07-27-95	1130	2,140	6.19	1.1	27.5	238	.00
WB28C	07-27-95	1200	1,640	5.83	.8	24.5	37.2	.00
WB28D	07-21-95	1430	810	5.40	.4	16.1	>1,000	.00
WB28F	07-27-95	1100	484	5.21	.2	20.5	19.0	4.81
WB28F (d)	07-27-95	1100	--	--	--	--		--
WB30A	08-16-95	1445	--	--	--	--	--	--
WB30B	07-25-95	1130	--	--	--	--	>1,000	--
WB30C	07-25-95	1130	482	--	.2	--	12.2	.43
WB30D	07-25-95	1130	474	6.00	.2	23.9	26.5	.29
WB30E	07-13-95	1530	714	4.90	.3	20.2	463	.65
WB31B	08-23-95	1415	866	6.00	.4	26.2	8.8	.86
WB31C	08-15-95	1030	873	5.18	.4	25.0	16.0	1.48

Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Well no.
34	13	80	2.4	--	180	96	0.3	WB25B (d)
27	12	100	2.2	<1	170	120	.3	WB25C
53	55	410	3.0	942	2.1	340	.2	WB26A
9.9	13	230	4.6	386	4.2	170	.3	WB26B
8.9	13	130	4.9	210	4.1	110	.2	WB26C
16	21	110	5.1	144	78	110	.2	WB26D
36	20	120	3.9	100	140	120	.2	WB26E
22	8.5	77	2.8	2	140	75	.2	WB26F
8.4	2.7	26	1.8	4	50	23	<.1	WB26G
3.6	1.5	21	1.0	1	33	16	<.1	WB26H
	3.5	77	--	<1	25	150	<.1	WB27A
5.5	8.9	130	5.6	4	60	200	.1	WB27B
4.8	6.6	110	3.8	<1	97	150	<.1	WB27C
14	8.3	110	2.0	3	120	120	<.1	WB27D
14	5.5	51	2.0	1	100	46	.1	WB27E
9.2	4.0	52	1.7	1	82	41	.1	WB27F
4.3	2.4	29	1.5	4	22	35	<.1	WB27G
80	54	330	5.7	454	0.2	580	.3	WB28A
30	55	250	13	249	1.2	540	.1	WB28B
29	48	140	17	78	3.5	460	.1	WB28C
5.5	3.8	150	2.7	18	84	180	<.1	WB28D
.8	.4	98	.6	2	73	84	<.1	WB28F
.9	.3	96	.5	--	73	84	<.1	WB28F (d)
41	48	400	3.5	--	1.9	240	.3	WB30A
--	--	--	--	--	--	--	--	WB30B
1.7	1.7	24	1.9	111	4.4	33	.1	WB30C
6.4	7.1	55	1.8	71	26	60	.2	WB30D
23	11	92	1.9	4	160	97	.1	WB30E
7.5	8.5	140	1.7	34	130	150	<.1	WB31B
9.0	8.7	130	1.9	15	150	150	.1	WB31C

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, total (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)
WB25B (d)	07-13-95	0.47	14	--	740	--	<1	30
WB25C	07-13-95	.37	13	--	390	--	<1	33
WB26A	07-24-95	.4	56	--	<10	--	2	26
WB26B	07-24-95	.2	56	--	190	--	<1	13
WB26C	07-26-95	.11	45	--	70	--	<5	8
WB26D	07-26-95	.16	21	--	20	--	<1	16
WB26E	07-25-95	.18	14	--	<10	--	<5	25
WB26F	07-18-95	.49	14	8,200	280	3	<1	23
WB26G	07-14-95	.22	12	--	70	--	<1	22
WB26H	07-18-95	.29	8.3	--	50	--	<1	34
WB27A	08-04-95	.09	65	--	--	--	--	13
WB27B	08-04-95	.3	48	--	60	--	<1	15
WB27C	08-04-95	.17	37	--	170	--	<1	23
WB27D	07-20-95	.1	15	870	200	<1	<1	37
WB27E	07-19-95	.36	12	1,700	240	<1	<1	17
WB27F	07-19-95	.38	11	--	190	--	<1	19
WB27G	07-21-95	.39	12	--	70	--	<1	34
WB28A	07-24-95	1.8	39	2,000	30	5	1	72
WB28B	07-27-95	1.7	58	--	<10	--	<1	12
WB28C	07-27-95	.58	77	--	10	--	<1	28
WB28D	07-21-95	.28	12	9,000	20	<1	<1	18
WB28F	07-27-95	.48	13	--	<10	--	<1	11
WB28F (d)	07-27-95	.63	13	--	<10	--	1	10
WB30A	08-16-95	.5	39	--	90	--	<5	100
WB30B	07-25-95	.1	--	--	--	--	--	--
WB30C	07-25-95	.1	5.8	--	<10	--	<1	8
WB30D	07-25-95	.09	15	--	20	--	<1	15
WB30E	07-13-95	.2	12	--	130	--	<1	86
WB31B	08-23-95	.05	16	--	10	--	1	35
WB31C	08-15-95	.08	13	--	60	--	<1	29

Beryllium, dissolved (µg/L as Be)	Cadmium, total (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, total (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Well no.
1.0	--	<1	--	<5	70	--	<10	WB25B (d)
.6	--	<1	--	<5	70	--	<10	WB25C
<.5	--	<1	--	<5	5	--	<10	WB26A
<.5	--	14	--	10	10	--	<10	WB26B
<.5	--	<1	--	<5	10	--	<10	WB26C
<.5	--	<1	--	<5	7	--	<10	WB26D
<.5	--	<1	--	<5	20	--	<10	WB26E
.8	<1	<1	26	<5	60	20	<10	WB26F
<.5	--	<1	--	<5	30	--	<10	WB26G
<.5	--	<1	--	<5	10	--	<10	WB26H
<.5	--	<1	--	40	--	--	<10	WB27A
<.5	--	5	--	20	10	--	<10	WB27B
.9	--	3	--	300	--	--	20	WB27C
.6	<1	<1	3	<5	30	<10	<10	WB27D
<.5	<1	<1	7	<5	40	<10	<10	WB27E
<.5	--	<1	--	<5	30	--	<10	WB27F
.7	--	<1	--	<5	30	--	20	WB27G
<1.0	<1	<1	16	<10	80	10	<20	WB28A
<.5	--	2	--	<5	--	--	<10	WB28B
<.5	--	3	--	<5	--	--	<10	WB28C
<.5	<1	<1	34	<5	--	20	<10	WB28D
<.5	--	<1	--	<5	50	--	<10	WB28F
<.5	--	<1	--	<5	50	--	<10	WB28F (d)
<.5	--	<1	--	10	<3	--	<10	WB30A
--	--	--	--	--	--	--	--	WB30B
.6	--	4	--	<5	--	--	<10	WB30C
< .5	--	1	--	<5	30	--	<10	WB30D
< .5	--	1	--	<5	80	--	<10	WB30E
< .5	--	<1	--	<5	--	--	<10	WB31B
< .5	--	2	--	<5	40	--	<10	WB31C

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lead, total (µg/L as Pb)	Iron, total (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
WB25B (d)	07-13-95	--	--	<3	<1	5	--	970
WB25C	07-13-95	--	--	24	<1	8	--	960
WB26A	07-24-95	--	--	1,700	<1	<4	--	990
WB26B	07-24-95	--	--	2,000	34	<4	--	390
WB26C	07-26-95	--	--	2,600	13	<4	--	450
WB26D	07-26-95	--	--	2,100	8	<4	--	690
WB26E	07-25-95	--	--	4,300	<1	<4	--	2,200
WB26F	07-18-95	10	17,000	40	<1	4	910	840
WB26G	07-14-95	--	--	11	<1	6	--	380
WB26H	07-18-95	--	--	7	<1	6	--	170
WB27A	08-04-95	--	--	7,200	--	8	--	310
WB27B	08-04-95	--	--	1,700	3	8	--	340
WB27C	08-04-95	--	--	12,000	7	9	--	640
WB27D	07-20-95	<1	1,800	950	<1	<4	860	860
WB27E	07-19-95	2	4,900	10	<1	<4	550	550
WB27F	07-19-95	--	--	42	<1	5	--	420
WB27G	07-21-95	--	--	16	<1	8	--	360
WB28A	07-24-95	13	14,000	8,800	<1	<8	2,700	2,500
WB28B	07-27-95	--	--	39,000	<1	6	--	4,100
WB28C	07-27-95	--	--	37,000	<1	33	--	4,000
WB28D	07-21-95	12	23,000	6,200	<1	<4	320	330
WB28F	07-27-95	--	--	47	<1	<4	--	580
WB28F (d)	07-27-95	--	--	43	<1	<4	--	550
WB30A	08-16-95	--	--	2,400	5	<4	--	1,100
WB30B	07-25-95	--	--	--	--	--	--	--
WB30C	07-25-95	--	--	5,400	17	<4	--	230
WB30D	07-25-95	--	--	1,300	2	<4	--	1,500
WB30E	07-13-95	--	--	61	<1	<4	--	1,000
WB31B	08-23-95	--	--	6,300	2	<4	--	950
WB31C	08-15-95	--	--	540	<1	<4	--	1,100

Molybdenum, dissolved (µg/L as Mo)	Nickel, total (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)	Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, total (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Well no.
<10	--	30	<1	200	<6	--	130	WB25B (d)
<10	--	50	<1	180	<6	--	99	WB25C
<10	--	20	<1	300	<6	--	57	WB26A
10	--	40	<1	100	<6	--	160	WB26B
<10	--	<10	1	99	<6	--	24	WB26C
<10	--	<10	<1	160	<6	--	110	WB26D
10	--	60	<1	230	<6	--	22	WB26E
20	42	30	<1	160	<6	80	53	WB26F
10	--	<10	1	58	<6	--	23	WB26G
20	--	20	<1	26	<6	--	16	WB26H
10	--	360	<1	32	<6	--	130	WB27A
60	--	290	<1	75	<6	--	170	WB27B
<10	--	1,800	<1	64	<6	--	130	WB27C
<10	17	20	<1	120	<6	<10	9	WB27D
20	21	20	<1	99	<6	50	43	WB27E
<10	--	10	2	70	<6	--	21	WB27F
<10	--	20	<1	42	<6	--	20	WB27G
<20	18	<20	<2	460	<12	130	44	WB28A
10	--	20	2	410	<6	--	160	WB28B
20	--	30	2	430	<6	--	190	WB28C
<10	20	<10	<1	53	<6	40	<3	WB28D
<10	--	20	<1	8	<6	--	13	WB28F
<10	--	30	<1	8	<6	--	15	WB28F (d)
10	--	30	<1	310	8	--	28	WB30A
--	--	--	--	--	--	--	--	WB30B
20	--	50	<1	16	<6	--	120	WB30C
<10	--	130	2	47	<6	--	82	WB30D
<10	--	60	<1	180	<6	--	86	WB30E
<10	--	50	1	84	<6	--	67	WB31B
20	--	120	1	96	<6	--	140	WB31C

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Time	Specific conductance, field (µS/cm)	pH, field (standard units)	Salinity, field (ppt)	Water temperature, field (°C)	Turbidity, field (NTU)	Oxygen, dissolved, field (mg/L)
WB31D	08-17-95	1200	466	5.93	0.2	21.7	5.42	--
WB31E	08-17-95	1130	484	5.32	.2	23.9	54.8	3.43
WB32B	09-06-95	1200	507	3.73	.2	22.0	20.0	2.93
WB33A	09-06-95	1100	564	5.40	.3	18.5	27.4	2.59
WB33B	09-05-95	1000	658	3.89	.3	21.0	162	1.43
WB33B (d)	09-05-95	1000	--	--	--	--		--
WB33F	10-06-95	1015	665	5.38	.3	20.0	654	.52
WB33F (d)	10-06-95	1015	--	--	--	--		--
WB33F (t)	10-06-95	1015	--	--	--	--		--
WB34A	09-13-95	1145	1,200	6.91	.6	17.5	33.4	--
WB34B	09-12-95	1400	853	5.00	.4	21.0	5.1	3.18
WB34C	09-06-95	1400	484	4.05	.2	16.5	27.9	1.79
WB34E	09-20-95	1415	90	5.58	.0	17.2	>1,000	.26
WB34E (d)	09-20-95	1415	--	--	--	--		--
WB35A	10-02-95	1100	412	5.23	.2	21.5	6.2	--
WB35B	09-07-95	1330	527	4.41	.3	21.0	7.4	--
WB35C	09-15-95	1030	452	4.15	.2	22.0	564	2.61
WB35D	09-15-95	1000	407	4.30	.2	19.5	144	1.82
WB35E	09-12-95	1500	314	4.23	.2	21.2	456	1.11
WB35F	10-03-95	1115	162	5.47	.1	16.5	799	1.65
WB36A	10-02-95	930	269	5.80	.1	17.5	10.3	--
WB36B	10-02-95	1000	336	5.52	.2	20.0	18.7	--
WB36C	10-03-95	1145	373	4.19	.2	22.0	>1,000	3.13
WB36D	09-07-95	1330	344	4.11	.2	18.5	578	2.36
WB36D (d)	09-07-95	1500	--	--	--	--		--
WB36E	09-13-95	1345	335	4.45	.2	17.0	>1,000	1.00
WB36E (d)	09-13-95	1345	--	--	--	--		--
WB36F	10-02-95	1400	586	5.01	.3	17.0	152	4.45
WB36F (d)	10-02-95	1400	--	--	--	--		--
WB36G	10-13-95	1045	616	5.50	.3	16.0	>1,000	1.30

Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Well no.
8.9	6.1	62	2.3	10	75	54	0.1	WB31D
8.6	5.0	68	1.5	7	78	74	<.1	WB31E
13	5.7	33	2.2	<1	170	45	.2	WB32B
23	17	56	2.4	17	120	86	.3	WB33A
23	14	53	2.8	<1	180	78	.3	WB33B
24	14	54	3.0	--	180	78	.3	WB33B (d)
7.5	3.2	110	1.6	9	45	160	<.1	WB33F
7.8	3.2	110	1.6	--	43	160	<.1	WB33F (d)
7.6	3.2	110	1.6	--	43	150	<.1	WB33F (t)
9.9	15	200	2.9	200	27	250	.2	WB34A
8.8	17	130	2.0	4	210	120	.2	WB34B
18	8.6	40	2.0	<1	140	49	.7	WB34C
.4	.3	14	.5	9	2.4	18	<.1	WB34E
.4	.3	14	.5	--	2.4	18	<.1	WB34E (d)
19	9.5	38	2.5	20	78	56	1.2	WB35A
20	11	47	3.8	<1	--	--	--	WB35B
17	8.3	38	1.8	<1	130	51	.4	WB35C
14	7.0	38	1.5	<1	110	46	.5	WB35D
8.9	4.8	32	1.3	<1	77	37	.2	WB35E
.2	.1	30	.4	12	11	33	<.1	WB35F
8.8	4.8	29	1.0	29	37	46	.8	WB36A
9.8	6.3	34	1.6	20	67	44	.3	WB36B
14	6.5	36	1.8	<1	97	42	.2	WB36C
11	5.4	35	1.4	<1	84	43	.1	WB36D
11	5.5	35	1.6	--	84	42	.1	WB36D (d)
4.5	2.6	51	1.0	<1	49	66	<.1	WB36E
4.6	2.7	49	.9	--	47	63	<.1	WB36E (d)
.7	.4	110	.8	2	12	150	<.1	WB36F
.8	.5	110	.7	--	12	150	<.1	WB36F (d)
1.0	.6	110	.6	12	15	170	<.1	WB36G

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, total (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)
WB31D	08-17-95	0.06	13	--	60	--	<5	39
WB31E	08-17-95	.08	12	--	40	--	<1	43
WB32B	09-06-95	.04	43	--	17,000	--	<1	23
WB33A	09-06-95	.05	38	--	360	--	<1	26
WB33B	09-05-95	1.1	44	--	7,800	--	<1	16
WB33B (d)	09-05-95	.37	46	--	8,100	--	<1	17
WB33F	10-06-95	.31	15	--	<10	--	<1	47
WB33F (d)	10-06-95	.48	15	--	<10	--	<1	51
WB33F (t)	10-06-95	.6	15	--	<10	--	<1	47
WB34A	09-13-95	.58	19	--	30	--	1	21
WB34B	09-12-95	.05	25	--	460	--	<1	19
WB34C	09-06-95	.03	41	--	7,000	--	<1	18
WB34E	09-20-95	.22	9.1	--	<10	--	<1	5
WB34E (d)	09-20-95	.22	9.1	--	<10	--	<1	5
WB35A	10-02-95	.06	38	--	710	--	2	22
WB35B	09-07-95	--	31	--	2,200	--	<1	34
WB35C	09-15-95	.04	33	9,400	6,900		<1	24
WB35D	09-15-95	.04	30	--	5,600	--	<1	23
WB35E	09-12-95	.05	19	--	2,900	--	<1	18
WB35F	10-03-95	.36	12	--	<10	--	1	3
WB36A	10-02-95	.07	23	--	150	--	<1	11
WB36B	10-02-95	.05	26	--	50	--	<1	11
WB36C	10-03-95	.05	24	--	2,600	--	<5	31
WB36D	09-07-95	.04	19	--	3,200	--	<1	23
WB36D (d)	09-07-95	.04	19	--	3,300	--	<1	23
WB36E	09-13-95	.61	12	--	420	--	2	28
WB36E (d)	09-13-95	1.0	11	--	420	--	<1	28
WB36F	10-02-95	1.2	12	--	<10	--	2	7
WB36F (d)	10-02-95	.4	12	--	<10	--	1	8
WB36G	10-13-95	.26	11	--	20	--	1	11

Beryllium, dissolved (µg/L as Be)	Cadmium, total (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, total (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Well no.
<0.5	--	<1	--	<5	30	--	<10	WB31D
< .5	--	<1	--	<5	70	--	<10	WB31E
13	--	<1	--	10	60	--	130	WB32B
3	--	1	--	<5	50	--	<10	WB33A
5	--	<1	--	<5	30	--	80	WB33B
5	--	<1	--	<5	30	--	80	WB33B (d)
.6	--	1	--	<5	40	--	<10	WB33F
< .5	--	1	--	<5	40	--	<10	WB33F (d)
< .5	--	4	--	<5	30	--	<10	WB33F (t)
< .5	--	5	--	5	--	--	<10	WB34A
2	--	<1	--	<5	40	--	<10	WB34B
20	--	<1	--	<5	90	--	50	WB34C
< .5	--	<1	--	<5	5	--	<10	WB34E
< .5	--	<1	--	<5	3	--	<10	WB34E (d)
1	--	<1	--	<5	8	--	<10	WB35A
14	--	<1	--	6	120	--	<10	WB35B
15	1	<1	40	10	70	80	60	WB35C
14	--	<1	--	<5	60	--	30	WB35D
6	--	<1	--	<5	30	--	30	WB35E
< .5	--	<1	--	<5	<3	--	<10	WB35F
< .5	--	3	--	<5	<3	--	<10	WB36A
< .5	--	<1	--	<5	--	--	<10	WB36B
7	--	2	--	10	50	--	<10	WB36C
6	--	<1	--	<5	30	--	30	WB36D
6	--	2	--	<5	30	--	30	WB36D (d)
2	--	3	--	<5	30	--	<10	WB36E
1	--	<1	--	<5	30	--	<10	WB36E (d)
< .5	--	<1	--	<5	7	--	<10	WB36F
< .5	--	<1	--	<5	8	--	<10	WB36F (d)
< .5	--	5	--	<5	<3	--	<10	WB36G

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lead, total (µg/L as Pb)	Iron, total (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
WB31D	08-17-95	--	--	2,200	3	<4	--	1,200
WB31E	08-17-95	--	--	360	<1	<4	--	700
WB32B	09-06-95	--	--	1,600	5	13	--	720
WB33A	09-06-95	--	--	2,100	11	16	--	470
WB33B	09-05-95	--	--	43	7	14	--	400
WB33B (d)	09-05-95	--	--	50	7	15	--	420
WB33F	10-06-95	--	--	3,500	<1	10	--	440
WB33F (d)	10-06-95	--	--	3,600	<1	10	--	440
WB33F (t)	10-06-95	--	--	3,500	<1	11	--	450
WB34A	09-13-95	--	--	24,000	1	<4	--	710
WB34B	09-12-95	--	--	420	1	8	--	380
WB34C	09-06-95	--	--	28	2	21	--	860
WB34E	09-20-95	--	--	1,400	<1	6	--	36
WB34E (d)	09-20-95	--	--	1,400	<1	6	--	38
WB35A	10-02-95	--	--	3,100	<1	7	--	1,300
WB35B	09-07-95	--	--	4,300	<1	15	--	1,100
WB35C	09-15-95	13	12,000	330	7	18	700	700
WB35D	09-15-95	--	--	210	3	14	--	680
WB35E	09-12-95	--	--	81	<1	10	--	360
WB35F	10-03-95	--	--	500	<1	<4	--	36
WB36A	10-02-95	--	--	4,000	<1	<4	--	640
WB36B	10-02-95	--	--	8,100	<1	<4	--	740
WB36C	10-03-95	--	--	620	3	11	--	600
WB36D	09-07-95	--	--	28	2	10	--	480
WB36D (d)	09-07-95	--	--	15	2	11	--	480
WB36E	09-13-95	--	--	1,700	1	6	--	360
WB36E (d)	09-13-95	--	--	640	<1	6	--	340
WB36F	10-02-95	--	--	1,900	<1	6	--	51
WB36F (d)	10-02-95	--	--	2,000	<1	4	--	55
WB36G	10-13-95	--	--	3,900	<1	4	--	82

Molybdenum, dissolved (µg/L as Mo)	Nickel, total (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)	Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, total (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Well no.
<10	--	110	<1	70	<6	--	140	WB31D
<10	--	10	<1	73	<6	--	50	WB31E
<10	--	130	<1	100	<6	--	240	WB32B
<10	--	110	<1	230	<6	--	390	WB33A
<10	--	30	<1	180	<6	--	48	WB33B
<10	--	20	<1	190	<6	--	62	WB33B (d)
<10	--	40	<1	100	<6	--	46	WB33F
<10	--	20	<1	110	<6	--	68	WB33F (d)
<10	--	40	<1	100	<6	--	55	WB33F (t)
10	--	10	<1	120	<6	--	190	WB34A
<10	--	80	<1	110	<6	--	98	WB34B
<10	--	50	<1	190	<6	--	160	WB34C
<10	--	<10	<1	3	<6	--	9	WB34E
<10	--	<10	<1	3	<6	--	11	WB34E (d)
<10	--	20	<1	190	<6	--	45	WB35A
<10	--	110	<1	200	<6	--	55	WB35B
20	130	110	<1	150	<6	190	180	WB35C
<10	--	50	<1	130	<6	--	120	WB35D
20	--	50	<1	67	<6	--	79	WB35E
20	--	10	<1	2	<6	--	<3	WB35F
<10	--	50	1	67	<6	--	71	WB36A
<10	--	40	<1	86	<6	--	230	WB36B
<10	--	260	<1	110	<6	--	410	WB36C
<10	--	40	1	85	<6	--	82	WB36D
<10	--	40	2	86	<6	--	80	WB36D (d)
<10	--	100	<1	36	<6	--	120	WB36E
10	--	50	<1	35	<6	--	77	WB36E (d)
<10	--	10	<1	4	<6	--	22	WB36F
<10	--	10	<1	5	<6	--	23	WB36F (d)
<10	--	10	2	6	<6	--	20	WB36G

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Time	Specific conductance, field (µS/cm)	pH, field (standard units)	Salinity, field (ppt)	Water temperature, field (°C)	Turbidity, field (NTU)	Oxygen, dissolved, field (mg/L)
WB37A	10-04-95	1050	635	6.51	0.3	16.5	17.3	--
WB37B	10-04-95	1100	443	6.19	.2	16.1	14.9	--
WB37C	09-15-95	1500	332	5.51	.2	19.2	623	2.50
WB37D	09-19-95	1430	902	4.58	.4	20.5	120	.19
			Quality-Assurance Samples					
PUMP BLANK	07-12-95	1330	--	--	--	--	--	--
TRIP BLANK	07-12-95	1430	--	--	--	--	--	--
BAILER BLANK	07-25-95	1500	--	--	--	--	--	--
PUMP BLANK	08-04-95	1145	--	--	--	--	--	--
TRIP BLANK	08-04-95	1345	--	--	--	--	--	--
TRIP BLANK	08-22-95	1330	--	--	--	--	--	--
PUMP BLANK	08-22-95	1400	--	--	--	--	--	--
TRIP BLANK	09-07-95	1600	--	--	--	--	--	--
PUMP BLANK	09-07-95	1545	--	--	--	--	--	--
TRIP BLANK	09-13-95	1400	--	--	--	--	--	--
PUMP BLANK	09-13-95	1500	--	--	--	--	--	--
TRIP BLANK	09-20-95	1145	--	--	--	--	--	--
PUMP BLANK	09-21-95	1400	--	--	--	--	--	--
BAILER BLANK	09-21-95	1500	--	--	--	--	--	--
BAILER BLANK	09-27-95	1330	--	--	--	--	--	--
PUMP BLANK	10-03-95	900	--	--	--	--	--	--
BAILER BLANK	10-06-95	1315	--	--	--	--	--	--
PUMP BLANK	10-12-95	1530	--	--	--	--	--	--

Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Well no.
16	13	99	1.7	137	1.0	120	0.3	WB37A
11	24	250	7.7	107	28	260	<.1	WB37B
7.3	4.0	43	1.5	7	50	59	.3	WB37C
6.9	10	120	2.6	<1	17	260	.1	WB37D
< .1	<.1	<.2	<.1	--	<.1	0.1	.4	PUMP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	.4	TRIP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	BAILER BLANK
<.1	<.1	<.2	<.1	--	<.1	.2	<.1	PUMP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	TRIP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	TRIP BLANK
<.1	<.1	<.2	<.1	--	1.7	.2	<.1	PUMP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	TRIP BLANK
.1	<.1	.2	.1	--	<.1	<.1	--	PUMP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	TRIP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	PUMP BLANK
<.1	<.1	<.2	<.1	--	.8	.2	<.1	TRIP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	PUMP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	BAILER BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	BAILER BLANK
<.1	<.1	<.2	.1	--	<.1	<.1	<.1	PUMP BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	BAILER BLANK
<.1	<.1	<.2	<.1	--	<.1	<.1	<.1	PUMP BLANK

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, total (µg/L as Al)	Aluminum, dissolved (µg/L as Al)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Barium, dissolved (µg/L as Ba)
WB37A	10-04-95	0.11	41	240	60	--	--	15
WB37B	10-04-95	.5	44	--	80	--	1	17
WB37C	09-15-95	.05	14	49,000	310	--	2	30
WB37D	09-19-95	.07	9.1	--	170	--	<1	56
			Quality-Assurance Samples--Continued					
PUMP BLANK	07-12-95	<.01	<.01	--	<10	--	<1	<2
TRIP BLANK	07-12-95	<.01	< .01	--	<10	--	<1	<2
BAILER BLANK	07-25-95	<.01	.02	--	<10	--	<1	<2
PUMP BLANK	08-04-95	.1	.06	--	<10	--	<1	<2
TRIP BLANK	08-04-95	<.01	.02	--	<10	--	<1	<2
TRIP BLANK	08-22-95	<.01	.01	--	<10	--	<1	<2
PUMP BLANK	08-22-95	.05	.04	--	<10	--	<1	<2
TRIP BLANK	09-07-95	<.01	<.01	--	<10	--	<1	<2
PUMP BLANK	09-07-95	<.01	.02	--	<10	--	<1	<2
TRIP BLANK	09-13-95	<.01	<.01	--	<10	--	<1	<2
PUMP BLANK	09-13-95	<.01	<.01	--	<10	--	<1	<2
TRIP BLANK	09-20-95	<.01	.03	--	<10	--	<1	<2
PUMP BLANK	09-21-95	<.01	.02	--	<10	--	<1	<2
BAILER BLANK	09-21-95	<.01	<.01	--	<10	--	<1	<2
BAILER BLANK	09-27-95	<.01	<.01	--	<10	--	<1	<2
PUMP BLANK	10-03-95	<.01	.07	--	<10	--	<1	<2
BAILER BLANK	10-06-95	<.01	.02	--	<10	--	<1	<2
PUMP BLANK	10-12-95	<.01	.03	--	<10	--	<1	<2

Beryllium, dissolved (µg/L as Be)	Cadmium, total (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Chromium, total (µg/L as Cr)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, total (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Well no.
<0.5	<1	<1	29	6	<3	10	<10	WB37A
<.5	--	1	--	<5	<3	--	<10	WB37B
<.5	1	3	150	<5	30	80	<10	WB37C
1	--	2	--	<5	70	--	<10	WB37D
<.5	--	<1	--	<5	<3	--	<10	PUMP BLANK
<.5	--	<1	--	<5	<3	--	<10	TRIP BLANK
<.5	--	<1	--	<5	<3	--	<10	BAILER BLANK
<.5	--	<1	--	<5	<3	--	<10	PUMP BLANK
<.5	--	<1	--	<5	<3	--	<10	TRIP BLANK
<.5	--	1	--	<5	<3	--	<10	TRIP BLANK
.5	--	2	--	<5	<3	--	<10	PUMP BLANK
<.5	--	2	--	<5	<3	--	<10	TRIP BLANK
<.5	--	2	--	<5	<3	--	<10	PUMP BLANK
<.5	--	<1	--	<5	<3	--	<10	TRIP BLANK
<.5	--	<1	--	<5	<3	--	<10	PUMP BLANK
<.5	--	<1	--	<5	<3	--	<10	TRIP BLANK
<.5	--	<1	--	<5	<3	--	<10	PUMP BLANK
<.5	--	3	--	<5	<3	--	<10	BAILER BLANK
<.5	--	<1	--	<5	<3	--	<10	BAILER BLANK
<.5	--	<1	--	<5	<3	--	<10	PUMP BLANK
<.5	--	<1	--	<5	<3	--	<10	BAILER BLANK
<.5	--	<1	--	<5	<3	--	<10	PUMP BLANK

Table 10. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lead, total (µg/L as Pb)	Iron, total (µg/L as Fe)	Iron, dissolved (µg/L as Fe)	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)
WB37A	10-04-95	5	940	610	<1	<4	810	930
WB37B	10-04-95	--	--	2,100	<1	6	--	340
WB37C	09-15-95	64	27,000	2,300	<1	<4	500	490
WB37D	09-19-95	--	--	18,000	2	<4	--	300
				Quality-Assurance Samples--Continued				
PUMP BLANK	07-12-95	--	--	<3	<1	<4	--	<1
TRIP BLANK	07-12-95	--	--	<3	<1	<4	--	<1
BAILER BLANK	07-25-95	--	--	<3	<1	<4	--	<1
PUMP BLANK	08-04-95	--	--	<3	<1	<4	--	<1
TRIP BLANK	08-04-95	--	--	<3	<1	<4	--	<1
TRIP BLANK	08-22-95	--	--	<3	<1	<4	--	<1
PUMP BLANK	08-22-95	--	--	<3	<1	<4	--	<1
TRIP BLANK	09-07-95	--	--	9	<1	<4	--	1
PUMP BLANK	09-07-95	--	--	22	<1	<4	--	10
TRIP BLANK	09-13-95	--	--	<3	<1	<4	--	<1
PUMP BLANK	09-13-95	--	--	<3	<1	<4	--	<1
TRIP BLANK	09-20-95	--	--	7	<1	4	--	<1
PUMP BLANK	09-21-95	--	--	5	<1	<4	--	<1
BAILER BLANK	09-21-95	--	--	7	<1	<4	--	1
BAILER BLANK	09-27-95	--	--	10	<1	<4	--	4
PUMP BLANK	10-03-95	--	--	<3	<1	<4	--	<1
BAILER BLANK	10-06-95	--	--	<3	2	<4	--	<1
PUMP BLANK	10-12-95	--	--	9	<1	<4	--	<1

