1997 Water Monitoring Report

for

Laboratory for Energy-related Health Research and South Campus Disposal Site

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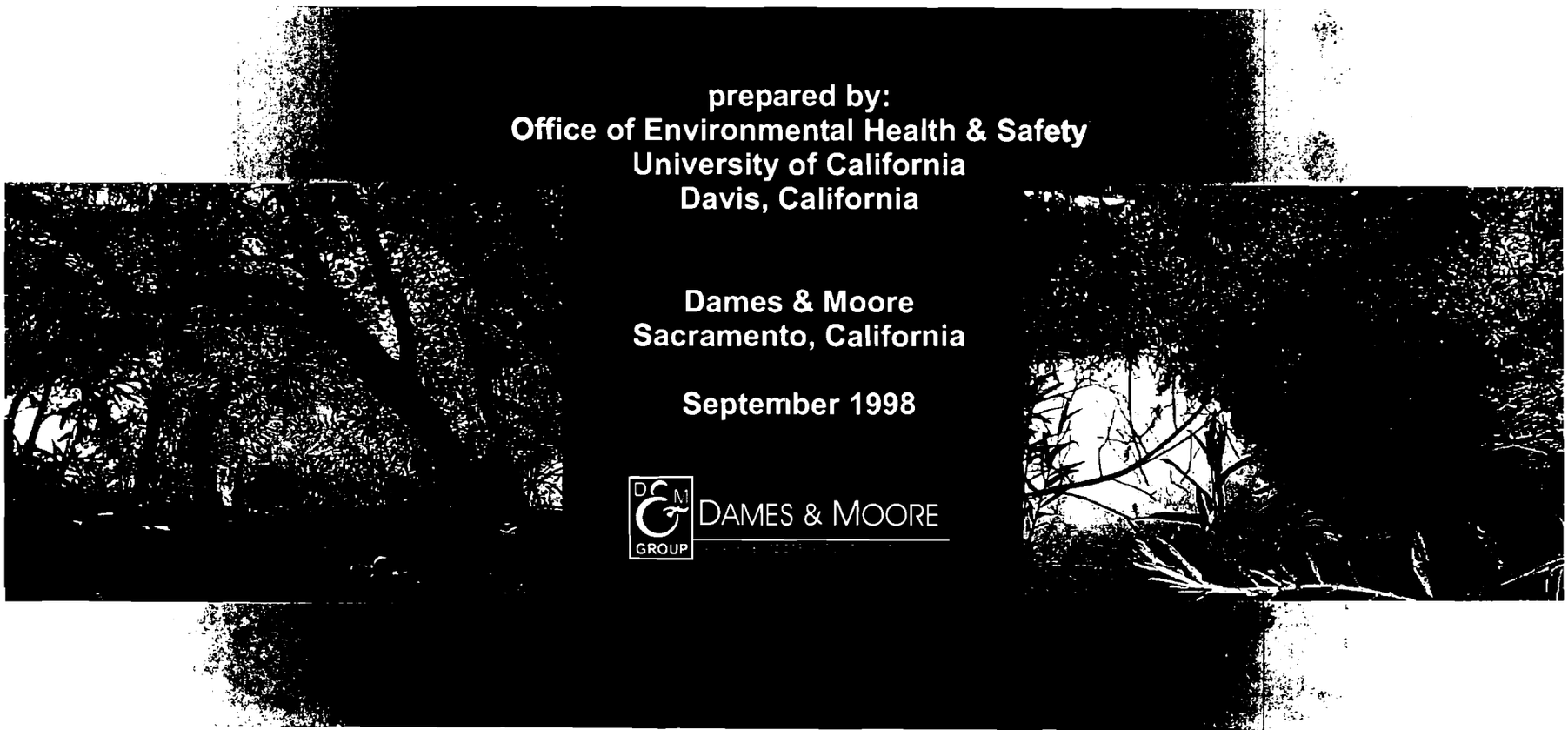

prepared by:
Office of Environmental Health & Safety
University of California
Davis, California

Dames & Moore
Sacramento, California

September 1998

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UNIVERSITY OF CALIFORNIA, DAVIS

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September 25, 1998

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Re: 1997 Water Monitoring Report

Dear Ms. Timm, Mr. Austin, Ms. Brown, and Ms. Setian:

Enclosed please find one copy of the 1997 Water Monitoring Report for the LEHR/SCDS Site. This report presents groundwater, surface water, and storm water monitoring data collected in 1997.

If you have any questions about the enclosed document, please call me at (530) 752-6041, or write me at the following address:

Environmental Health & Safety
University of California
One Shields Avenue
Davis, California 95616-8646

for
Brian Oatman
LEHR/SCDS Project Manager

Attachments: 1997 Water Monitoring Report

cc: Julie McNeal, UC Davis
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1997 ANNUAL WATER MONITORING REPORT
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LEHR/SCDS ENVIRONMENTAL RESTORATION
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1.0 EXECUTIVE SUMMARY

This annual report presents the results of the1997 groundwater, surface water and storm water monitoring program conducted at the former Laboratory for Energy-Related Health Research facility and South Campus Disposal Site (LEHR/SCDS) (the Site). During the year, extensive water monitoring was performed at the Site in coordination with the Remedial Investigation/Feasibility Study (RI/FS) currently being implemented at the Site. This report has been prepared in compliance with the Site Water Monitoring Plan (PNL, 1994b) and the Draft Revised Field Sampling Plan (Dames & Moore, 1997a). These documents specify the sample collection, analysis, and quality assurance/quality control procedures and reporting requirements for the Site water monitoring program.

The purpose of collecting monitoring data presented in this report is to assess the present and potential impacts to groundwater and surface water due to the presence of former waste disposal areas located at the Site. The data are also used by UC Davis to support conceptual development and design criteria for interim and final soil and groundwater remediation. In addition, the sampling data will be used to evaluate the successful implementation of the interim remedial action (IRA) for groundwater remediation that was developed during 1997 and constructed at the Site in the spring of 1998.

1.1 1997 Changes to Monitoring Program

Responsibility for investigation and remediation of the Site was divided by investigation area between the U.S. Department of Energy (DOE) and UC Davis through a Memorandum of Agreement (MOA) on June 23, 1997. In conjunction with this agreement, UC Davis took over implementation of quarterly groundwater and surface water monitoring at the beginning of the year. The first two quarters of monitoring in 1997 were performed under the Water Monitoring Plan (PNL, 1994b). Beginning with the summer quarter, monitoring was conducted in accordance with the UC Davis' Draft Revised Field Sampling Plan (FSP) (Dames & Moore, 1997a).

Several changes were implemented in the Site water monitoring program during 1997. Nine new monitoring wells were added to the program, three of which were installed in the fourth hydrostratigraphic unit (HSU) for investigation of this deeper groundwater unit. During the development of the FSP (Dames & Moore, 1997a), the schedule for collection of data was revised to increase efficiency and usefulness of data.

Based on a review of historical groundwater and surface water monitoring data compiled since the fall of 1990, the list of analytes included in the program was modified. Where additional data was needed, analytes were added to the sampling schedule for selected groundwater and surface water sampling

locations. The sampling schedule was reduced for other locations and analytes with clear, established trends and/or few positive detections. These revisions were implemented in the summer monitoring quarter.

1.2 Groundwater Investigation Activities

A number of activities performed during the year contributed to a better understanding of site hydrogeology. These activities included an off-site groundwater investigation, groundwater studies performed in preparation for the installation of the groundwater Interim Remedial Action (IRA), and monthly water level measurements. The Removal Action Work Plan Report (Dames & Moore, 1997b) and the Off-Site Monitoring Well Installation Data Transmittal for the Fourth Hydrostratigraphic Unit (Dames & Moore, 1998d) provide details of the investigations performed. During these groundwater investigation activities, eleven groundwater wells were installed. These included five groundwater monitoring wells, one injection well for the IRA, and five groundwater monitoring wells for the off-site groundwater investigation. These wells were sampled for the first time during the fall 1997 sampling quarter.

Groundwater elevation data were assessed by using the measured water level data to compile groundwater elevation hydrographs and elevation contour plots to establish generalized flow conditions. Groundwater flow directions for 1997 were similar to those reported in previous years, and the range of water levels were similar to those in 1995-1996. Due to the 1997 precipitation pattern, groundwater levels experienced a rapid decline from February through August, followed by aquifer recovery after cessation of agricultural pumping in September through December. During 1997, the lateral gradient in HSU-1 was toward the east, with a slight northerly component that is prominent in the winter. The lateral gradient in HSU-2 continues to be consistently toward the east with a slight northerly component in winter. In HSU-4, the groundwater flow direction for fall (the only 1997 quarter with measurement data) was to the northeast.

1.3 Water Monitoring Results

A total of 20,164 analytical results were reported and validated for 1997 monitoring data, according to procedures outlined in the draft Revised Quality Assurance Project Plan. Over 98% of this data (19,886 results) were accepted and less than 2% (278 results) were rejected.

In general, results of groundwater monitoring during 1997 were similar to those of recent years. Levels of constituents of concern, including chloroform and other volatile organic compounds (VOCs), tritium, carbon-14, nitrate and hexavalent chromium reported in site wells were similar to those found in 1996. A statistical analysis was conducted on analytical results from 1997 groundwater samples. The purpose of this analysis was to compare data from downgradient sample locations with data from background locations UCD1-18 and UCD2-17 to evaluate impacts to groundwater in the vicinity of the Site. Data for HSU-1 and HSU-2 were evaluated separately.

As in previous years, reported surface water analytical results show the presence of several VOCs, including low levels of acetone, methylene chloride and trihalomethanes (chloroform, bromodichloromethane, bromoform and dibromochloromethane). Acetone and methylene chloride are routinely reported in laboratory samples as a result of laboratory contamination. However, methylene chloride has never been reported in upstream samples and is regularly reported in STPO samples. Acetone was the only VOC reported in all three surface water locations, although all acetone results were qualified as estimated. The use of chlorine disinfectants in the UC Davis wastewater treatment plant is a potential source of the trihalomethanes. Wastewater effluent is treated at the plant to reduce trihalomethane concentrations and ensure levels are below the 20-μg/L residual chlorine discharge requirement.

Stormwater sampling was conducted in spring and fall of 1997. This report also includes landfill stormwater results for December 1996, since data validation was not complete in time for this data to be included in the 1996 annual report. Several metals, including chromium, iron, lead, manganese and nickel were reported at landfill stormwater samples. Survival bioassay tests for acute toxicity were added to surface and stormwater monitoring, beginning with the spring quarter. All of these results were reported as being between 95% and 100% survival for 1997 samples.

1.4 IRA Progress Update--Treatment System Construction

The groundwater IRA treatment system was constructed between January and April 1998 under the supervision of UC Davis and Dames & Moore. Construction activities included: mobilization, site clearing and grading, concrete pad construction, building construction, extraction and injection well head installation, installation of treatment system components and piping and electrical and control wiring connections. Following the completion of construction, the system operation was checked and a Treatment Performance Evaluation (TPE) was conducted. As part of the system check, the piping was pressure tested to ensure there were no leaks, the instrumentation and control systems were inspected, and automatic controls were tested to ensure they operated within the design parameters. During the TPE, the system was run for over 48 hours and sampled frequently to ensure that it was effectively removing VOCs as designed. Treated water was discharged to the sanitary sewer during the TPE. *The Treatment Performance Evaluation Report* (Dames & Moore, 1998c) provides greater detail of the actions taken to evaluate operation of the treatment system. The IRA began full-scale operation in May 1998.

1.5 New Wells Constructed for IRA

In 1997 five new monitoring wells were installed in HSU-2 to assess water quality and gradient effects of the groundwater IRA. Wells were placed near the injection well, along the northern boundary of the chloroform plume, within the chloroform plume and downgradient of the extraction well. These wells will be sampled monthly during the first year of operation of the IRA treatment system to monitor the effectiveness of the IRA.

1.6 Update on HSU-4 Investigation

Four monitoring wells were installed in HSU-4 during 1997. Results reported from monitoring of some off-site irrigation wells indicated detections of chloroform and other VOCs. Since construction of these wells allowed a connection between HSU-2 and HSU-4, monitoring wells were needed in HSU-4 to determine if constituents of concern were present in HSU-4 groundwater and at what levels. The first well, UCD4-33 was abandoned after a casing break was discovered. Well UCD4-42 was constructed to replace UCD4-33. This well is located adjacent to an irrigation well that provides a conduit between HSU-2 and HSU-4. Two other wells, UCD4-41 and 4-43 were added to provide additional data on constituents of concern in groundwater and determine flow direction and gradient in HSU-4. Based on 1997-1998 water level measurements from these wells, flow directions have varied from northeast to east-southeast.

1.7 Site Information Sources

For more information about the Site restoration program, you may contact:

Brian Oatman - UC Davis Project Manager	(530) 752-6041
Susan Fields - DOE Project Manager	(510) 637-1608

Documents relating to the Site investigation and restoration may by found at the following locations:

UC Davis Shields Library, Reserve Desk
University of California
Davis, California
(530) 752-1203

Yolo County Public Library, Davis Branch
Reference Desk
315 14th Street
Davis, California
(530) 756-2332

Additional information is also available on the Internet at:

www.ehs.ucdavis.edu/envrprot/lehr.html

2.0 INTRODUCTION

This report presents the analytical results for the 1997 water monitoring program at the former Laboratory for Energy-related Health Research (LEHR)/South Campus Disposal Site (SCDS) (the Site) located at the University of California, Davis (UC Davis) (Figure 2.1). The water monitoring program is performed as part of the environmental restoration project for the Site that is being conducted by the U.S. Department of Energy (DOE) and the University of California. The water monitoring program consists of quarterly sampling of groundwater and surface water and seasonal sampling of storm water runoff. The sampling was performed in accordance with the procedures and analyses detailed in the site-specific Water Monitoring Plan (PNL, 1994b) and the Revised FSP (Dames & Moore, 1997a).

2.1. Purpose and Objectives of Annual Report

The purpose of the water monitoring program at the Site is to monitor the presence or absence of constituents of concern in groundwater and surface water and to track changes in concentration or movement of contaminants over time. This report presents the results of the fall 1997 monitoring and data validation and summarizes the results of the winter, spring and summer quarters, which have previously been reported (Dames & Moore, 1997c, 1998d, 1998e). This Annual Report is intended to present a more detailed analysis of the results contained in the quarterly data transmittals. The specific objectives of this report are to:

- present an evaluation and discussion of water monitoring data for groundwater and surface water samples collected during 1997;
- discuss changes in the hydrogeological model;
- present data validation methods and results;
- identify data gaps and potential deficiencies in the water monitoring program;
- propose changes to the analyte list and/or frequency of analyses;
- evaluate the presence of constituents of concern in downgradient wells in relation to background wells;
- evaluate the presence of constituents of concern at surface water and storm water runoff sampling locations; and
- provide data to support the development and implementation of soil and groundwater remediation strategies.

2.2 Project Overview

The Site is located in Solano County, California, approximately 1.5 miles southwest of the city of Davis. The Site is in the southern portion of the UC Davis campus and is bounded by University research and

agricultural facilities, private farmland and the South Fork of Putah Creek. The Site covers approximately 15 acres and contains laboratory buildings and former animal handling facilities.

UC Davis conducted research on laboratory animals at the Site for the U.S. Atomic Energy Commission (later DOE) from the late 1950s until the late 1980s. The main research project at LEHR studied the long-term health effects of strontium-90 and radium-226 exposure on beagle dogs. As a result of LEHR research activities, a variety of laboratory wastes, including radioactive, organic and inorganic materials were disposed of on site. Waste disposal areas at the Site include waste burial trenches, radiological liquid waste treatment systems, domestic septic systems and outdoor dog pens (Figure 2.2).

Adjacent to and co-located with portions of the LEHR site is the SCDS, which consists of three landfill cells and other waste burial trenches and pits used by UC Davis for disposal of general campus refuse, chemical and radiological laboratory wastes and construction debris. Landfill Unit #1 is the oldest waste unit and received waste from the 1940s to the late 1950s or early 1960s. This area is now covered by the former Cobalt-60 field and five animal isolation buildings used by the UC Davis Animal Resource Service. Landfill Unit #2 was used from 1956 to 1967 and is partially covered by the easternmost of two sets of dog pens used for animal research at LEHR. Landfill Unit #3 was used from 1963 to 1967. The combined total acreage for the three landfill areas is estimated at approximately six acres.

As the research at the LEHR facility came to an end, DOE began decontamination and decommissioning of the laboratories at the Site. This led to several phases of investigation of the environmental impacts from past activities, as presented in the *Phase II Site Characterization Report* (Dames & Moore, 1993) and the *Draft RI/FS Work Plan* (PNL, 1994a). At about the same time, investigation of the old landfill areas began as part of the California State Solid Waste Water Quality Assessment Test Program (Dames & Moore, 1990). Based on the findings of these investigations and the potential contamination to groundwater, the Site was placed on the U.S. EPA National Priorities List in May 1994.

Since 1988, several phases of groundwater investigation have resulted in the installation of 43 monitor wells. Two wells (UCD1-2 and UCD4-33) have been abandoned. Water levels are measured in the remaining 41 wells on a monthly basis and 36 wells are routinely sampled as part of the water monitoring program. The *Draft Revised Field Sampling Plan* (Dames & Moore, 1997a) describes the sequence and phases of well installation and the frequency of well monitoring.

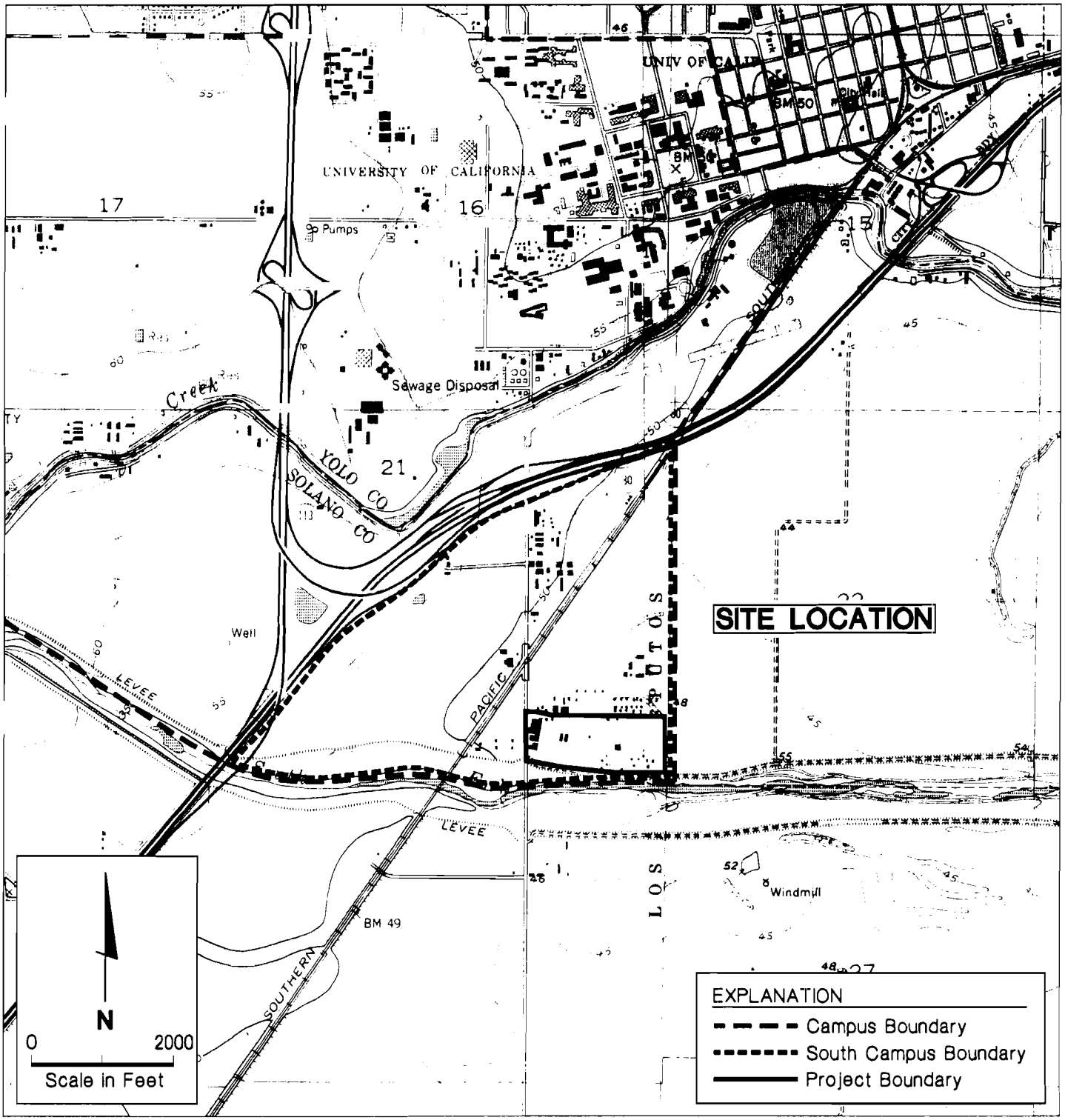
In 1996 UC Davis began planning and design for an Interim Removal Action (IRA) to begin extraction and treatment of groundwater. In May 1998 construction of the IRA treatment system was completed and the system put into operation. The IRA treatment system consists of an extraction well, an air stripper, and an injection well. The IRA was designed to begin to remove chloroform and other VOCs from groundwater at the Site. The system was designed with the intention that the extraction well cut off migration of the chloroform plume, preventing off-site migration of contaminants. Treated water is re-injected upgradient of site source areas. Other site constituents of concern, such as nitrate, total dissolved

solids, tritium or hexavalent chromium are not remediated by the IRA system and will be addressed with future remedial actions.

2.3 Report Organization

This report is organized into nine sections and three appendices. For ease of reference, tables and figures are included at the end of the section in which they are first referenced. Sections 1.0 and 2.0 (above) present an executive summary of this report and introductory and background information to the water monitoring program. Section 3.0 presents a discussion of site hydrogeology. Section 4.0 summarizes 1997 and historical data for site constituents of concern. Section 5.0 presents the results of 1997 water monitoring, and Section 6.0 summarizes 1997 data quality. Section 7.0 presents the results of statistical analysis. Section 8.0 lists acronyms and abbreviations, and Section 9.0 lists references.

Three appendices are attached to this report. Appendix A includes complete tabulated results for 1997 groundwater, surface water, and storm water samples. Appendix B presents time series graphs of historical site data through 1997. Appendix C presents a description of statistical calculations.



REFERENCE: USGS 7.5 Quadrangle; Merritt, CA, 1952, photorevised 1981; and Davis, CA, 1952, photorevised 1981.

SITE VICINITY MAP

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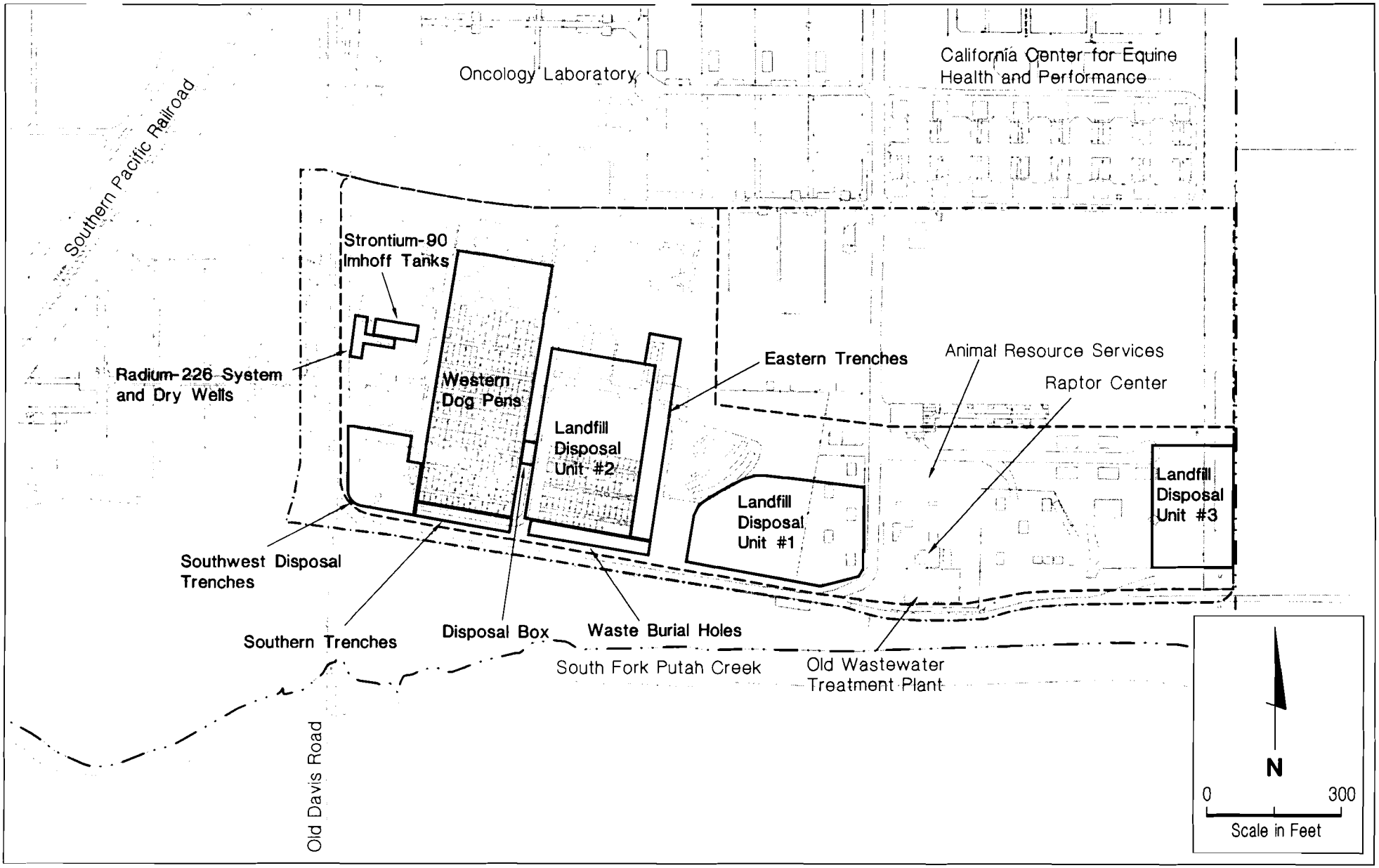
FIGURE 2.1



EXPLANATION

— · · — · · — Campus Boundary

- - - - - - - LEHR/SCDS Boundary

·—·—·—·— Project Boundary

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FIGURE 2.2

3.0 HYDROGEOLOGY

Groundwater investigations have been conducted at the Site since 1987 and have primarily consisted of installing monitoring wells and collecting Hydropunch in-situ water samples from two water-bearing zones that occur beneath the Site. In 1997, groundwater investigation activities included performing an off-site groundwater investigation, designing and starting construction of a groundwater treatment system as an Interim Remedial Action (IRA), and collecting monthly water levels. The details of these activities have been presented in various groundwater investigation reports, which include the Removal Action Work Plan (Dames & Moore, 1997b), the Off-Site Monitoring Well Installation Data Transmittal for the Fourth Hydrostratigraphic Unit (Dames & Moore, 1998), and in the Winter, Spring and Summer Quarterly Data Transmittals (Dames & Moore, 1997c, 1998d, 1998e).

This section summarizes the Site hydrogeology data collected during 1997 groundwater investigations. Section 3.1 describes site hydrostratigraphic units. Section 3.2 presents a summary of groundwater investigation and well installation activities conducted in 1997 at the Site. Sections 3.3 through 3.6 present discussions of groundwater elevations, horizontal and vertical gradients, and aquifer parameters observed at the Site in 1997.

3.1 Site Hydrostratigraphic Units

During groundwater investigations conducted previously and in 1997, five hydrostratigraphic units (HSUs) have been identified beneath the Site. A description of the Site hydrogeology has been presented in several previous reports including the 1995 Annual Water Monitoring Report (PNNL, 1996a) and the Off-Site Monitoring Well Installation Data Transmittal for the Fourth Hydrostratigraphic Unit (Dames & Moore, 1998a).

The hydrostratigraphic units identified beneath the Site include the vadose zone, HSU-1, HSU-2, HSU-3, and HSU-4. Descriptions for each of the hydrostratigraphic units are presented below.

- The vadose zone extends to a depth of 29 to 55 feet bgs, depending on water level. This unit consists of primarily unsaturated clays and silts with lesser amounts of interbedded sands and gravels.

- HSU-1 extends to a depth of 76 to 88 feet bgs. This unit is lithologically similar to the vadose zone, and consists primarily of silt and clay with lesser amounts of sand and gravel.

- HSU-2 extends to a depth of 114 to 130 feet bgs, for a thickness of 28 to 54 feet. This unit is composed primarily of sand in the upper portion of the unit and gravel in the middle to lower portions of the unit.

- HSU-3, investigated for the first time at the Site in 1997, extends to a depth of about 250 feet bgs, for a thickness of approximately 120 feet. The unit consists primarily of relatively fine-grained sediments varying from very fine-grained sandy silt to clayey silt to silty clay.

- HSU-4, investigated for the first time at the Site in 1997, extends to a depth of about 282 feet bgs, for a thickness of about 32 feet. This unit consists of coarse sand and gravel.

Beneath HSU-4, a sharp contact with a bluish, dark gray silt was encountered at 282 feet bgs in wells UCD4-41 and UCD4-43. The bottom of this unit was not penetrated in any of the Site borings. A schematic cross-section of these hydrostratigraphic units is presented as Figure 3.1. A generalized cross section, including stratigraphic data of HSU-3 and HSU-4 from off-site areas, is presented as Figure 3.2.

3.2 1997 Investigation Activities

During groundwater investigation activities conducted in 1997, 11 groundwater wells were installed. Five groundwater monitoring wells (UCD2-36, UCD2-37, UCD2-38, UCD2-39, and UCD2-40) and one injection well (IW2-1) were installed as part of the groundwater IRA activities. Five groundwater monitoring wells (UCD2-32, UCD4-33, UCD4-41, UCD4-42, and UCD4-43) were installed as part of the off-site groundwater investigation. These activities are summarized below, and monitoring well construction details are presented in Table 3.1; monitoring well locations are presented in Figure 3.3.

3.2.1 Design and Start-Up of the Groundwater IRA

The groundwater Interim Removal Action (IRA) is an interim and non-time critical removal action to address VOC impacts that have been reported in Site HSU-2 groundwater. A detailed description of the IRA was previously presented in the Removal Action Work Plan (RAWP; Dames & Moore, 1997b) and the Engineering Evaluation/Cost Analysis (EE/CA) Report (Dames & Moore, 1997d). In general, the IRA consists of extracting groundwater from HSU-2 downgradient of Site source areas, treating the groundwater for VOCs by air stripping, and injecting the treated water into HSU-2 upgradient of the Site.

Nine monitoring wells, one injection well, and one extraction well were installed as part of the groundwater IRA. The monitoring wells will be used to evaluate the extraction and injection system. In September 1996, four monitoring wells (UCD1-28, UCD2-29, UCD2-30, and UCD2-31) and extraction well (EW2-1) were installed. In October and November 1997, monitoring wells UCD2-36, UCD2-37, UCD2-38, UCD2-39, and UCD2-40 and injection well IW2-1 were installed. Boring logs and well installation details for the 1996 IRA wells were presented in the Removal Action Work Plan (Dames & Moore, 1997b), and boring logs for the 1997 IRA wells will be presented in the Groundwater IRA Start-up Report.

3.2.2 Off-Site Groundwater Investigation

As part of the overall investigation of site impacts to groundwater, a limited investigation was performed off-site between December 1996 and April 1997. The purpose of this investigation was to assess off-site groundwater impacts to HSU-2 and HSU-4 and to assess the potential for groundwater cross-contamination due to two nearby irrigation wells. Two monitoring wells were installed downgradient of the Site; UCD2-32 was installed in HSU-2 and UCD4-33 was installed in HSU-4. During development

and sampling of UCD4-33, a break in the well screen was discovered and the well was abandoned by pressure grouting.

Hydraulic and chemical data collected from UCD4-33 prior to abandonment indicated that HSU-4 was impacted with chloroform and, as a result, three additional HSU-4 monitoring wells (UCD4-41, UCD4-42, and UCD4-43) were installed between September and November 1997 (Dames & Moore, 1998a). Downhole geophysical logging and rising- and falling-head permeability (slug) testing were conducted to gain further stratigraphic and hydraulic data (see Figure 3.2). Well installation details from the off-site investigation were presented in the Off-Site Monitoring Well Installation Data Transmittal for the Fourth Hydrostratigraphic Unit (Dames & Moore, 1998a) and the Removal Action Work Plan (Dames & Moore, 1997b). Hydraulic data from slug testing are discussed further in Section 3.6.

3.3 Groundwater Elevations

Groundwater elevations were measured monthly for HSU-1 and HSU-2 wells and in the fall quarter of 1997 for HSU-4 wells. During 1997, HSU-1 groundwater elevations ranged from 0.22 to 31.58 feet mean sea level datum (MSLD) and HSU-2 groundwater elevations measured ranged from –0.73 to 29.90 feet MSLD. In fall 1997, HSU-4 groundwater elevations measured ranged from 9.54 to 11.69 feet MSLD. Groundwater elevation data are presented in the following tables and figures: groundwater elevations for 1997 are presented in Table 3.2.; quarterly groundwater elevation contour maps are presented in Figures 3.4 through 3.12; and groundwater elevation hydrographs are presented in Figures 3.13 through 3.22.

Groundwater elevation data for HSU-1 and HSU-2 wells have been collected for over six years. Water levels measured across the Site in HSU-1 and HSU-2 are typically highest in March and April, but in 1997, were highest in February and March. A rapid decline in water levels across the Site occurred from April to August, primarily due to pumping from HSU-2 and HSU-4 as supply to local agriculture during the dry spring and summer months. Water levels recovered from September through December, primarily due to the end of the agricultural pumping season in August, and the beginning of the wet season in October.

In addition to the overall seasonal trends in water levels, water levels in HSU-1 also respond to changes in Putah Creek stage level. Water levels in HSU-2 wells located near Putah Creek show a dampened response to creek stage level. Because HSU-4 wells were installed in late 1997, groundwater elevation trends in HSU-4 cannot yet be evaluated. Water level trends for HSU-4 will be evaluated in the 1998 Annual Water Monitoring Report, after one year of water levels have been obtained.

3.4 Horizontal Groundwater Gradients

Figures 3.4 through 3.12 show groundwater elevation contours for HSU-1, HSU-2, and HSU-4 wells in 1997. In 1997, the groundwater flow direction in HSU-1 for 1997 was northeast (23 to 40 degrees from east). HSU-1 horizontal hydraulic gradients ranged from approximately 0.0017 to 0.003 and were

shallower in the fall and summer and steeper in the winter and spring. This is consistent with gradients and flow directions observed in previous years.

In 1997, the groundwater flow direction in HSU-2 was interpreted to be east with a northerly component (0 to 18 degrees from east). HSU-2 horizontal hydraulic gradients in 1997 ranged from approximately 0.0007 to 0.0015 and were shallower in the fall and winter and steeper in the spring and summer. This is consistent with gradients and flow directions observed in previous years (PNNL, 1996a; Weiss Associates, 1997).

Based on one set of groundwater elevation measurements, the horizontal hydraulic gradient of HSU-4 for fall 1997 was approximately 0.001 (Figure 3.12). The groundwater flow direction was to the northeast (50 degrees from east).

3.5 Well Pairs

Ten well pairs exist at the Site and were used to qualitatively estimate vertical groundwater gradients. Eight of the ten well pairs consist of a monitoring well completed in HSU-1 adjacent to a monitoring well completed in HSU-2. HSU-1/HSU-2 well pairs include: UCD1-18 and UCD2-17; UCD1-1 and UCD2-16; UCD1-20 and UCD2-7; UCD1-13 and UCD2-14; UCD1-34 and UCD2-35; UCD1-25 and UCD2-26; UCD1-11 and UCD2-39; and UCD1-28 and UCD2-29. Two of the ten well pairs consist of a monitoring well completed in HSU-2 adjacent to a monitoring well completed in HSU-4. HSU-2/HSU-4 well pairs include: UCD2-40 and UCD4-41; and UCD2-32 and UCD4-42 (Figure 3.2).

Vertical groundwater gradients were estimated using water level elevation differences measured between wells in a well pair. Water level elevations are presented in Table 3.2. The bottom portion of the hydrographs presented in Figures 3.13 through 3.22 plot a line that represents the difference in water level elevation between the wells in a well pair (HSU-2 minus HSU-1 or HSU-4 minus HSU-2). A downward vertical gradient is expressed when the plotted line is below zero and occurs when the HSU-1 water level is greater than the HSU-2 water level or the HSU-2 water level is greater than the HSU-4 water level. An upward vertical gradient is expressed when the plotted line is above zero and occurs when the HSU-2 water level is greater than the HSU-1 water level or the HSU-4 water level is greater than the HSU-2 water level. No net vertical gradient is indicated when water levels are the same for the wells in a well pair and when the plotted line is at zero.

Through 1994, vertical groundwater gradients between HSU-1 and HSU-2 were typically downward from April to September, during the agricultural pumping season when water was being pumped from HSU-2 and deeper units. Vertical groundwater gradients were upward from September through November, when water levels began to recover in HSU-2. In 1995, 1996, and 1997, which have been relatively wet years, the apparent vertical groundwater gradient has typically been downward during the pumping season, and

relatively flat (near zero) during the rainy season. The largest difference for 1997 of 3.74 feet occurred in May in well pair UCD1-34/UCD2-35 (Figure 3.17).

Based on two sets of groundwater elevations for well pair UCD2-40/UCD4-41 and one set of groundwater elevations for well pair UCD2-32/UCD4-42, the vertical groundwater gradient between HSU-2 and HSU-4 for fall 1997 was downward. The difference in water levels measured between HSU-2 and HSU-4 ranged from 0.60 to 1.63 feet. Apparent vertical groundwater gradients between HSU-2 and HSU-4 will be evaluated more completely in the 1998 Annual Water Monitoring Report, after one year of water levels have been collected.

3.6 Aquifer Parameters

Aquifer parameters for HSU-1 and HSU-2 were previously estimated by conducting slug tests in HSU-1 and HSU-2 (Dames & Moore, 1993) and a pumping test in HSU-2 and HSU-4 (Dames & Moore, 1997b). Results of the slug tests were presented in the Groundwater Characterization Field Activities Report for 1995-1996 (PNNL, 1996b). Results of the pumping test were presented in Removal Action Work Plan (Dames & Moore, 1997b).

In 1997, aquifer parameters for HSU-4 were estimated by conducting slug tests in wells UCD4-41 and UCD4-43 and performing a constant-rate pumping test of off-site irrigation well 22N in July 1997. The results of the pumping test were previously presented in the Off-Site Monitoring Well Installation Work Plan (Dames & Moore, 1997f). The results of the slug tests were previously presented in the Off-Site Monitoring Well Installation Data Transmittal for the Fourth Hydrostratigraphic Unit (Dames & Moore, 1998a).

In general, the hydraulic conductivity for HSU-4 was estimated to range from 73 to 242 feet/day for both the pumping test and slug test data. The transmissivity was estimated to range from 1,788 to 6,849 feet^2/day for the slug test data to 12,850 feet^2/day for the pumping test data. The transmissivity results for the slug test data were calculated using an HSU-4 thickness of 24.5 to 31.5 feet, based on geophysical logs. The transmissivity results for the pumping test data were calculated using an HSU-4 thickness of 52 to 77 feet, based on 1995 Time-domain Electromagnetic (TEM) Models. Table 3.3 presents a summary of aquifer parameters for these three Site hydrostratigraphic units (HSU-1, HSU-2, and HSU-4).

3.7 1997 Summary

During 1997, 10 monitoring wells and one injection well were installed as part of IRA and off-site investigation activities. The installation of off-site HSU-4 wells UCD4-33 (destroyed), UCD4-41, UCD4-42, and UCD4-43 has resulted in expanding site stratigraphic data below HSU-2 for the first time. HSU-3 underlies HSU-2 from approximately 130 feet bgs to 250 feet bgs, and is primarily fine-grained silt and clay with some thin sandy intervals. HSU-3 is underlain by HSU-4, which occurs from

approximately 250 feet bgs to 280 feet bgs, and consists of sand and gravel. HSU-4 is a regional aquifer used for drinking and irrigation supply.

TABLE 3.1
SUMMARY OF WELL CONSTRUCTION DETAILS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

Well Number	Date Installed	Total Boring Depth (ft bgs)	PVC Well Diameter (inches)	Screen Interval (ft bgs)	Filter Pack (ft bgs)	Bentonite (ft bgs)	Cement (ft bgs)	Elevation Top of Well Cover (ft msl)	Elevation Ground Surface (ft msl)
UCD1-1	10/09/87	56.5	2	46.5-56.5	41-56.5	38-41	0-38	50.05	47.9
UCD1-2	Abandoned								
UCD1-3	10/23/87	51.5	2	39-49	34-51.5	(a)	0-34	50.05	48.2
UCD1-4	10/14/87	56.5	2	45-55	40-56.5	(a) 37-40	0-37	51.69	49.4
UCD1-5	10/22/87	48.5	2	38-48	33-48	(a)	0-33	48.44	48.4
UCD1-6	10/21/87	52.5	2	40-50	35-50	(a)	0-35	50.94	49.0
UCD2-7	11/05/87	90	2	80-90	75-90	(a)	0-75	51.65	49.3
UCD1-8	11/03/87	56	2	43.5-53.5	39-53.5	(a)	0-39	51.51	49.2
UCD1-9	11/04/87	51.5	2	40-50	35-50	(a)	0-35	51.38	49.0
UCD1-10	10/11/89	70	4	54-69	52-70	49-52	0-49	49.87	47.4
UCD1-11	10/17/89	66.5	4	50-65	47-66.5	44-47	0-44	50.67	47.6
UCD1-12	10/19/89	65	4	49.5-64.5	47-65	44-47	0-44	51.76	48.8
UCD1-13	10/26/89	65	4	50-65	47-65	44.5-47	0-44.5	52.19	49.2
UCD2-14	11/15/89	86	4	75-85	69-86	64-69	0-64	48	49.0
UCD2-15	03/28/90	120.5	4*	91-116	86-120.5	65-86	0-65	51.49	49.4
UCD2-16	04/04/90	122	4*	92-117	86-122	71-86	0-71	49.95	48.2
UCD2-17	04/10/90	143	4*	88-113	81-113	78-81	0-78	51.83	49.6
UCD1-18	10/04/90	70	4*	54-69	51-70	48-51	0-48	48.56	46.7
UCD1-19	10/01/90	74.5	4*	56.5-71.5	53.5-72.5	50.5- 53.5	0-50.5	51.33	49.3
UCD1-20	10/09/90	73.5	4*	57-72	54-73.5	51-54	0-51	49.78	48.0
UCD1-21	10/11/90	73.5	4*	57-72	54-73.5	51-54	0-51	48.77	48.7
UCD1-22	10/25/90	73	4*	57-72	54-73	51-54	0-51	49.07	49.0
UCD1-23	10/17/90	76.5	4*	56.5-71.5	53.5-73	50.5- 53.5	0-50.5	49.39	49.2
UCD1-24	10/22/90	73	4*	57-72	54-73	51-54	0-51	48.91	48.8
UCD1-25	10/06/95	75	4**	60-75	56.9-75	52-56.9	0.52	48.80	-
UCD1-26	10/06/95	102	4**	87-102	84-102	79-84	0-79	48.79	-
UCD1-27Z1	10/06/95	136	5**	53-55	51.5-57.5	49-51.5	0-49	47.79	-
UCD1-27Z2	10/06/95	136	5**	63-65	61.5-66.5	57.5-61.5	0-49	47.79	-
UCD1-27Z3	10/06/95	136	5**	73-75	71.5-76.5	66.5-71.5	0-49	47.79	-
UCD2-27Z4	10/06/95	136	5**	86-88	84.9-90	76.5-84.9	0-49	47.79	-
UCD2-27Z5	10/06/95	136	5**	96-98	94.5-100	90-94.5	0-49	47.79	-
UCD2-27Z6	10/06/95	136	5**	106-108	104.5-109.5	100-104.5	0-49	47.79	-
UCD2-27Z7	10/06/95	136	5**	116-118	114.5-119	109.5-114.5	0-49	47.79	-
UCD1-28	09/05/96	70	2*	53-68	51-70	47-51	0-47	50.34(b)	48.1
UCD2-29	09/04/96	97	2*	80-95	76.7-97	72-76.7	0-72	50.32(b)	48.1
UCD2-30	09/10/96	110	2*	95-110	91-110	89.5-91	0-89.5	49.83(b)	47.6
UCD2-31	09/11/96	110	2*	94-109	91-110	87-91	0-87	49.86(b)	47.5
UCD2-32	04/03/97	105	2*	83-103	81 -105	77-81	0-77	45.42(b)	45.08

TABLE 3.1 (continued)
SUMMARY OF WELL CONSTRUCTION DETAILS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

Well Number	Date Installed	Total Boring Depth (ft bgs)	PVC Well Diameter (inches)	Screen Interval (ft bgs)	Filter Pack (ft bgs)	Bentonite (ft bgs)	Cement (ft bgs)	Elevation Top of Well Cover (ft msl)	Elevation Ground Surface (ft msl)
UCD4-33	Abandoned in May 1997 and replaced by UCD4-42								
UCD1-34	10/06/95	80	4**	61-76	57-76	50-57	0-50	55.70	-
UCD2-35	10/06/95	130	4**	107-122	103-122	98-103	0-98	55.71	-
UCD2-36	11/06/97	105	2*	82-102	79-105	73-79	0-73	48.31	-
UCD2-37	10/20/97	118.5	2*	94-114	91-118.5	85-91	0.85	49.63	-
UCD2-38	10/23/97	119	2*	95-115	89-95	83-89	0-83	57.20	-
UCD2-39	10/30/97	112	2*	87-107	84-112	80.5-84	0-81.5	49.63	47.4
UCD2-40	11/07/97	108.5	2*	86-106	83-108.5	78-83	0-78	48.98(b)	46.5
UCD4-41	10/10/97	295	4*	257-277	255.5-280	248.5-253	0-248.5	49.37	47.0
UCD4-42	11/03/97	272	4*	248.5-268.5	245-269	240-246	0-246	47.22(b)	47.0
UCD4-43	10/02/97	295	4*	248-268	242.5-274	233-242.5	0-237	45.06(b)	44.52
EW2-1	09/20/96	125.65	8*	79.4- 119.4	74.4-125.6	68.4- 74.4	0-68.4	49.17(b)	47.3
IW2-1	10/17/97	126.5	10*	84.5-119.5	80-126.5	75-80	0-75	48.55	47.5

Note: ft bgs feet below ground surface.
ft msl feet mean sea level datum.
* stainless steel, wire wrap screen.
** stainless steel, blank casing and wire wrap screen.
(a) Well constructed with #60 sand seal and no bentonite.
(b) Re-surveyed July 1998.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-01	01/09/97	50.05	28.61	21.44
	02/11/97	50.05	20.18	29.87
	03/18/97	50.05	24.86	25.19
	04/23/97	50.05	34.29	15.76
	05/13/97	50.05	37.86	12.19
	06/24/97	50.05	43.05	7.00
	07/18/97	50.05	45.90	4.15
	08/19/97	50.05	46.31	3.74
	09/29/97	50.05	42.21	7.84
	10/30/97	50.05	39.52	10.53
	11/12/97	50.05	38.93	11.12
	12/19/97	50.05	36.56	13.49
UCD1-03	01/09/97	50.05	28.46	21.59
	02/11/97	50.05	19.83	30.22
	03/18/97	50.05	24.67	25.38
	04/23/97	50.05	34.33	15.72
	05/13/97	50.05	37.55	12.50
	06/24/97	50.05	43.53	6.52
	07/18/97	50.05	47.02	3.03
	08/19/97	50.05	47.06	2.99
	09/29/97	50.05	42.62	7.43
	10/30/97	50.05	39.73	10.32
	11/12/97	50.05	39.37	10.68
	12/19/97	50.05	36.72	13.33
UCD1-04	01/09/97	51.69	25.84	25.85
	02/11/97	51.69	20.13	31.56
	03/18/97	51.69	25.60	26.09
	04/23/97	51.69	34.52	17.17
	05/13/97	51.69	37.58	14.11
	06/24/97	51.69	43.59	8.10
	07/18/97	51.69	46.86	4.83
	08/19/97	51.69	47.44	4.25

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-04	09/29/97	51.69	43.41	8.28
	10/30/97	51.69	40.95	10.74
	11/12/97	51.69	40.13	11.56
	12/19/97	51.69	37.83	13.86
UCD1-05	01/09/97	48.44	26.88	21.56
	02/11/97	48.44	18.28	30.16
	03/18/97	48.44	23.14	25.30
	04/23/97	48.44	32.75	15.69
	05/13/97	48.44	35.88	12.56
	06/24/97	48.44	41.70	6.74
	07/18/97	48.44	45.12	3.32
	08/19/97	48.44	45.13	3.31
	09/29/97	48.44	40.83	7.61
	10/30/97	48.44	39.07	9.37
	11/12/97	48.44	37.55	10.89
	12/19/97	48.44	35.05	13.39
UCD1-06	01/09/97	50.94	28.94	22.00
	02/11/97	50.94	20.60	30.34
	03/18/97	50.94	25.50	25.44
	04/23/97	50.94	35.12	15.82
	05/13/97	50.94	37.87	13.07
	06/24/97	50.94	43.54	7.40
	07/18/97	50.94	48.97	1.97
	08/19/97	50.94	47.05	3.89
	09/29/97	50.94	42.83	8.11
	10/30/97	50.94	40.02	10.92
	11/12/97	50.94	39.73	11.21
	12/19/97	50.94	37.31	13.63
UCD1-08	01/09/97	51.51	29.51	22.00
	02/11/97	51.51	21.10	30.41
	03/18/97	51.51	25.62	25.89
	04/23/97	51.51	35.03	16.48

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-08	05/13/97	51.51	38.35	13.16
	06/24/97	51.51	45.02	6.49
	07/18/97	51.51	48.64	2.87
	08/19/97	51.51	48.58	2.93
	09/29/97	51.51	44.12	7.39
	10/30/97	51.51	41.65	9.86
	11/12/97	51.51	40.89	10.62
	12/19/97	51.51	38.39	13.12
UCD1-09	01/09/97	51.38	30.66	20.72
	02/11/97	51.38	21.49	29.89
	03/18/97	51.38	25.84	25.54
	04/23/97	51.38	35.55	15.83
	05/13/97	51.38	39.28	12.10
	06/24/97	51.38	45.35	6.03
	07/18/97	51.38	49.05	2.33
	08/19/97	51.38	NR	NR
	09/29/97	51.38	44.27	7.11
	10/30/97	51.38	41.72	9.66
	11/12/97	51.38	40.98	10.40
	12/19/97	51.38	38.38	13.00
UCD1-10	01/09/97	49.87	27.88	21.99
	02/11/97	49.87	19.75	30.12
	03/18/97	49.87	26.44	23.43
	04/23/97	49.87	35.85	14.02
	05/13/97	49.87	39.98	9.89
	06/24/97	49.87	45.55	4.32
	07/18/97	49.87	49.65	0.22
	08/19/97	49.87	48.38	1.49
	09/29/97	49.87	43.56	6.31
	10/30/97	49.87	41.57	8.30
	11/12/97	49.87	39.96	9.91
	12/19/97	49.87	37.41	12.46

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-11	01/09/97	50.67	30.08	20.59
	02/11/97	50.67	21.15	29.52
	03/18/97	50.67	26.12	24.55
	04/23/97	50.67	35.81	14.86
	05/13/97	50.67	39.53	11.14
	06/24/97	50.67	45.40	5.27
	07/18/97	50.67	49.26	1.41
	08/19/97	50.67	48.42	2.25
	09/29/97	50.67	43.86	6.81
	10/30/97	50.67	41.25	9.42
	11/12/97	50.67	40.48	10.19
	12/19/97	50.67	35.81	14.86
UCD1-12	01/09/97	51.76	31.07	20.69
	02/11/97	51.76	21.93	29.83
	03/18/97	51.76	26.28	25.48
	04/23/97	51.76	36.01	15.75
	05/13/97	51.76	39.78	11.98
	06/24/97	51.76	45.78	5.98
	07/18/97	51.76	46.77	4.99
	08/19/97	51.76	49.20	2.56
	09/29/97	51.76	44.68	7.08
	10/30/97	51.76	42.22	9.54
	11/12/97	51.76	41.38	10.38
	12/19/97	51.76	38.81	12.95
UCD1-13	01/09/97	52.19	30.01	22.18
	02/11/97	52.19	21.61	30.58
	03/18/97	52.19	26.27	25.92
	04/23/97	52.19	35.66	16.53
	05/13/97	52.19	38.99	13.20
	06/24/97	52.19	45.62	6.57
	07/18/97	52.19	49.22	2.97
	08/19/97	52.19	49.18	3.01

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-13	09/29/97	52.19	44.73	7.46
	10/30/97	52.19	42.24	9.95
	11/12/97	52.19	41.32	10.87
	12/19/97	52.19	39.04	13.15
UCD1-18	01/09/97	48.56	23.33	25.23
	02/11/97	48.56	NR	NR
	03/18/97	48.56	21.90	26.66
	04/23/97	48.56	30.50	18.06
	05/13/97	48.56	33.93	14.63
	06/24/97	48.56	39.48	9.08
	07/18/97	48.56	42.96	5.60
	08/19/97	48.56	43.44	5.12
	09/29/97	48.56	39.78	8.78
	10/30/97	48.56	37.35	11.21
	11/12/97	48.56	36.59	11.97
	12/19/97	48.56	34.19	14.37
UCD1-19	01/09/97	51.33	31.07	20.26
	02/11/97	51.33	22.13	29.20
	03/18/97	51.33	26.51	24.82
	04/23/97	51.33	36.17	15.16
	05/13/97	51.33	39.88	11.45
	06/24/97	51.33	45.46	5.87
	07/18/97	51.33	46.94	4.39
	08/19/97	51.33	48.82	2.51
	09/29/97	51.33	44.33	7.00
	10/30/97	51.33	42.95	8.38
	11/12/97	51.33	40.88	10.45
	12/19/97	51.33	38.56	12.77
UCD1-20	01/09/97	49.78	28.15	21.63
	02/11/97	49.78	19.57	30.21
	03/18/97	49.78	24.42	25.36
	04/23/97	49.78	34.11	15.67

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-20	05/13/97	49.78	37.29	12.49
	06/24/97	49.78	43.24	6.54
	07/18/97	49.78	46.75	3.03
	08/19/97	49.78	46.75	3.03
	09/29/97	49.78	42.33	7.45
	10/30/97	49.78	40.97	8.81
	11/12/97	49.78	39.08	10.70
	12/19/97	49.78	36.45	13.33
UCD1-21	01/09/97	48.77	27.15	21.62
	02/11/97	48.77	18.59	30.18
	03/18/97	48.77	23.46	25.31
	04/23/97	48.77	33.09	15.68
	05/13/97	48.77	36.18	12.59
	06/24/97	48.77	42.05	6.72
	07/18/97	48.77	45.50	3.27
	08/19/97	48.77	45.48	3.29
	09/29/97	48.77	41.19	7.58
	10/30/97	48.77	39.75	9.02
	11/12/97	48.77	37.93	10.84
	12/19/97	48.77	35.41	13.36
UCD1-22	01/09/97	49.07	26.97	22.10
	02/11/97	49.07	18.64	30.43
	03/18/97	49.07	23.55	25.52
	04/23/97	49.07	33.20	15.87
	05/13/97	49.07	36.07	13.00
	06/24/97	49.07	41.94	7.13
	07/18/97	49.07	46.50	2.57
	08/19/97	49.07	45.18	3.89
	09/29/97	49.07	41.04	8.03
	10/30/97	49.07	39.59	9.48
	11/12/97	49.07	37.83	11.24
	12/19/97	49.07	34.41	14.66

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-23	01/09/97	49.39	24.85	24.54
	02/11/97	49.39	17.99	31.40
	03/18/97	49.39	23.38	26.01
	04/23/97	49.39	32.58	16.81
	05/13/97	49.39	35.55	13.84
	06/24/97	49.39	41.64	7.75
	07/18/97	49.39	44.84	4.55
	08/19/97	49.39	45.30	4.09
	09/29/97	49.39	41.21	8.18
	10/30/97	49.39	38.75	10.64
	11/12/97	49.39	37.91	11.48
	12/19/97	49.39	35.56	13.83
UCD1-24	01/09/97	49.91	26.70	23.21
	02/11/97	49.91	18.36	31.55
	03/18/97	49.91	23.38	26.53
	04/23/97	49.91	32.90	17.01
	05/13/97	49.91	37.90	12.01
	06/24/97	49.91	42.36	7.55
	07/18/97	49.91	46.32	3.59
	08/19/97	49.91	45.67	4.24
	09/29/97	49.91	41.38	8.53
	10/30/97	49.91	39.02	10.89
	11/12/97	49.91	38.18	11.73
	12/19/97	49.91	35.63	14.28
UCD1-25	01/09/97	48.80	28.81	19.99
	02/11/97	48.80	20.06	28.74
	03/18/97	48.80	24.87	23.93
	04/23/97	48.80	34.51	14.29
	05/13/97	48.80	38.48	10.32
	06/24/97	48.80	43.99	4.81
	07/18/97	48.80	47.84	0.96
	08/19/97	48.80	47.05	1.75

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-1				
UCD1-25	09/29/97	48.80	42.28	6.52
	10/30/97	48.80	39.64	9.16
	11/12/97	48.80	38.82	9.98
	12/19/97	48.80	36.14	12.66
UCD1-28	01/09/97	50.45	29.40	21.05
	02/11/97	50.45	21.19	29.26
	03/18/97	50.45	27.09	23.36
	04/23/97	50.45	36.43	14.02
	05/13/97	50.45	40.64	9.81
	06/24/97	50.45	45.83	4.62
	07/18/97	50.45	49.85	0.60
	08/19/97	50.45	48.68	1.77
	09/29/97	50.45	43.84	6.61
	10/30/97	50.45	41.07	9.38
	11/12/97	50.45	40.12	10.33
	12/19/97	50.45	37.64	12.81
UCD1-34	01/09/97	55.70	27.93	27.77
	02/11/97	55.70	24.12	31.58
	03/18/97	55.70	29.55	26.15
	04/23/97	55.70	38.33	17.37
	05/13/97	55.70	41.82	13.88
	06/24/97	55.70	47.71	7.99
	07/18/97	55.70	51.26	4.44
	08/19/97	55.70	51.41	4.29
	09/29/97	55.70	47.29	8.41
	10/30/97	55.70	44.89	10.81
	11/12/97	55.70	44.07	11.63
	12/19/97	55.70	41.74	13.96
HSU-2				
EW2-1	01/09/97	50.28	28.37	21.91
	02/11/97	50.28	21.34	28.94
	03/18/97	50.28	26.62	23.66

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-2				
EW2-1	04/23/97	50.28	35.55	14.73
	05/13/97	50.28	40.99	9.29
	06/24/97	50.28	45.10	5.18
	07/18/97	50.28	50.20	0.08
	08/19/97	50.28	47.47	2.81
	09/29/97	50.28	42.92	7.36
	10/30/97	50.28	40.13	10.15
	11/12/97	50.28	39.15	11.13
	12/19/97	50.28	36.75	13.53
UCD2-07	01/09/97	51.65	30.07	21.58
	02/11/97	51.65	22.09	29.56
	03/18/97	51.65	27.44	24.21
	04/23/97	51.65	36.72	14.93
	05/13/97	51.65	41.82	9.83
	06/24/97	51.65	46.12	5.53
	07/18/97	51.65	50.09	1.56
	08/19/97	51.65	48.56	3.09
	09/29/97	51.65	44.28	7.37
	10/30/97	51.65	41.71	9.94
	11/12/97	51.65	40.79	10.86
	12/19/97	51.65	38.47	13.18
UCD2-14	01/09/97	51.72	30.08	21.64
	02/11/97	51.72	22.20	29.52
	03/18/97	51.72	27.72	24.00
	04/23/97	51.72	36.95	14.77
	05/13/97	51.72	42.14	9.58
	06/24/97	51.72	46.67	5.05
	07/18/97	51.72	50.20	1.52
	08/19/97	51.72	48.86	2.86
	09/29/97	51.72	44.55	7.17
	10/30/97	51.72	41.94	9.78
	11/12/97	51.72	41.00	10.72