Molybdenum, dissolved (µg/L as Mo)	Nickel, total (µg/L as Ni)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)	Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, total (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Well no.
<10	38	30	<1	120	<6	110	100	WB37A
<10	--	60	<1	150	<6	--	56	WB37B
<10	140	60	<1	57	<6	190	84	WB37C
<10	--	100	<1	80	<6	--	260	WB37D
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK
<10	--	<10	<1	<1	<6	--	<3	TRIP BLANK
<10	--	<10	<1	<1	<6	--	<3	BAILER BLANK
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK
<10	--	<10	<1	<1	<6	--	<3	TRIP BLANK
<10	--	<10	<1	<1	<6	--	<3	TRIP BLANK
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK
<10	--	<10	<1	<1	<6	--	<3	TRIP BLANK
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK
<10	--	<10	<1	<1	<6	--	<3	TRIP BLANK
<10	--	<10	2	<1	<6	--	<3	TRIP BLANK
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK
<10	--	<10	1	<1	<6	--	10	BAILER BLANK
<10	--	<10	<1	<1	<6	--	15	BAILER BLANK
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK
<10	--	<10	<1	<1	<6	--	<3	BAILER BLANK
<10	--	<10	<1	<1	<6	--	<3	PUMP BLANK

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland-- Organic chemical data, June 1995 to October 1995

[µg/L, micrograms per liter; N, USGS National Water-Quality Laboratory; (d), duplicate sample; O, on-site laboratory; E, Estimated; (s), split sample; --, not analyzed; (t), triplicate sample; <, less than]

Well no.	Date	Time	Lab-ora-tory	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,1,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,1,1-Tri-chloro-ethane (µg/L)	1,2-Di-chloro-ethane (µg/L)
WB19A	06-16-95	1000	N	<0.2	<0.2	<0.2	<0.2	<0.2
WB19B	06-22-95	1000	N	< .2	< .2	< .2	< .2	< .2
WB19D	06-19-95	1115	N	< .2	< .2	< .2	< .2	< .2
WB19E	06-16-95	1430	N	< .2	< .2	< .2	< .2	< .2
WB19F	06-19-95	1130	N	< .2	< .2	< .2	< .2	< .2
WB20A	10-12-95	945	N	< .2	< .2	< .2	< .2	< .2
WB20B	10-12-95	940	N	2.0	< .2	< .2	< .2	< .2
WB20B (d)	10-12-95	940	N	1.4	< .2	< .2	< .2	< .2
WB20E	10-23-95	1220	N	80	< .2	.7	< .2	2.2
WB21A	08-14-97	1200	O	< .2	< .2	< .2	< .2	< .2
WB21B	06-20-95	1330	N	3.7	< .2	1.7	< .2	4.4
WB21C	06-20-95	1430	N	110	< .2	1.4	< .2	2.9
WB21D	06-21-95	900	N	20	< .2	.7	< .2	.8
WB21E	06-21-95	1400	N	33	< .2	1.2	< .2	2.3
WB21F	06-22-95	1500	N	3.2	< .2	< .2	< .2	.3
WB21F (d)	06-22-95	1500	N	3.3	< .2	< .2	< .2	.3
WB21G	06-26-95	900	N	23	< .2	.4	< .2	1.8
WB22A	06-26-95	1400	O	< .2	< .2	< .2	< .2	< .2
WB22B	06-28-95	1400	N	8.4	<2.0	1.8	<2.0	< .2
WB22C	07-12-95	1100	N	41	< .2	.8	< .2	2.0
WB22D	06-26-95	1330	N	25	< .2	1.1	< .2	2.0
WB22E	07-26-95	1000	N	3.3	< .2	< .2	< .2	.3
WB23A	07-28-95	1200	O	< .2	< .2	< .2	< .2	< .2
WB23B	07-24-95	1430	N	< .2	< .2	< .2	< .2	< .2
WB23C	07-24-95	1430	N	3.1	< .2	E .6	< .2	1.7
WB23D	07-10-95	1530	N	120	< .2	1.4	< .2	4.8
WB23E	06-28-95	1515	N	120	<2.0	E1.0	<2.0	3.5
WB23F	07-11-95	1030	N	16	< .2	.9	< .2	.9
WB24A	07-12-95	1100	O	< .2	< .2	< .2	< .2	< .2
WB24B	07-11-95	1330	N	< .2	< .2	< .2	< .2	.4

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB19A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB19B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB19D
< .2	< .2	.2	< .2	< .2	< .2	< .2	WB19E
< .2	< .2	< .2	.3	< .2	< .2	< .2	WB19F
< .2	< .2	< .2	2.0	< .2	< .2	< .2	WB20A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB20B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB20B (d)
< .2	< .2	1.1	52	2.2	.3	< .2	WB20E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21A
< .2	< .2	< .2	7.7	.9	1.8	< .2	WB21B
< .2	< .2	9.2	240	5.8	.7	< .2	WB21C
< .2	< .2	3.1	68	2.6	.4	< .2	WB21D
< .2	< .2	6	110	5.7	.7	< .2	WB21E
< .2	< .2	1.3	23	.9	< .2	< .2	WB21F
< .2	< .2	1.2	16	.9	< .2	< .2	WB21F (d)
< .2	< .2	1.2	34	1.6	.3	< .2	WB21G
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB22A
<2.0	<2.0	2.2	69	4.0	E1.5	<2.0	WB22B
< .2	< .2	2.4	54	2.8	.4	< .2	WB22C
< .2	< .2	6.5	130	5.7	.6	< .2	WB22D
< .2	< .2	.4	8.2	.5	< .2	< .2	WB22E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB23A
< .2	< .2	< .2	< .2	.2	< .2	< .2	WB23B
< .2	< .2	1.4	63	3.5	1.1	< .2	WB23C
< .2	< .2	4.8	96	2.5	.3	< .2	WB23D
<2.0	<2.0	4.7	140	3.1	<2.0	<2.0	WB23E
< .2	< .2	2.4	84	3.8	.4	< .2	WB23F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB24A
< .2	< .2	< .2	< .2	13	.5	.3	WB24B

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
WB19A	06-16-95	N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
WB19B	06-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB19D	06-19-95	N	< .2	< .2	.6	< .2	< .2	< .2
WB19E	06-16-95	N	< .2	< .2	.2	< .2	< .2	< .2
WB19F	06-19-95	N	< .2	< .2	.6	< .2	< .2	< .2
WB20A	10-12-95	N	< .2	< .2	.6	< .2	< .2	< .2
WB20B	10-12-95	N	< .2	.3	2.3	< .2	< .2	< .2
WB20B (d)	10-12-95	N	< .2	.3	1.8	< .2	< .2	< .2
WB20E	10-23-95	N	< .2	37	48	< .2	< .2	.4
WB21A	08-14-97	O	< .2	< .2	< .2	< .2	< .2	< .2
WB21B	06-20-95	N	.9	< .2	.3	< .2	< .2	< .2
WB21C	06-20-95	N	< .2	92	130	.3	< .2	1.0
WB21D	06-21-95	N	< .2	25	40	< .2	< .2	.3
WB21E	06-21-95	N	< .2	22	52	< .2	< .2	.3
WB21F	06-22-95	N	< .2	3.5	7.3	< .2	< .2	< .2
WB21F (d)	06-22-95	N	< .2	3.4	7.5	< .2	< .2	< .2
WB21G	06-26-95	N	< .2	9.6	41	< .2	< .4	< .2
WB22A	06-26-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB22B	06-28-95	N	<2.0	<2.0	6.3	<2.0	<2.0	<2.0
WB22C	07-12-95	N	< .2	24	56	.3	< .2	.4
WB22D	06-26-95	N	< .2	27	54	.2	< .4	.5
WB22E	07-26-95	N	< .2	3.5	9.4	< .2	< .2	< .2
WB23A	07-28-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB23B	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB23C	07-24-95	N	E .9	< .2	8.7	E .3	< .2	< .2
WB23D	07-10-95	N	< .2	77	230	1.3	< .2	1.6
WB23E	06-28-95	N	<2.0	81	200	<2.0	<2.0	E1.4
WB23F	07-11-95	N	< .2	30	81	< .2	< .2	.6
WB24A	07-12-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB24B	07-11-95	N	5.5	< .2	< .2	< .2	< .2	< .2

Dibromochloromethane (µg/L)	Toluene (µg/L)	Benzene (µg/L)	Chlorobenzene (µg/L)	Ethylbenzene (µg/L)	Trichlorofluoromethane (µg/L)	1,2-Dichlorobenzene (µg/L)	Well no.
<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB19A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB19B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB19D
< .2	.2	< .2	< .2	< .2	< .2	< .2	WB19E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB19F
< .2	.6	< .2	< .2	.9	< .2	< .2	WB20A
< .2	< .2	< .2	< .2	< .2	.2	< .2	WB20B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB20B (d)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB20E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21B
< .2	.3	< .2	< .2	< .2	< .2	< .2	WB21C
< .2	.2	< .2	< .2	< .2	< .2	< .2	WB21D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21F (d)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB21G
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB22A
<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	WB22B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB22C
< .2	.2	< .2	< .2	< .2	0.2	< .2	WB22D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB22E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB23A
< .2	< .2	.7	< .2	< .2	< .2	< .2	WB23B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB23C
.3	< .2	< .2	< .2	< .2	< .2	< .2	WB23D
<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	WB23E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB23F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB24A
< .2	< .2	1.3	< .2	< .2	< .2	< .2	WB24B

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Laboratory	1,2-Dichloropropane (µg/L)	1,2,4-Trichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	Naphthalene (µg/L)	Hexachlorobutadiene (µg/L)	1,2,4-Trimethylbenzene (µg/L)
WB19A	06-16-95	N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
WB19B	06-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB19D	06-19-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB19E	06-16-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB19F	06-19-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB20A	10-12-95	N	< .2	< .2	< .2	18	< .2	1.2
WB20B	10-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB20B (d)	10-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB20E	10-23-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB21A	08-14-97	O	< .2	< .2	< .2	< .2	< .2	< .2
WB21B	06-20-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB21C	06-20-95	N	< .2	< .2	.3	2.1	< .2	< .2
WB21D	06-21-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB21E	06-21-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB21F	06-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB21F (d)	06-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB21G	06-26-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB22A	06-26-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB22B	06-28-95	N	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
WB22C	07-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB22D	06-26-95	N	< .2	.3	< .2	.2	.2	< .2
WB22E	07-26-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB23A	07-28-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB23B	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB23C	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB23D	07-10-95	N	< .2	.3	.9	< .2	< .2	< .2
WB23E	06-28-95	N	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
WB23F	07-11-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB24A	07-12-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB24B	07-11-95	N	< .2	< .2	< .2	< .2	< .2	< .2

1,3.5-Tri-methyl-benzene (µg/L)	p-Iso-propyl-toluene (µg/L)	1,2,3-Tri-chloro-propane (µg/L)	1,2,3-Tri-chloro-benzene (µg/L)	Methyl tert-butyl ether (µg/L)	Xylene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	1.1	<0.2	WB19A
< .2	< .2	< .2	< .2	< .2	< .2	WB19B
< .2	< .2	< .2	< .2	< .2	< .2	WB19D
< .2	< .2	< .2	< .2	< .2	< .2	WB19E
< .2	< .2	< .2	< .2	< .2	< .2	WB19F
.5	2.4	< .2	< .2	< .2	4.4	WB20A
< .2	< .2	< .2	< .2	< .2	< .2	WB20B
< .2	< .2	< .2	< .2	< .2	< .2	WB20B (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB20E
< .2	< .2	< .2	< .2	--	< .2	WB21A
< .2	< .2	< .2	< .2	< .2	< .2	WB21B
< .2	< .2	.3	< .2	< .2	< .2	WB21C
< .2	< .2	< .2	< .2	< .2	< .2	WB21D
< .2	< .2	< .2	< .2	< .2	< .2	WB21E
< .2	< .2	< .2	< .2	< .2	< .2	WB21F
< .2	< .2	< .2	< .2	< .2	< .2	WB21F (d)
< .2	< .2	< .2	.2	< .2	< .2	WB21G
< .2	< .2	< .2	< .2	--	< .2	WB22A
<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	WB22B
< .2	< .2	< .2	< .2	< .2	< .2	WB22C
< .2	< .2	< .2	.4	< .2	< .2	WB22D
< .2	< .2	< .2	< .2	< .2	< .2	WB22E
< .2	< .2	< .2	< .2	--	< .2	WB23A
< .2	< .2	< .2	< .2	.3	< .2	WB23B
< .2	< .2	< .2	< .2	< .2	< .2	WB23C
< .2	< .2	< .2	< .2	< .2	< .2	WB23D
<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	WB23E
< .2	< .2	< .2	< .2	< .2	< .2	WB23F
< .2	< .2	< .2	< .2	--	< .2	WB24A
< .2	< .2	< .2	< .2	< .2	< .2	WB24B

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Time	Laboratory	1,1,2,2-Tetrachloroethane (µg/L)	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	1,2-Dichloroethane (µg/L)
WB24E	08-01-95	1000	N	36	<0.2	0.4	<0.2	1.0
WB24F	07-20-95	1130	N	59	< .2	1.2	< .2	2.2
WB25A	07-26-95	1100	O	< .2	< .2	< .2	< .2	< .2
WB25B	07-13-95	1300	N	110	< .2	.8	< .2	3.1
WB25B (d)	07-13-95	1300	N	120	< .2	.8	< .2	3.3
WB25C	07-13-95	1030	N	110	< .2	1.0	< .2	3.3
WB26A	07-24-95	1000	N	< .2	< .2	< .2	< .2	< .2
WB26B	07-24-95	1030	N	< .2	< .2	< .2	< .2	< .2
WB26C	07-24-95	1200	N	< .2	< .2	< .2	< .2	< .2
WB26D	07-21-95	1130	N	< .2	< .2	< .2	< .2	1.5
WB26E	07-25-95	900	N	2.2	< .2	1.0	< .2	5.3
WB26F	07-18-95	1400	N	45	< .2	.4	< .2	1.2
WB26G	07-14-95	1330	N	7.0	< .2	< .2	< .2	.6
WB26H	07-18-95	1100	N	3.3	< .2	< .2	< .2	.3
WB27A	07-31-95	1000	O	< .2	< .2	< .2	< .2	< .2
WB27B	08-04-95	1130	N	.3	< .2	< .2	< .2	< .2
WB27C	08-04-95	1030	N	.4	< .2	< .2	< .2	.3
WB27D	07-20-95	1030	N	29	< .2	1.2	< .2	2.0
WB27E	07-19-95	1130	N	19	< .2	.4	< .2	1.0
WB27F	07-19-95	1130	N	9.9	< .2	.5	< .2	1.0
WB27G	07-21-95	1500	N	12	< .2	.3	< .2	1.7
WB28A	07-24-95	1400	N	< .2	< .2	< .2	< .2	< .2
WB28A (s)	07-24-95	1400	O	< .2	< .2	< .2	< .2	< .2
WB28B	07-27-95	1130	N	< .2	< .2	< .2	< .2	.3
WB28C	07-27-95	1200	N	< .2	< .2	< .2	< .2	3.3
WB28D	07-21-95	1430	N	4.9	< .2	.4	< .2	1.3
WB28F	07-27-95	1100	N	14	1.8	2.2	.2	3.8
WB28F (d)	07-27-95	1100	N	17	4.0	3.9	.4	5.1
WB28F (s)	07-27-95	1100	O	21	--	--	--	--
WB30A	08-16-95	1445	O	< .2	< .2	< .2	< .2	< .2
WB30B	07-25-95	1130	N	< .2	< .2	< .2	< .2	< .2
WB30C	07-25-95	1130	N	< .2	< .2	< .2	< .2	1.9

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	0.5	77	1.6	<0.2	<0.2	WB24E
< .2	< .2	7.3	180	5.8	.7	< .2	WB24F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB25A
< .2	< .2	2.8	71	1.5	< .2	< .2	WB25B
< .2	< .2	3.1	74	1.7	.2	< .2	WB25B (d)
< .2	< .2	4.7	120	3.1	.5	< .2	WB25C
< .2	< .2	< .2	< .2	.2	< .2	< .2	WB26A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26B
< .2	< .2	< .2	< .2	5.7	.4	< .2	WB26C
< .2	< .2	< .2	13	22	1.9	.7	WB26D
< .2	< .2	.6	44	19	9.3	.3	WB26E
< .2	< .2	1.7	84	1.1	< .2	< .2	WB26F
< .2	< .2	1.8	22	.9	< .2	< .2	WB26G
< .2	< .2	1.4	21	.7	< .2	< .2	WB26H
< .2	< .2	< .2	< .2	< .2	< .2	<1.0	WB27A
.3	< .2	< .2	2.1	5.2	< .2	1.0	WB27B
.2	.6	2.0	2.3	4.6	1.5	3.1	WB27C
< .2	< .2	34	69	3.6	1.7	< .2	WB27D
< .2	< .2	2.4	58	1.8	.2	< .2	WB27E
< .2	< .2	3.9	40	2.6	.4	< .2	WB27F
< .2	< .2	2.0	21	1.4	.3	< .2	WB27G
< .2	< .2	< .2	< .2	.4	< .2	< .2	WB28A
< .2	< .2	< .2	< .2	.4	< .2	< .2	WB28A (s)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB28B
.4	< .2	< .2	.4	11	< .2	.6	WB28C
< .2	< .2	4.8	89	5.0	5.1	< .2	WB28D
.6	< .2	32	44	2.0	.3	< .2	WB28F
.8	< .2	29	44	3.4	.5	< .2	WB28F (d)
--	--	--	--	--	--	--	WB28F (s)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB30A
< .2	< .2	< .2	< .2	E .2	E .3	< .2	WB30B
< .2	< .2	< .2	4.7	40	4.0	.6	WB30C

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
WB24E	08-01-95	N	<0.2	E19	58	<0.2	<0.2	<0.2
WB24F	07-20-95	N	< .2	53	81	< .2	< .2	.6
WB25A	07-26-95	O	< .2	<0.2	<0.2	< .2	< .2	< .2
WB25B	07-13-95	N	< .2	85	170	.7	< .2	1.1
WB25B (d)	07-13-95	N	< .2	90	180	.7	< .2	1.2
WB25C	07-13-95	N	< .2	90	200	.9	< .2	1.3
WB26A	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26B	07-24-95	N	.9	< .2	< .2	< .2	< .2	< .2
WB26C	07-24-95	N	3	< .2	< .2	< .2	< .2	< .2
WB26D	07-21-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26E	07-25-95	N	.9	< .2	3.6	< .2	< .2	< .2
WB26F	07-18-95	N	< .2	45	85	.4	< .2	.3
WB26G	07-14-95	N	< .2	8.1	18	< .2	< .2	< .2
WB26H	07-18-95	N	< .2	5.5	14	< .2	< .2	< .2
WB27A	07-31-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB27B	08-04-95	N	< .2	< .2	.3	< .2	< .2	< .2
WB27C	08-04-95	N	< .2	< .2	1.5	< .2	.3	< .2
WB27D	07-20-95	N	< .2	120	170	2.3	< .2	.6
WB27E	07-19-95	N	< .2	30	51	.3	< .2	.3
WB27F	07-19-95	N	< .2	10	29	< .2	< .2	.3
WB27G	07-21-95	N	< .2	4.8	18	< .2	< .2	< .2
WB28A	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB28A (s)	07-24-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB28B	07-27-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB28C	07-27-95	N	.8	< .2	< .2	< .2	< .2	< .2
WB28D	07-21-95	N	< .2	210	72	.3	< .2	.3
WB28F	07-27-95	N	< .2	560	1,600	26	< .2	2.2
WB28F (d)	07-27-95	N	< .2	E680	E2,500	26	< .2	3.7
WB28F (s)	07-27-95	O	--	290	1,200	--	--	--
WB30A	08-16-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB30B	07-25-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB30C	07-25-95	N	5.3	< .2	< .2	< .2	< .2	< .2

Dibromochloromethane (µg/L)	Toluene (µg/L)	Benzene (µg/L)	Chlorobenzene (µg/L)	Ethylbenzene (µg/L)	Trichlorofluoromethane (µg/L)	1,2-Dichlorobenzene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB24E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB24F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB25A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB25B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB25B (d)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB25C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26A
< .2	< .2	.4	< .2	< .2	< .2	< .2	WB26B
< .2	.4	.8	< .2	< .2	< .2	< .2	WB26C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26G
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB26H
< .2	< .2	<1.0	< .2	< .2	< .2	< .2	WB27A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB27B
< .2	< .2	.7	< .2	< .2	< .2	< .2	WB27C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB27D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB27E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB27F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB27G
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB28A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB28A (s)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB28B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB28C
< .2	< .2	2.5	.9	< .2	< .2	.5	WB28D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB28F
.3	< .2	< .2	< .2	< .2	< .2	.4	WB28F (d)
--	--	--	--	--	--	--	WB28F (s)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB30A
< .2	< .2	E .4	< .2	< .2	< .2	< .2	WB30B
< .2	.2	< .2	< .2	< .2	< .2	< .2	WB30C

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Laboratory	1,2-Dichloropropane (µg/L)	1,2,4-Trichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	Naphthalene (µg/L)	Hexachlorobutadiene (µg/L)	1,2,4-Trimethylbenzene (µg/L)
WB24E	08-01-95	N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
WB24F	07-20-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB25A	07-26-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB25B	07-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB25B (d)	07-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB25C	07-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26A	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26B	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26C	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26D	07-21-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26E	07-25-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26F	07-18-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26G	07-14-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB26H	07-18-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB27A	07-31-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB27B	08-04-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB27C	08-04-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB27D	07-20-95	N	< .2	< .2	< .2	< .2	.6	< .2
WB27E	07-19-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB27F	07-19-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB27G	07-21-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB28A	07-24-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB28A (s)	07-24-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB28B	07-27-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB28C	07-27-95	N	< .2	< .2	< .2	< .2	< .2	.3
WB28D	07-21-95	N	< .2	< .2	1.1	< .2	< .2	< .2
WB28F	07-27-95	N	< .2	< .2	.2	< .2	< .2	< .2
WB28F (d)	07-27-95	N	< .2	< .2	.8	< .2	.4	< .2
WB28F (s)	07-27-95	O	--	--	--	--	--	--
WB30A	08-16-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB30B	07-25-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB30C	07-25-95	N	< .2	< .2	< .2	< .2	< .2	< .2

1,3,5-Tri-methyl-benzene (µg/L)	p-Iso-propyl-toluene (µg/L)	1,2,3-Tri-chloro-propane (µg/L)	1,2,3-Tri-chloro-benzene (µg/L)	Methyl tert-butyl ether (µg/L)	Xylene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB24E
< .2	< .2	< .2	< .2	< .2	< .2	WB24F
< .2	< .2	< .2	< .2	--	< .2	WB25A
< .2	< .2	< .2	< .2	< .2	< .2	WB25B
< .2	< .2	< .2	< .2	< .2	< .2	WB25B (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB25C
< .2	< .2	< .2	< .2	< .2	< .2	WB26A
< .2	< .2	< .2	< .2	< .2	< .2	WB26B
< .2	< .2	< .2	< .2	< .2	< .2	WB26C
< .2	< .2	< .2	< .2	< .2	< .2	WB26D
< .2	< .2	< .2	< .2	.4	< .2	WB26E
< .2	< .2	< .2	< .2	< .2	< .2	WB26F
< .2	< .2	< .2	< .2	< .2	< .2	WB26G
< .2	< .2	< .2	< .2	< .2	< .2	WB26H
< .2	< .2	< .2	< .2	--	< .2	WB27A
< .2	< .2	< .2	< .2	< .2	< .2	WB27B
< .2	< .2	< .2	< .2	< .2	< .2	WB27C
< .2	< .2	< .2	< .2	< .2	< .2	WB27D
< .2	< .2	< .2	< .2	< .2	< .2	WB27E
< .2	< .2	< .2	< .2	< .2	< .2	WB27F
< .2	< .2	< .2	< .2	< .2	< .2	WB27G
< .2	< .2	< .2	< .2	.3	< .2	WB28A
< .2	< .2	< .2	< .2	--	< .2	WB28A (s)
< .2	< .2	< .2	< .2	.4	< .2	WB28B
< .2	< .2	< .2	< .2	1.3	.4	WB28C
< .2	< .2	< .2	< .2	< .2	< .2	WB28D
< .2	< .2	< .2	< .2	< .2	< .2	WB28F
< .2	< .2	< .2	< .2	< .2	< .2	WB28F (d)
--	--	--	--	--	--	WB28F (s)
< .2	< .2	< .2	< .2	--	< .2	WB30A
< .2	< .2	< .2	< .2	< .2	< .2	WB30B
< .2	< .2	< .2	< .2	< .2	< .2	WB30C

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Time	Lab-ora-tory	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,1,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,1,1-Tri-chloro-ethane (µg/L)	1,2-Di-chloro-ethane (µg/L)
WB30D	07-25-95	1130	N	13	<0.2	3.4	<0.2	5.9
WB30E	07-13-95	1530	N	110	< .2	1.0	< .2	3.5
WB31A	09-13-95	1100	O	<0.2	<1.0	< .2	< .2	< .2
WB31B	08-23-95	1415	N	3.8	< .2	2.2	< .2	1.7
WB31C	08-15-95	1030	N	17	< .2	.7	< .2	.6
WB31D	08-15-95	1415	N	26	< .2	.9	< .2	1.6
WB31E	08-15-95	1515	N	45	< .2	.7	< .2	2.0
WB32B	09-06-95	1200	N	2,000	.9	20	.2	< .2
WB33A	09-06-95	1100	N	2,000	< .2	24	< .2	.3
WB33B	09-05-95	1000	N	150	< .2	2.6	< .2	1.3
WB33B (d)	09-05-95	1000	N	120	< .2	2.6	< .2	1.4
WB33F	10-06-95	1015	N	6.2	< .2	< .2	< .2	1.1
WB33F (d)	10-06-95	1015	N	6.3	< .2	< .2	< .2	1.1
WB33F (t)	10-06-95	1015	N	6.3	< .2	< .2	< .2	1.2
WB34A	09-07-95	1340	N	.3	< .2	< .2	< .2	.9
WB34B	09-07-95	1400	N	380	< .2	9.1	< .2	.3
WB34C	09-06-95	1400	N	120	< .2	1.7	< .2	.4
WB34E	09-20-95	1415	N	4.4	< .2	< .2	< .2	< .2
WB34E (d)	09-20-95	1415	N	4.5	< .2	< .2	< .2	< .2
WB35A	09-13-95	1200	N	1.5	< .2	.5	< .2	3.4
WB35B	09-07-95	1330	N	E300	< .2	E32	< .2	.4
WB35C	09-15-95	1030	N	300	< .2	2.4	< .2	.5
WB35D	09-15-95	1045	N	120	< .2	1.5	< .2	.4
WB35E	09-12-95	1500	N	130	< .2	1.2	< .2	.3
WB35F	10-03-95	1115	N	3.8	< .2	< .2	< .2	< .2
WB35F(s)	10-03-95	1115	O	2.8	<1.0	< .2	< .2	< .2
WB36A	10-02-95	930	N	< .2	< .2	.4	< .2	6.4
WB36B	10-02-95	1000	N	1.3	< .2	.9	< .2	15
WB36C	10-03-95	1145	N	70	< .2	.7	< .2	.4
WB36C(s)	10-03-95	1145	O	95	< .2	< .2	< .2	< .2
WB36D	09-07-95	1330	N	47	< .2	.4	< .2	.4
WB36D (d)	09-07-95	1500	N	44	< .2	.3	< .2	.4

1,1-Dichloroethane (µg/L)	Chloroethane (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	*cis*-1,2-Dichloroethene (µg/L)	*trans*-1,2-Dichloroethene (µg/L)	1,1-Dichloroethene (µg/L)	Well no.
<0.2	<0.2	3.6	90	17	4.2	2.3	WB30D
< .2	< .2	5.2	100	3.2	.4	< .2	WB30E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB31A
< .2	< .2	.4	21	2.1	1.0	< .2	WB31B
< .2	< .2	.5	19	.9	< .2	< .2	WB31C
< .2	< .2	1.8	67	4.6	.6	< .2	WB31D
< .2	< .2	1.7	57	2.7	.3	< .2	WB31E
< .2	< .2	4.2	54	13	3.9	< .2	WB32B
< .2	< .2	1.4	30	23	13	< .2	WB33A
< .2	< .2	.9	7.4	.9	.3	< .2	WB33B
< .2	< .2	.9	7.3	1.0	.3	< .2	WB33B (d)
< .2	< .2	< .2	3.7	.3	.2	< .2	WB33F
< .2	< .2	< .2	4.2	.3	.3	< .2	WB33F (d)
< .2	< .2	< .2	4.2	.4	.2	< .2	WB33F (t)
< .2	< .2	< .2	< .2	7.3	.5	.3	WB34A
< .2	< .2	1.3	23	12	3.0	< .2	WB34B
< .2	< .2	.3	3.6	1.3	.4	< .2	WB34C
< .2	< .2	< .2	.3	< .2	< .2	< .2	WB34E
< .2	< .2	< .2	.3	< .2	< .2	< .2	WB34E (d)
< .2	< .2	< .2	6.7	18	24	.4	WB35A
< .2	< .2	1.3	14	E26	9.0	< .2	WB35B
< .2	< .2	.7	11	1.2	.3	< .2	WB35C
< .2	< .2	.4	6.8	.9	.2	< .2	WB35D
< .2	< .2	.6	6.9	.6	< .2	< .2	WB35E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB35F
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB35F(s)
< .2	< .2	< .2	1.7	11	3.6	.4	WB36A
< .2	< .2	< .2	4.3	10	25	< .2	WB36B
< .2	< .2	.4	5.7	.3	< .2	< .2	WB36C
< .2	< .2	< .2	6.0	< .2	< .2	< .2	WB36C(s)
< .2	< .2	< .2	2.6	< .2	< .2	< .2	WB36D
< .2	< .2	.2	3.4	< .2	< .2	< .2	WB36D (d)

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
WB30D	07-25-95	N	0.8	0.3	6.8	<0.2	<0.2	<0.2
WB30E	07-13-95	N	< .2	60	170	.8	< .2	1.4
WB31A	09-13-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB31B	08-23-95	N	.4	< .2	2.2	< .2	< .2	< .2
WB31C	08-15-95	N	< .2	8.0	17	< .2	< .2	< .2
WB31D	08-15-95	N	< .2	10	40	.3	< .2	< .2
WB31E	08-15-95	N	< .2	22	62	.3	< .2	.6
WB32B	09-06-95	N	< .2	4.7	17	< .2	.4	.3
WB33A	09-06-95	N	2.3	.2	1.3	< .2	< .2	< .2
WB33B	09-05-95	N	< .2	7.2	2.5	< .2	< .2	< .2
WB33B (d)	09-05-95	N	< .2	7.0	2.5	< .2	< .2	< .2
WB33F	10-06-95	N	< .2	21	110	.9	< .2	.7
WB33F (d)	10-06-95	N	< .2	19	100	1.0	< .2	.8
WB33F (t)	10-06-95	N	< .2	18	100	.9	< .2	.8
WB34A	09-07-95	N	59	< .2	< .2	< .2	< .2	< .2
WB34B	09-07-95	N	< .2	4.6	13	< .2	< .2	< .2
WB34C	09-06-95	N	< .2	1.2	2.7	< .2	< .2	< .2
WB34E	09-20-95	N	< .2	< .2	.4	< .2	< .2	< .2
WB34E (d)	09-20-95	N	< .2	< .2	.4	< .2	< .2	< .2
WB35A	09-13-95	N	18	< .2	< .2	< .2	< .2	< .2
WB35B	09-07-95	N	< .3	< .2	2.1	< .2	< .2	< .2
WB35C	09-15-95	N	< .2	7.1	15	< .2	< .2	.2
WB35D	09-15-95	N	< .2	4.2	9.9	< .2	< .2	< .2
WB35E	09-12-95	N	< .2	6.5	15	< .2	< .2	.2
WB35F	10-03-95	N	< .2	< .2	6.5	< .2	< .2	< .2
WB35F(s)	10-03-95	O	< .2	< .2	10	< .2	<1.0	< .2
WB36A	10-02-95	N	15	< .2	< .2	< .2	< .2	< .2
WB36B	10-02-95	N	1.9	< .2	< .2	< .2	< .2	< .2
WB36C	10-03-95	N	< .2	12	22	< .2	< .2	.3
WB36C(s)	10-03-95	O	< .2	7.8	28	< .2	< .2	< .2
WB36D	09-07-95	N	< .2	6.3	22	< .2	< .2	.2
WB36D (d)	09-07-95	N	< .2	9.6	24	< .2	< .2	.3

Dibromochloromethane (µg/L)	Toluene (µg/L)	Benzene (µg/L)	Chlorobenzene (µg/L)	Ethylbenzene (µg/L)	Trichlorofluoromethane (µg/L)	1,2-Dichlorobenzene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB30D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB30E
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB31A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB31B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB31C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB31D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB31E
< .2	< .2	< .2	< .2	< .2	.3	< .2	WB32B
< .2	.2	< .2	< .2	< .2	< .2	< .2	WB33A
< .2	< .2	< .2	< .2	< .2	.2	< .2	WB33B
< .2	< .2	< .2	< .2	< .2	.3	< .2	WB33B (d)
< .2	< .2	1.6	.2	< .2	< .2	< .2	WB33F
< .2	< .2	1.7	.2	< .2	< .2	< .2	WB33F (d)
< .2	< .2	1.8	.2	< .2	< .2	< .2	WB33F (t)
< .2	< .2	.3	< .2	< .2	< .2	< .2	WB34A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB34B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB34C
< .2	< .2	< .2	< .2	< .2	.5	< .2	WB34E
< .2	< .2	< .2	< .2	< .2	.3	< .2	WB34E (d)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB35A
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB35B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB35C
< .2	< .2	< .2	< .2	< .2	.3	< .2	WB35D
< .2	< .2	< .2	< .2	< .2	.3	< .2	WB35E
< .2	.3	.2	< .2	< .2	.2	< .2	WB35F
< .2	< .2	< .2	< .2	< .2	.2	< .2	WB35F(s)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB36A
< .2	< .2	.3	< .2	< .2	< .2	< .2	WB36B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB36C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB36C(s)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB36D
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB36D (d)

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lab-ora-tory	1,2-Di-chloro-propane (µg/L)	1,2,4-Tri-chloro-benzene (µg/L)	1,4-Di-chloro-benzene (µg/L)	Naphth-alene (µg/L)	Hexa-chloro-buta-diene (µg/L)	1,2,4-Tri-methyl-benzene (µg/L)
WB30D	07-25-95	N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
WB30E	07-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB31A	09-13-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB31B	08-23-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB31C	08-15-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB31D	08-15-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB31E	08-15-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB32B	09-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB33A	09-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB33B	09-05-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB33B (d)	09-05-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB33F	10-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB33F (d)	10-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB33F (t)	10-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB34A	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB34B	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB34C	09-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB34E	09-20-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB34E (d)	09-20-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35A	09-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35B	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35C	09-15-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35D	09-15-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35E	09-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35F	10-03-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB35F(s)	10-03-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB36A	10-02-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36B	10-02-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36C	10-03-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36C(s)	10-03-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB36D	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36D (d)	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2

1,3,5-Tri-methyl-benzene (µg/L)	p-Iso-propyl-toluene (µg/L)	1,2,3-Tri-chloro-propane (µg/L)	1,2,3-Tri-chloro-benzene (µg/L)	Methyl tert-butyl ether (µg/L)	Xylene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB30D
< .2	< .2	< .2	< .2	< .2	< .2	WB30E
< .2	< .2	< .2	< .2	--	< .2	WB31A
< .2	< .2	< .2	< .2	< .2	< .2	WB31B
< .2	< .2	< .2	< .2	< .2	< .2	WB31C
< .2	< .2	< .2	< .2	< .2	< .2	WB31D
< .2	< .2	< .2	< .2	< .2	< .2	WB31E
< .2	< .2	< .2	< .2	< .2	< .2	WB32B
< .2	< .2	< .2	< .2	< .2	< .2	WB33A
< .2	< .2	< .2	< .2	< .2	< .2	WB33B
< .2	< .2	< .2	< .2	< .2	< .2	WB33B (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB33F
< .2	< .2	< .2	< .2	< .2	< .2	WB33F (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB33F (t)
< .2	< .2	< .2	< .2	< .2	< .2	WB34A
< .2	< .2	< .2	< .2	< .2	< .2	WB34B
< .2	< .2	< .2	< .2	< .2	< .2	WB34C
< .2	< .2	< .2	< .2	< .2	< .2	WB34E
< .2	< .2	< .2	< .2	< .2	< .2	WB34E (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB35A
< .2	< .2	< .2	< .2	< .2	< .2	WB35B
< .2	< .2	< .2	< .2	< .2	< .2	WB35C
< .2	< .2	< .2	< .2	< .2	< .2	WB35D
< .2	< .2	< .2	< .2	< .2	< .2	WB35E
< .2	< .2	< .2	< .2	< .2	< .2	WB35F
< .2	< .2	< .2	< .2	--	< .2	WB35F (s)
< .2	< .2	< .2	< .2	< .2	< .2	WB36A
< .2	< .2	< .2	< .2	< .2	< .2	WB36B
< .2	< .2	< .2	< .2	< .2	< .2	WB36C
< .2	< .2	< .2	< .2	--	< .2	WB36C (s)
< .2	< .2	< .2	< .2	< .2	< .2	WB36D
< .2	< .2	< .2	< .2	< .2	< .2	WB36D (d)

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Time	Lab-ora-tory	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,1,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,1,1-Tri-chloro-ethane (µg/L)	1,2-Di-chloro-ethane (µg/L)
WB36E	09-13-95	1345	N	6.7	<0.2	<0.2	<0.2	<0.2
WB36E (d)	09-13-95	1345	N	8.4	< .2	< .2	< .2	< .2
WB36F	10-02-95	1400	N	3.6	< .2	< .2	< .2	< .2
WB36F (d)	10-02-95	1400	N	4.4	< .2	< .2	< .2	< .2
WB36G	10-13-95	1045	N	5.9	< .2	< .2	< .2	< .3
WB37A	10-04-95	1050	O	< .2	< .2	< .2	< .2	< .2
WB37B	10-04-95	1100	O	< .2	< .2	< .2	< .2	< .2
WB37C	09-15-95	1500	N	26	< .2	1.0	< .2	.5
WB37D	09-19-95	1430	N	1.4	< .2	< .2	< .2	< .2
Quality-Assurance Samples								
PUMP BLANK	07-12-95	1330	N	<0.2	<0.2	<0.2	<0.2	<0.2
PUMP BLANK (d)	07-12-95	1330	N	1.4	< .2	< .2	< .2	< .2
TRIP BLANK	07-12-95	1430	N	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	07-25-95	1500	N	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	08-04-95	1145	N	.7	< .2	< .2	< .2	< .2
TRIP B LANK	08-04-95	1345	N	< .2	< .2	< .2	< .2	< .2
AMBIENT BLANK	08-22-95	1300	N	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	08-22-95	1330	N	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	08-22-95	1400	N	2.7	< .2	< .2	< .2	< .2
AMBIENT BLANK	09-07-95	1530	N	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	09-07-95	1545	N	3.5	< .2	< .2	< .2	< .2
TRIP BLANK	09-07-95	1600	N	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	09-13-95	1400	N	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	09-13-95	1500	N	4.0	< .2	< .2	< .2	< .2
TRIP BLANK	09-20-95	1145	N	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	09-21-95	1500	N	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	09-27-95	1330	N	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	10-03-95	900	N	.8	< .2	< .2	< .2	< .2
AMBIENT BLANK	10-06-95	1300	N	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	10-06-95	1315	N	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	10-12-95	1530	N	1.3	< .2	< .2	< .2	< .2

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	WB36E
< .2	< .2	< .2	.5	< .2	< .2	< .2	WB36E (d)
< .2	< .2	< .2	.7	.4	.9	< .2	WB36F
< .2	< .2	< .2	.7	.5	.9	< .2	WB36F (d)
< .2	< .2	< .2	1.5	.5	.3	< .2	WB36G
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB37A
< .2	< .2	< .2	< .2	2.0	< .2	< .2	WB37B
< .2	< .2	< .2	2.4	.2	< .2	< .2	WB37C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB37D
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	PUMP BLANK
< .2	< .2	< .2	1.2	< .2	< .2	< .2	PUMP BLANK (d)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	.2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP B LANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	.2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
WB36E	09-13-95	N	<0.2	0.5	4.0	<0.2	<0.2	<0.2
WB36E (d)	09-13-95	N	< .2	1.1	8.5	< .2	< .2	< .2
WB36F	10-02-95	N	< .2	< .2	26	.3	< .2	< .2
WB36F (d)	10-02-95	N	< .2	< .2	33	.3	< .2	< .2
WB36G	10-13-95	N	< .2	1.7	110	.6	< .2	.4
WB37A	10-04-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB37B	10-04-95	O	2.6	< .2	< .2	< .2	< .2	< .2
WB37C	09-15-95	N	.2	2.4	10	< .2	< .2	< .2
WB37D	09-19-95	N	< .2	< .2	.2	< .2	< .2	< .2
Quality-Assurance Samples--Continued								
PUMP BLANK	07-12-95	N	<0.2	<0.2	<0.2	1.8	<0.2	<0.2
PUMP BLANK (d)	07-12-95	N	< .2	.3	1.4	1.5	< .2	< .2
TRIP BLANK	07-12-95	N	< .2	< .2	< .2	1.8	< .2	< .2
BAILER BLANK	07-25-95	N	< .2	< .2	< .2	E2.1	< .2	< .2
PUMP BLANK	08-04-95	N	< .2	.8	2.6	1.5	< .2	< .2
TRIP B LANK	08-04-95	N	< .2	< .2	< .2	1.7	< .2	< .2
AMBIENT BLANK	08-22-95	N	< .2	< .2	< .2	.4	< .2	< .2
TRIP BLANK	08-22-95	N	< .2	< .2	< .2	1.4	< .2	< .2
PUMP BLANK	08-22-95	N	< .2	< .2	< .2	1.2	< .2	< .2
AMBIENT BLANK	09-07-95	N	< .2	< .2	< .2	.7	< .2	< .2
PUMP BLANK	09-07-95	N	< .2	.5	1.5	.9	< .2	< .2
TRIP BLANK	09-07-95	N	< .2	< .2	< .2	.9	< .2	< .2
TRIP BLANK	09-13-95	N	< .2	< .2	< .2	1.7	< .2	< .2
PUMP BLANK	09-13-95	N	< .2	< .2	< .2	1.4	< .2	< .2
TRIP BLANK	09-20-95	N	< .2	< .2	< .2	1.5	< .2	< .2
BAILER BLANK	09-21-95	N	< .2	< .2	< .2	1.2	< .2	< .2
BAILER BLANK	09-27-95	N	< .2	< .2	< .2	1.3	< .2	< .2
PUMP BLANK	10-03-95	N	< .2	< .2	1.0	1.0	< .2	< .2
AMBIENT BLANK	10-06-95	N	< .2	< .2	< .2	.6	< .2	< .2
BAILER BLANK	10-06-95	N	< .2	< .2	< .2	.8	< .2	< .2
PUMP BLANK	10-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2

Di-bromo-chloro-methane (µg/L)	Toluene (µg/L)	Benzene (µg/L)	Chloro-benzene (µg/L)	Ethyl-benzene (µg/L)	Tri-chloro-fluoro-methane (µg/L)	1,2-Di-chloro-benzene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	WB36E
< .2	< .2	< .2	< .2	< .2	.5	< .2	WB36E (d)
< .2	< .2	2.1	.2	< .2	.3	< .2	WB36F
< .2	< .2	2.2	.2	< .2	.3	< .2	WB36F (d)
< .2	< .2	4.0	.5	< .2	.2	< .2	WB36G
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB37A
< .2	< .2	<1.0	< .2	< .2	< .2	< .2	WB37B
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB37C
< .2	< .2	< .2	< .2	< .2	< .2	< .2	WB37D
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK (d)
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP B LANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK

Table 11. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1995 to October 1995--Continued

Well no.	Date	Laboratory	1,2-Dichloropropane (µg/L)	1,2,4-Trichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	Naphthalene (µg/L)	Hexachlorobutadiene (µg/L)	1,2,4-Trimethylbenzene (µg/L)
WB36E	09-13-95	N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
WB36E (d)	09-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36F	10-02-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36F (d)	10-02-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB36G	10-13-95	N	< .2	< .2	.2	< .2	< .2	< .2
WB37A	10-04-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB37B	10-04-95	O	< .2	< .2	< .2	< .2	< .2	< .2
WB37C	09-15-95	N	< .2	< .2	< .2	< .2	< .2	< .2
WB37D	09-19-95	N	< .2	< .2	< .2	< .2	< .2	< .2
Quality-Assurance Samples--Continued								
PUMP BLANK	07-12-95	N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
PUMP BLANK (d)	07-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	07-12-95	N	< .2	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	07-25-95	N	< .2	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	08-04-95	N	< .2	< .2	< .2	< .2	< .2	< .2
TRIP B LANK	08-04-95	N	< .2	< .2	< .2	< .2	< .2	< .2
AMBIENT BLANK	08-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	08-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	08-22-95	N	< .2	< .2	< .2	< .2	< .2	< .2
AMBIENT BLANK	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	09-07-95	N	< .2	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	09-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	09-13-95	N	< .2	< .2	< .2	< .2	< .2	< .2
TRIP BLANK	09-20-95	N	< .2	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	09-21-95	N	< .2	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	09-27-95	N	< .2	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	10-03-95	N	< .2	< .2	< .2	< .2	< .2	< .2
AMBIENT BLANK	10-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
BAILER BLANK	10-06-95	N	< .2	< .2	< .2	< .2	< .2	< .2
PUMP BLANK	10-12-95	N	< .2	< .2	< .2	.5	< .2	< .2

1,3,5-Tri-methyl-benzene (µg/L)	p-Iso-propyl-toluene (µg/L)	1,2,3-Tri-chloro-propane (µg/L)	1,2,3-Tri-chloro-benzene (µg/L)	Methyl tert-butyl ether (µg/L)	Xylene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB36E
< .2	< .2	< .2	< .2	< .2	< .2	WB36E (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB36F
< .2	< .2	< .2	< .2	< .2	< .2	WB36F (d)
< .2	< .2	< .2	< .2	< .2	< .2	WB36G
< .2	< .2	< .2	< .2	--	< .2	WB37A
< .2	< .2	< .2	< .2	--	< .2	WB37B
< .2	< .2	< .2	< .2	< .2	< .2	WB37C
< .2	< .2	< .2	< .2	< .2	< .2	WB37D
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK (d)
< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	TRIP B LANK
< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	.2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	.2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	TRIP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	< .2	PUMP BLANK
< .2	< .2	< .2	< .2	< .2	< .2	AMBIENT BLANK
< .2	< .2	< .2	< .2	< .2	< .2	BAILER BLANK
< .2	< .2	< .2	< .2	< .2	.3	PUMP BLANK

Table 12. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, June 1995 to October 1995

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, not analyzed for; s, sulfide analyzed by syringe method; k, sulfide analyzed using Chemetrics kit; <, less than]

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
WB19A	06-15-95	166	--	107	108	13 s	2,600
WB19B	06-15-95	181	--	11.6	12.3	199 s	5,900
WB19D	06-19-95	12	3.20	<.01	<.01	<10 s	<25
WB19E	06-16-95	6	5.96	<.01	<.01	<10 s	<21
WB19F	06-19-95	<1	5.44	<.01	<.01	<10 s	<26
WB20A	10-12-95	1,230	.00	.34	.34	444 k	160
WB20B	10-12-95	7	7.07	<.01	<.01	<10 k	<26
WB20E	10-23-95	--	3.50	1.56	1.57	50 k	<34
WB21A	08-10-95	<1	--	--	--	<10 k	5,500
WB21B	06-20-95	59	.00	2.05	1.80	<10 s	62
WB21C	06-20-95	5	.00	.05	.06	261 s	<25
WB21D	06-22-95	3	.00	.22	.25	<10 s	<23
WB21E	06-22-95	4	.00	.99	1.15	<10 s	<22
WB21F	06-22-95	<1	1.18	<.01	<.01	<10 s	<24
WB21G	06-26-95	<1	1.63	<.01	.01	<10 s	<24
WB22A	08-10-95	--	--	--	--	<10 s	2,100
WB22B	06-26-95	20	4.66	6.86	6.63	<10 s	67
WB22C	07-12-95	1	1.67	<.01	<.01	501 s	<27
WB22D	06-26-95	5	.00	<.10	<.10	591 s	<24
WB22E	07-26-95	2	6.41	.01	.03	--	--
WB23A	07-28-95	--	--	--	--	<10 s	1,600
WB23B	07-14-95	381	--	16.2	24.0	17 s	3,900
WB23C	07-20-95	34	2.42	.99	1.07	<10 s	<26
WB23D	07-10-95	<1	.46	<.10	<.10	<10 s	<25
WB23E	06-28-95	4	.46	<.10	<.10	<10 s	<22
WB23F	07-11-95	2	1.57	<.10	<.10	--	<26
WB24A	07-28-95	--	--	--	--	<10 s	860
WB24B	07-11-95	142	.77	4.33	4.35	20 s	7,900
WB24C	08-31-95	--	--	--	--	--	510
WB24E	08-14-95	31	5.91	.12	.132	<10 k	<27

Table 12. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, June 1995 to October 1995--Continued

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
WB24F	07-20-95	<1	1.54	0.03	0.04	--	59
WB25A	07-12-95	--	--	2.37	2.78	17 s	3,700
WB25B	07-13-95	1	1.00	<.10	.50	<10 s	<25
WB25C	07-14-95	<1	1.26	<.10	<.10	271 s	<25
WB26A	08-10-95	942	1.60	<.10	<.10	25 s	4,500
WB26B	08-10-95	386	--	1.24	1.72	174 s	5,900
WB26C	08-10-95	210	.67	2.21	2.37	920 k	5,500
WB26D	08-10-95	144	2.67	2.05	2.21	730 s	270
WB26E	08-01-95	100	--	6.90	7.69	43 s	<28
WB26F	07-18-95	2	2.96	<.01	.02	--	140
WB26G	07-14-95	4	.64	<.10	<.10	<10 s	<22
WB26H	07-18-95	1	1.66	<.01	<.01	--	<19
WB27A	08-10-95	<1	--	6.86	6.78	13 s	660
WB27B	08-10-95	4	1.88	.34	.42	<10 k	120
WB27C	08-10-95	<1	--	83.1	83.1	30 k	60
WB27D	07-20-95	3	1.52	.98	.96	--	<26
WB27E	07-19-95	1	.78	<.01	<.01	--	<24
WB27F	07-19-95	1	1.70	.03	.07	--	<21
WB27G	07-21-95	4	1.39	<.01	<.01	<10 s	--
WB28A	07-21-95	454	.00	6.78	8.04	45 s	5,900
WB28B	08-01-95	249	.00	26.1	26.1	35 s	11,000
WB28C	07-27-95	78	.00	22.7	23.5	190 s	5,900
WB28D	07-21-95	18	.00	6.47	6.70	--	--
WB28F	07-31-95	2	4.81	<.01	<.01	--	--
WB30A	07-27-95	--	--	.18	.18	204 s	4,400
WB30B	08-14-95	--	--	--	--	<10 k	2,600
WB30C	07-28-95	111	.43	9.45	10.2	13 s	970
WB30D	08-10-95	71	.29	.10	.26	<10 s	240
WB30E	08-09-95	4	.65	.18	.18	239 s	<25
WB31B	08-24-95	34	.86	6.27	6.59	40 k	140

Table 12. Comprehensive-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, June 1995 to October 1995--Continued

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
WB31C	07-28-95	15	1.48	0.18	0.26	<10 k	<27
WB31D	08-16-95	10	2.84	2.42	2.53	80 k	<27
WB31E	08-17-95	7	3.43	.23	.24	<10 k	<29
WB32B	09-12-95	<1	2.93	1.26	1.48	--	--
WB33A	09-12-95	17	2.59	1.96	1.97	10 k	<46
WB33B	09-05-95	<1	1.43	.09	.08	<10 k	550
WB33F	10-06-95	9	.52	1.15	1.16	<10 k	<27
WB34A	09-07-95	198	--	9.88	9.88	<10 k	1,200
WB34B	09-15-95	4	3.18	.14	.14	<10 k	<27
WB34C	09-06-95	<1	1.79	.03	.03	<10 k	<27
WB34E	09-20-95	9	.26	1.24	1.24	--	<24
WB35A	10-02-95	20	2.18	2.62	2.62	20 k	220
WB35B	09-08-95	<1	1.87	4.89	4.89	42 k	<48
WB35C	09-15-95	<1	2.61	.34	.34	<10 k	<28
WB35D	09-15-95	<1	1.82	.10	.18	<10 k	<26
WB35E	09-12-95	<1	1.11	.07	.08	<10 k	<27
WB35F	10-03-95	12	1.65	.44	.45	<10 k	<26
WB36A	10-04-95	29	--	4.73	4.73	50 k	930
WB36B	10-04-95	20	1.38	8.97	8.96	10 k	<37
WB36C	10-04-95	<1	3.13	.45	.44	--	<29
WB36D	09-07-95	<1	2.36	.00	.00	<10 k	<35
WB36E	09-13-95	<1	1.00	1.96	2.04	--	<26
WB36F	10-03-95	2	4.45	1.96	1.96	--	--
WB36G	10-13-95	12	1.30	4.25	4.27	<10 k	--
WB37A	10-05-95	137	1.24	.46	.51	<10 k	1,100
WB37B	10-13-95	107	.97	1.62	1.63	10 k	4,700
WB37C	09-15-95	7	2.50	.23	.24	<10 k	<26
WB37D	09-15-95	<1	.19	16.7	16.8	<10 k	<18

Table 13 follows

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; ppt, parts per thousand; °C, degrees Celsius; NTU, nephelometric turbidity units; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries/L; --, not analyzed for; (d), duplicate sample; >, greater than; <, less than]

Well no.	Date	Time	Specific conductance (µS/cm)	pH, Field (standard units)	Salinity (ppt)	Water temperature (°C)	Turbidity (NTU)
First Seasonal Sampling Period (November-December 1995)							
DP-1A	12-14-95	1030	1,070	6.14	0.5	6.4	--
WB19B	12-04-95	1000	480	--	.2	9.8	28.6
WB19E	11-30-95	1530	134	4.60	.1	12.8	>1,000
WB22B	11-29-95	1410	316	5.45	.2	12.0	14.4
WB22D	11-27-95	1400	374	4.98	.2	14.5	>1,000
WB24A	11-29-95	1400	--	--	--	11.8	32.2
WB24B	11-27-95	1200	519	6.52	.3	11.5	29.5
WB24E	11-30-95	1300	373	--	.2	12.2	11.3
WB25C	11-28-95	1315	739	4.56	--	14.0	43.4
WB25C (d)	11-28-95	1315	--	--	--	--	--
WB26B	11-29-95	1130	1,220	6.43	.6	11.0	15.9
WB26C	11-29-95	1140	699	--	.3	11.5	21.0
WB26D	11-29-95	1150	611	6.54	.3	12.5	22.2
WB26F	11-28-95	1300	562	4.55	.3	13.2	213
WB27B	12-04-95	1530	602	6.35	.3	8.5	13.0
WB27C	12-04-95	1130	1,080	--	.5	13.0	18.8
WB27E	11-29-95	1115	407	5.07	.2	12.8	956
WB27E (d)	11-29-95	1115	--	--	--	--	--
WB33A	12-15-95	1300	448	--	.2	11.2	204
WB34A	12-04-95	1100	927	--	.5	6.0	39.9
WB35A	11-29-95	1100	359	--	.2	5.8	14.4
WB35C	11-29-95	1600	435	4.34	.2	7.8	5.4
Second Seasonal Sampling Period (March-April 1996)							
DP-1A	03-13-96	900	963	6.58	.5	7.0	23.6
WB19B	03-25-96	1000	471	6.26	.2	11.0	14.3

Oxygen, dissolved (mg/L)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Well no.
2.57	--	--	--	--	40	--	DP-1A
.00	--	--	--	--	--	--	WB19B
5.87	--	--	--	--	<1	--	WB19E
--	--	--	--	--	11	--	WB22B
2.71	--	--	--	--	5	--	WB22D
--	--	--	--	--	--	--	WB24A
.31	--	--	--	--	144	--	WB24B
3.14	--	--	--	--	--	--	WB24E
.90	25	11	97	2.3	--	170	WB25C
--	25	11	97	2.2	--	170	WB25C (d)
--	--	--	--	--	--	--	WB26B
--	--	--	--	--	--	--	WB26C
--	--	--	--	--	195	--	WB26D
1.68	18	8.1	75	--	<1	130	WB26F
--	--	--	--	--	--	--	WB27B
--	--	--	--	--	--	--	WB27C
.74	--	--	--	--	4	--	WB27E
.89	--	--	--	--	--	--	WB27E (d)
2.41	--	--	--	--	--	--	WB33A
--	--	--	--	--	--	--	WB34A
--	--	--	--	--	--	--	WB35A
1.21	--	--	--	--	<1	--	WB35C
0.00	20	29	120	1.2	266	2.0	DP-1A
.00	8.7	17	81	2.7	198	.6	WB19B

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Arsenic, dissolved (µg/L as As)
		First Seasonal Sampling Period (November-December 1995)--Continued					
DP-1A	12-14-95	--	--	--	--	--	--
WB19B	12-04-95	--	--	--	--	--	--
WB19E	11-30-95	--	--	--	--	--	--
WB22B	11-29-95	--	--	--	--	--	--
WB22D	11-27-95	--	--	--	--	--	--
WB24A	11-29-95	--	--	--	--	--	--
WB24B	11-27-95	--	--	--	--	--	--
WB24E	11-30-95	--	--	--	--	--	--
WB25C	11-28-95	110	0.30	0.25	13	480	<1
WB25C (d)	11-28-95	110	.30	.25	13	490	<1
WB26B	11-29-95	--	--	--	--	--	--
WB26C	11-29-95	--	--	--	--	--	--
WB26D	11-29-95	--	--	--	--	--	--
WB26F	11-28-95	78	--	--	13	--	--
WB27B	12-04-95	--	--	--	--	--	--
WB27C	12-04-95	--	--	--	--	--	--
WB27E	11-29-95	--	--	--	--	--	--
WB27E (d)	11-29-95	--	--	--	--	--	--
WB33A	12-15-95	--	--	--	--	--	--
WB34A	12-04-95	--	--	--	--	--	--
WB35A	11-29-95	--	--	--	--	--	--
WB35C	11-29-95	--	--	--	--	--	--
		Second Seasonal Sampling Period (March-April 1996)--Continued					
DP-1A	03-13-96	230	0.30	1.2	30	--	--
WB19B	03-25-96	100	<.10	--	59	--	--

Barium, dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, dissolved (µg/L as Cd)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Well no.
--	--	--	--	--	--	--	DP-1A
--	--	--	--	--	--	--	WB19B
--	--	--	--	--	--	--	WB19E
--	--	--	--	--	--	--	WB22B
--	--	--	--	--	--	--	WB22D
--	--	--	--	--	--	--	WB24A
--	--	--	--	--	--	--	WB24B
--	--	--	--	--	--	--	WB24E
32	1.0	<1.0	<5	70	<10	15	WB25C
32	1.0	<1.0	<5	70	<10	5	WB25C (d)
--	--	--	--	--	--	--	WB26B
--	--	--	--	--	--	--	WB26C
--	--	--	--	--	--	--	WB26D
27	.7	1.0	<5	60	<10	11	WB26F
--	--	--	--	--	--	--	WB27B
--	--	--	--	--	--	--	WB27C
--	--	--	--	--	--	--	WB27E
--	--	--	--	--	--	--	WB27E (d)
--	--	--	--	--	--	--	WB33A
--	--	--	--	--	--	--	WB34A
--	--	--	--	--	--	--	WB35A
--	--	--	--	--	--	--	WB35C
--	--	--	--	--	--	50,000	DP-1A
--	--	--	--	--	--	18,000	WB19B

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, dissolved (µg/L as Mn)	Molybdenum, dissolved (µg/L as Mo)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)
		First Seasonal Sampling Period (November-December 1995)--Continued					
DP-1A	12-14-95	--	--	--	--	--	--
WB19B	12-04-95	--	--	--	--	--	--
WB19E	11-30-95	--	--	--	--	--	--
WB22B	11-29-95	--	--	--	--	--	--
WB22D	11-27-95	--	--	--	--	--	--
WB24A	11-29-95	--	--	--	--	--	--
WB24B	11-27-95	--	--	--	--	--	--
WB24E	11-30-95	--	--	--	--	--	--
WB25C	11-28-95	1	4	930	<10	30	<1.0
WB25C (d)	11-28-95	<1	4	930	<10	30	<1.0
WB26B	11-29-95	--	--	--	--	--	--
WB26C	11-29-95	--	--	--	--	--	--
WB26D	11-29-95	--	--	--	--	--	--
WB26F	11-28-95	<10	<4	720	<10	30	<1.0
WB27B	12-04-95	--	--	--	--	--	--
WB27C	12-04-95	--	--	--	--	--	--
WB27E	11-29-95	--	--	--	--	--	--
WB27E (d)	11-29-95	--	--	--	--	--	--
WB33A	12-15-95	--	--	--	--	--	--
WB34A	12-04-95	--	--	--	--	--	--
WB35A	11-29-95	--	--	--	--	--	--
WB35C	11-29-95	--	--	--	--	--	--
		Second Seasonal Sampling Period (March-April 1996)--Continued					
DP-1A	03-13-96	--	--	1,400	--	--	--
WB19B	03-25-96	--	--	840	--	--	--