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-2				
UCD2-14	12/19/97	51.72	38.69	13.03
UCD2-15	01/09/97	51.49	28.56	22.93
	02/11/97	51.49	21.59	29.90
	03/18/97	51.49	26.68	24.81
	04/23/97	51.49	36.17	15.32
	05/13/97	51.49	40.96	10.53
	06/24/97	51.49	45.41	6.08
	07/18/97	51.49	48.89	2.60
	08/19/97	51.49	47.85	3.64
	09/29/97	51.49	42.72	8.77
	10/30/97	51.49	41.19	10.30
	11/12/97	51.49	40.29	11.20
	12/19/97	51.49	38.02	13.47
UCD2-16	01/09/97	49.95	28.33	21.62
	02/11/97	49.95	20.29	29.66
	03/18/97	49.95	25.38	24.57
	04/23/97	49.95	34.66	15.29
	05/13/97	49.95	39.11	10.84
	06/24/97	49.95	43.53	6.42
	07/18/97	49.95	45.77	4.18
	08/19/97	49.95	46.45	3.50
	09/29/97	49.95	42.30	7.65
	10/30/97	49.95	41.02	8.93
	11/12/97	49.95	38.86	11.09
	12/19/97	49.95	36.56	13.39
UCD2-17	01/09/97	51.83	26.69	25.14
	02/11/97	51.83	NR	NR
	03/18/97	51.83	26.40	25.43
	04/23/97	51.83	35.90	15.93
	05/13/97	51.83	40.49	11.34
	06/24/97	51.83	44.41	7.42
	07/18/97	51.83	48.21	3.62

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-2				
UCD2-17	08/19/97	51.83	47.42	4.41
	09/29/97	51.83	43.51	8.32
	10/30/97	51.83	41.07	10.76
	11/12/97	51.83	40.21	11.62
	12/19/97	51.83	37.95	13.88
UCD2-26	01/09/97	48.79	27.77	21.02
	02/11/97	48.79	19.75	29.04
	03/18/97	48.79	25.78	23.01
	04/23/97	48.79	34.83	13.96
	05/13/97	48.79	39.34	9.45
	06/24/97	48.79	44.19	4.60
	07/18/97	48.79	47.84	0.95
	08/19/97	48.79	46.70	2.09
	09/29/97	48.79	42.19	6.60
	10/30/97	48.79	39.48	9.31
	11/12/97	48.79	38.54	10.25
	12/19/97	48.79	36.14	12.65
UCD2-29	01/09/97	50.43	29.28	21.15
	02/11/97	50.43	21.26	29.17
	03/18/97	50.43	27.48	22.95
	04/23/97	50.43	36.44	13.99
	05/13/97	50.43	41.81	8.62
	06/24/97	50.43	45.95	4.48
	07/18/97	50.43	50.90	-0.47
	08/19/97	50.43	49.37	1.06
	09/29/97	50.43	43.82	6.61
	10/30/97	50.43	41.09	9.34
	11/12/97	50.43	40.07	10.36
	12/19/97	50.43	37.69	12.74
UCD2-30	01/09/97	49.94	28.83	21.11
	02/11/97	49.94	20.77	29.17
	03/18/97	49.94	27.12	22.82

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-2				
UCD2-30	04/23/97	49.94	36.05	13.89
	05/13/97	49.94	41.60	8.34
	06/24/97	49.94	45.66	4.28
	07/18/97	49.94	50.67	-0.73
	08/19/97	49.94	48.00	1.94
	09/29/97	49.94	43.41	6.53
	10/30/97	49.94	40.62	9.32
	11/12/97	49.94	39.63	10.31
	12/19/97	49.94	37.20	12.74
UCD2-31	01/09/97	49.98	28.87	21.11
	02/11/97	49.98	20.85	29.13
	03/18/97	49.98	27.05	22.93
	04/23/97	49.98	35.90	14.08
	05/13/97	49.98	41.47	8.51
	06/24/97	49.98	45.55	4.43
	07/18/97	49.98	50.47	-0.49
	08/19/97	49.98	47.94	2.04
	09/29/97	49.98	43.36	6.62
	10/30/97	49.98	40.61	9.37
	11/12/97	49.98	39.61	10.37
	12/19/97	49.98	37.21	12.77
UCD2-32	12/19/97	55.70	32.66	23.04
UCD2-35	01/09/97	55.71	33.89	21.82
	02/11/97	55.71	26.02	29.69
	03/18/97	55.71	31.39	24.32
	04/23/97	55.71	40.78	14.93
	05/13/97	55.71	45.57	10.14
	06/24/97	55.71	49.91	5.80
	07/18/97	55.71	54.02	1.69
	08/19/97	55.71	52.60	3.11
	09/29/97	55.71	48.35	7.36
	10/30/97	55.71	45.78	9.93

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

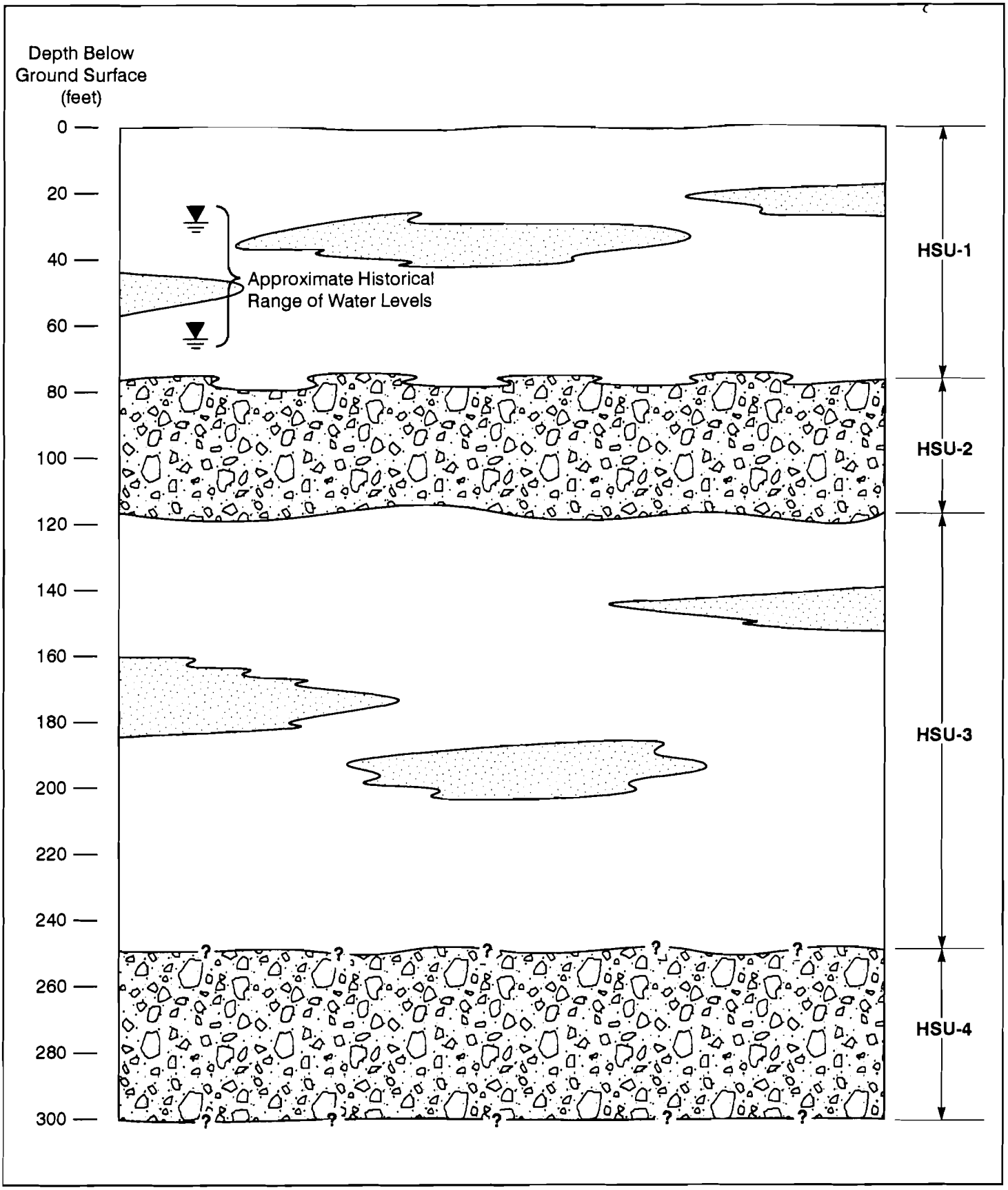
TABLE 3.2
GROUNDWATER ELEVATION DATA
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Well	Date	Well Elevation (MSLD)	Depth to Water (bgs)	Groundwater Elevation (MSLD)
HSU-2				
UCD2-35	11/12/97	55.71	44.89	10.82
	12/19/97	55.71	42.56	13.15
UCD2-36	12/19/97	56.71	35.13	21.58
UCD2-37	11/12/97	49.63	38.25	11.38
	12/19/97	49.63	35.95	13.68
UCD2-38	11/12/97	56.71	45.91	10.80
	12/19/97	56.71	43.65	13.06
UCD2-39	11/12/97	49.63	39.22	10.41
	12/19/97	49.63	36.49	13.14
UCD2-40	11/12/97	48.96	38.48	10.48
	12/19/97	48.96	36.67	12.29
HSU-4				
UCD4-41	11/12/97	49.35	39.81	9.54
	12/19/97	49.35	37.66	11.69
UCD4-42	12/19/97	47.24	35.83	11.41
UCD4-43	12/19/97	45.00	33.89	11.11

MSLD Mean Sea Level Datum. bgs - Below Ground Surface.
NR Not recorded.

TABLE 3.3
AQUIFER PARAMETERS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

Hydrostratigraphic Unit	Aquifer Testing Method	Hydraulic Conductivity, K (ft/day)	Transmissivity, T (ft^2/day)
HSU-1	Slug tests	3.6	-
HSU-2	Pumping test	1,024	43,420
HSU-4	Slug tests	73-217	1,788-6,849
HSU-4	Pumping test	146-242	12,580



SCHEMATIC CROSS SECTION
HYDROSTRATIGRAPHIC UNITS

1997 Annual Report
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00234-258-79801 maj 79801a 7/27/98

FIGURE 3.1

West
A

East
A'

UCD4-41

UCD4-42
(Former Nishi
Well Retrofitted)

UCD4-33
(Abandoned)

UCD4-43

HSU-1

HSU-2

HSU-3

HSU-4

Approximate Historical
Range of Water Levels

TD=272

TD=295

TD=310

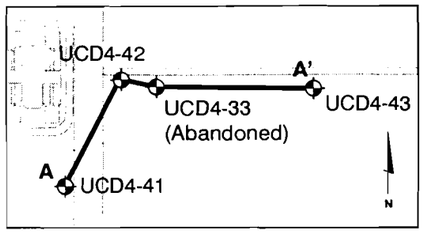
TD=295

Depth Below Ground Surface (feet)

0
40
80
120
160
200
240
280
320

Elevation (feet MSLD)

80
40
0
-40
-80
-120
-160
-200
-240
-280



Cross-Section Location Map

EXPLANATION

UCD4-43 HSU4 Monitoring Well

Screened Interval

TD=295 Total Depth of Boring in feet

Geologic Contact

Geologic Contact Uncertain

Fine Grained Silty Sand (SM)

Interbedded Clayey Silt (ML) to Silty Clay (CL)

Fine to Coarse Grained Sand (SP)

Coarse Grained Sandy Gravel (GP)

Silt (ML) With Some Sand and Clay

60

100

Scale in Feet
Vertical Exaggeration: 1.7x

GENERALIZED HYDROSTRATIGRAPHIC CROSS-SECTION

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FIGURE 3.2

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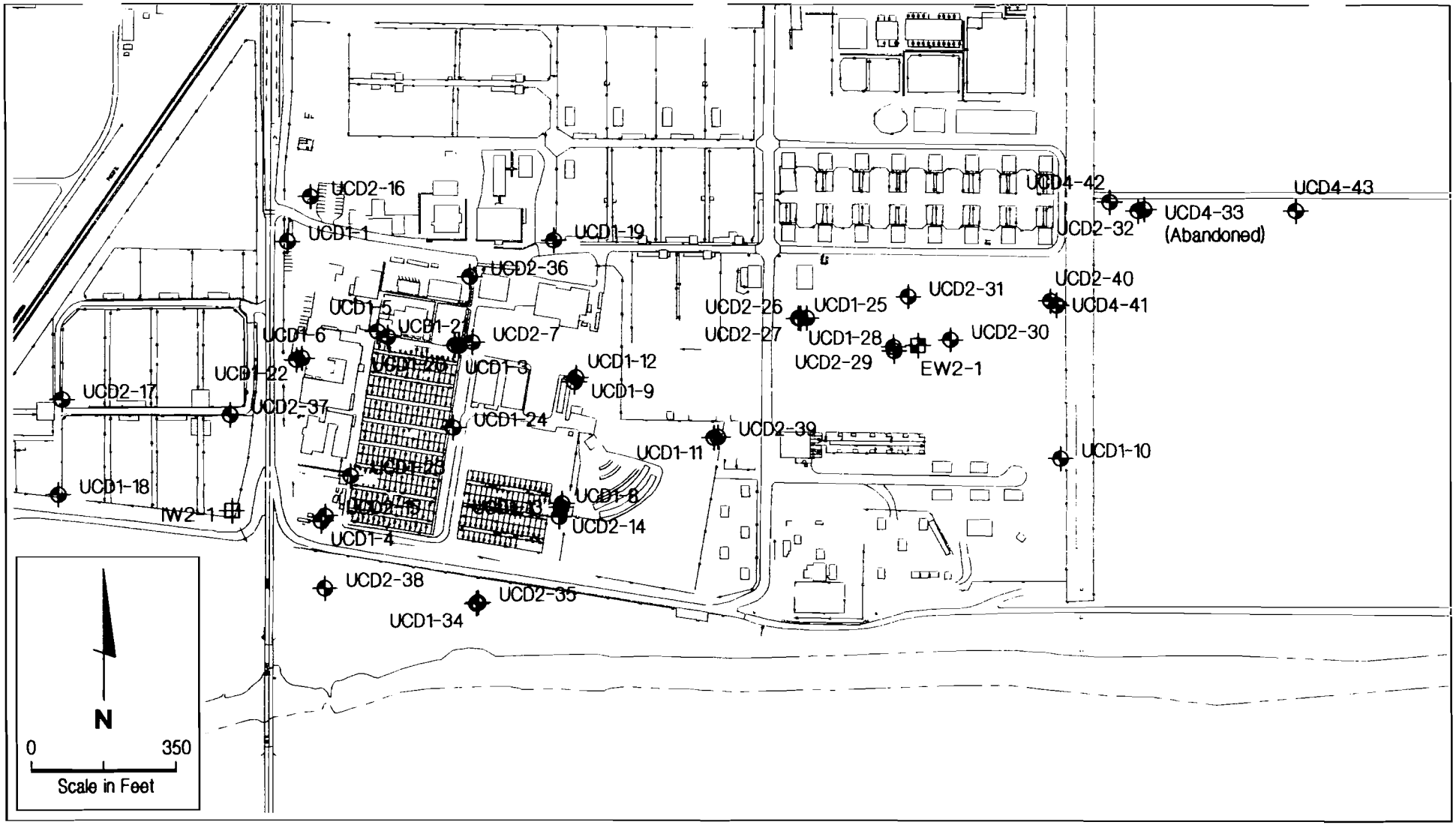

EXPLANATION

- UCD1-11 HSU-1 Monitoring Well
- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well
- UCD4-33 HSU-4 Monitoring Well

WELL LOCATION MAP

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FIGURE 3.3

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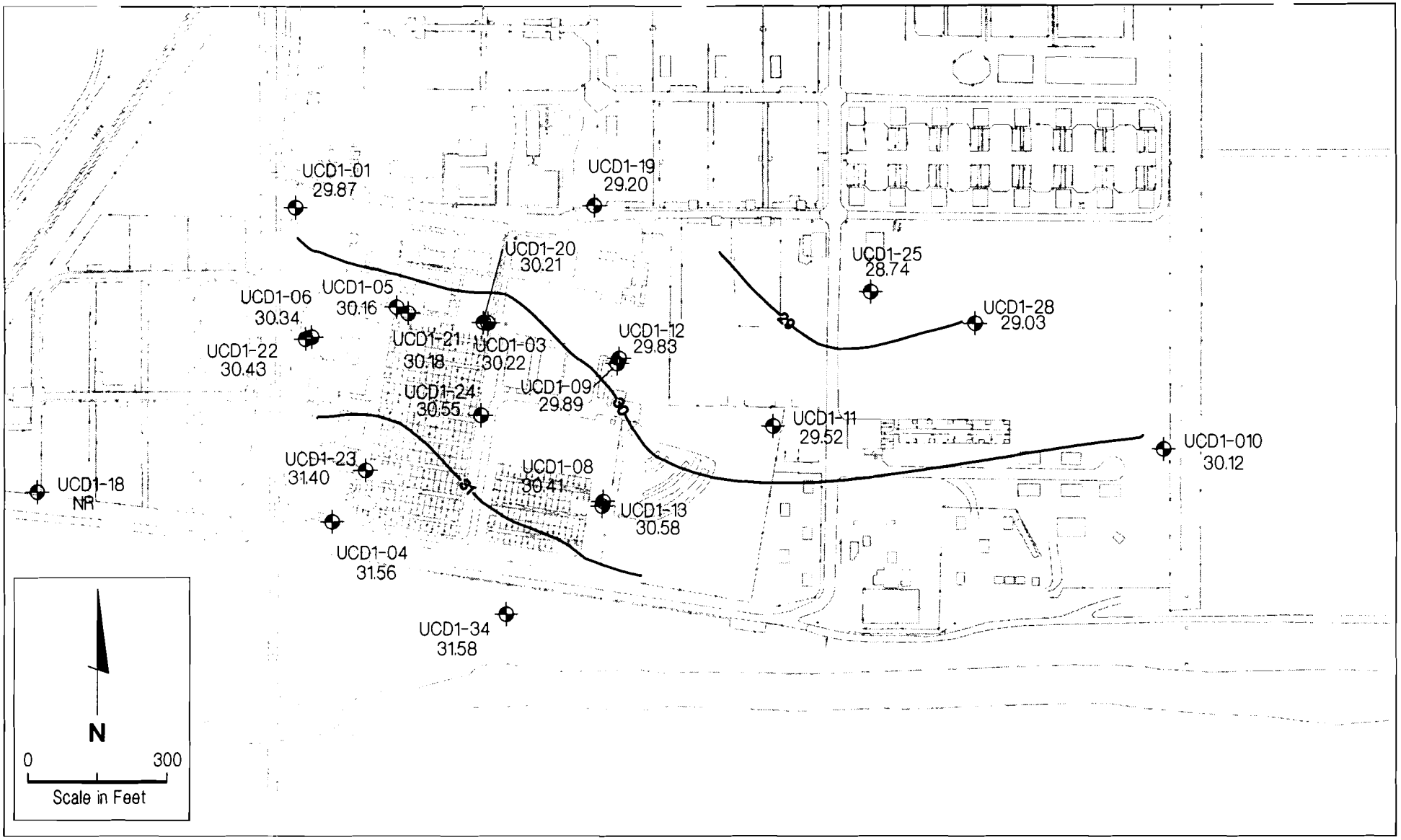

EXPLANATION

UCD1-11 HSU-1 Monitoring Well

GROUNDWATER ELEVATION CONTOUR - HSU 1
WINTER QUARTER, 1997

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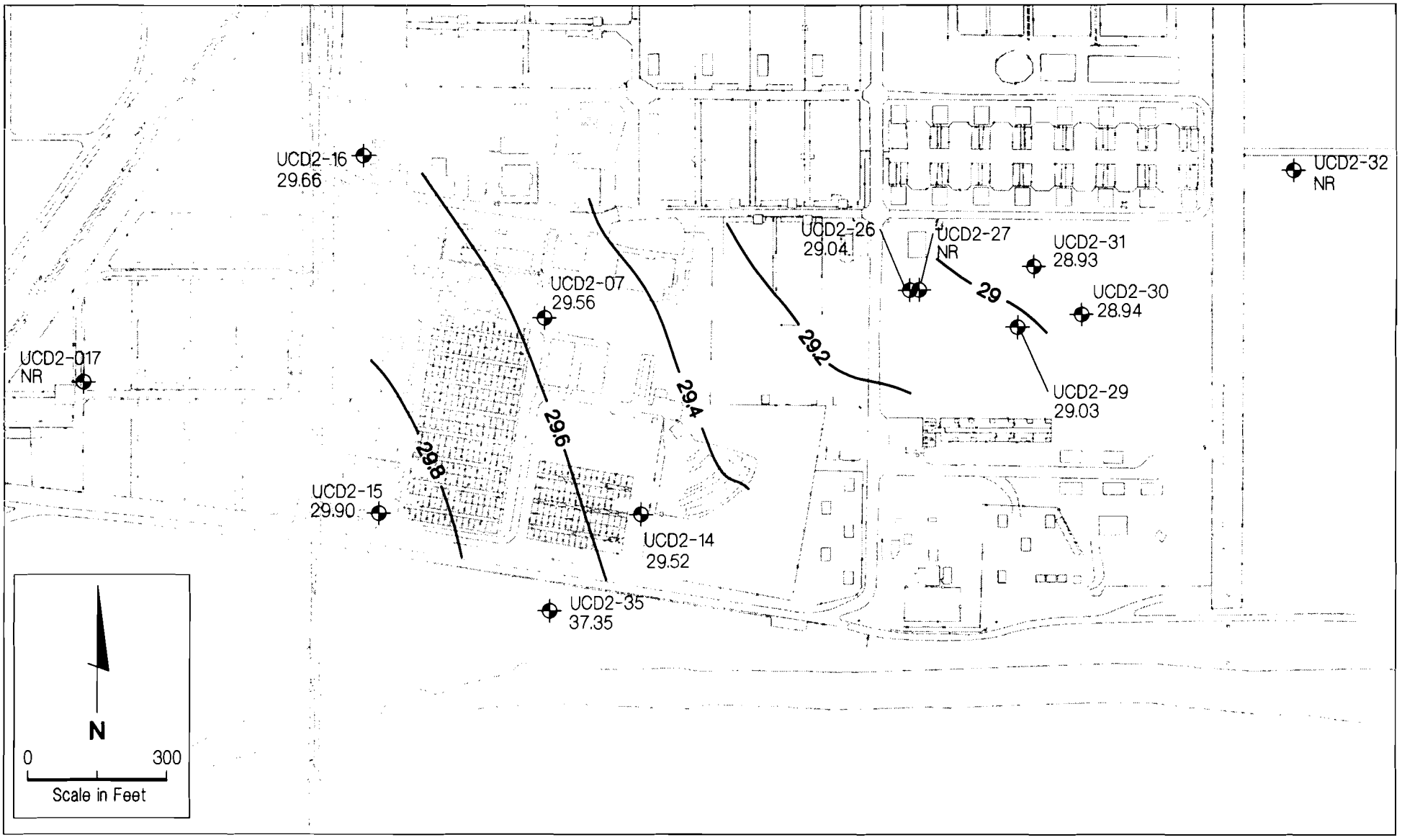
FIGURE 3.4



EXPLANATION

UCD2-17 HSU-2 Monitoring Well

GROUNDWATER ELEVATION CONTOUR - HSU 2
WINTER QUARTER, 1997

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FIGURE 3.5

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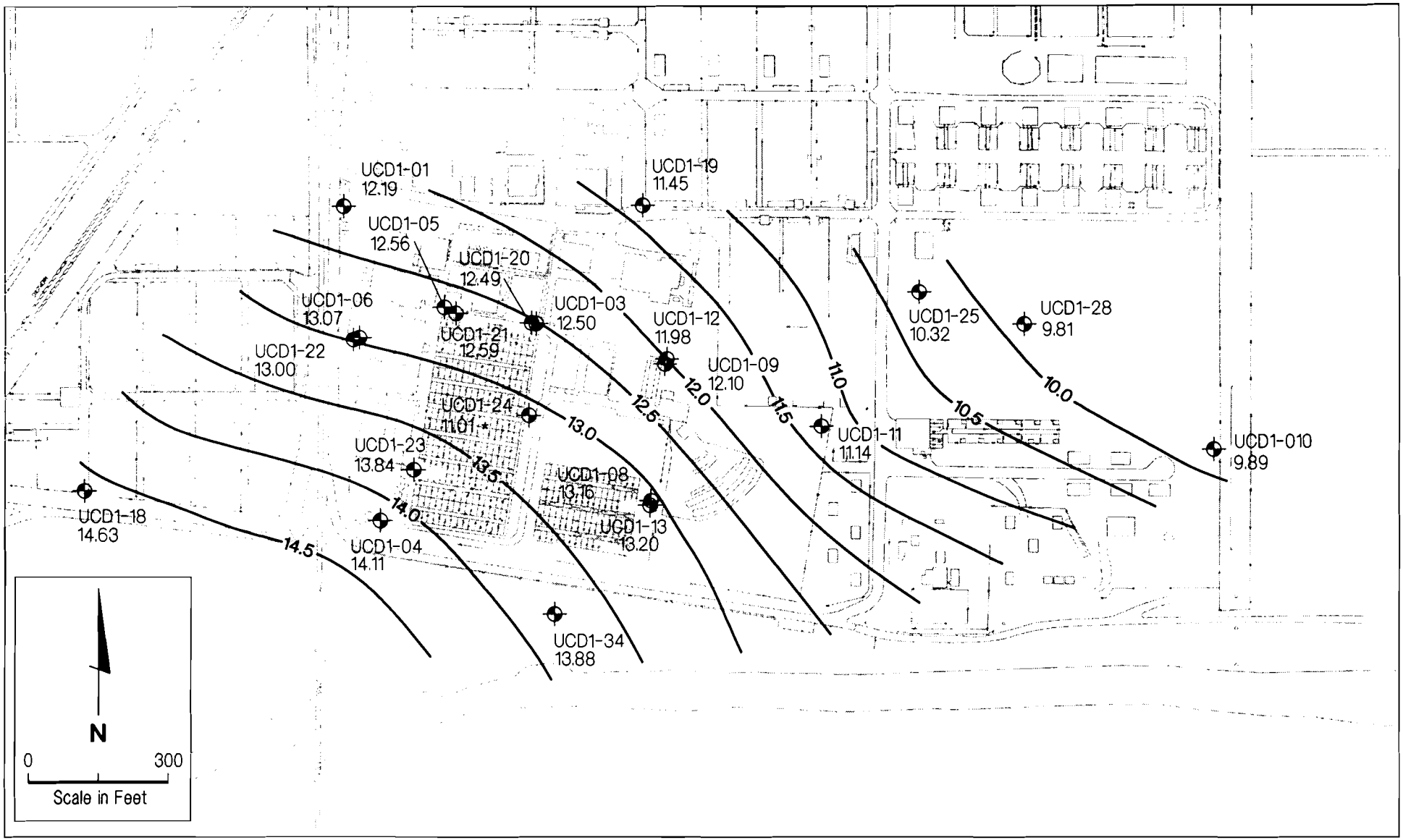

EXPLANATION

UCD1-11 HSU-1 Monitoring Well

* Appears to be anomalous, not used in contouring.

GROUNDWATER ELEVATION CONTOUR - HSU 1
SPRING QUARTER, 1997

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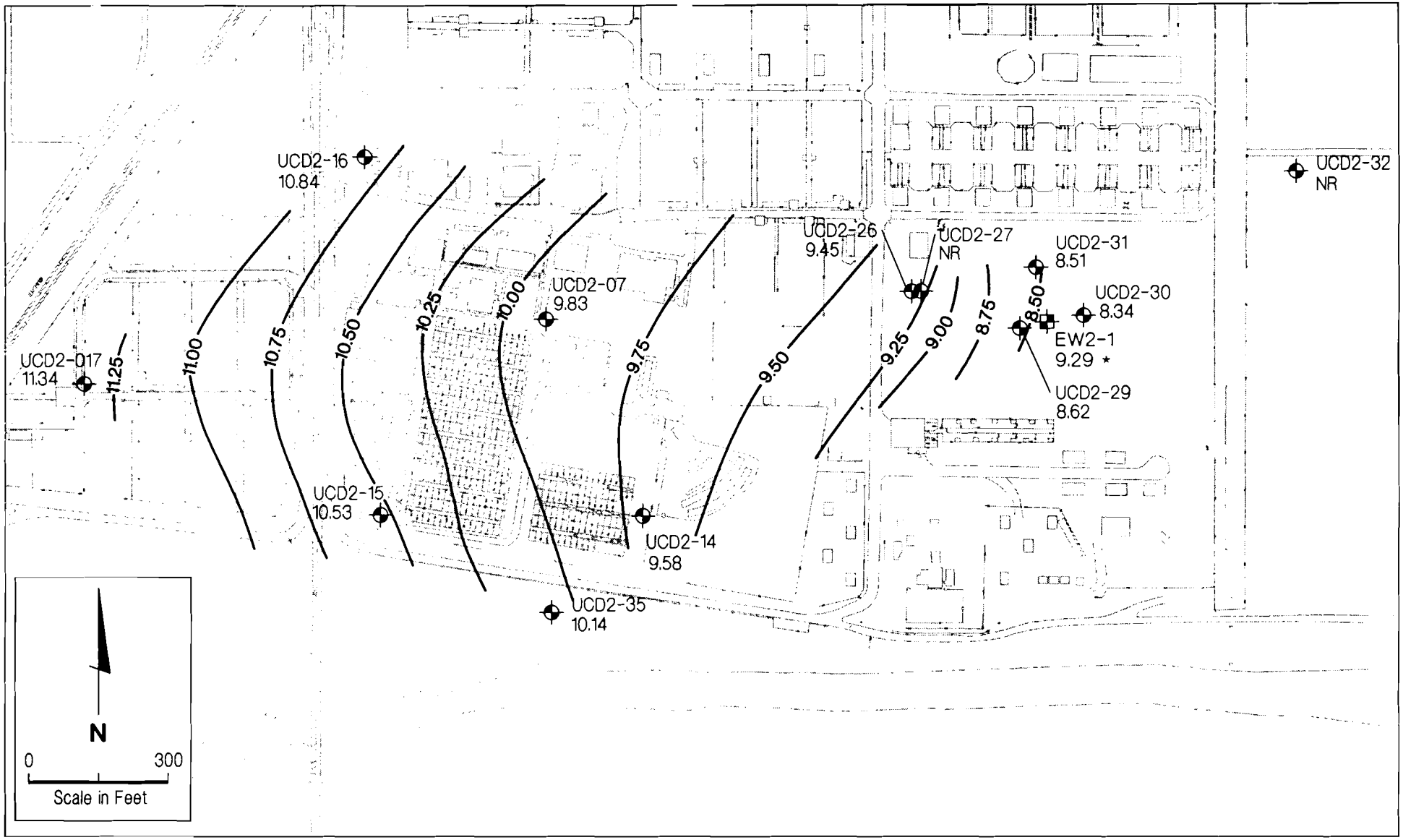
FIGURE 3.6



EXPLANATION

UCD2-17 HSU-2 Monitoring Well

EW2-1 HSU-2 Extraction Well

* Appears to be anomalous, not used in contouring.

GROUNDWATER ELEVATION CONTOUR - HSU 2
SPRING QUARTER, 1997

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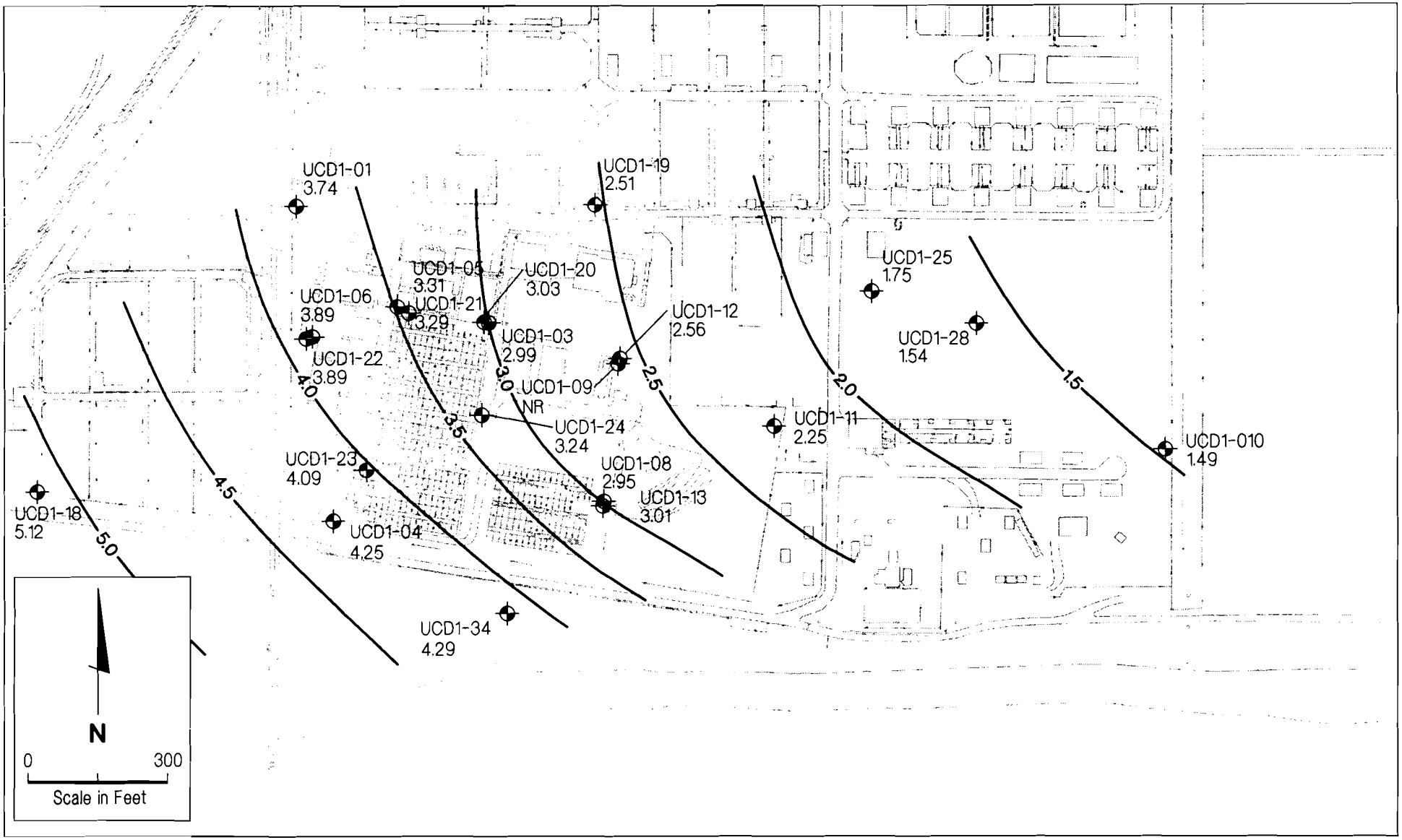
FIGURE 3.7



EXPLANATION

UCD1-11 HSU-1 Monitoring Well

NR Not Reported

GROUNDWATER ELEVATION CONTOUR - HSU 1
SUMMER QUARTER, 1997

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Davis, California

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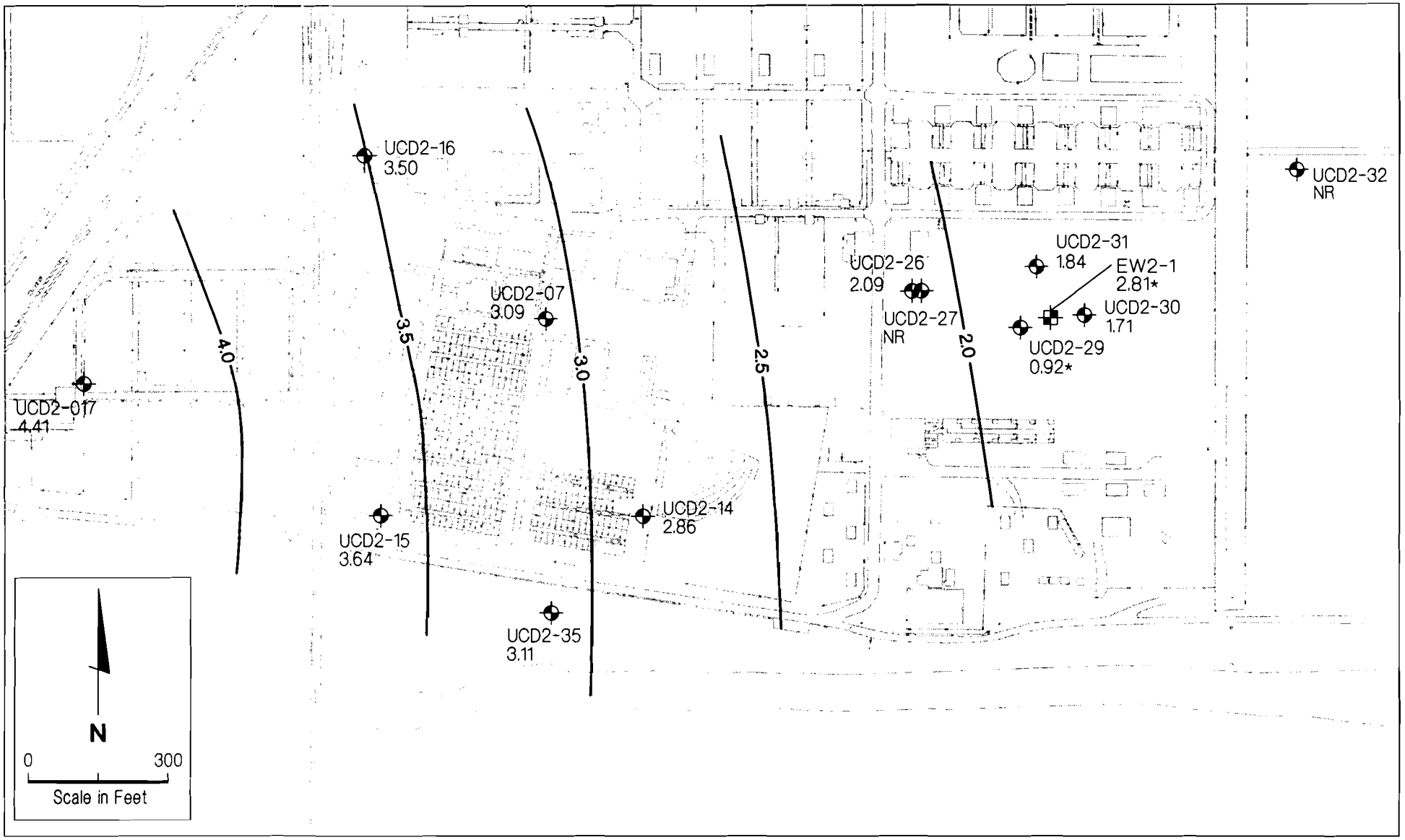
FIGURE 3.8



EXPLANATION

UCD2-17 HSU-2 Monitoring Well

* Measurements appear anomalous not used in contouring.

GROUNDWATER ELEVATION CONTOUR - HSU 2
SUMMER QUARTER, 1997

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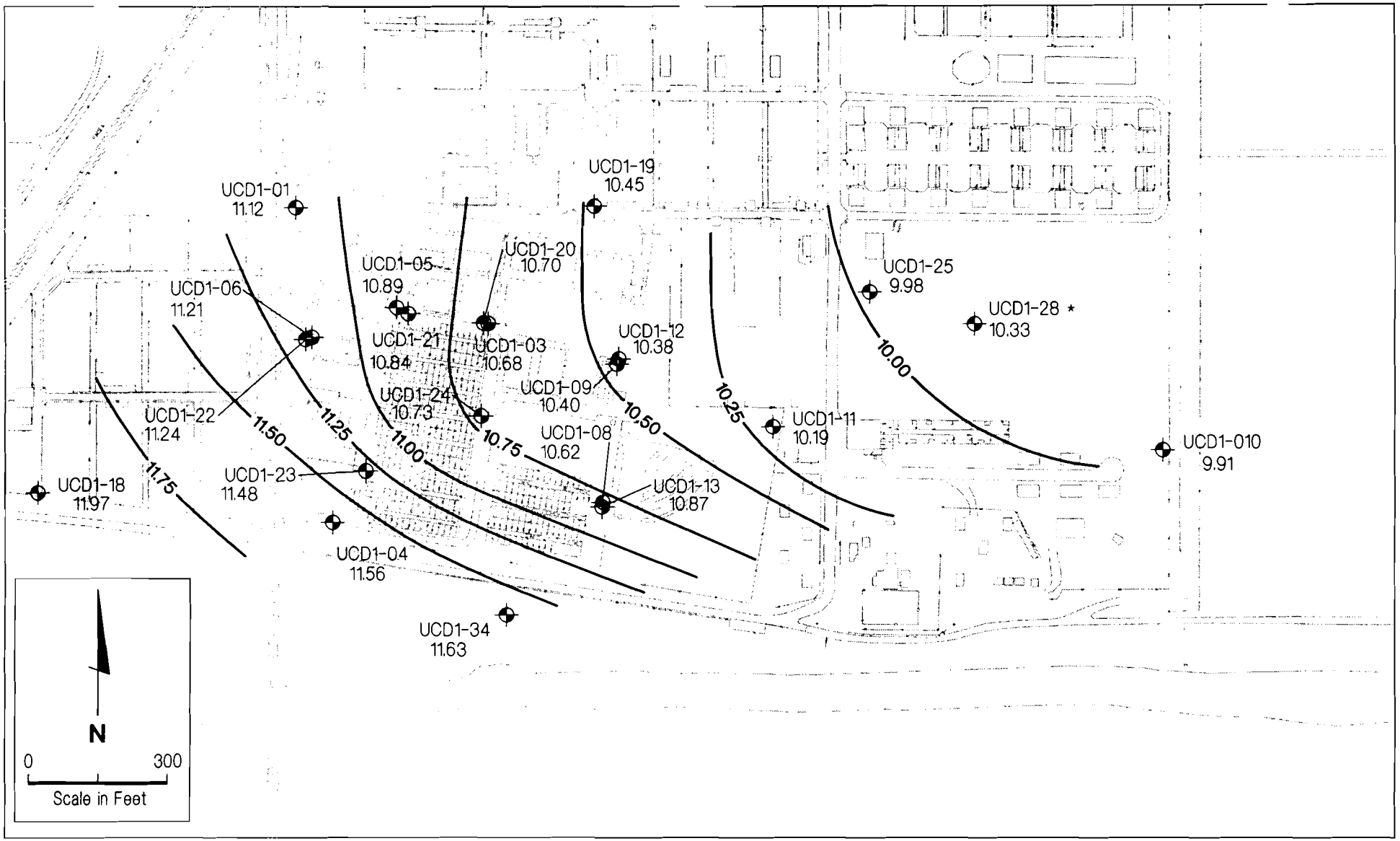
FIGURE 3.9



EXPLANATION

UCD1-11	HSU-1 Monitoring Well
11.4	Groundwater Elevation Contour (Feet MSL)
*	Water level appears anomalous, not used in contouring

GROUNDWATER ELEVATION CONTOUR - HSU 1
FALL QUARTER, 1997

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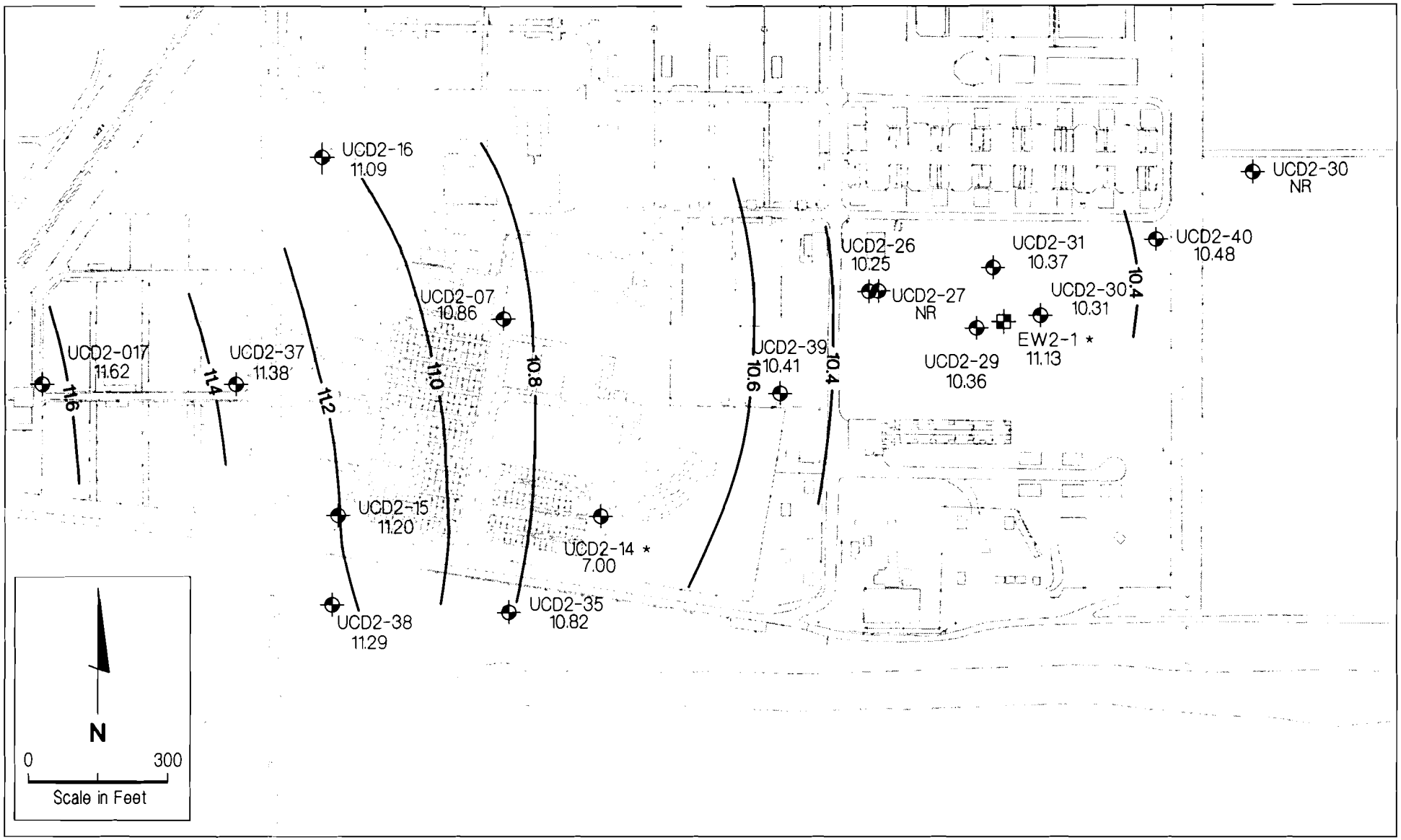
00234-258-79801 maj 79801K 7/27/98

FIGURE 3.10



EXPLANATION

HSU-1 Monitoring Well

——11.4—— Groundwater Elevation Contour (Feet MSL)

* Water level appears anomalous, not used in contouring

GROUNDWATER ELEVATION CONTOUR - HSU 2
FALL QUARTER, 1997

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

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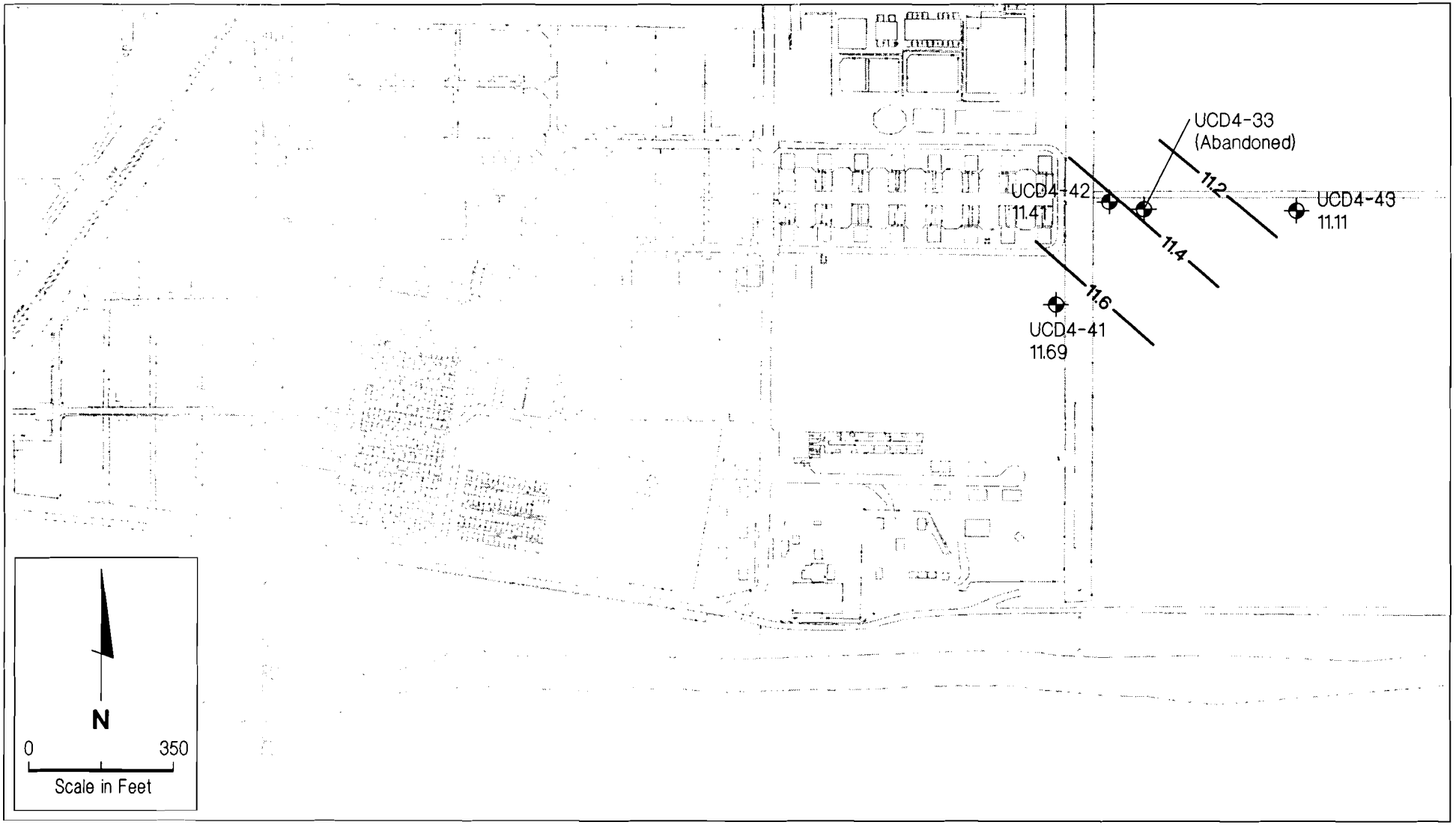
00234-258-79801 maj 79801L 7/27/98

FIGURE 3.11



EXPLANATION

UCD4-33 HSU-4 Monitoring Well

11.4 Groundwater Elevation Contour (Feet MSL)

GROUNDWATER ELEVATION CONTOUR HSU-4
FALL QUARTER, 1997

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FIGURE 3.12

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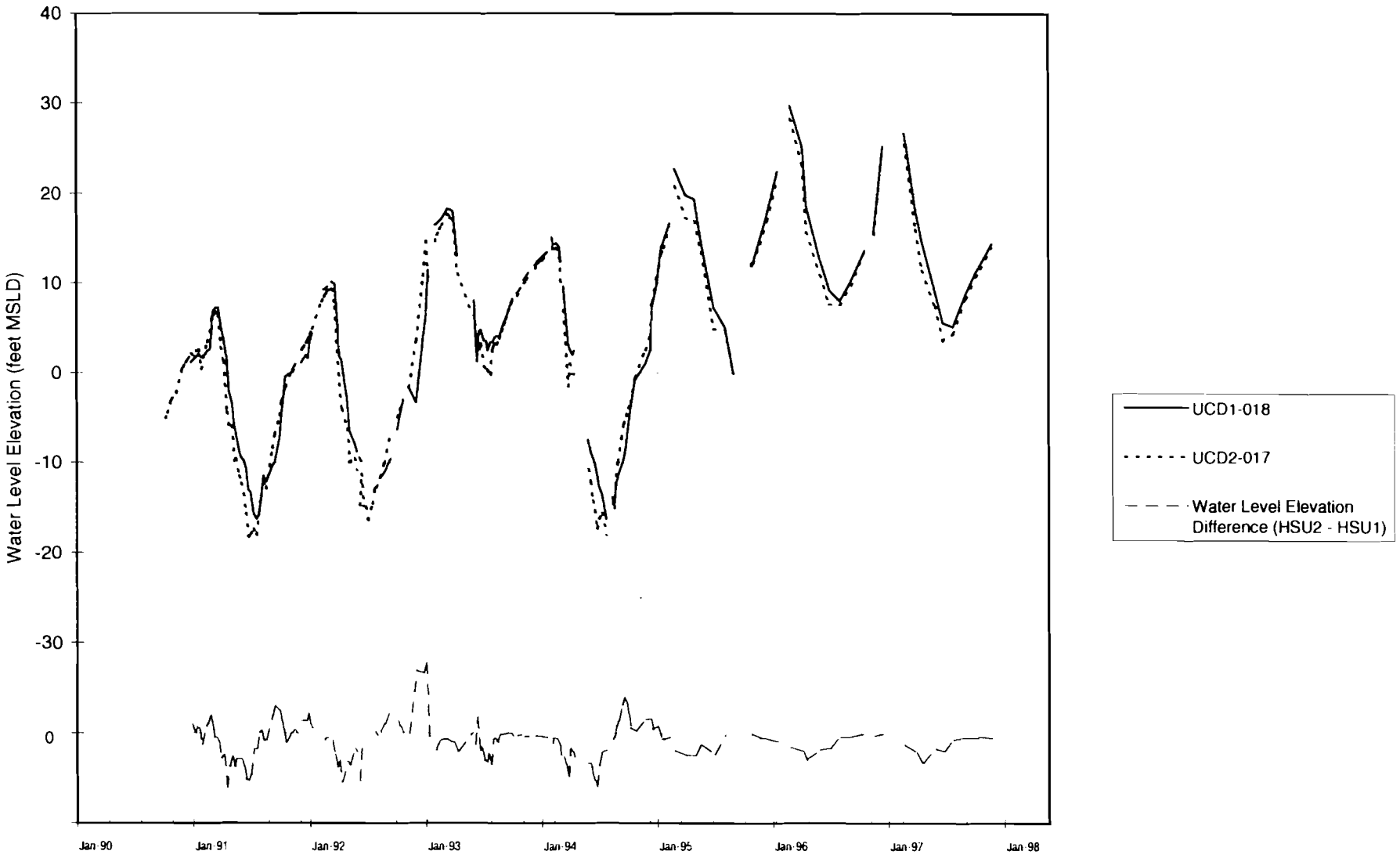
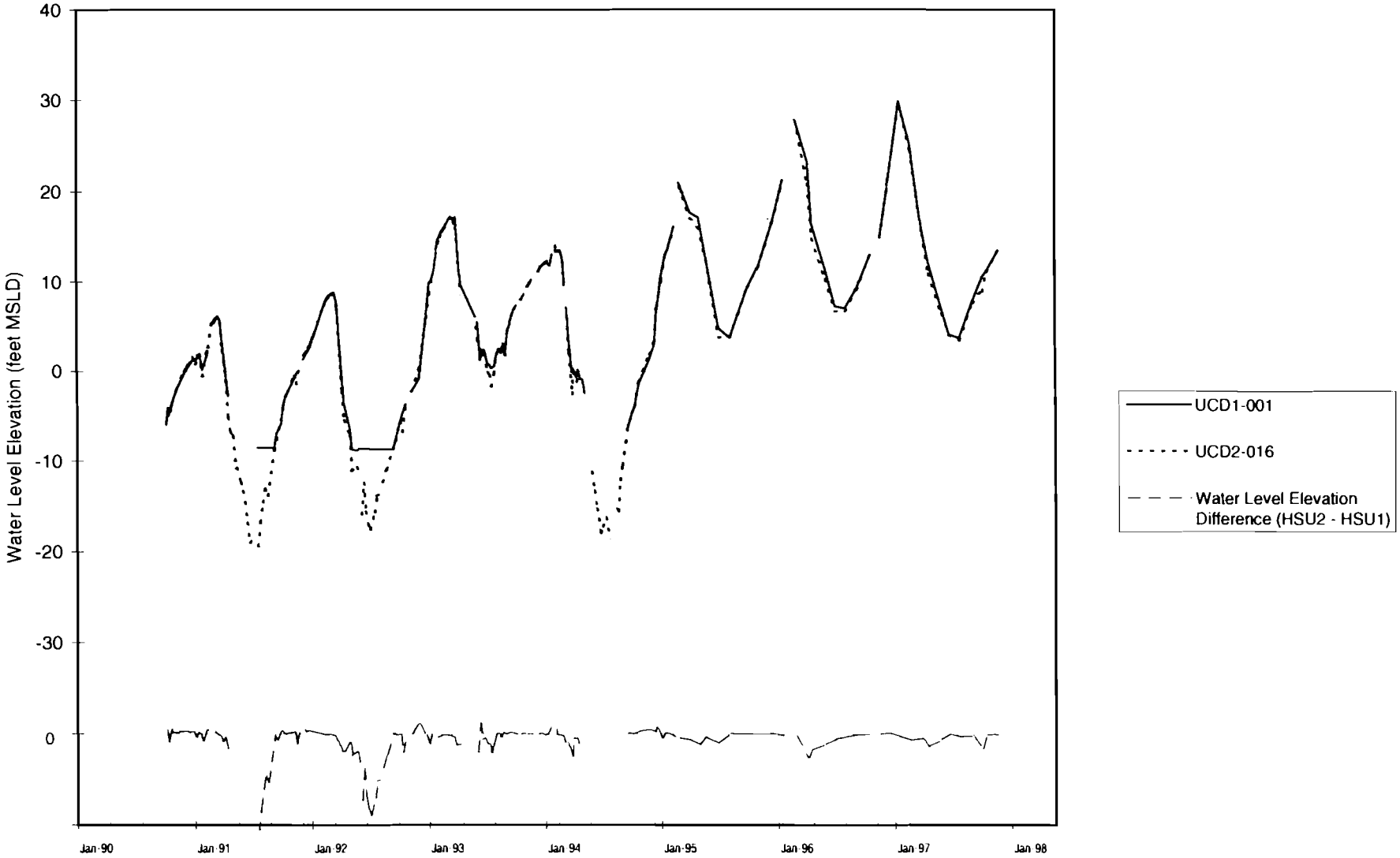
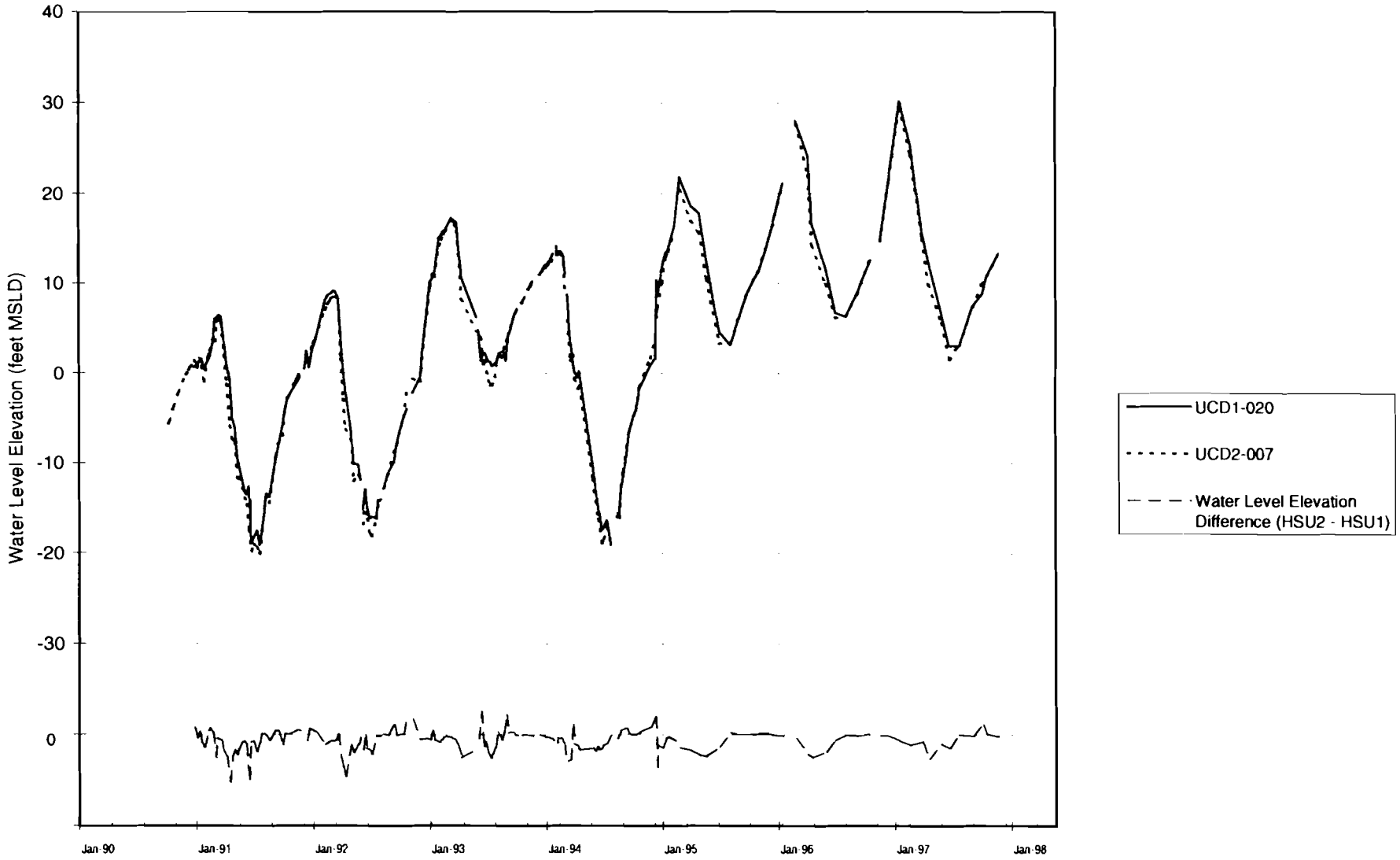