Stron-tium, dis-solved (µg/L as Sr)	Vana-dium, dis-solved (µg/L as V)	Zinc, dis-solved (µg/L as Zn)	Tritium, total (pCi/L)	Tritium, 2-Sigma (pCi/L)	Well no.
--	--	--	--	--	DP-1A
--	--	--	--	--	WB19B
--	--	--	--	--	WB19E
--	--	--	--	--	WB22B
--	--	--	--	--	WB22D
--	--	--	--	--	WB24A
--	--	--	--	--	WB24B
--	--	--	--	--	WB24E
180	<6	90	--	--	WB25C
180	<6	86	--	--	WB25C (d)
--	--	--	--	--	WB26B
--	--	--	--	--	WB26C
--	--	--	--	--	WB26D
150	<6	54	--	--	WB26F
--	--	--	--	--	WB27B
--	--	--	--	--	WB27C
--	--	--	--	--	WB27E
--	--	--	--	--	WB27E (d)
--	--	--	--	--	WB33A
--	--	--	--	--	WB34A
--	--	--	--	--	WB35A
--	--	--	--	--	WB35C
--	--	--	--	--	DP-1A
--	--	--	--	--	WB19B

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Specific conductance (µS/cm)	pH, Field (Standard units)	Salinity (ppt)	Temperature, (°C)	Turbidity (NTU)
Second Seasonal Sampling Period (March-April 1996)--Continued							
WB19E	03-12-96	1045	180	4.78	0.1	13.0	>1,000
WB22B	03-22-96	1035	234	5.32	.1	7.5	16.3
WB22D	03-12-96	1600	401	4.93	.2	13.0	475
WB23B	03-25-96	1200	969	6.62	.5	9.2	60.0
WB23C	03-22-96	1100	1,100	7.26	.6	13.5	22.1
WB23D	03-14-96	1130	738	4.71	.4	14.2	18.0
WB23D (d)	03-14-96	1130	--	--	--	--	--
WB24A	03-18-96	1045	765	--	.4	11.0	34.9
WB24B	03-12-96	1000	510	6.02	.3	9.0	10.4
WB25C	03-12-96	1500	708	4.62	.3	12.0	8.0
WB25C (d)	03-12-96	1500	--	--	--	--	--
WB26B	03-26-96	1530	1,030	6.49	.5	10.5	9.2
WB26C	03-27-96	900	647	6.56	.3	7.0	17.3
WB26D	03-22-96	1030	778	6.48	.4	12.0	38.3
WB26F	03-13-96	1000	565	4.82	.3	13.0	108
WB27B	03-21-96	1100	556	5.14	.3	6.5	13.0
WB27C	03-29-96	1600	546	4.07	.3	13.5	10.8
WB27E	03-13-96	1000	411	4.72	.2	12.0	37.5
WB33A	04-03-96	1530	514	5.41	.2	10.0	24.7
WB34A	03-29-96	1400	1,260	6.59	.6	12.2	28.9
WB34B	03-25-96	1515	804	4.94	.3	12.5	51.7
WB35A	03-29-96	1300	444	5.54	.2	9.5	13.1
WB35B	03-14-96	1500	466	4.44	.2	11.5	14.7
WB35C	03-14-96	1415	448	4.04	.2	13.5	.9
WB36A	03-27-96	1300	298	5.74	.1	13.5	13.6
WB36B	03-27-96	1300	354	5.58	.2	8.5	27.7
WB36C	03-27-96	1030	378	4.32	.2	12.5	>1,000
WB37B	03-26-96	1400	355	6.34	.2	9.5	9.9

Oxygen, dissolved (mg/L)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Well no.
5.80	5.6	5.6	14	1.4	3	27	WB19E
--	2.8	6.1	41	1.4	6	48	WB22B
1.30	12	4.9	60	1.5	9	80	WB22D
--	8.1	11	160	2.1	323	3.1	WB23B
--	12	24	170	4.2	130	65	WB23C
.33	24	9.8	110	2.4	<1	190	WB23D
--	24	9.7	110	2.2	--	190	WB23D (d)
--	--	--	--	--	--	--	WB24A
.40	5.0	7.6	89	.5	132	3.0	WB24B
.56	28	12	99	2.3	<1	180	WB25C
--	27	12	99	2.4	--	180	WB25C (d)
--	9.5	14	240	3.0	378	4.1	WB26B
--	7.5	13	120	4.4	189	3.5	WB26C
--	13	21	110	4.8	158	98	WB26D
1.01	21	9.0	79	2.3	<1	130	WB26F
--	3.4	4.4	94	3.3	15	42	WB27B
--	2.7	2.7	86	2.1	<1	68	WB27C
1.44	15	6.3	56	2.0	<1	97	WB27E
3.55	23	16	51	1.8	11	110	WB33A
--	11	20	210	2.0	202	48	WB34A
1.40	8.8	16	130	1.6	2	200	WB34B
--	21	10	34	2.2	20	120	WB35A
--	20	10	38	2.3	<1	140	WB35B
1.43	16	7.7	35	1.5	<1	130	WB35C
--	10	5.6	25	1.0	24	51	WB36A
--	11	6.8	33	1.6	20	80	WB36B
1.35	15	7.2	31	1.7	<1	110	WB36C
--	2.9	2.7	68	1.0	78	3.1	WB37B

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Arsenic dissolved (µg/L as As)
Second Seasonal Sampling Period (March-April 1996)--Continued							
WB19E	03-12-96	27	<0.1	0.14	8.7	--	--
WB22B	03-22-96	63	<.1	.12	9.7	--	--
WB22D	03-12-96	64	<.1	.08	12	--	--
WB23B	03-25-96	130	.4	1.2	8.7	--	--
WB23C	03-22-96	350	.2	1.0	14	--	--
WB23D	03-14-96	110	.2	.41	12	--	--
WB23D (d)	03-14-96	110	.2	.42	12	--	--
WB24A	03-18-96	--	--	--	--	--	--
WB24B	03-12-96	99	<.1	.11	23	--	--
WB25C	03-12-96	110	.2	.11	13	--	--
WB25C (d)	03-12-96	110	.2	.11	13	--	--
WB26B	03-26-96	190	.3	.17	51	--	--
WB26C	03-27-96	110	.1	.09	41	--	--
WB26D	03-22-96	130	.1	.18	18	--	--
WB26F	03-13-96	84	.2	.09	13	--	--
WB27B	03-21-96	120	<.1	.08	50	--	--
WB27C	03-29-96	110	<.1	.1	33	--	--
WB27E	03-13-96	62	.1	.06	12	--	--
WB33A	04-03-96	82	.5	.05	31	--	--
WB34A	03-29-96	250	.2	1.3	16	--	--
WB34B	03-25-96	120	.2	.06	21	--	--
WB35A	03-29-96	51	1.3	.05	31	--	--
WB35B	03-14-96	53	1.0	.03	31	--	--
WB35C	03-14-96	48	.3	.11	30	--	--
WB36A	03-27-96	26	.5	.09	16	--	--
WB36B	03-27-96	45	.3	.07	21	--	--
WB36C	03-27-96	41	.2	.05	25	--	--
WB37B	03-26-96	62	.2	.06	47	--	--

Barium dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, dissolved (µg/L as Cd)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Well no.
--	--	--	--	--	--	9	WB19E
--	--	--	--	--	--	4,600	WB22B
--	--	--	--	--	--	59	WB22D
--	--	--	--	--	--	15,000	WB23B
--	--	--	--	--	--	1,200	WB23C
--	--	--	--	--	--	10	WB23D
--	--	--	--	--	--	54	WB23D (d)
--	--	--	--	--	--	--	WB24A
--	--	--	--	--	--	4,800	WB24B
--	--	--	--	--	--	5	WB25C
--	--	--	--	--	--	4	WB25C (d)
--	--	--	--	--	--	1,200	WB26B
--	--	--	--	--	--	980	WB26C
--	--	--	--	--	--	160	WB26D
--	--	--	--	--	--	29	WB26F
--	--	--	--	--	--	1,600	WB27B
--	--	--	--	--	--	7,500	WB27C
--	--	--	--	--	--	5	WB27E
--	--	--	--	--	--	240	WB33A
--	--	--	--	--	--	32,000	WB34A
--	--	--	--	--	--	280	WB34B
--	--	--	--	--	--	3,100	WB35A
--	--	--	--	--	--	5,700	WB35B
--	--	--	--	--	--	7	WB35C
--	--	--	--	--	--	3,600	WB36A
--	--	--	--	--	--	8,100	WB36B
--	--	--	--	--	--	920	WB36C
--	--	--	--	--	--	1,800	WB37B

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, dissolved (µg/L as Mn)	Molybdenum, dissolved (µg/L as Mo)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)
Second Seasonal Sampling Period (March-April 1996)--Continued							
WB19E	03-12-96	--	--	67	--	--	--
WB22B	03-22-96	--	--	490	--	--	--
WB22D	03-12-96	--	--	440	--	--	--
WB23B	03-25-96	--	--	450	--	--	--
WB23C	03-22-96	--	--	210	--	--	--
WB23D	03-14-96	--	--	760	--	--	--
WB23D (d)	03-14-96	--	--	750	--	--	--
WB24A	03-18-96	--	--	--	--	--	--
WB24B	03-12-96	--	--	250	--	--	--
WB25C	03-12-96	--	--	970	--	--	--
WB25C (d)	03-12-96	--	--	960	--	--	--
WB26B	03-26-96	--	--	420	--	--	--
WB26C	03-27-96	--	--	350	--	--	--
WB26D	03-22-96	--	--	640	--	--	--
WB26F	03-13-96	--	--	800	--	--	--
WB27B	03-21-96	--	--	300	--	--	--
WB27C	03-29-96	--	--	470	--	--	--
WB27E	03-13-96	--	--	580	--	--	--
WB33A	04-03-96	--	--	410	--	--	--
WB34A	03-29-96	--	--	860	--	--	--
WB34B	03-25-96	--	--	360	--	--	--
WB35A	03-29-96	--	--	1,500	--	--	--
WB35B	03-14-96	--	--	1,200	--	--	--
WB35C	03-14-96	--	--	650	--	--	--
WB36A	03-27-96	--	--	800	--	--	--
WB36B	03-27-96	--	--	820	--	--	--
WB36C	03-27-96	--	--	640	--	--	--
WB37B	03-26-96	--	--	160	--	--	--

Stron-tium, dis-solved (µg/L as Sr)	Vana-dium, dis-solved (µg/L as V)	Zinc, dis-solved (µg/L as Zn)	Tritium, Total (pCi/L)	Tritium, 2-Sigma (pCi/L)	Well no.
--	--	--	--	--	WB19E
--	--	--	--	--	WB22B
--	--	--	--	--	WB22D
--	--	--	--	--	WB23B
--	--	--	--	--	WB23C
--	--	--	--	--	WB23D
--	--	--	--	--	WB23D (d)
--	--	--	--	--	WB24A
--	--	--	--	--	WB24B
--	--	--	--	--	WB25C
--	--	--	--	--	WB25C (d)
--	--	--	--	--	WB26B
--	--	--	--	--	WB26C
--	--	--	--	--	WB26D
--	--	--	--	--	WB26F
--	--	--	--	--	WB27B
--	--	--	--	--	WB27C
--	--	--	--	--	WB27E
--	--	--	--	--	WB33A
--	--	--	--	--	WB34A
--	--	--	--	--	WB34B
--	--	--	--	--	WB35A
--	--	--	--	--	WB35B
--	--	--	--	--	WB35C
--	--	--	--	--	WB36A
--	--	--	--	--	WB36B
--	--	--	--	--	WB36C
--	--	--	--	--	WB37B

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Specific conductance (µS/cm)	pH, Field (Standard units)	Salinity (ppt)	Temperature, (°C)	Turbidity (NTU)
Third Seasonal Sampling Period (June 1996)							
DP-1A	06-13-96	1300	1,130	6.12	0.6	22.2	109
WB19B	06-17-96	1500	586	5.97	.3	21.5	49.8
WB19E	06-07-96	1030	173	4.74	.1	17.9	51.9
WB22B	06-20-96	900	342	5.11	.2	22.0	47.7
WB22D	06-17-96	1400	439	5.05	.2	21.0	149
WB23B	06-20-96	1000	853	6.34	.4	19.0	41.2
WB23C	06-26-96	1000	855	7.03	.4	16.0	29.0
WB23D	06-17-96	1000	756	4.66	.4	21.0	336
WB23D (d)	06-17-96	1000	--	--	--	--	--
WB24A	06-26-96	1000	213	--	.1	26.0	55.0
WB24B	06-18-96	1100	494	6.02	.2	20.0	16.0
WB24E	06-18-96	900	305	5.31	.1	22.5	45.8
WB25C	06-11-96	1300	701	4.66	.3	19.0	39.3
WB25C (d)	06-11-96	1300	--	--	--	--	--
WB26B	06-21-96	1100	635	6.37	.3	19.0	12.8
WB26C	06-17-96	1100	448	5.99	.2	25.0	12.6
WB26D	06-17-96	1200	825	6.18	.4	25.5	21.7
WB26F	06-13-96	1100	563	4.74	.3	18.5	76.0
WB27B	06-13-96	1300	572	4.81	.3	26.0	20.1
WB27C	06-17-96	900	519	4.43	.2	21.0	6.1
WB27E	06-13-96	830	397	4.59	.2	17.0	36.3
WB28F	06-13-96	1440	455	5.18	.2	22.0	>1,000
WB33A	06-20-96	1300	541	5.03	.3	17.0	21.4
WB34A	06-20-96	1000	750	6.20	.4	23.0	26.3
WB34B	06-20-96	1100	752	4.80	.4	19.5	43.2
WB35A	06-18-96	1500	410	5.25	.2	23.0	40.1
WB35B	06-21-96	1200	397	4.62	.2	19.0	18.1
WB35C	06-18-96	1430	408	3.99	.2	22.5	45.9
WB35C (d)	06-18-96	1430	--	--	--	--	--

Oxygen, dissolved (mg/L)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Well no.
0.00	23	31	120	8.0	337	4.9	DP-1A
--	8.2	16	77	3.2	186	1.0	WB19B
5.56	5.2	6.0	12	1.3	<1	30	WB19E
1.06	2.3	6.1	39	1.6	5	48	WB22B
.72	13	5.4	57	1.3	5	88	WB22D
--	5.7	10	150	1.8	290	2.3	WB23B
--	6.5	12	110	2.2	270	11	WB23C
.59	25	9.9	110	2.0	<1	190	WB23D
--	23	9.1	100	1.9	--	190	WB23D (d)
--	--	--	--	--	--	--	WB24A
.00	4.6	7.2	83	1.1	128	2.9	WB24B
7.80	5.9	3.2	45	1.3	10	49	WB24E
.44	28	12	93	2.2	<1	170	WB25C
--	25	11	91	2.2	--	170	WB25C (d)
--	8.0	12	200	3.2	401	2.0	WB26B
--	5.3	8.1	74	3.1	138	3.1	WB26C
--	14	25	120	5.3	181	64	WB26D
.73	21	9.1	75	2.3	<1	120	WB26F
--	3.7	4.0	85	3.8	8	41	WB27B
--	3.8	2.5	70	2.6	<1	68	WB27C
.84	14	5.8	49	1.7	<1	83	WB27E
--	--	--	--	--	--	--	WB28F
1.15	22	15	48	2.4	12	100	WB33A
--	9.9	16	180	2.5	176	44	WB34A
1.48	8.0	16	120	1.7	2	190	WB34B
--	20	9.5	38	2.8	22	100	WB35A
--	22	10	37	2.3	<1	120	WB35B
1.35	15	7.5	33	1.5	<1	120	WB35C
--	17	8.2	36	1.5	--	120	WB35C (d)

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Arsenic dissolved (µg/L as As)
Third Seasonal Sampling Period (June 1996)--Continued							
DP-1A	06-13-96	200	0.4	1.7	31	--	--
WB19B	06-17-96	97	.2	.45	63	--	--
WB19E	06-07-96	22	<.10	.21	8.6	--	--
WB22B	06-20-96	64	<.10	.09	12	--	--
WB22D	06-17-96	62	.1	.28	14	--	--
WB23B	06-20-96	95	.4	.62	10	--	--
WB23C	06-26-96	110	.5	.15	11	--	--
WB23D	06-17-96	100	.2	.42	12	--	--
WB23D (d)	06-17-96	100	.1	.41	11	--	--
WB24A	06-26-96	--	--	--	--	--	--
WB24B	06-18-96	91	.1	.09	23	--	--
WB24E	06-18-96	51	<.10	.08	11	--	--
WB25C	06-11-96	110	.2	.48	14	--	--
WB25C (d)	06-11-96	110	.3	.5	13	--	--
WB26B	06-21-96	180	.3	.11	48	--	--
WB26C	06-17-96	98	.2	.05	27	--	--
WB26D	06-17-96	120	.2	.14	19	--	--
WB26F	06-13-96	83	.1	.6	14	--	--
WB27B	06-13-96	96	.1	.06	50	--	--
WB27C	06-17-96	92	<.10	.07	28	--	--
WB27E	06-13-96	58	.2	.16	12	--	--
WB28F	06-13-96	--	--	--	--	--	--
WB33A	06-20-96	86	.6	.04	31	--	--
WB34A	06-20-96	160	.1	.39	17	--	--
WB34B	06-20-96	100	.3	.05	23	--	--
WB35A	06-18-96	53	1.4	.04	32	--	--
WB35B	06-21-96	48	1.0	.05	32	--	--
WB35C	06-18-96	47	.3	.31	31	--	--
WB35C (d)	06-18-96	46	.3	.2	33	--	--

Barium dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, dissolved (µg/L as Cd)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Well no.
--	--	--	--	--	--	29,000	DP-1A
--	--	--	--	--	--	13,000	WB19B
--	--	--	--	--	--	<3	WB19E
--	--	--	--	--	--	6,700	WB22B
--	--	--	--	--	--	<3	WB22D
--	--	--	--	--	--	25,000	WB23B
--	--	--	--	--	--	640	WB23C
--	--	--	--	--	--	6	WB23D
--	--	--	--	--	--	7	WB23D (d)
--	--	--	--	--	--	--	WB24A
--	--	--	--	--	--	4,600	WB24B
--	--	--	--	--	--	87	WB24E
--	--	--	--	--	--	5	WB25C
--	--	--	--	--	--	4	WB25C (d)
--	--	--	--	--	--	1,200	WB26B
--	--	--	--	--	--	990	WB26C
--	--	--	--	--	--	560	WB26D
--	--	--	--	--	--	<3	WB26F
--	--	--	--	--	--	1,400	WB27B
--	--	--	--	--	--	3,300	WB27C
--	--	--	--	--	--	3	WB27E
--	--	--	--	--	--	--	WB28F
--	--	--	--	--	--	370	WB33A
--	--	--	--	--	--	29,000	WB34A
--	--	--	--	--	--	360	WB34B
--	--	--	--	--	--	2,000	WB35A
--	--	--	--	--	--	4,300	WB35B
--	--	--	--	--	--	22	WB35C
--	--	--	--	--	--	21	WB35C (d)

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, dissolved (µg/L as Mn)	Molybdenum, dissolved (µg/L as Mo)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)
Third Seasonal Sampling Period (June 1996)--Continued							
DP-1A	06-13-96	--	--	1,300	--	--	--
WB19B	06-17-96	--	--	770	--	--	--
WB19E	06-07-96	--	--	73	--	--	--
WB22B	06-20-96	--	--	420	--	--	--
WB22D	06-17-96	--	--	460	--	--	--
WB23B	06-20-96	--	--	390	--	--	--
WB23C	06-26-96	--	--	160	--	--	--
WB23D	06-17-96	--	--	720	--	--	--
WB23D (d)	06-17-96	--	--	700	--	--	--
WB24A	06-26-96	--	--	--	--	--	--
WB24B	06-18-96	--	--	260	--	--	--
WB24E	06-18-96	--	--	290	--	--	--
WB25C	06-11-96	--	--	930	--	--	--
WB25C (d)	06-11-96	--	--	890	--	--	--
WB26B	06-21-96	--	--	330	--	--	--
WB26C	06-17-96	--	--	250	--	--	--
WB26D	06-17-96	--	--	630	--	--	--
WB26F	06-13-96	--	--	760	--	--	--
WB27B	06-13-96	--	--	310	--	--	--
WB27C	06-17-96	--	--	280	--	--	--
WB27E	06-13-96	--	--	500	--	--	--
WB28F	06-13-96	--	--	--	--	--	--
WB33A	06-20-96	--	--	430	--	--	--
WB34A	06-20-96	--	--	730	--	--	--
WB34B	06-20-96	--	--	340	--	--	--
WB35A	06-18-96	--	--	1,200	--	--	--
WB35B	06-21-96	--	--	1,100	--	--	--
WB35C	06-18-96	--	--	630	--	--	--
WB35C (d)	06-18-96	--	--	660	--	--	--

Stron-tium, dis-solved (µg/L as Sr)	Vana-dium, dis-solved (µg/L as V)	Zinc, dis-solved (µg/L as Zn)	Tritium, Total (pCi/L)	Tritium, 2-Sigma (pCi/L)	Well no.
--	--	--	--	--	DP-1A
--	--	--	--	--	WB19B
--	--	--	--	--	WB19E
--	--	--	--	--	WB22B
--	--	--	--	--	WB22D
--	--	--	--	--	WB23B
--	--	--	--	--	WB23C
--	--	--	--	--	WB23D
--	--	--	--	--	WB23D (d)
--	--	--	--	--	WB24A
--	--	--	--	--	WB24B
--	--	--	--	--	WB24E
--	--	--	--	--	WB25C
--	--	--	--	--	WB25C (d)
--	--	--	--	--	WB26B
--	--	--	--	--	WB26C
--	--	--	--	--	WB26D
--	--	--	--	--	WB26F
--	--	--	--	--	WB27B
--	--	--	--	--	WB27C
--	--	--	--	--	WB27E
--	--	--	--	--	WB28F
--	--	--	--	--	WB33A
--	--	--	--	--	WB34A
--	--	--	--	--	WB34B
--	--	--	--	--	WB35A
--	--	--	--	--	WB35B
--	--	--	--	--	WB35C
--	--	--	--	--	WB35C (d)

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Specific conductance (µS/cm)	pH, Field (Standard units)	Salinity (ppt)	Temperature, (°C)	Turbidity (NTU)
Third Seasonal Sampling Period (June 1996)--Continued							
WB36A	06-20-96	1430	332	5.73	0.2	21.0	21.6
WB36B	06-21-96	1500	348	5.64	.2	19.0	21.1
WB36C	06-21-96	1530	381	4.31	.2	23.5	>1,000
WB37B	06-20-96	1130	357	6.08	.2	27.5	14.7
Fourth Seasonal Sampling Period (August 1996)							
CC27A	08-20-96	1300	1,520	5.12	0.8	18.5	6.4
CC27B	08-21-96	900	398	5.23	.2	22.2	11.7
DP-1A	08-15-96	1330	1,040	6.21	.5	23.5	323
WB19B	08-15-96	1130	612	5.90	.3	24.0	27.1
WB19E	08-12-96	930	175	4.79	.1	15.8	3.5
WB22B	08-19-96	1100	319	4.78	.2	21.5	28.3
WB22D	08-16-96	930	428	4.98	.2	19.0	225
WB23B	08-28-96	1500	800	6.28	.4	19.5	25.6
WB23C	08-19-96	1445	476	6.44	.2	18.5	9.0
WB23D	08-16-96	1430	723	4.65	.3	24.0	30.3
WB24A	08-15-96	1130	--	--	--	20.5	21.1
WB24B	08-16-96	1400	490	5.86	.2	23.5	15.6
WB24E	08-19-96	1130	316	5.38	.2	24.8	19.0
WB25C	08-14-96	930	633	4.60	.3	17.0	270
WB25C (d)	08-14-96	930	--	--	--	--	--
WB26B	08-19-96	1330	1,090	6.39	.5	22.0	15.6
WB26C	08-15-96	1030	707	6.15	.3	25.0	11.5
WB26D	08-19-96	1145	737	6.30	.4	23.5	12.9
WB26F	08-15-96	1345	607	4.70	.3	22.0	>1,000
WB27B	08-19-96	900	472	4.78	.2	24.5	14.4
WB27C	08-19-96	1000	615	4.07	.3	22.0	4.2
WB27E	08-15-96	1015	391	4.70	.2	20.0	100

Oxygen, dissolved (mg/L)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Well no.
--	15	7.6	30	1.4	43	73	WB36A
--	13	7.7	33	1.6	29	77	WB36B
1.59	16	6.6	29	2.1	<1	96	WB36C
--	--	--	--	--	87	--	WB37B
0.34	34	20	230	2.9	28	260	CC27A
3.62	23	6.3	39	1.9	19	86	CC27B
.00	22	30	120	1.7	299	4	DP-1A
--	5.4	5.7	13	1.6	189	30	WB19B
5.21	7.7	16	75	3.2	1	0.7	WB19E
--	2.6	6.7	44	1.4	3	48	WB22B
.53	12	5.1	60	1.6	<1	88	WB22D
--	7.0	10	170	5.0	335	1.6	WB23B
--	3.9	6.8	42	1.8	95	5.6	WB23C
.37	23	9.0	110	2.2	<1	180	WB23D
--	--	--	--	--	--	--	WB24A
.00	4.7	7.2	81	.8	128	2.6	WB24B
3.12	6.7	3.6	52	1.7	10	57	WB24E
.00	27	12	96	2.2	<1	170	WB25C
--	25	12	98	2.7	--	170	WB25C (d)
--	8.6	13	210	4.4	389	1.9	WB26B
--	6.9	12	120	5.4	193	2.9	WB26C
--	12	21	110	5.7	183	73	WB26D
.85	20	8.7	81	2.6	4	130	WB26F
--	3.4	4.3	92	4.5	<1	51	WB27B
--	3.0	2.5	77	2.5	<1	77	WB27C
.70	13	5.4	54	2.1	<1	85	WB27E

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Arsenic dissolved (µg/L as As)
Third Seasonal Sampling Period (June 1996)--Continued							
WB36A	06-20-96	38	0.7	0.04	24	--	--
WB36B	06-21-96	39	.3	.04	24	--	--
WB36C	06-21-96	41	.2	.06	24	--	--
WB37B	06-20-96	--	--	--	--	--	--
Fourth Seasonal Sampling Period (August 1996)--Continued							
CC27A	08-20-96	290	0.2	0.1	27	--	--
CC27B	08-21-96	50	.2	.16	13	--	--
DP-1A	08-15-96	210	.4	1.7	37	--	--
WB19B	08-15-96	23	<.10	.1	7.9	--	--
WB19E	08-12-96	100	<.10	.33	62	--	--
WB22B	08-19-96	66	.1	.05	12	--	--
WB22D	08-16-96	59	<.10	.17	12	--	--
WB23B	08-28-96	130	.5	1.5	11	--	--
WB23C	08-19-96	24	.1	.04	7.1	--	--
WB23D	08-16-96	110	.1	.18	12	--	--
WB24A	08-15-96	--	--	--	--	--	--
WB24B	08-16-96	90	<.10	.08	22	--	--
WB24E	08-19-96	54	<.10	.06	12	--	--
WB25C	08-14-96	110	.2	.21	13	--	--
WB25C (d)	08-14-96	110	.2	.17	13	--	--
WB26B	08-19-96	170	.3	.18	48	--	--
WB26C	08-15-96	120	.2	.07	44	--	--
WB26D	08-19-96	110	.1	.17	18	--	--
WB26F	08-15-96	94	.1	.38	13	--	--
WB27B	08-19-96	130	.1	.11	59	--	--
WB27C	08-19-96	120	<.10	.11	30	--	--
WB27E	08-15-96	60	.1	.11	12	--	--

Barium dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, dissolved (µg/L as Cd)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Well no.
--	--	--	--	--	--	6,100	WB36A
--	--	--	--	--	--	11,000	WB36B
--	-	--	--	--	--	400	WB36C
--	--	--	--	--	--	--	WB37B
--	--	--	--	--	--	690	CC27A
--	--	--	--	--	--	17	CC27B
--	--	--	--	--	--	55,000	DP-1A
--	--	--	--	--	--	<3	WB19B
--	--	--	--	--	--	15,000	WB19E
--	--	--	--	--	--	7,100	WB22B
--	--	--	--	--	--	6	WB22D
--	--	--	--	--	--	24,000	WB23B
--	--	--	--	--	--	100	WB23C
--	--	--	--	--	--	<3	WB23D
--	--	--	--	--	--	--	WB24A
--	--	--	--	--	--	4,100	WB24B
--	--	--	--	--	--	110	WB24E
--	--	--	--	--	--	29	WB25C
--	--	--	--	--	--	<3	WB25C (d)
--	--	--	--	--	--	1,100	WB26B
--	--	--	--	--	--	750	WB26C
--	--	--	--	--	--	570	WB26D
--	--	--	--	--	--	23	WB26F
--	--	--	--	--	--	2,400	WB27B
--	--	--	--	--	--	2,900	WB27C
--	--	--	--	--	--	<3	WB27E

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, dissolved (µg/L as Mn)	Molybdenum, dissolved (µg/L as Mo)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)
Third Seasonal Sampling Period (June 1996)--Continued							
WB36A	06-20-96	--	--	1,100	--	--	--
WB36B	06-21-96	--	--	920	--	--	--
WB36C	06-21-96	--	--	570	--	--	--
WB37B	06-20-96	--	--	--	--	--	--
Fourth Seasonal Sampling Period (August 1996)--Continued							
CC27A	08-20-96	--	--	460	--	--	--
CC27B	08-21-96	--	--	650	--	--	--
DP-1A	08-15-96	--	--	1,400	--	--	--
WB19B	08-15-96	--	--	71	--	--	--
WB19E	08-12-96	--	--	760	--	--	--
WB22B	08-19-96	--	--	520	--	--	--
WB22D	08-16-96	--	--	460	--	--	--
WB23B	08-28-96	--	--	400	--	--	--
WB23C	08-19-96	--	--	140	--	--	--
WB23D	08-16-96	--	--	690	--	--	--
WB24A	08-15-96	--	--	--	--	--	--
WB24B	08-16-96	--	--	280	--	--	--
WB24E	08-19-96	--	--	330	--	--	--
WB25C	08-14-96	--	--	930	--	--	--
WB25C (d)	08-14-96	--	--	910	--	--	--
WB26B	08-19-96	--	--	340	--	--	--
WB26C	08-15-96	--	--	340	--	--	--
WB26D	08-19-96	--	--	520	--	--	--
WB26F	08-15-96	--	--	740	--	--	--
WB27B	08-19-96	--	--	340	--	--	--
WB27C	08-19-96	--	--	240	--	--	--
WB27E	08-15-96	--	--	490	--	--	--

Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, dissolved (µg/L as Zn)	Tritium, Total (pCi/L)	Tritium, 2-Sigma (pCi/L)	Well no.
--	--	--	--	--	WB36A
--	--	--	--	--	WB36B
--	--	--	--	--	WB36C
--	--	--	--	--	WB37B
--	--	--	41	5.1	CC27A
--	--	--	--	--	CC27B
--	--	--	--	--	DP-1A
--	--	--	--	--	WB19B
--	--	--	--	--	WB19E
--	--	--	--	--	WB22B
--	--	--	--	--	WB22D
--	--	--	--	--	WB23B
--	--	--	--	--	WB23C
--	--	--	--	--	WB23D
--	--	--	--	--	WB24A
--	--	--	37	4.5	WB24B
--	--	--	34	4.5	WB24E
--	--	--	--	--	WB25C
--	--	--	--	--	WB25C (d)
--	--	--	--	--	WB26B
--	--	--	--	--	WB26C
--	--	--	--	--	WB26D
--	--	--	--	--	WB26F
--	--	--	--	--	WB27B
--	--	--	--	--	WB27C
--	--	--	--	--	WB27E

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Specific conductance (µS/cm)	pH, Field (Standard units)	Salinity (ppt)	Temperature, (°C)	Turbidity (NTU)
Fourth Seasonal Sampling Period (August 1996)--Continued							
WB27E (d)	08-15-96	1015	--	--	--	--	--
WB33A	08-20-96	1445	535	5.24	0.3	19.5	9.8
WB34A	08-19-96	1600	1,020	6.32	.5	21.5	45.6
WB34B	08-20-96	1430	731	4.93	.4	21.8	198
WB35A	08-19-96	1600	212	5.28	.1	21.5	8.1
WB35B	08-20-96	1530	426	4.85	.2	21.1	14.4
WB35C	08-20-96	900	323	4.06	.2	23.0	124
WB35C (d)	08-20-96	900	--	--	--	--	--
WB36A	08-19-96	1500	271	5.25	.1	21.5	126
WB36B	08-26-96	1100	341	5.72	.2	21.5	28.3
WB36C	08-20-96	930	360	4.05	.2	22.5	>1,000
WB37B	08-20-96	900	285	6.09	.1	21.0	26.5
Quality-Assurance Samples							
PUMP BLANK	12-04-95	1330	--	--	--	--	--
BAILER BLANK	12-04-95	1400	--	--	--	--	--
PUMP BLANK	03-13-96	1130	--	--	--	--	--
PUMP BLANK	03-14-96	1530	--	--	--	--	--
PUMP BLANK	06-13-96	1400	--	--	--	--	--
BAILER BLANK	06-18-96	1100	--	--	--	--	--
BAILER BLANK	06-26-96	1100	--	--	--	--	--
PUMP BLANK	08-14-96	1330	--	--	--	--	--
BAILER BLANK	08-19-96	1400	--	--	--	--	--
BAILER BLANK	08-20-96	1500	--	--	--	--	--

Oxygen, dissolved (mg/L)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Bicarbonate, field (mg/L as HCO_3)	Sulfate, dissolved (mg/L as SO_4)	Well no.
--	13	5.4	54	2.2	--	85	WB27E (d)
2.40	22	15	52	2.4	12	100	WB33A
--	10	16	200	2.7	290	66	WB34A
--	8.5	16	120	2.4	<1	190	WB34B
--	20	9.6	38	2.6	21	93	WB35A
--	20	10	37	2.7	2	120	WB35B
.51	16	7.9	35	1.8	<1	120	WB35C
--	17	8.2	34	1.7	--	120	WB35C (d)
--	--	--	--	--	21	--	WB36A
--	--	--	--	--	43	--	WB36B
1.90	14	6.4	34	2.7	<1	97	WB36C
--	3.0	2.6	67	1.6	95	2.2	WB37B
--	--	--	--	--	--	--	PUMP BLANK
--	--	--	--	--	--	--	BAILER BLANK
--	<0.1	<0.1	<0.2	<0.1	--	<0.1	PUMP BLANK
--	<.1	<.1	<.2	<.1	--	<.1	PUMP BLANK
--	<.1	<.1	<.2	<.1	--	.1	PUMP BLANK
--	<.1	<.1	<.2	<.1	--	<.1	BAILER BLANK
--	<.1	<.1	<.2	<.1	--	<.1	BAILER BLANK
--	<.1	<.1	<.2	<.1	--	<.1	PUMP BLANK
--	<.1	<.1	<.2	<.1	--	<.1	BAILER BLANK
--	<.1	<.1	<.2	.1	--	<.1	BAILER BLANK

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Arsenic dissolved (µg/L as As)
Fourth Seasonal Sampling Period (August 1996)--Continued							
WB27E (d)	08-15-96	65	0.1	0.12	12	--	--
WB33A	08-20-96	92	.4	.05	34	--	--
WB34A	08-19-96	240	.2	--	19	--	--
WB34B	08-20-96	110	.2	.09	24	--	--
WB35A	08-19-96	46	1.3	.05	34	--	--
WB35B	08-20-96	47	.9	.04	30	--	--
WB35C	08-20-96	46	.2	.18	32	--	--
WB35C (d)	08-20-96	48	.2	.20	33	--	--
WB36A	08-19-96	--	--	--	--	--	--
WB36B	08-26-96	--	--	--	--	--	--
WB36C	08-20-96	44	.1	.05	24	--	--
WB37B	08-20-96	53	.2	.05	51	--	--
					.19		
Quality-Assurance Samples							
PUMP BLANK	12-04-95	--	--	--	--	--	--
BAILER BLANK	12-04-95	--	--	--	--	--	--
PUMP BLANK	03-13-96	<0.1	<0.1	0.04	0.19	--	--
PUMP BLANK	03-14-96	<.1	<.1	.03	.16	--	--
PUMP BLANK	06-13-96	<.1	<.1	.04	.20	--	--
BAILER BLANK	06-18-96	<.1	<.1	<.01	.15	--	--
BAILER BLANK	06-26-96	<.1	<.1	<.01	.16	--	--
PUMP BLANK	08-14-96	<.1	<.1	.05	.05	--	--
BAILER BLANK	08-19-96	<.1	<.1	<.01	.03	--	--
BAILER BLANK	08-20-96	<.1	<.1	<.01	<.01	--	--

Barium dissolved (µg/L as Ba)	Beryllium, dissolved (µg/L as Be)	Cadmium, dissolved (µg/L as Cd)	Chromium, dissolved (µg/L as Cr)	Cobalt, dissolved (µg/L as Co)	Copper, dissolved (µg/L as Cu)	Iron, dissolved (µg/L as Fe)	Well no.
--	--	--	--	--	--	6	WB27E (d)
--	--	--	--	--	--	1,200	WB33A
--	--	--	--	--	--	25,000	WB34A
--	--	--	--	--	--	15	WB34B
--	--	--	--	--	--	2,100	WB35A
--	--	--	--	--	--	3,400	WB35B
--	--	--	--	--	--	5	WB35C
--	--	--	--	--	--	10	WB35C (d)
--	--	--	--	--	--	--	WB36A
--	--	--	--	--	--	--	WB36B
--	--	--	--	--	--	470	WB36C
--	--	--	--	--	--	1,500	WB37B
--	--	--	--	--	--	--	PUMP BLANK
--	--	--	--	--	--	--	BAILER BLANK
--	--	--	--	--	--	4	PUMP BLANK
--	--	--	--	--	--	<3	PUMP BLANK
--	--	--	--	--	--	<3	PUMP BLANK
--	--	--	--	--	--	<3	BAILER BLANK
--	--	--	--	--	--	5	BAILER BLANK
--	--	--	--	--	--	3	PUMP BLANK
--	--	--	--	--	--	8	BAILER BLANK
--	--	--	--	--	--	5	BAILER BLANK

Table 13. Seasonal-phase ground-water-quality data for the West Branch Canal Creek area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, dissolved (µg/L as Mn)	Molybdenum, dissolved (µg/L as Mo)	Nickel, dissolved (µg/L as Ni)	Silver, dissolved (µg/L as Ag)
Fourth Seasonal Sampling Period (August 1996)--Continued							
WB27E (d)	08-15-96	--	--	490	--	--	--
WB33A	08-20-96	--	--	410	--	--	--
WB34A	08-19-96	--	--	710	--	--	--
WB34B	08-20-96	--	--	380	--	--	--
WB35A	08-19-96	--	--	1,300	--	--	--
WB35B	08-20-96	--	--	1,100	--	--	--
WB35C	08-20-96	--	--	660	--	--	--
WB35C (d)	08-20-96	--	--	690	--	--	--
WB36A	08-19-96	--	--	--	--	--	--
WB36B	08-26-96	--	--	--	--	--	--
WB36C	08-20-96	--	--	560	--	--	--
WB37B	08-20-96	--	--	170	--	--	--
Quality-Assurance Samples							
PUMP BLANK	12-04-95	--	--	--	--	--	--
BAILER BLANK	12-04-95	--	--	--	--	--	--
PUMP BLANK	03-13-96	--	--	<1	--	--	--
PUMP BLANK	03-14-96	--	--	<1	--	--	--
PUMP BLANK	06-13-96	--	--	<1	--	--	--
BAILER BLANK	06-18-96	--	--	<1	--	--	--
BAILER BLANK	06-26-96	--	--	3	--	--	--
PUMP BLANK	08-14-96	--	--	<1	--	--	--
BAILER BLANK	08-19-96	--	--	1	--	--	--
BAILER BLANK	08-20-96	--	--	<1	--	--	--

Stron-tium, dis-solved (µg/L as Sr)	Vana-dium, dis-solved (µg/L as V)	Zinc, dis-solved (µg/L as Zn)	Tritium, Total (pCi/L)	Tritium, 2-Sigma (pCi/L)	Well no.
--	--	--	--		WB27E (d)
--	--	--	--		WB33A
--	--	--	--		WB34A
--	--	--	--		WB34B
--	--	--	--		WB35A
--	--	--	--		WB35B
--	--	--	--		WB35C
--	--	--	--		WB35C (d)
--	--	--	--		WB36A
--	--	--	--		WB36B
--	--	--	--		WB36C
--	--	--	--		WB37B
--	--	--	--		PUMP BLANK
--	--	--	--		BAILER BLANK
--	--	--	--		PUMP BLANK
--	--	--	--		PUMP BLANK
--	--	--	--		PUMP BLANK
--	--	--	--		BAILER BLANK
--	--	--	--		BAILER BLANK
--	--	--	--		PUMP BLANK
--	--	--	--		BAILER BLANK
--	--	--	--		BAILER BLANK

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996

[µg/L, micrograms per liter; (d), duplicate sample; (s), split sample; --, not detected; E, estimated; N, USGS National Water-Quality Laboratory; O, On-site laboratory; (t), triplicate sample; <, less than]

Well no.	Date	Time	Laboratory	1,1,2,2-Tetrachloroethane (µg/L)	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	1,2-Dichloroethane (µg/L)
First Seasonal Sampling Period (November-December 1995)								
DP-1A	12-14-95	1030	O	<2.0	<0.2	<0.2	<0.2	<0.2
DP-1A (d)	12-14-95	1030	O	<2.0	<.2	<.2	< 2	<.2
WB19E	11-30-95	1530	O	<.2	<.2	<.2	<.2	<.2
WB22B	11-29-95	1410	O	18	<.2	4.4	<.2	4.5
WB22D	11-27-95	1400	O	33	<.2	<.2	3.2	1.5
WB24B	11-27-95	1200	O	<2.0	<.2	<.2	<.2	<1.0
WB24E	11-30-95	1300	O	52	<.2	<.2	<.2	2.0
WB25C	11-28-95	1315	O	100	<.2	<.2	<.2	3.7
WB25C (s)	11-28-95	1315	N	64	<.2	.9	<.2	3.5
WB26B	11-29-95	1130	O	<2.0	<.2	<.2	<.2	<.2
WB26C	11-29-95	1140	O	<2.0	<.2	<.2	<.2	<.2
WB26D	11-29-95	1150	O	<2.0	<.2	<.2	<.2	1.0
WB26F	11-28-95	1300	O	32	<.2	<.2	<.2	1.7
WB27E	11-29-95	1115	O	21	<.2	<.2	<.2	<1.0
WB27E (s)	11-29-95	1115	N	23	<.2	.3	<.2	.9
WB35C	11-29-95	1600	O	230	<.2	<.2	<.2	<1.0
Second Seasonal Sampling Period (March-April 1996)								
DP-1A	03-13-96	900	O	<1.0	<0.2	<0.2	<0.2	<1 0
WB19B	03-25-96	1000	O	<.2	<.2	<.2	<.2	<.2
WB19E	03-12-96	1045	O	1.8	< 2	<.2	<.2	<.2
WB19E (d)	03-12-96	1045	O	1.7	<.2	<.2	<.2	<.2
WB19E (t)	03-12-96	1045	O	1.2	<.2	<.2	<.2	<.2
WB22B	03-22-96	1035	O	14	<.2	3.0	<.2	3.2
WB22D	03-12-96	1600	O	45	<.2	1.3	<.2	2.4
WB23B	03-25-96	1200	O	<1.0	<.2	<.2	<.2	<.2
WB23C	03-22-96	1100	O	<1.0	<.2	< 2	<.2	2.5
WB23D	03-14-96	1130	O	210	<.2	1.4	<1.0	6.1

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	<0.2	<1.0	4.5	<0.2	<0.2	DP-1A
<.2	<.2	<.2	<1.0	4.5	<.2	<.2	DP-1A (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19E
<.2	<.2	5.9	230	12	5.0	<1.0	WB22B
<.2	<.2	<.2	64	3.2	<2.0	<.2	WB22D
<.2	3.3	<.2	1.0	13	<.2	<1.0	WB24B
<.2	<.2	<5.0	78	2.9	<2.0	<.2	WB24E
<.2	<.2	<5.0	110	2.8	<.2	<.2	WB25C
<.2	<.2	3.9	71	2.8	.4	<.2	WB25C
<.2	<.2	<.2	1.0	<.2	<.2	<.2	WB26B
<.2	<.2	<.2	<1.0	2.2	<.2	<.2	WB26C
<.2	<.2	<.2	11	18	<.2	<1.0	WB26D
<.2	<.2	<5.0	51	<2.0	<.2	<.2	WB26F
<.2	<.2	<.2	32	<2.0	<.2	<.2	WB27E
<.2	<.2	1.3	32	1.3	<.2	<.2	WB27E (s)
<.2	<.2	<.2	17	<2.0	<.2	<.2	WB35C
<0.2	0.6	<0.2	<.5	4.6	<0.5	<1.0	DP-1A
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19E
<.2	<.5	<.2	.5	<.2	<.2	<.2	WB19E (d)
<.2	<.2	<.2	.6	<.2	<.2	<1.0	WB19E (t)
<.2	<.2	6.8	160	7.1	3.5	<.2	WB22B
<.2	<.5	8.5	160	6.1	.9	<1.0	WB22D
<.2	<.2	<.2	<.5	<.2	<.2	<1.0	WB23B
<.2	<.2	<1.0	23	2.2	.6	<1.0	WB23C
<.2	<.5	5.0	160	2.5	.6	<1.0	WB23D

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
First Seasonal Sampling Period (November-December 1995)--Continued								
DP-1A	12-14-95	O	<2.0	<0.2	<0.2	<0.2	<0.2	<0.2
DP-1A (d)	12-14-95	O	<2.0	<.2	<.2	<.2	<.2	<.2
WB19E	11-30-95	O	<.2	<.2	<1.0	<.2	<.2	<.2
WB22B	11-29-95	O	<2.0	<2.0	8.5	<.2	<.2	<.2
WB22D	11-27-95	O	<.2	13	40	<.2	<.2	<.2
WB24B	11-27-95	O	17	<.2	<.2	<.2	<.2	<.2
WB24E	11-30-95	O	<.2	18	59	<.2	<.2	<.2
WB25C	11-28-95	O	<.2	75	190	<1.0	<.2	<1.0
WB25C	11-28-95	N	<.2	50	130	.8	<.2	1.2
WB26B	11-29-95	O	<.2	<.2	<.2	<.2	<.2	<.2
WB26C	11-29-95	O	<.2	<.2	<.2	<.2	<.2	<.2
WB26D	11-29-95	O	<.2	<.2	<.2	<.2	<.2	<.2
WB26F	11-28-95	O	<.2	31	77	<1.0	<.2	<1.0
WB27E	11-29-95	O	<.2	25	44	<.2	<.2	<.2
WB27E (s)	11-29-95	N	<.2	27	44	.3	<.2	.3
WB35C	11-29-95	O	<.2	10	22	<.2	<.2	<.2
Second Seasonal Sampling Period (March-April 1996)--Continued								
DP-1A	03-13-96	O	5.0	<0.2	<0.2	<0.2	<1.0	<0.2
WB19B	03-25-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB19E	03-12-96	O	<.2	<.2	<1.0	<.2	<.2	<.2
WB19E (d)	03-12-96	O	<.2	<1.0	<1.0	<1.0	<1.0	<.2
WB19E (t)	03-12-96	O	<.2	<.2	<1.0	<1.0	<.2	<.2
WB22B	03-22-96	O	<1.0	1.5	8.1	<.2	<.2	<.2
WB22D	03-12-96	O	<.2	36	83	<.2	<.2	<.5
WB23B	03-25-96	O	<.2	<.2	<.2	<.2	<1.0	<.2
WB23C	03-22-96	O	<.2	<.2	3.3	<1.0	<.2	<.2
WB23D	03-14-96	O	<.2	110	320	<1.0	1.0	1.6

Toluene (µg/L)	Benzene (µg/L)	Chloro-benzene (µg/L)	Tri-chloro-fluoro-methane (µg/L)	Hexa-chloro-buta-diene (µg/L)	tert-Butyl-benzene (µg/L)	1,4-Di-chloro-benzene (µg/L)	Well no.
<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	DP-1A
<1.0	<.2	<.2	<1.0	<.2	<.2	<.2	DP-1A (d)
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB19E
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB22B
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB22D
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB24B
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB24E
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB25C
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB25C
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB26B
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB26C
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB26D
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB26F
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB27E
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB27E (s)
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB35C
2.3	1.4	<0.2	<1.0	<0.2	<0.2	<0.2	DP-1A
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB19B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19E
<1.0	<.2	<.2	<1.0	<.2	<.2	<.2	WB19E (d)
<1.0	<.2	<.2	<1.0	<.2	<.2	<.2	WB19E (t)
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB22B
<.2	<.2	<.2	<1.0	<.2	<1.0	<.2	WB22D
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB23B
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB23C
<.2	<.2	<.2	<1.0	<.2	<.2	0.6	WB23D

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Lab-ora-tory	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,1,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,1,1-Tri-chloro-ethane (µg/L)	1,2-Di-chloro-ethane (µg/L)
Second Seasonal Sampling Period (March-April 1996)--Continued								
WB23D (d)	03-14-96	1130	O	210	<0.2	1.3	<0.2	6.2
WB24A	03-18-96	1045	O	<1.0	<.2	<.2	<.2	<.2
WB24B	03-18-96	1045	O	1.4	<.2	<.2	<.2	<1.0
WB25C	03-12-96	1500	O	110	<.2	<1.0	<.2	3.6
WB25C (d)	03-12-96	1500	O	82	<.2	<1.0	<.2	3.5
WB25C (s)	03-12-96	1500	N	110	<.2	1.0	<.2	4.7
WB26B	03-26-96	1530	O	<1.0	<.2	<.2	<.2	<.2
WB26C	03-27-96	900	O	<1.0	<.2	<.2	<.2	<.2
WB26D	03-22-96	1030	O	<1.0	<.2	< 2	<.2	1.6
WB26F	03-13-96	1000	O	47	<.2	<.2	<.2	2.3
WB27B	03-21-96	1100	O	1.0	<.2	<.2	<.2	<.2
WB27C	03-29-96	1600	O	1.2	<.2	<.2	<.2	<1.0
WB27E	03-13-96	1000	O	40	<.2	<1.0	<.2	1.7
WB33A	04-03-96	1530	O	1,700	<.2	22	<.2	<1.0
WB34A	03-29-96	1400	O	1.9	<.2	<.2	<.2	1.0
WB34B	03-25-96	1515	O	390	<.2	6.5	<.2	<1.0
WB35A	03-29-96	1300	O	<1.0	<.2	7.8	<.2	2.1
WB35A (d)	03-29-96	1300	O	<1.0	<.2	8.2	<.2	2.2
WB35B	03-14-96	1500	O	220	<.2	27	<.2	<1.0
WB35B (d)	03-14-96	1500	O	220	<.2	29	<.2	<1.0
WB35C	03-14-96	1415	O	180	<.2	1.2	<.2	<1.0
WB35C (d)	03-14-96	1415	O	160	<.2	1.3	<.2	<1.0
WB36A	03-27-96	1300	O	2.7	<.2	<.2	<.2	7.4
WB36B	03-27-96	1300	O	2.6	<.2	<.2	<.2	15
WB36C	03-27-96	900	O	110	<.2	<1 0	<.2	<1.0
WB37B	03-26-96	1400	O	<.2	<.2	<.2	<.2	<.2
Third Seasonal Sampling Period (June 1996)								
DP-1A	06-13-96	1300	O	<1.0	<0.2	<0.2	<0.2	<0.2
WB19B	06-17-96	1500	O	<1.0	<.2	<.2	<.2	<.2

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	5.2	160	2.7	<0.5	<1.0	WB23D (d)
<.2	<.2	<.2	<.5	<.5	<.2	<1.0	WB24A
<.2	<.5	<.2	1.0	12	.7	<1.0	WB24B
<.2	<.5	4.5	100	2.5	<.5	<.2	WB25C
<.2	<.2	2.9	73	2.1	<.5	<.2	WB25C (d)
<.2	<.2	5.6	110	3.0	.4	<.2	WB25C (s)
<.2	<.5	<.2	<.2	<.5	<.5	<.2	WB26B
<.2	<.2	<.2	<.2	3.1	.5	<1.0	WB26C
<.2	<.5	<.2	11	24	2.9	<1.0	WB26D
<.2	<.2	2.3	60	2.5	.6	<1.0	WB26F
<1.0	<.2	<.2	6.0	13	.9	5.2	WB27B
<1.0	<.5	2.4	1.8	4.0	1.2	2.7	WB27C
<.2	<.2	4.5	78	2.3	.6	<.2	WB27E
<.2	<.2	<.2	64	17	18	<1.0	WB33A
<.2	<.5	<.2	<.5	9.1	.6	1.1	WB34A
<.2	<.2	2.1	25	11	2.7	<1.0	WB34B
<.2	<.2	<1.0	15	35	71	<1.0	WB35A
<.2	<.2	<1.0	15	36	77	<1.0	WB35A (d)
<.2	<.5	1.9	18	22	15	<1.0	WB35B
<.2	<.5	1.8	18	24	14	<1.0	WB35B (d)
<.2	<.2	<1.0	12	1.0	<.5	<1.0	WB35C
<.2	<.2	<1.0	10	.8	<.5	<1.0	WB35C (d)
<.2	<.2	<.2	2.4	7.4	4.8	<1.0	WB36A
<.2	<.2	<.2	4.4	6.7	18	<1.0	WB36B
<.2	<.2	<.2	4.7	<.2	<.2	<1.0	WB36C
<.2	<.2	<.2	<.2	3.0	<.2	<.2	WB37B
<0.2	<0.2	<0.2	<0.2	1.4	<0.2	<0.2	DP-1A
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19B

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
Second Seasonal Sampling Period (March-April 1996)--Continued								
WB23D (d)	03-14-96	O	<0.2	110	310	<1.0	<0.2	1.6
WB24A	03-18-96	O	1.1	<0.2	<1.0	<.2	<.2	<.2
WB24B	03-18-96	O	19	<.2	<.2	<.2	<.2	<.2
WB25C	03-12-96	O	<.2	82	210	<1.0	<.2	1.1
WB25C (d)	03-12-96	O	<.2	60	180	<1.0	<.2	.8
WB25C (s)	03-12-96	N	<.2	82	190	.9	<.2	1.4
WB26B	03-26-96	O	<1.0	<.2	<.2	<.2	<.2	<.2
WB26C	03-27-96	O	3.7	<.2	<.2	<.2	<.2	<.2
WB26D	03-22-96	O	<1.0	<.2	<.2	<.2	<1.0	<.2
WB26F	03-13-96	O	<.2	36	120	<1.0	<.2	.6
WB27B	03-21-96	O	<.2	<.2	<1.0	<.2	<.2	<.2
WB27C	03-29-96	O	<.2	<.2	1.4	<.2	<.2	.5
WB27E	03-13-96	O	<.2	48	81	<1.0	<.2	<.2
WB33A	04-03-96	O	8.1	<1.0	2.4	<.2	<.2	<.2
WB34A	03-29-96	O	97	<.2	<.2	<.2	<1.0	<.2
WB34B	03-25-96	O	<.2	5.6	14	<.2	<.2	<.2
WB35A	03-29-96	O	14	<.2	<1.0	<.2	1.0	<.2
WB35A (d)	03-29-96	O	14	<.2	<1.0	<.2	<.2	<.2
WB35B	03-14-96	O	<1.0	<.2	3.8	<.2	<.2	<.2
WB35B (d)	03-14-96	O	<.2	<.2	4.0	<.2	<.2	<.2
WB35C	03-14-96	O	<.2	8.2	18	<1.0	<.2	<.5
WB35C (d)	03-14-96	O	<.2	8.6	18	<.2	<.2	<.5
WB36A	03-27-96	O	8.4	<.2	<.2	<.2	<.2	<.2
WB36B	03-27-96	O	1.4	<.2	<.2	<1.0	<1.0	<.2
WB36C	03-27-96	O	<.2	9.5	20	<.2	<.2	<.5
WB37B	03-26-96	O	6.6	<.2	<.2	<.2	<1.0	<.2
Third Seasonal Sampling Period (June 1996)--Continued								
DP-1A	06-13-96	O	1.6	<0.2	<0.2	<0.2	<0.2	<0.2
WB19B	06-17-96	O	<.2	<.2	<.2	<.2	<.2	<.2

Toluene (µg/L)	Benzene (µg/L)	Chloro-benzene (µg/L)	Tri-chloro-fluoro-methane (µg/L)	Hexa-chloro-buta-diene (µg/L)	tert-Butyl-benzene (µg/L)	1,4-Di-chloro-benzene (µg/L)	Well no.
<0.2	<1.0	<0.2	<1.0	<0.2	<0.2	0.5	WB23D (d)
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB24A
<.2	1.5	<.2	<1.0	<.2	<.2	<.2	WB24B
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB25C
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB25C (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB25C (s)
<.2	<1.0	<.2	<1.0	<2.0	<.2	<.5	WB26B
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB26C
<.2	2.6	<.2	<1.0	<.2	<.2	<.2	WB26D
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB26F
<.2	<1.0	<.2	<1.0	<2.0	<1.0	<.2	WB27B
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB27C
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB27E
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB33A
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB34A
<.2	<.2	<.2	<1.0	<.2	<1.0	<.2	WB34B
<1.0	<1.0	<.2	<.2	<.2	<.2	<.2	WB35A
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB35A (d)
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB35B
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB35B (d)
<.2	<1.0	<.2	<1.0	<.2	<1.0	<.2	WB35C
<.2	<1.0	<.2	<1.0	<.2	<1.0	<.2	WB35C (d)
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	WB36A
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB36B
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB36C
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB37B
8.5	<1.0	<0.2	<1.0	<0.2	<0.2	<0.2	DP-1A
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB19B

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Laboratory	1,1,2,2-Tetrachloroethane (µg/L)	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	1,2-Dichloroethane (µg/L)
Third Seasonal Sampling Period (June 1996)--Continued								
WB19E	06-07-96	1030	O	<1.0	<0.2	<0.2	<0.2	<0.2
WB22B	06-20-96	900	O	18	<.2	3.9	<.2	3.2
WB22D	06-17-96	1400	O	51	<.2	1.3	<.2	2.3
WB23B	06-20-96	1000	O	1.0	<.2	<.2	<.2	<.2
WB23C	06-26-96	1000	O	2.0	<.2	<.2	<.2	1.8
WB23D	06-17-96	1000	O	210	<.2	1.3	<.2	6.0
WB24A	06-26-96	1000	O	<1.0	<.2	<.2	<.2	<.2
WB24B	06-18-96	1100	O	<.2	<.2	<.2	< 2	<1.0
WB24E	06-18-96	900	O	38	<.2	<1.0	<.2	1.7
WB25C	06-11-96	1300	O	120	<.2	1.0	<.2	4.0
WB25C (d)	06-11-96	1300	O	130	<.2	1.2	<.2	4.0
WB25C (s)	06-11-96	1300	N	100	<.2	1.0	<.2	4.7
WB26B	06-21-96	1100	O	1.2	<.2	<.2	<.2	<.2
WB26C	06-17-96	1100	O	1.2	<.2	<.2	<.2	<.2
WB26D	06-17-96	1200	O	1.7	<.2	<.2	<.2	1.4
WB26F	06-13-96	1100	O	85	<.2	1.2	<.2	2.7
WB26F (d)	06-13-96	1100	O	88	<.2	1.5	<.2	2.8
WB27B	06-13-96	1300	O	1.3	<.2	<.2	<.2	<.2
WB27C	06-17-96	900	O	2.2	<.2	<.2	<.2	<.2
WB27E	06-13-96	830	O	45	<.2	<1.0	<.2	1.6
WB28F	06-13-96	1440	O	19	1.4	1.8	<.2	3.2
WB28F (d)	06-17-96	1000	O	26	2.4	3.0	<.2	3.6
WB33A	06-20-96	1300	O	1,600	<.2	21	<.2	<1.0
WB34A	06-20-96	1000	O	4.0	<.2	<.2	<.2	<1.0
WB34B	06-20-96	1100	O	E500	<.2	5.1	<.2	<1.0
WB35A	06-18-96	1500	O	3.8	<.2	9.9	< 2	1.7
WB35B	06-21-96	1200	O	280	<.2	35	<.2	<1.0
WB35C	06-18-96	1430	O	120	<.2	1.0	<.2	<1.0
WB35C (d)	06-18-96	1430	O	140	<.2	1.2	<.2	.6
WB35C (s)	06-18-96	1430	N	140	<.2	1.6	<.2	.6
WB36A	06-20-96	1430	O	1.6	<.2	<.2	<.2	5.4
WB36B	06-21-96	1500	O	1.3	<.2	<.2	<.2	9.9

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB19E
<.2	<.2	5.8	130	9.4	4.5	<1.0	WB22B
<.2	<.2	6.4	120	4.5	<.5	<.2	WB22D
<.2	<.2	<.2	<.5	<.2	<.2	<.2	WB23B
<.2	<.2	<1.0	36	2.6	<.5	<.2	WB23C
<.2	<.2	5.2	130	2.6	<.5	<.2	WB23D
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB24A
<.2	<.2	<.2	.5	13	<.5	<1.0	WB24B
<.2	<.2	3.6	66	2.5	<.5	<.2	WB24E
<.2	<.2	4.5	95	2.8	<.5	<.2	WB25C
<.2	<.2	4.6	97	2.9	<.5	<.2	WB25C (d)
<.2	<.2	5.7	120	3.2	.4	<.2	WB25C (s)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB26B
<.2	<.2	<.2	<.2	2.7	<.5	<1.0	WB26C
<.2	<.2	<.2	8.7	26	1.3	<1.0	WB26D
<.2	<.2	6.7	120	4.2	<.5	<.2	WB26F
<.2	<.2	7.1	150	4.1	.5	<.2	WB26F (d)
<1.0	<.2	<.2	2.3	5.9	<.5	1.6	WB27B
<.2	<.2	2.0	1.5	2.7	.9	1.5	WB27C
<.2	<.2	5.6	79	2.8	<.5	<.2	WB27E
<1.0	<.2	9.8	19	1.1	<.5	<.2	WB28F
<1.0	<.2	19	28	1.4	<.5	<.2	WB28F (d)
<.2	<.2	1.6	36	13	10	<1.0	WB33A
<.2	<.2	<.2	<.5	6.0	<.5	<.2	WB34A
<.2	<.2	1.7	20	11	2.4	<.2	WB34B
<.2	<.2	<1.0	20	45	72	<1.0	WB35A
<.2	<.2	1.8	16	30	26	<.2	WB35B
<.2	<.2	<1.0	10	.9	<.5	<.2	WB35C
<.2	<.2	<1.0	9.3	.9	<.5	<.2	WB35C (d)
<.2	<.2	.8	16	1.3	.3	<.2	WB35C (s)
<.2	<.2	<.2	1.5	4.7	2.5	<1.0	WB36A
<.2	<.2	<.2	2.6	3.8	8.8	<.2	WB36B