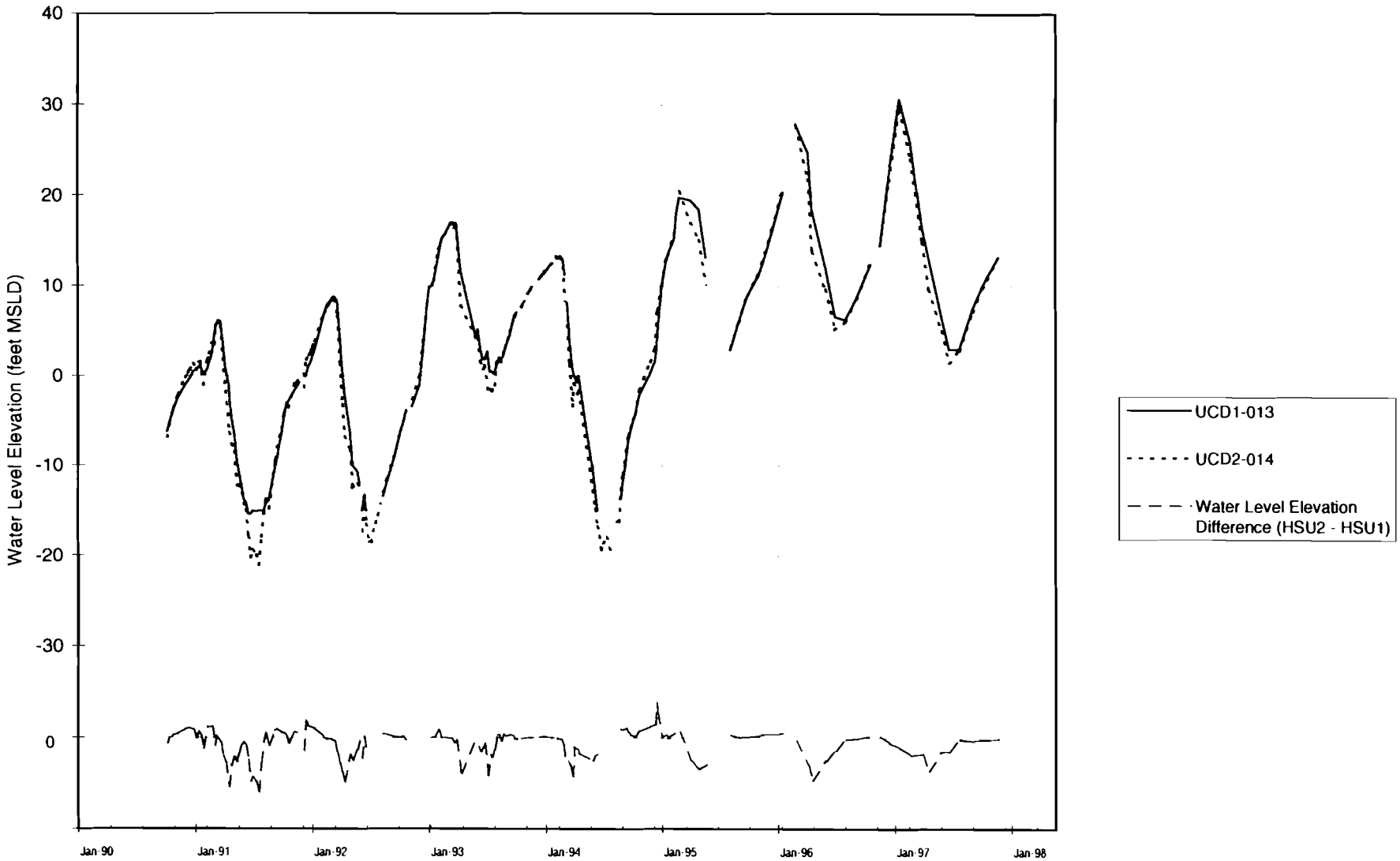
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-018 and UCD2-017
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.13



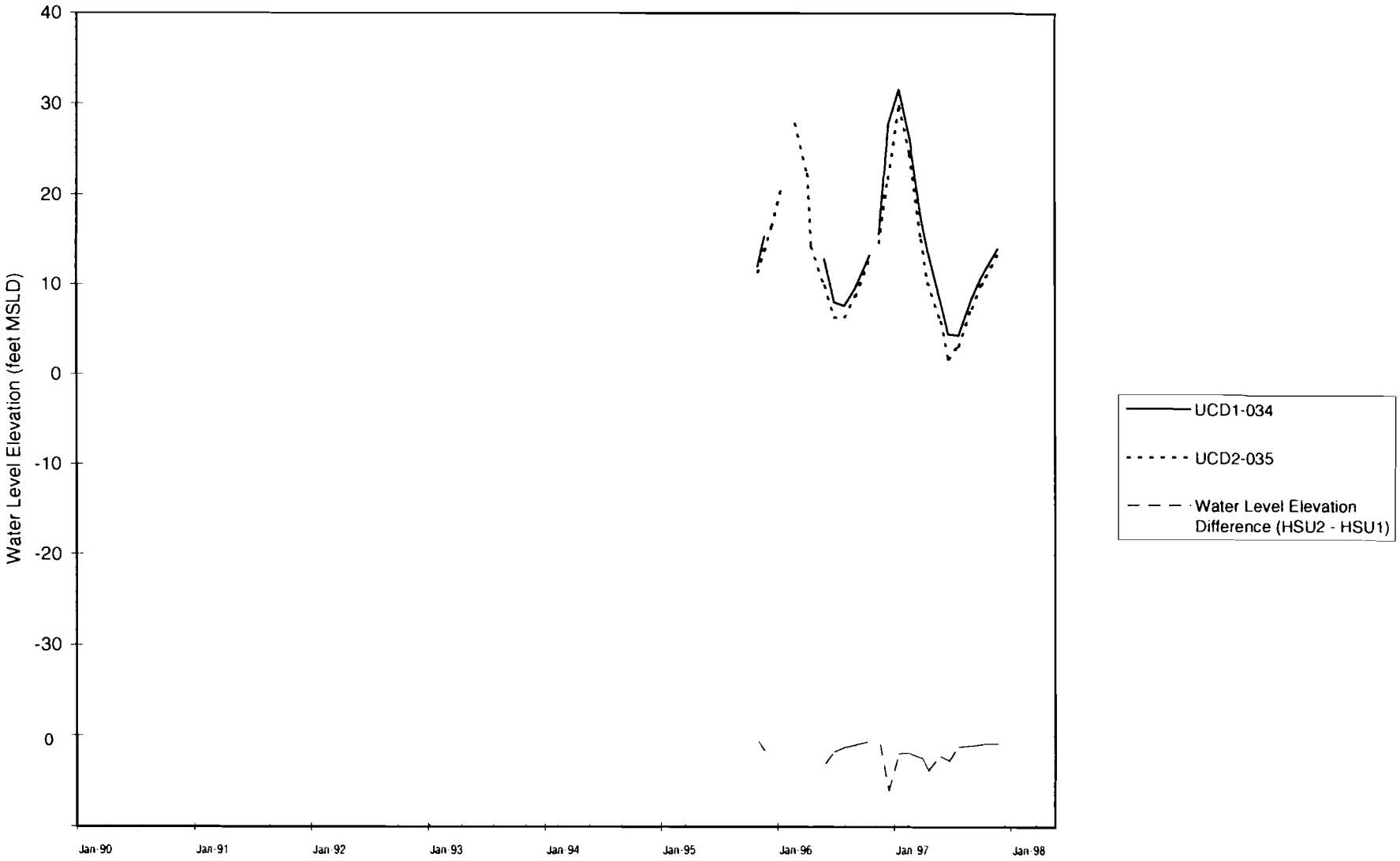
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-001 and UCD2-016
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.14



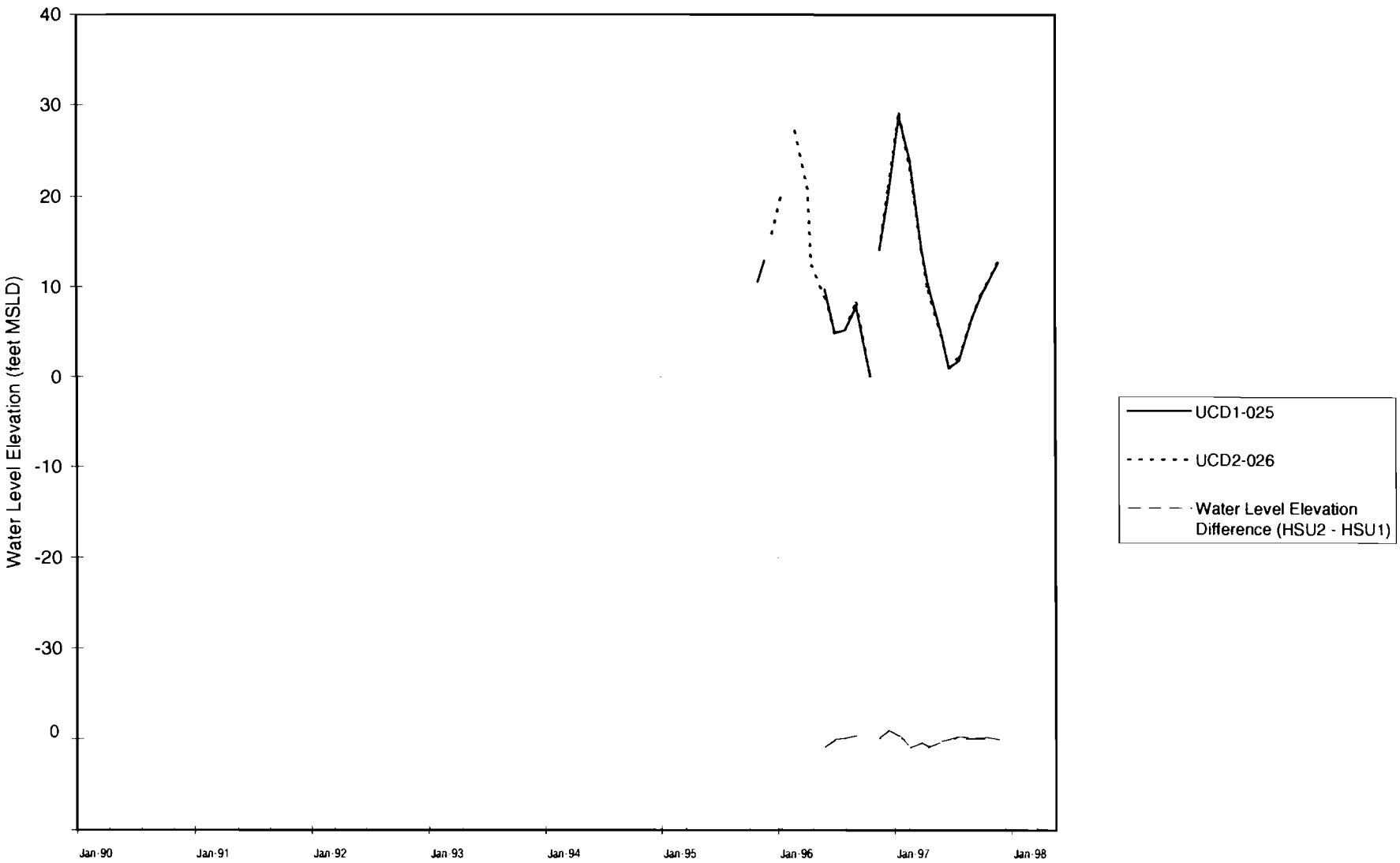
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-020 and UCD2-007
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.15



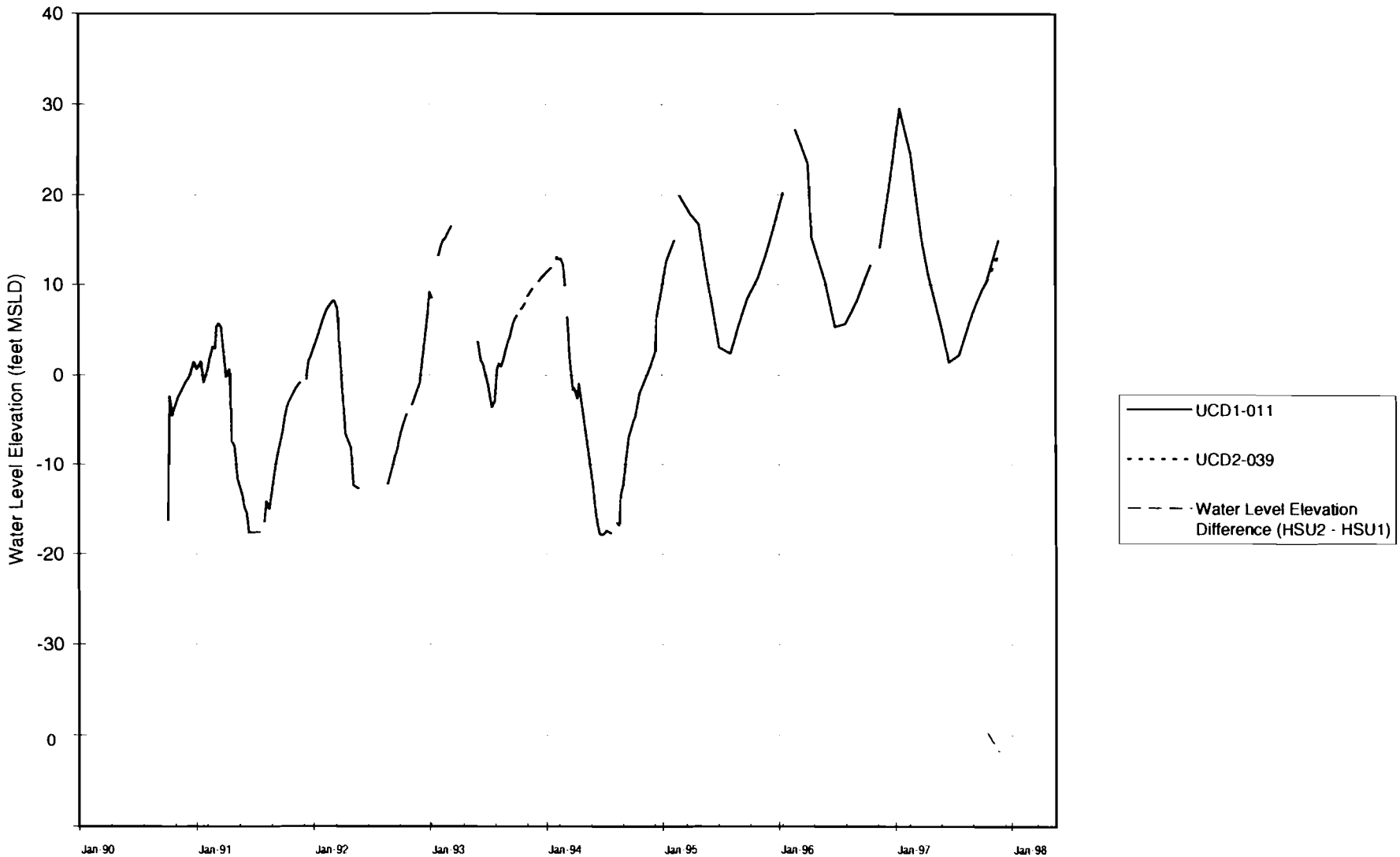
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-013 and UCD2-014
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.16



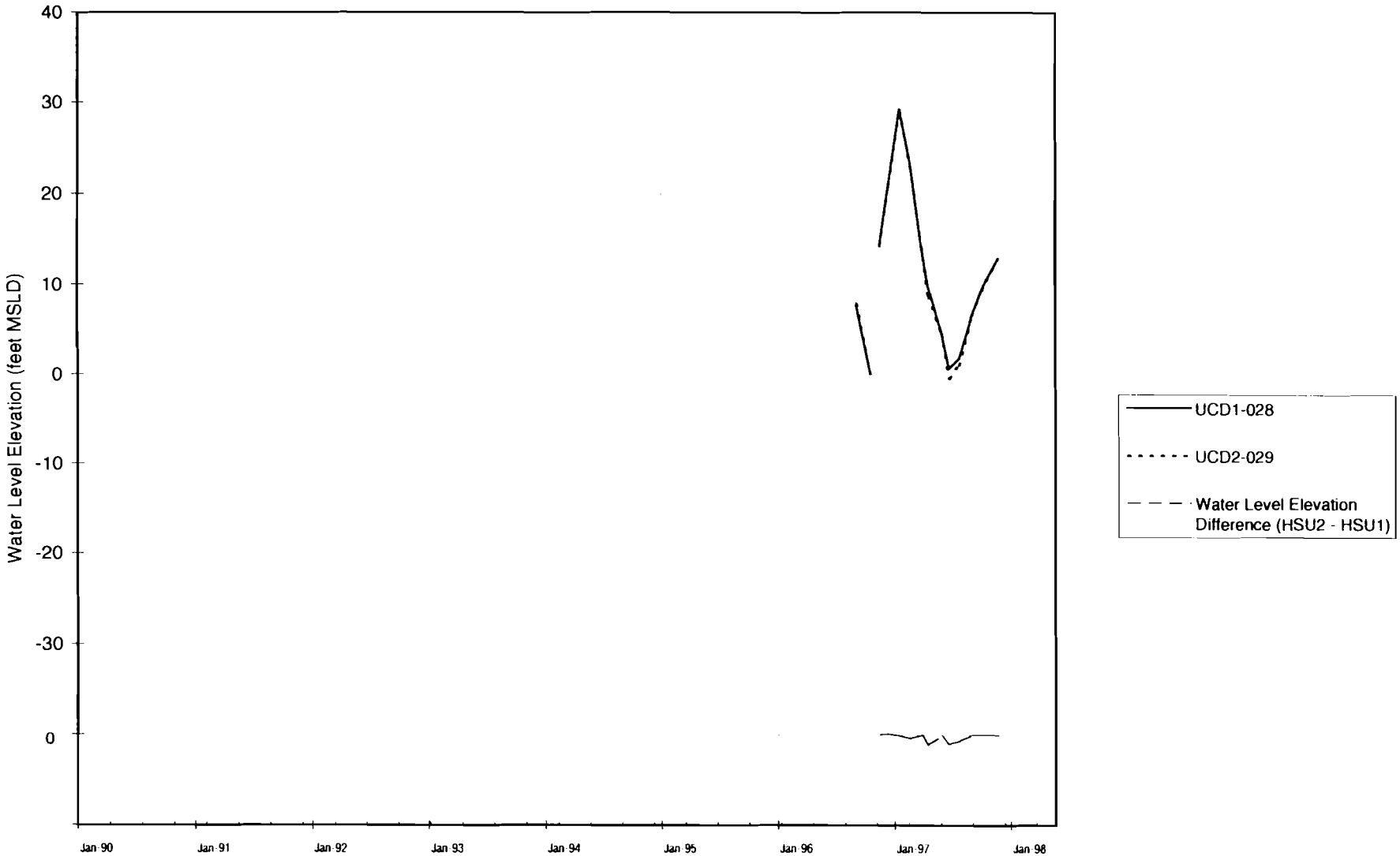
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-034 and UCD2-035
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.17



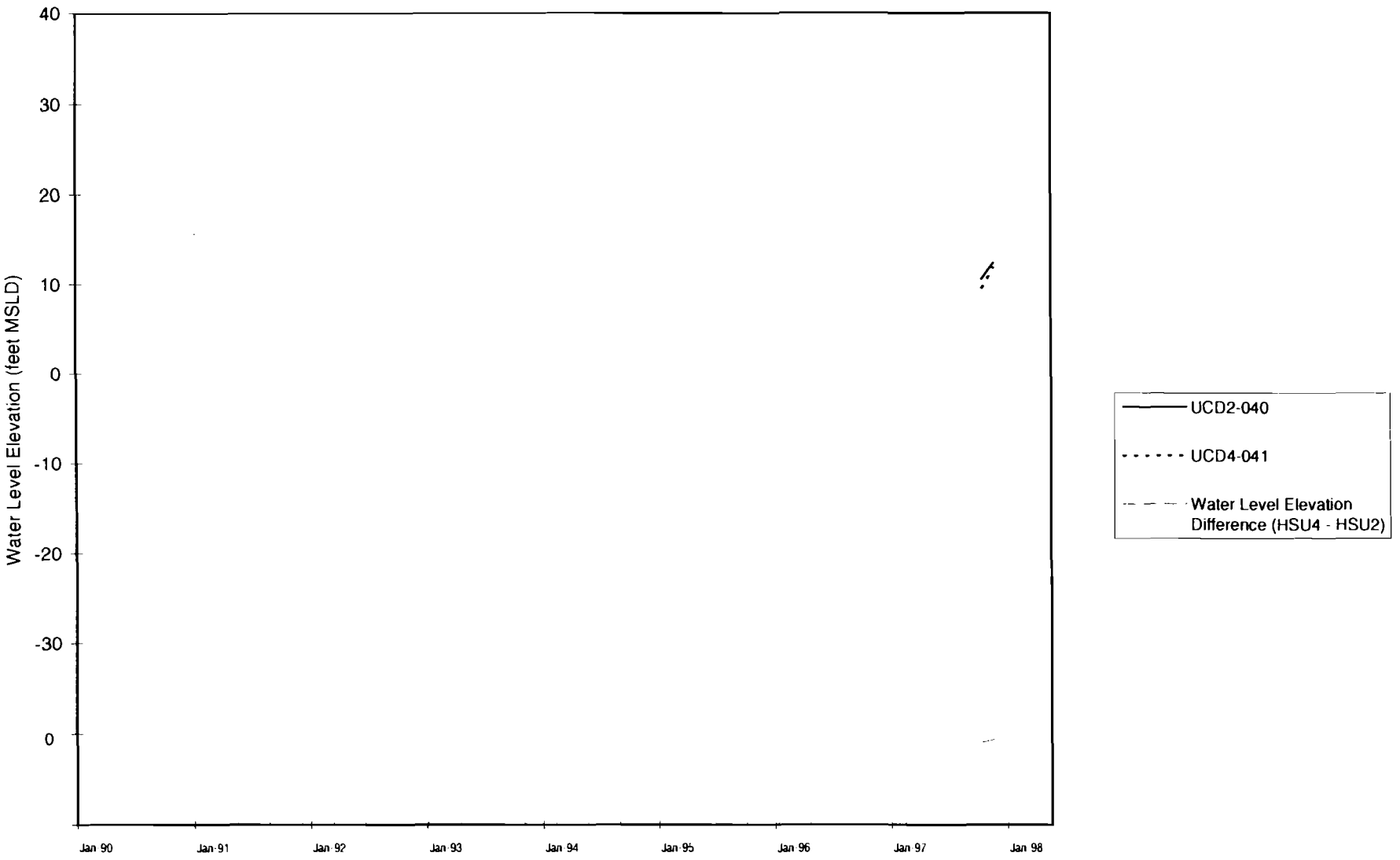
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-025 and UCD2-026
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.18



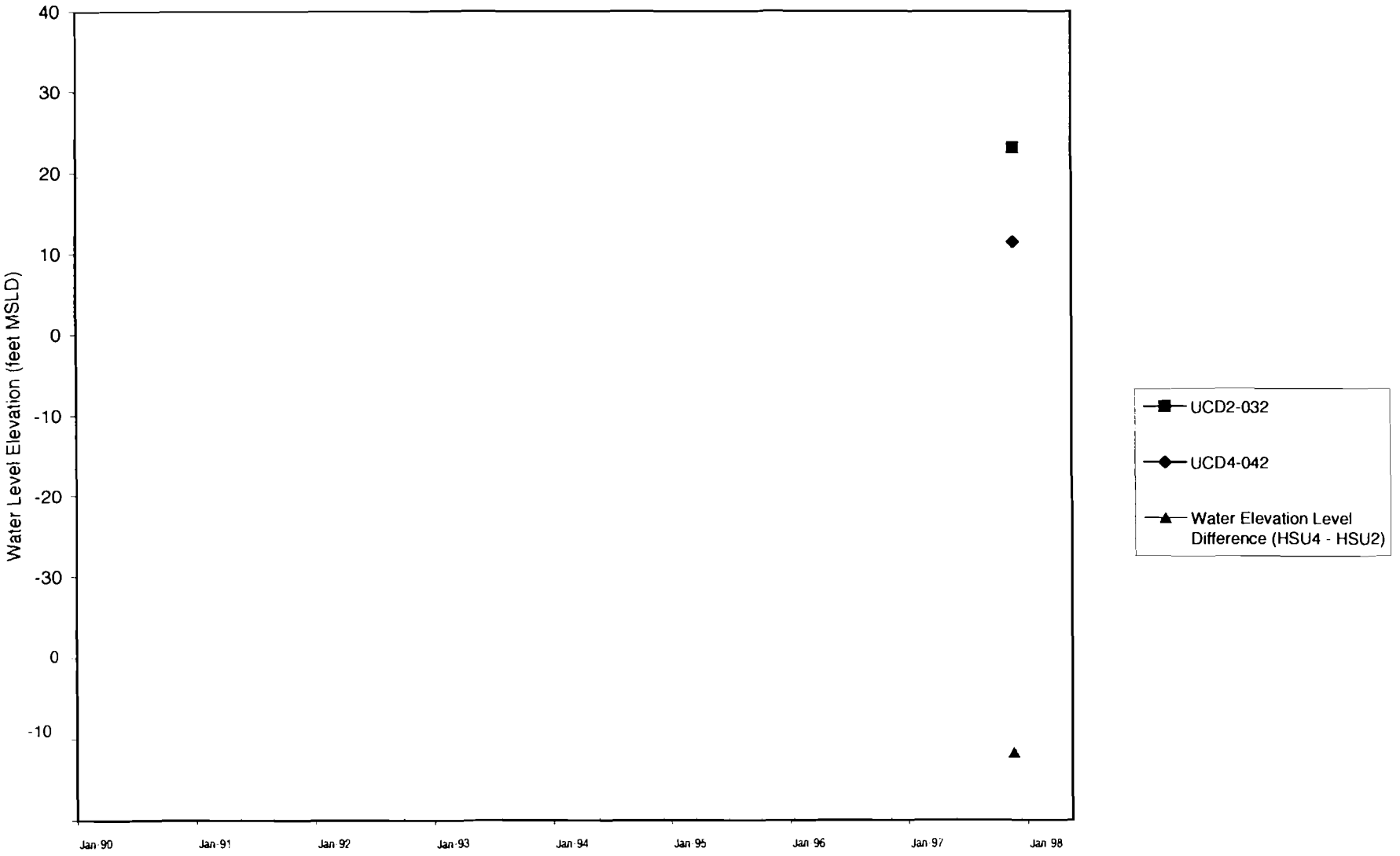
GROUNDWATER ELEVATION HYDROGRAPH
UCD1-011 and UCD2-039
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.19



GROUNDWATER ELEVATION HYDROGRAPH
UCD1-028 and UCD2-029
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.20



GROUNDWATER ELEVATION HYDROGRAPH
UCD2-040 and UCD4-041
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.21



GROUNDWATER ELEVATION HYDROGRAPH
UCD2-032 and UCD4-042
1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California
Figure 3.22

4.0 PRIMARY CONSTITUENTS OF CONCERN FOR THE SITE

This section presents a discussion of 1997 results for the primary site constituents of concern. These constituents have been reported during monitoring conducted since 1990 as the most significant parameters in groundwater beneath the Site, and include: VOCs, chromium, hexavalent chromium, carbon-14, tritium, nitrate, and total dissolved solids. The purpose of this section is to summarize 1997 data for these parameters, their distribution across the Site, and their distribution within the context of previous monitoring results. This summary is built around plots and graphs for each constituent attached to the end of this section. A more detailed and complete presentation of 1997 data is presented in Section 5.0 - 1997 Water Monitoring Program.

4.1 Volatile Organic Compounds in Site Groundwater

The most widespread impacts to groundwater from waste burial activities at the Site are primarily due to chloroform, although several other VOCs have also been reported at much lower levels. Chloroform was the most frequently reported VOC and was found in nineteen site wells during 1997, nine of which were installed at strategic monitoring locations as part of the groundwater IRA. Regular quarterly monitoring of these new wells began in fall 1997, and five of them will be included in a monthly sampling program for one year (June 1998 to May 1999). Chloroform was reported during 1997 with the highest concentrations (4,600-7,900 μg/L) in UCD1-12. Chloroform has also been reported at much lower levels (below 6 μg/L) in several other wells in the vicinity of Landfill 2 and nearby waste burial areas. Figure 4.1 presents a graphical representation of the range and magnitude of 1997 chloroform concentrations reported for all site wells. Figures 4.2 through 4.5 present similar graphs for other VOCs that were reported.

Distribution of chloroform near the waste burial areas has been evaluated as part of a soil gas survey conducted in 1995 and in the 1996 Data Gaps Limited Field Investigation. Results reported from the soil gas survey and soil sampling have shown the most consistent detections of chloroform and other VOCs occur beneath Landfill Unit #2 and the Eastern Trenches. Additional soil gas investigations (passive and flux) are scheduled in 1998 to further evaluate potential source areas.

Within HSU-1, the highest VOC concentrations are reported in UCD1-12 and in hydropunch samples from the area immediately east of UCD1-12. In areas further downgradient, reported HSU-1 concentrations decrease rapidly to values near the detection limit at the UC Davis property boundary. Figure 4.6 plots chloroform concentrations in HSU-1 for winter 1997 (with fall data for new wells).

Chloroform impacts reported in HSU-2 appear to be more widely distributed than impacts in HSU-1. Chloroform-impacted groundwater extends downgradient of UCD1-12, with off-site levels reported in HSU-2 ranging from 40-70 μg/L at the UC Davis property boundary. Previous hydropunch sampling results reported have shown that chloroform concentrations decrease to below 1 μg/L approximately

2,000 feet further east (Dames & Moore, 1998). Figure 4.7 plots chloroform concentrations in HSU-2 for winter 1997 (with fall data for new wells).

During 1997, three HSU-4 wells were installed on neighboring property near a private agricultural well east of the Site. The well was known to be screened at depths corresponding to HSU-2 and HSU-4, and the particular construction of the well was found to be a conduit for movement of water from HSU-2 to the deeper levels. Chloroform was reported during fall 1997 in each of the new HSU-4 wells at levels of 5.1 to 37 μg/L.

Changes in chloroform concentration over time for selected site wells with sufficient historical data are presented in Figures 4.8 to 4.13. These graphs show a trend of generally decreasing chloroform concentrations in wells UCD1-12, UCD1-24, UCD1-13, and UCD1-14. Wells UCD1-25 and UCD1-26 were installed in late 1995, so they have only a few years monitoring history shown on the graph. During this time, UCD1-25 shows a relatively consistent chloroform concentration between 1 and 2 μg/L. UCD2-26 is the closest HSU-2 well downgradient of the source area, and shows somewhat variable chloroform concentrations, ranging from non-detect to 43 μg/L.

In addition to chloroform, several other VOCs have been reported at much lower levels in site groundwater. During 1997, eight VOCs (other than chloroform) were reported in site wells at levels above the contract required detection limit (0.5 μg/L). These included: bromodichloromethane; dibromochloromethane; 1,1-dichloroethane; 1,1-dichloroethene; 1,2-dichloroethane; 1,2-dichloropropane; 1,3-dichlorobenzene; and 1,1,2-trichloroethane. All of these compounds except 1,3-dichlorobenzene were reported in UCD1-12. Four of the compounds; 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, and 1,2-dichloropropane, were reported in eight wells during 1997 (see Figures 4.2-4.5). All of these eight wells are within the defined limits of the chloroform plume, and most were installed as part of groundwater monitoring for the Interim Remedial Action groundwater cleanup. Section 5.3.1.1 gives further details regarding results of 1997 VOC monitoring.

4.2 Chromium and Hexavalent Chromium in Site Groundwater

Chromium and hexavalent chromium are included as site constituents of concern, because several site wells are consistently reported with concentrations greater than the background values (PNNL 1996a, Weiss Associates, 1997). However, studies of soil and groundwater in the area indicate that chromium is also a natural component of native soil and occurs naturally in groundwater beneath the Site and in the surrounding region.

Depending on environmental conditions, the number of electrons present in the chromium atom may vary, producing the hexavalent or trivalent forms. In its trivalent state, the chromium is missing three electrons. In its hexavalent state, six electrons are missing. It is possible for one valence state of chromium to change into the other when chemical conditions within the environment help to promote this process.

Such factors include the oxidation-reduction potential, soil pH conditions, or the presence of manganese or other reducing agents. The two valence states of chromium have distinctly different aqueous speciation, and the hexavalent form is much more mobile in water. As shown in the comparative graphs for selected wells (Figures 4.18 through 4.25), much of the chromium in site groundwater is present in the hexavalent form. Although the trivalent form of chromium shows very low toxicity, both the federal and California EPA have designated hexavalent chromium a carcinogen. A risk-based drinking water standard of 50 μg/L has been established for total chromium.

Within a number of HSU-1 wells on site, hexavalent chromium results are consistently reported as elevated in comparison to concentrations reported in background well UCD1-18. Figure 4-14 represents a graphical representation of the range and magnitude of hexavalent chromium detections for 1997. Figure 4.15 presents this information for total chromium. The locations of wells with consistently higher results do not readily indicate a relationship between the elevated results and site waste disposal areas. Figure 4.16 is a contour map with HSU-1 concentrations from winter quarter 1997 (and fall data for new well UCD1-28). The four wells with the highest reported hexavalent chromium (UCD1-19, UCD1-11, UCD1-25 and UCD1-28) are not located near waste disposal areas. Results from off-site sampling have also indicated areas of elevated hexavalent chromium in the region of the Site.

Both chromium and hexavalent chromium reported decrease with depth in the aquifer. In HSU-2, comparatively few detections of hexavalent chromium are reported, and impacts are both lower in concentration and less widely distributed than in HSU-1 (see Figures 4.14 and 4.17). Data reported from recently installed wells are consistent with the previous findings: relatively high detections of hexavalent chromium are reported in HSU-1 wells, but hexavalent chromium was reported near detection limits for wells screened in HSU-2 and HSU-4.

In addition to quarterly monitoring of groundwater, potential site source areas for chromium have been investigated through hydropunch as well as soil and waste samples. In the environment, chromium usually exists in the trivalent state, and chromium reported from most soil and waste samples collected in and around the landfill areas is predominantly trivalent. Reported chromium speciation analysis results reported show that hexavalent chromium in soil is uncommon in both background and site soil sample locations. The highest values of chromium in waste were reported in some samples with abundant ash material. However, results reported from soil samples collected below waste disposal units do not contain elevated chromium concentrations, suggesting that chromium in the waste is not very mobile. Additional data evaluation is planned during 1998 as part of the Groundwater Source Investigation to gather further information on the relationship of site disposal units and hexavalent chromium concentrations in groundwater.

4.3 Carbon 14 and Tritium in Site Groundwater

Radiological impacts to site groundwater have been monitored quarterly since 1990 for specific radiological constituents that are known or suspected to have been used or buried on the Site. Non-specific tests are also included to screen for other potentially present radionuclides that emit alpha or beta radiation. Radiological constituents with gamma radiation are screened via the gamma spectral analysis. This testing has reported two primary radiological constituents of concern; carbon-14 and tritium. These constituents are consistently reported in a few site wells near the radiological waste burial areas. Radium-226 and Strontium-90 have been only sporadically reported in site wells at activities near method detection limits.

The monitoring program has evolved since 1996 to focus on specific wells and analytes that provide the most useful data for tracking site radiological contamination. When the Revised FSP was developed in 1997, the radiological analyte list and collection schedule were again reviewed and revised. The collection schedule was increased where more data was needed and reduced in some wells for analytes that have been consistently below detection limits. Additional samples were collected during the year to track potential upward trends in specific wells, based on changes noted in data collected each quarter. The new wells installed in the latter part of 1997 will be monitored quarterly for all constituents until trends are established. Some of these wells will also be important in tracking the potential movement of radiological constituents during operation of the groundwater treatment system.

Positive detections reported for carbon-14 in site wells during 1997 are shown in Figure 4.26. The highest detections reported were from wells UCD1-13 and UCD2-14, although lower concentrations were found in a few other wells. Figures 4.27 and 4.28 show concentration contours for winter quarter 1997 (plus fall data for new wells). Carbon-14 has been consistently reported for several years in three HSU-1 wells (UCD1-12, UCD1-13, and UCD1-23) and one HSU-2 well (UCD2-14). Changes in concentration over time for these wells are shown in Figures 4.32 through 4.35.

Tritium impacts to site soil and groundwater are primarily reported in the area of the Waste Burial Holes and the southern section of the Eastern Trenches. Monitoring wells UCD1-13 and UCD2-14 are located in this area and consistently have reported detections of tritium. As shown in Figure 4.36, levels in HSU-1 (UCD1-13) reported over the past few years have ranged between 15,000-20,000 pCi/L, and in HSU-2 (UCD2-14, Fig. 4.37) results reported have ranged between 3,000-10,000 pCi/L. Removal of the radiological waste from these areas to reduce future potential for groundwater contamination is a priority for the project and is scheduled for the near future.

Tritium results for 1997 are shown in the concentration graph in Figure 4.29. This figure represents a graphical representation of the range and magnitude of reported tritium detections. Low detections of tritium were reported in several site wells that are not near any radiological waste burial areas. None of these wells have had consistent reported detections of tritium, and results have returned to below

minimum detectable activity for the following quarter of sampling. Maps for HSU-1 and HSU-2 with winter quarter 1997 (plus fall data for new wells) tritium concentrations are found in Figures 4.30 and 4.31.

4.4 Nitrate and Total Dissolved Solids in Site Groundwater

Nitrate and total dissolved solids (TDS) are the most widely distributed of the primary constituents of concern reported in site groundwater throughout HSU-1 and HSU-2. Concentrations reported of both constituents in on-site wells show higher than background results in wells downgradient from dog pen and waste disposal areas. Wells screened in HSU-1 have higher concentrations reported for both nitrate and TDS than wells screened in HSU-2 and HSU-4. Based on 1997 results reported for wells not directly downgradient of source areas, levels for these constituents are not significantly different in HSU-2 than they are in HSU-4.

The level of nitrate in groundwater is both a regional and a site-related issue. Elevated nitrate effects have been reported in both private and municipal sources of drinking water in the Davis area. The 1995 site summary prepared by the Agency for Toxic Substances and Disease Control evaluated the potential pathway of exposure for site neighbors and stated that "nitrate levels do not show any particular spatial pattern and likely result from agricultural use of fertilizers throughout this part of the state."

Nitrate is a relatively mobile constituent in water and soil. When applied to crops during fertilization, excess nitrate does not remain in the topsoil, but over a number of years, gradually moves down into the groundwater. Agricultural application has been a common source of nitrate in groundwater when fertilizers mixed with irrigation water are pumped out onto fields. The current regional problems with increasing nitrate levels in drinking water sources around the state have been caused by agricultural practices that span several decades.

In groundwater below the Site, there may be a combination of factors that relate to the presence of nitrate. Although some areas of elevated nitrate in site groundwater are adjacent to potential site sources (as described above), a number of other wells with concentrations exceeding background are not directly downgradient of waste burial areas, and off-site sampling has found that similar elevated areas surrounding the Site. Sampling conducted for the Site remedial investigation indicates that nitrate occurs in background soils; site sampling of soil and waste has found nitrate in concentrations above background in samples from all three landfill units, and from disposal pits and trenches.

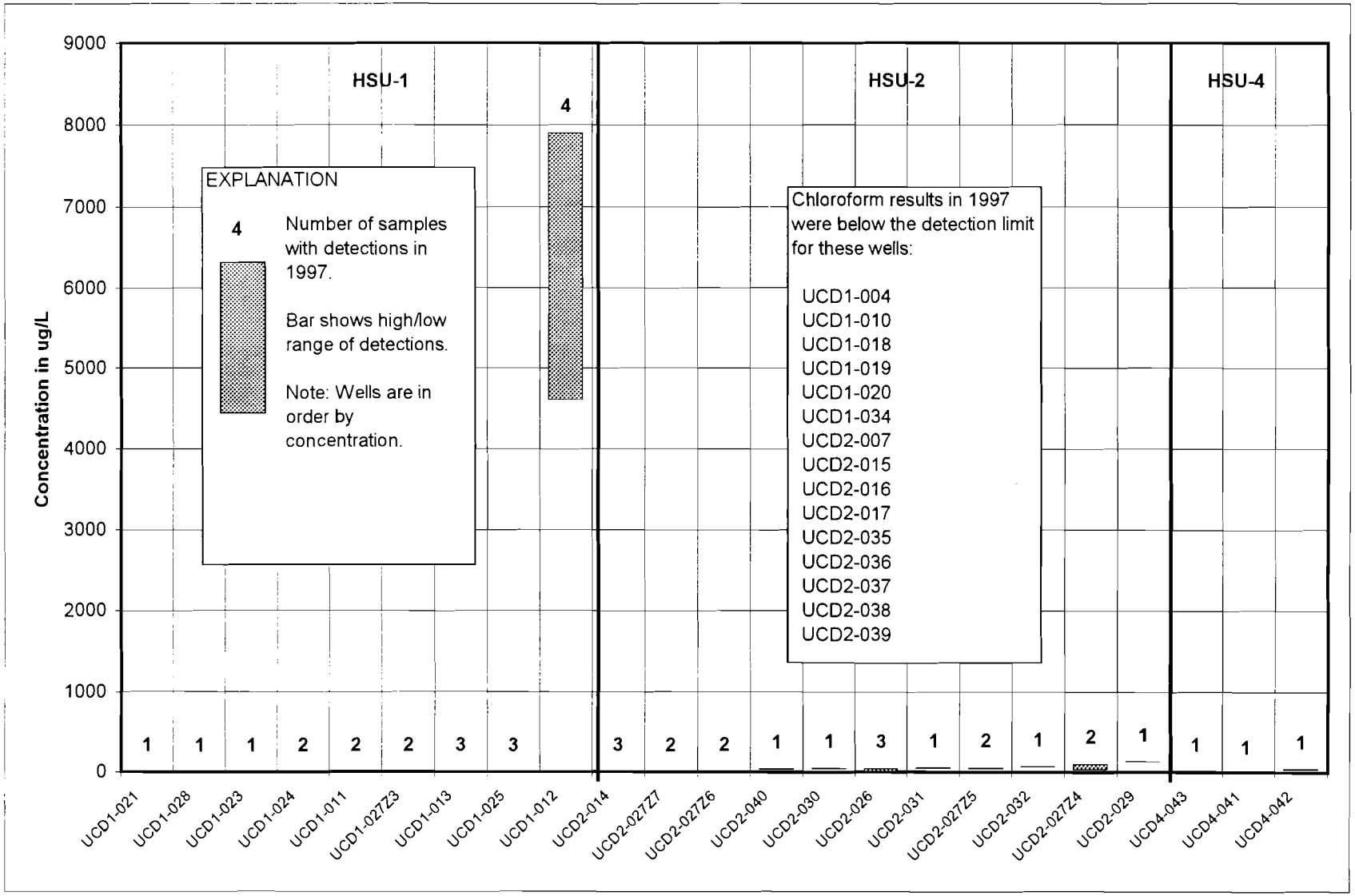
Results of 1997 groundwater sampling are shown in Figure 4.38, presenting the range and magnitude of nitrate detections. Concentration contours for winter quarter 1997 (plus fall data for new wells) are shown in Figures 4.40 and 4.41. These figures clearly indicate a positive influence from Putah Creek on nitrate as N levels in site groundwater. Those wells located on or adjacent to the levee are consistently lowest in nitrate as N in both HSUs. In HSU-1 wells that are not adjacent to the levee, the influence of

Putah Creek recharge is much less significant. The influence of well proximity to potential site sources (waste burial areas, dog pens) is shown in the contour maps (Figures 4.40 and 4.41). Other areas of elevated nitrate concentrations are also observed in both HSU-1 and HSU-2 that do not appear to be influenced by site sources. A few site wells in the first HSU have shown increasing trends for nitrate as N over the past few years. This may be related to higher than normal precipitation during this same period, increasing downward migration of nitrate or nitrogen compounds present in the soil. Historical trends for selected wells with nitrate concentrations that exceed background are provided in Figures 4.44 through 4.47.

The distribution of TDS concentrations across the Site is similar to that of nitrate as N, although the relative range of concentrations is much greater for TDS. Figure 4.39 shows the concentration range for 1997 TDS in site wells grouped by HSU. In HSU-1, TDS is above background in several wells, and is highest in wells downgradient of site disposal areas including UCD1-10—downgradient of Landfill Unit #3, UCD1-12—downgradient of Landfill Unit #2, UCD1-24—downgradient of the dog pens, UCD1-13, downgradient of the Eastern Trenches, and UCD1-21—downgradient of a domestic septic tank and the dog pens. In HSU-2, TDS is highest in downgradient wells UCD2-7 and UCD2-14, the same wells that are highest in nitrate as N for this HSU.

The data indicate that Putah Creek also has an influence on levels of TDS in wells that are located on or very close to the levee, where the lowest concentrations are typically reported. Figures 4.43 and 4.42 show contours of TDS concentrations during winter quarter 1997 (plus fall data for new wells).

Over the past few years, TDS has increased slightly in some HSU-1 site wells. A number of these wells (UCD1-10, UCD1-23, and UCD1-24) are also downgradient of site sources and have elevated or increasing nitrate levels. Historical trends for selected wells with TDS concentrations that significantly exceed background or show increasing trends during 1997 are found in Figures 4.48 through 4.51. Appendix B has additional time series graphs for TDS in site wells.



CHLOROFORM
CONCENTRATION GRAPH
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FIGURE 4.1

DAMES & MOORE
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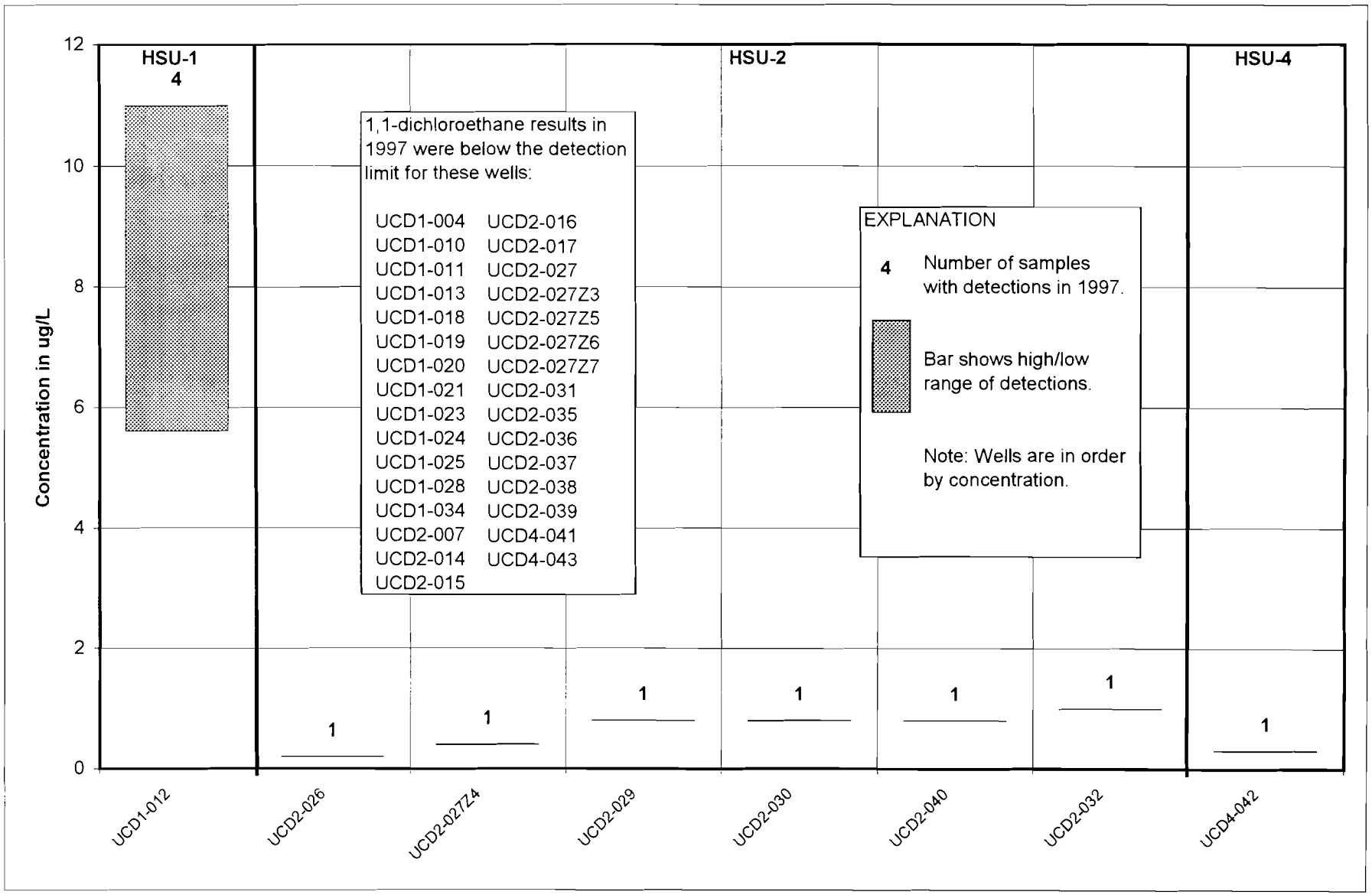

1,1-DICHLOROETHANE CONCENTRATION GRAPH

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FIGURE 4.2

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

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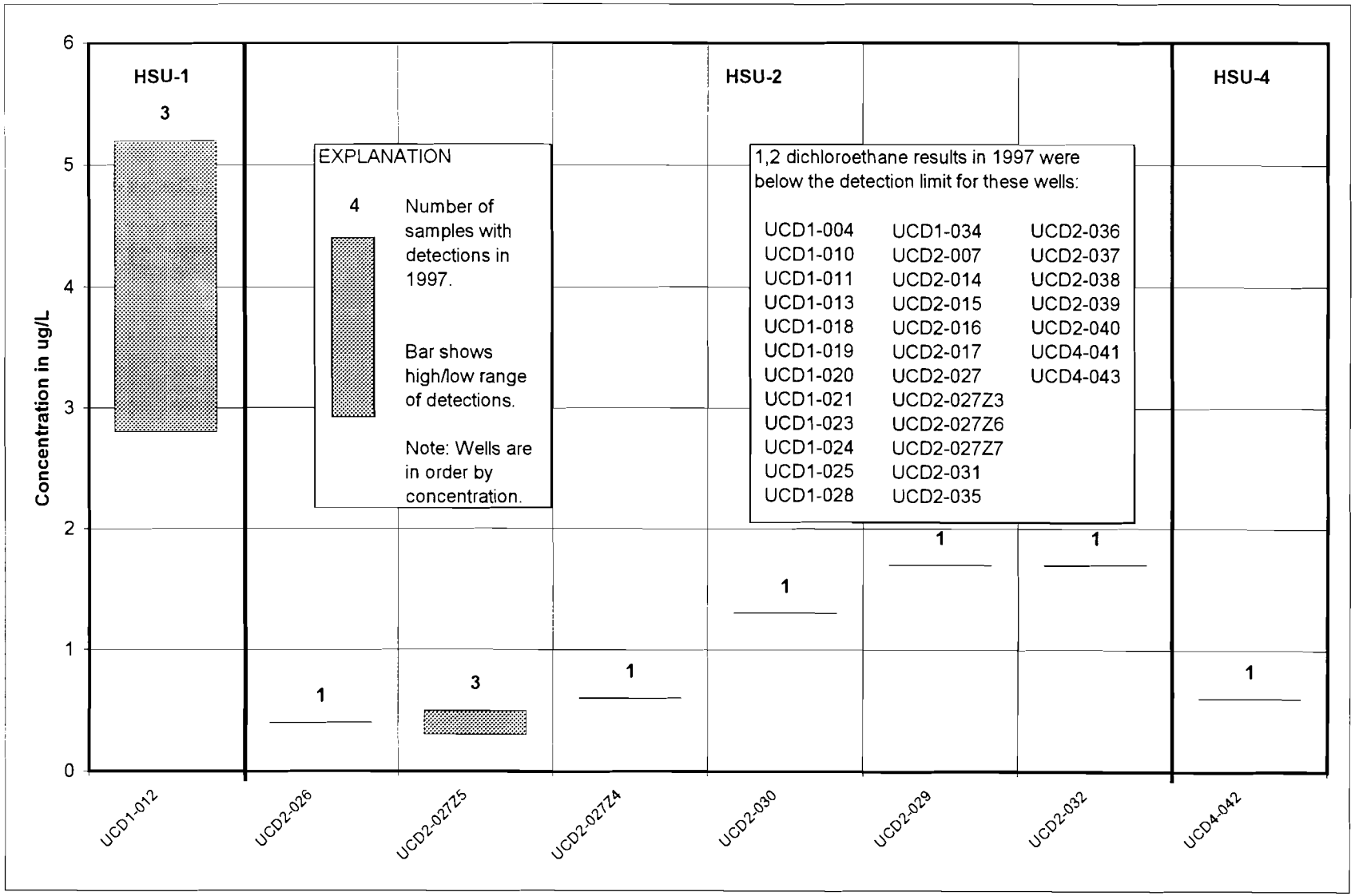

1,2-DICHLOROETHANE CONCENTRATION GRAPH

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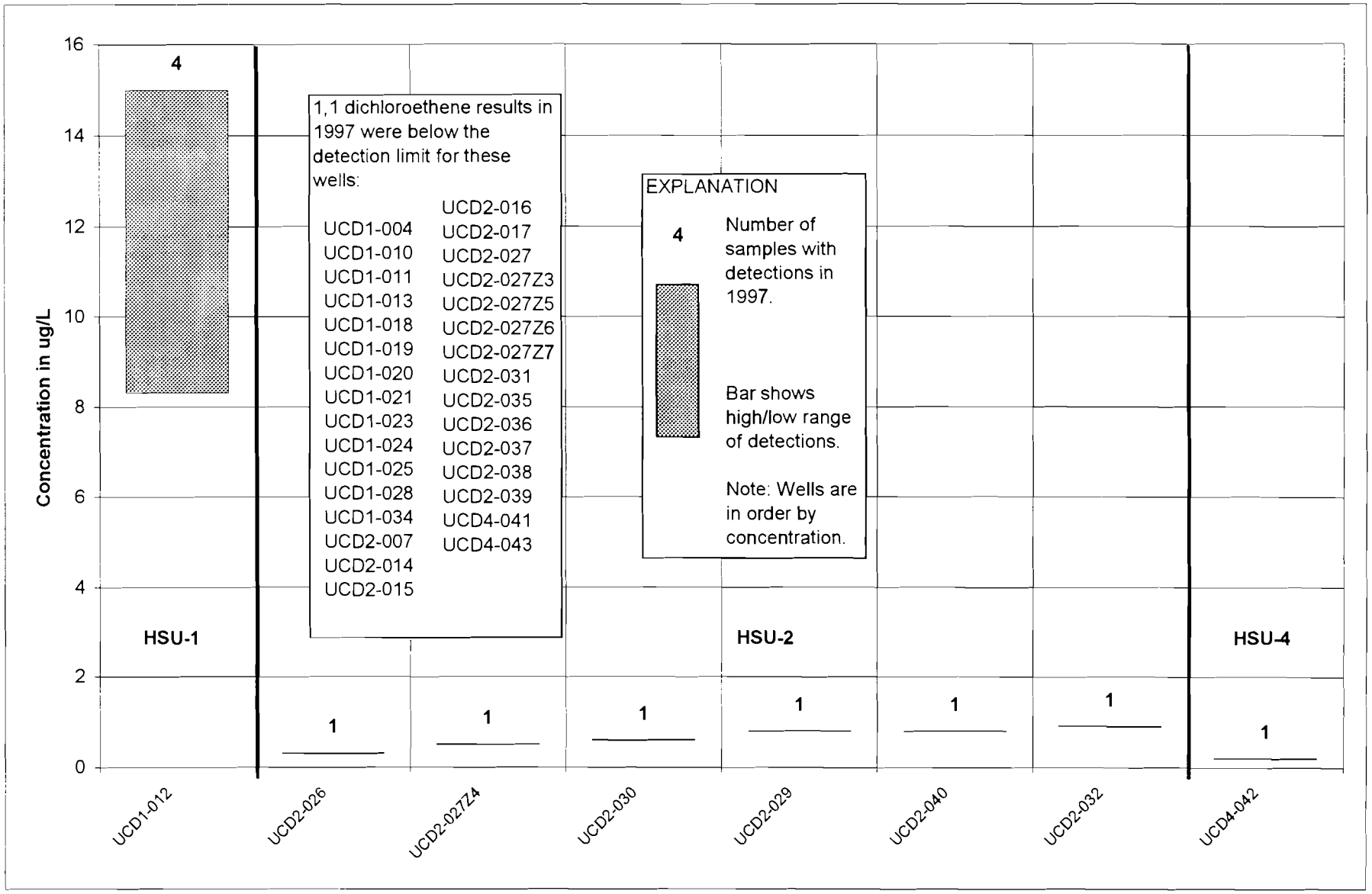
FIGURE 4.3