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
Third Seasonal Sampling Period (June 1996)--Continued								
WB19E	06-07-96	O	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
WB22B	06-20-96	O	<1.0	1.7	11	<.2	<1.0	<.2
WB22D	06-17-96	O	<.2	33	110	<1.0	<.2	.5
WB23B	06-20-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB23C	06-26-96	O	<.2	<.2	3.7	<1.0	<.2	<.2
WB23D	06-17-96	O	<.2	88	E330	1.1	<.2	1.8
WB24A	06-26-96	O	<1.0	<.2	<.2	<.2	<.2	<.2
WB24B	06-18-96	O	19	<.2	<.2	<.2	<.2	<.2
WB24E	06-18-96	O	<.2	18	74	<1.0	<1.0	<.5
WB25C	06-11-96	O	<.2	72	230	<1.0	<.2	1.0
WB25C (d)	06-11-96	O	<.2	74	230	<1.0	<.2	1.1
WB25C (s)	06-11-96	N	<.2	87	250	.9	<.2	1.2
WB26B	06-21-96	O	<.2	<.2	<.2	<.2	<1.0	<.2
WB26C	06-17-96	O	2.0	<.2	<.2	<.2	<1.0	<.2
WB26D	06-17-96	O	<.2	<.2	<1.0	<.2	<.2	<.2
WB26F	06-13-96	O	<.2	62	150	<1.0	<.2	.8
WB26F (d)	06-13-96	O	<.2	70	150	<1.0	<.2	.7
WB27B	06-13-96	O	<.2	<.2	<1.0	<.2	<.2	<.2
WB27C	06-17-96	O	<.2	<.2	1.0	<.2	<1.0	<.2
WB27E	06-13-96	O	<.2	50	82	<1.0	<.2	<.5
WB28F	06-13-96	O	<.2	190	1,200	19	<.2	1.5
WB28F (d)	06-17-96	O	<.2	260	1,200	19	<.2	2.0
WB33A	06-20-96	O	3.6	<1.0	2.3	<.2	<.2	<.2
WB34A	06-20-96	O	27	<.2	<.2	<.2	<.2	<.2
WB34B	06-20-96	O	<.2	5.1	14	<.2	<.2	<.2
WB35A	06-18-96	O	27	<.2	<1.0	<.2	<.2	<.2
WB35B	06-21-96	O	<1.0	<.2	4.0	<.2	<1.0	<.2
WB35C	06-18-96	O	<.2	7.0	27	<1.0	<1.0	<.2
WB35C (d)	06-18-96	O	<.2	6.4	25	<1.0	<.2	<.5
WB35C (s)	06-18-96	N	<.2	10	20	<.2	<.2	.2
WE36A	06-20-96	O	4.9	<.2	<.2	<.2	<.2	<.2
WB36B	06-21-96	O	1.4	<.2	<.2	<.2	<.2	<.2

Toluene (µg/L)	Benzene (µg/L)	Chloro-benzene (µg/L)	Tri-chloro-fluoro-methane (µg/L)	Hexa-chloro-buta-diene (µg/L)	tert-Butyl-benzene (µg/L)	1,4-Di-chloro-benzene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB19E
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB22B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB22D
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB23B
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB23C
<.2	<.2	<.2	<.2	<.2	<.2	<.5	WB23D
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB24A
<.2	1.8	<.2	<.2	<.2	<.2	<.2	WB24B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB24E
<.2	2.8	<.2	<.2	<.2	<.2	<.2	WB25C
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB25C (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB25C (s)
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB26B
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB26C
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB26D
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB26F
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB26F (d)
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB27B
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB27C
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	WB27E
<.2	<1.0	<.2	<1.0	<.2	<1.0	<.2	WB28F
<.2	<1.0	<.2	<.2	<.2	2.3	<.2	WB28F (d)
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB33A
<.2	<1.0	<.2	<1.0	<.2	<.2	<.2	WB34A
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB34B
<.5	<1.0	<.2	<.2	<.2	<.2	<.2	WB35A
<.5	<1.0	<.2	<.2	<.2	<.2	<.2	WB35B
<.5	<.2	<.2	<1.0	<.2	<.2	<.2	WB35C
<.2	<.2	<.2	<1.0	<.2	<1.0	<.2	WB35C (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB35C (s)
<.5	<.2	<.2	<.2	<.2	<.2	<.2	WB36A
<.2	<1.0	<.2	<.2	<.2	<.2	<.2	WB36B

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Laboratory	1,1,2,2-Tetrachloroethane (µg/L)	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	1,2-Dichloroethane (µg/L)
Third Seasonal Sampling Period (June 1996)--Continued								
WB36C	06-21-96	1530	O	89	<0.2	<1.0	<0.2	<1.0
WB37B	06-20-96	1130	O	<.2	<.2	<.2	<.2	<.2
Fourth Seasonal Sampling Period (August 1996)								
CC27A	08-20-96	1300	O	4,300	<1.0	18	<0.2	<0.5
DP-1A	08-15-96	1330	O	.8	<.2	<.2	<.2	<.5
DP-1A (d)	08-15-96	1330	O	.5	<.2	<.2	<.2	<.5
WB19B	08-15-96	1130	O	.9	<.2	<.2	<.2	<.2
WB19E	08-12-96	930	O	<.5	<.2	<.2	<.2	<.2
WB22B	08-19-96	1100	O	15	<.2	2.5	<.2	2.7
WB22B (d)	08-19-96	1100	O	14	<.2	2.9	<.2	3.5
WB22D	08-16-96	930	O	52	<.2	<.5	<.2	4.8
WB23B	08-28-96	1500	O	<.2	<.2	<.2	<.2	<.2
WB23C	08-19-96	1445	O	.7	<.2	<.2	<.2	1.3
WB23D	08-16-96	1430	O	130	<.2	.6	<.2	4.8
WB24A	08-15-96	1130	O	1.0	<.2	<.2	<.2	<.2
WB24A (d)	08-15-96	1130	O	3.4	<.2	<.2	<.2	<.2
WB24B	08-16-96	1400	O	81	<.2	.7	<.2	2.6
WB24E	08-19-96	1130	O	56	<.2	<.2	<.2	3.0
WB25C	08-14-96	930	O	93	<.2	<.5	<.2	5.1
WB25C (d)	08-14-96	930	O	100	<.2	<.2	<.2	4.4
WB25C (s)	08-14-96	930	N	100	<.2	.9	<.2	3.9
WB26B	08-19-96	1330	O	1.0	<.2	<.2	<.2	<.2
WB26B (d)	08-19-96	1330	O	1.0	<.2	<.2	<.2	<.2
WB26C	08-15-96	1030	O	.7	<.2	<.2	<.2	<.2
WB26C (d)	08-15-96	1030	O	<.5	<.2	<.2	<.2	<.2
WB26D	08-19-96	1145	O	<.2	<.2	<.2	<.2	2.0
WB26F	08-15-96	1345	O	198	<.2	1.6	<.2	6.7
WB27B	08-19-96	900	O	.9	<.2	<.2	<.2	<.2
WB27C	08-19-96	1000	O	.5	<.2	<.2	<.2	<.5
WB27E	08-15-96	1015	O	34	<.2	<.2	<.2	1.5
WB27E (d)	08-15-96	1015	O	51	<.2	<.2	<.2	1.8

1,1-Dichloroethane (µg/L)	Chloroethane (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	*cis*-1,2-Dichloroethene (µg/L)	*trans*-1,2-Dichloroethene (µg/L)	1,1-Dichloroethene (µg/L)	Well no.
<0.2	<0.2	<1.0	7.4	<.5	<0.2	<0.2	WB36C
<.2	<.2	<.2	<.2	1.6	<.2	<.2	WB37B
<0.2	<0.2	16	300	64	18	1.0	CC27A
<.2	<.2	<.2	<.2	6.6	<.2	<.2	DP-1A
<.2	<.2	<.2	<.2	8.4	<.2	<.2	DP-1A (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19E
<.2	<.2	2.4	93	6.9	3.2	2.2	WB22B
<.2	<.2	2.7	130	8.6	4.1	<.2	WB22B (d)
<.2	<.2	7.6	180	5.4	.5	<.2	WB22D
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB23B
<.2	<.2	<.5	37	2.4	.5	<.2	WB23C
<.2	<.2	7.1	140	2.9	<.5	<.2	WB23D
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB24A
<.2	<.2	<.2	<.5	<.2	<.2	<.2	WB24A (d)
<.2	<.2	4.3	160	4.1	<.5	<.2	WB24B
<.2	<.2	4.0	150	4.3	<.5	<.2	WB24E
<.2	<.2	5.8	140	3.6	<.2	<.2	WB25C
<.2	<.2	5.4	131	3.0	<.5	<.2	WB25C (d)
<.2	<.2	5.1	E110	4.1	.6	<.2	WB25C (s)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB26B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB26B (d)
<.2	<.2	<.2	<.2	4.7	<.5	<.2	WB26C
<.2	<.2	<.2	<.2	4.1	<.5	<.2	WB26C (d)
<.2	<.2	<.2	2.2	47	1.9	<.5	WB26D
<.2	<.2	14	E320	7.6	.9	<.2	WB26F
<.5	<.2	<.2	3.4	14	<.5	1.8	WB27B
<.5	<.2	1.4	2.4	6.2	1.1	2.4	WB27C
<.2	<.2	7.0	120	3.2	<.5	<.2	WB27E
<.2	<.2	6.2	130	3.8	<.5	<.2	WB27E (d)

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Lab-ora-tory	Vinyl chlo-ride (µg/L)	Carbon tetra-chlo-ride (µg/L)	Chloro-form (µg/L)	Methyl-ene chlo-ride (µg/L)	Methyl chlo-ride (µg/L)	Bromo-di-chloro-methane (µg/L)
Third Seasonal Sampling Period (June 1996)--Continued								
WB36C	06-21-96	O	<0.2	11	27	<0.2	<0.2	<0.5
WB37B	06-20-96	O	4.2	<.2	<1.0	<.2	<.2	<.2
Fourth Seasonal Sampling Period (August 1996)--Continued								
CC27A	08-20-96	O	5.3	4.4	5.3	<0.2	<0.2	<0.2
DP-1A	08-15-96	O	6.5	<.2	<.2	<.2	<.2	<.2
DP-1A (d)	08-15-96	O	9.1	<.2	<.2	<.2	<.2	<.2
WB19B	08-15-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB19E	08-12-96	O	<.2	<.2	<.5	<.2	<.2	<.2
WB22B	08-19-96	O	<.5	<.5	5.4	<.2	<.2	<.2
WB22B (d)	08-19-96	O	<.5	<.5	7.0	<.2	<.2	<.2
WB22D	08-16-96	O	<.2	43	92	<.5	<.2	<.5
WB23B	08-28-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB23C	08-19-96	O	<.2	<.2	2.5	<.2	<.2	<.2
WB23D	08-16-96	O	<.2	150	310	.9	<.2	<.5
WB24A	08-15-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB24A (d)	08-15-96	O	<.2	<.2	1.5	<.2	<.2	<.2
WB24B	08-16-96	O	<.2	43	110	<.5	<.2	.6
WB24E	08-19-96	O	<.2	57	130	<.5	<.2	.5
WB25C	08-14-96	O	<.2	140	220	.9	<.2	1.2
WB25C (d)	08-14-96	O	<.2	110	230	.7	<.2	1.0
WB25C (s)	08-14-96	N	<.2	E77	E230	1.4	<.2	1.7
WB26B	08-19-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB26B (d)	08-19-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB26C	08-15-96	O	2.4	<.2	<.2	<.2	<.2	<.2
WB26C (d)	08-15-96	O	2.6	<.2	<.2	<.2	<.2	<.2
WB26D	08-19-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB26F	08-15-96	O	<.2	160	290	1.1	<.2	1.5
WB27B	08-19-96	O	<.2	<.2	<.5	<.2	<.2	<.2
WB27C	08-19-96	O	<.2	<.2	1.0	<.2	<.2	<.2
WB27E	08-15-96	O	<.2	76	88	<.5	<.2	<.5
WB27E (d)	08-15-96	O	<.2	77	97	<.5	<.2	<.2

Toluene (µg/L)	Benzene (µg/L)	Chloro-benzene (µg/L)	Tri-chloro-fluoro-methane (µg/L)	Hexa-chloro-buta-diene (µg/L)	tert-Butyl-benzene (µg/L)	1,4-Di-chloro-benzene (µg/L)	Well no.
<0.2	<0.2	<0.2	<1.0	<0.2	<0.2	<0.2	WB36C
<.2	1.0	<.2	<1.0	<.2	<.2	<.2	WB37B
6	0.9	<0.2	<0.2	<0.2	5.0	<0.2	CC27A
<.2	<.2	<.2	<.2	<.2	<.2	<.2	DP-1A
<.2	<.2	<.2	<.5	<.2	<.2	<.2	DP-1A (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB19E
2.5	3.1	2.6	<.5	<.2	<.2	<.2	WB22B
<.2	<.5	<.2	<.2	<.2	<.2	<.2	WB22B (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB22D
<.2	.8	<.2	<.2	<.2	<.2	<.2	WB23B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB23C
<.2	<.5	<.2	<.5	1.4	<1.0	<1.0	WB23D
<.2	<.5	<.2	<.5	<.2	<.2	<.2	WB24A
<.2	<.5	<.2	<.2	<.2	<.2	<.2	WB24A (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB24B
<.2	<.5	<.2	<.5	<.2	<.2	<.2	WB24E
<.2	<.2	<.2	<.5	<.2	<.2	<.2	WB25C
<.2	<.2	<.2	<.5	1.9	<.2	<1.0	WB25C (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB25C (s)
<.2	.6	<.2	<.2	<.2	<.2	<.2	WB26B
<.2	<.5	<.2	<.5	<.2	<.2	<.2	WB26B (d)
<.2	.8	<.2	<.5	<.2	<.2	<.2	WB26C
<.2	.7	<.2	<.2	<.2	<.2	<.2	WB26C (d)
<.2	4.1	<.2	<.5	<.2	<.2	<.2	WB26D
<.2	<.2	<.2	<.5	<.2	<.2	<.2	WB26F
<.2	<.5	<.2	<.2	<.2	<.2	<.2	WB27B
<.2	.8	<.2	<.2	<.2	<.2	<.2	WB27C
<.2	<.2	<.2	<.5	<.2	<.2	<.2	WB27E
<.2	<.2	<.2	<.5	<.2	<.2	<.2	WB27E (d)

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Time	Lab-ora-tory	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,1,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,1,1-Tri-chloro-ethane (µg/L)	1,2-Di-chloro-ethane (µg/L)
Fourth Seasonal Sampling Period (August 1996)--Continued								
WB27E (s)	08-15-96	1015	N	37	<0.2	0.7	<0.2	1.7
WB28F			O	63	3.2	2.0	<.2	5.1
WB33A	08-20-96	1445	O	2,440	<.2	21	<.2	<.5
WB34B	08-20-96	1430	O	500	<.2	4.6	<.2	<.2
WB35A	08-19-96	1600	O	2.7	<.2	1.8	<.2	2.0
WB35B	08-20-96	1530	O	200	<.2	36	<.2	<.5
WB35C	08-20-96	900	O	220	<.2	1.5	<.2	.5
WB35C (d)	08-20-96	900	O	180	<.2	1.2	<.2	.6
WB35C (s)	08-20-96	900	N	130	<.2	1.4	<.2	.6
WB36A	08-19-96	1500	O	10	<.2	<.2	<.2	5.7
WB36B	08-26-96	1100	O	2.8	<.2	<.2	<.5	17
WB36C	08-20-96	930	O	96	<.2	<.2	<.2	.5
WB37B	08-20-96	900	O	<.2	<.2	<.2	<.2	<.2
WB37B (d)	08-20-96	900	O	1.8	<.2	<.2	<.2	<.2
Quality-Assurance Samples								
PUMP BLANK	03-13-96	1130	O	11	<0.2	<0.2	<0.2	<0.2
PUMP BLANK	03-14-96	1530	O	35	<.2	<.2	<.2	<.2
TRIP BLANK	03-18-96	1100	O	1.3	<.2	<.2	<.2	<.2
AMBIENT BLANK	03-18-96	1315	O	<.2	<.2	<.2	<.2	<.2
BAILER BLANK	03-29-96	1300	O	1.7	<.2	<.2	<.2	< 2
BAILER BLANK	06-18-96	1100	O	<.2	<.2	<.2	<.2	<.2
PUMP BLANK (d)	06-13-96	1400	O	<1.0	<.2	<.2	<.2	<.2
PUMP BLANK	06-13-96	1400	O	4.5	<.2	<.2	<.2	<.2
PUMP BLANK (d)	06-13-96	1400	O	2.9	<.2	<.2	<.2	<.2
BAILER BLANK	06-26-96	1100	O	<1.0	<.2	<.2	<.2	<.2
PUMP BLANK	08-14-96	1330	O	5.3	<.2	<.2	<.2	<.5
PUMP BLANK (d)	08-14-96	1330	O	5.6	<.2	<.2	<.2	<.5
BAILER BLANK	08-19-96	1400	O	<.5	<.2	<.2	<.2	<.2
TRIP BLANK	08-19-96	1415	O	<.5	<.2	<.2	<.2	<.2
BAILER BLANK	08-20-96	1500	O	<.2	<.2	<.2	<.2	<.2

1,1-Di-chloro-ethane (µg/L)	Chloro-ethane (µg/L)	Tetra-chloro-ethene (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)	*trans*-1,2-Di-chloro-ethene (µg/L)	1,1-Di-chloro-ethene (µg/L)	Well no.
<0.2	<0.2	6.2	E96	4.8	0.7	<0.2	WB27E (s)
<.2	<.2	12	32	1.8	1.3	<.2	WB28F
<.2	<.2	1.9	75	24	21	<.2	WB33A
<.2	<.2	1.4	<.2	11	2.6	<.2	WB34B
<.2	<.2	<.2	13	30	42	<.5	WB35A
<.2	<.2	2.0	25	33	47	<.2	WB35B
<.2	<.2	<.5	11	.7	<.2	<.2	WB35C
<.2	<.2	.6	11	.8	<.2	<.2	WB35C (d)
<.2	<.2	.6	8.9	.9	.2	<.2	WB35C (s)
<.2	<.2	<.2	2.2	4.7	2.6	<.2	WB36A
<.2	<.2	<.2	4.7	6.5	14	<.2	WB36B
<.2	<.2	<.2	8.6	<.2	<.2	<.2	WB36C
<.2	<.2	<.2	<.2	.8	<.2	<.2	WB37B
<.2	<.2	<.2	<.2	1.0	<.2	<.2	WB37B (d)
<0.2	<0.5	<1.0	12	<0.5	<0.5	<1.0	PUMP BLANK
<.2	<.2	<.2	3.4	<.5	<.2	<.2	PUMP BLANK
<.2	<.2	<.2	<.5	<.2	<.5	<.2	TRIP BLANK
<.2	<.2	<.2	<.2	<.2	<.2	<1.0	AMBIENT BLANK
<.2	<.2	<.2	<.5	<.2	<.5	<1.0	BAILER BLANK
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	--	<.5	<.2	--	PUMP BLANK (d)
<1.0	<.2	<.2	12	<.5	<.2	<.2	PUMP BLANK
<1.0	<.2	<.2	13	<.5	<.2	<.2	PUMP BLANK (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	15	<.5	<.2	<.2	PUMP BLANK
<.2	<.2	<.2	15	<.2	<.2	<.2	PUMP BLANK (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	<.2	<.2	<.2	<.2	TRIP BLANK
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK

Table 14. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, November 1995 to August 1996--Continued

Well no.	Date	Laboratory	Vinyl chloride (µg/L)	Carbon tetrachloride (µg/L)	Chloroform (µg/L)	Methylene chloride (µg/L)	Methyl chloride (µg/L)	Bromodichloromethane (µg/L)
Fourth Seasonal Sampling Period (August 1996)--Continued								
WB27E (s)	08-15-96	N	<0.2	E68	E90	0.7	<0.2	0.7
WB28F		O	<.2	420	2,000	23	<.2	2.4
WB33A	08-20-96	O	5.5	<.2	3.3	<.2	<.2	<.2
WB34B	08-20-96	O	<.2	5.0	12	<.2	<.2	<.2
WB35A	08-19-96	O	16	<.2	<.2	<.2	<.2	<.2
WB35B	08-20-96	O	.8	<.2	3.0	<.2	<.2	<.2
WB35C	08-20-96	O	<.2	6.4	15	<.2	<.2	<.2
WB35C (d)	08-20-96	O	<.2	6.0	15	<.2	<.2	<.2
WB35C (s)	08-20-96	N	<.2	E6.2	14	<.2	<.2	<.2
WB36A	08-19-96	O	4.0	<.2	<.2	<.2	<.2	<.2
WB36B	08-26-96	O	2.2	<.2	<.2	<.2	<.2	<.2
WB36C	08-20-96	O	<.2	12	25	<.2	<.2	<.2
WB37B	08-20-96	O	<.2	<.2	<.2	<.2	<.2	<.2
WB37B (d)	08-20-96	O	<.2	<.2	<.2	<.2	<.2	<.2
Quality-Assurance Samples								
PUMP BLANK	03-13-96	O	<0.2	4.7	11	<1.0	<0.2	<0.2
PUMP BLANK	03-14-96	O	<.2	1.8	3.8	<1.0	<.2	<.2
TRIP BLANK	03-18-96	O	<.2	<.2	<.2	<1.0	<1.0	<.2
AMBIENT BLANK	03-18-96	O	<.2	<.2	<.2	<1.0	<.2	<.2
BAILER BLANK	03-29-96	O	<.2	<.2	<.2	<1.0	<.2	<.2
BAILER BLANK	06-18-96	O	<.2	<.2	<1.0	<1.0	<.2	<.2
PUMP BLANK (d)	06-13-96	O	<.2	4.3	14	<1.0	<1.0	<.2
PUMP BLANK	06-13-96	O	<.2	4.5	16	<1.0	<.2	<.2
PUMP BLANK (d)	06-13-96	O	<.2	4.5	14	<1.0	<.2	<.2
BAILER BLANK	06-26-96	O	<.2	<.2	<.2	<1.0	<1.0	<.2
PUMP BLANK	08-14-96	O	<.2	8.5	21	<.5	<.2	<.2
PUMP BLANK (d)	08-14-96	O	<.2	9.5	23	.6	<.2	<.2
BAILER BLANK	08-19-96	O	<.2	<.2	<.5	<.5	<.2	<.2
TRIP BLANK	08-19-96	O	<.2	<.2	<.5	.6	<.2	<.2
BAILER BLANK	08-20-96	O	<.2	<.2	<.2	<.5	<.2	<.2

Toluene (µg/L)	Benzene (µg/L)	Chloro-benzene (µg/L)	Tri-chloro-fluoro-methane (µg/L)	Hexa-chloro-buta-diene (µg/L)	tert-Butyl-benzene (µg/L)	1,4-Di-chloro-benzene (µg/L)	Well no.
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	WB27E (s)
<.2	<.2	<.2	<.2	<.2	3.4	<.2	WB28F
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB33A
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB34B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB35A
<.5	<.2	<.2	<.2	<.2	<.2	<.2	WB35B
<.2	<.2	<.2	<.2	<.2	<1.0	<.2	WB35C
<.2	<.2	<.2	.6	<.2	<.2	<.2	WB35C (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB35C (s)
<.2	<.5	<.2	<.2	<.2	<.2	<.2	WB36A
<.2	<.5	<.2	<.5	<.2	<.2	<.2	WB36B
<.2	<.2	<.2	<.2	<.2	<.2	<.2	WB36C
<.2	<.5	<.2	<.5	<.2	<.2	<.2	WB37B
<.2	.5	<.2	<.5	<.5	<1.0	<.2	WB37B (d)
<0.2	<0.2	<0.2	<1.0	<2.0	<0.2	<0.2	PUMP BLANK
<.2	<.2	<.2	<1.0	<.2	<1.0	<.2	PUMP BLANK
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	TRIP BLANK
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	AMBIENT BLANK
<1.0	<1.0	<.2	<1.0	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	PUMP BLANK (d)
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	PUMP BLANK
<.2	<.2	<.2	<1.0	<.2	<.2	<.2	PUMP BLANK (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	<.5	<.2	<.2	<.2	PUMP BLANK
<.2	<.2	<.2	<.5	<.5	<.2	<.2	PUMP BLANK (d)
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK
<.2	<.2	<.2	<.5	<.2	<.2	<.2	TRIP BLANK
<.2	<.2	<.2	<.2	<.2	<.2	<.2	BAILER BLANK

Table 15. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland-- Redox-sensitive constituents, November 1995 to August 1996

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, not analyzed for; all sulfide analyzed using Chemetrics kit; <, less than]

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Ammonium (mg/L)	Nitrate, dissolved (mg/L as NO_3)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
First Seasonal Sampling Period (November-December 1995)									
DP-1A	12-15-95	40	2.57	--	--	<0.01	<0.01	<10	1,900
WB19B	12-04-95	--	0.00	--	--	--	--	<10	--
WB19E	11-30-95	<1	5.87	--	--	<.01	<.01	<10	<35
WB22B	11-30-95	11	--	--	--	8.38	8.39	<10	320
WB22D	11-27-95	5	2.71	--	--	<.01	<.01	<10	<26
WB24B	11-27-95	144	.31	--	--	4.49	4.50	170	9,400
WB24E	12-04-95	--	3.14	--	--	.06	.07	<10	<23
WB25C	11-28-95	--	.90	--	--	<.01	<.01	10	<24
WB26B	12-04-95	--	--	--	--	1.24	1.24	--	--
WB26C	11-30-95	--	--	--	--	.93	.93	250	4,400
WB26D	11-30-95	195	--	--	--	<.01	.04	70	110
WB26F	11-28-95	<1	1.68	--	--	<.01	<.01	<10	<21
WB27B	12-04-95	--	--	--	--	1.33	1.32	<10	280
WB27E	11-29-95	4	.82	--	--	<.01	<.01	<10	<31
WB33A	12-15-95	--	--	--	--	1.52	1.58	--	--
WB35C	11-29-95	<1	1.21	--	--	<.01	<.01	<10	<27
WB38H	11-29-95	--	--	--	--	<.01	<.01	--	--
Second Seasonal Sampling Period (March-April 1996)									
DP-1A	03-19-96	266	0.00	--	--	49.4	49.4	<10	8,700
WB19B	03-18-96	198	.00	--	--	9.48	9.46	<10	12,000
WB19E	03-12-96	3	5.80	--	--	<.01	<.01	--	<30
WB22B	03-18-96	6	1.45	--	--	4.76	5.99	<10	150
WB22D	03-12-96	9	1.30	--	--	<.01	<.01	<10	<23
WB23B	03-18-96	323	--	--	--	23.0	23.0	<10	3,400
WB23C	03-18-96	130	--	--	--	.02	.03	<10	<29
WB23D	03-14-96	<1	.33	--	--	<.01	<.01	<10	<25
WB24A	03-14-96	--	--	--	--			--	3,300
WB24B	03-12-96	132	.40	--	--	4.90	4.90	250	110

Table 15. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, November 1995 to August 1996--Continued

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Ammonium (mg/L)	Nitrate, dissolved (mg/L as NO_3)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
Second Seasonal Sampling Period (March-April 1996)--Continued									
WB25C	03-12-96	<1	0.56	--	--	<0.01	<0.01	<10	<29
WB26B	03-26-96	378	1.94	--	--	.50	.50	30	9,800
WB26C	03-18-96	189	2.20	--	--	.98	1.02	660	5,200
WB26D	03-22-96	158	3.14	--	--	1.75	1.75	<10	<28
WB26F	03-13-96	<1	1.01	--	--	.02	.02	<10	<29
WB27B	03-25-96	15	2.39	--	--	1.62	1.66	30	600
WB27C	03-25-96	<1	--	--	--	.82	.80	<10	190
WB27E	03-13-96	<1	1.44	--	--	<.01	<.01	<10	<28
WB33A	04-17-96	11	3.55	--	--	.24	.24	<10	31
WB34A	03-22-96	202	--	--	--	34.20	34.2	<10	2,900
WB34B	03-25-96	2	1.40	--	--	.05	.05	<10	<27
WB35A	03-22-96	20	--	--	--	2.45	2.46	470	100
WB35B	03-14-96	<1	--	--	--	5.93	5.94	560	39
WB35C	03-14-96	<1	1.43	--	--	<.01	.01	<10	<27
WB36A	03-25-96	24	--	--	--	1.45	1.53	30	57
WB36B	03-26-96	20	1.38	--	--	3.77	3.77	<10	<26
WB36C	03-27-96	<1	1.35	--	--	.94	.94	--	<26
WB37B	03-25-96	78	--	--	--	.29	.29	<10	3,500
Third Seasonal Sampling Period (June 1996)									
DP-1A	06-17-96	337	0.00	--	--	32.5	32.5	50	9,100
WB19B	06-13-96	186	--	--	--	15.2	15.9	50	12,000
WB19E	06-07-96	<1	5.56	--	--	<.01	<.01	--	<37
WB22B	06-21-96	5	1.06	--	--	4.32	4.32	20	80
WB22D	06-17-96	5	.72	--	--	<.01	<.01	<10	<21
WB23B	06-13-96	290	--	--	--	9.97	9.93	<10	1,400
WB23C	06-13-96	270	--	--	--	.1	.11	<10	170
WB23D	06-13-96	<1	.59	--	--	<.01	<.01	<10	<34

Table 15. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, November 1995 to August 1996--Continued

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Ammonium (mg/L)	Nitrate, dissolved (mg/L as NO_3)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
Third Seasonal Sampling Period (June 1996)--Continued									
WB24A	06-13-96	--	--	--	--	5.02	5.32	20	2,800
WB24B	06-18-96	128	0.00	--	--	4.58	4.60	270	7,100
WB24E	06-18-96	10	7.80	--	--	.09	.10	<10	<27
WB25C	06-11-96	<1	.44	--	--	<.01	<.01	<10	<25
WB26B	06-13-96	401	--	--	--	1.80	1.79	190	8,100
WB26C	06-13-96	138	--	--	--	.75	.75	460	7,300
WB26D	06-18-96	181	--	--	--	.68	.70	240	58
WB26F	06-13-96	<1	73	--	--	<.01	<.01	<10	<17
WB27B	06-17-96	8	--	--	--	1.42	1.42	<10	560
WB27C	06-17-96	<1	--	--	--	1.66	1.69	<10	200
WB27E	06-13-96	<1	.84	--	--	<.01	<.01	<10	<26
WB28F	06-20-96	--	--	--	--	--	--	--	<17
WB33A	06-20-96	12	1.15	--	--	.04	.04	<10	<34
WB34A	06-27-96	176	--	--	--	5.36	5.40	80	480
WB34B	06-20-96	2	1.48	--	--	.43	.46	<10	<44
WB35A	06-18-96	22	--	--	--	2.23	2.23	1,320	510
WB35B	06-21-96	<1	.79	--	--	4.55	4.55	90	50
WB35C	06-18-96	<1	1.35	--	--	<.01	<.01	<10	<35
WB36A	06-20-96	43	--	--	--	5.13	5.36	30	320
WB36B	06-20-96	29	--	--	--	9.22	9.26	50	<35
WB36C	06-20-96	<1	1.59	--	--	.20	.20	<10	<26
WB37B	06-20-96	87	--	--	--	.88	.93	<10	2,300
Fourth Seasonal Sampling Period (August 1996)									
CC27A	08-20-96	28	0.35	0.32	0.00	0.80	0.79	<10	73
CC27B	08-20-96	19	3.62	.00	.00	<.01	<.01	<10	<39
DP-1A	08-14-96	299	.00	1.77	.00	27.5 0	34.1	50	9,100
WB19B	08-13-96	189	--	6.10	.00	14.10	14.5	<10	9,700
WB19E	08-12-96	1	5.21	.00	.00	<.01	<.01	<10	<30

Table 15. Seasonal-phase ground-water-quality data for the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Redox-sensitive constituents, November 1995 to August 1996--Continued

Well no.	Date	Bicarbonate, field (mg/L as HCO_3)	Oxygen, dissolved (mg/L)	Ammonium (mg/L)	Nitrate, dissolved (mg/L as NO_3)	Iron, ferrous (mg/L as Fe)	Iron, ferrous + ferric, dissolved (mg/L)	Sulfide, dissolved (µg/L as S)	Methane (µg/L as CH_4)
Fourth Seasonal Sampling Period (August 1996)--Continued									
WB22B	08-16-96	3	2.26	0.00	0.00	4.43	4.44	<10	80
WB22D	08-16-96	<1	.53	.00	.00	<.01	<.01	<10	<26
WB23B	08-16-96	335	--	--	.00	7.20	11.0	<10	3,100
WB23C	08-15-96	95	--	--	--	<.01	.10	<10	<44
WB23D	08-16-96	<1	.37	.00	.00	<.01	<.01	<10	<32
WB24A	08-19-96	--	--	--	--	9.77	9.76	20	1,900
WB24B	08-16-96	128	.00	.00	.00	4.06	4.07	250	8,200
WB24E	08-19-96	10	3.12	.00	.00	.02	.04	<10	<37
WB25C	08-14-96	<1	.00	.00	.00	<.01	<.01	10	<31
WB26B	08-13-96	389	--	--	--	1.26	1.26	200	9,600
WB26C	08-13-96	193	--	.71	.00	.84	.83	510	8,000
WB26D	08-13-96	183	--	.81	.00	.33	.35	150	130
WB26F	08-15-96	4	.85	.00	.00	<.01	<.01	50	<27
WB27B	08-16-96	<1	--	3.07	.00	.27	.27	<10	<43
WB27C	08-13-96	<1	--	1.58	.00	.08	.09	<10	130
WB27E	08-15-96	<1	.70	.00	.00	<.01	<.01	<10	<26
WB33A	08-14-96	12	2.40	.38	.00	.39	.39	10	<41
WB34A	08-14-96	290	--	--	.00	8.18	7.87	110	300
WB34B	08-20-96	<1	--	.10	.00	.15	.14	20	<41
WB35A	08-14-96	21	--	--	.00	2.45	2.44	390	<45
WB35B	08-20-96	2	--	--	.00	3.84	3.88	980	<42
WB35C	08-20-96	<1	.51	.00	.00	<.01	<.01	<10	<29
WB36A	08-14-96	21	--	.06	.00	1.78	1.78	20	120
WB36B	08-20-96	43	--	.82	.00	9.30	9.30	160	<48
WB36C	08-20-96	<1	1.90	.15	.00	.53	.54	<10	<65
WB37B	08-14-96	95	--	.43	.00	2.00	1.99	20	2,900

Table 16. Ground-water-quality data from porous membrane sampling device P35B in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Organic chemical data, June 1996

[µg/L, micrograms per liter; (d), duplicate sample; --, not detected; <, less than]

Sample Name	Depth (inches below land surface)	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,2-Di-chloro-ethane (µg/L)	Tri-chloro-ethene (µg/L)	*cis*-1,2-Di-chloro-ethene (µg/L)
P35b-1	0.30	--	--	--	--	--
P35b-2	1.48	<0.20	<0.20	<0.20	<0.20	<0.20
P35b-3	2.66	< .20	< .20	< .20	< .20	< .20
P35b-3 (d)	2.66	< .20	< .20	< .20	< .20	< .20
P35b-4	3.84	< .20	< .20	< .20	< .20	< .20
P35b-5	5.02	< .20	< .20	< .20	< .20	< 20
P35b-6	6.20	< .20	< .20	< .20	< .20	< .20
P35b-6 (d)	6.20	< .20	< .20	< .20	< .20	1.63
P35b-7	7.38	< .20	< .20	< .20	< .20	1.84
P35b-8	8.56	1.05	< .20	< .20	< .20	7.73
P35b-9	9.74	1.52	< .20	< .20	< .20	9.76
P35b-10	10.93	< .20	< .20	1.03	< .20	20.1
P35b-11	12.11	< .20	< .20	1.60	1.35	30.1
P35b-11 (d)	12.11	2.90	< .20	1.08	.56	18.5
P35b-12	13.29	< .20	< .20	2.08	2.45	24.1
P35b-13	14.47	1.54	< .20	3.03	3.44	26.0
P35a-14	15.65	1.97	< .20	3.22	2.25	32.7
P35b-16	18.01	1.12	< .20	5.25	3.41	31.6
P35b-17	19.19	2.16	1.15	5.66	3.58	32.0
P35b-18	20.37	2.60	1.43	7.52	4.38	32.5
P35b-19	21.56	< .20	1.27	10.5	5.68	37.2
P35b-20	22.74	< .20	1.10	18.5	4.72	49.5

trans-1,2-Dichloroethene (µg/L)	Vinyl chloride, (µg/L)	Methyl chloride, (µg/L)	Toluene (µg/L)	Benzene (µg/L)	Methane (µg/L)	Sample Name
--	--	--	--	--	7,397	P35b-1
<0.20	<0.20	<0.20	10.7	<0.20	6,067	P35b-2
< .20	< .20	< .20	20.2	1.01	4,649	P35b-3
< .20	< .20	< .20	14.4	< .20	--	P35b-3 (d)
< .20	< .20	< .20	29.4	1.23	8,911	P35b-4
< .20	< .20	2.02	13.8	< .20	9,022	P35b-5
< .20	1.21	< .20	< .20	< .20	8,337	P35b-6
< .20	3.70	< .20	284	2.84	9,783	P35b-6 (d)
< .20	5.52	< .20	82.6	2.49	8,750	P35b-7
< .20	29.0	1.29	63.8	2.14	9,348	P35b-8
.50	39.0	1.00	27.3	2.38	9,894	P35b-9
1.52	76.6	< .20	14.0	1.48	7,083	P35b-10
15.8	89.3	< .20	14.4	2.34	--	P35b-11
2.96	96.2	< .20	< .20	< .20	--	P35b-11 (d)
26.6	63.2	< .20	10.6	1.98	4,698	P35b-12
41.9	47.4	< .20	3.41	1.88	4,991	P35b-13
37.7	65.5	< .20	2.47	1.74	3,878	P35a-14
45.2	39.3	< .20	2.88	1.87	3,813	P35b-16
46.2	41.2	< .20	2.67	1.81	3,353	P35b-17
49.8	31.8	< .20	3.02	1.69	3,140	P35b-18
57.1	26.2	< .20	4.22	1.70	3,291	P35b-19
61.9	32.6	< .20	26.0	2.09	4,700	P35b-20

Table 17. Surface-water-quality data collected by autosampler at Site WBSW-1, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to March 1996

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; <, less than]

Date	Time	Specific conductance (µS/cm)	pH, Field (standard units)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)
06-20-95	1200	1,410	7.1	23	27	190	8.2	44
06-20-95	1500	2,720	7.0	30	52	410	17	92
06-20-95	1800	1,800	7.1	24	34	260	11	58
06-20-95	2100	1,040	7.1	20	21	140	6.1	33
06-20-95	2400	1,060	7.2	20	21	140	6.1	33
06-21-95	0300	2,560	7.2	30	49	380	15	83
06-21-95	0600	2,260	7.1	28	42	320	13	71
06-21-95	0900	1,190	7.2	22	24	170	7.4	37
06-21-95	1200	836	7.2	19	18	110	5.3	26
06-21-95	1500	1,500	7.1	23	28	200	8.6	45
06-21-95	1800	1,390	7.2	23	28	200	8.5	41
06-21-95	2100	854	7.1	19	18	110	5.4	26
06-21-95	2400	836	7.2	19	18	110	5.3	25
06-22-95	0300	2,920	7.1	31	57	450	18	99
06-22-95	0600	4,260	6.9	32	86	690	30	170
06-22-95	0900	3,560	7.0	32	69	550	23	130
06-22-95	1200	2,450	7.3	28	45	350	15	86
06-22-95	1500	3,290	7.0	31	63	500	21	120
06-22-95	1800	3,110	7.1	31	60	470	19	120
06-22-95	2100	2,030	7.1	27	39	290	12	67
06-22-95	2400	1,290	7.0	22	26	180	8.2	45
06-23-95	0300	2,320	7.1	29	46	350	15	76
06-23-95	0600	2,940	6.9	32	58	450	18	100
06-23-95	0900	2,100	7.0	27	42	320	14	71
07-18-95	0930	3,160	7.1	31	62	480	21	99
07-18-95	1230	4,030	7.0	32	80	630	27	140
07-18-95	1530	4,230	7.0	33	85	670	29	150
07-18-95	1830	3,250	7.2	30	63	500	21	110
07-18-95	2130	2,310	7.2	27	45	340	14	68
07-19-95	0030	3,490	7.1	32	69	540	22	110

Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Iron, dissolved (µg/L as Fe)	Manganese, total (µg/L as Mn)	Time	Date
380	0 .20	1.20	2.7	0.20	34	0.004	1200	06-20-95
730	.20	2.60	3.2	<.10	16	.230	1500	06-20-95
490	.20	1.90	2.0	<.10	17	.008	1800	06-20-95
260	.20	.72	1.9	<.10	73	.002	2100	06-20-95
260	.20	.58	2.3	<.10	93	.006	2400	06-20-95
650	.30	2.30	3.4	<.10	27	.025	0300	06-21-95
570	.20	2.00	2.5	<.10	25	.021	0600	06-21-95
310	.20	.97	2.2	.10	64	.011	0900	06-21-95
210	.20	.41	1.9	<.10	17	.005	1200	06-21-95
390	.20	1.20	2.6	<.10	40	.029	1500	06-21-95
350	.20	1.10	2.3	<.10	53	.027	1800	06-21-95
200	.20	.50	1.6	<.10	11	.005	2100	06-21-95
200	.20	.38	1.9	<.10	13	.006	2400	06-21-95
830	.20	2.90	3.4	<.10	26	.160	0300	06-22-95
1,300	.20	4.30	3.2	<.10	<9	.110	0600	06-22-95
1,000	.20	3.50	2.8	<.10	18	.140	0900	06-22-95
670	.20	2.00	2.5	<.10	130	.110	1200	06-22-95
930	.20	3.10	2.7	<.10	21	.180	1500	06-22-95
890	.20	2.90	2.4	<.10	23	.140	1800	06-22-95
520	.20	1.70	1.9	<.10	40	.073	2100	06-22-95
330	.20	1.00	2.5	.10	120	.100	2400	06-22-95
610	.20	2.30	2.7	<.10	64	.200	0300	06-23-95
830	.20	3.00	3.0	<.10	52	.260	0600	06-23-95
580	.20	2.10	2.0	<.10	130	.240	0900	06-23-95
850	.20	2.90	3.1	<.10	16	.025	0930	07-18-95
1,100	.20	4.10	3.7	<.10	12	.004	1230	07-18-95
1,200	.20	3.90	3.6	<.10	22	.008	1530	07-18-95
900	.20	3.10	2.4	.20	11	<.003	1830	07-18-95
630	.20	2.10	2.6	<.10	27	.004	2130	07-18-95
980	.20	3.30	2.9	.20	11	.007	0030	07-19-95

Table 17. Surface-water-quality data collected by autosampler at Site WBSW-1, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to March 1996--Continued

Date	Time	Specific conductance (µS/cm)	pH, Field (standard units)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)
07-19-95	0330	4,130	7.1	32	79	650	27	140
07-19-95	0630	3,760	7.2	32	74	580	25	130
07-19-95	0930	2,630	7.2	29	52	400	16	78
07-19-95	1230	2,910	7.3	29	57	440	18	88
07-19-95	1530	3,320	7.1	32	65	510	22	100
07-19-95	1830	2,560	7.2	28	50	380	16	74
07-19-95	2130	1,880	7.6	24	36	270	12	50
07-20-95	0030	2,910	7.3	29	55	440	19	83
07-20-95	0330	4,420	7.2	31	88	710	30	170
07-20-95	0630	4,510	6.9	31	91	710	30	170
07-20-95	0930	3,490	7.1	32	69	540	22	110
07-20-95	1230	3,260	7.2	30	62	510	20	96
07-20-95	1530	4,200	7.0	32	82	660	27	150
07-20-95	1830	3,850	7.2	31	74	600	25	130
07-20-95	2130	2,920	7.2	29	57	440	18	86
07-21-95	0030	3,290	7.2	30	62	500	20	100
07-21-95	0330	4,620	7.1	31	90	730	30	170
07-21-95	0709	4,730	7.0	31	92	750	32	190
08-20-95	1600	5,440	6.4	39	110	890	36	210
08-20-95	1900	5,330	6.8	40	110	880	35	220
08-20-95	2200	4,810	6.6	40	99	800	30	200
08-21-95	0100	5,240	6.7	38	110	880	33	210
08-21-95	0400	5,810	3.4	32	110	820	33	230
08-21-95	0700	5,620	6.3	36	110	920	37	230
08-21-95	1000	5,480	6.7	36	120	910	33	230
08-21-95	1300	5,070	6.7	42	100	830	33	200
08-21-95	1600	5,390	6.7	39	110	910	35	170
08-21-95	1900	5,260	6.7	39	110	860	34	210
08-21-95	2200	4,640	6.8	41	91	740	29	190
08-22-95	0100	4,470	6.9	43	93	740	28	180
08-22-95	0400	5,320	6.8	39	110	900	34	210
08-22-95	0700	5,590	6.7	38	120	960	35	230
08-22-95	1000	5,100	6.7	44	110	870	33	210
08-22-95	1300	3,820	6.7	40	76	610	24	140
08-22-95	1600	3,730	6.9	40	77	610	22	130

Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Iron, dissolved (µg/L as Fe)	Manganese, total (µg/L as Mn)	Time	Date
1,200	<0.10	4.1	3.3	<0.10	25	0.007	0330	07-19-95
1,000	.20	3.7	2.9	.10	15	.007	0630	07-19-95
700	.20	2.3	2.4	<.10	24	.005	0930	07-19-95
800	.20	2.7	2.4	.10	36	.030	1230	07-19-95
910	.20	3.2	2.4	.10	29	.046	1530	07-19-95
680	.20	2.3	1.5	<.10	31	.013	1830	07-19-95
500	.20	1.7	1.3	<.10	43	.016	2130	07-19-95
790	<.10	2.6	1.7	<.10	39	.032	0030	07-20-95
1,300	.20	4.5	3.7	.10	12	.055	0330	07-20-95
1,300	.20	4.5	3.7	<.10	17	.089	0630	07-20-95
980	.20	3.4	2.2	<.10	16	.094	0930	07-20-95
900	.30	3.2	1.9	<.10	40	.080	1230	07-20-95
1,200	.30	4.1	3.2	<.10	16	.100	1530	07-20-95
1,100	.30	3.7	2.2	<.10	24	.053	1830	07-20-95
800	.20	2.9	1.3	<.10	66	.047	2130	07-20-95
900	<.10	3.1	1.4	.20	69	.080	0030	07-21-95
1,300	.20	4.7	4.0	<.10	30	.120	0330	07-21-95
1,400	<.10	4.9	4.2	.20	28	.180	0709	07-21-95
1,600	.20	6.4	4.9	<.10	42	1.000	1600	08-20-95
1,700	.20	6.1	5.0	<.10	74	1.200	1900	08-20-95
1,500	.20	5.1	5.4	<.10	92	1.400	2200	08-20-95
1,600	.20	5.7	4.9	.10	54	1.500	0100	08-21-95
1,700	.20	6.2	4.4	<.10	73	1.200	0400	08-21-95
1,700	.20	6.1	4.8	<.10	72	1.200	0700	08-21-95
1,700	.20	5.7	4.4	.10	18	.880	1000	08-21-95
1,500	.20	5	5.1	<.10	23	.650	1300	08-21-95
1,300	.20	4.5	4.9	<.10	11	.850	1600	08-21-95
1,600	.20	5.5	4.6	<.10	26	.880	1900	08-21-95
1,400	.20	4.9	5.1	<.10	47	.310	2200	08-21-95
1,400	.20	4.6	5.9	<.10	33	.540	0100	08-22-95
1,700	.20	5.6	5.0	<.10	15	.570	0400	08-22-95
1,700	.20	5.8	4.9	<.10	<9	.590	0700	08-22-95
1,600	.20	5.4	5.1	<.10	24	.760	1000	08-22-95
1,100	.20	3.9	6.2	<.10	47	.680	1300	08-22-95
1,100	.20	3.8	7.1	<.10	71	.970	1600	08-22-95

Table 17. Surface-water-quality data collected by autosampler at Site WBSW-1, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to March 1996--Continued

Date	Time	Specific conductance (µS/cm)	pH, Field (standard units)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)
08-22-95	1900	3,610	6.8	41	75	590	21	120
08-22-95	2200	2,850	7.0	36	56	440	17	84
08-23-95	0100	2,280	6.9	31	47	350	13	58
08-23-95	0400	3,220	7.0	39	63	500	19.0	99
08-23-95	0700	4,140	7.3	43	82	660	26.0	140
08-23-95	1000	3,600	7.0	40	71	560	22	110
08-23-95	1300	2,620	6.9	33	51	390	58	71
10-10-95	1500	5,020	6.8	41	97	760	30.0	150
10-10-95	1800	6,390	6.9	54	140	1,100	39	480
10-10-95	2100	9,790	6.6	64	220	1,700	60	390
10-10-95	2400	10,200	6.8	64	220	1,700	68	400
10-11-95	0300	7,700	6.8	57	170	1,300	48	630
10-11-95	0600	6,600	7.1	53	140	1,100	42	250
10-11-95	0900	8,570	6.9	62	190	1,500	56	350
10-11-95	1200	8,000	6.9	60	180	1,400	52	320
10-11-95	1500	6,150	6.9	52	130	980	39	220
10-11-95	1800	6,250	6.8	52	130	1,000	40	220
10-11-95	2100	9,290	6.6	61	200	1,600	61	420
10-11-95	2400	10,100	6.6	68	230	1,800	67	400
10-12-95	0300	7,920	6.8	56	170	1,300	49	650
10-12-95	0600	6,410	6.9	52	140	1,100	41	240
10-12-95	0900	7,940	6.8	60	180	1,300	52	310
10-12-95	1200	8,360	6.7	60	180	1,400	53	700
10-12-95	1500	6,330	7.1	51	140	1,100	41	230
10-12-95	1800	5,610	6.9	46	110	900	35	190
10-12-95	2100	7,740	6.8	56	160	1,300	49	620
10-12-95	2400	10,100	6.6	69	220	1,800	68	420
10-13-95	0300	7,450	6.7	56	170	1,200	49	290
10-13-95	0600	5,200	6.9	43	110	850	33	170
10-13-95	0900	5,780	6.9	47	120	910	35	390
10-13-95	1200	6,630	6.8	57	140	1,100	43	240
03-18-96	1000	613	6.8	20	11	68	3.6	34
03-18-96	1300	485	7.0	18	10	52	2.9	32
03-18-96	1600	649	7.2	22	12	71	3.7	39
03-18-96	1900	704	7.3	19	13	82	5.0	30

Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L as SiO_2)	Aluminum, dissolved (µg/L as Al)	Iron, dissolved (µg/L as Fe)	Manganese, total (µg/L as Mn)	Time	Date
1,100	0.2	3.50	7.4	<0.10	63	0.650	1900	08-22-95
800	.20	2.70	7.8	<.10	47	.590	2200	08-22-95
640	.20	2.00	9.4	<.10	67	.910	0100	08-23-95
940	.20	3.00	8.3	<.10	23	.950	0400	08-23-95
1,200	.20	4.10	6.8	<.10	28	.930	0700	08-23-95
1,100	.20	3.60	7.1	<.10	21	.920	1000	08-23-95
730	.20	2.50	8.2	<.10	26	.790	1300	08-23-95
1,500	.10	5.30	8.2	--	160	3.700	1500	10-10-95
1,900	.20	6.90	7.1	--	30	2.900	1800	10-10-95
2,900	.10	11.00	2.9	--	30	2.000	2100	10-10-95
3,300	.20	11.00	3.1	--	20	1.400	2400	10-10-95
2,400	.20	8.40	4.2	--	20	1.000	0300	10-11-95
2,000	.10	7.20	4.8	--	<9	.910	0600	10-11-95
2,800	.10	9.70	3.5	--	20	.720	0900	10-11-95
2,600	.10	8.80	4.0	--	10	1.000	1200	10-11-95
1,800	.20	4.50	5.3	--	30	1.000	1500	10-11-95
1,900	.20	7.00	5.4	--	30	1.100	1800	10-11-95
3,200	.20	12.00	4.0	--	20	.770	2100	10-11-95
3,200	.20	11.00	2.5	--	10	.820	2400	10-11-95
2,400	.20	9.40	3.5	--	30	.660	0300	10-12-95
1,900	.10	7.40	4.3	--	30	.700	0600	10-12-95
2,500	.10	9.40	3.5	--	10	.490	0900	10-12-95
2,600	.20	9.40	3.3	--	20	.550	1200	10-12-95
1,900	.10	6.80	4.5	--	50	.740	1500	10-12-95
1,700	.20	6.00	6.3	--	71	1.30	1800	10-12-95
2,400	.20	8.20	3.9	--	30	.720	2100	10-12-95
3,300	.20	12.00	2.5	--	30	.730	2400	10-12-95
2,300	.10	8.70	3.6	--	50	.680	0300	10-13-95
1,500	.10	5.80	5.5	--	57	.970	0600	10-13-95
1,700	.20	5.40	6.5	--	1,400	1.40	0900	10-13-95
2,000	.10	7.40	4.2	--	350	.760	1200	10-13-95
130	.20	.19	7.1	--	180	.043	1000	03-18-96
95	.20	.19	7.2	--	210	.110	1300	03-18-96
130	.20	.20	7.2	--	140	.150	1600	03-18-96
150	.10	.33	6.4	--	27	.005	1900	03-18-96

Table 17. Surface-water-quality data collected by autosampler at Site WBSW-1, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Field parameters and inorganic chemical data, June 1995 to March 1996--Continued

Date	Time	Specific conductance (µS/cm)	pH, Field (standard units)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)
03-18-96	2200	617	7.3	20	12	69	3.8	35
03-19-96	0100	489	7.3	18	9.7	51	2.9	31
03-19-96	0400	592	7.3	20	11	65	3.4	37
03-19-96	0700	744	7.4	20	13	87	5.1	35
03-19-96	1000	659	7.4	22	12	74	3.9	37
03-19-96	1300	479	7.3	18	9.7	50	2.8	31
03-19-96	1600	479	7.3	18	10	51	2.6	30
03-19-96	1900	686	7.2	19	12	81	4.4	30
03-19-96	2200	717	7.4	21	13	84	4.7	36
03-20-96	0100	648	7.3	18	12	75	4.4	28
03-20-96	0400	678	7.4	18	12	80	4.8	26
03-20-96	0700	678	7.4	18	12	79	4.9	26
03-20-96	1000	675	7.5	18	12	78	4.8	27
03-20-96	1300	579	7.4	17	11	66	4.0	26
03-20-96	1600	402	7.4	15	8.0	43	2.9	22
03-20-96	1900	565	7.3	17	11	65	4.0	25
03-20-96	2200	466	7.2	16	9.2	53	3.4	24
03-21-96	0100	364	7.2	15	7.6	38	2.5	22
03-21-96	0400	382	7.2	16	8.2	41	2.6	24
03-21-96	0700	510	7.3	17	9.9	57	3.8	25

Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)	Bromide, dissolved (mg/L as Br)	Silica, dissolved (mg/L) as SiO_2)	Aluminum, dissolved (µg/L as Al)	Iron, dissolved (µg/L as Fe)	Manganese, total (µg/L as Mn)	Time	Date
130	0.2	0.19	7.0	--	130	0.094	2200	03-18-96
92	.20	.12	6.8	--	170	.120	0100	03-19-96
120	.20	.18	7.2	--	160	.180	0400	03-19-96
170	.10	.35	6.5	--	43	.047	0700	03-19-96
140	.20	.22	7.2	--	210	.160	1000	03-19-96
91	.20	.12	6.9	--	260	.150	1300	03-19-96
90	.20	.12	7.6	--	310	.200	1600	03-19-96
150	.10	.34	6.3	--	52	.004	1900	03-19-96
160	.10	.31	6.7	--	86	.072	2200	03-19-96
140	.10	.31	6.2	--	23	.021	0100	03-20-96
150	.10	.37	6.2	--	15	.002	0400	03-20-96
150	.10	.38	6.1	--	13	.002	0700	03-20-96
150	.10	.33	6.1	--	45	.004	1000	03-20-96
130	.10	.21	6.3	--	94	.034	1300	03-20-96
80	.10	.07	6.6	--	160	.057	1600	03-20-96
120	.10	.21	6.4	--	69	.013	1900	03-20-96
98	.10	.12	6.5	--	110	.048	2200	03-20-96
67	.20	.05	7.0	--	160	.050	0100	03-21-96
67	.10	.05	7.3	--	160	.061	0400	03-21-96
100	.10	.16	6.4	--	75	.018	0700	03-21-96

Table 18. Concentrations of major and minor inorganic constituents in sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[Whole sediment analyzed by induction coupled argon plasma-atomic emission spectrometry, except mercury, which was analyzed by cold vapor atomic absorption (Crock and others, 1983). Concentrations are given in units of percent solid or in micrograms per gram (µg/g) as noted. <, less than]

Site No.	Date	Depth (feet below land surface)	Calcium (percent solid)	Magnesium (percent solid)	Sodium (percent solid)	Potassium (percent solid)	Phosphorus (percent solid)	Aluminum (percent solid)	Arsenic (µg/g solid)
Fill material/upper confining unit									
WB20-5	07-22-94	5.1- 5.6	0.03	0.17	0.18	0.78	0.01	4.2	< 10
WB20-7	07-22-94	6.6- 7.2	.07	.20	.31	.70	.02	3.2	< 10
WB20-9.6	07-22-94	9.5- 9.7	.04	.16	.22	.76	.02	4.0	< 10
WB20-11	07-22-94	10.5-12.0	.04	.12	.21	.43	.03	2.3	15
WB21-1	07-11-94	0.7- 2.0	.41	.30	.39	1.1	.04	4.7	< 10
WB32-5	07-20-94	4.0- 6.0	.09	.19	.25	.71	.02	2.9	< 10
WB32-7	07-20-94	6.3- 7.8	.06	.17	.20	.54	.01	2.3	< 10
WB32-12	08-02-94	12.3-12.9	.36	.24	.17	.61	.01	2.5	< 10
WB32-13	08-02-94	12.7-14.0	.04	.14	.05	.72	.02	4.6	< 10
WB32-14	08-02-94	14.0-14.8	4.5	1.4	.32	.73	.02	3.8	< 10
WB33-3	07-25-94	2.0- 4.0	.09	.25	.28	.88	.03	4.0	10
WB33-9	07-25-94	8.0-10.0	.13	.39	.27	1.4	.02	7.5	< 10
WB33-11	07-25-94	10.3-12.0	.06	.16	.15	.53	.01	2.4	< 10
Wetland sediment, peat and peaty clay									
WB21.4-5	07-12-94	4.0- 5.0	0.18	0.32	0.38	1.1	0.05	4.8	< 10
WB24-6	07-19-94	6.0- 6.5	.01	.06	.05	.22	.17	1.8	71
WB26-3	07-19-94	2.0- 4.0	.37	.73	.45	1.5	.04	6.7	< 10
WB27-1	07-20-94	0.0- 2.0	.25	.59	.34	1.4	.04	6.2	< 10
WB27-3	07-20-94	2.0- 4.0	.24	.66	.35	1.5	.05	6.5	< 10
WB27-5	07-20-94	4.0- 5.5	.23	.64	.35	1.5	.05	6.5	< 10
WB28-1	07-19-94	0.0- 2.0	.60	1.1	.31	1.2	.17	7.3	170
WB28-3	07-19-94	2.0- 4.0	.19	.58	.36	1.4	.07	7.4	< 10
WB28-5	07-19-94	4.0- 6.0	.15	.53	.36	1.4	.07	6.7	< 10
WB28-7	07-19-94	6.0- 8.0	.16	.53	.36	1.4	.07	6.8	< 10
WB28-9	07-19-94	8.6- 9.5	.04	.11	.07	.34	.01	1.8	< 10
WB28-11	07-19-94	10.0-12.0	.05	.16	.11	.57	.01	2.7	< 10

Barium (µg/g solid)	Beryllium (µg/g solid)	Cadmium (µg/g solid)	Cerium (µg/g solid)	Chromium (µg/g solid)	Cobalt (µg/g solid)	Copper (µg/g solid)	Europium (µg/g solid)	Gallium (µg/g solid)	Site No.
190	< 1	< 2	42	60	3	10	< 2	11	WB20-5
200	< 1	< 2	42	42	5	8	< 2	8	WB20-7
180	1	< 2	47	56	4	20	< 2	10	WB20-9.6
120	< 1	< 2	23	48	3	14	< 2	6	WB20-11
350	2	< 2	59	60	14	92	< 2	10	WB21-1
230	1	< 2	55	32	7	7	< 2	7	WB32-5
160	< 1	< 2	41	28	3	9	< 2	6	WB32-7
180	<1	< 2	38	43	4	14	< 2	6	WB32-12
220	1	< 2	74	51	1	12	< 2	12	WB32-13
300	2	< 2	62	52	5	17	< 2	11	WB32-14
220	1	< 2	51	46	6	14	< 2	10	WB33-3
320	2	< 2	80	90	6	17	< 2	17	WB33-9
160	< 1	< 2	36	31	3	10	< 2	5	WB33-11
350	2	< 2	68	51	12	30	< 2	11	WB21.4-5
73	5	< 2	27	190	12	57	< 2	5	WB24-6
160	2	< 2	67	75	20	20	< 2	16	WB26-3
120	2	< 2	61	71	18	15	< 2	14	WB27-1
130	2	< 2	67	78	17	15	< 2	16	WB27-3
100	2	< 2	65	77	18	15	< 2	16	WB27-5
310	3	5	90	120	52	350	< 2	17	WB28-1
270	2	< 2	80	81	22	22	< 2	18	WB28-3
240	2	< 2	72	74	20	22	< 2	16	WB28-5
340	2	< 2	75	74	20	20	< 2	16	WB28-7
110	< 1	< 2	22	21	4	5	< 2	5	WB28-9
150	< 1	< 2	33	35	4	9	< 2	7	WB28-11