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

12-dca.xls 8/31/98 4:11 PM



1,1-DICHLOROETHENE CONCENTRATION GRAPH

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FIGURE 4.4

DAMES & MOORE
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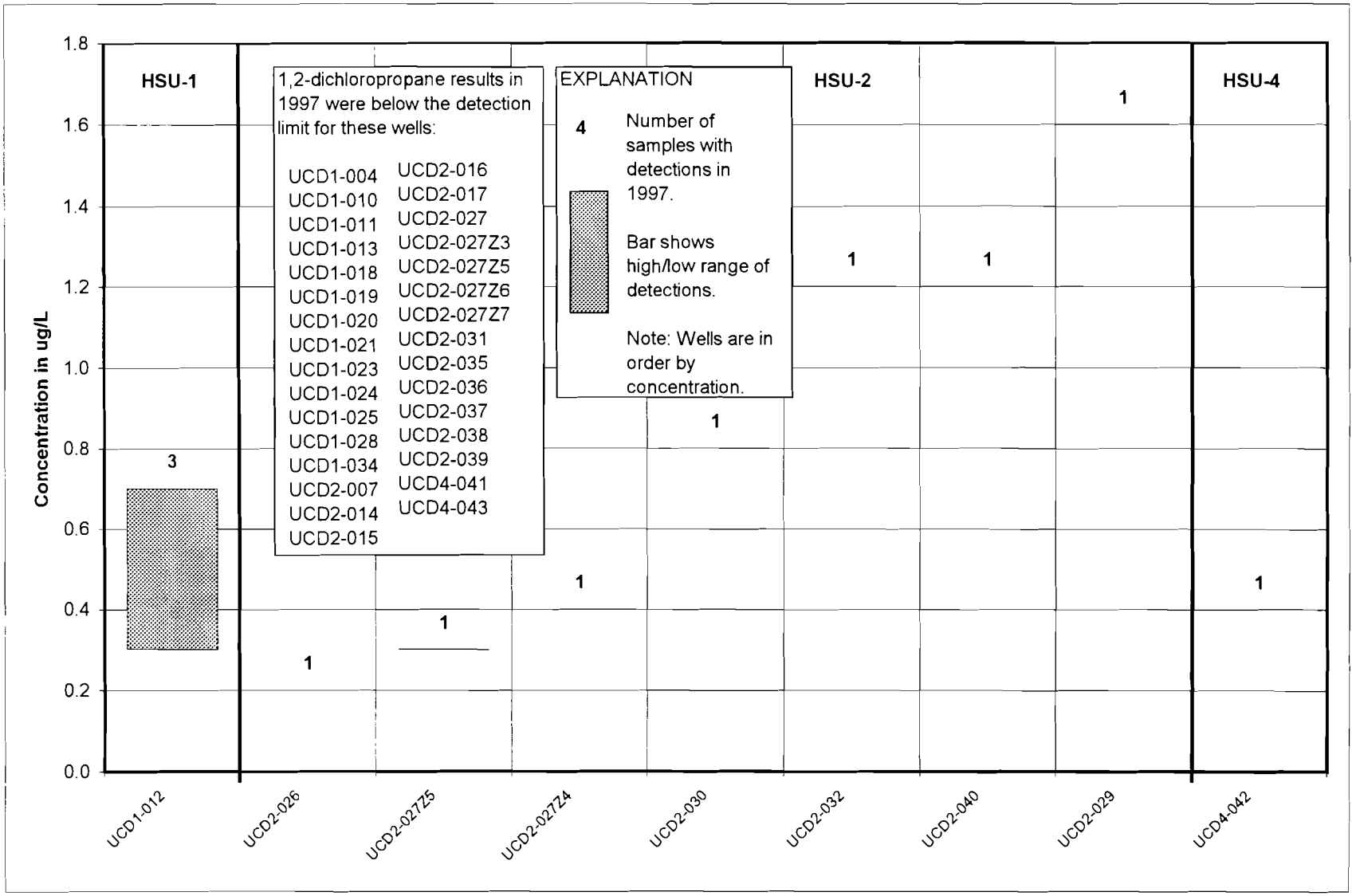
11-dce.xls 8/31/98 4:12 PM



1,2-DICHLOROPROPANE CONCENTRATION GRAPH

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FIGURE 4.5

DAMES & MOORE
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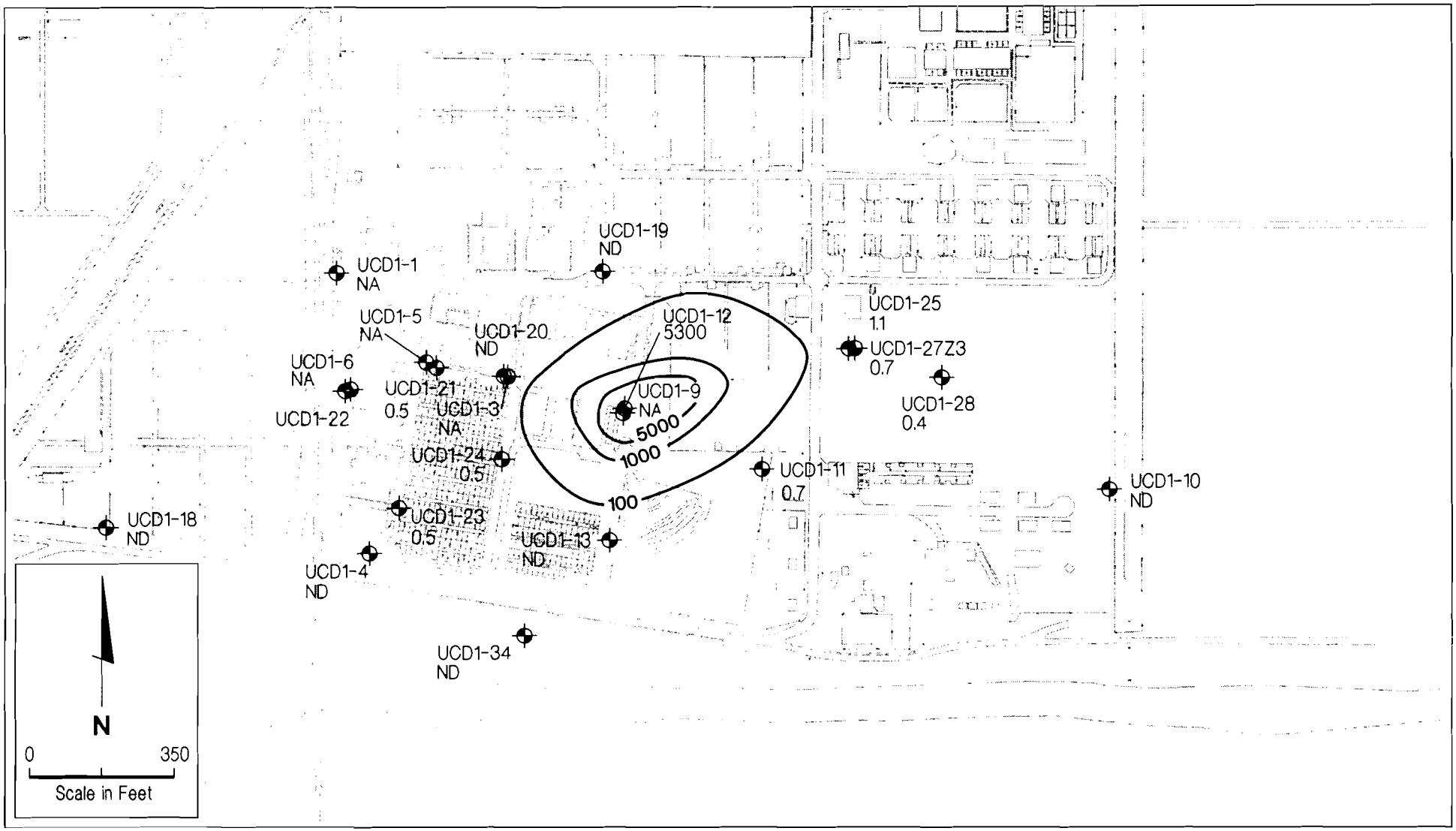
12-dcp.xls 8/31/98 4:13 PM



EXPLANATION

UCD1-11 HSU-1 Monitoring Well

ND = Not Detected

NA = Not Analyzed

All results reported in ug/L

CONCENTRATION CONTOUR PLOT
1997 CHLOROFORM CONCENTRATIONS - HSU 1

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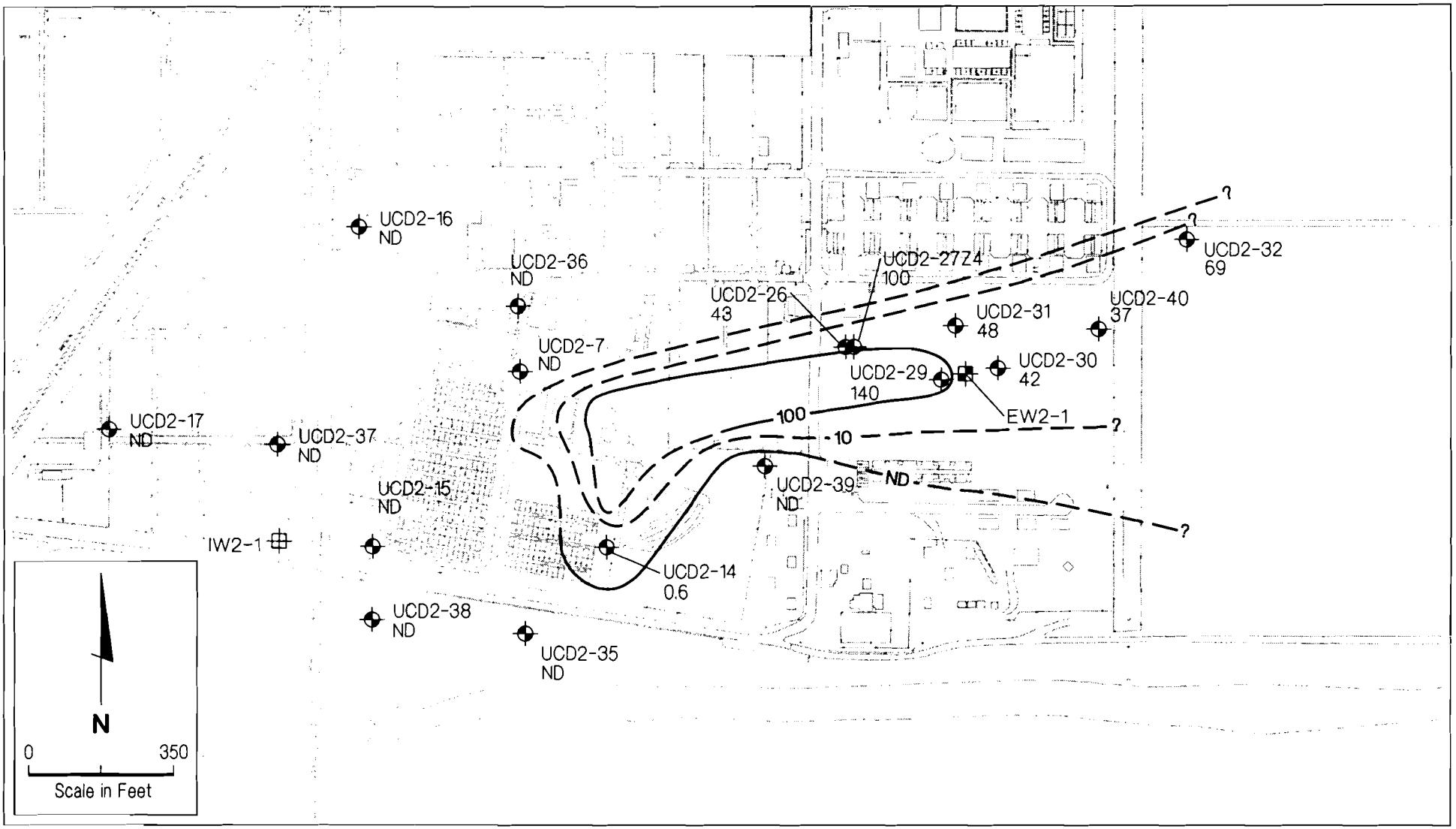
FIGURE 4.6



EXPLANATION

- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well
- All results reported in ug/L
- ND = Not Detected
- Concentration contour dashed where inferred based on previous hydropunch data (See Engineering/Cost Analysis, Dames and Moore, 1998)

CONCENTRATION CONTOUR PLOT
1997 CHLOROFORM CONCENTRATIONS - HSU 2

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00234-258-79801 maj 79801Q 7/27/98

FIGURE 4.7

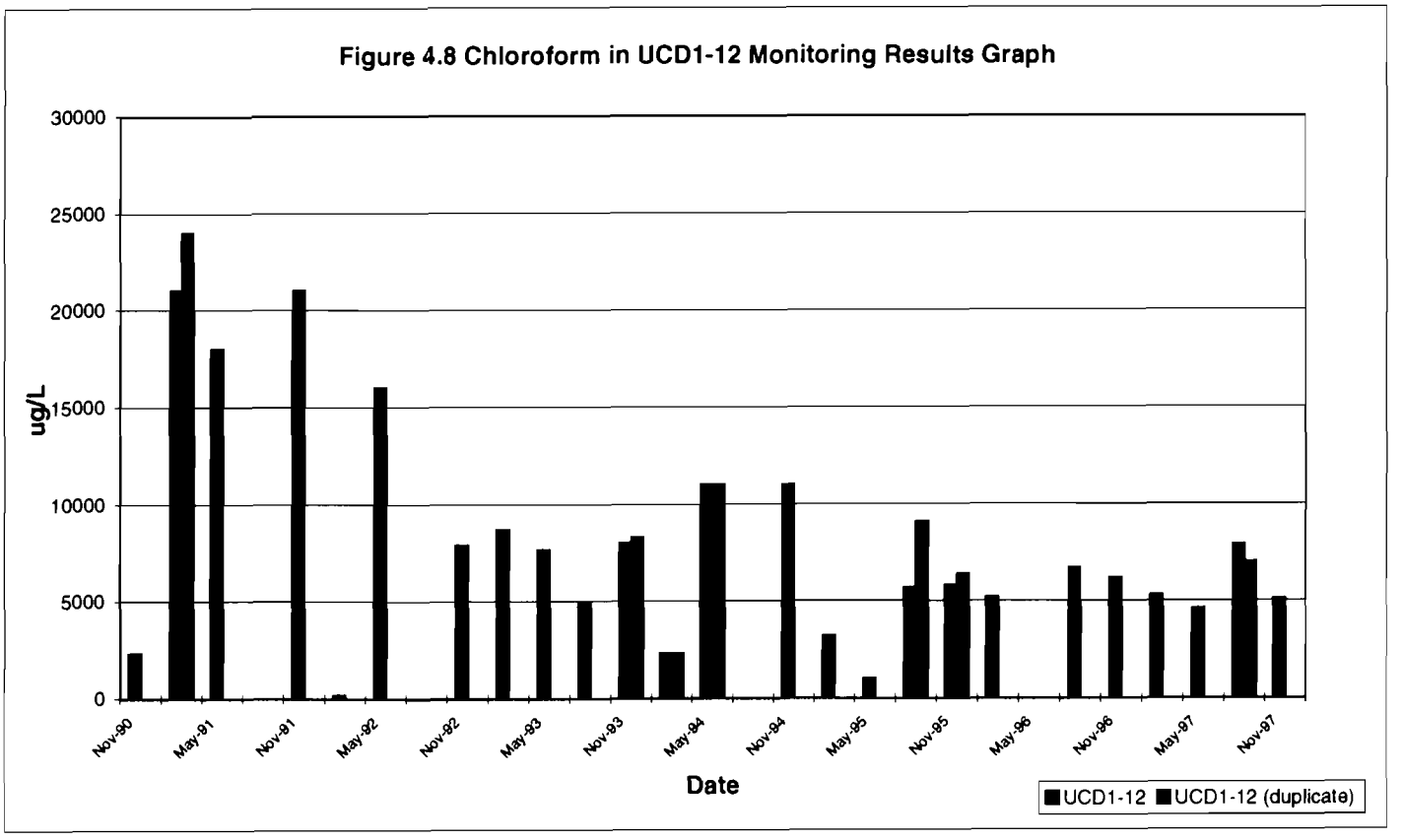


Figure 4.8 Chloroform in UCD1-12 Monitoring Results Graph
30000
25000
20000
15000
10000
5000
0
ug/L
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-12
UCD1-12 (duplicate)

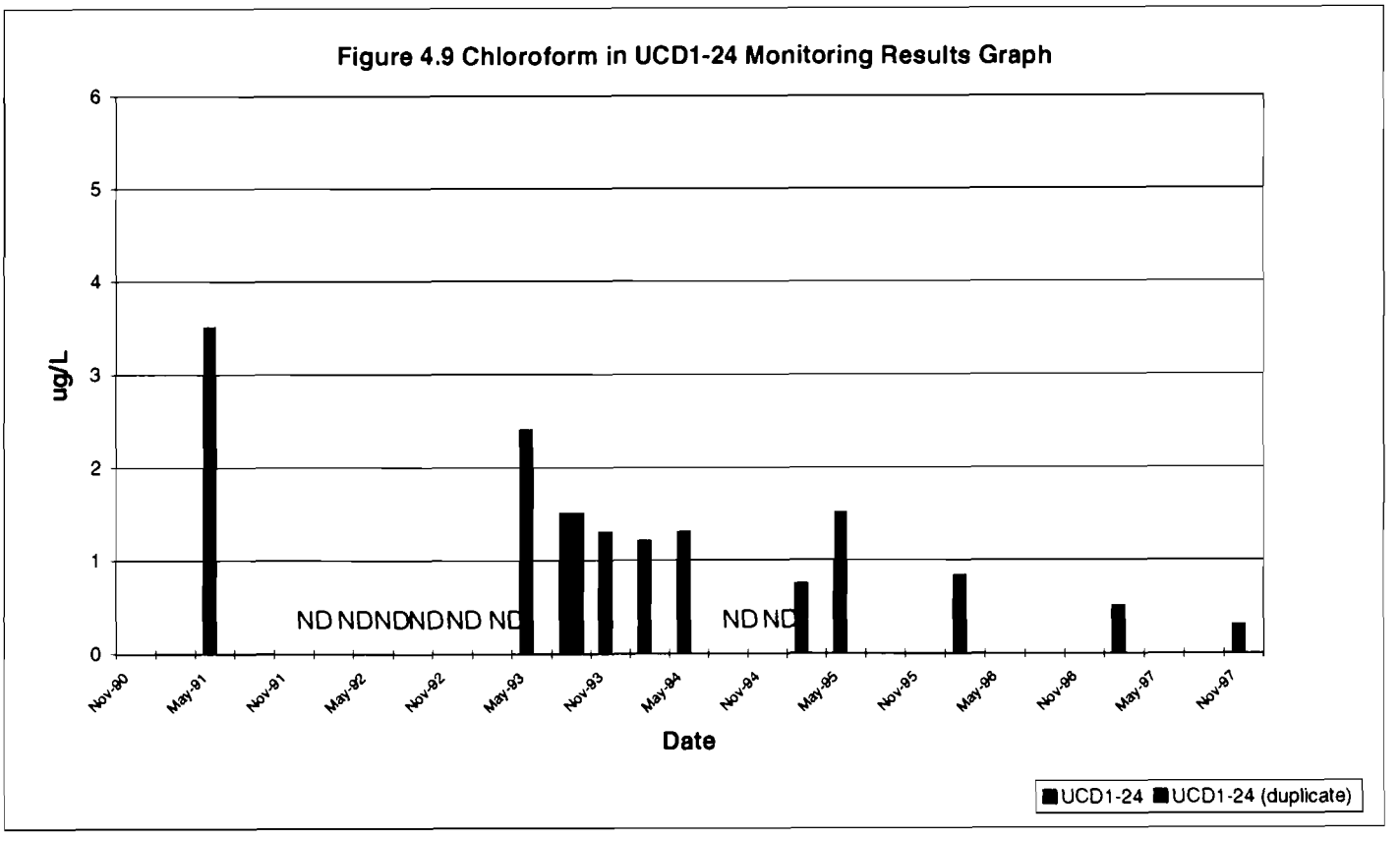


Figure 4.9 Chloroform in UCD1-24 Monitoring Results Graph
6
5
4
3
2
1
0
ug/L
ND ND ND ND ND ND
ND ND
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-24
UCD1-24 (duplicate)

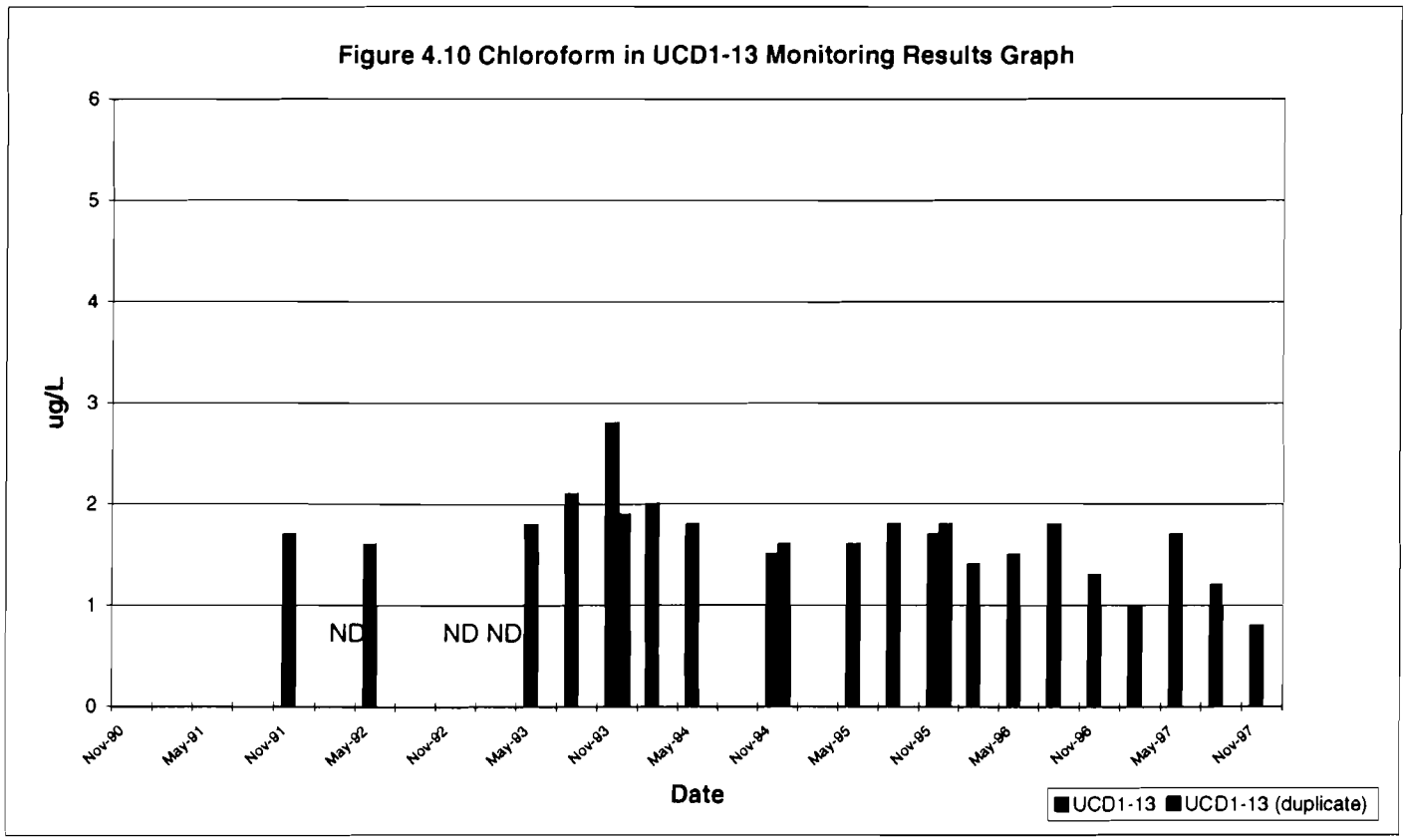


Figure 4.10 Chloroform in UCD1-13 Monitoring Results Graph
ug/L
0
1
2
3
4
5
6
ND
ND ND
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-13
UCD1-13 (duplicate)

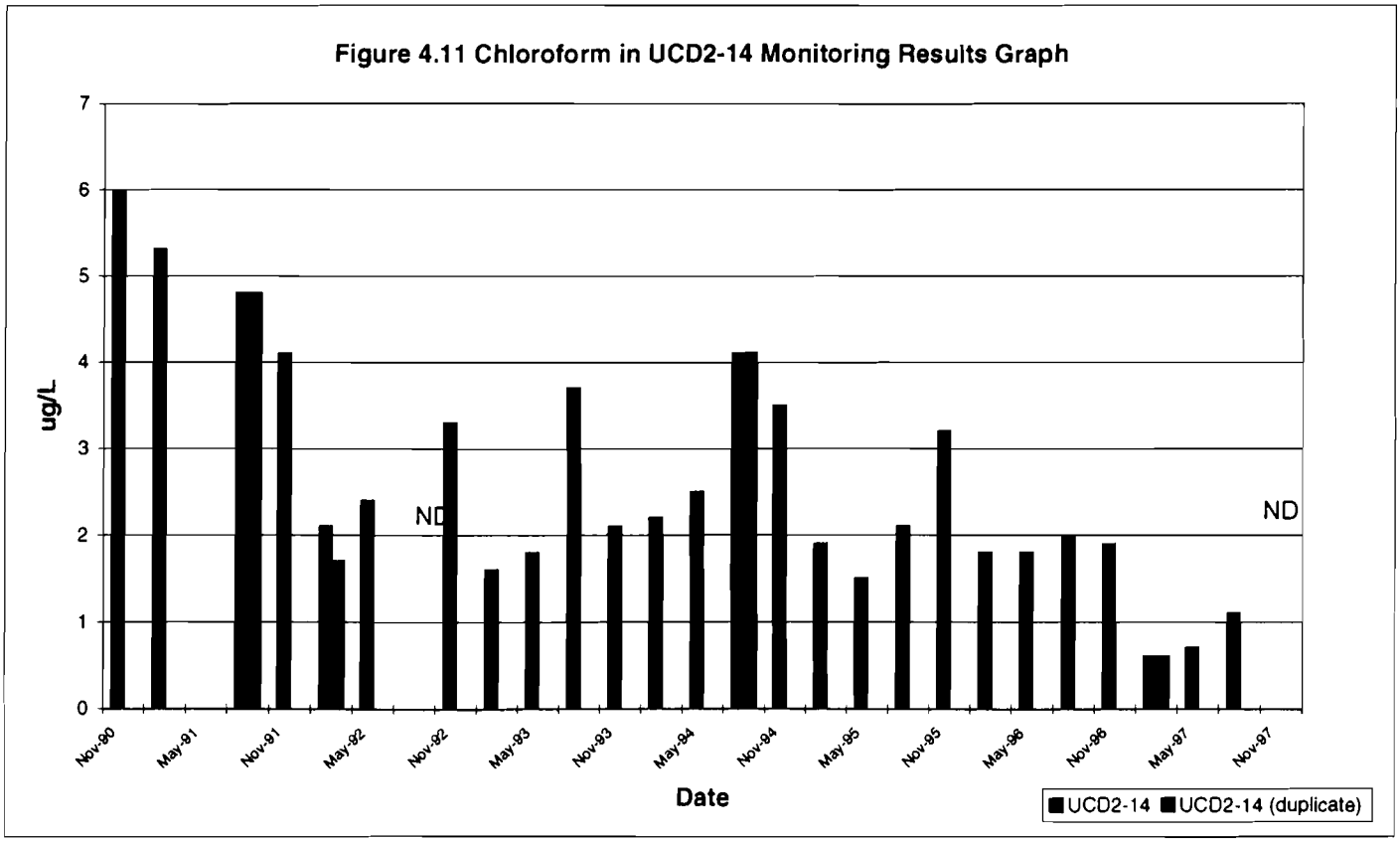


Figure 4.11 Chloroform in UCD2-14 Monitoring Results Graph
ug/L
0
1
2
3
4
5
6
7
ND
ND
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD2-14
UCD2-14 (duplicate)

Figure 4.12 Chloroform in UCD1-25 Monitoring Results Graph

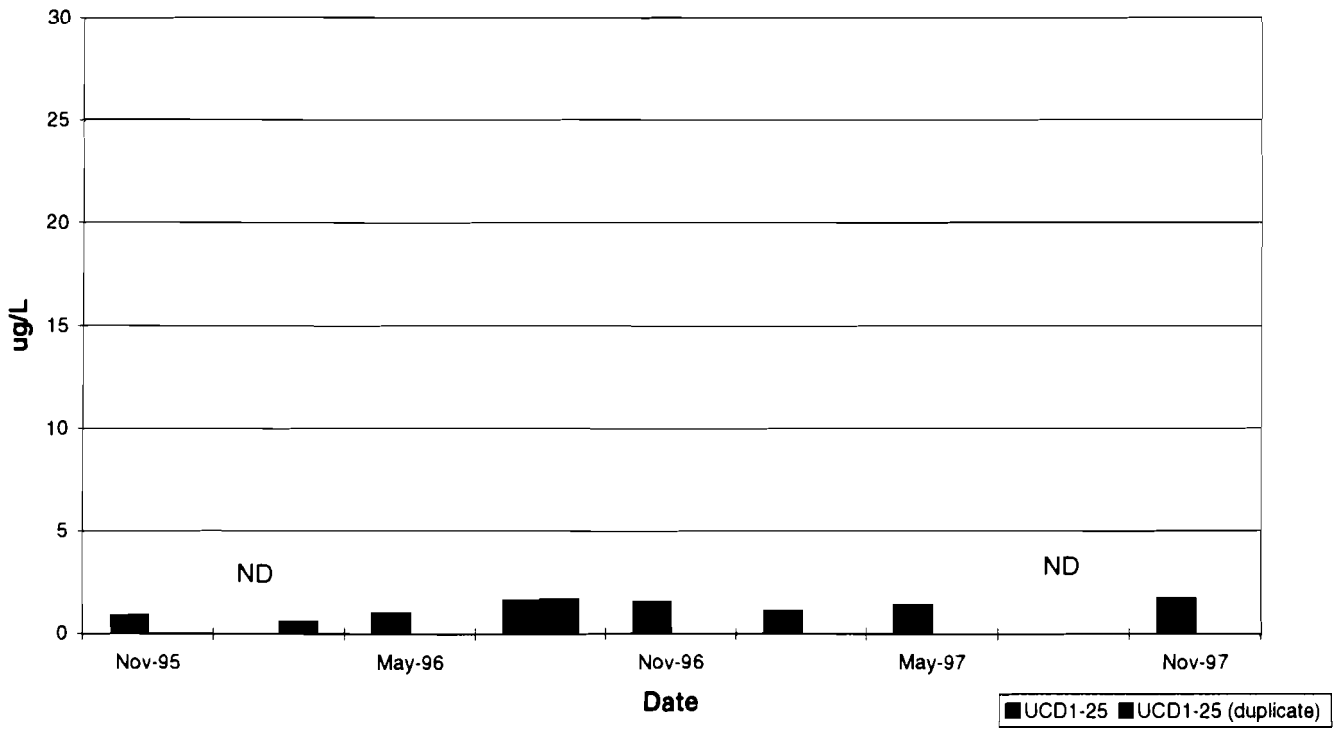
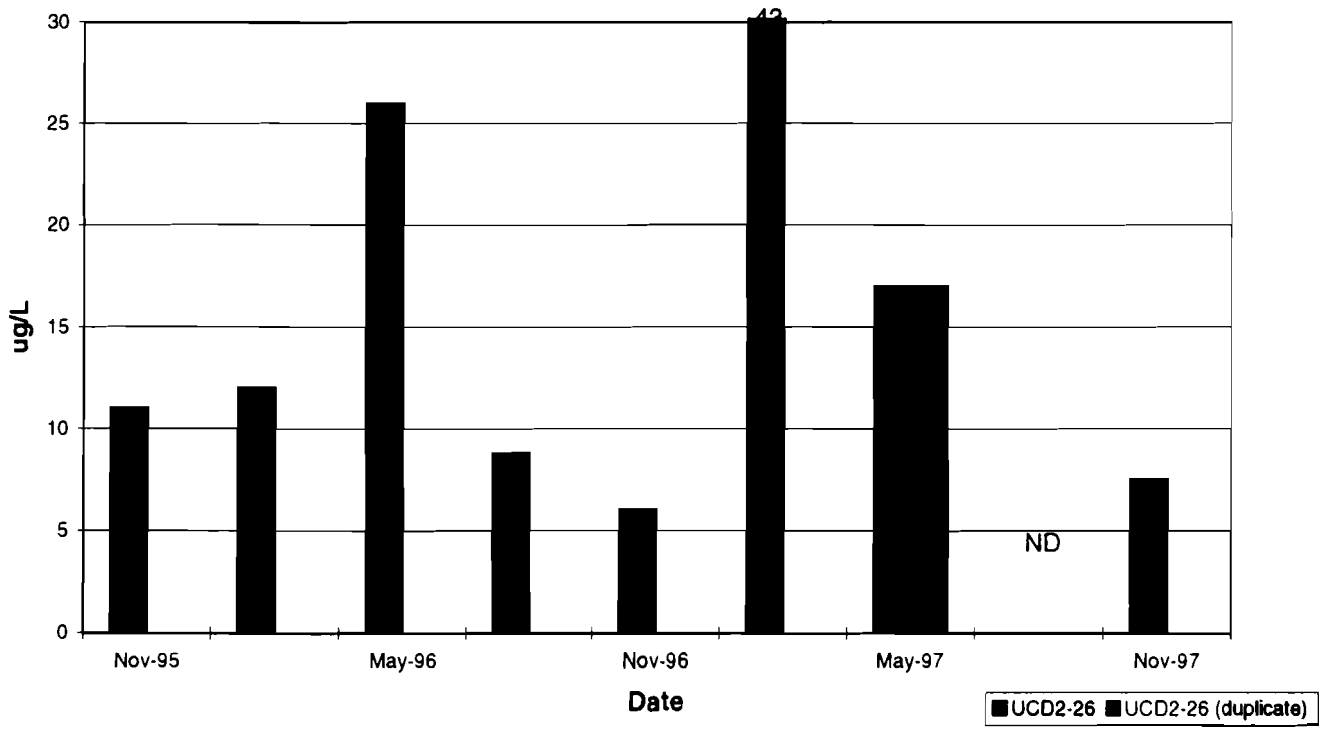
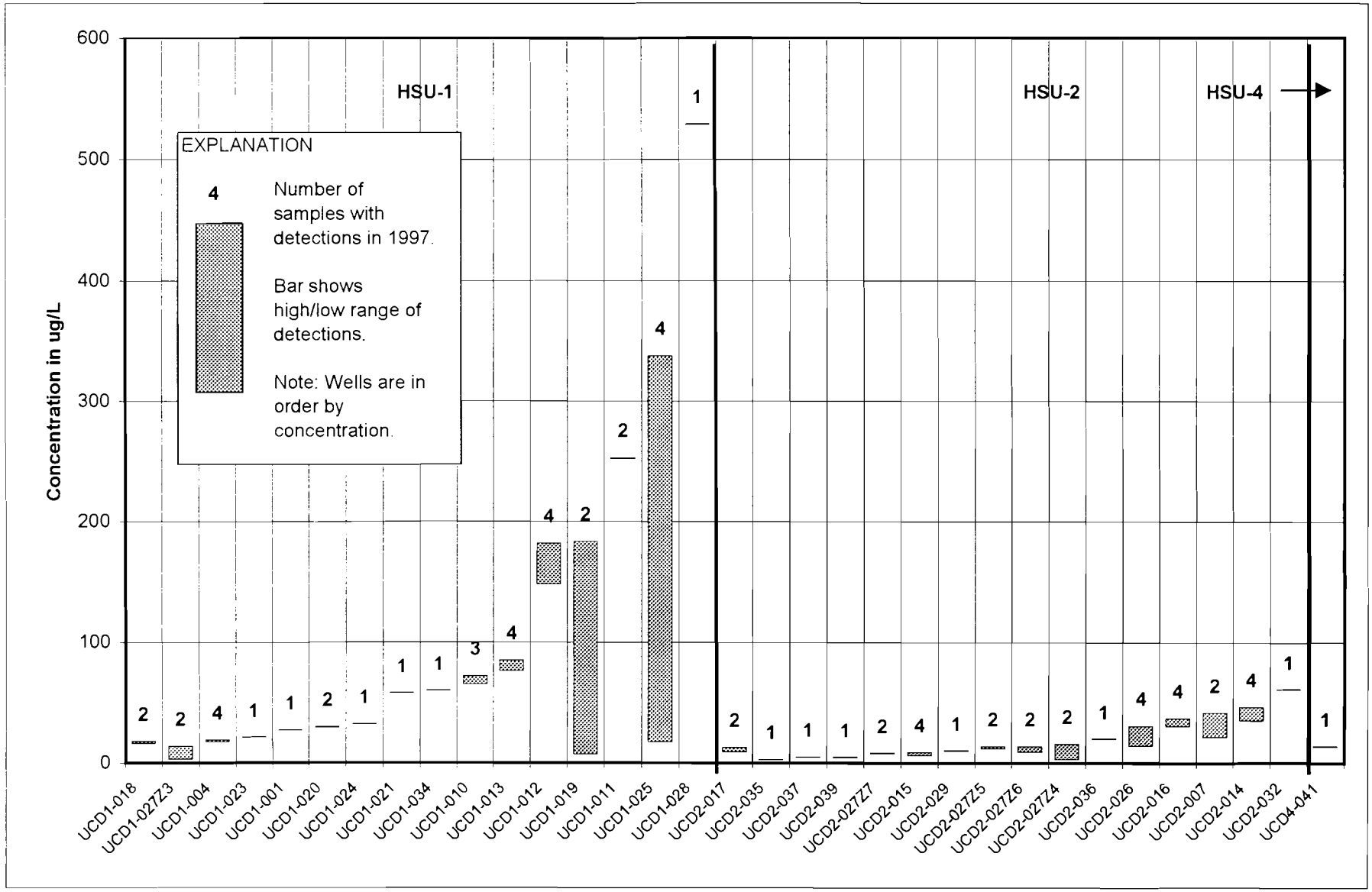


Figure 4.13 Chloroform in UCD2-26 Monitoring Results Graph





HEXAVALENT CHROMIUM CONCENTRATION GRAPH

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FIGURE 4.14

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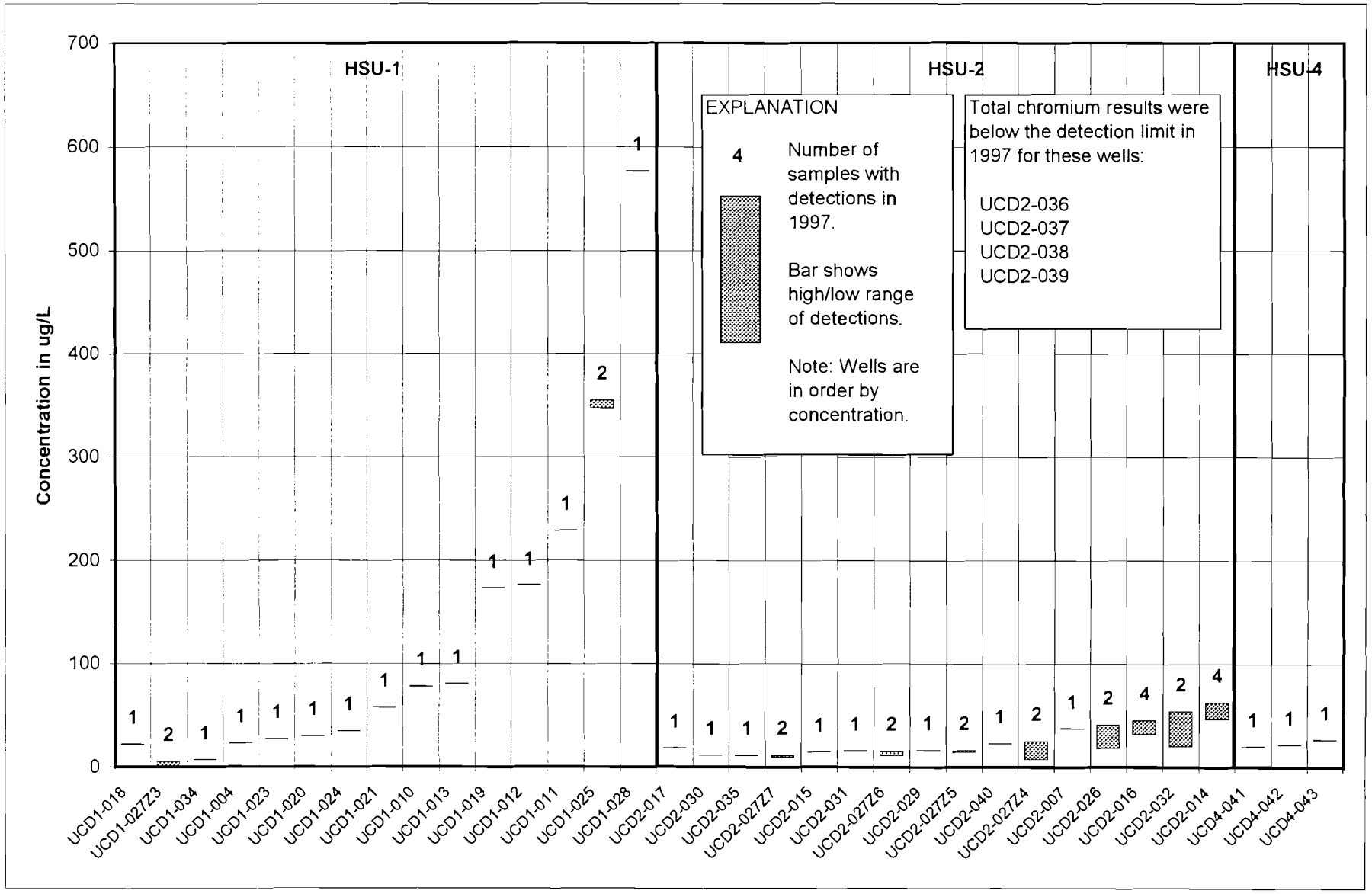

TOTAL CHROMIUM CONCENTRATION GRAPH

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FIGURE 4.15

DAMES & MOORE

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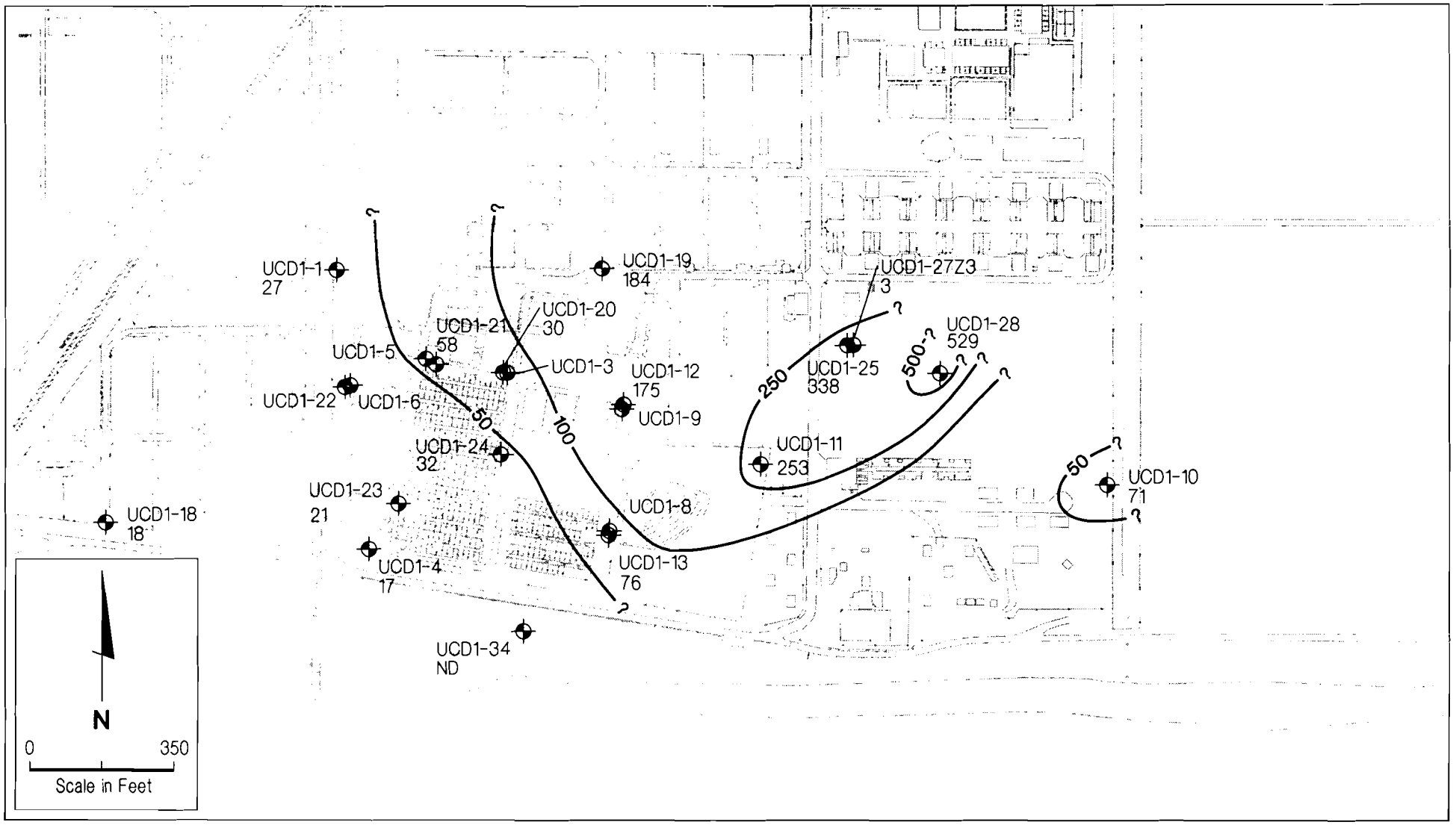

EXPLANATION

UCD1-11 HSU-1 Monitoring Well

All results reported in ug/L

NA = Not Analyzed

ND = Not Detected

CONCENTRATION CONTOUR PLOT
1997 HEXAVALENT CHROMIUM CONCENTRATIONS - HSU 1

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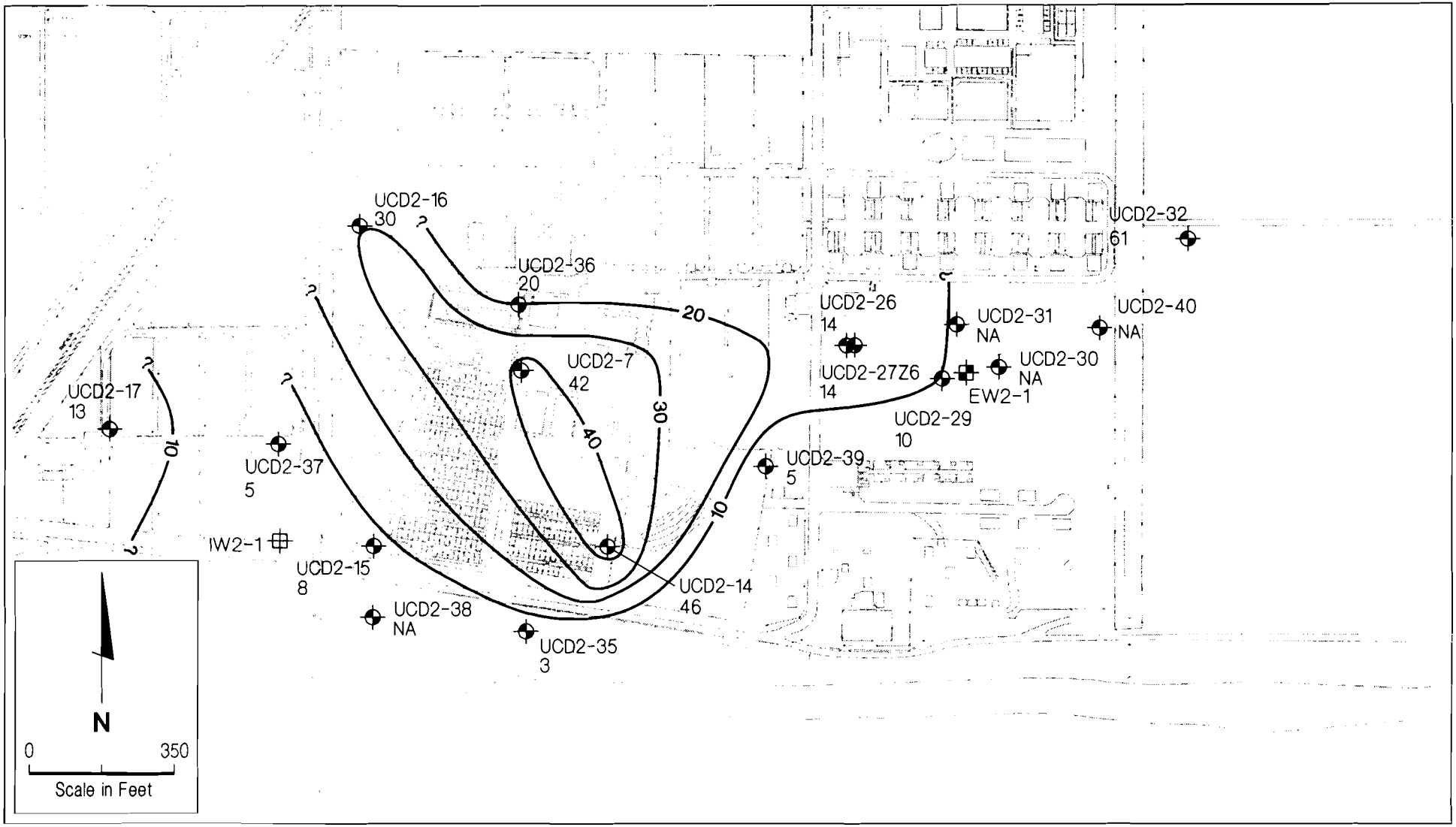
FIGURE 4.16



EXPLANATION

- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well

All results reported in ug/L

NA = Not Analyzed

ND = Not Detected

CONCENTRATION CONTOUR PLOT
1997 HEXAVALENT CHROMIUM CONCENTRATIONS - HSU 2

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FIGURE 4.17

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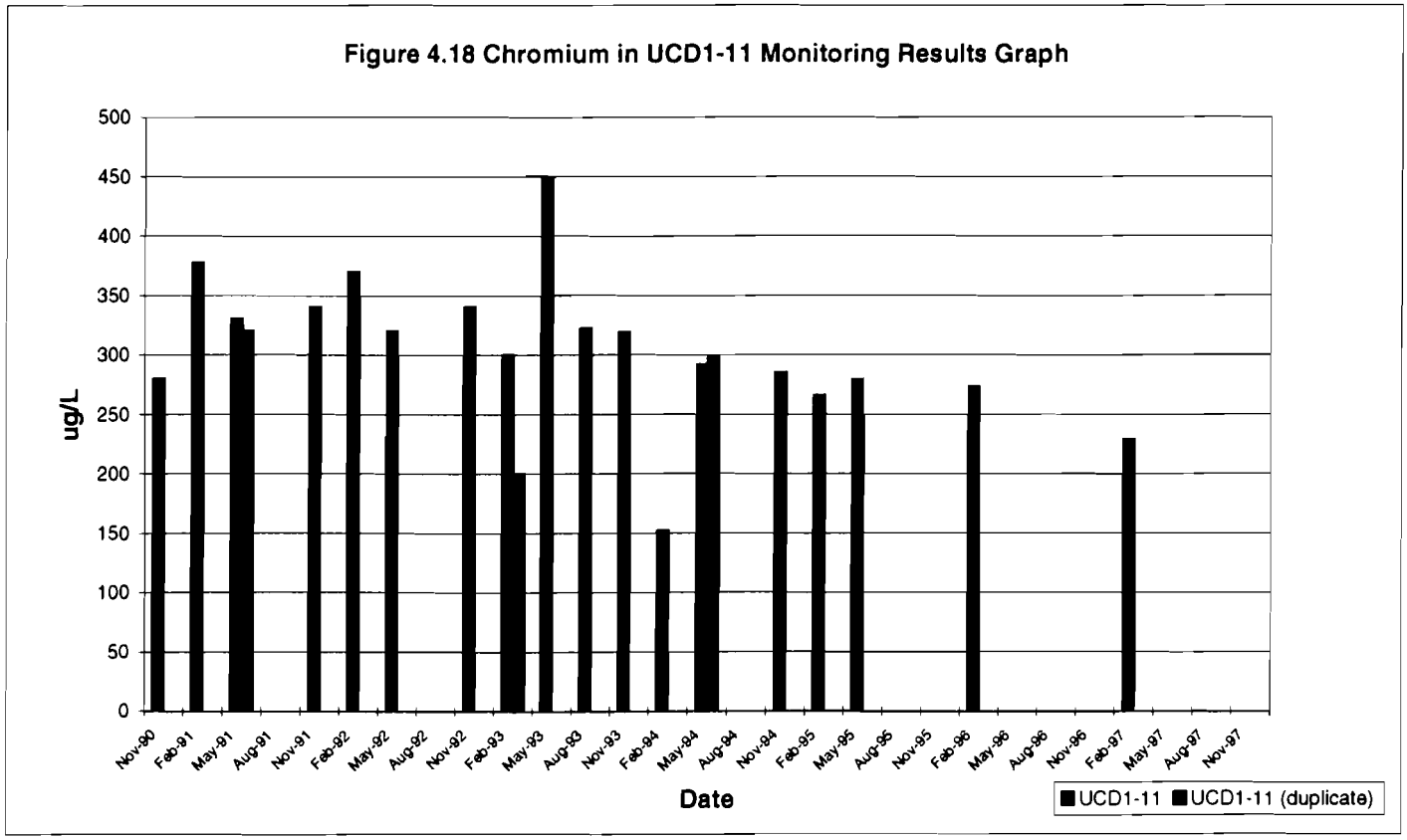


Figure 4.18 Chromium in UCD1-11 Monitoring Results Graph
ug/L
500
450
400
350
300
250
200
150
100
50
0
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-11
UCD1-11 (duplicate)

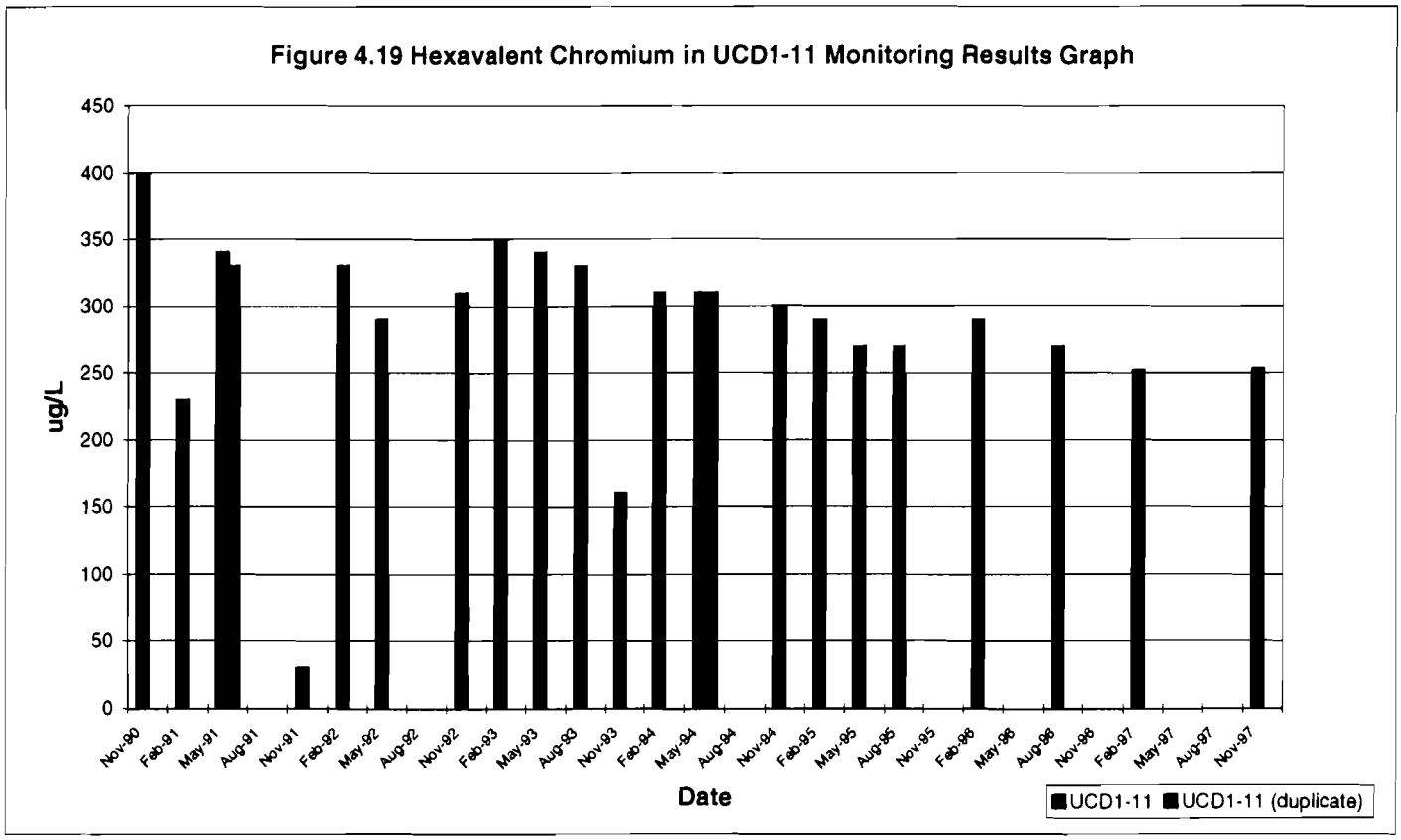


Figure 4.19 Hexavalent Chromium in UCD1-11 Monitoring Results Graph
ug/L
450
400
350
300
250
200
150
100
50
0
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-11
UCD1-11 (duplicate)

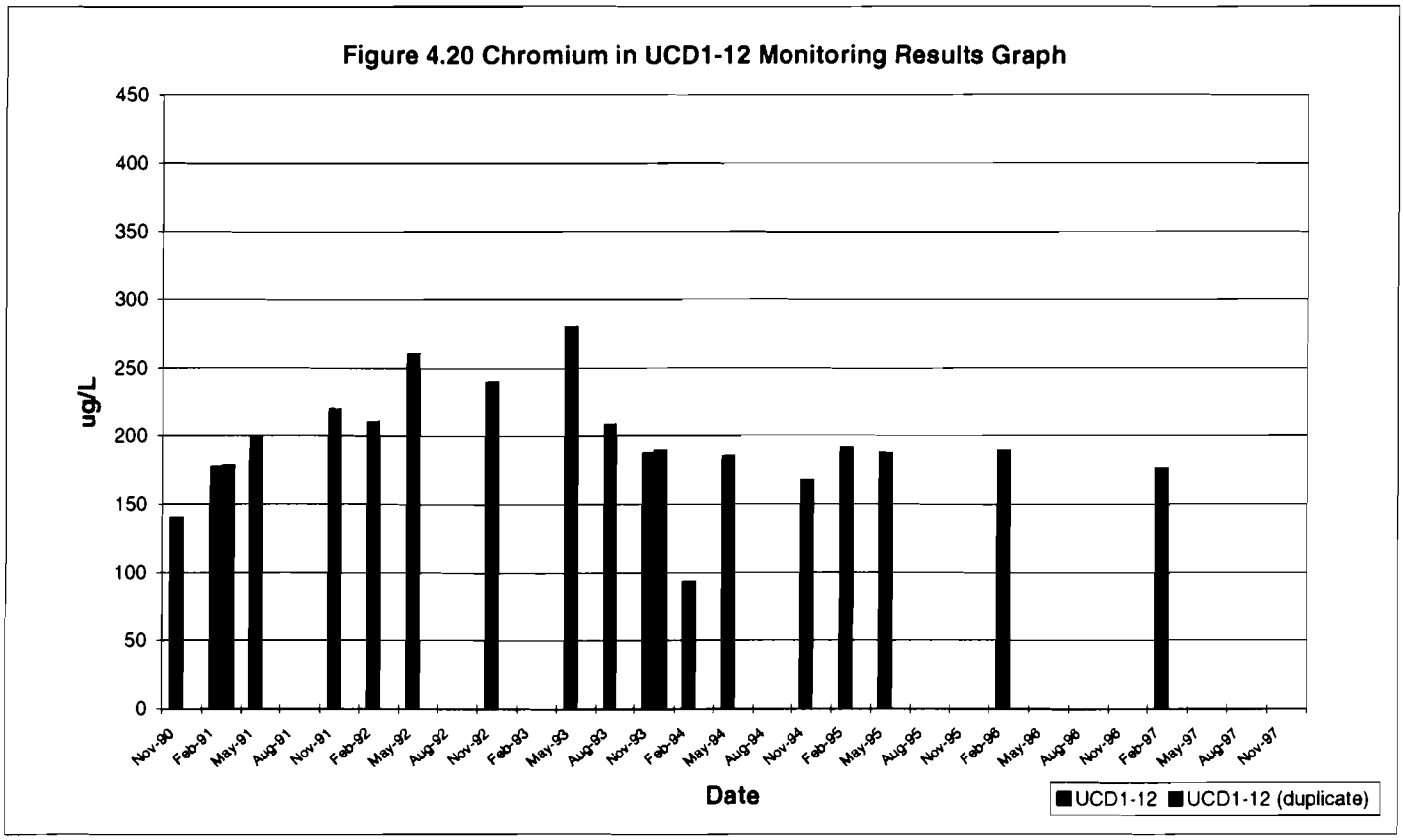


Figure 4.20 Chromium in UCD1-12 Monitoring Results Graph
ug/L
450
400
350
300
250
200
150
100
50
0
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-12
UCD1-12 (duplicate)

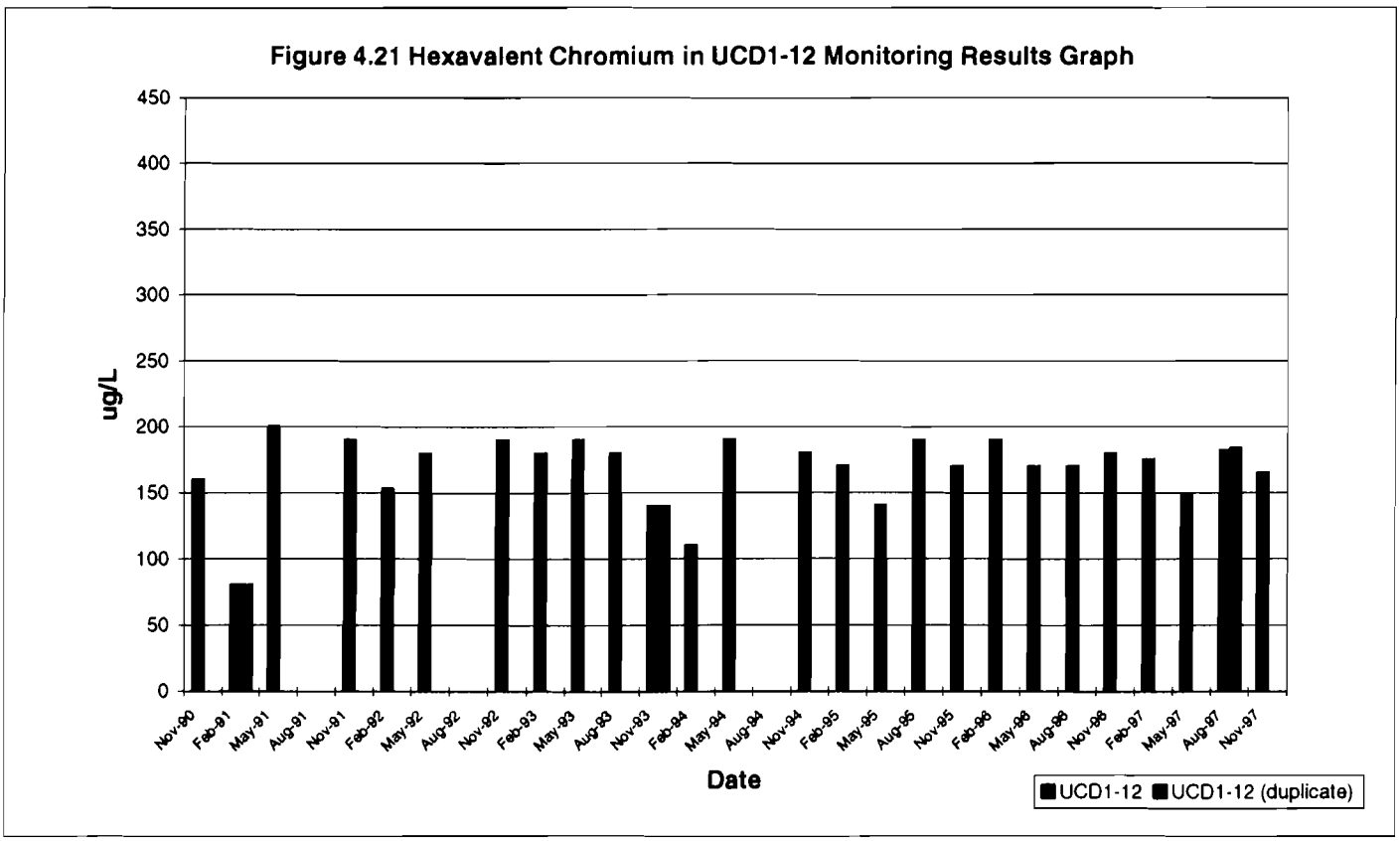


Figure 4.21 Hexavalent Chromium in UCD1-12 Monitoring Results Graph
ug/L
450
400
350
300
250
200
150
100
50
0
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-12
UCD1-12 (duplicate)

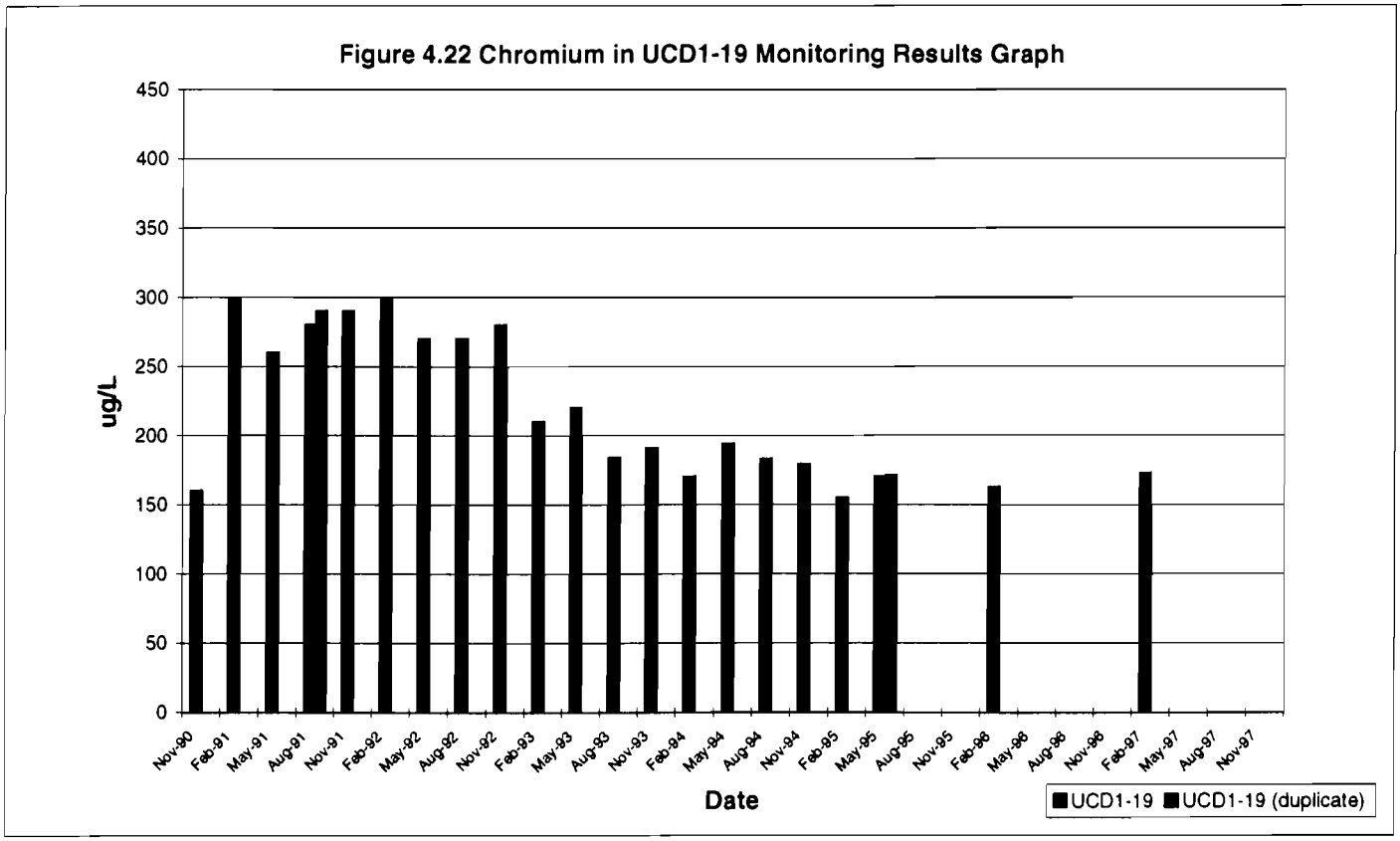


Figure 4.22 Chromium in UCD1-19 Monitoring Results Graph
ug/L
450
400
350
300
250
200
150
100
50
0
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-19
UCD1-19 (duplicate)

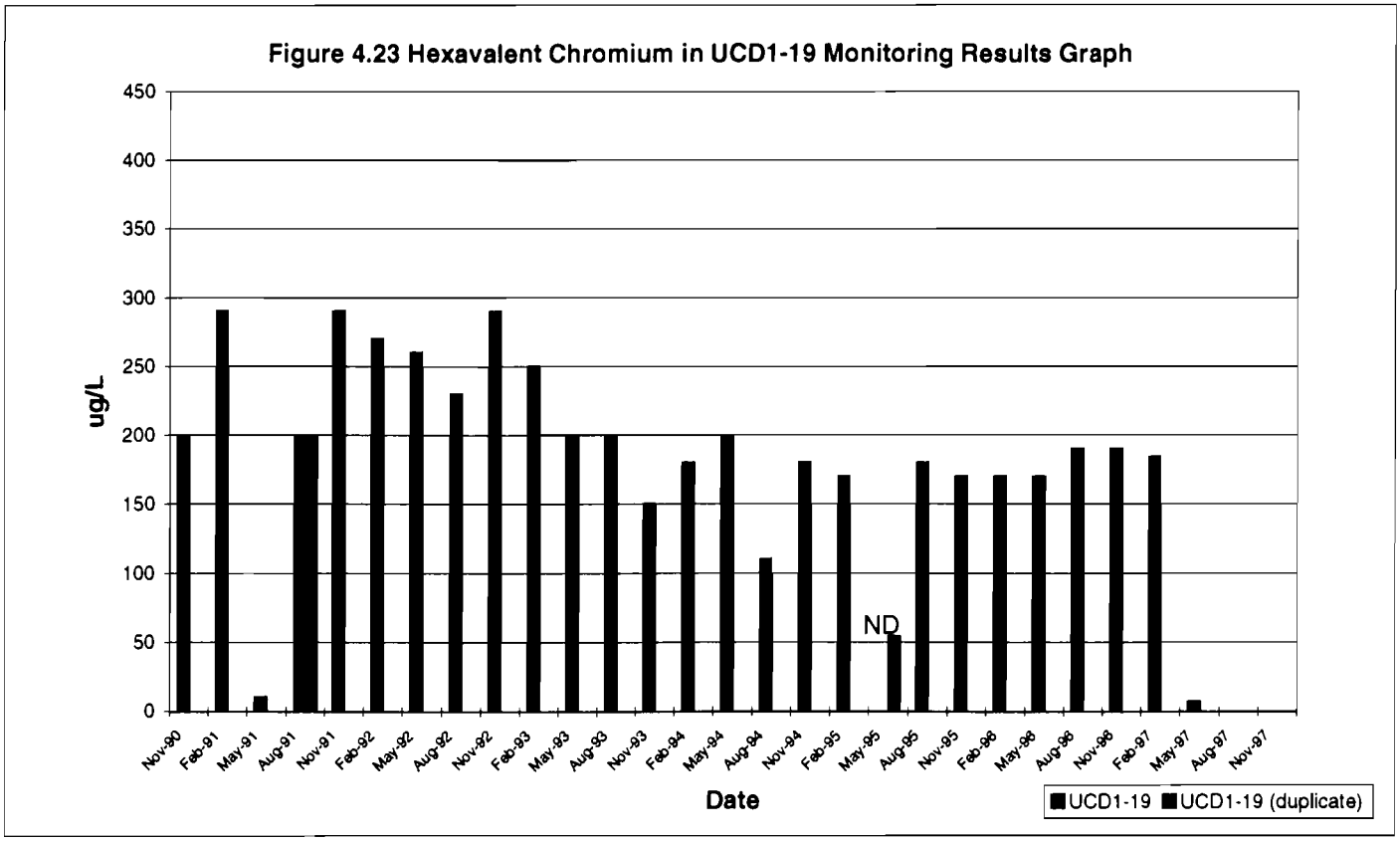


Figure 4.23 Hexavalent Chromium in UCD1-19 Monitoring Results Graph
ug/L
450
400
350
300
250
200
150
100
50
0
ND
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-19
UCD1-19 (duplicate)

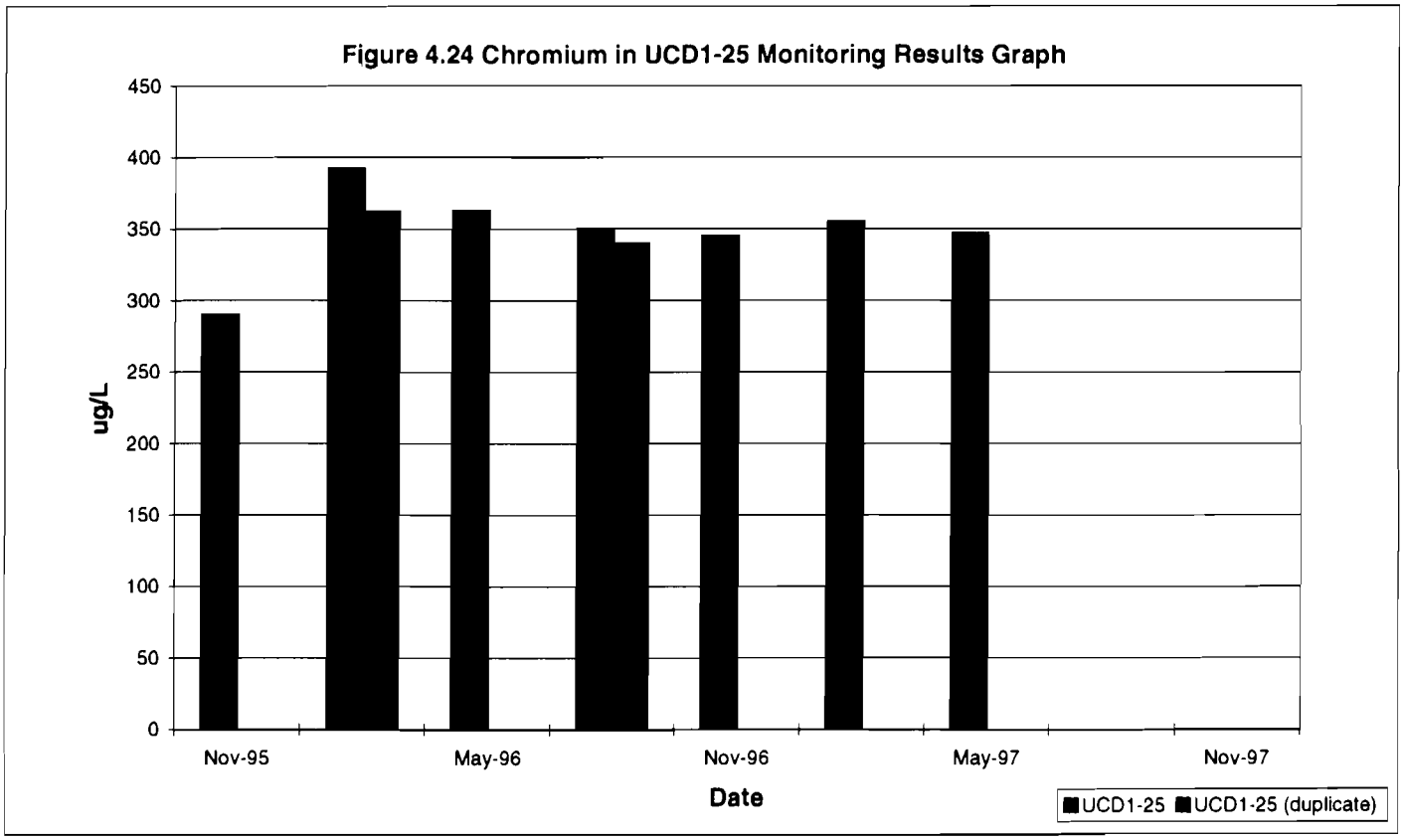


Figure 4.24 Chromium in UCD1-25 Monitoring Results Graph
450
400
350
300
250
200
150
100
50
0
ug/L
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-25
UCD1-25 (duplicate)

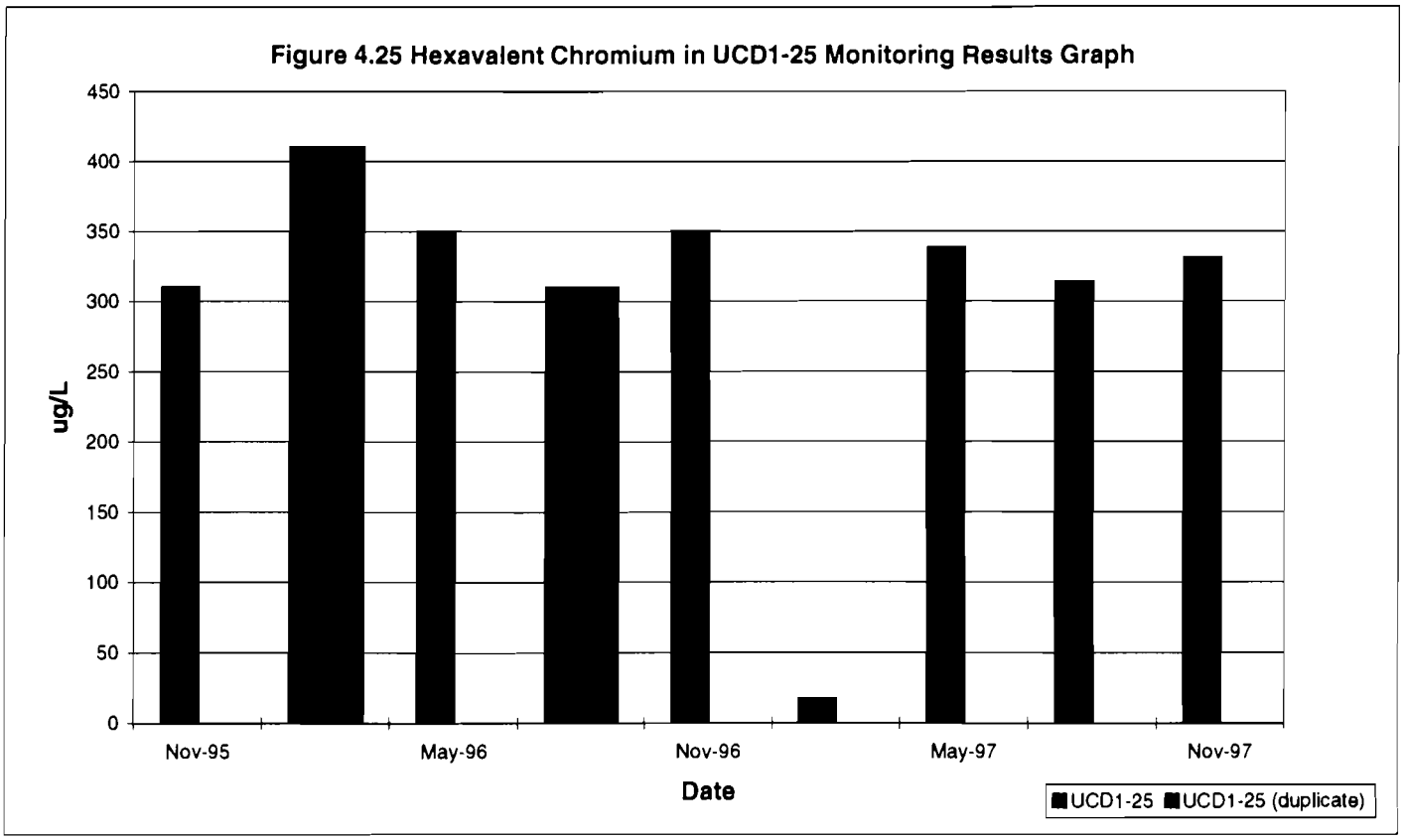
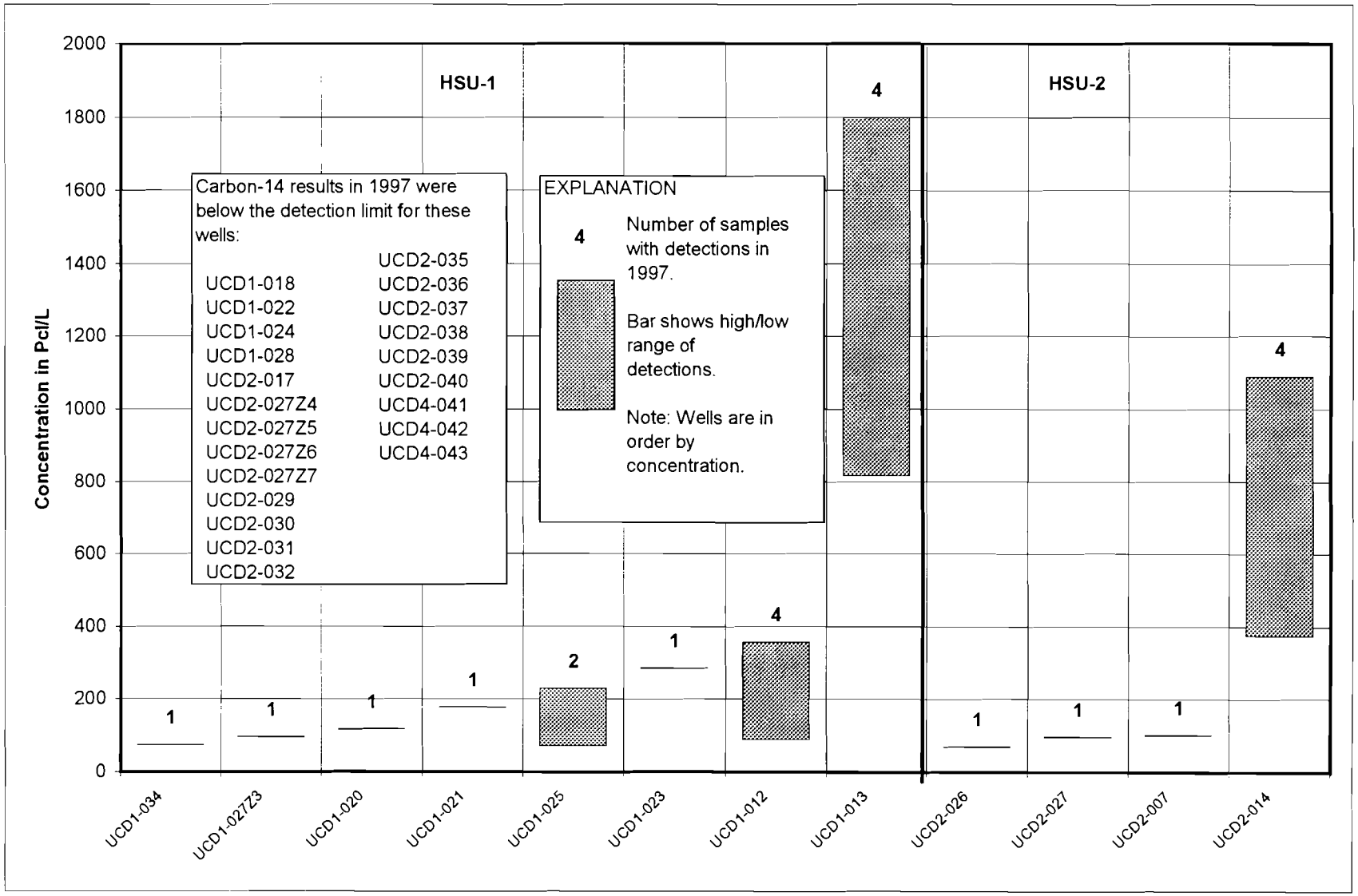


Figure 4.25 Hexavalent Chromium in UCD1-25 Monitoring Results Graph
450
400
350
300
250
200
150
100
50
0
ug/L
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-25
UCD1-25 (duplicate)



CARBON 14
CONCENTRATION GRAPH
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FIGURE 4.26

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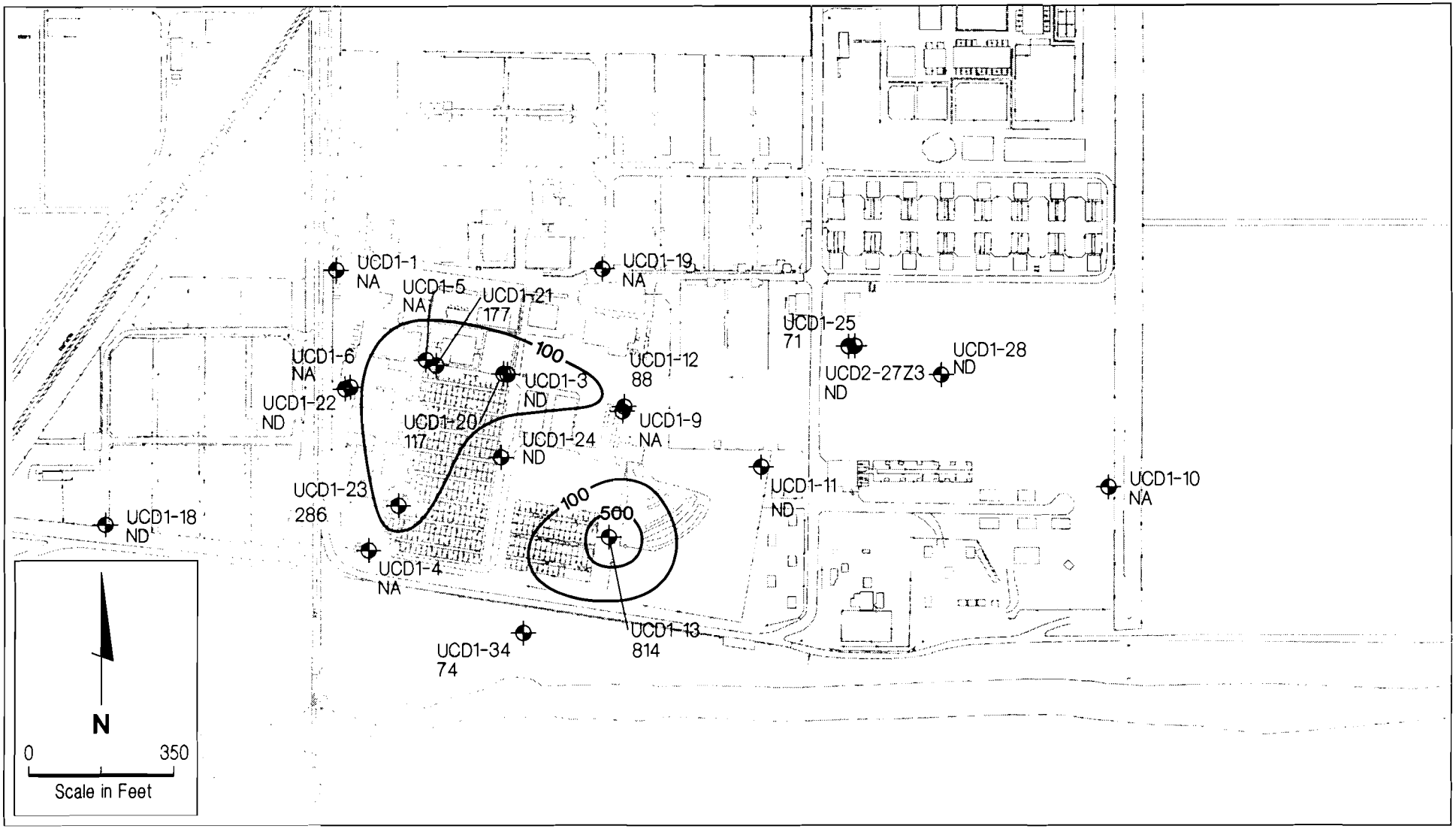

EXPLANATION

UCD1-11 HSU-1 Monitoring Well

All results reported in pCi/L

NA = Not Analyzed

ND = Not Detected

CONCENTRATION CONTOUR PLOT
1997 CARBON-14 CONCENTRATIONS - HSU 1

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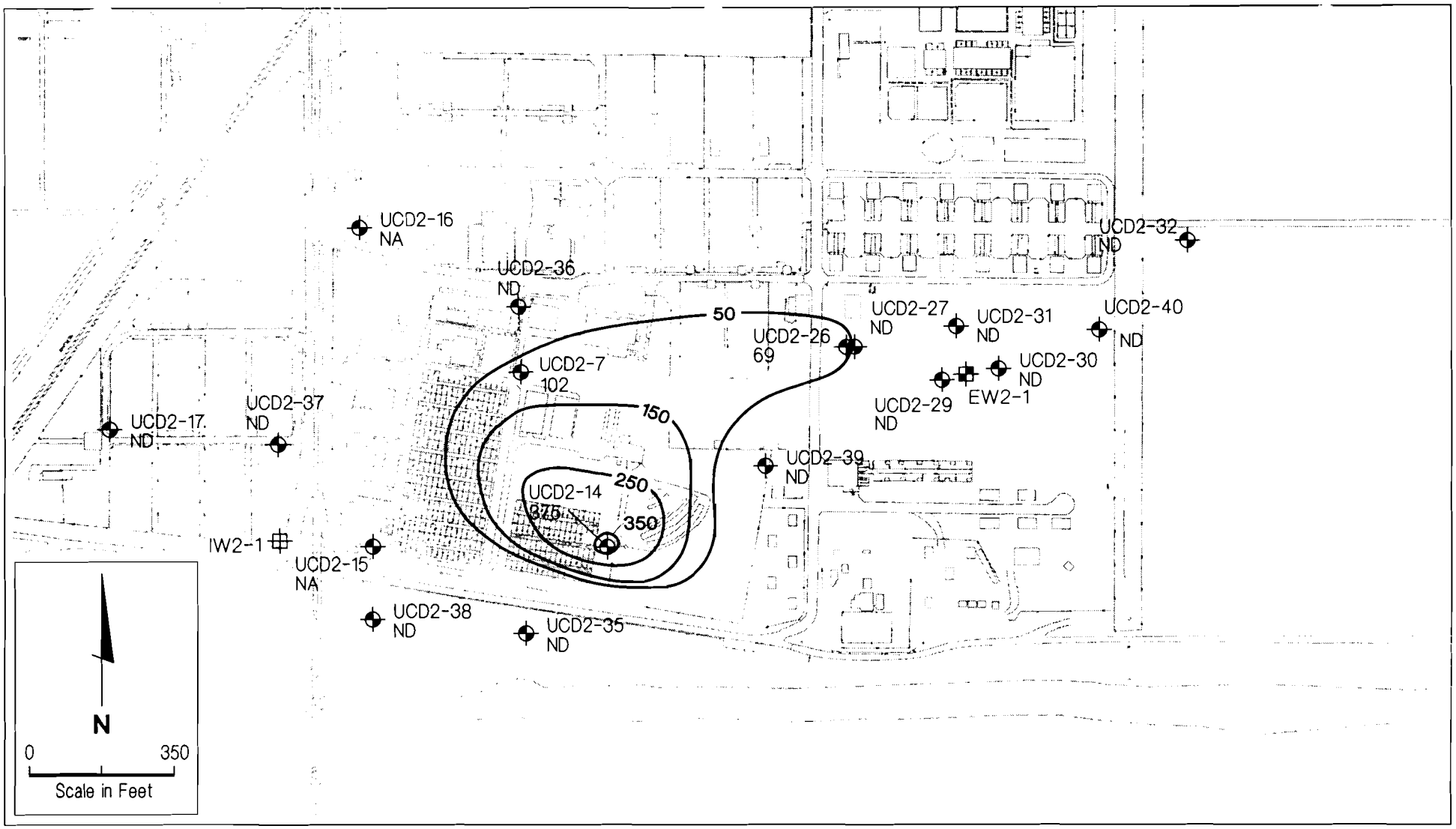
00234-258-79801 maj 79801S 7/27/98

FIGURE 4.27



EXPLANATION

- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well

All results reported in pCi/L

NA = Not Analyzed

ND = Not Detected

CONCENTRATION CONTOUR PLOT
1997 CARBON-14 CONCENTRATIONS - HSU 2

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FIGURE 4.28

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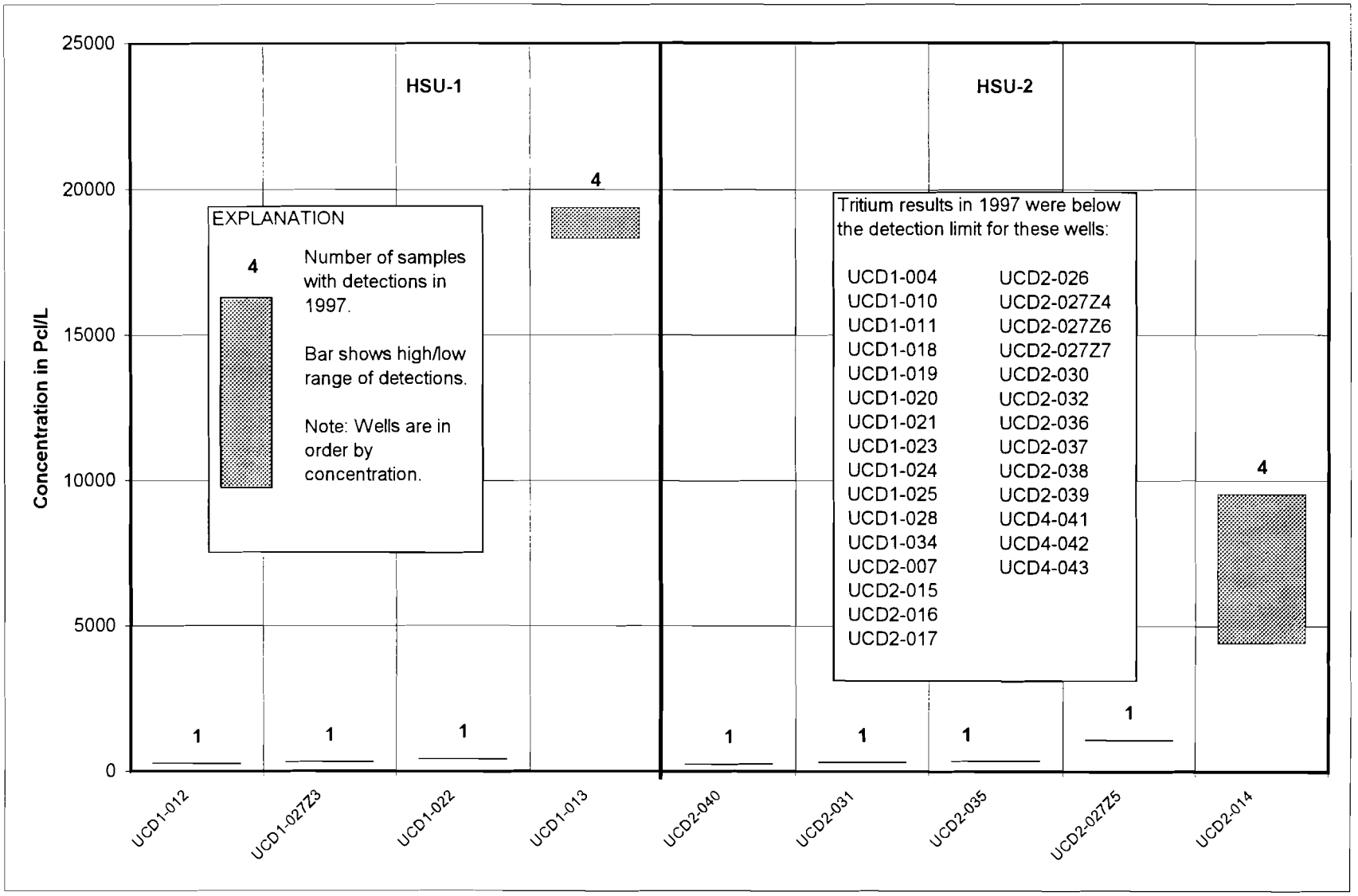

TRITIUM
CONCENTRATION GRAPH
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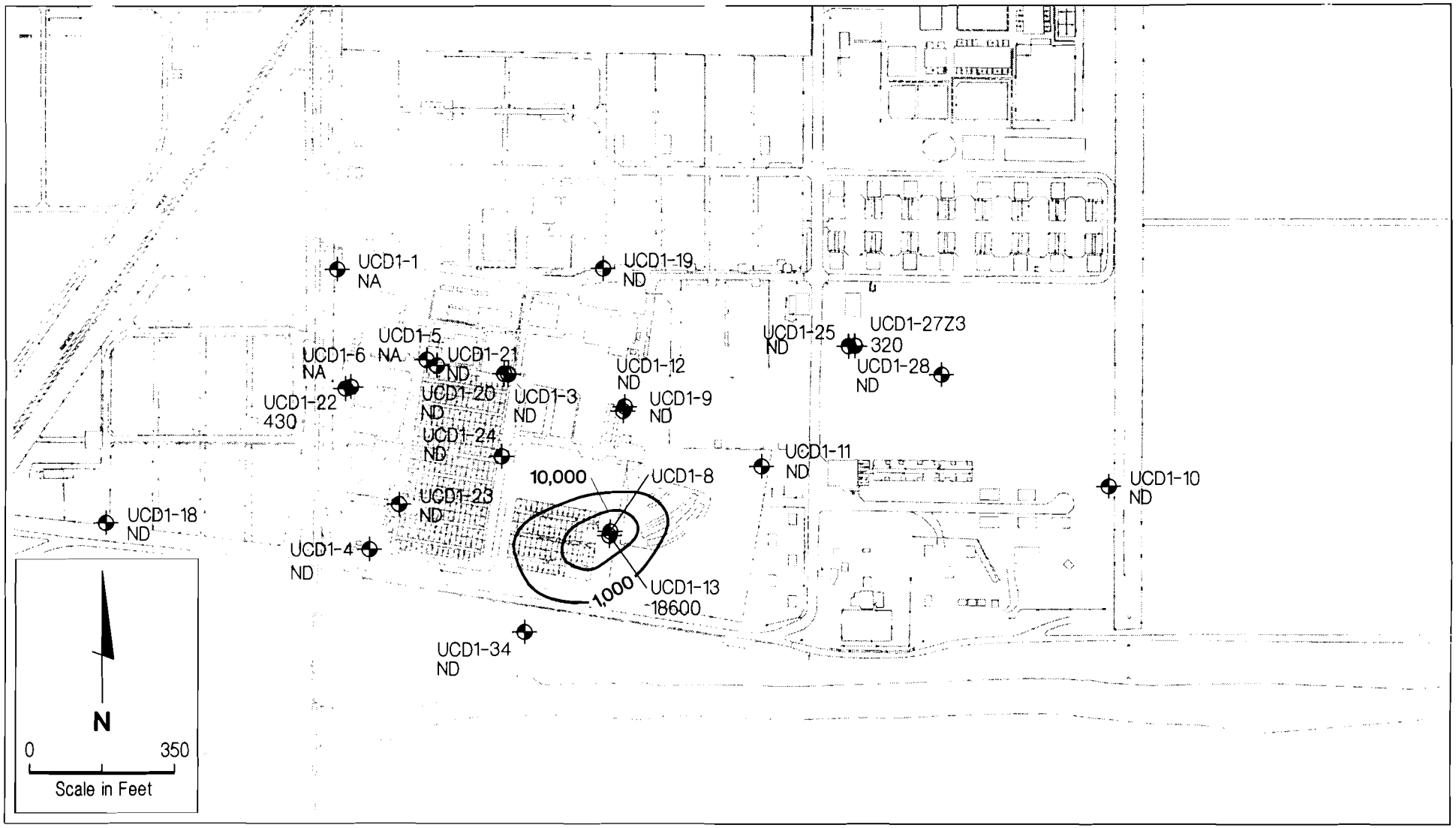
Davis, California
FIGURE 4.29

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

Tritium.xls 8/31/98 4:19 PM



EXPLANATION

UCD1-11 HSU-1 Monitoring Well

NA = Not Analyzed

ND = Not Detected

All results reported in pC:/L

CONCENTRATION CONTOUR PLOT
1997 TRITIUM CONCENTRATIONS - HSU 1

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FIGURE 4.30

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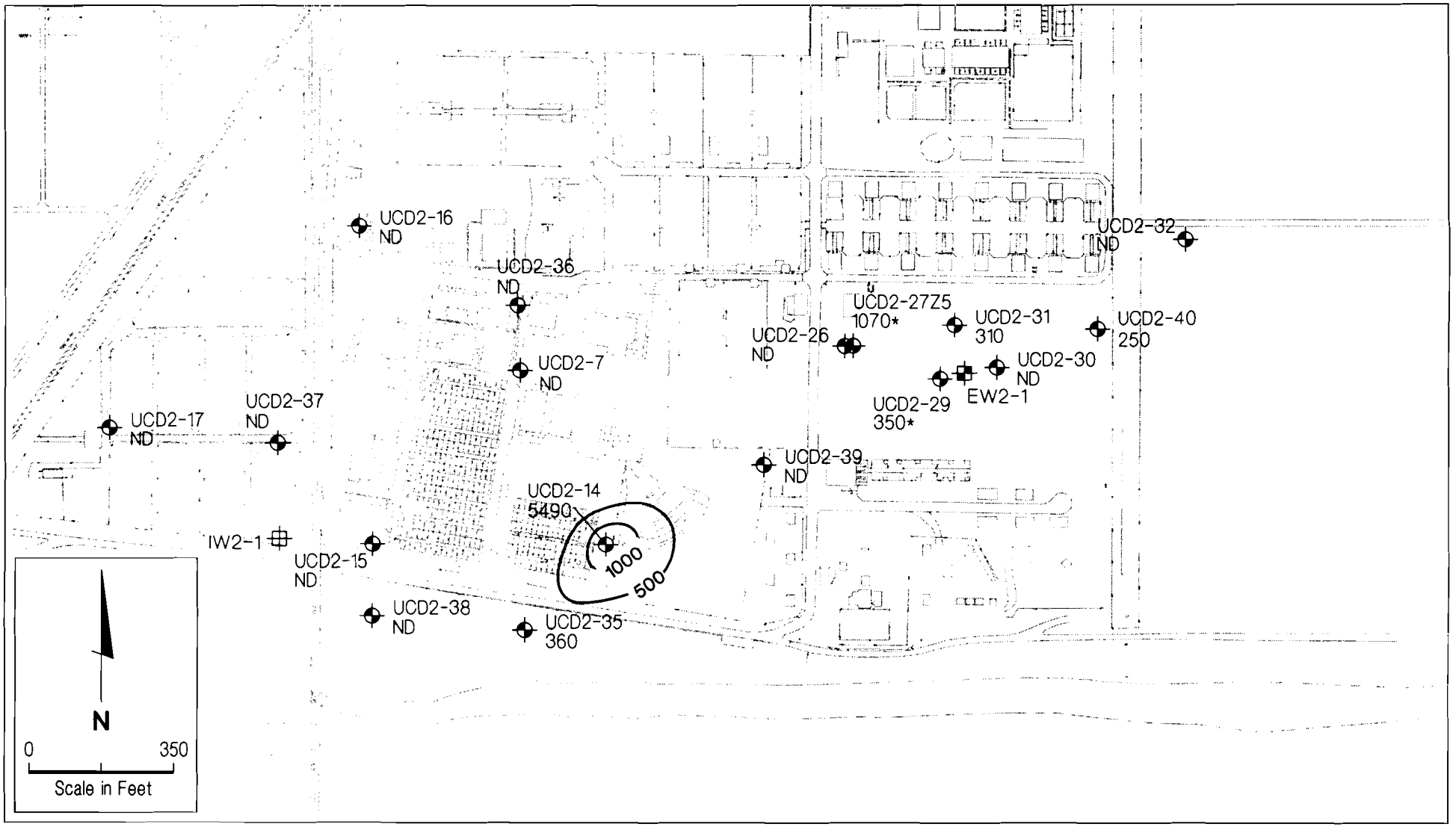
00234-258-79801 maj 79801T 7/27/98



EXPLANATION

- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well

All results reported in pC:/L

ND = Not Detected

* Not used in contouring. Tritium value of 1070 pCi/L in UCD2-27Z5 was not confirmed in adjacent sample from UCD2-26. Tritium value of 350 pCi/L was not confirmed in the duplicate sample.

CONCENTRATION CONTOUR PLOT
1997 TRITIUM CONCENTRATIONS - HSU 2

1997 Annual Report
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DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

00234-258-79801 maj 79801X 7/27/98

FIGURE 4.31

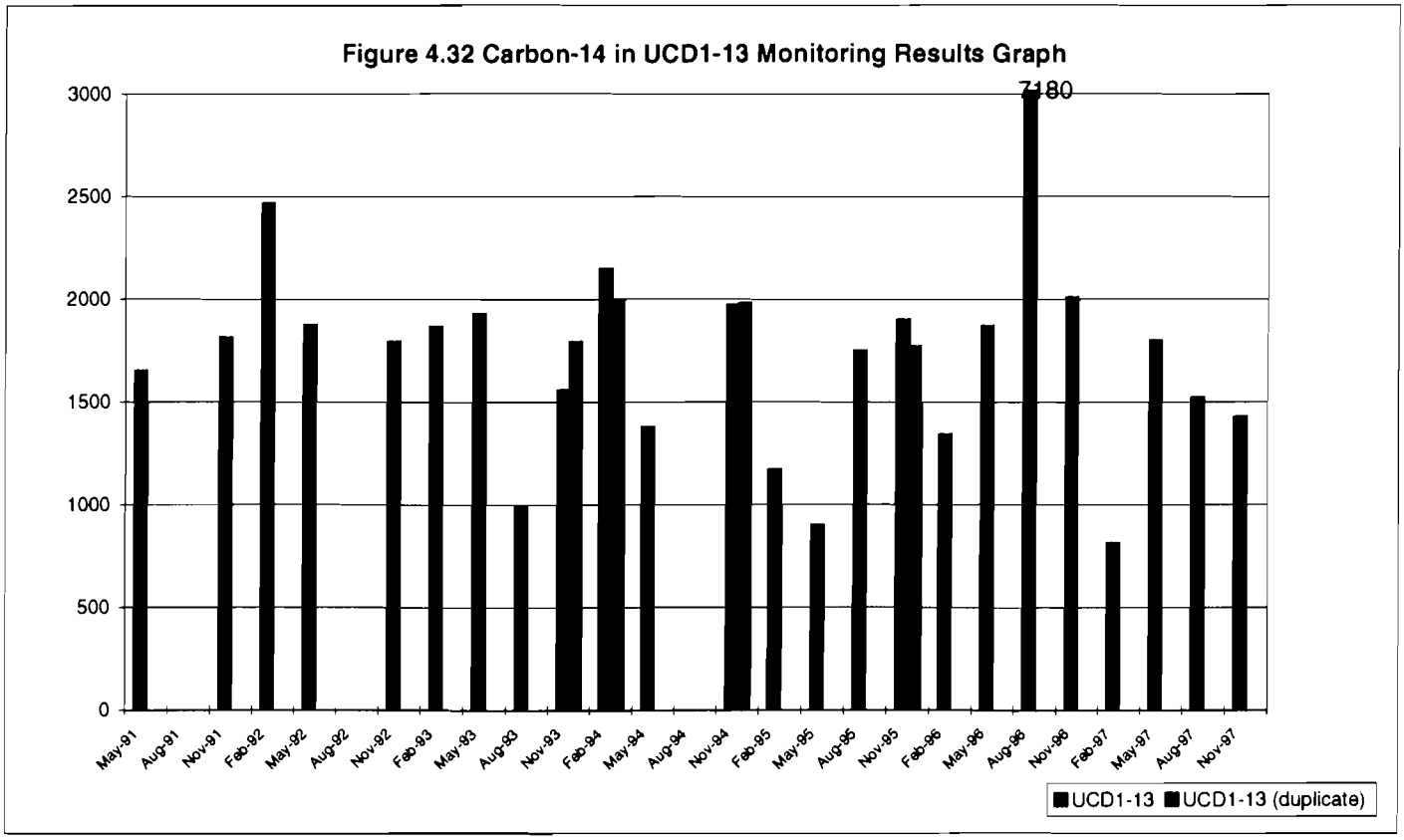


Figure 4.32 Carbon-14 in UCD1-13 Monitoring Results Graph
7180
3000
2500
2000
1500
1000
500
0
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
UCD1-13
UCD1-13 (duplicate)

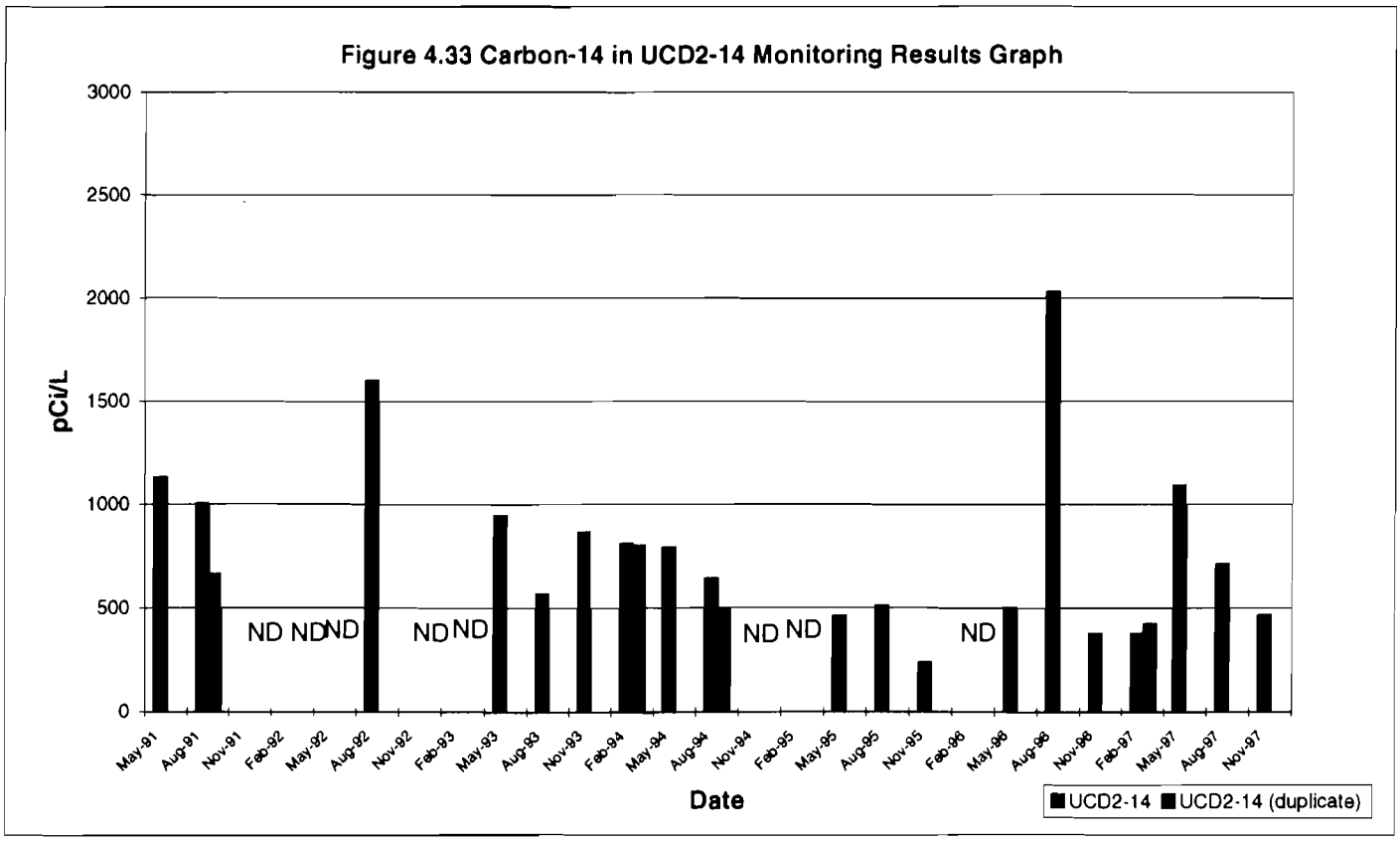


Figure 4.33 Carbon-14 in UCD2-14 Monitoring Results Graph
pCi/L
3000
2500
2000
1500
1000
500
0
ND ND ND
ND ND
ND ND
ND
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD2-14
UCD2-14 (duplicate)

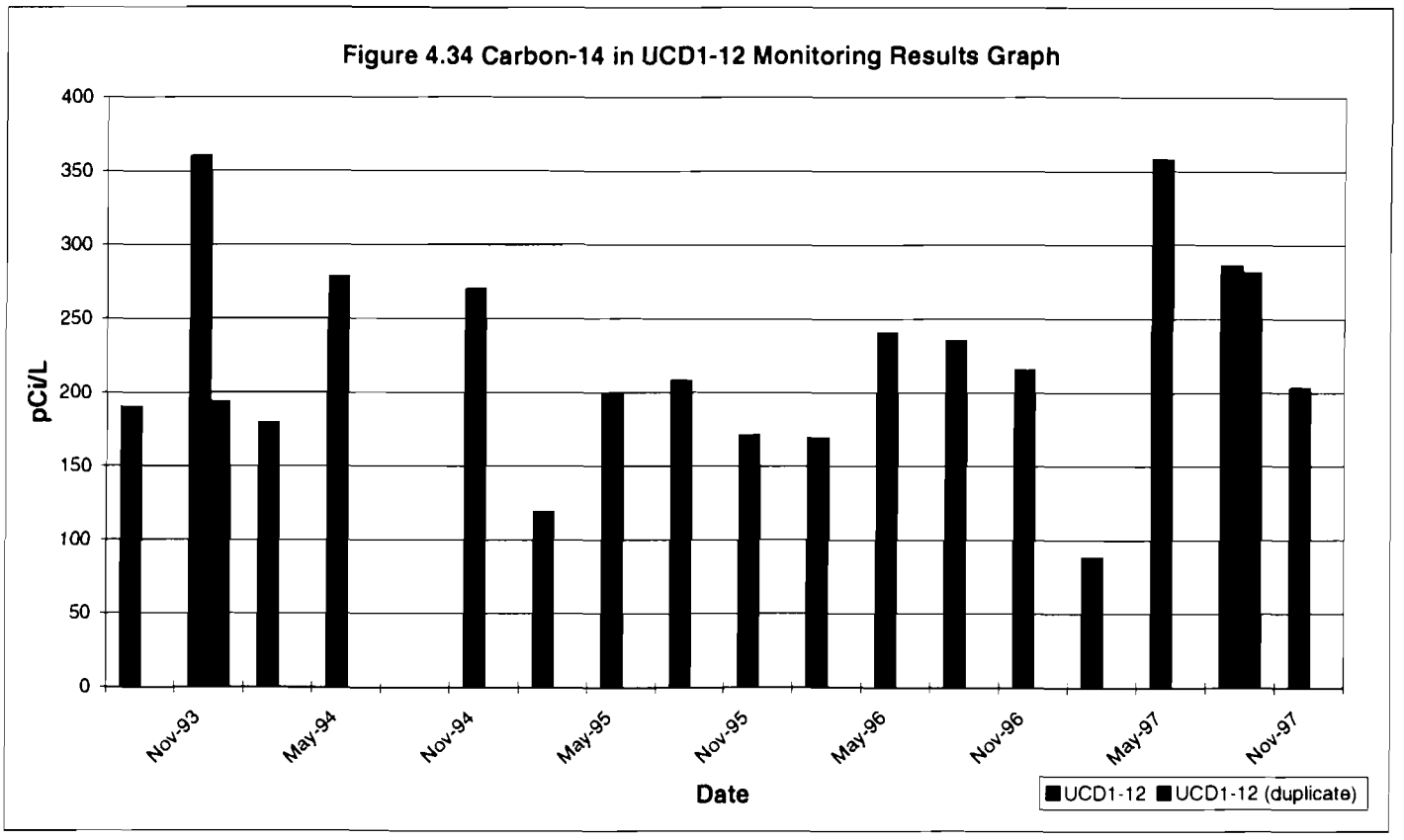


Figure 4.34 Carbon-14 in UCD1-12 Monitoring Results Graph
400
350
300
250
200
150
100
50
0
pCi/L
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-12
UCD1-12 (duplicate)