Table 18. Concentrations of major and minor inorganic constituents in sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Site No.	Iron (percent solid)	Lanthium (µg/g solid)	Lead (µg/g solid)	Lithium (µg/g solid)	Manganese (µg/g solid)	Mercury (µg/g solid)	Niobium (µg/g solid)	Neodymium (µg/g solid)	Nickel (µg/g solid)
Fill material/upper confining unit--continued									
WB20-5	13	15	12	16	64	< 0.02	12	20	6
WB20-7	1.4	22	12	17	100	< .02	9	19	8
WB20-9.6	4.0	26	15	14	95	< .02	10	22	6
WB20-11	4.2	12	11	12	72	.04	5	10	5
WB21-1	4.0	30	67	33	290	.06	13	29	42
WB32-5	1.3	24	14	19	110	< .02	10	21	11
WB32-7	1.1	20	11	17	86	< .02	8	19	8
WB32-12	2.3	20	12	18	210	< .02	7	19	8
WB32-13	.55	39	18	17	24	< .02	12	34	7
WB32-14	1.8	30	16	30	2,000	< .02	9	27	16
WB33-3	2.5	26	16	21	120	< .02	1	22	13
WB33-9	1.8	44	20	32	71	< .02	17	38	16
WB33-11	.92	19	11	19	51	< .02	7	18	8
Wetland sediment, peat and peaty clay--continued									
WB21.4-5	1.9	34	32	29	170	0.32	15	34	21
WB24-6	17	12	27	8	120	< .02	5	14	15
WB26-3	3.8	39	28	65	370	.15	16	36	37
WB27-1	3.5	36	16	62	300	.04	15	34	29
WB27-3	3.7	40	18	65	380	.05	17	38	31
WB27-5	4.0	38	16	66	330	.03	14	36	31
WB28-1	4.2	50	620	49	600	13	17	51	110
WB28-3	3.3	46	25	56	280	.11	18	42	36
WB28-5	3.3	41	24	53	290	.18	16	39	31
WB28-7	3.2	43	23	53	290	.14	17	38	32
WB28-9	.65	11	8	15	43	< .02	5	10	7
WB28-11	1.1	17	10	20	59	< .02	8	15	8

Scandium (µg/g solid)	Strontium (µg/g solid)	Thallium (µg/g solid)	Tin (µg/g solid)	Titanium (percent solid)	Vanadium (µg/g solid)	Ytterbium (µg/g solid)	Yttrium (µg/g solid)	Zinc (µg/g solid)	Site No.
8	36	8	< 5	0.34	73	2	10	15	WB20-5
6	38	7	< 5	.28	56	1	9	26	WB20-7
10	35	8	< 5	.28	87	2	12	27	WB20-9.6
5	22	5	< 5	.43	72	< 1	5	20	WB20-11
9	82	9	12	.35	72	2	20	50	WB21-1
5	41	7	< 5	.33	42	1	8	29	WB32-5
5	31	7	< 5	.26	44	1	10	20	WB32-7
6	38	7	< 5	.26	71	< 1	9	27	WB32-12
13	46	11	< 5	.36	83	2	19	9	WB32-13
12	10	9	< 5	.38	100	2	20	25	WB32-14
9	43	8	< 5	.35	66	< 1	10	31	WB33-3
15	71	12	< 5	.40	110	2	22	40	WB33-9
5	30	5	< 5	.23	42	1	11	22	WB33-11
8	62	6	6	0.35	68	3	26	160	WB21.4-5
24	12	10	< 5	.07	1,700	< 1	9	99	WB24-6
14	89	11	< 5	.30	97	2	26	140	WB26-3
13	77	10	< 5	.29	92	3	27	89	WB27-1
14	84	11	< 5	.33	100	3	27	100	WB27-3
14	81	11	< 5	.29	100	3	26	100	WB27-5
15	76	10	32	.31	150	4	40	4,000	WB28-1
14	72	10	< 5	.35	110	3	31	130	WB28-3
13	71	11	< 5	.34	95	3	29	130	WB28-5
13	72	10	< 5	.35	95	3	30	120	WB28-7
4	19	4	< 5	.16	30	< 1	4	17	WB28-9
6	29	7	< 5	.24	49	1	8	23	WB28-11

Table 18. Concentrations of major and minor inorganic constituents in sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Site No.	Date	Depth (ft)	Calcium (percent solid)	Magnesium (percent solid)	Sodium (percent solid)	Potassium (percent solid)	Phosphorus (percent solid)	Aluminum (percent solid)	Arsenic (µg/g solid)
				Wetland sediment, peat and peaty clay--continued					
WB36-1	07-21-94	0.0- 2.0	0.41	1.0	0.27	0.94	0.21	6.2	46
WB36-4.5	07-21-94	4.0- 4.7	.29	.57	.27	1.3	.09	6.5	48
				Wetland sediment, clay					
WB22-2	07-13-94	2.0- 3.0	0.20	0.34	0.41	1.2	0.05	5.1	< 10
WB22-5	07-13-94	5.3- 5.5	.10	.14	.24	.62	.02	2.4	< 10
WB22-6	07-13-94	6.0- 7.1	.05	.31	.23	1.2	.02	5.5	< 10
WB22-11	07-13-94	11.3-12.0	.06	.29	.23	.85	.02	4.1	< 10
WB23-5	07-13-94	4.0- 6.0	.06	.36	.28	1.4	.02	6.9	< 10
WB24-7.2	07-19-94	6.6- 8.0	.06	.33	.30	1.2	.02	5.9	< 10
WB26-7	07-19-94	6.0- 8.0	.08	.16	.19	.57	.02	2.4	< 10
WB30-5	07-14-94	4.0- 6.0	.05	.21	.20	.86	.01	4.0	< 10
WB30-9	07-14-94	9.0- 9.5	.06	.23	.20	.77	.02	3.5	< 10
WB31-2.5	07-14-94	2.0- 3.0	.05	.18	.17	.58	.02	2.9	< 10
WB31-5	07-14-94	4.0- 5.5	.12	.30	.34	1.0	.03	4.7	10
WB31-6.2	07-14-94	6.0- 6.5	.05	.13	.15	.47	.01	2.1	< 10
WB31-9	07-18-94	8.0- 9.2	.07	.23	.17	.83	.02	3.9	< 10
WB35-6.5	07-22-94	6.4- 6.7	.05	.24	.20	.93	.01	4.5	< 10
				Wetland sediment, sand					
WB23-11	07-13-94	10.8-11.0	0.04	0.15	0.09	0.39	0.01	2.1	< 10
WB24-10	07-19-94	10.3-10.5	.01	.05	.03	.15	.009	.73	< 10
WB27-9	07-20-94	8.0-10.0	.01	.03	.009	.08	.03	.56	< 10
WB27-11	07-20-94	10.7-11.0	.04	.12	.10	.44	.01	2.0	< 10
WB30-3	07-14-94	2.0- 4.0	.05	.13	.16	.52	.009	2.2	< 10
WB30-7	07-14-94	6.7- 7.0	.02	.16	.10	.51	.01	2.5	< 10
WB31-6.8	07-14-94	6.5- 6.9	.01	.05	.02	.15	.01	.92	< 10
WB35-5.6	07-22-94	5.4- 5.7	.04	.20	.16	.67	.02	3.5	< 10
WB36-4.8	07-21-94	4.7- 4.8	.07	.15	.11	.44	.01	2.1	< 10
WB36-5	07-21-94	4.8- 5.9	.08	.24	.21	.79	.01	3.7	< 10

Barium (µg/g solid)	Beryl-lium (µg/g solid)	Cad-mium (µg/g solid)	Cerium (µg/g solid)	Chro-mium (µg/g solid)	Cobalt (µg/g solid)	Copper (µg/g solid)	Eu-ropium (µg/g solid)	Gal-lium (µg/g solid)	Site No.
130	3	5	99	130	75	260	2	14	WB36-1
190	2	< 2	81	82	31	110	< 2	16	WB36-4.5
390	2	< 2	66	51	15	11	< 2	13	WB22-2
190	< 1	< 2	39	25	7	5	< 2	6	WB22-5
280	1	< 2	46	66	10	13	< 2	14	WB22-6
220	1	< 2	49	52	7	9	< 2	11	WB22-11
300	2	< 2	75	76	5	19	< 2	17	WB23-5
290	2	< 2	57	77	5	17	< 2	14	WB24-7.2
180	< 1	< 2	31	27	4	7	< 2	6	WB26-7
220	< 1	< 2	47	46	4	11	< 2	10	WB30-5
200	< 1	< 2	43	46	8	9	< 2	8	WB30-9
180	< 1	< 2	30	31	5	7	< 2	7	WB31-2.5
270	1	< 2	64	48	6	15	< 2	11	WB31-5
150	< 1	< 2	31	25	3	7	< 2	6	WB31-6.2
210	1	< 2	50	43	5	12	< 2	9	WB31-9
230	1	< 2	66	50	6	13	< 2	11	WB35-6.5
130	< 1	< 2	24	26	5	7	< 2	5	WB23-11
77	< 1	< 2	12	11	2	4	< 2	< 4	WB24-10
50	< 1	< 2	16	17	5	6	< 2	< 4	WB27-9
130	< 1	< 2	27	28	4	7	< 2	5	WB27-11
160	< 1	< 2	33	25	3	6	< 2	6	WB30-3
140	< 1	< 2	27	39	3	9	< 2	5	WB30-7
72	< 1	< 2	20	14	2	5	< 2	< 4	WB31-6.8
180	1	< 2	49	40	8	13	< 2	8	WB35-5.6
130	< 1	< 2	40	26	14	14	< 2	4	WB36-4.8
210	1	< 2	49	41	9	15	< 2	9	WB36-5

Table 18. Concentrations of major and minor inorganic constituents in sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Site No.	Iron (percent solid)	Lanthium (µg/g solid)	Lead (µg/g solid)	Lithium (µg/g solid)	Manganese (µg/g solid)	Mercury (µg/g solid)	Niobium (µg/g solid)	Neodymium (µg/g solid)	Nickel (µg/g solid)
				Wetland sediment, peat and peaty clay--continued					
WB36-1	6.0	51	440	36	560	4.8	15	61	270
WB36-4.5	3.8	44	200	52	310	2.7	11	42	49
				Wetland sediment, clay--continued					
WB22-2	1.9	32	18	32	190	0.04	16	29	21
WB22-5	1.2	17	10	19	74	.02	9	15	9
WB22-6	1.7	26	15	29	79	.04	14	20	15
WB22-11	1.7	26	15	28	100	< .02	12	22	13
WB23-5	2.8	40	19	34	92	< .02	17	37	14
WB24-7.2	3.8	31	16	32	82	< .02	14	26	12
WB26-7	.90	16	10	21	75	< .02	9	13	8
WB30-5	1.0	26	12	24	62	.02	12	23	10
WB30-9	1.8	23	12	25	110	< .02	10	22	11
WB31-2.5	1.4	15	10	19	76	.05	9	12	10
WB31-5	2.6	33	20	21	170	.02	14	27	13
WB31-6.2	.94	16	10	14	69	.08	8	15	7
WB31-9	1.3	27	12	23	89	< .02	10	24	11
WB35-6.5	1.6	35	18	21	84	< .02	12	32	11
				Wetland sediment, sand--continued					
WB23-11	1.2	12	8	17	44	< 0.02	5	11	8
WB24-10	.72	6	5	8	30	< .02	< 4	5	3
WB27-9	1.6	6	4	6	29	< .02	< 4	6	3
WB27-11	.76	15	7	16	62	< .02	5	13	8
WB30-3	.74	17	9	17	54	< .02	10	16	7
WB30-7	1.5	15	7	18	50	< .02	6	14	7
WB31-6.8	.65	8	6	9	36	< .02	< 4	8	4
WB35-5.6	1.0	26	16	21	65	.04	11	27	12
WB36-4.8	.97	20	22	18	76	.09	6	18	15
WB36-5	1.1	24	19	21	87	< .02	10	21	14

Scandium (µg/g solid)	Strontium (µg/g solid)	Thallium (µg/g solid)	Tin (µg/g solid)	Titanium (percent solid)	Vanadium (µg/g solid)	Ytterbium (µg/g solid)	Yttrium (µg/g solid)	Zinc (µg/g solid)	Site No.
14	76	9	15	0.26	410	4	46	1,800	WB36-1
13	75	11	5	.28	110	3	31	1,000	WB36-4.5
9	68	8	< 5	0.38	70	2	22	63	WB22-2
4	40	5	< 5	.26	39	1	9	18	WB22-5
11	50	9	< 5	.33	92	2	13	34	WB22-6
8	42	8	< 5	.33	76	2	12	37	WB22-11
15	63	12	< 5	.39	110	3	21	35	WB23-5
12	56	10	< 5	.35	95	2	15	35	WB24-7.2
5	37	6	< 5	.28	38	1	8	23	WB26-7
9	42	9	< 5	.36	69	2	12	24	WB30-5
7	39	8	< 5	.29	60	1	12	30	WB30-9
6	30	6	< 5	.27	47	< 1	6	31	WB31-2.5
9	55	10	< 5	.39	68	2	13	33	WB31-5
5	27	6	< 5	.26	33	< 1	6	20	WB31-6.2
8	43	9	< 5	.30	63	1	12	27	WB31-9
9	41	9	< 5	.33	70	2	24	36	WB35-6.5
4	23	5	< 5	0.14	38	< 1	6	21	WB23-11
< 2	9	< 4	< 5	.06	14	< 1	3	8	WB24-10
2	7	< 4	< 5	.08	17	< 1	2	12	WB27-9
4	23	4	< 5	.16	31	1	8	21	WB27-11
5	30	6	< 5	.30	35	1	7	17	WB30-3
5	25	5	< 5	.17	43	1	6	20	WB30-7
2	11	4	< 5	.13	20	< 1	3	11	WB31-6.8
7	32	7	< 5	.32	54	2	19	37	WB35-5.6
4	27	< 4	< 5	.19	34	< 1	15	120	WB36-4.8
8	38	9	< 5	.31	55	1	14	41	WB36-5

Table 18. Concentrations of major and minor inorganic constituents in sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Site No.	Date	Depth (ft)	Calcium (percent solid)	Magnesium (percent solid)	Sodium (percent solid)	Potassium (percent solid)	Phosphorus (percent solid)	Aluminum (percent solid)	Arsenic (µg/g solid)
				Canal Creek aquifer, sand					
WB20-21	07-26-94	21.0-22.0	0.01	0.09	0.04	0.54	0.008	3.1	< 10
WB20-29	07-26-94	28.0-30.0	.009	.03	.02	.17	.005	1.0	< 10
WB20-37	07-26-94	36.0-37.3	.007	.02	.01	.08	.007	.40	< 10
WB21.4-9	07-12-94	8.0-10.0	.01	.03	.01	.09	.008	.51	< 10
WB30-11.7	07-14-94	11.3-12.0	.03	.09	.08	.30	.007	1.3	< 10
WB31-10	07-18-94	10.0-11.2	.02	.05	.02	.15	.02	.84	< 10
WB32-36	08-02-94	36.0-36.4	.007	.03	.02	.17	.01	.90	< 10
WB32-25	08-02-94	24.0-26.6	.009	.07	.05	.50	.005	2.4	< 10
WB32-46	08-02-94	44.0-47.8	.01	.02	.02	.10	< .005	.52	< 10
WB33-19	08-05-94	18.0-20.0	.008	.03	.01	.13	.008	.72	< 10
WB33-45	08-16-94	44.5-45.1	.009	.02	.02	.10	< .005	.43	< 10
WB34-5	07-25-94	4.6- 5.4	.03	.13	.11	.42	.01	2.1	< 10
WB34-9.2	07-25-94	9.2-10.0	.03	.17	.10	.53	.01	2.8	< 10
WB34-11.2	07-25-94	10.0-12.0	.03	.13	.09	.44	.01	2.2	< 10
WB35-6.8	07-22-94	6.7- 6.9	.02	.10	.07	.36	.01	1.8	13
WB35-9	07-22-94	8.0-10.0	.02	.09	.05	.30	.01	1.6	< 10
WB35-11	07-22-94	11.0-11.7	.006	.03	.008	.09	.02	.66	< 10
WB36-6.5	07-21-94	6.0- 7.0	.05	.17	.18	.65	.01	2.9	< 10
WB36-9	07-21-94	8.7- 9.3	.007	.03	.009	.08	.02	.59	< 10
WB36-11	07-21-94	10.0-12.0	.006	.02	.006	.05	.04	.40	10
WB37-10	07-21-94	10.0-11.4	.008	.03	.02	.12	.01	.68	< 10
				Canal Creek aquifer, clay					
WB20-24	07-26-94	23.4-24.0	0.02	0.16	0.09	1.1	0.01	5.6	< 10
WB34-9.1	07-25-94	8.0-10.0	.05	.28	.20	.99	.01	4.9	< 10
WB34-11.1	07-25-94	10.0-12.0	.08	.27	.29	1.1	.01	4.9	< 10
WB24-7.1	07-19-94	7.0	.07	.31	.29	1.2	.02	5.6	< 10
WB33-44.5	08-16-94	44.5	< .005	.02	.01	.09	.02	.66	12

Barium (µg/g solid)	Beryl-lium (µg/g solid)	Cad-mium (µg/g solid)	Cerium (µg/g solid)	Chro-mium (µg/g solid)	Cobalt (µg/g solid)	Copper (µg/g solid)	Eu-ropium (µg/g solid)	Gal-lium (µg/g solid)	Site No.
140	< 1	< 2	36	34	< 1	4	< 2	8	WB20-21
73	< 1	< 2	14	18	1	5	< 2	< 4	WB20-29
50	< 1	< 2	9	16	3	13	< 2	< 4	WB20-37
60	< 1	< 2	13	10	2	3	< 2	< 4	WB21.4-9
110	< 1	< 2	22	17	3	5	< 2	< 4	WB30-11.7
71	< 1	< 2	17	27	5	15	< 2	< 4	WB31-10
69	< 1	< 2	13	24	2	15	< 2	< 4	WB32-36
140	< 1	< 2	23	30	1	4	< 2	6	WB32-25
57	< 1	< 2	10	12	< 1	5	< 2	< 4	WB32-46
59	< 1	< 2	14	18	2	10	< 2	< 4	WB33-19
53	< 1	< 2	8	17	1	8	< 2	< 4	WB33-45
130	< 1	< 2	32	31	4	9	< 2	6	WB34-5
140	< 1	< 2	39	38	4	12	< 2	8	WB34-9.2
130	< 1	< 2	32	30	3	9	< 2	6	WB34-11.2
120	< 1	< 2	33	43	4	23	< 2	5	WB35-6.8
100	< 1	< 2	37	21	3	9	< 2	4	WB35-9
51	< 1	< 2	14	17	2	9	< 2	< 4	WB35-11
180	< 1	< 2	57	36	4	9	< 2	8	WB36-6.5
54	< 1	< 2	15	15	3	9	< 2	< 4	WB36-9
40	< 1	< 2	11	19	3	12	< 2	< 4	WB36-11
58	< 1	< 2	12	18	1	7	< 2	< 4	WB37-10
240	1	< 2	63	65	1	6	< 2	14	WB20-24
240	1	< 2	61	59	5	16	< 2	11	WB34-9.1
270	1	< 2	67	58	5	12	< 2	12	WB34-11.1
290	1	< 2	56	67	4	15	< 2	14	WB24-7.1
40	< 1	< 2	6	60	4	10	< 2	14	WB33-44.5

Table 18. Concentrations of major and minor inorganic constituents in sediment samples collected from wetland sediments and the Canal Creek aquifer, West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland--Continued

Site No.	Iron (percent solid)	Lanthium (µg/g solid)	Lead (µg/g solid)	Lithium (µg/g solid)	Manganese (µg/g solid)	Mercury (µg/g solid)	Niobium (µg/g solid)	Neodymium (µg/g solid)	Nickel (µg/g solid)
				Canal Creek aquifer, sand--continued					
WB20-21	0.28	24	15	12	14	< 0.02	10	19	2
WB20-29	.40	8	5	7	11	< .02	< 4	6	< 2
WB20-37	1.1	5	< 4	5	24	< .02	< 4	4	< 2
WB21.4-9	.44	6	4	7	32	< .02	< 4	6	2
WB30-11.7	.44	12	7	12	35	< .02	5	11	5
WB31-10	1.8	8	9	8	47	< .02	< 4	9	3
WB32-36	2.0	7	< 4	6	11	< .02	< 4	7	2
WB32-25	.24	14	5	10	13	< .02	7	11	2
WB32-46	.46	6	< 4	5	10	< .02	< 4	5	< 2
WB33-19	.69	7	< 4	6	17	< .02	< 4	7	3
WB33-45	.87	5	< 4	6	11	< .02	< 4	6	< 2
WB34-5	.96	16	11	15	43	< .02	6	14	7
WB34-9.2	1.7	19	14	20	42	< .02	7	18	8
WB34-11.2	1.2	16	12	17	34	< .02	6	15	6
WB35-6.8	1.1	17	10	14	35	.03	6	18	6
WB35-9	.66	19	10	14	33	< .02	6	19	6
WB35-11	1.1	6	7	6	26	< .02	< 4	7	3
WB36-6.5	1.3	27	15	18	78	< .02	9	27	9
WB36-9	1.3	7	6	7	21	< .02	< 4	8	4
WB36-11	1.8	4	5	4	12	< .02	< 4	6	4
WB37-10	1.0	6	5	7	20	< .02	< 4	7	3
				Canal Creek aquifer, clay--continued					
WB20-24	0.51	44	13	13	22	<0 .02	14	33	4
WB34-9.1	1.5	33	17	29	66	< .02	12	29	12
WB34-11.1	1.1	35	17	32	67	< .02	13	31	12
WB24-7.1	2.3	30	16	32	79	< .02	15	26	12
WB33-44.5	15	4	6	4	18	< .02	< 4	< 4	3

Scandium (µg/g solid)	Strontium (µg/g solid)	Thallium (µg/g solid)	Tin (µg/g solid)	Titanium (percent solid)	Vanadium (µg/g solid)	Ytterbium (µg/g solid)	Yttrium (µg/g solid)	Zinc (µg/g solid)	Site No.
5	27	6	< 5	0.27	44	< 1	7	4	WB20-21
4	10	< 4	< 5	.12	29	< 1	2	3	WB20-29
< 2	6	< 4	< 5	.09	14	< 1	< 2	8	WB20-37
< 2	8	< 4	< 5	.08	13	< 1	3	8	WB21.4-9
3	19	< 4	< 5	.17	24	< 1	5	13	WB30-11.7
3	11	5	< 5	.18	33	< 1	4	17	WB31-10
3	10	< 4	< 5	.12	37	< 1	2	9	WB32-36
4	22	< 4	< 5	.21	37	< 1	5	4	WB32-25
< 2	7	< 4	< 5	.09	14	< 1	< 2	4	WB32-46
3	9	< 4	< 5	.08	27	< 1	3	13	WB33-19
< 2	8	< 4	< 5	.11	27	< 1	< 2	5	WB33-45
5	24	5	< 5	.23	40	< 1	7	19	WB34-5
6	27	6	< 5	.23	58	1	10	25	WB34-9.2
5	25	6	< 5	.19	38	< 1	8	18	WB34-11.2
5	20	6	< 5	.21	35	1	10	22	WB35-6.8
4	17	5	< 5	.21	29	1	12	16	WB35-9
2	6	< 4	< 5	.07	26	< 1	4	11	WB35-11
6	34	8	< 5	.32	45	2	17	26	WB36-6.5
2	7	< 4	< 5	.09	16	< 1	3	13	WB36-9
< 2	4	< 4	< 5	.05	14	< 1	2	12	WB36-11
< 2	8	< 4	< 5	.09	18	< 1	3	12	WB37-10
10	46	9	< 5	0.38	69	2	16	7	WB20-24
10	47	11	< 5	.35	76	2	17	33	WB34-9.1
10	56	9	< 5	.38	68	2	18	34	WB34-11.1
12	55	11	< 5	.36	98	2	14	35	WB24-7.1
8	7	5	5	.06	240	< 1	< 2	37	WB33-44.5

Table 19. Percent moisture and volatile organic compounds detected in sediment samples from the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland

[µg/kg, micrograms per kilogram dry soil; sediment core site numbers give the sample depth (after the dash), in feet below land surface; (r), laboratory duplicate analysis of the sample; t, trace amount detected; E, value detected below the reporting limit and given as an estimated value; B, detected in the instrument blank; <, less than]

Sediment Core Site no.	Date	Percent Moisture	1,1,2,2-Tetra-chloro-ethane (µg/kg)	Tetra-chloro-ethene (µg/kg)	1,1,2-Tri-chloro-ethane (µg/kg)	1,1-Di-chloro-ethane (µg/kg)	Tri-chloro-ethene (µg/kg)	*cis*-1,2-Di-chloro-ethene (µg/kg)	*trans*-1,2-Di-chloro-ethene (µg/kg)
WB21 - 2.5	07-12-94	55.11	<30	t	<30	<30	134	E23	E11
WB21 - 2.5 (r)	07-12-94	--	<30	t	<30	<30	132	E22	E12
WB21 - 5.4	07-12-94	14.79	<30	E8.0	<30	<30	42	<30	<30
WB22 - 5.0	07-13-94	40.75	<30	E9.5	<30	<30	580	210	E19
WB22 - 5.0 (r)	07-13-94	--	<30	E12	<30	<30	680	160	E21
WB22 - 7.0	07-13-94	20.85	<30	t	<30	<30	33	t	<30
WB23 - 3.0	07-12-94	23.54	<30	<30	<30	<30	<30	<30	<30
WB24 - 5.0	07-19-94	60.77	<30	<30	<30	<30	<30	E10	<30
WB24 - 7.0	07-19-94	19.40	<30	<30	<30	<30	28	E4.7	<30
WB24 - 18	10-14-94	14.30	t	<30	<30	<30	E8.0	<30	<30
WB24 - 26	10-14-94	19.40	E10	<30	<30	<30	E12	<30	<30
WB25 - 1.0	07-26-94	52.82	<30	<30	<30	<30	<30	<30	<30
WB25 - 1.0 (r)	07-26-94	--	<30	<30	<30	<30	<30	<30	<30
WB26 - 3.0	07-19-94	64.00	<30	<30	<30	<30	<30	<30	<30
WB26 - 5.0	07-19-94	67.80	<30	<30	<30	<30	<30	E8.0	E9.0
WB26 - 13.5	10-12-94	13.00	t	<30	<30	<30	t	<30	<30
WB26 - 15	10-12-94	9.49	E9.2	<30	<30	<30	t	<30	<30
WB26 - 21	10-12-94	17.89	E8.3	<30	<30	<30	E13	<30	<30
WB27 - 0.5	07-20-94	70.20	<30	<30	<30	<30	<30	<30	<30
WB27 - 1.0	07-26-94	52.82	<30	<30	<30	<30	<30	<30	t
WB27 - 3.0	07-20-94	67.00	<30	120	<30	t	51	E21	E10
WB27 - 5.0	07-20-94	69.40	<30	45	<30	t	29	E24	E8.7
WB30 - 0.8	07-14-94	44.05	<30	<30	<30	<30	<30	<30	<30
WB30 - 0.9	07-14-94	48.60	<30	<30	<30	<30	<30	<30	<30
WB30 - 5.0	07-14-94	18.57	<30	E10	<30	<30	29	<30	<30
WB31 - 1.0	07-14-94	18.95	<30	<30	<30	<30	E13	<30	<30
WB31 - 3.0	07-14-94	15.69	<30	<30	<30	<30	t	<30	<30
WB31 - 3.0 (r)	07-14-94	--	<30	<30	<30	<30	t	<30	<30
WB35 - 1.5	07-22-94	73.20	2,500	88	72	<30	370	110	280
WB36 - 4.0	07-21-94	67.60	<30	<30	<30	<30	93	63	230
WB37 - 11	07-21-94	15.10	<30	<30	<30	<30	<30	<30	<30
WB43 - 0.5	07-22-94	52.60	<30	<30	<30	<30	<30	<30	<30
WB43 - 1.0	07-22-94	68.90	<30	<30	<30	<30	<30	68	<30

1,1-Di-chloro-ethene (µg/kg)	Vinyl chlo-ride, (µg/kg)	Carbon Tetra-chlor-ide, (µg/kg)	Chloro-form (µg/kg)	Methyl-ene chlo-ride, (µg/kg)	Benzene (µg/kg)	1,2-Di-chloro-benzene (µg/kg)	1,3-Di-chloro-benzene (µg/kg)	1,4-Di-chloro-benzene (µg/kg)	Sediment Core Site No.
<30	t	<30	<30	<31 B	t	<30	<30	<30	WB21 - 2.5
<30	<30	<30	<30	<30	t	<30	<30	<30	WB21 - 2.5 (r)
<30	<30	<30	<30	<30	<30	<30	t	t	WB21 - 5.4
t	t	<30	<30	<30	45	<30	<30	<30	WB22 - 5.0
t	t	<30	<30	<30	39	<30	<30	<30	WB22 - 5.0 (r)
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB22 - 7.0
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB23 - 3.0
<30	t	<30	<30	<88 B	<30	<30	<30	<30	WB24 - 5.0
<30	<30	<30	<30	<48 B	<30	<30	<30	<30	WB24 - 7.0
<30	<30	<30	t	<30	<30	<30	<30	<30	WB24 - 18
<30	<30	t	t	<30	<30	<30	<30	<30	WB24 - 26
<30	<30	<30	<30	<30	<30	t	<30	t	WB25 - 1.0
<30	<30	<30	<30	<30	<30	t	<30	t	WB25 - 1.0 (r)
<30	<30	<30	<30	<84 B	<30	<30	<30	<30	WB26 - 3.0
<30	t	<30	<30	<106 B	<30	<30	<30	<30	WB26 - 5.0
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB26 - 13.5
<30	<30	<30	E8.5	<30	<30	<30	<30	<30	WB26 - 15
<30	<30	t	E7.5	<30	<30	<30	<30	<30	WB26 - 21
<30	<30	<30	<30	<62 B	<30	<30	<30	<30	WB27 - 0.5
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB27 - 1.0
E17	<30	E21	E23	<52 B	<30	<30	<30	<30	WB27 - 3.0
E17	<30	t	E18	<140 B	<30	<30	<30	<30	WB27 - 5.0
<30	<30	<30	<30	<34 B	<30	<30	<30	<30	WB30 - 0.8
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB30 - 0.9
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB30 - 5.0
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB31 - 1.0
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB31 - 3.0
<30	<30	<30	<30	<30	<30	<30	<30	<30	WB31 - 3.0 (r)
<30	<30	<30	<30	<99 B	<30	<30	<30	<30	WB35 - 1.5
<30	15	<30	<30	<81 B	<30	<30	<30	<30	WB36 - 4.0
<30	<30	<30	<30	<40 B	<30	<30	<30	<30	WB37 - 11
<30	<30	<30	<30	<68 B	<30	E14	E11	E13	WB43 - 0.5
<30	E12	<30	<30	<110 B	E24	<30	<30	<30	WB43 - 1.0