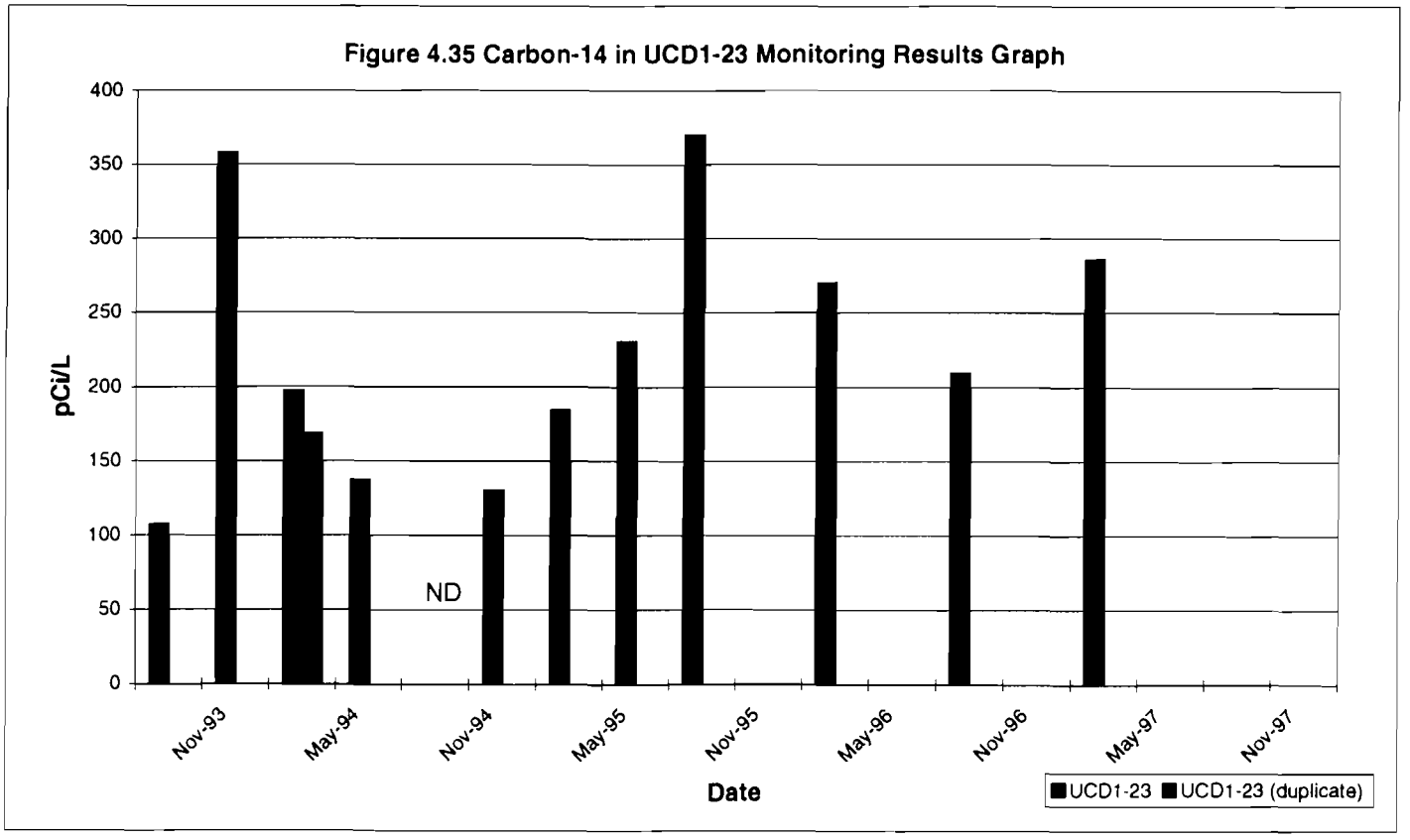


Figure 4.35 Carbon-14 in UCD1-23 Monitoring Results Graph
400
350
300
250
200
150
100
50
0
pCi/L
ND
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-23
UCD1-23 (duplicate)

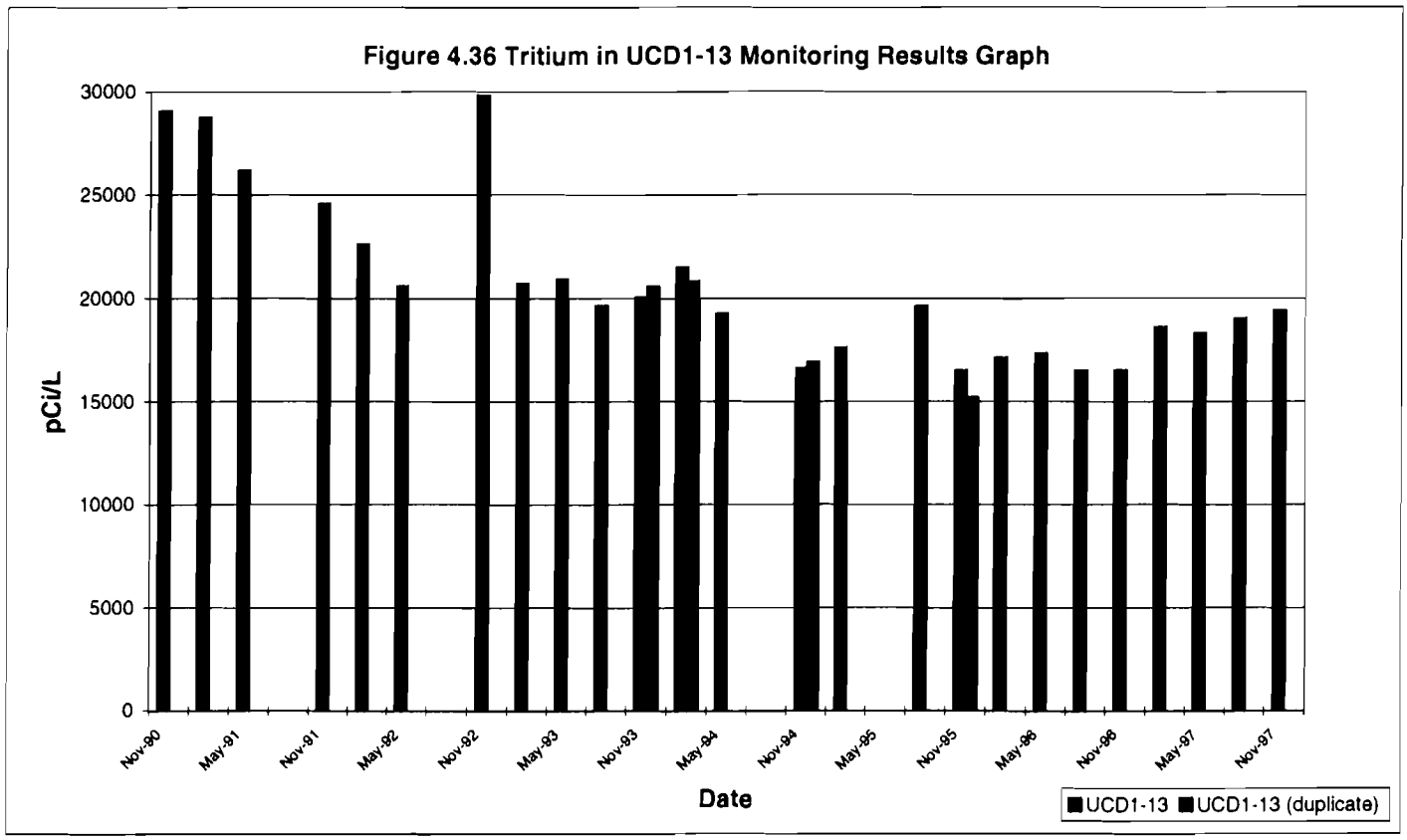


Figure 4.36 Tritium in UCD1-13 Monitoring Results Graph
30000
25000
20000
15000
10000
5000
0
pCi/L
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-13
UCD1-13 (duplicate)

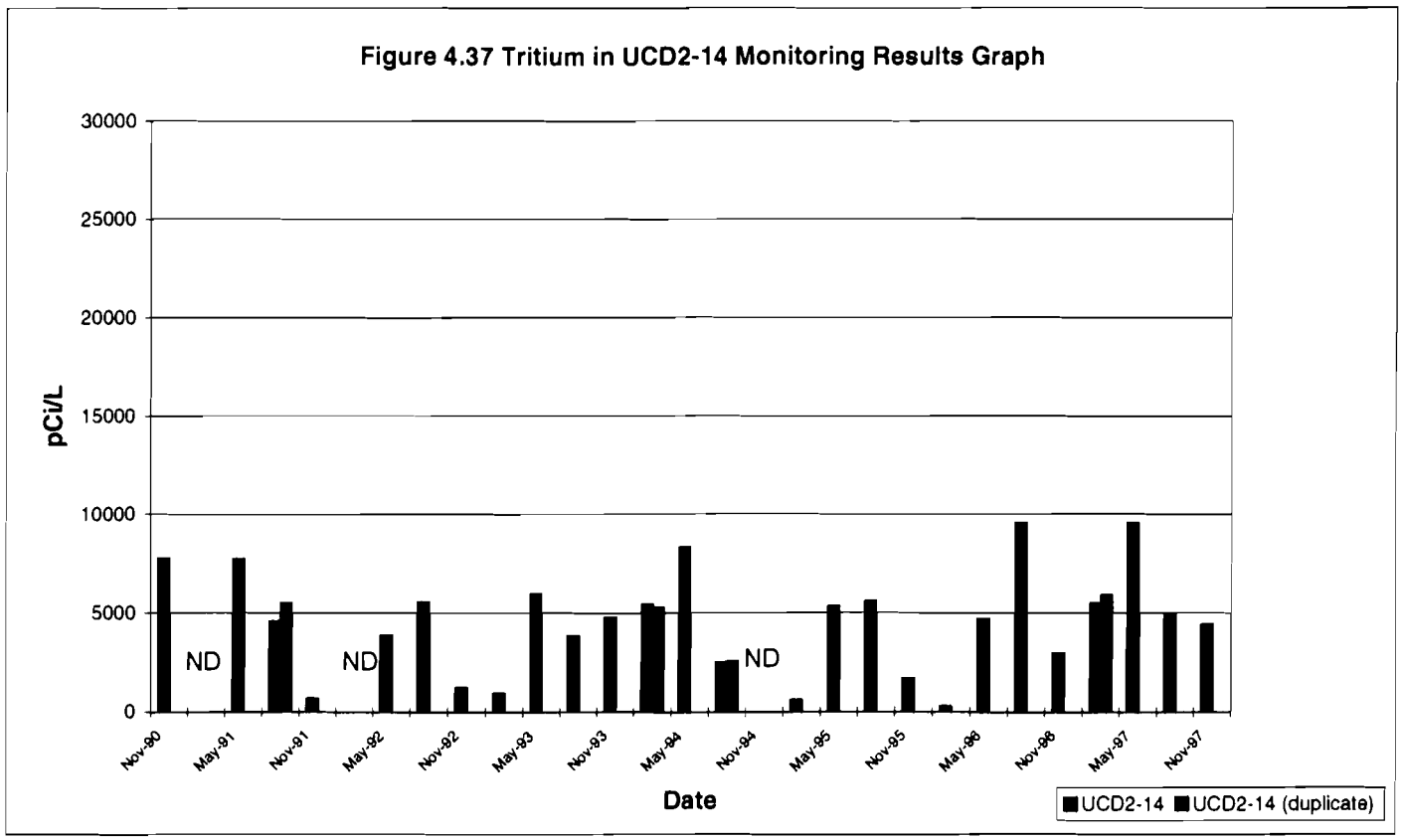
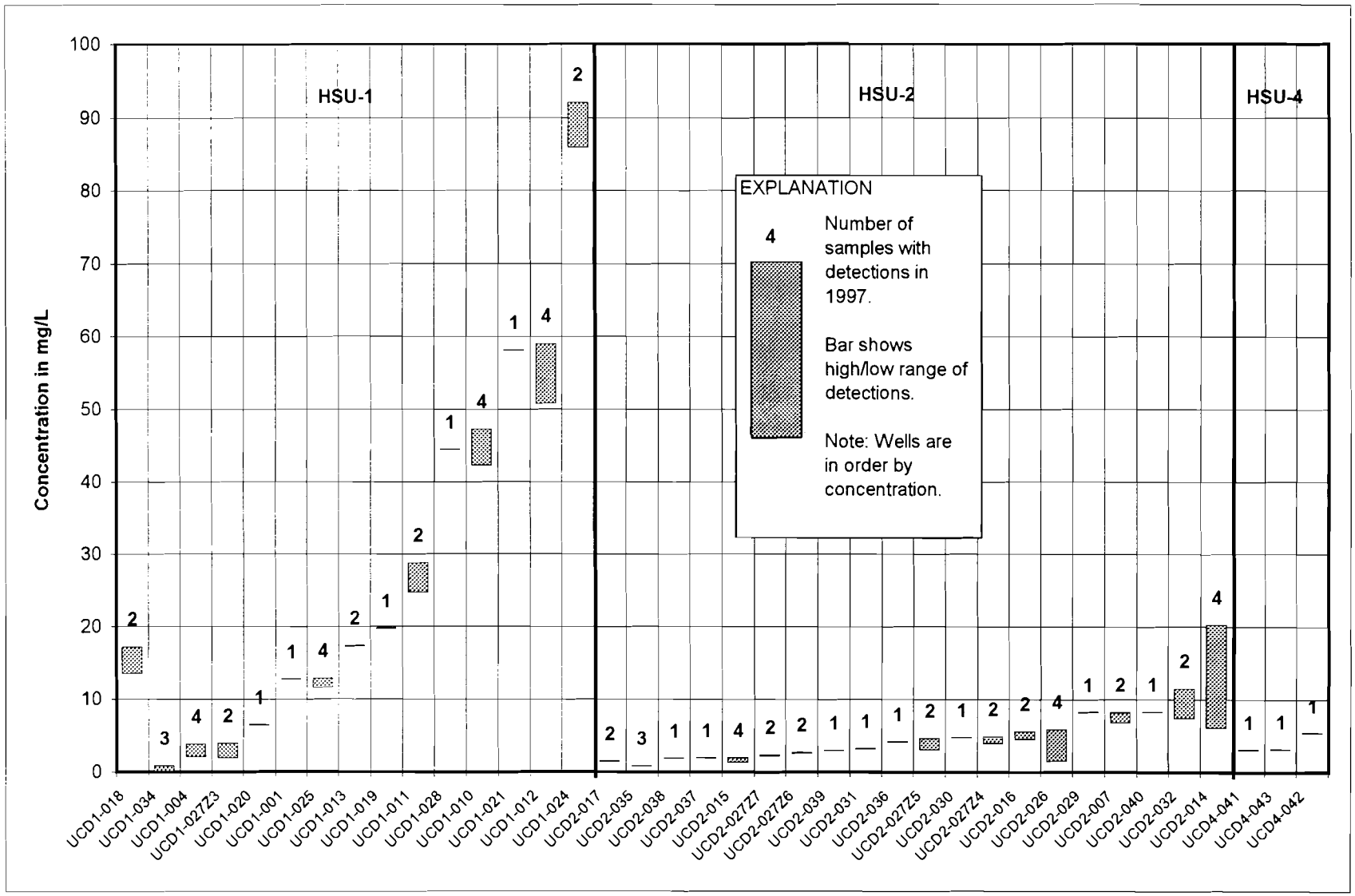


Figure 4.37 Tritium in UCD2-14 Monitoring Results Graph
30000
25000
20000
15000
10000
5000
0
pCi/L
ND
ND
ND
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD2-14
UCD2-14 (duplicate)



NITRATE AS N
CONCENTRATION GRAPH
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Davis, California
FIGURE 4.38

DAMES & MOORE
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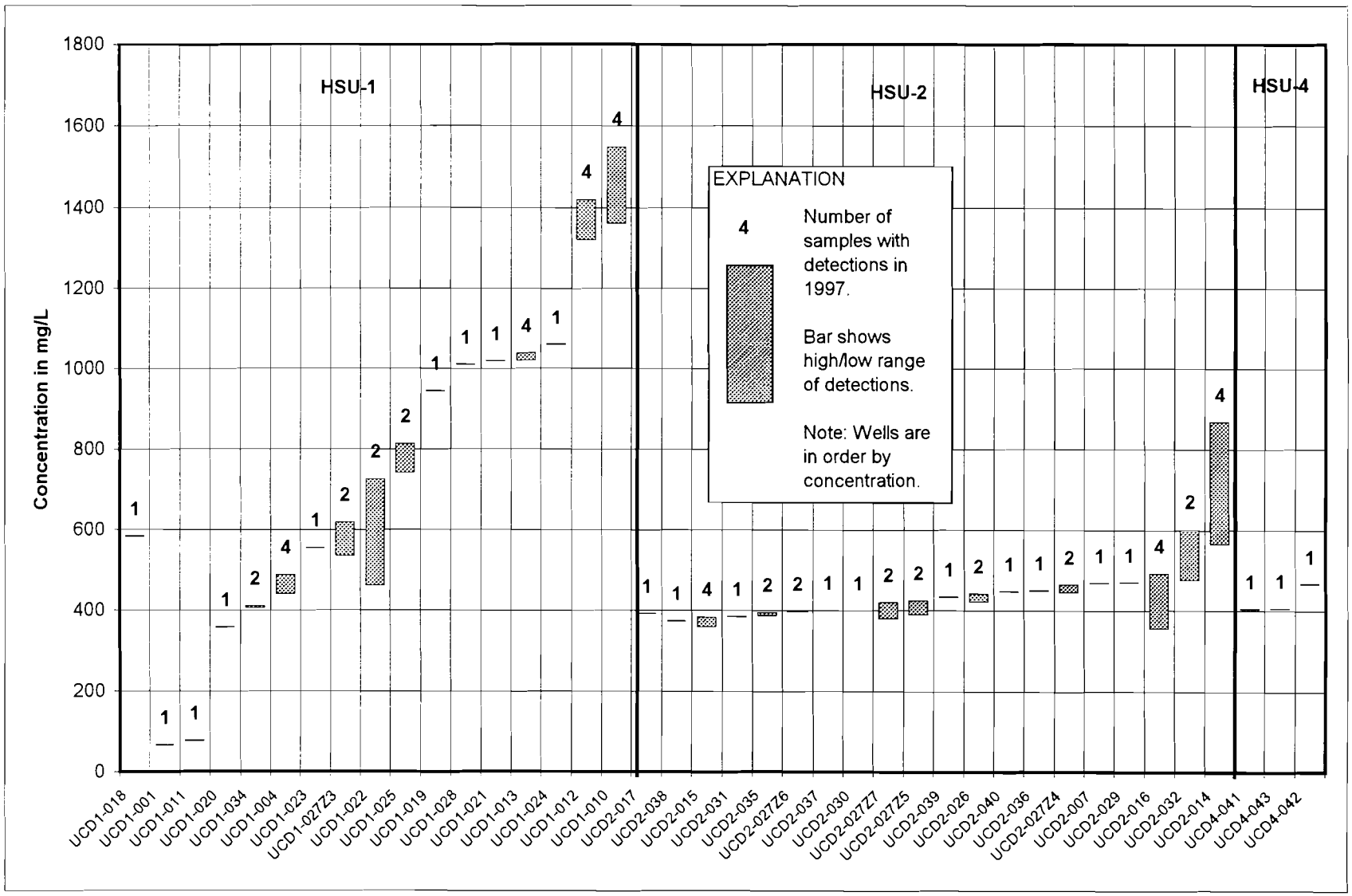
Nitrate.xls 8/31/98 4:19 PM



TOTAL DISSOLVED SOLIDS CONCENTRATION GRAPH

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LEHR/SCDS Environemtnal Restoration
Davis, California
FIGURE 4.39

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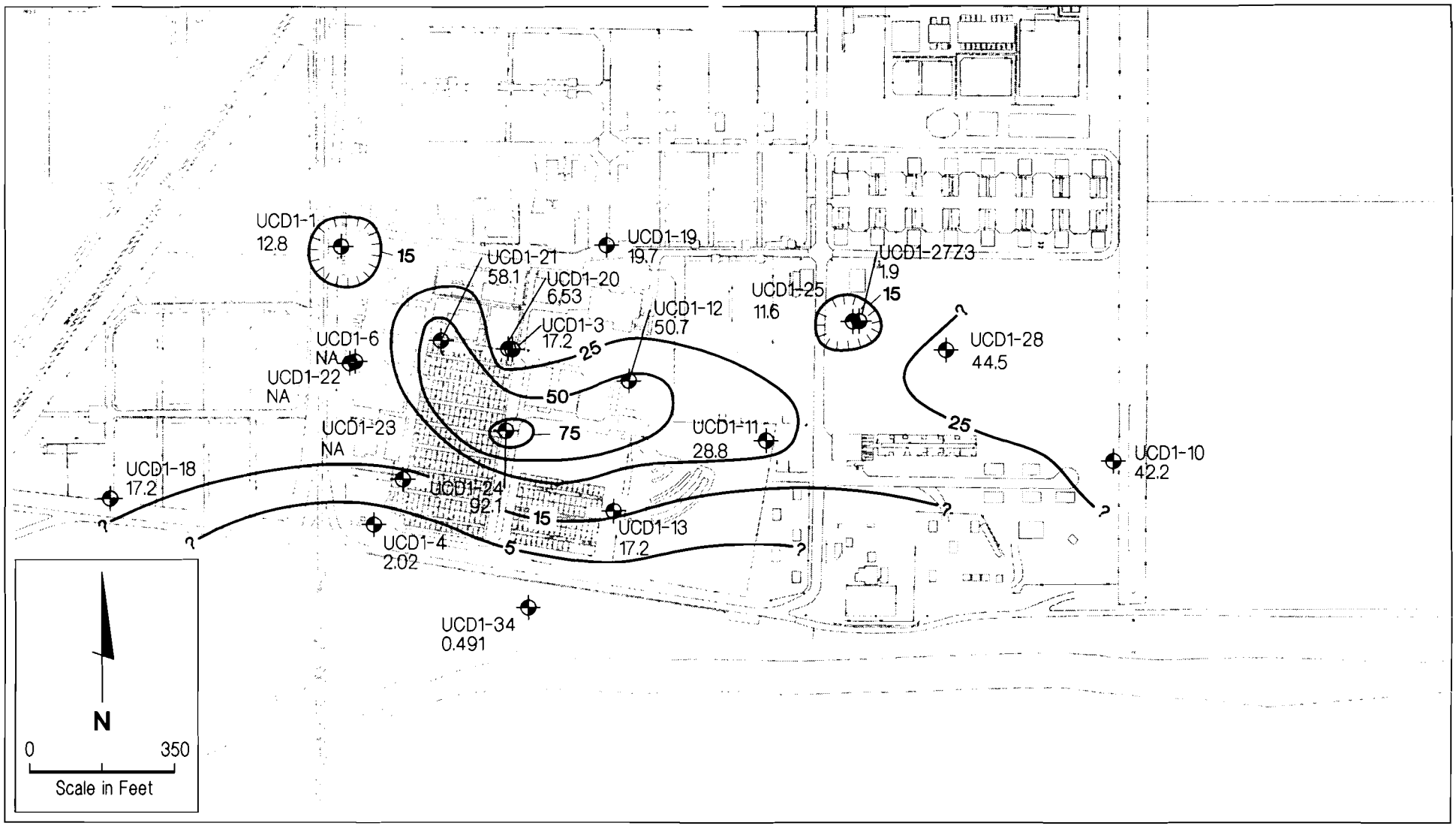

EXPLANATION

UCD1-11 HSU-1 Monitoring Well

All results reported in mg/L

NA = Not Analyzed

ND = Not Detected

NR = Not Recorded

CONCENTRATION CONTOUR PLOT
1997 NITRATE (as N) CONCENTRATIONS - HSU 1

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

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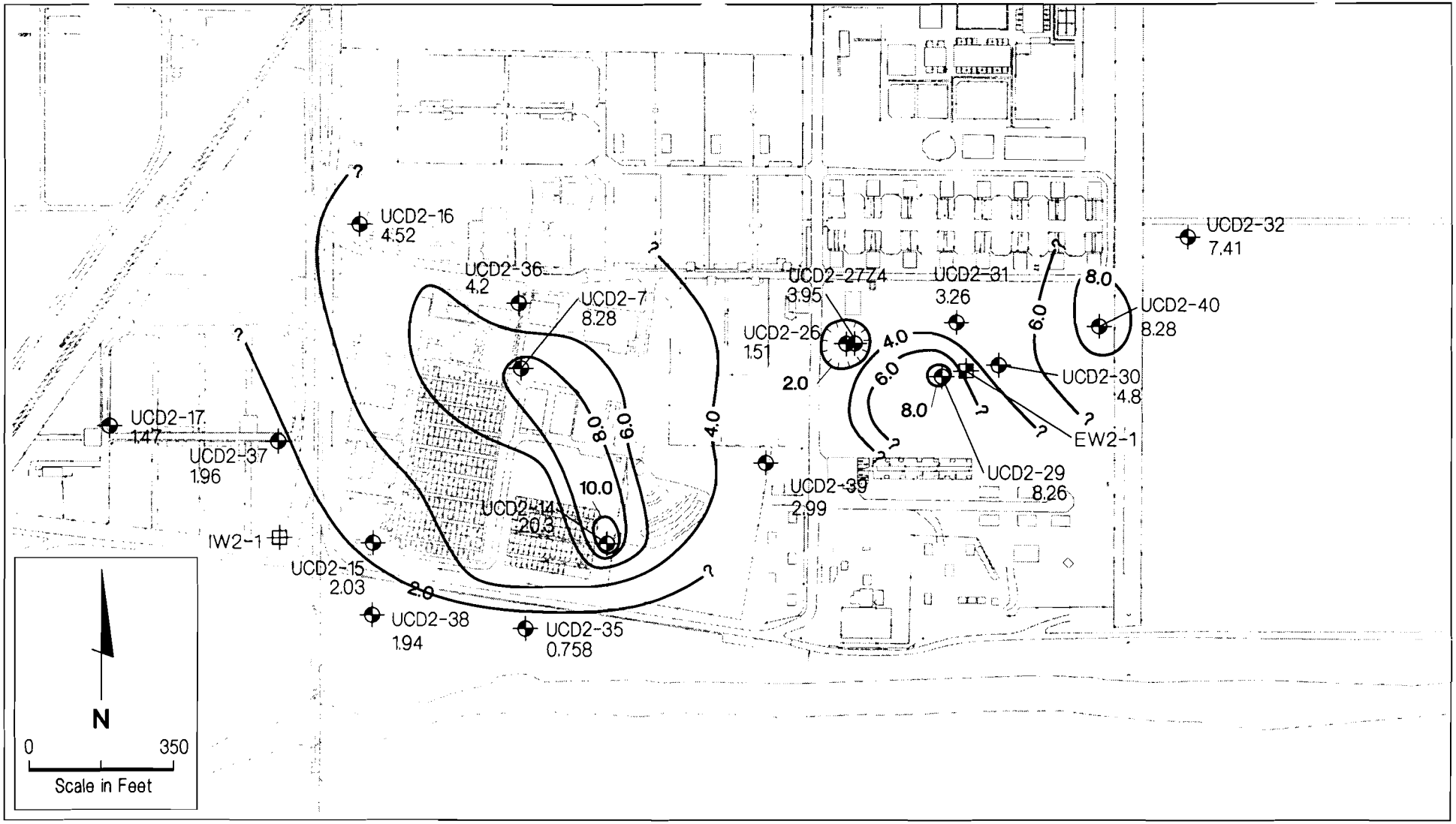
00234-258-79801 maj 79801AA 7/27/98

FIGURE 4.40



EXPLANATION

- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well

All results reported in mg/L

ND = Not Detected

NA = Not Analyzed

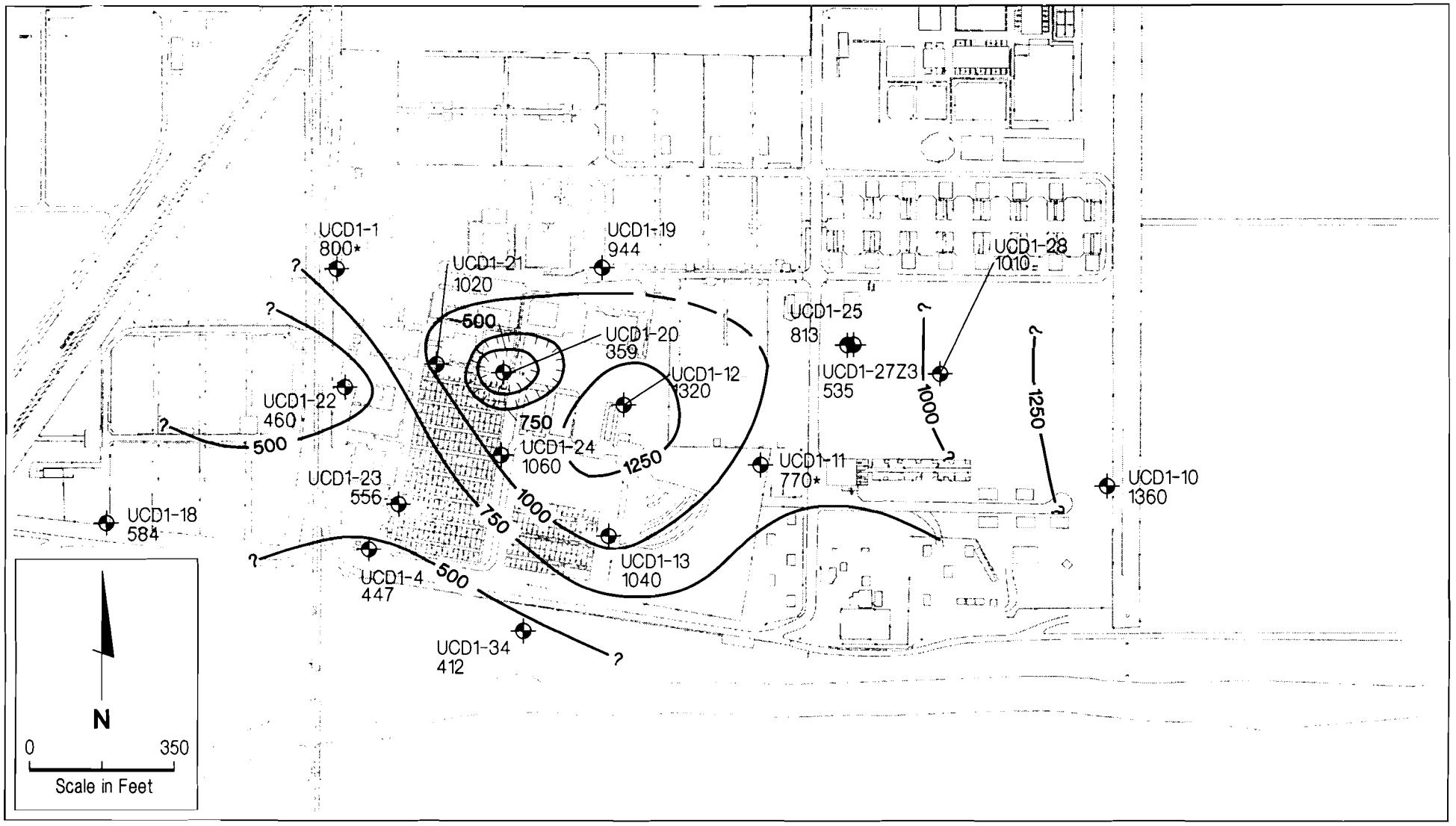
CONCENTRATION CONTOUR PLOT
1997 NITRATE (as N) CONCENTRATIONS - HSU 2

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

00234-258-79801 maj 79801Y 7/27/98

FIGURE 4.41



EXPLANATION

UCD1-11 HSU-1 Monitoring Well

NA = Not Analyzed

ND = Not Detected

* Erroneous 1997 data - Historical average used for contouring

All results reported in mg/L

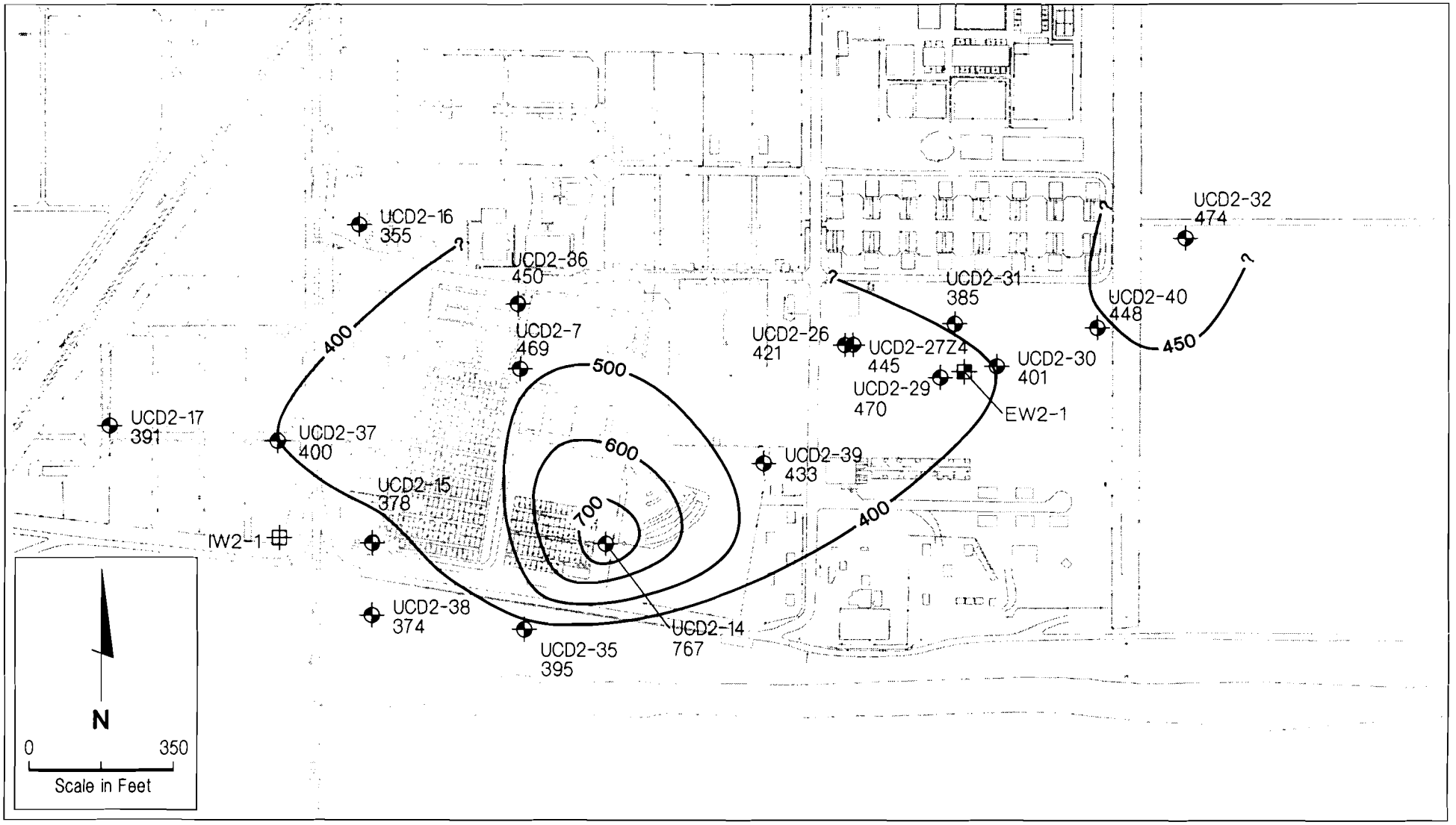
CONCENTRATION CONTOUR PLOT
1997 TDS CONCENTRATIONS - HSU 1

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

00234-258-79801 maj 79801AB 7/27/98

FIGURE 4.42



EXPLANATION

- UCD2-17 HSU-2 Monitoring Well
- EW2-1 HSU-2 Extraction Well
- IW2-1 HSU-2 Injection Well

All results reported in mg/L

NA = Not Analyzed

ND = Not Detected

CONCENTRATION CONTOUR PLOT
1997 TDS CONCENTRATIONS - HSU 2

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

00234-258-79801 maj 79801AD 7/27/98

FIGURE 4.43

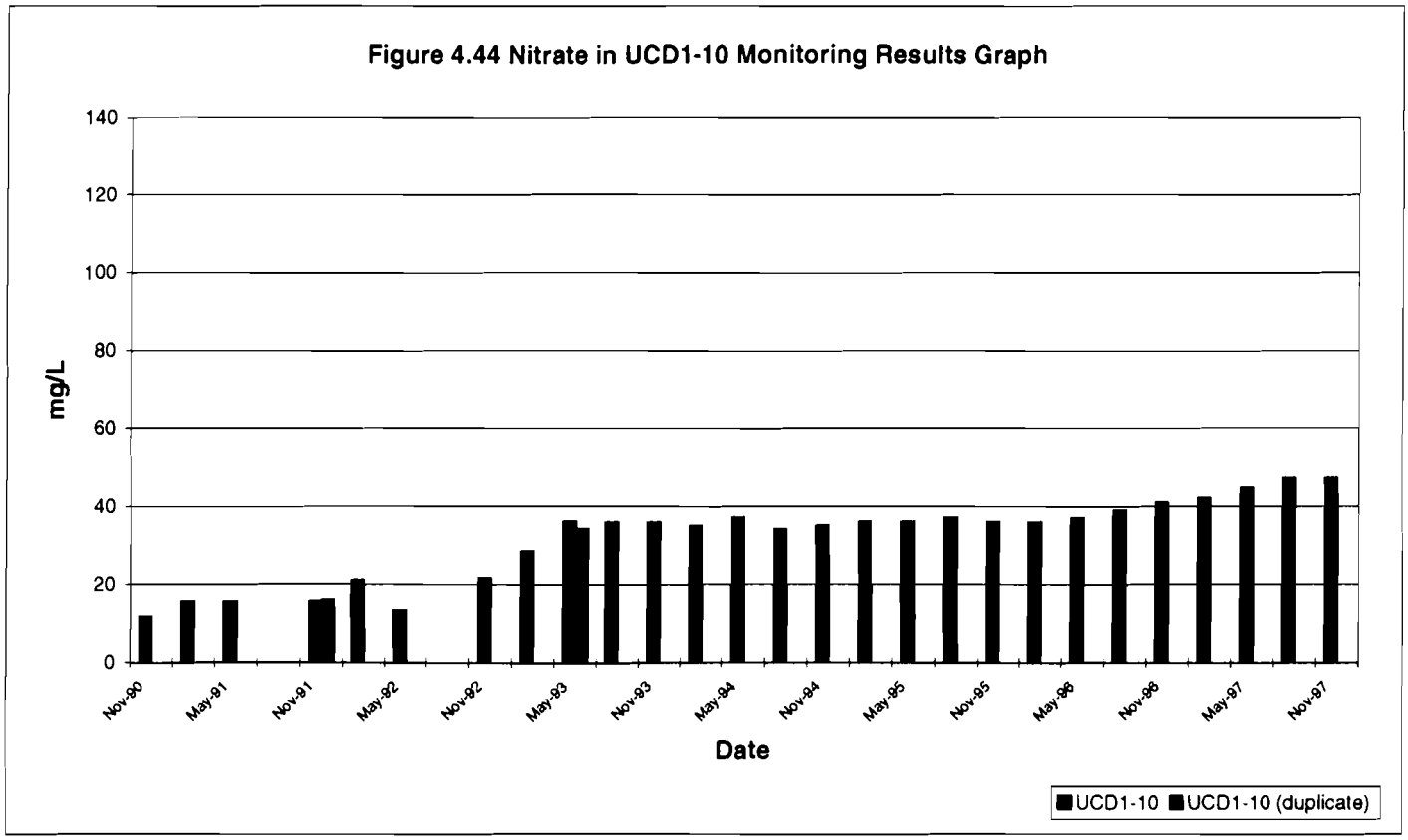


Figure 4.44 Nitrate in UCD1-10 Monitoring Results Graph
mg/L
140
120
100
80
60
40
20
0
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-10
UCD1-10 (duplicate)

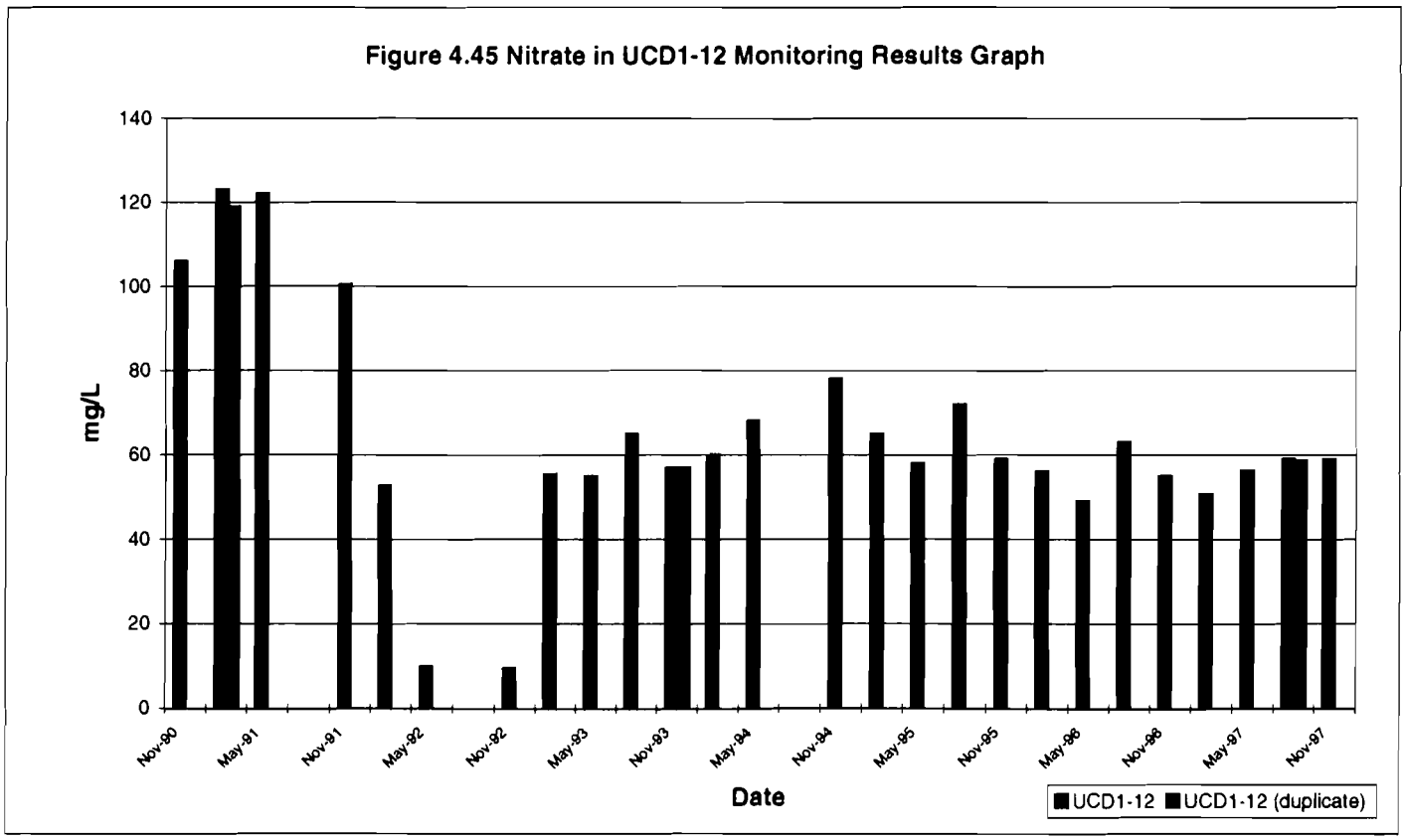


Figure 4.45 Nitrate in UCD1-12 Monitoring Results Graph
mg/L
140
120
100
80
60
40
20
0
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-12
UCD1-12 (duplicate)

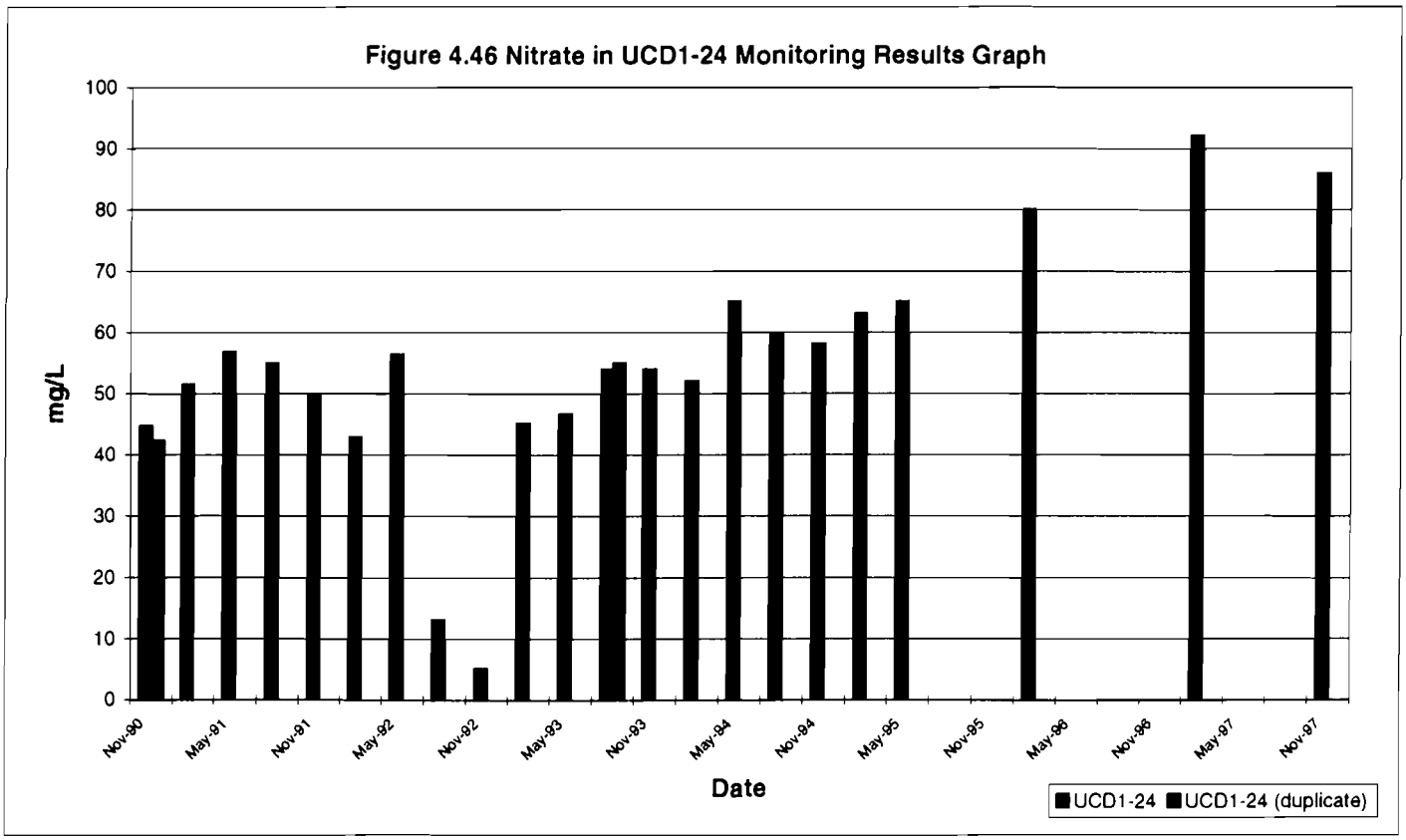


Figure 4.46 Nitrate in UCD1-24 Monitoring Results Graph
mg/L
100
90
80
70
60
50
40
30
20
10
0
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD1-24
UCD1-24 (duplicate)

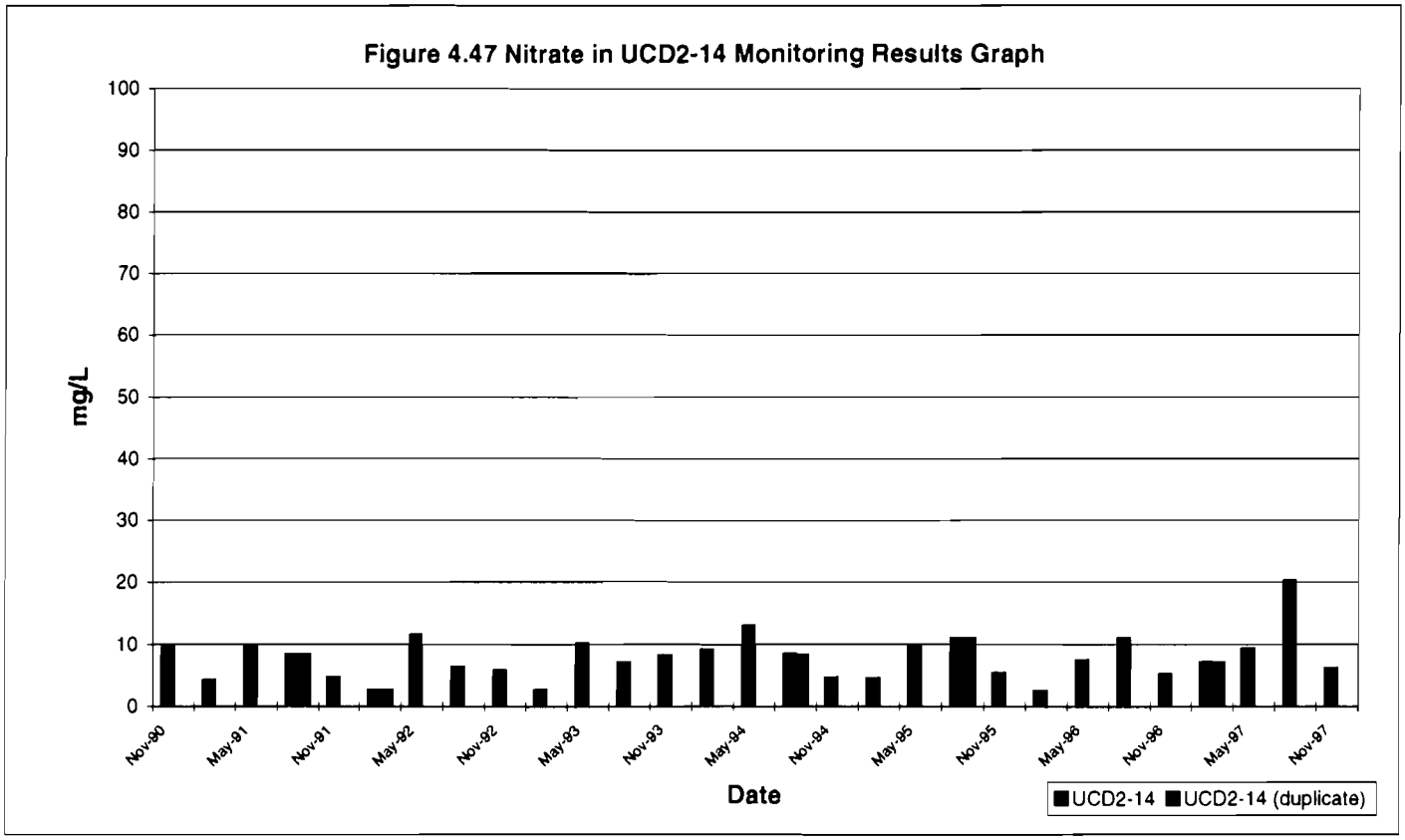


Figure 4.47 Nitrate in UCD2-14 Monitoring Results Graph
mg/L
100
90
80
70
60
50
40
30
20
10
0
Nov-90
May-91
Nov-91
May-92
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
Date
UCD2-14
UCD2-14 (duplicate)

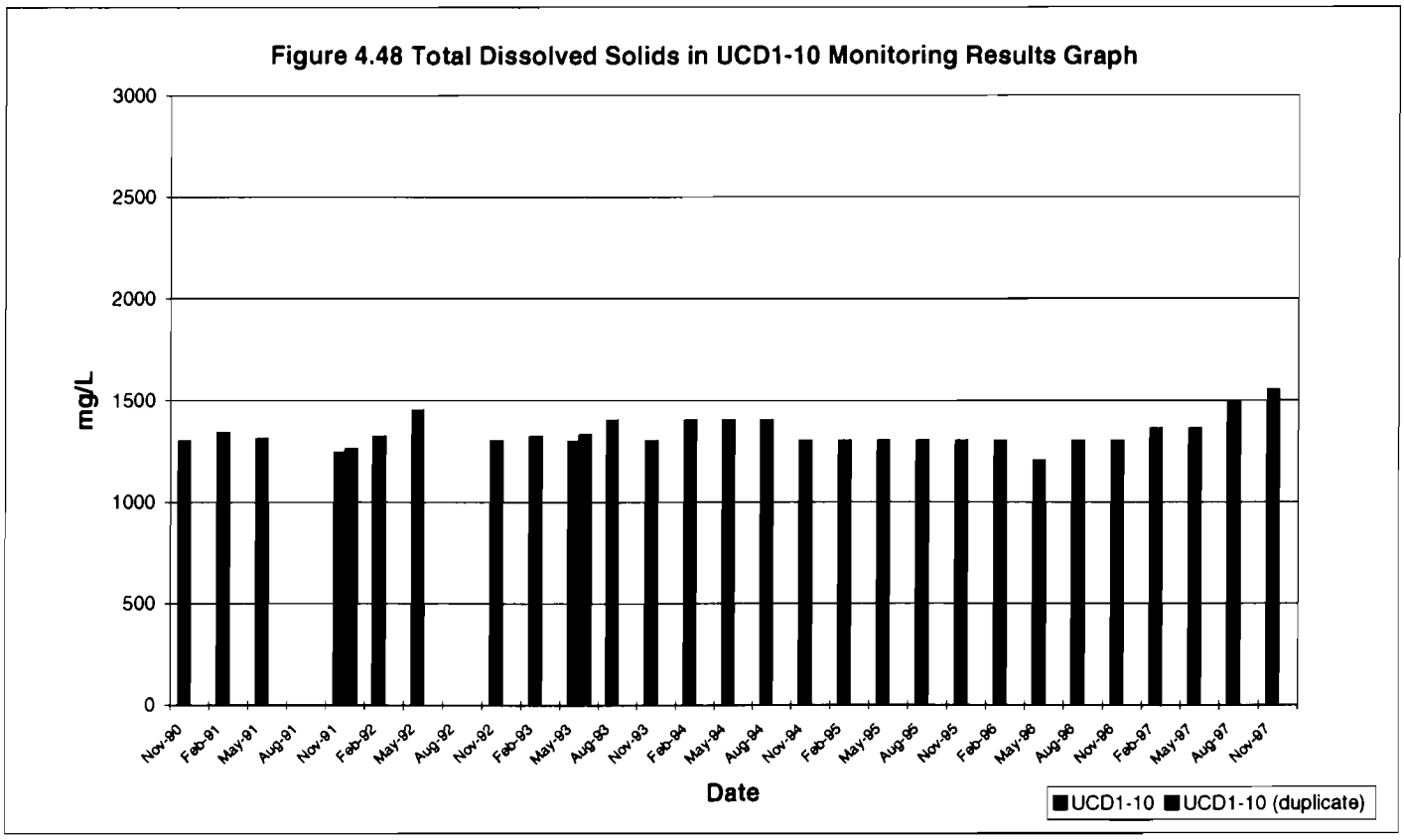


Figure 4.48 Total Dissolved Solids in UCD1-10 Monitoring Results Graph
3000
2500
2000
1500
1000
500
0
mg/L
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-10
UCD1-10 (duplicate)

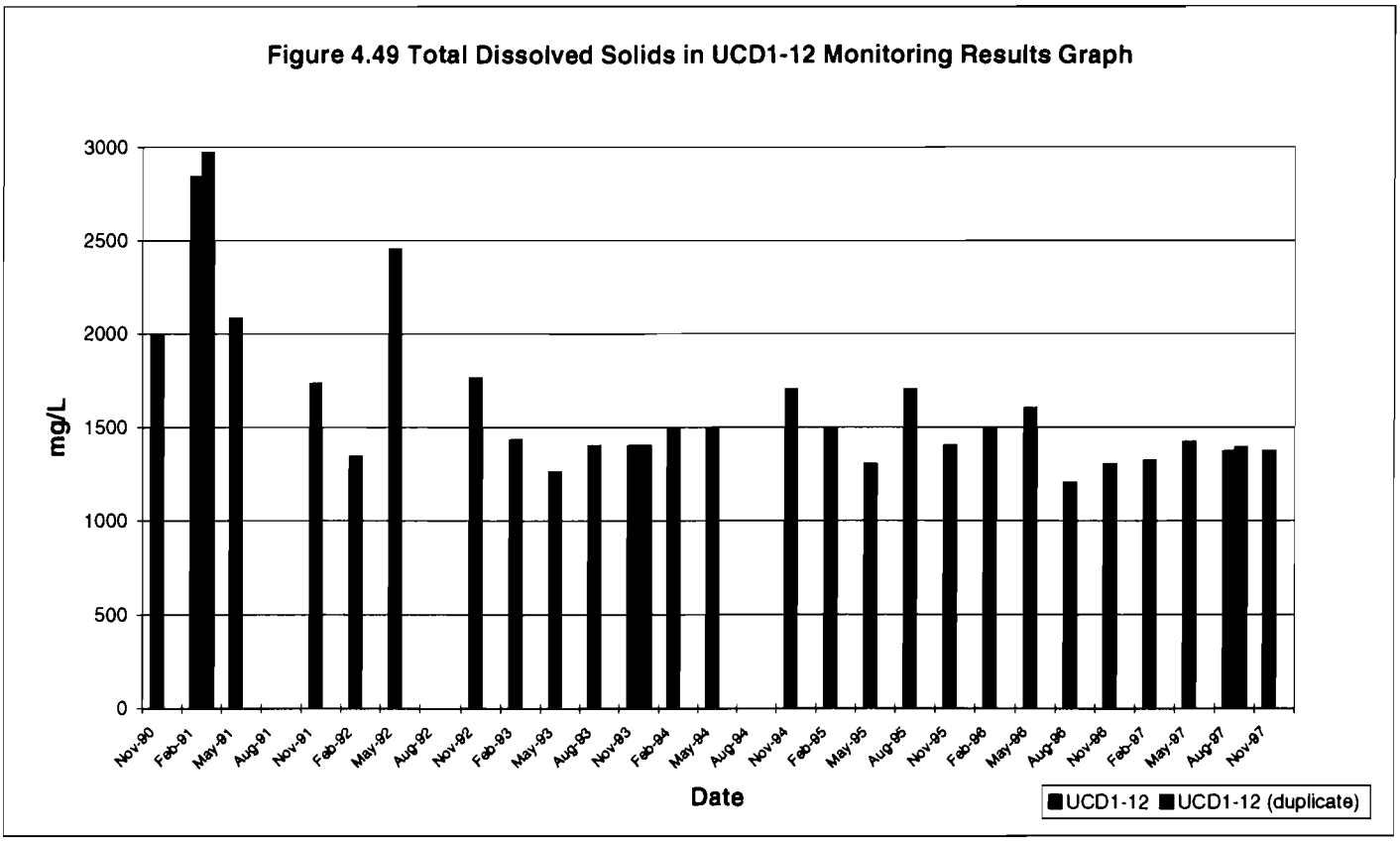


Figure 4.49 Total Dissolved Solids in UCD1-12 Monitoring Results Graph
3000
2500
2000
1500
1000
500
0
mg/L
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-12
UCD1-12 (duplicate)

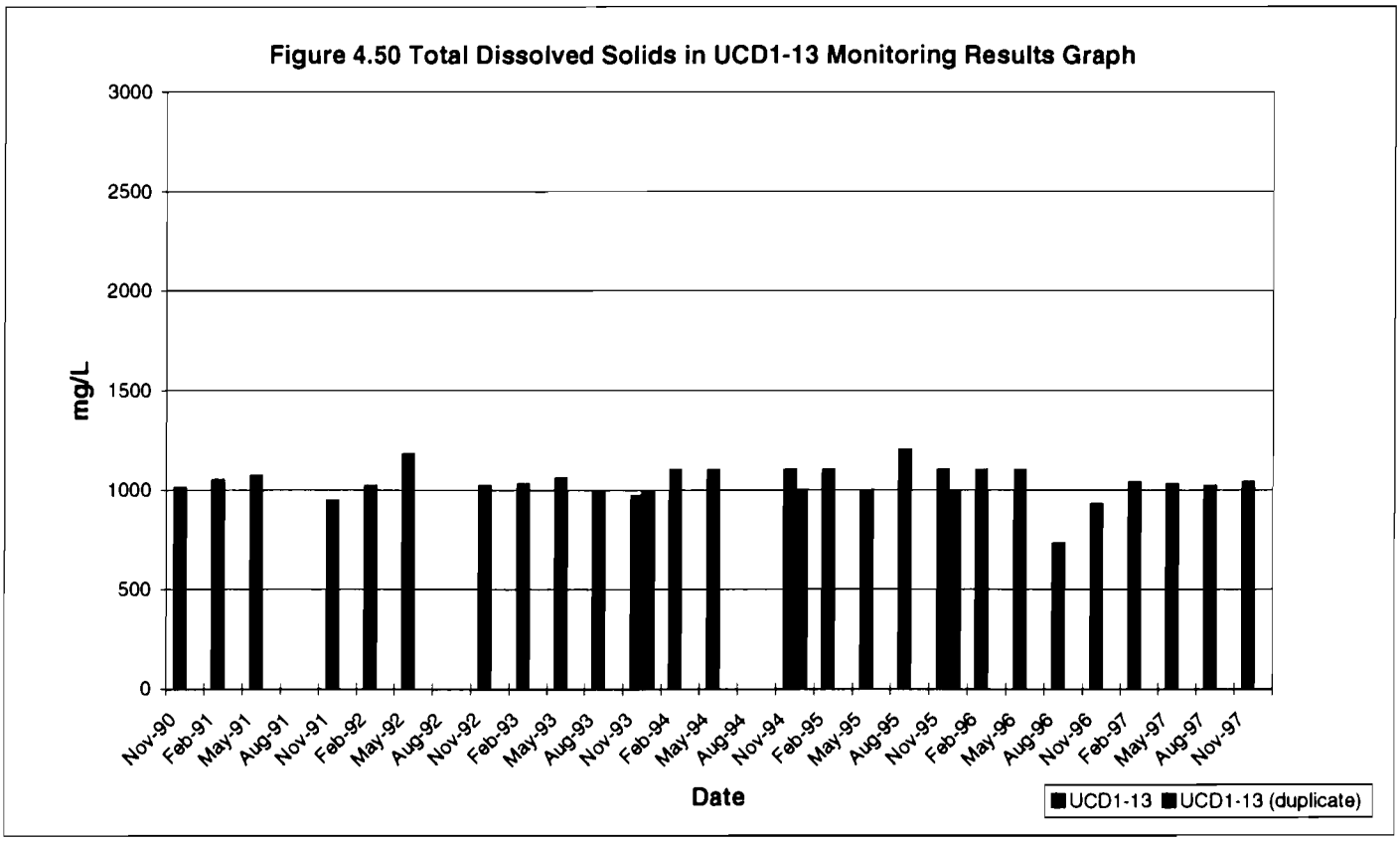


Figure 4.50 Total Dissolved Solids in UCD1-13 Monitoring Results Graph
3000
2500
2000
1500
1000
500
0
mg/L
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD1-13
UCD1-13 (duplicate)

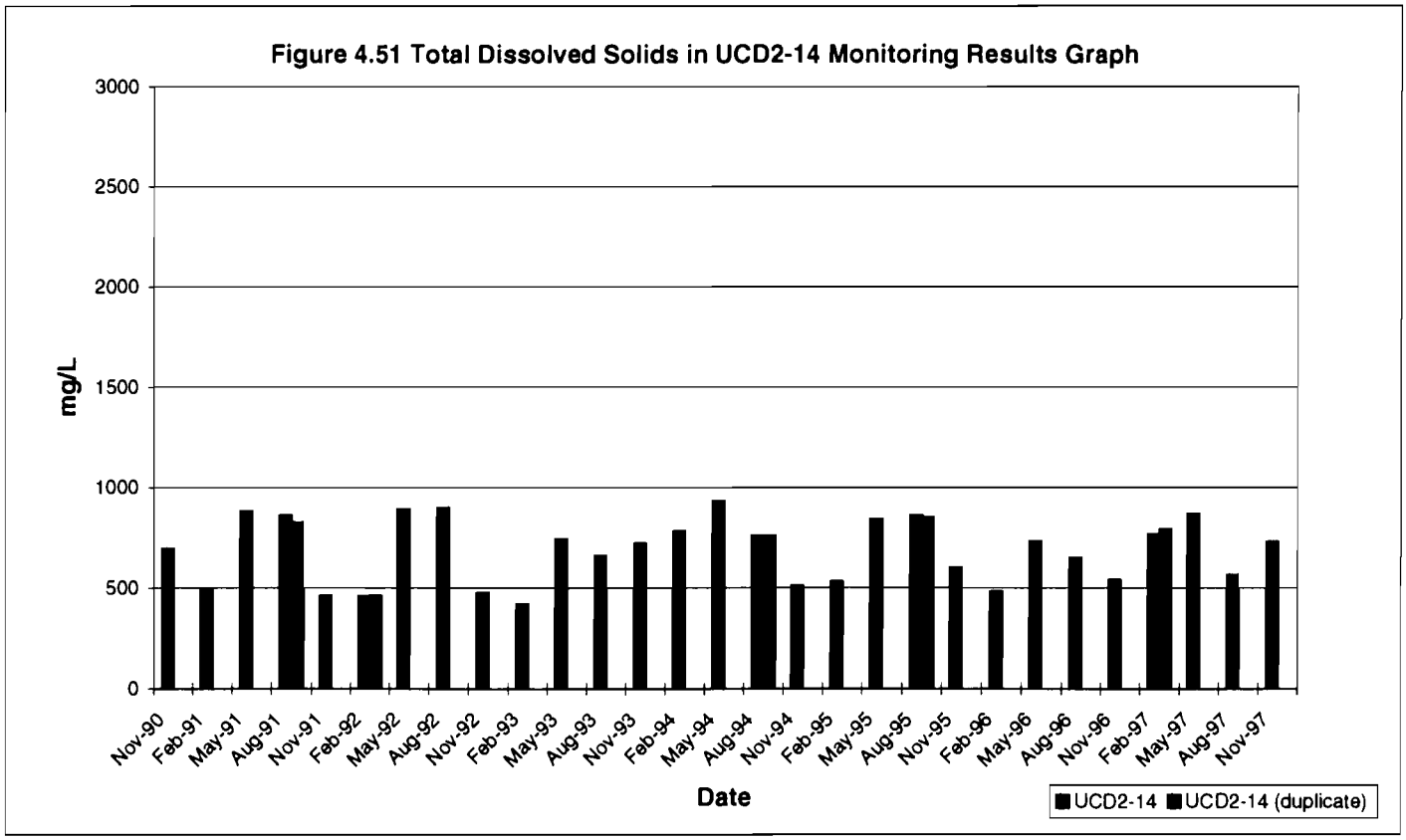


Figure 4.51 Total Dissolved Solids in UCD2-14 Monitoring Results Graph
3000
2500
2000
1500
1000
500
0
mg/L
Nov-90
Feb-91
May-91
Aug-91
Nov-91
Feb-92
May-92
Aug-92
Nov-92
Feb-93
May-93
Aug-93
Nov-93
Feb-94
May-94
Aug-94
Nov-94
Feb-95
May-95
Aug-95
Nov-95
Feb-96
May-96
Aug-96
Nov-96
Feb-97
May-97
Aug-97
Nov-97
Date
UCD2-14
UCD2-14 (duplicate)

5.0 1997 WATER MONITORING PROGRAM

This section presents the results of 1997 groundwater, surface water, and storm water monitoring programs. A description of the monitoring parameters and schedule for each program is presented, including a summary of significant changes compared to previous years. A summary of reported values for 1997 groundwater, surface water, and storm water sampling are presented in Tables 5.4, 5.5, and 5.6.

5.1 Analytical Program

Water samples were collected and handled according to procedures described in the Water Monitoring Plan (PNL, 1994) and the Revised FSP (Dames & Moore, 1997a). Samples for chemical or radiological analysis were shipped daily via Federal Express for overnight delivery to LAS Laboratories (formerly Lockheed Analytical Services) in Las Vegas, Nevada. Surface water samples for aquatic toxicity were shipped via Federal Express for overnight delivery to Aquatic Testing Laboratories in Ventura, California. Immediately upon receipt of the sample shipment the laboratory documented the condition of the sample containers on the chain of custody form and reported any discrepancies or problems with the samples to the UC Davis task manager.

Methods for each analysis are listed in Table 5.2. Tables 5.4, 5.5 and 5.6 summarize the chemical and radiological detections in groundwater, surface water and storm water samples (respectively) collected during 1997. Appendix A presents the complete analytical reports for all samples.

5.1.1 Reporting of Chemical Analysis Results

Results for chemical analysis are reported as positive detections if the analytical result exceeds the laboratory limit. The laboratory limit is equal to or less than the EPA-required CLP detection limits. In the cases that the laboratory limit is lower than the EPA-required limit, the data are reported, but flagged by the laboratory with a "J" for organic analysis, or a "B" for inorganic analytes.

5.1.2 Reporting of Radionuclide Results

Levels of radioactivity in site water samples are reported in picocuries per liter (pCi/L), with many of the results being very close to the minimum activity that analysis methods are able to detect. Statistical methods are used to determine the amount of radioactivity in a sample. Radionuclide analyses are reported with the calculated activity of the sample, the minimum detectable activity (MDA), and the counting error. The MDA describes quantitatively the sensitivity of the analytical procedures used and represents a minimum detectable radionuclide activity in a sample medium at the time of analysis. Variables include decay rate, sample counting time, sample volume and density, chemical recovery, background counts, and detector efficiency, which all affect the resulting MDA for a given sample. The counting error represents the total statistical uncertainty resulting from measuring all random processes involved in the analytical procedures used. Individual errors associated with these processes are propagated to estimate the total uncertainty.

The uncertainty value is reported as a two-sigma (two standard deviations) error for each sample analysis result. This uncertainty, therefore, approximates a 95% confidence interval about the reported value. Non-random systematic errors will not be reported since they cannot be accurately quantified. Good laboratory practices, QA/QC programs and procedures, as well as frequent instrument calibrations minimize any incurred systematic errors.

Radionuclide results are reported as the calculated value (V) followed by the total uncertainty (T). The format follows the convention ($V \pm T$). The significance of the radionuclide results can be evaluated by comparing the reported value with the reported uncertainty that is calculated for each sample. Although gross alpha and gross beta analyses are not performed for specific radionuclides (i.e. they measure total alpha or beta energy released in a sample), they are included in the radionuclide analytical results tables for consistency in reporting radionuclide characteristics.

Reported radionuclide concentrations that are equal to or greater than the uncertainty and the MDA are summarized in Tables 5.4, 5.5, and 5.6 for groundwater, surface water and storm water samples, respectively. These values represent a 95% level of confidence that measurable radioactivity above zero is present for a given radionuclide, and the result is referred to as a "positive value". It should be emphasized, however, that despite being statistically detectable on the basis of total uncertainty, a given sample result may not be significant in terms of health risk, presence of site contamination, or regional background concentrations. A more detailed discussion of radiation measurement at or near the detection limit is presented by Currie (1968).

5.1.3 Changes to Laboratory Program for 1997

In an effort to improve the monitoring and reporting for VOCs, the detection limits were reduced by 50%, starting with the summer quarter of 1997. This was the result of negotiations with LAS to reduce the laboratory reporting limits for this monitoring program. Prior to the summer 1997 monitoring round, LAS used the CLP reporting limits specified by EPA. These CLP reporting limits were not always low enough to evaluate the presence of some constituents of concern. The CLP limits added confusion to the reporting of some analytical results, because the analytical procedure could often detect levels below the CLP limit. Detections above the instrument detection limit, but below the reporting limit, are coded with a "J" as an estimated value. The reduction in the contract required minimum detection limits resulted in fewer results being flagged as estimated values.

LAS was the only analytical laboratory used for testing of chemical and radiological parameters for the Site water monitoring program during 1997. In February 1998, LAS ceased operations, therefore a new analytical laboratory was needed to perform analysis of samples for the project. For the 1998 water monitoring program, General Engineering Laboratories (GEL) of Charleston, South Carolina is serving as the primary laboratory. Quanterra, Inc. of West Sacramento, California is serving as the laboratory for

samples related to the IRA groundwater treatment system and as a back-up to GEL. Due to the closure of the laboratory, pesticide/PCB analyses from the Fall 1997 quarter were not performed as requested. This resulted in no pesticide data for that quarter.

5.2 Groundwater Monitoring

This section presents a description of the 1997 groundwater monitoring program, and summarizes the 1997 monitoring results. The purpose of the groundwater monitoring program is to evaluate the presence, distribution, and transport of contaminants in the groundwater beneath the Site. Groundwater monitoring began at LEHR in 1987 with the installation of nine monitoring wells and has since continuously evolved in scope. In 1997, the program comprised 41 monitoring wells, including nine new wells completed during the year. A complete description of the current program can be found in the Revised FSP.

5.2.1 Overview of Program

The 1997 program consisted of quarterly (winter, spring, summer, and fall) sampling and analysis of groundwater and monthly water level measurements from monitoring wells that extend into either the first, second or fourth hydrostatic units (HSU-1, HSU-2, or HSU-4). The third hydrostratigraphic unit is predominantly fine-grained and is not sampled. Well locations are shown in Figure 3.3, while table 3.1 provides well specifications. In accordance with the Revised FSP, selected wells were sampled each quarter for particular constituents of concern; Table 5.1 provides the schedule of well sampling and chemical analysis that was followed in 1997. Table 5.2 presents analytical methods used for 1997 monitoring. The sampling and analysis schedule is adjusted periodically when data trends or new or unusual detections indicate that particular wells or constituents should be monitored with greater frequency.

5.2.2 Changes to the Program in 1997

UC Davis took over responsibility for the water sampling program from the DOE and began field operations with the winter sampling round. Both the winter and spring sampling rounds were conducted by UC Davis in accordance with the DOE's existing Water Monitoring Plan (1996). Summer and fall rounds, however, were conducted according to the University's Revised FSP, which was a revision of the Water Monitoring Plan (Dames & Moore, 1997a). As part of that revision, data trends were analyzed for wells installed in 1995 (UCD1-25, UCD1-34, UCD2-26, UCD2-27, UCD2-35) which were still undergoing the full suite of analysis each quarter as required for new wells. A lack of significant detections for some radiological and chemical constituents for these wells supported the elimination of those analytes from the sampling schedule. These changes are reflected in Table 5.1. A review of historical data also supported reducing the sampling frequency for UCD1-1. Additional analytes (including total organic carbon) were also added to the sampling schedule for a number of wells.

A total of nine new wells were added to the LEHR monitoring program in 1997. Five of the new wells (UCD2-36, UCD2-37, UCD2-38, UCD2-39, and UCD2-40) were installed during the fall in support of the University's groundwater IRA. These wells were completed in time to be sampled in the fall quarter.

Five other wells (one later abandoned) were installed to investigate concerns as to whether irrigation well (22N) allowed transport of contaminants from HSU-2 to HSU-4. Two wells (UCD2-32 in HSU-2 and UCD4-33 in HSU-4) were installed in the spring adjacent to well 22N to test this concern. Although UCD4-33 was eventually abandoned due to a break in the well casing, samples taken prior to abandonment reported chloroform in HSU-4. Three more HSU-4 wells (UCD4-41, UCD4-42 (replacing UCD4-33), and UCD4-43) were then installed in the fall of 1997 upgradient, adjacent to, and downgradient of well 22N (Dames & Moore, 1998a). Data from these wells will be used to map water gradients and flow in HSU-4 and to further investigate possible impacts. The wells were completed in time to be sampled in the fall round.

5.2.3 Summary of 1997 Groundwater Monitoring Results

This section summarizes the analytical results for the 1997 groundwater monitoring program. Significant results are presented within each category of analysis and general trends are discussed as they apply to the data. In this annual report, groundwater data are organized into summary tables of reported site constituents and complete data tables containing all analyses results. Table 5.3 presents a statistical review of constituents that were reported in groundwater samples during the four quarters of the 1997 monitoring program. Table 5.4 presents a complete summary of 1997 groundwater detections with results presented by well and by quarter. The entire groundwater monitoring results for 1997, with both detections and nondetections for each of the analytical groups, are presented in Appendix A. Groundwater analytical results for selected parameters are also presented in a series of graphs that illustrate the concentration of various parameters in selected wells over time. These graphs are provided in Appendix B.

5.2.3.1 Volatile Organic Compounds

VOCs reported in 1997 groundwater samples are summarized in Table 5.4. More than eighty VOC samples and six duplicates were collected from thirty-five site wells in accordance with the schedule identified in Table 5.1. Samples were analyzed for the list of target compounds in accordance with the CLP Method for low concentration organics (OLC 02.0). As shown in Table 5.4, fifteen VOCs were reported in 1997 groundwater samples. However, six of the fifteen VOCs were reported in only one or two samples at levels below both the CLP and the contract required quantitation detection limits. These results were reported by the laboratory as estimated (J). Nine VOCs that were reported above these detection limits included bromodichloromethane, chloroform, dibromochloromethane, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, 1,2-dichloropropane, 1,3-dichlorobenzene, and 1,1,2-trichloroethane. Results for each of these compounds are discussed below. Except for UCD1-12, most VOC detections were reported in HSU-2, although several VOCs (including chloroform) were

reported in one of the HSU-4 wells—UCD4-42. See Section 4.1 for additional details regarding chloroform and other VOCs in site groundwater.

- Bromodichloromethane was reported in three of four quarterly samples in UCD1-12 at levels ranging from 0.6-8.3 µg/L. It was also reported in one sample from UCD2-27Z4 at 0.3 µg/L. In 1995 and 1996, this compound was reported only in UCD1-12, with results ranging from 0.6-2.1 µg/L.

- Chloroform was the most frequently reported VOC and was found in nineteen wells, nine of which were installed during 1997 as part of the Interim Remedial Action for groundwater. Regular quarterly monitoring of these nine wells began in Fall 1997, and five of them will be included in a monthly sampling program for one year (June 1998 to May 1999) to measure effectiveness of the IRA treatment system. Further in-depth information on chloroform in site groundwater is provided in Section 4.1. Site wells with positive detections for chloroform are shown in Figure 4.1, and Figure 4.6 shows the chloroform concentration contour plot, reflecting concentrations in winter 1997 (with fall results for new wells).

- Dibromochloromethane was reported just once during 1997 during the winter quarter for UCD1-12 at 0.6 µg/L. This compound was not reported in any site well during 1995 or 1996.

- 1,1-Dichloroethane was reported in eleven samples from eight wells, six of which were installed during 1997 for the IRA. Figure 4.2 identifies all wells with positive detections for this compound. The highest levels were reported in four samples and a duplicate from UCD1-12 (5.6-13 µg/L). Results reported for this compound have shown an increasing trend over the past few years in this well, although results have fluctuated by quarter and tend to be slightly higher in summer. In the seven other (downgradient) wells where this compound was reported, the highest result was 1.0 µg/L in UCD2-32.

- 1,2-Dichloroethane was reported in twelve samples from eight wells during 1997. Figure 4.3 shows the relative concentrations and wells where this compound was reported. Levels for UCD1-12 ranged from 2.8-6.0 µg/L, which is a slight increase over the range of concentrations reported in 1995 (<1-5.9 µg/L) and 1996 (2.9- 4.9 µg/L). The MCL for this compound is 0.5 µg/L. Highest downgradient levels were reported in UCD2-29 and UCD2-32 at 1.7 µg/L, and it was also reported in UCD4-42 at 0.6 µg/L.

- 1,1-Dichloroethene was reported in the same eight wells as 1,1-dichloroethane and at similar levels. Positive detections reported for this compound in site wells are indicated in Figure 4.4. The highest 1997 results were reported in UCD1-12 (8.3-18 µg/L). Results for this compound have shown an increasing trend over the past few years in this well. In the seven remaining downgradient wells where this compound was reported in 1997, the highest reported detections were two fall results of 0.9 µg/L in UCD2-29 and UCD2-32.

- 1,2-Dichloropropane was reported in thirteen samples from eight wells. Figure 4.5 shows the relative concentrations and wells where it was reported. 1997 data shows that this compound has a trend different from other chlorinated solvents reported within the site VOC plume--concentrations are higher in three downgradient wells (UCD2-29 at 1.6 µg/L; UCD2-32 and UCD2-40 at 1.2 µg/L) than in UCD1-12 (highest 1997 detection 0.8 µg/L). Since the wells with the highest reported levels have only one quarter of data (fall), more data is necessary to assess this analyte. Concentrations in UCD1-12 are just slightly higher for this analyte than they were in 1996.

- 1,3-Dichlorobenzene was reported in only one sample during 1997. It was reported in the fall sample from UCD2-40 at 1.5 µg/L. Future samples from this well will help to determine the significance (if any) of this result, particularly since this compound was not reported in any other sample during 1995, 1996 or 1997.

- 1,1,2-Trichloroethane was reported in two wells during 1997. The highest results were consistently reported in UCD1-12, where concentrations ranged from 1.0 to 3.3 µg/L. It was also reported in one sample from UCD2-29 at 0.2 µg/L. UCD1-12 results are similar to those reported in 1996.

5.2.3.2 Semivolatile Organic Compounds

A summary of semivolatile organic compounds (SVOCs) reported in groundwater samples is presented in Table 5.4. Forty-one SVOC samples and three duplicates were collected from twenty-seven site wells in accordance with the schedule identified in Table 5.1. Samples were analyzed for the list of target compounds in accordance with the CLP Method for Low/Medium Concentration Organics (OLM 01.8). Seven SVOCs were reported in 1997 groundwater samples. These compounds were only sporadically reported and no definitive trends are evident. Five of the seven SVOCs were found in only one or two of the forty-four samples at levels under 3 µg/L—well below both the CLP and the contract required quantitation detection limit of 10 µg/L. The other two SVOCs are discussed below:

- Bis(2-ethylhexyl)phthalate was the most commonly reported SVOC. It was reported in twelve samples from ten different wells. No clear trends are evident in the 1997 results for this compound. Only one well had reported detections in more than one quarter; the winter and spring samples from UCD2-26 (including a duplicate) reported results ranging between 3-11 µg/L. The highest reported detection of bis(2-ethylhexyl)phthalate was in UCD2-30 at 17 µg/L. Positive detections of bis(2-ethylhexyl)phthalate are often due to sample contamination during the analytical process and have been attributed to laboratory contamination in previous Site samples. This compound has been reported sporadically in groundwater samples throughout the water monitoring program. The reported detections are rarely repeated upon subsequent sampling (no clear trends are defined) and therefore, are likely the result of laboratory contamination.

- Di-n-butylphthalate was reported in several new wells that are near the extraction well during the fall sampling round. Di-n-butylphthalate was reported in wells UCD2-30, UCD2-31, UCD2-32, and UCD2-40, at levels ranging between 0.5-4.4 µg/L. This was the first quarter these wells were monitored.

5.2.3.3 Pesticides and PCBs

A summary of organochlorine pesticides and polychlorinated biphenyls (PCBs) reported in 1997 groundwater samples is presented in Table 5.4. Thirty-four pesticide and PCB samples and three duplicates were collected from nineteen site wells. Samples were analyzed for the list of target compounds in accordance with the CLP Method for Low/Medium Concentration Organics (OLM 01.8M). Eight pesticide compounds were reported in 1997 groundwater samples; 4,4'-DDD, alpha chlordane, dieldren, endrin, endrin ketone, gamma-BHC (Lindane), gamma-chlordane and heptachlor. Over 90% of these results were below CLP/contract required quantitation limits, and were therefore qualified as estimated. No PCB compounds were reported in 1997 groundwater samples.

As in previous years, the majority of pesticide detections were reported in UCD1-13. Low levels of alpha-chlordane, dieldrin, endrin, endrin ketone, gamma-BHC (Lindane), and gamma-chlordane were reported in this well. The highest detection was for dieldrin at 0.03 μg/L, which exceeds the EPA Region 9 PRG of 0.0042 μg/L for tap water. In 1995 and 1996, dieldrin was reported in this well at approximately the same concentrations (0.027-0.029 μg/L).

The other wells in which pesticides were reported in 1997 are UCD1-4 (4,4'-DDD at 0.007 μg/L) and UCD2-27, Zone 4 (Heptachlor at 0.009 μg/L). Neither of these wells had pesticide detections in 1996.

5.2.3.4 Metals

A summary of metals reported in 1997 groundwater samples is presented in Table 5.4. During the four quarters of sampling, fifty-five samples and four duplicates from thirty-three site wells were analyzed for metals. The metals analysis includes 18 metals and is performed in accordance with the CLP Method for Low Concentration Inorganics Analysis (ILC 02.0). A variety of metals were reported in each of these samples. In addition, ninety-two samples and six duplicates from thirty-five wells were analyzed for hexavalent chromium by EPA Method 7196. The metals beryllium, cadmium, mercury, silver and thallium were not reported in any 1997 groundwater samples. The remaining metals analyzed were reported above detection limits in several wells during 1997. Results are discussed below:

- Antimony was reported above the method detection limit but below the 5.0 μg/L contract required detection limit (CRDL) in ten wells. In one well sample from UCD1-4, antimony was above the CRDL at 9.3 μg/L. Thee are no significant trends or patterns for this analyte in any site well for 1997 or previous data.

- Arsenic is consistently reported at very low levels in most site wells, although it was not reported in any of the new wells installed during 1997. In the wells with reported concentrations, levels ranged from 2.6 μg/L in Zone 5 of UCD2-27 to the highest detection of 9.3 μg/L in UCD1-19. This concentration range is similar to that reported in previous years. Background concentrations in 1997 were 4.0 μg/L in UCD1-18 and 2.9 μg/L in UCD2-17.

- Barium was reported above the detection limit in every 1997 groundwater sample that was analyzed for metals. Reported concentrations ranged from 40.3 μg/L to 437 μg/L. The highest concentrations of barium are reported in HSU-1 wells UCD1-11, UCD1-12, UCD1-13, and UCD1-25, and in HSU-2 well UCD2-14. The lowest values for barium are consistently reported for well UCD1-10. Trends for this metal have been relatively consistent over several years in most wells.

- Calcium results for 1997 were reported to range from 23,900 μg/L in UCD1-20 to 74,400 μg/L in UCD1-13. The background concentrations (35-40,000 μg/L) are reported near the average for site wells in general, with the exception of those wells that are immediately downgradient of waste disposal areas: UCD1-12, UCD1-13, and UCD2-14. These three wells typically are above background for calcium; their 1997 results ranged from 55,000 to 75,000 μg/L.

- Total chromium is reported consistently in all site wells. In 1997, chromium was reported above the detection limit in every site well and in all but one of the fifty-five samples collected. A graph of comparative concentrations is provided in Figure 4.15. Reported concentrations ranged from 1.1 µg/L in UCD1-27 (Zone 3) to 577 µg/L in UCD1-28. The two highest detections reported for total chromium (UCD1-25 and UCD1-28) are in wells located in close proximity to the well with the lowest result (UCD1-27). Further discussion of chromium in site groundwater can be found in section 4.2. Section 7.0 provides a statistical evaluation and analysis of the significance of the chromium results.

- Hexavalent chromium is also consistently reported in most site wells. A comparative graph of 1997 results is provided in Figure 4.14. During 1997, concentrations of hexavalent chromium reported on site ranged from below detection limits in some wells, to a high of 529 µg/L in UCD1-28. In general, results for hexavalent chromium are similar in concentration and distribution to the total chromium results. Historically, about 80% of the chromium reported in site groundwater is in the hexavalent form. Figures 4.18 through 4.25 show comparative graphs for chromium and hexavalent chromium over time for selected wells. Further discussion regarding hexavalent chromium as a site constituent of concern is found in section 4.2.

- Cobalt was not reported above the contract required quantitation limit of 10 µg/L in any 1997 sample, but was reported at lower levels in most wells. Concentrations ranged from 1.0 µg/L in UCD1-20 to 4.4 µg/L in UCD1-12. The background results were 1.8 µg/L in UCD1-18 and 1.2 µg/L in UCD1-17. Concentrations were similar in both HSUs. Fall results (collected in newly-installed wells only) were all non-detect, due to a higher laboratory instrument detection limit of 5.0 µg/L. There is no regulatory limit for cobalt in water.

- Copper was reported above the contract required quantitation limit of 10 µg/L in only three wells—all of which were installed during 1997. In two of the newly-installed HSU-4 wells, results for copper were 17 µg/L, and a level of 13.7 µg/L was reported in UCD1-28. Results reported for the remaining site wells were from <1.0 in several wells to 6.1 µg/L in UCD1-34. Additional sampling results will verify whether the three new wells consistently report higher copper levels.

- Iron results reported for 1997 were highest in UCD2-36 at 2,010 µg/L and in UCD1-27, Zone 3. The winter result for Zone 3 was 1,130 µg/L and the spring result was 1,570 µg/L, while all other zones of this well were consistently below detection limits. Most of the 1997 results reported for iron were below the laboratory detection limits, which varied from 1.0 to 27 µg/L. As discussed in the data quality section of this report (Section 6), a number of reported detection limits for this analyte were qualified due to laboratory blank contamination. The EPA contract required quantitation limit is 100 µg/L.

- Lead was reported at 3.7 µg/L in UCD1-34, which was the highest result in an HSU-1 well. In HSU-2, the highest reported detections of lead were in UCD2-14 at 7.4 µg/L and UCD2-16 at 7.3 µg/L. Lead has been inconsistently reported over the past few years at low levels in various site wells, but there are no clearly defined trends. All three of the wells (listed above) with the highest reported detections for 1997 had no positive detections for lead during the two previous years.

- Magnesium was reported above detection limits in all site wells during 1997. Its highest reported detection was in HSU-1, with wells located downgradient of waste burial areas showing slightly higher levels. The highest results for the HSU-1 were in UCD1-12 (215,000 µg/L), UCD1-10

(198,000 μg/L) and UCD1-13 (190,000 μg/L). In the HSU-2, UCD2-14 was reported significantly higher than any other well, at 148,000 μg/L.

- Manganese concentrations reported vary greatly across the Site and show seasonal fluctuations, but comparative results are relatively consistent for particular wells (or zones, as in UCD1/2-27). Manganese is not reported in many site wells. Some wells have very low reported detections (below 2 μg/L), but a few are consistently very high. Highest reported detections were in UCD1-27Z3 and UCD2-27Z4; Zone 3 results for 1997 ranged as high as 1310 μg/L and Zone 4 as high as 97.6 μg/L. Zones 5 and 6 were below 2 μg/L but Zone 7 went up again, to 44.1 μg/L. Other wells with relatively high results include UCD1-34 (27.2 μg/L) and UCD2-36 (66.9 μg/L). No 1997 result exceeded the EPA Region 9 PRG of 1700 μg/L. Results for 1997 had the same trend relationship between wells but were lower than 1996 results. In 1996, the highest result for UCD1-27Z3 was 1710 μg/L; Zone 4 was 306 μg/L; Zone 7 was 271 μg/L; and UCD1-34 was 137 μg/L. In general, results for most wells show that manganese concentrations are highest in winter.

- Molybdenum was reported at low concentrations in most site wells during 1997. Only one well hada detection above 2 μg/L. Reported detections ranged from 1.0 μg/L in UCD1-10 to 9.1 μg/L in UCD1-27Z3. Background concentrations were 1.4 μg/L in UCD1-18 and 2.0 μg/L in UCD2-17. The only well that had a reported detection that exceeded background with any significance was UCD1-27Z3. All detections reported were far below the EPA Region 9 PRG of 180 μg/L for tap water.

- Nickel was reported above the laboratory detection limit but below the contract requiredquantitation limit in almost all site wells. Concentrations exceeded the CRQL in only four wells: UCD1-27Z3 (218 μg/L); UCD1-23 (114 μg/L); UCD1-24 (48.3 μg/L); and UCD2-29 (24.1 μg/L). EPA has set the PRG for tap water at 730 μg/L.

- Potassium concentrations reported were below the contract required reporting limit (2000μg/L) in all wells, with the exception of UCD4-42, which had a result of 40,200 μg/L.

- Selenium was reported in most site wells during 1997. Concentrations reported ranged from below detection limits (<3 μg/L) in 12 wells to a high of 30.2 μg/L in UCD1-10. Selenium has historically been reported at the highest concentrations in wells UCD1-10, UCD1-11, UCD1-12 and UCD1-19. This was also true during 1997, even though fourteen additional wells were installed. The background level in UCD1-18 (5.6 μg/L) was exceeded in most HSU-1 wells, although most HSU-2 wells were below the UCD2-17 background (5.1 μg/L).

- Sodium results can generally be grouped by HSU, although the ranges overlap. Highest sodium concentrations reported are generally seen in HSU-1, and ranged during 1997 from 32,100 μg/L in UCD1-4 to 182,000 μg/L in UCD1-10. Results reported for the majority of HSU-1 wells were greater than 70,000 μg/L. UCD1-12, UCD1-21, and UCD1-28 all had results reported over 90,000 μg/L. In contrast, the range reported for HSU-2 was from 27,900 μg/L in UCD2-37 to 62,900 μg/L in UCD2-36, with the majority of results less than 45,000 μg/L. HSU-4 concentrations reported ranged from 49,600 to 89,200 μg/L, which is generally higher than most HSU-2 wells.

- Vanadium was reported at low concentrations in most site wells during 1997. Concentrations reported ranged from 3.3 to 16.1 μg/L. Only seven wells had results greater than the CRQL of 10 μg/L. The three wells with highest results were side-gradient perimeter wells UCD1-34 (16.1 μg/L), UCD2-16 (16.1 μg/L) and UCD2-35 (14.5 μg/L). A review of results for the past few years indicates

similar concentration ranges across the Site, with no particular trends for wells that show consistently higher concentrations. The EPA Region 9 PRG for tap water is 260 µg/L.

- Zinc was also reported at low concentrations in most site wells, but most detections were below the CRQL of 20 µg/L. The wells with the highest reported results in 1997 were UCD2-27Z4 (40.2 µg/L), UCD1-25 (32.9 µg/L), and UCD1-34 (20.9 µg/L). As discussed in the data quality section of this report (Section 6), some detection limits were qualified for the Fall quarter results due to laboratory preparation blank contamination.

5.2.3.5 Radionuclides

Radionuclides reported in 1997 groundwater samples are summarized in Table 5.4. Complete analytical results for groundwater samples, including data validation flags and reason codes, are presented in Appendix A. During 1997, seventy-eight samples and six duplicates were collected for analysis of various radionuclides in thirty-five site wells, as indicated in Table 5.1. Analysis methods for each radiological analyte are defined in Table 5.2.

The Site contains known radiological waste burial areas. Tritium and carbon-14 have been consistently reported in wells adjacent to these locations (for example, UCD1-13, UCD2-14). Levels of these radionuclides are being closely monitored in the groundwater as described in Section 4.3. Quarterly monitoring of these locations and other site wells also includes analytical testing for some specific radionuclides that are known to have been buried on site, as well as measurements of gross alpha, gross beta and gamma spectral analysis in order to detect the presence of other radionuclides.

Radionuclides present in groundwater that produce gamma emissions are monitored through the gamma spectral analysis method. Uranium-238 and thorium-232 are naturally occurring radionuclides found in most soils, including soils at the Site. Uranium-238 decays into daughter products such as thorium-234, radium-226, radon-222, bismuth-214, and lead-210. Thorium-232 progeny include radium-228, radon-220, lead-212, bismuth-212, and lead-208. Because these parent radionuclides are found in soils and groundwater, their progeny are also expected to be found in soil and groundwater analysis results. Several of these radionuclides have been reported sporadically at low levels by gamma spectral analysis in various site wells, but significant trends have not been observed.

Most Site wells were tested in 1997 for a variety of radiological constituents during one or more sampling quarters. A number of radionuclides that are monitored were not reported above minimum detectable activities (MDAs) in any groundwater samples during 1997: actinium-228, cesium-137, cobalt-60, lead-210, lead-212, potasium-40, strontium-89/90, thorium-234, and uranium-235 (gamma). Radiological detections and trends for each analyte are discussed below for the 1997 groundwater sample results.

- Americium-241 was reported slightly above the MDA in six wells; UCD1-21, UCD1-25, UCD1-34, UCD2-26, and UCD2-35. Reported results ranged from 0.016 to 0.044 pCi/L. All of these wells had at least one other sample in 1997 with non-detect results for americium-241. No specific trends are observable at this time.

- Bismuth-212 was reported near the MDA in two wells--UCD1-12 and UCD1-13. However, three other samples from each of these wells were reported as non-detect. Therefore, no specific trends are defined.

- Bismuth-214 was reported above the MDA in eighteen site wells at levels below or near the amount reported in the background well, UCD2-17.

- Carbon-14 was reported above the MDA in each 1997 sample collected from four site wells. The highest levels are consistently reported in UCD1-13, ranging from 814 to 1800 pCi/L. UCD2-14 reported levels were from 375 to 1090 pCi/L. Both of these wells show seasonal fluctuations for this analyte, with winter quarter normally the lowest result of the year. UCD1-12 and UCD1-23 also had consistent detections reported for carbon-14, at approximately 300 pCi/L. During 1997, carbon-14 was also reported at lower levels at least once in UCD1-20, UCD1-21, UCD1-25, UCD1-34, UCD2-07, UCD2-26 and UCD2-27Z3. For additional information and graphical representation of carbon-14 trends in site groundwater, see Section 4.3 of this report.

- Gross alpha and gross beta were tested in every site well during 1997, with only three values reported above the MDA for each of these analytes. Gross alpha was reported in three samples at levels between 3 and 8 pCi/L. Gross beta was reported in three samples at levels between 7 and 43 pCi/L. None of these wells have indicated significant trends for these analytes.

- Lead-214 was reported above the MDA in fifteen site wells at levels below the amount reported in background well UCD2-17.

- Plutonium-241 was reported above the MDA at 4.7±2.9 pCi/L in the winter sample from UCD1-27Z3 but was not reported in the spring sample from this well.

- Radium-226 was reported above the MDA in samples from eight wells at levels below 1 pCi/L. The highest result was from a UCD1-12 duplicate sample at 0.73±0.35 pCi/L (the original sample was below the MDA). There were also two other reported detections from UCD1-12 in 1997. A review of the last three years data indicated that radium-226 has been reported in about 50% of the samples from UCD1-12. Trends will continue to be monitored in this well, although at this point the results are not reported above the background well levels. Radium-226 was also reported in several samples from UCD1/2-27 at close to background levels.

- Thallium-208 was reported above the MDA in one sample from UCD2-07 at 3.6±2.7 pCi/L (MDA of 3.5 pCi/L). A review of past data indicates that no trends are evident for this analyte in this well.

- Tritium was reported above MDAs in eight site wells during 1997. The highest values were reported in UCD1-13, ranging from 18,300±1,200 pCi/L to 19,400±1,200 pCi/L. UCD2-14 results were reported from 4,390±470 pCi/L to 9,540±700 pCi/L. In other site wells, tritium was reported in no more than one quarter, with results all below 500 pCi/L. One exception was a detection in UCD2-27 that was 1,070±210 pCi/L--however, tritium will be monitored monthly for the first year in wells near the extraction system to verify that reinjection requirements are met. Section 4.3 of this annual report provides additional information and graphical representations of tritium in site groundwater.

5.2.3.6 General Chemicals and Field Parameters

A summary of general chemical and field parameter results reported in groundwater samples is presented in Table 5.4 These results are reviewed below.

- Alkalinity, total (as CaCO3) was monitored only in the newer wells during 1997, in accordance with the schedule in the Water Monitoring Plan for the first two quarters, and the FSP during the second two quarters of the year. Results tend to be fairly consistent for each well over time, with some seasonal fluctuation. Wells in HSU-1 (except for the levee well, which is influenced by Putah Creek recharge) tend to have higher values reported for alkalinity than wells in HSU-2. In 1997, the range for HSU-1 was 356 mg/L (UCD1-34) to 745 mg/L (UCD1-28) and for HSU-2, it was 311 mg/L (UCD2-37) to 473 mg/L (UCD2-32). Only the fall quarter results are available for HSU-4, but levels are generally similar to those reported in HSU-2 (331-346 mg/L).

- Ammonia-nitrogen was reported below the 0.05 mg/L detection limit in all but five samples during 1997. Four of these samples were from UCD1/2-27, where it was highest in Zone 4, at 0.206 mg/L. One other detection was from UCD2-42 at 0.138 mg/L.

- Chemical Oxygen Demand was monitored for the first two quarters of 1997 in several of the newer wells. All samples were reported below detection limits except for samples from UCD1-27Z3, which ranged from18.9-21.8 mg/L. This constituent was removed from the analyte list prepared for the FSP in mid-1997.

- Chloride concentrations have remained consistent within each well over time, with relatively little fluctuation. 1997 results reported for chloride were from newer wells only, and were within historical background levels that are generally higher for HSU-1 (except for levee wells). Reported results ranged from 17.5 mg/L to 65 mg/L.

- Electrical Conductivity is one of the field measurements taken prior to collection of each sample set. Successive conductivity readings that are relatively stable help to verify that the well purge process has been completed. In general, conductivity results measured are higher for HSU-1 wells than for HSU-2 and HSU-4 wells. Those wells immediately downgradient of waste burial areas tend to have higher than average conductivity, while wells on the levee tend to have lower results, due to the influence of Putah Creek. Conductivity readings tend to be higher in summer, when there is reduced recharge and less dilution of the groundwater constituents.

- Reported concentrations of nitrate as nitrogen show a great deal of variability across the Site. Section 4.4 provides additional details concerning nitrate concentrations over time in site wells. During 1997, nitrate as nitrogen was one of the most frequently sampled constituents, with 84 samples and six duplicates collected. Highest concentrations reported were found in UCD1-24 (92.1 mg/L), which has shown increasing levels for several years. Concentrations reported reported are also increasing in UCD1-10 (1997 results were up to 47.3 mg/L). UCD1-12 levels reported are also high for nitrate, although 1997 results (50-59 mg/L) were similar to results for the previous two years. Graphs showing trends over time in these wells are provided in Figures 4.44 through 4.46. Except for the levee wells that are reported relatively low in nitrate, concentrations were highest in HSU-1 (3.5- 92.1 mg/L) compared to HSU-2 (1.3-20.3 mg/L). Nitrate levels and/or trends in most wells have been relatively consistent over time. Higher nitrate concentrations reported in UCD2-14 (7-20 mg/L) may be due to the fact that this well has been completed partially in HSU-1.

- Oxidation-reduction Potential (Eh) is taken as a field parameter prior to the collection of each groundwater sample. Measurements of Eh are taken in millivolts. Along with measurements of electrical conductivity, temperature, and pH, the stability of this measurement (taken in at least three successive readings) can help determine whether the well has been sufficiently purged before the sample is taken. 1997 results across the Site generally ranged between 50-250 mV, with the majority of results between 80-150 mV. Wells located closest to Putah Creek frequently have lower readings. No other clearly defined trends were noted in 1997 data, except that for most wells, winter Eh readings tend to be higher than those recorded in summer.

- pH is another field measurement that is taken at the end of the purge process, prior to collection of samples for each well. During 1997, pH levels in site wells remained fairly consistent. The full range of results was between 6.4 and 8.5. The vast majority of measurements for all wells (82%) were between 7.0 and 7.5. The greatest drop over the year was in a well pair located in the southwest corner--pH levels in UCD1-4 decreased from 8.2 in winter to 6.4 in fall and UCD2-15 decreased from 8.5 in winter to 6.8 in fall. This is similar to the decrease in pH levels in Putah Creek, although this decrease was not observed for data collected from the well pair on the levee (UCD1-34 & UCD2-35). No other trends were apparent in 1997 results for any site location or HSU.

- Phosphorus, total (as P) was reported at levels significantly below the contract required quantitation limit of 1 mg/L in all samples. Historically, results in most site wells are frequently reported below the CRQL, and are not significantly different than background. The 1997 reported results ranged from 0.042 mg/L in UCD1-27Z3 to 0.151 mg/L in UCD2-26. In general, the 1997 results reported for most wells were slightly lower than the 1996 results. This constituent was removed from the analyte list prepared for the FSP in mid-1997. Past reported results did not indicate this analyte was a constituent of concern or significant to site groundwater chemistry.

- Sulfate was monitored only in newer wells during 1997. All wells monitored in 1997 were close to background levels, with the exception of one result of 72 mg/L in UCD1-25 and a result of 49.4 mg/L in UCD2-32.

- Temperature is taken prior to the collection of groundwater samples, and stable temperature readings help to verify that the purge process has been completed. 1997 temperature results indicated relative consistency over the year, with results within each well fluctuating only about one degree centigrade over the four quarters. The range for the year was between 17-21 °C, with most wells remaining between 18-20 °C all year long.

- Total Dissolved Solids (TDS) is monitored in all site wells at least annually. 1997 levels were similar to results from the two previous years. HSU-1 wells tend to have higher reported TDS, and several wells had results greater than 1000 mg/L—UCD1-10 (1360-1550 mg/L), UCD1-12 (1320-1420 mg/L), UCD1-13 (1020-1040 mg/L), UCD1-21 (1020 mg/L), UCD1-24 (1060 mg/L), and UCD1-28 (1010 mg/L). Only one HSU-2 well had reported results over 500mg/L—UCD2-14 (565-868 mg/L).

- Total Kjedhal Nitrogen (TKN) was monitored in the newer wells during 1997, in accordance with the schedule in the Water Monitoring Plan for the first two quarters, and the FSP during the second two quarters of the year. For the wells in which TKN was monitored during the first two quarters, there was a significant increase reported between winter and spring levels. However, sufficient historical data is not available to determine whether this is a normal seasonal fluctuation. All wells monitored in the fall had reported results that were close to or below the detection limit of 0.5 mg/L.

- Total Organic Carbon (TOC) was added to the analyte list in 1997 and was sampled in every site well at least once during the year. Levels reported tended to be slightly higher in the winter quarter for nearly every well in which TOC was sampled more than once, except in UCD1-10, where it remained high all year. In HSU-1, results reported were above background in UCD1-10 (2.37-2.81 mg/L), UCD1-12 (2.31-3 mg/L), and UCD1-27Z3 (7.57-7.7 mg/L). In HSU-2, results were reported above background in UCD2-14 (0.98-1.7 mg/L), UCD2-27 Zone 4 to Zone 7 (1.01-4.2 mg/L), and in all the wells installed in 1997.

- Turbidity is a field measurement taken prior to the collection of groundwater samples, and stable readings help to verify that the purge process has been successfully completed. In general, turbidity levels vary with the seasons and most wells show an increase in summer, when water levels are lowest. Turbidity readings for most the site wells are generally below 2 ntu and are not significantly different between the first and second HSUs.

5.3 Surface Water Monitoring

The purpose of the surface water monitoring program is to evaluate whether site constituents impact Putah Creek, which lies adjacent to the southern boundary of the Site. This section presents a description of the 1997 surface water monitoring program and summarizes the 1997 monitoring results.

5.3.1 Overview of Program

Quarterly surface water monitoring began at LEHR in the fall of 1990 and is presently conducted at three locations along the north bank of the creek. Water samples have been collected quarterly in conjunction with the groundwater sampling. The three sampling sites are PCU (Putah Creek Upstream), located upstream of the Site; PCD (Putah Creek Downstream) located downstream of the Site; and STPO (Sewage Treatment Plant Outfall), located at the outfall from the UC Davis waste water treatment plant at a point between PCU and PCD, just upstream from the Site. A reading of a stream gage on Putah Creek is recorded at the time samples are collected. Figure 5.1 shows the sampling locations. Table 5.1 lists the chemical analyses which were performed on surface water samples in 1997. A complete description of the current surface water monitoring program can be found in the 1997 Revised FSP.

5.3.2 Changes to the program in 1997

UC Davis took over the surface water sampling program from the DOE in 1997 and began field operations with the winter sampling round. Both the winter and spring sampling rounds were conducted by UC Davis in accordance with the DOE's Water Monitoring Plan (1996). Summer and fall rounds, however, were conducted according to the University's FSP.

During the development of the FSP, data trends were analyzed for each of the three sampling locations along Putah Creek. This resulted in both additions and deletions to the analytical schedule. Additions to the program included analyses for hardness, cations and anions, alkalinity, and total organic carbon. A lack of significant detections for some radiological constituents during five years of sampling supported the elimination of most radiological analytes from the sampling schedule for the upstream (PCU) and the wastewater treatment plant outfall (STPO) locations. All radiological analytes are still monitored in the

downstream location in order to verify that historical trends are maintained. The semivolatile analysis was also dropped from all surface water locations in 1997 due to significant historical data with few positive detections. These changes to the program are reflected in Table 5.1.

5.3.3 Summary of 1997 Surface Water Monitoring Results

This section summarizes the analytical results reported for the 1997 surface water monitoring program. Significant results are discussed within each category of analytes and general trends are covered as they apply to the data. In this annual report, sample results are organized into summary tables of reported constituents and complete data tables. Table 5.3 presents a statistical review of constituents that were reported in surface water samples collected in 1997. Table 5.5 presents a complete summary of 1997 surface water detections with results presented by sample location and sample date. Appendix A presents results for all surface water samples collected—both detects and non-detects. Surface water results for selected parameters are also presented in a series of graphs that illustrate the concentration of various parameters in specific wells over time. These graphs are provided in Appendix B.

5.3.3.1 Volatile Organic Compounds

Twelve VOC samples and four duplicates were collected from the three locations along Putah Creek. Samples were analyzed for the list of target compounds in accordance with the CLP method for low concentration organics (OLC 02.0). Each of the six VOCs reported in surface water samples is discussed below.

Low levels of one or more of the trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) were reported in STPO each quarter and in the downstream location PCD in spring, summer and/or fall. The use of chlorine disinfectants in the UC Davis wastewater treatment plant is the apparent source of these constituents. Effluent from the wastewater goes through a dechlorination process that reduces the trihalomethane concentrations far below the 100 μg/L residual chlorine discharge requirement, as verified by the sampling results.

- Acetone was reported at least twice in all three surface water locations during 1997. During the data validation process, all acetone results were qualified as estimated, either due to laboratory calibration concerns (summer data), or because they were below the CLP contract required detection limit (5 μg/L). Highest reported detections were in summer, when the PCD result was 6.3 μg/L and the STPO result was 6.9 μg/L. This compound was also reported twice in PCU--during summer (1.1 μg/L), and in the fall duplicate (1.5 μg/L).

- Bromodichloromethane was reported in both PCD (spring and summer) and STPO (all four quarters). Detections in PCD were below 1 μg/L. Spring and summer detections for STPO were highest at 19 μg/L.

- Bromoform was reported during spring and summer in STPO at 2.7-2.9 μg/L.

- Chloroform was reported during three quarters in PCD at levels below 1 μg/L, and all four quarters in STPO at levels between 4-14 μg/L.

- Dibromochloromethane was reported during spring and summer in PCD with results below 1 μg/L, and in STPO with results between 0.4-18 μg/L.

- Methylene chloride was reported only in STPO during spring and fall quarters with results of 0.5 and 1 μg/L.

5.3.3.2 Semi-Volatile Organic Compounds

Six SVOC samples and two duplicates were collected during the first two quarters of 1997. These samples were analyzed for the list of target compounds in accordance with the CLP Method for Low/Medium Concentration Organics (OLM 01.8). On the basis of the significant amount of historical data collected since fall of 1990, it was determined that continued monitoring ofSVOCs in surface water would not provide additional significant information relevant to the LEHR/SCDS Project. Therefore, SVOCs were dropped from the analytical list in mid-year when the Draft FSP was published.

Only one SVOC was reported in surface water samples during the first two quarters of monitoring. The compound bis(2-ethylhexyl)phthalate was reported in STPO in the winter quarter sample and duplicate. The results for both sample (0.70 μg/L) and duplicate (0.56 μg/L) were qualified as estimated (J), since they were below the contract required detection limit of 10 μg/L.

5.3.3.3 Pesticides and PCBs

A summary of organochlorine pesticides and polychlorinated biphenyls (PCBs) reported in 1997 surface water samples is presented in Table 5.5. Twelve pesticide and PCB samples and four duplicates were collected from three surface water locations. Fall samples were collected and sent to the laboratory, but due to concerns about the analytical process that are discussed in Section 6, the resulting data was not accepted by UC Davis. With the exception of the fall data, samples were analyzed for the list of target compounds in accordance with the CLP Method for Low/Medium Concentration Organics (OLM 01.8M).

Five pesticide compounds were reported in 1997 surface water samples; 4,4'-DDD, 4,4'-DDT, aldrin, alpha chlordane, and heptachlor epoxide. Except for one result for 4,4'-DDD (0.027 μg/L) in STPO, all results reported were below CLP/contract required quantitation limits, and were qualified as estimated (J). At least one pesticide was reported at low levels in each of the surface water locations, but no significant trends were evident for any particular location or compound. No PCBs were reported in 1997 surface water samples.

5.3.3.4 Metals

Twelve metals samples and four duplicates were collected from the three surface water locations. The analysis included 19 metals analyzed in accordance with the CLP Method for Low/Medium

Concentration Inorganics (ILM 4.0). Additional metals analyses that are reported in this section include the cations—calcium, magnesium, potassium and sodium by EPA 6010; hexavalent chromium by EPA 7196; and mercury by EPA 7470A. The metals beryllium, cadmium, lead, mercury, and thallium were not reported in any 1997 surface water samples. Antimony and cobalt were each reported in one sample at approximately 1 μg/L (below contract required detection limits). Results for remaining metals are discussed below.

- Arsenic was reported during the winter quarter at all three surface water locations. It was also found in STPO during summer and fall. Winter results for STPO were slightly higher (4.9 and 5.1 μg/L in sample and duplicate) than the 3 μg/L reported in both the upstream and downstream locations.

- Barium was reported in every surface water sample during 1997. Levels ranged between 38 μg/L (STPO, winter) and 108 μg/L (PCD, fall), although the upstream location PCU had the highest average results, and was highest in spring (101 μg/L) and summer (84.2 μg/L).

- Calcium levels reported in surface water varied between 18,800-33,200 μg/L, both the highest and lowest values were reported in PCU. No significant differences were noted between 1996 and 1997 data.

- Total chromium was reported in most surface water samples at levels between 2.9 μg/L (STPO, spring) and 7.9 μg/L (PCU, winter). Detection limits were rejected in the summer samples due to laboratory preparation blank contamination. The overall range is consistent with results presented in 1996.

- Hexavalent chromium levels reported for surface water were below detection limits in winter and summer quarters for all three locations. Fall results were 8 μg/L in STPO and 4 μg/L in both PCD and PCU. The spring result reported for STPO was 12 μg/L, and results for PCD and PCU were 30-33 μg/L. These results were unusual for two reasons: in the two previous years of sampling, no surface water result for hexavalent chromium had exceeded 4 μg/L, and total chromium results for the same spring sample ranged from 2.9 μg/L in STPO to 7.9 in PCU. Since the total chromium results reported were so much lower than the hexavalent chromium, it is not certain that the spring hexavalent chromium results are representative. However, there was no indication of laboratory error during the data validation process.

- Copper levels reported in surface water samples ranged from <1 μg/L in several PCD and PCD samples to 21.6 μg/L in the fall PCD sample. Except for the single high result from PCD, values are not significantly different from last year.

- Iron was reported only in samples from STPO. The range of results at this location was 28-89 μg/L. The 1997 results are different from historical trends that have shown significantly higher iron levels at all three locations.

- Magnesium levels reported in surface water samples ranged from 24,800 μg/L (PCU, winter) to 41,800 (PCU, spring). No significant difference is evident between the 1996 and 1997 results.

- Manganese results for 1997 were reported below the contract required detection limit of 15 μg/L. In the reported data, there does not appear to be a significant difference in results between the three

locations, except that results for STPO tend to be slightly lower than those for the upstream or downstream locations. This same trend occurred in three of four quarters during 1996.

- Molybdenum was reported in STPO during the first three quarters of 1997 at levels between 5.6 and 11.8 µg/L. It was also reported in the spring duplicate from PCD at 1.1 µg/L. The contract required detection limit is 10.0 µg/L. Similar levels were reported in 1996, when molybdenum was more consistently reported in all three locations.

- Nickel results reported in surface water for 1997 were all significantly below the contract required detection limit of 20 µg/L. It was reported in all three locations at similar levels (1.8-5.8 µg/L) during both 1996 and 1997.

- Potassium was consistently reported in all three surface water locations during 1997, except for the summer samples from both PCD and PCU. All samples except those from STPO were reported below the contract required detection limit of 2,000 µg/L. STPO results reported ranged between 7,550 in summer and 12,300 in fall.

- Selenium was reported only in STPO in winter and in all three locations during spring quarter sampling. Levels reported ranged between 3.6 µg/L (STPO winter) and 7.0 µg/L (STPO spring). The same concentration range was reported in last year's results, although it was then reported only in STPO.

- Silver was reported at levels below the contract required detection limits during the first two quarters in STPO (1.1-2.9 µg/l) and PCU (1.9 µg/L). No detections were reported for silver in 1996.

- Sodium was reported above detection limits in all 1997 surface water samples. Highest concentrations were found in STPO, ranging from 141,000 to 196,000 µg/L. In general, concentrations reported in Putah Creek have been relatively consistent over the past few years.

- Vanadium was reported in all three surface water locations in summer and in STPO during all four sampling quarters. Results reported ranged from 4.5 µg/L in PCD during summer to 19.3 µg/L in STPO during the spring quarter. Results reported from both PCD and PCU show no increase over concentrations found in the previous two years, although values reported for STPO are slightly higher in 1997 than those reported for 1996.

- Zinc concentrations reported tend to be much higher in STPO than in either the upstream or downstream locations. The highest 1997 result was 58.8 µg/L in the STPO summer sample. In the fall quarter sample, results were reported as non-detect for all three locations. Except for the summer STPO result, zinc results in 1997 were slightly lower than results from the two previous years.

5.3.3.5 Radionuclides

A total of twelve samples and four duplicates were collected (for various radionuclide analyses) from three surface water locations. Seven radionuclides were reported at very low levels in surface water samples during 1997; results are discussed below. The schedule for collection of radiological samples from two of the three Putah Creek locations was reduced in 1997 for some analytes following a review of historical data that indicated few positive detections and no clear trends. The full suite of radiological analytes were collected quarterly from the PCD location for 1997, downstream of the Site.

- Americium-241 was reported in the spring sample from PCD at 0.026 ± 0.025 pCi/L. This analyte has been reported sporadically in surface water samples at similar levels (below 0.05 pCi/L) over the past few years.

- Bismuth-214 was reported by gamma spectral analysis in two surface water samples in 1997. During the winter sampling, it was reported in PCU at 17.1 ± 7.5 pCi/L and during the spring quarter it was reported in PCD at 23 ± 14 pCi/L. Bismuth-214 is sporadically reported in surface water samples, but no clear trends are apparent in the data. Bismuth-214 was not reported in any surface water sample during 1996.

- Gross beta activity was reported at low levels (10-20 pCi/L) in three samples from STPO in winter and spring 1997. During 1997, these results reported are less than results for the two previous years, and there were fewer positive detections.

- Lead-212 was reported by gamma spectral analysis (at 48 ± 14 pCi/L) in the spring duplicate sample from PCD. Results for the primary sample, taken at the same time, were below the MDA (–8.6± 5.8 pCi/L).

- Lead-214 was reported through the gamma spectral analysis in PCU during the winter quarter. Results for this sample were 10.4 ± 6.4 pCi/L.

- Radium-226 was reported in one sample from PCU at 0.19 ± 0.18 pCi/L. This detection was found during winter quarter, but no further detections were reported in any surface water sample during the rest of 1997.

- Tritium was reported in both the sample and duplicate taken from PCD during the spring sampling round. Results reported were 790 ± 230 pCi/L in the primary sample and 710 ± 220 pCi/L in the duplicate. Tritium was not reported in any other 1997 surface water sample.

5.3.3.6 General Chemicals, Field Parameters, and Survival Bioassay Results

A summary of general chemical results reported in surface water samples is presented in Table 5.5. These results are reviewed below.

- Alkalinity, Total as (CaCO3) was monitored quarterly at all three locations beginning in summer. Results reported were very similar for both the upstream and downstream monitoring locations (187-206 mg/L), and slightly higher in STPO (216-256 mg/L).

- Chloride concentrations reported in the creek near the Site are highest in STPO. Levels in STPO were over 200 mg/L, compared to 23-25 mg/L in PCD and 13.7-17.9 in PCU.

- Electrical Conductivity is a field measurement taken prior to collection of each sample. The results indicate that STPO is highest in conductivity (926-1120 μS/cm), and that PCD (253-555 μS/cm) is slightly higher than PCU (235-518 μS/cm).

- Hardness was monitored in all three locations during spring quarter only. Results for STPO were lowest (208,000 mg/L), and hardness levels in PCU (255,000 mg/L) were just slightly higher than PCD (249,000 mg/L).

- Nitrate as nitrogen levels are monitored in all surface water locations each quarter. Results reported for all three locations in 1997 were similar to or slightly lower than concentrations reported in 1996. The range for 1997 was from 0.35 mg/L in PCU (winter) to 9.55 mg/L in STPO (fall).

- pH was fairly consistent between the upstream and downstream sample locations in 1997 with a usual difference of about 0.2 pH units. The creek gradually became slightly more acidic as the year progressed. PCU had a pH of 8.13 in winter, which dropped to 6.43 by the fall sampling round. STPO results for pH ranged from 7.34 in spring to 6.64 in fall.

- Redox Potential (Eh) results is a field measurement reported in millivolts. Results did not show a significant pattern since no particular location was consistently higher than the others. In general, winter results were higher for all locations.

- Sulfate was added to the analyte list in the summer quarter. As with chloride, STPO is reported significantly higher in sulfate (57-76 mg/L) compared to the other sampling locations (20-29 mg/L). Results for PCD were slightly greater (by 2-4 mg/L) than PCU.

- Survival Bioassay was added to the analyte list in the spring sampling round. Samples were collected at all three locations during spring, summer, and fall. Survival was 100% for all samples.

- Temperature results were consistent (within 1.5° C) between the upstream and downstream locations. The temperature range over the year was from 11° C in winter to 23° C in summer. STPO was warmer than the other locations, with a range of 20.8-26.8° C.

- Total Dissolved Solids samples were collected each quarter from all surface water locations. Results reported for 1997 indicated elevated levels in STPO compared to the other surface water locations. Levels for all three locations were lowest in winter and highest in summer. Results in STPO ranged from 561 to 700 mg/L. PCD (170-305 mg/L) was slightly higher than PCU (146-280 mg/L).

- Total Organic Carbon samples were collected each quarter in all three locations. Levels reported were highest in STPO (6.06-9.53 mg/L). Only slight differences were reported in the results for PCD and PCU--both averaged just over 3 mg/L.

- Turbidity readings were highest in PCU (42.0 ntu) and PCD (36.5 ntu) during winter. Results for other seasons ranged between 11-24 ntu for these locations. Levels in STPO were generally consistent, ranging between 6-9 ntu.

5.4 Storm Water Monitoring

The purpose of the storm water monitoring program is to evaluate whether site constituents are leaving the Site via runoff and impacting Putah Creek, which lies adjacent to the southern boundary of the Site. This section presents a description of the 1997 storm water monitoring program and summarizes the 1997 monitoring results along with the fall quarter 1996 monitoring results.

5.4.1 Overview of Program

Monitoring of storm water runoff is conducted twice during the rainy season. In 1997 the first sampling occurred on May 23, 1997, which was near the end of the 1996-1997 rainy season. The intent of this sampling event is to monitor storm water runoff that represents the height of the rainy season. However,

in 1997, there was little rain and not sufficient runoff to collect samples from mid-January through late May. The second sampling is intended to represent the first storm event of the rainy season that causes enough runoff to collect samples at each monitoring location. The second storm water sampling occurred on November 14, 1997 for locations LF-1 and LS-1, but there was insufficient water to sample location LF-3, so it was not sampled until November 26, 1997. This second sampling event monitored runoff that might have carried material that accumulated on the ground surface during the dry summer months.

Fall 1996 storm water monitoring for the landfill locations is presented in this annual report since these data were not available for inclusion in the 1996 Annual Water Monitoring Report (Weiss Associates, 1997). The data for the Lift Station (LS-1) ampling event, collected in October 1996, was reported in the 1996 annual report. The second collection event in fall 1996 occurred on December 10, 1996, when storm water samples were collected from locations SD-1 and LS-1. Fall 1996 and spring 1997 monitoring programs were in accordance with the Water Monitoring Plan (PNL, 1994, revised in 1996) and the fall 1997 monitoring program was in accordance with the Revised FSP (Dames & Moore, 1997a).

5.4.2 Changes to the Program in 1997

The revised FSP resulted in several analytes being eliminated from the monitoring program. These included: SVOCs, total chromium, turbidity, Am-241, and Pu-241. Several analytes were added to the revised FSP and included the following: hardness, alkalinity, cations, anions, total organic carbon and aquatic toxicity.

The storm water program includes sampling from three monitoring locations at the Site. These locations include:

- LS-1 at the lift station located along Old Davis Road at the southwest corner of the Site;
- LF-1 at the discharge pipe located south of the "X" buildings (south of the eastern portion of Landfill Unit No. 1); and
- LF-3 at the discharge pipe of the main north-south drainage ditch at the southeast corner of the Site, which is southeast of Landfill Unit No. 3 (originally labeled DD-1 in the 1996 revision of the Water Monitoring Plan).

Sample location LS-1 monitors storm water runoff from the west and southwest portions of the Site and includes those areas being investigated and remediated by DOE. Locations LF-1 and LF-3 monitor areas of the Site that are under investigation and remediation by UC Davis.

The storm water runoff monitoring program began at the Site in 1994. Samples were collected twice during the rainy season from 1994 through the spring of 1996 at two locations, SD-1 a storm drain located west of the western dog pens and LS-1 the lift station located along Old Davis Road. Two storm water monitoring locations were added during the winter of 1996-1997. These included LF-1 a discharge pipe

located south of the "X" buildings (south of Landfill Unit No. 1) and LF-3 a discharge pipe of the main north-south drainage ditch at the southwest corner of the Site (southeast of Landfill Unit No. 3). Location SD-1 is no longer sampled as it was determined that runoff at SD-1 joins other drains along the western side of the dog pens and flows to the lift station (LS-1).

5.4.3 Summary of 1997 Storm Water Monitoring Results

This section summarizes the analytical results reported for the 1997 and fall 1996 storm water monitoring program. Significant results are discussed within each category of analytes, and general trends are covered as they apply to the data. In this annual report, sample results are organized into summary tables of reported constituents and complete data tables. Table 5.3 presents a statistical review of constituents that were reported in storm water samples collected in 1997 and fall 1996. Table 5.6 presents a complete summary of 1997 and fall 1996 reported detections with results presented by sample location and sample date. Appendix A presents results for all storm water samples collected, both detects and non-detects. Storm water results for selected parameters are also presented in a series of graphs that illustrate the concentration of various parameters in specific wells over time. These graphs are provided in Appendix B.

5.4.3.1 Volatile Organic Compounds

VOCs reported in storm water during 1997 and fall 1996 are summarized in Table 5.6. Fall 1997 VOC data for location LS-1 was not provided for this report. Each of the four VOCs reported in storm water samples is discussed below.

- Acetone was reported in three storm water samples. The highest detection was reported in spring when the LS-1 result was 10 μg/L and the corresponding duplicate sample reported 11 μg/L. The spring LF-3 result reported was 8.9 μg/L. Acetone was also reported in fall when the LF-1 result was 5.5 μg/L.

- 2-butanone was reported in both spring and fall at location LF-3 and was 3.3 μg/L and 1.0 μg/L, respectively.

- Toluene was reported only in the spring sample at location LS-1 and was reported below the contract required detection limit at an estimated value of 0.3 μg/L.

- Xylenes were reported only in spring at location LS-1 and was reported below the contract required detection limit at an estimated value of 0.2 μg/L.

Acetone and 2-butanone results for fall 1996 have been qualified as rejected (R) due to low relative response factors related to instrument calibration. Methylene chloride results for fall 1996 were qualified as anomalous (U) due to associated laboratory blank contamination. In spring 1997 data, acetone in storm water sample LF-3 has been qualified as estimated (J) due to a high percent relative standard deviation in the initial calibration. In fall 1997 data, acetone results in samples from LF-3 were qualified as anomalous (U) due to blank contamination.

5.4.3.2 Semi-Volatile Organic Compounds

No SVOCs were reported in storm water samples in 1997. One compound, bis(2-ethylhexyl)phthalate) was reported at 1.8 μg/L (below the CRDL of 10 μg/L) in the December 1996 sample from SD-1.

5.4.3.3 Pesticides and PCB's

A summary of organochlorine pesticides and polychlorinated biphenyls (PCBs) reported in 1997 storm water samples is presented in Table 5.6. Two pesticide compounds from were reported in 1997 storm water samples, alpha-chlordane and gamma-chlordane. These compounds were reported from location LS-1 in the spring and were identified in both the primary and duplicate samples. No other pesticides or PCBs were reported in the spring or fall samples from the storm water monitoring locations.

The concentration of alpha-chlordane in the spring 1997 primary and duplicate samples was 0.0078 μg/L and 0.017 μg/L, respectively. The concentration of gamma-chlordane was 0.0097 μg/L and 0.013 μg/L in the primary and duplicate samples, respectively.

Due to laboratory oversight, the pesticides/PCBs analysis for fall 1997 was performed using EPA method 8080, rather than the specified method CLP OLM03.1 (Modified). Due to serious deficiencies in meeting data quality objectives, the pesticide results were deemed unreliable (R).

5.4.3.4 Metals

A summary of metals reported in fall 1996 and 1997 storm water samples is presented in Table 5.6. Calcium, magnesium, potassium and sodium were reported in all storm water locations monitored in fall 1996 and during 1997. Storm water samples for fall 1996 and spring 1997 were not filtered prior to field preservation with nitric acid, resulting in the dissolution of suspended material and increased concentrations of some metals.

- Antimony was not reported from locations SD-1 and LS-1 in fall 1996. This metal was reported at LF-1 in fall 1997 at 4.2 μg/L and LF-3 in spring 1997 at 1.1 μg/L. At location LS-1, antimony was reported both in the spring 1997 primary and duplicate samples, at 25.6 μg/L to 29.0 μg/L, respectively. The fall 1997 result at location LS-1 was 4.4 μg/L.

- Arsenic was reported from locations SD-1 and LS-1 in fall 1996 at 6.9 μg/L and 15.6 μg/L, respectively. At location LF-3, arsenic was reported both in the fall 1997 at 3.1 μg/L in both the primary and duplicate samples. Arsenic was reported at location LS-1 in spring 1997 in both the primary and duplicate samples, at 6.0 μg/L and 8.5 μg/L, respectively.

- Barium was reported in all samples for 1996 and 1997, with the exception of location LS-1 in fall 1997. Barium concentrations ranged from 9.7 μg/L to 161.0 μg/L.

- Chromium was reported from locations SD-1 and LS-1 in fall 1996 at 64.0 μg/L and 115.0 μg/L, respectively. At locations LF-3 in spring 1997, chromium was reported at 1.7 μg/L. All other

samples reported no detections of chromium. Hexavalent chromium was not reported in any of the samples.

- Cobalt was reported from locations SD-1 and LS-1 in fall 1996 at 16.4 µg/L and 25.8 µg/L, respectively. At location LS-1, cobalt was reported in both the primary and duplicate samples for spring 1997 at 1.3 µg/L and 1.4 µg/L, respectively. In the spring 1997 sample from location LF-3, cobalt was reported at 1.4 µg/L.

- Copper was reported from locations SD-1 and LS-1 in fall 1996, from locations LF-1 and LF-3 in spring and fall 1997, and from location LS-1 in fall 1997. The concentration of copper ranged from 3.5 µg/L to 74.0 µg/L. Cooper was also reported in the fall 1997 duplicate sample for location LF-3 at 15.6 µg/L. Copper was not reported at location LS-1 in spring 1997.

- Iron was reported from locations SD-1 and LS-1 in fall 1996 at 22,000 µg/L and 39,000 µg/L, respectively. Iron was reported only in the duplicate sample from location LF-3 at 910 µg/L and primary sample from LS-1 at 95.7 µg/L in fall 1997.

- One detection of selenium was reported from sample LF-3 in spring 1997 at 4.4 µg/L.

- Silver was reported in spring 1997 at LS-1 at 1.0 µg/L in the duplicate sample, but not in the primary sample at that location. Silver was also reported in fall 1997 at LS-1 at 1.0 µg/L.

- Vanadium was reported from locations SD-1 and LS-1 in fall 1996 at 41.9 µg/L and 73.5 µg/L respectively. The duplicate sample from LF-3 for fall 1997 reported a result of 4.5 µg/L, but vanadium was not reported in the primary sample from that location.

- Zinc was reported from locations SD-1 and LS-1 in fall 1996 at 236 µg/L and 183 µg/L respectively. This metal was also reported at 18.5 µg/L from LF-3 in spring 1997. Zinc was reported in both spring and fall 1997 from LS-1, and ranged from 43.1 to 95.6 µg/L.

- Lead was reported from locations SD-1 and LS-1 in fall 1996 at 23.5 µg/L and 12.4 µg/L, respectively. Lead was not reported from locations LF-1 or LF-3 in 1997. Lead was reported from LS-1 in spring and fall 1997 and ranged from 1.4 µg/L to 2.3 µg/L.

- Mercury was reported from SD-1 and LS-1 in fall 1996 at 0.20 µg/L and 0.79 µg/L, respectively. The only detection of mercury in 1997 was in spring samples from location LS-1 at 0.2 µg/L, in both the primary and duplicate samples.

- Nickel was reported in fall 1996 and during 1997 in all locations except LF-1 in fall 1997. Nickel concentrations ranged from 140 to 247 µg/L in fall 1996 and from 2.2 µg/L to 33.4 µg/L during 1997 at all three storm water locations.

- Molybdenum was reported at location LS-1 in fall 1996, and spring and fall 1997 at 4.9 µg/L, 1.1 µg/L, and 1.2 µg/L, respectively. It was also reported at location LF-3 in the spring 1997 sample at 1.0 µg/L. Molybdenum was not reported in the duplicate sample from spring 1997 at location LS-1.

- Manganese was reported at locations SD-1 and LS-1 in fall 1996 at 486.0 µg/L and 570.0 µg/L, respectively. Manganese was reported in 1997 from locations LS-1 and ranged in concentration from 11.4 µg/L to 67.2 µg/L. Manganese was also detected at LF-3 in spring 1997 at 69.7 µg/L.

5.4.3.5 Radionuclides

Radionuclides reported in storm water samples are summarized in Table 5.6. A radionuclide result is considered a positive detection when the result exceeds the minimum detectable activity (MDA) and the uncertainty for each radionuclide.

- Americium-241 was reported above the MDA at location SD-1 in fall 1996 and at LS-1 in spring 1997.

- Carbon-14 was reported at locations SD-1 and LS-1 in fall 1996 at levels slightly above the MDA.

- Gross alpha was reported above the MDA at location SD-1 in fall 1996.

- Gross beta was reported above the MDA at SD-1 and LS-1 in 1996. Detections were also observed at all three locations in 1997, including both the primary and duplicate samples.

- Radium-226 was reported above the MDA at location LS-1 in fall 1996. For the fall 1996 data, radium-226 was qualified as estimated (J) due to the presence of matrix interference. Detections slightly above the MDA were also reported at locations LF-3 in spring 1997 and LS-1 in fall 1997. Radium-226 was reported in the duplicate sample from location LF-3 in fall 1997, but was not reported in the primary sample. The fall 1997 radium result for LF-3 was qualified for bias due to precision problems in the field duplicate.

5.4.3.6 General Chemicals, Field Parameters, and Survival Bioassay Results

A summary of general chemicals results reported in storm water samples is presented in Table 5.6. These results are reviewed below.

- Alkalinity, Total as (CaCO3) was analyzed and reported results ranged in concentration from 9.8 mg/L at LF-1 in fall 1996 to 155 mg/L in spring 1997 at location LF-3.

- Ammonia-Nitrogen was analyzed and was reported in both the primary and duplicate samples from LS-1 in spring 1997, at 1.28 mg/L and 1.06 mg/L, respectively. There were no other detections reported.

- Chemical Oxygen Demand was analyzed and was reported in both the primary and duplicate samples from LS-1 in spring 1997, at 83.0 mg/L and 95.6 mg/L, respectively. There were no other detections reported.

- Chloride was monitored and reported results ranged from 2.18 mg/L to 88.6 mg/L at location LS-1 in 1997, 9.35 mg/L to 16.4 mg/L at location LF-3 in 1997, and was reported at location LF-1 at 1.12 mg/L in fall 1997.

- Hardness was reported at location LF-3 in 1997 and ranged from 54.6 mg/L to 158.0 mg/L. Hardness testing for fall 1997 was performed by Method SM2340 instead of EPA Method 130.2 prescribed in the QAPjP.

- Nitrate (as Nitrogen) was reported at locations SD-1 and LS-1 in fall 1996 at 0.42 mg/L and 2.0 mg/L, respectively. Nitrate was reported at location LF-1 in fall 1997 at 1.48 mg/L and location LF-3 in the spring 1997 at 0.645 mg/L. Nitrate was reported at location LS-1 in both the primary and duplicate samples for spring 1997 at 0.961 mg/L and 0.983 mg/L, respectively. In fall 1997, the nitrate concentration at LS-1 was reported as 0.254 mg/L.

- Oil and grease was reported only in the spring 1997 duplicate sample from location LS-1 at 1.2 mg/L. Oil and grease was not reported in the primary sample at this location, or in any other samples.

- Phosphate, Total (as P) was reported in spring 1997 at location LS-1 in both the primary and duplicate samples at 0.576 mg/L and 0.591 mg/L, respectively.

- Sulfate was not reported at locations SD-1 or LS-1 in fall 1996. Sulfate was reported at LF-3 in fall 1997 in both the primary and duplicate samples at 8.25 mg/L and 8.11 mg/L, respectively. At location LS-1, sulfate was reported in both the primary and duplicate samples in spring 1997 at 8.47 mg/L and 8.5 mg/L, respectively. Sulfate was also reported at locations LF-1 at 0.898 mg/L and LS-1 at 1.85 mg/kg in fall 1997.

- Total Dissolved Solids were analyzed and reported detections ranged from 36 mg/L to 350 mg/L.

- Total Kjeldahl Nitrogen was analyzed at location LS-1 in spring 1997 and was reported in both the primary and duplicate samples as 3.29 mg/L and 3.75 mg/L, respectively.

- Total Organic Carbon was reported in 1997 samples from all three storm water locations and ranged from 3.93 mg/L to 35.9 mg/L. In fall 1997 data, matrix interference was noted for TOC analysis and the results are considered estimated

- Survival bioassay was monitored at LF-3 and LS-1 in spring 1997 and was 100% at both sampling locations. Survival bioassay was monitored at LF-1 and LS-1 in fall 1997 and was reported as 95% and 100%, respectively. These results indicated no acute toxicity in the storm water samples.

5.5 Monitoring Data Quality Assurance

The quality assurance/quality control objective is to ensure that technical data generated during the monitoring program are accurate and representative, able to withstand scientific and legal scrutiny, and useful for evaluating site conditions and remedial alternatives. The criteria commonly used to specify QA/QC goals are precision, accuracy, representativeness, completeness, and comparability (PARCC). This section describes the procedures used to assess the quality of the field operations and the analytical data collected.

5.5.1. Field Quality Assurance

Field sampling was conducted in accordance with the guidelines and procedures in the Water Monitoring Plan (PNL, 1994b) for the winter and spring sampling rounds and the Revised FSP (Dames & Moore, 1997a) for the summer and fall sampling rounds. Additional information regarding field procedures,

sample custody, and equipment calibration procedures are contained in the Draft Quality Assurance Project Plan (Dames & Moore, 1997f). A complete discussion of the QA/QC program elements that are applicable to field sampling can be found in these documents.

Field sampling consisted of measuring and recording the parameters of pH, conductivity, temperature, turbidity, and oxidation-reduction potential of ground and surface water; and collecting, filtering, preserving and maintaining custody of water samples for subsequent shipment to the analytical laboratory. For field activities, precision, accuracy, completeness and comparability are assessed by evaluation of field procedures; the criteria of representativeness are contained in the overall program strategy, for example, well locations, timeliness of sampling, and the analyte list.

Precision in field sampling was established by duplicate sampling. Duplicate measurements were recorded for 100% of the field parameters listed above. Accuracy was verified by calibrating the field instruments with acceptable and known standards. Completeness in field sampling is the percentage of field parameters measured and water samples collected versus the number planned. Over 95% of required field parameters were measured and over 95% of planned water samples were collected during 1997. Comparability in field sampling was facilitated by adhering to the approved standard sampling procedures. Custody of the collected samples was ensured by adherence to procedures dictating proper chain of custody of samples. Samples not in the possession of the sample collectors were secured in a locked facility. No surveillances of field sampling operations were conducted in 1997.

5.5.2. Sample Shipment

Shipment of the collected samples to the analytical laboratory was performed in accordance with the guidelines and procedures in the Water Monitoring Plan (PNL, 1994b) for the winter and spring sampling rounds and the Revised FSP (Dames & Moore, 1997a) for the summer and fall sampling rounds. A complete discussion of the QA/QC program elements that are applicable to sample custody and shipment can be found in these documents and in the Draft Quality Assurance Project Plan (Dames & Moore, 1997f).

The security of the collected water samples was maintained at all times by the sampling personnel. Samples were in a locked facility when not directly under the control of the sampling personnel. Samples were given unique sample numbers corresponding to the locations where they were collected. All required information concerning sample identification, date and time collected, personnel, procedures followed, etc, were recorded on either the field sample summary form and/or the chain-of-custody.

Samples were packaged for shipment in accordance with approved procedures. Completed chain-of-custody forms were included in each sample shipping container as required and the containers sealed with security tape. Containers were in the custody of sampling personnel or in a locked facility until delivered to the courier's agents, at which time responsibility for the security of the samples was relinquished.

5.5.3 Laboratory Quality Control

Laboratory quality assurance and quality control procedures are described in detail in LAS Laboratories' *Quality Assurance Management Plan* (LAS, 1997). In general, routine maintenance and calibration is performed before an analytical run. A calibration check verification is then completed, and the difference between analyzed values and known standards is calculated. If any calibration check sample exceeds the control limit for the method, corrective actions are taken and the instrument is recalibrated. During the course of the analytical run, the analyst incorporates all applicable QC samples in accordance with method-specific SOPs. Following each QC sample analysis, the analyst performs necessary calculation to evaluate the results. If any QC sample falls outside the method-specific control limits, the problem is investigated and resolved and corrective action is performed. All information related to the analytical run is documented in the injection and analysis logbooks. All calculations related to QC sample analysis and the types and frequency of QC samples are described in detail in method specific SOPs for inorganic, organic, general chemical and radionuclide analyses.

5.5.4 Management and Validation of Data

Analytical reports for water samples collected in 1997 were received in both hard copy and electronic formats. The electronic data were entered into a database containing water monitoring results for the project. Analytical results were validated to ensure they met the data quality objectives and quality assurance criteria described in the QAPjP. Data were reviewed with respect to the PARCC parameters. Each data package from LAS was received in a format equivalent to that specified by the U.S. EPA Contract Laboratory Program (CLP).

After the data were received, approximately 10% of the data packages were reviewed in detail, based on the *U.S. Environmental Protection Agency National Functional Guidelines for Laboratory Data Review* (EPA, 1994a and 1994b). This level of validation consists of a detailed review of raw sample data, including verification of calculations for instrument calibration and quality control samples. The remaining 90% of the data were reviewed according to a limited checklist procedure based on the National Functional Guidelines criteria. This level of review includes an assessment of holding times, method blank performance, instrument calibration, precision of duplicate measurements and matrix-specific biases. Methods and validation criteria used for the detailed and limited validations are specified in detail in the QAPjP. Section 6 describes the data validation procedures and presents the validation results.

TABLE 5.1
MONITORING PROGRAM
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

Wells		Radiological Analytes									Chemical Analytes																Bioassay
		Tritium	C-14	Gamma Spec	Gross Alpha	Gross Beta	Sr-90	Ra-226	Pu-241	Am-241	VOC	SVOC (8270)	Pesticides & PCBs (8080)	Metals	Total Organic Carbon (TOC)	Ammonia	Formaldehyde	Total Kjeldahl Nitrogen (TKN)	Chemical Oxygen Demand (COD)	Nitrates (NO_3)	Hex Chrome (Cr-6)	Total Dissolved Solids (TDS)	Alkalinity	Anions and Cations	Oil and Grease	Hardness	Aquatic Toxicity
HSU-1	UCD1-1														W					W	W	W					
	UCD1-4	WSpSuF		WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF			WSpSuF	W	WspSuF	W	WSpSuF					WSpSuF	WSpSuF	WSpSuF					
	UCD1-10	W		WF	WF	WF					WSpSuF	W	W	W	WSuF					WSpSuF	WSpSuF	WSpSuF					
	UCD1-11	W		W	W	W					WSu		W	W	W					WSu	WSu	W					
	UCD1-12	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF			WSpSuF	W	WSpSuF	W	WspSuF					WSpSuF	WSpSuF	WSpSuF					
	UCD1-13	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF			WSpSuF	W	WSpSuF	W	WSpSuF					W	WSpSuF	WSpSuF					
	UCD1-18	W	W	W	W	W					W	W	W	W	W					WSu	WSu	W					
	UCD1-19	W		W	W	W					W		W	W	W					W	WSp	W					
	UCD1-20	WSu	Wsu	Wsu	WSu	WSu	WSu	WSu			W	W	W	W	W					W	WSu	W					
	UCD1-21	W	WF	W	W	W	WF	WF	W	W	W			W	W					W	W	W					
	UCD1-22	WSu	Su	WSu	WSu	WSu	WSu	WSu	WSu	WSu					WSu							WSu					
	UCD1-23	WSu	WSu	WSu	WSu	WSu	WSu	WSu			WF			W	W						W	W					
	UCD1-24	W	W	WF	WF	WF	W	W			WF		W	W	W					WF	W	W					
	UCD1-25	WSpSuF	WSpSuF	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSuF	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSuF	WSpSuF	WSp	WSp	WSp			
	UCD1-28	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F	F	F	F	F			
	UCD1-34	WSpSu	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSu	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSu	WSpSu	WSp	WSp	WSp			
HSU-2	UCD2-7	WSu	WSu	WSu	WSu	WSu	WSu	WSu			W		W	W	W					WSu	WSu	W					
	UCD2-14	WspSuF	WspSuF	WspSuF	WspSuF	WspSuF	WspSuF	WspSuF	Wsp	Wsp	WspSuF	W	WSpSuF	WSpSuF	WSpSuF					WSpSuF	WSpSuF	WSpSuF					
	UCD2-15	WSpSuF		WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF			WSpSuF	W	WSpSuF	W	WSpSuF					WSpSuF	WSpSuF	WSpSuF					
	UCD2-16	WSu		WSu	WSu	WSu	WSu	WSu			WSu			WSpSuF	WSuF					WSu	WSpSuF	WSpSuF					
	UCD2-17	W	W	W	W	W					W	W	W	W	W					WSu	WSu	W					
	UCD2-26	WSpSuF	WSpSuF	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSuF	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSuF	WSpSuF	WSp	WSp	WSp			
	UCD2-27W	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp			
	UCD2-29	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F	F	F	F	F			
	UCD2-30	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F		F	F	F			
	UCD2-31	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F		F	F	F			
	UCD2-32	SuF	SuF	SuF	SuF	SuF	SuF	SuF			SuF	SuF	SuF	SuF	SuF	F		F		SuF	SuF	SuF	SuF	SuF			
	UCD2-35	WSpSu	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSu	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSu	WSpSu	WSp	WSp	WSp			
	UCD2-36	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F		F		F	F	F	F	F			
	UCD2-37	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F	F	F	F	F			
	UCD2-38	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F		F	F	F			
	UCD2-39	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F		F		F	F	F	F	F			
	UCD2-40	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F		F	F	F			
HSU-4	UCD4-41	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F	F	F	F	F			
	UCD4-42	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F	F	F	F	F			
	UCD4-43	F	F	F	F	F	F	F			F	F	F	F	F	F		F		F	F	F	F	F			
Surface Water	STPO	WSpSuF	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSuF	WSp	WSpSu	WSpSuF	WSpSuF					WSpSuF	WSpSuF	WSpSuF	SuF	SuF		Sp	SpSuF
	PCU	WSpSuF	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSp	WSpSuF	WSp	WSpSu	WSpSuF	WSpSuF					WSpSuF	WSpSuF	WSpSuF	SuF	SuF		Sp	SpSuF
	PCD	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSpSuF	WSp	WSp	WSpSuF	WSp	WSpSu	WSpSuF	WSpSuF					WSpSuF	WSpSuF	WSpSuF	SuF	SuF		Sp	SpSuF
Storm Water	LS-1	SpF	SpF	SpF	SpF	SpF	SpF	SpF	Sp	Sp	SpF	Sp	SpF	SpF	F					SpF	SpF	SpF	F	F	SpF	F	SpF
	LF-1	WF	WF	WF	WF	WF	WF	WF	W	W	WF	WF	WF	WF	F					WF	WF	WF	F	F	WF	F	F
	LF-3	WspF	WspF	WspF	WspF	WspF	WspF	WspF	W	W	WspF	WF	WSp	WSpF	SpF					WSp	WSpF	WF	SpF	SpF	WSpF	FSp	Sp

TABLE 5.2
ANALYTICAL PARAMETERS AND METHODS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS GROUNDWATER IRA
DAVIS, CALIFORNIA

SAMPLE PARAMETERS		
Constituent	**Units**	**Method**
Field		
pH	pH units	SOP
EC	µmhos/cm	SOP
Eh	mvolts	SOP
Temperature	°C	SOP
Turbidity	ntu	SOP
Organic		
Volatile Organic Compounds	µg/L	CLP SOW OLC 02.0
Semivilatile Organic Compounds	µg/L	CLP SOW OLM 01.8
Organichlorine Pesticides	µg/L	CLP SOW OLM 01.8
Radiologic Analyses		
Gross Alpha	pCi/L	EPA 9310
Gross Beta	pCi/L	EPA 9310
Tritium	pCi/L	EPA 906.0
Carbon-14	pCi/L	LSC
Strontium-90	pCi/L	EPA 905.0(M)
Radium-226	pCi/L	EPA 903.1
Americium-241	pCi/L	LAS 0108
Plutonium-241	pCi/L	LAS 0178
Gamma Spectral Analysis		
Th-234	pCi/L	EPA 901.1
Pb-214	pCi/L	EPA 901.1
Bi-214	pCi/L	EPA 901.1
Pb-210	pCi/L	EPA 901.1
U-235	pCi/L	EPA 901.1
U-238	pCi/L	EPA 901.1
Na-22	pCi/L	EPA 901.1
Ac-228	pCi/L	EPA 901.1
Pb-212	pCi/L	EPA 901.1
Bi-212	pCi/L	EPA 901.1
Tl-208	pCi/L	EPA 901.1
K-40	pCi/L	EPA 901.1
Co-60	pCi/L	EPA 901.1
Cs-137	pCi/L	EPA 901.1
Metals		
Hexavalent Chromium	µg/L	EPA 7196
Total Chromium	µg/L	CLP SOW ILC 02.0
Antimony	µg/L	CLP SOW ILC 02.0
Arsenic	µg/L	CLP SOW ILC 02.0
Barium	µg/L	CLP SOW ILC 02.0
Beryllium	µg/L	CLP SOW ILC 02.0
Cadmium	µg/L	CLP SOW ILC 02.0

TABLE 5.2 (continued)
ANALYTICAL PARAMETERS AND METHODS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

SAMPLE PARAMETERS		
Constituent	**Units**	**Method**
Cobalt	µg/L	CLP SOW ILC 02.0
Copper	µg/L	CLP SOW ILC 02.0
Iron	µg/L	CLP SOW ILC 02.0
Lead	µg/L	CLP SOW ILC 02.0
Mercury	µg/L	CLP SOW ILC 02.0
Molybdenum	µg/L	CLP SOW ILC 02.0
Nickel	µg/L	CLP SOW ILC 02.0
Selenium	µg/L	CLP SOW ILC 02.0
Silver	µg/L	CLP SOW ILC 02.0
Thallium	µg/L	CLP SOW ILC 02.0
Vanadium	µg/L	CLP SOW ILC 02.0
Zinc	µg/L	CLP SOW ILC 02.0
General Chemicals		
Alkalinity	mg/L	EPA 310.1
Sodium	mg/L	EPA 6010
Potassium	mg/L	EPA 6010
Calcium	mg/L	EPA 6010
Silica	mg/L	EPA 6010
Magnesium	mg/L	EPA 6010
Chloride	mg/L	EPA 300.0
Sulfate	mg/L	EPA 300.0
Phosphorous (all forms)	mg/L	EPA 365.2
Nitrate (as N)	mg/L	EPA 300.0
Total Dissolved Solids	mg/L	EPA 160.1
Total Organic Carbon	mg/L	EPA 415.2
Turbidity	ntu	EPA 180.1
Hardness	mg/L	EPA 130.2
Chemical Oxygen Demand	mg/L	EPA 410
Biochemical Oxygen Demand	mg/L	EPA 405.1
Aquatic Toxicity	%	EPA/600/4-90-027F
Oil & Grease	mg/L	EPA 1664

TABLE 5.3
NUMBER OF DETECTIONS, POSITIVE AND MAXIMUM VALUES IN HSU-1 GROUNDWATER DURING 1997
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

					UPGRADIENT WELLS						DOWNGRADIENT WELLS					
	PARAMETER		MCL		Number of Results	Number of Detections	Number >MCL	Maximum Value	Date of Maximum Value	Location of Maximum	Number of Results	Number of Detections	Number >MCL	Maximum Value	Date of Maximum Value	Location of Maximum
Metals	ANTIMONY	ug/L	6		1	0		--	--	--	18	10	1	9.3	02/13/97	UCD1-004
	ARSENIC	ug/L	50		1	1		4	02/20/97	UCD1-018	18	15		9.3	02/19/97	UCD1-019
	BARIUM	ug/L	1000		1	1		172	02/20/97	UCD1-018	18	18		437	02/18/97	UCD1-012
	CALCIUM	ug/L			1	1		38600	02/20/97	UCD1-018	18	18		74400	02/18/97	UCD1-013
	CHROMIUM	ug/L	50		1	1		21.8 |Jn	02/20/97	UCD1-018	18	17	10	577	11/24/97	UCD1-028
	CHROMIUM, HEXAVALENT (+6)	ug/L			2	2		18	02/20/97	UCD1-018	37	35		529	11/24/97	UCD1-028
	COBALT	ug/L			1	1		1.8 B|Jn	02/20/97	UCD1-018	18	15		4.4 B|	02/18/97	UCD1-012
	COPPER	ug/L	1300	#	1	1		1.7 B|Jn	02/20/97	UCD1-018	18	16		13.7	11/24/97	UCD1-028
	IRON	ug/L	300	S	2	0		--	--	--	18	2	2	1570 E|Jn	05/20/97	UCD1-027Z3
	LEAD	ug/L	15		1	0		--	--	--	18	2		3.7	05/19/97	UCD1-034
	MAGNESIUM	ug/L			1	1		100000	02/20/97	UCD1-018	18	18		215000	02/18/97	UCD1-012
	MANGANESE	ug/L	50	S	1	0		--	--	--	18	10	2	1310	05/20/97	UCD1-027Z3
	MOLYBDENUM	ug/L			1	1		1.4 B|	02/20/97	UCD1-018	18	12		9.1 B|	02/28/97	UCD1-027Z3
	NICKEL	ug/L	100		1	1		10.7 B|Jn	02/20/97	UCD1-018	18	18	2	218	05/20/97	UCD1-027Z3
	POTASSIUM	ug/L			1	0		--	--	--	18	4		1650 B|	02/28/97	UCD1-027Z3
	SELENIUM	ug/L	50		1	1		5.6	02/20/97	UCD1-018	18	15		30.2	02/18/97	UCD1-010
	SODIUM	ug/L			1	1		34800	02/20/97	UCD1-018	18	18		182000	02/18/97	UCD1-010
	VANADIUM	ug/L			1	1		5.6 B|	02/20/97	UCD1-018	18	13		16.1	05/19/97	UCD1-034
	ZINC	ug/L	5000	S	1	1		4.2 B|Jn	02/20/97	UCD1-018	18	17		32.9	05/19/97	UCD1-025
General Chemical Paramete	ALKALINITY, TOTAL (AS CACO3)	mg/L			NA	NA		--	--	--	7	7		745	11/24/97	UCD1-028
	AMMONIA-NITROGEN	mg/L			NA	NA		--	--	--	6	2		0.52	02/28/97	UCD1-027Z3
	CHEMICAL OXYGEN DEMAND	mg/L			NA	NA		--	--	--	5	2		21.8	05/20/97	UCD1-027Z3
	CHLORIDE	mg/L	250	S	NA	NA		--	--	--	7	7		65	02/13/97	UCD1-025
	NITRATE-N	mg/L	10	#	2	2	1	17.2	02/20/97	UCD1-018	34	34	24	92.1	02/25/97	UCD1-024
	PHOSPHORUS, TOTAL (AS P)	mg/L			NA	NA		--	--	--	3	3		0.149 B|	02/12/97	UCD1-034
	SULFATE	mg/L	500	#	NA	NA		--	--	--	7	7		72.2	02/13/97	UCD1-025
	TOTAL DISSOLVED SOLIDS	mg/L	500	S	1	1	1	584	02/20/97	UCD1-018	34	34	24	1550 |Jc	11/18/97	UCD1-010
	TOTAL KJELDAHL NITROGEN	mg/L			NA	NA		--	--	--	6	6		8	05/20/97	UCD1-027Z3
	TOTAL ORGANIC CARBON	mg/L			1	1		1.5	02/20/97	UCD1-018	32	32		7.7	02/28/97	UCD1-027Z3
Semi-Volatile Organics	BIS(2-ETHYLHEXYL)PHTHALATE	ug/L	4		1	0		--	--	--	12	1		0.83 J|	02/13/97	UCD1-025
Pesticides	4,4'-DDD	ug/L			1	0		--	--	--	21	1		0.007 J|	09/02/97	UCD1-004
	ALPHA-CHLORDANE	ug/L			1	0		--	--	--	21	2		0.005 JP|NJu	05/15/97	UCD1-013
	DIELDRIN	ug/L			1	0		--	--	--	21	2		0.03	05/15/97	UCD1-013
	ENDRIN	ug/L	0.2		1	0		--	--	--	21	2		0.011 J|	05/15/97	UCD1-013
	ENDRIN KETONE	ug/L			1	0		--	--	--	21	2		0.005 J|	05/15/97	UCD1-013
	GAMMA-BHC	ug/L	0.2		1	0		--	--	--	21	1		0.004	05/15/97	UCD1-013
	GAMMA-CHLORDANE	ug/L			1	0		--	--	--	21	1		0.004 J|	08/21/97	UCD1-013
Volatile Organics	1,1,2-TRICHLOROETHANE	ug/L	5		1	0		--	--	--	37	4		3.3 |Ji	08/21/97	UCD1-012
	1,1-DICHLOROETHANE	ug/L	5		1	0		--	--	--	37	5	5	13 |Ji	08/21/97	UCD1-012
	1,1-DICHLOROETHENE	ug/L	6		1	0		--	--	--	37	5	5	18 |Ji	08/21/97	UCD1-012
	1,2-DICHLOROETHANE	ug/L	0.5		1	0		--	--	--	37	4	4	6 |Ji	08/21/97	UCD1-012
	1,2-DICHLOROPROPANE	ug/L	5		1	0		--	--	--	37	4		0.8 |Ji	08/21/97	UCD1-012
	BROMODICHLOROMETHANE	ug/L	100	a	1	0		--	--	--	37	4		8.3	02/18/97	UCD1-012
	CHLOROFORM	ug/L	100	#	1	0		--	--	--	37	22	5	7900 |Js	08/21/97	UCD1-012
	DIBROMOCHLOROMETHANE	ug/L	100		1	0		--	--	--	37	1		0.6 J|	02/18/97	UCD1-012
	METHYLENE CHLORIDE	ug/L	5		1	0		--	--	--	37	1		0.4 J|	02/18/97	UCD1-012
	TETRACHLOROETHENE	ug/L	5		1	0		--	--	--	37	2		0.4 J|	02/25/97	UCD1-024
	TRANS-1,2-DICHLOROETHENE	ug/L	10		1	0		--	--	--	37	1		0.2 J|	02/18/97	UCD1-012
	TRICHLOROETHENE	ug/L	5		1	0		--	--	--	37	3		0.3 J|	05/15/97	UCD1-013
	XYLENES (TOTAL)	ug/L	1750		1	0		--	--	--	37	1		0.3 J|	05/19/97	UCD1-004
Radionuclides	AMERICIUM-241	pCi/L			NA	NA		--	--	--	10	3		0.039	02/24/97	UCD1-021
	BISMUTH-212	pCi/L			1	0		--	--	--	32	2		46	08/21/97	UCD1-013
	BISMUTH-214	pCi/L			1	0		--	--	--	32	13		144	02/19/97	UCD1-019
	CARBON-14	pCi/L			1	0		--	--	--	26	17		1800	05/15/97	UCD1-013
	LEAD-214	pCi/L			1	0		--	--	--	32	9		176	02/19/97	UCD1-019
	PLUTONIUM-241	pCi/L			NA	NA		--	--	--	10	1		4.7	02/28/97	UCD1-027Z3
	RADIUM-226	pCi/L	5	*	NA	NA		--	--	--	30	9		0.73	08/21/97	UCD1-012
	TRITIUM	pCi/L	20000	*	1	0		--	--	--	35	7		19400	11/18/97	UCD1-013

TABLE 5.3
NUMBER OF DETECTIONS, POSITIVE AND MAXIMUM VALUES IN HSU-2 GROUNDWATER DURING 1997
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

					UPGRADIENT WELLS						DOWNGRADIENT WELLS					
	PARAMETER		MCL		Number of Results	Number of Detections	Number >MCL	Maximum Value	Date of Maximum Value	Location of Maximum	Number of Results	Number of Detections	Number >MCL	Maximum Value	Date of Maximum Value	Location of Maximum
Metals	ANTIMONY	ug/L	8		1	0		--	--	--	39	3		1.5 B|	02/13/97	UCD2-026
	ARSENIC	ug/L	50		1	1		2.9 |Jc	02/19/97	UCD2-017	39	12		6.2	02/13/97	UCD2-026
	BARIUM	ug/L	1000		1	1		128	02/19/97	UCD2-017	39	39		285	05/15/97	UCD2-014
	CALCIUM	ug/L			1	1		35400	02/19/97	UCD2-017	39	39		57800	08/21/97	UCD2-014
	CHROMIUM	ug/L	50		1	1		18.5 |Jn	02/19/97	UCD2-017	39	33	4	62.6 |Jk	05/15/97	UCD2-014
	CHROMIUM, HEXAVALENT (+6)	ug/L			1	1		13	02/19/97	UCD2-017	39	37		61	08/27/97	UCD2-032
	COBALT	ug/L			1	1		1.2 B|	02/19/97	UCD2-017	39	14		3.1 B|	05/20/97	UCD2-014
	COPPER	ug/L	1300	#	1	1		1.5 B|Jn	02/19/97	UCD2-017	39	19		17	11/21/97	UCD4-042
	IRON	ug/L	300	S	1	0		--	--	--	39	5	5	2010	12/01/97	UCD2-036
	LEAD	ug/L	15		1	0		--	--	--	39	5		7.4 |Jn	08/21/97	UCD2-014
	MAGNESIUM	ug/L			1	1		59700	02/19/97	UCD2-017	39	39		148000	08/21/97	UCD2-014
	MANGANESE	ug/L	50	S	1	0		--	--	--	39	16	2	97.6 |Jn	02/27/97	UCD2-027Z4
	MOLYBDENUM	ug/L			1	1		1.9 B|	02/19/97	UCD2-017	39	19		2.4 B|	02/26/97	UCD2-035
	NICKEL	ug/L	100		1	1		5.5 B|Jn	02/19/97	UCD2-017	39	21		48.3	02/27/97	UCD2-027Z4
	POTASSIUM	ug/L			1	0		--	--	--	39	12		40200	11/21/97	UCD4-042
	SELENIUM	ug/L	50		1	1		5.1	02/19/97	UCD2-017	39	17		6.8	02/19/97	UCD2-016
	SODIUM	ug/L			1	1		29500	02/19/97	UCD2-017	39	39		89200	11/21/97	UCD4-042
	VANADIUM	ug/L			1	1		4.4 B|	02/19/97	UCD2-017	39	31		18.1	05/14/97	UCD2-016
	ZINC	ug/L	5000	S	1	1		4.5 B|Jn	02/19/97	UCD2-017	39	15		40.2 |Jn	02/27/97	UCD2-027Z4
General Chemical Parameters	ALKALINITY, TOTAL (AS CACO3)	mg/L			1	1		--	--	--	27	27		473	08/27/97	UCD2-032
	AMMONIA-NITROGEN	mg/L			NA	NA		--	--	--	26	3		0.206	05/20/97	UCD2-027Z4
	CHLORIDE	mg/L	250	S	NA	NA		--	--	--	27	27		29.4	11/25/97	UCD2-040
	NITRATE-N	mg/L	10	#	NA	NA		1.47	02/19/97	UCD2-017	44	44	2	20.3 |Jh	08/21/97	UCD2-014
	PHOSPHORUS, TOTAL (AS P)	mg/L			1	1		--	--	--	6	6		0.151 B|	02/13/97	UCD2-026
	SULFATE	mg/L	500	#	NA	NA		--	--	--	27	27		49.4	08/27/97	UCD2-032
	TOTAL DISSOLVED SOLIDS	mg/L	500	S	NA	NA		391	02/19/97	UCD2-017	42	42	6	868	05/15/97	UCD2-014
	TOTAL KJELDAHL NITROGEN	mg/L			1	1		--	--	--	26	13		7.61	05/22/97	UCD2-027Z7
	TOTAL ORGANIC CARBON	mg/L			NA	NA		0.9 B|	02/19/97	UCD2-017	41	41		6.08	08/27/97	UCD2-032
Semi-Volatile Organics	ANTHRACENE	ug/L			1	0		--	--	--	30	1		2 J|	08/27/97	UCD2-032
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/L	4		1	0		--	--	--	30	12	9	17	11/25/97	UCD2-030
	BUTYLBENZYLPHTHALATE	ug/L	100	#	1	0		--	--	--	30	2		0.71 J|	11/25/97	UCD2-030
	DI-N-BUTYLPHTHALATE	ug/L			1	0		--	--	--	30	2		1.1 J|	11/21/97	UCD2-032
	DI-N-OCTYLPHTHALATE	ug/L			1	0		--	--	--	30	5		4.4 J|	11/25/97	UCD2-040
	PHENOL	ug/L			1	0		--	--	--	30	1		2.5 J|	11/21/97	UCD4-042
	PYRENE	ug/L			1	0		--	--	--	30	1		1 J|	08/27/97	UCD2-032
Pesticides	HEPTACHLOR	ug/L	0.01		1	0		--	--	--	22	1		0.009 J|	05/20/97	UCD2-027Z4
Volatile Organics	1,1,2-TRICHLOROETHANE	ug/L	5		1	0		--	--	--	43	1		0.2 J|	11/24/97	UCD2-029
	1,1-DICHLOROETHANE	ug/L	5		1	0		--	--	--	43	8		1	11/21/97	UCD2-032
	1,1-DICHLOROETHENE	ug/L	6		1	0		--	--	--	43	8		0.9 J|	11/24/97	UCD2-029
	1,2-DICHLOROETHANE	ug/L	0.5		1	0		--	--	--	43	9	6	1.7	11/24/97	UCD2-029
	1,2-DICHLOROPROPANE	ug/L	5		1	0		--	--	--	43	9		1.6	11/24/97	UCD2-029
	1,3-DICHLOROBENZENE	ug/L	600	#	1	0		--	--	--	43	1		1.5	11/25/97	UCD2-040
	BENZENE	ug/L	1		1	0		--	--	--	43	1		0.3 J|	11/21/97	UCD4-042
	BROMODICHLOROMETHANE	ug/L	100	e	1	0		--	--	--	43	1		0.3 J|	02/27/97	UCD2-027Z4
	CHLOROFORM	ug/L	100	#	1	0		--	--	--	43	25	3	140 B|	11/24/97	UCD2-029
	METHYLENE CHLORIDE	ug/L	5		1	0		--	--	--	43	2		0.5 J|	02/27/97	UCD2-027Z4
	TOLUENE	ug/L	1000	#	1	0		--	--	--	43	1		0.4 J|	08/26/97	UCD2-016
	XYLENES (TOTAL)	ug/L	1750		1	0		--	--	--	43	1		0.3 J|	05/13/97	UCD2-035
Radionuclides	AMERICIUM-241	pCi/L			1	1		--	--	--	18	8		0.044	05/22/97	UCD2-027Z7
	BISMUTH-214	pCi/L			NA	NA		144	02/19/97	UCD2-017	41	11		151	02/19/97	UCD2-016
	CARBON-14	pCi/L			1	0		--	--	--	36	7		1090	05/15/97	UCD2-014
	GROSS ALPHA	pCi/L	15	*	1	0		--	--	--	41	3		7.9 C|	02/27/97	UCD2-027Z5
	GROSS BETA	pCi/L	50	*	1	0		--	--	--	41	3		42.8 C|	11/21/97	UCD4-042
	LEAD-214	pCi/L			1	1		180	02/19/97	UCD2-017	41	10		155	02/19/97	UCD2-016
	RADIUM-226	pCi/L	5	*	NA	NA		--	--	--	41	6		0.49	05/21/97	UCD2-027Z4
	THALLIUM-208	pCi/L			NA	NA		--	--	--	41	1		3.6	08/26/97	UCD2-007
	TRITIUM	pCi/L	20000	*	1	0		--	--	--	44	10		9540	5/97	UCD2-014

TABLE 5.3
NUMBER OF DETECTIONS, POSITIVE AND MAXIMUM VALUES IN SURFACE WATER DURING 1997
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

	PARAMETER		MCL		SURFACE WATER LOCATIONS					
					Number of Results	Number of Detections	Number >MCL	Maximum Value	Date of Maximum Value	Location of Maximum
Metals	ANTIMONY	ug/L	6		16	1		1.1 B|Jn	02/20/97	PCD
	ARSENIC	ug/L	50		16	6		5.1	02/20/97	STPO
	BARIUM	ug/L	1000		16	16		108	11/12/97	PCD
	CALCIUM	ug/L			16	16		33200	05/27/97	PCU
	CHROMIUM	ug/L	50		16	12		7.9 B|	05/27/97	PCU
	CHROMIUM, HEXAVALENT (+6)	ug/L			16	8		33	05/27/97	PCD
	COBALT	ug/L			16	1		1.2 B|Jn	02/20/97	STPO
	COPPER	ug/L	1300	#	16	12		21.6	11/12/97	PCD
	IRON	ug/L	300	S	16	4		87.8 B|	11/12/97	STPO
	MAGNESIUM	ug/L			16	16		41800	05/27/97	PCU
	MANGANESE	ug/L	50	S	16	10		11.8 |Jn	02/20/97	PCD
	MOLYBDENUM	ug/L			16	5		11.8	08/29/97	STPO
	NICKEL	ug/L	100		16	8		5.8 B|Jn	02/20/97	STPO
	POTASSIUM	ug/L			16	14		12300	11/12/97	STPO
	SELENIUM	ug/L	50		16	6		7	05/27/97	STPO
	SILVER	ug/L	50		16	4		2.9 B|	05/27/97	STPO
	SODIUM	ug/L			16	16		196000	05/27/97	STPO
	VANADIUM	ug/L			16	8		19.3	05/27/97	STPO
	ZINC	ug/L	5000	S	16	9		58.8 |Jn	08/29/97	STPO
General Chemical Parameter	ALKALINITY, TOTAL (AS CACO3)	mg/L			8	8		256 *	08/29/97	STPO
	CHLORIDE	mg/L	250	S	8	8		139 *	08/29/97	STPO
	HARDNESS	mg/L			4	4		255	05/27/97	PCU
	NITRATE-N	mg/L	10	#	16	16		9.55	11/12/97	STPO
	SULFATE	mg/L	500	#	8	8		76 *	08/29/97	STPO
	SURVIVAL BIOASSAY	%			8	8		100	05/27/97	PCU
	TOTAL DISSOLVED SOLIDS	mg/L	500	S	16	16	5	700	05/27/97	STPO
	TOTAL ORGANIC CARBON	mg/L			16	16		9.53 N|Jm	11/12/97	STPO
	BIS(2-ETHYLHEXYL)PHTHALATE	ug/L	4		8	2		0.7 J|	02/20/97	STPO
Pesticides	4,4'-DDD	ug/L			11	2		0.027	08/29/97	STPO
	4,4'-DDT	ug/L			11	1		0.039 |Jw	08/29/97	PCU
	ALDRIN	ug/L	0.05	C	12	1		0.003 J|	08/29/97	PCU
	ALPHA-CHLORDANE	ug/L			12	1		0.007 JP|JNu	08/29/97	STPO
	HEPTACHLOR EPOXIDE	ug/L	0.01		12	1		0.003 J|	08/29/97	PCU
Volatile Organics	ACETONE	ug/L			11	7		6.9 |Jc	09/03/97	STPO
	BROMODICHLOROMETHANE	ug/L	100	a	16	9		19	05/27/97	STPO
	BROMOFORM	ug/L	100		16	2		2.9	09/03/97	STPO
	CHLOROFORM	ug/L	100	#	16	10		14	05/27/97	STPO
	DIBROMOCHLOROMETHANE	ug/L	100		16	7		18	05/27/97	STPO
	METHYLENE CHLORIDE	ug/L	5		16	2		1 J|	11/12/97	STPO
Radionuclides	AMERICIUM-241	pCi/L			8	1		0.026	05/27/97	PCD
	BISMUTH-214	pCi/L			11	2		23 |Jf	05/27/97	PCD
	GROSS BETA	pCi/L	50	*	11	4		19.7 C|Jf	02/20/97	STPO
	LEAD-212	pCi/L			11	1		48 |Jf	05/27/97	PCD
	LEAD-214	pCi/L			11	1		10.4	02/20/97	PCU
	RADIUM-226	pCi/L	5	*	11	1		0.19	05/27/97	PCU
	TRITIUM	pCi/L	20000	*	16	2		790	05/27/97	PCD

TABLE 5.3
NUMBER OF DETECTIONS, POSITIVE AND MAXIMUM VALUES IN STORM WATER DURING 1997
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

	PARAMETER		MCL	STORM WATER LOCATIONS					
				Number of Results	Number of Detections	Number >MCL	Maximum Value	Date of Maximum Value	Location of Maximum
Metals	ANTIMONY	ug/L	6	9	5	2	29	05/23/97	LS-1
	ARSENIC	ug/L	50	9	6		15.6	12/10/96	LS-1
	BARIUM	ug/L	1000	9	8		293	12/10/96	LS-1
	CALCIUM	ug/L		9	9		20000	05/23/97	LF-3
	CHROMIUM	ug/L	50	9	3	2	115	12/10/96	LS-1
	COBALT	ug/L		9	5		25.8	12/10/96	LS-1
	COPPER	ug/L	1300 #	9	7		74	12/10/96	LS-1
	IRON	ug/L	300 S	9	4	3	39000	12/10/96	LS-1
	LEAD	ug/L	15	9	5	1	23.5	12/10/96	SD-1
	MAGNESIUM	ug/L		9	9		31300	12/10/96	LS-1
	MANGANESE	ug/L	50 S	9	6	5	570	12/10/96	LS-1
	MERCURY	ug/L	2	9	4		0.79 *|Jd	12/10/96	LS-1
	MOLYBDENUM	ug/L		9	4		4.9 B|	12/10/96	LS-1
	NICKEL	ug/L	100	9	8	2	247	12/10/96	LS-1
	POTASSIUM	ug/L		9	9		61900	12/10/96	LS-1
	SELENIUM	ug/L	50	9	1		4.4	05/23/97	LF-3
	SILVER	ug/L	50	9	2		1	05/23/97	LS-1
	SODIUM	ug/L		9	9		70500	05/23/97	LS-1
	VANADIUM	ug/L		9	3		73.5	12/10/96	LS-1
	ZINC	ug/L	5000 S	9	6		236 N|Jm	12/10/96	SD-1
General Chemical Parameter	ALKALINITY, TOTAL (AS CACO3)	mg/L		7	7		155	05/23/97	LF-3
	AMMONIA-NITROGEN	mg/L		2	2		1.28	05/23/97	LS-1
	CHEMICAL OXYGEN DEMAND	mg/L		2	2		95.6	05/23/97	LS-1
	CHLORIDE	mg/L	250 S	7	7		89.1	05/23/97	LS-1
	HARDNESS	mg/L		3	3		158	05/23/97	LF-3
	NITRATE-N	mg/L	10 #	7	7		2	12/10/96	LS-1
	OIL AND GREASE	mg/L		6	1		1.2	05/23/97	LS-1
	PHOSPHORUS, TOTAL (AS P)	mg/L		2	2		0.591	05/23/97	LS-1
	SULFATE	mg/L	500 #	7	7		18.5	05/23/97	LF-3
	SURVIVAL BIOASSAY	%		3	3		100	05/23/97	LF-3
	TOTAL DISSOLVED SOLIDS	mg/L	500 S	9	9		350	12/10/96	LS-1
	TOTAL KJELDAHL NITROGEN	mg/L		2	2		3.75	05/23/97	LS-1
	TOTAL ORGANIC CARBON	mg/L		7	7		35.9	05/23/97	LS-1
Pesticides	ALPHA-CHLORDANE	ug/L		5	2		0.017 P|J	05/23/97	LS-1
	GAMMA-CHLORDANE	ug/L		5	2		0.013 P|J	05/23/97	LS-1
Semi-Volatile Organics	BIS(2-ETHYLHEXYL)PHTHALATE	ug/L		4	1		1.8 J|	12/10/96	SD-1
Volatile Organics	2-BUTANONE	ug/L		8	2		3.3 J|	05/23/97	LF-3
	ACETONE	ug/L		8	4		11	05/23/97	LS-1
	TOLUENE	ug/L	1000 #	8	1		0.3 J|J	05/23/97	LS-1
	XYLENES (TOTAL)	ug/L	1750	8	1		0.2 J|J	05/23/97	LS-1
Radionuclides	AMERICIUM-241	pCi/L		4	2		0.032	12/10/96	SD-1
	CARBON-14	pCi/L		9	2		64	12/10/96	LS-1
	GROSS ALPHA	pCi/L	15 *	9	1		4.7 C|	12/10/96	SD-1
	GROSS BETA	pCi/L	50 *	9	9	1	62.3 C|	12/10/96	LS-1
	RADIUM-226	pCi/L	5 *	9	4	2	1.09 |Jf	11/26/97	LF-3

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Quarter	ALKALINITY, TOTAL (AS CACO3) mg/L	AMMONIA-NITROGEN mg/L	CHEMICAL OXYGEN DEMAND mg/L	CHLORIDE mg/L	NITRATE-N mg/L	PHOSPHORUS, TOTAL (AS P) mg/L	SULFATE mg/L	TOTAL DISSOLVED SOLIDS mg/L
UCD1-001	02/24/97		WINTER	--	--	--	--	12.8	--	--	66.0
UCD1-004	02/13/97		WINTER	--	--	--	--	2.02	--	--	447.
UCD1-004	05/19/97		SPRING	--	--	--	--	3.89	--	--	489.
UCD1-004	09/02/97		SUMMER	--	--	--	--	3.5	--	--	453.
UCD1-004	11/17/97		FALL	--	--	--	--	3.19	--	--	440. |Jc
UCD1-010	02/18/97		WINTER	--	--	--	--	42.2	--	--	1360
UCD1-010	05/14/97		SPRING	--	--	--	--	44.8	--	--	1360
UCD1-010	08/25/97		SUMMER	--	--	--	--	47.3	--	--	1490
UCD1-010	11/18/97		FALL	--	--	--	--	47.3	--	--	1550 |Jc
UCD1-011	02/18/97		WINTER	--	--	--	--	28.8	--	--	77.0
UCD1-011	08/25/97		SUMMER	--	--	--	--	24.6	--	--	--
UCD1-012	02/18/97		WINTER	--	--	--	--	50.7	--	--	1320
UCD1-012	05/15/97		SPRING	--	--	--	--	56.3	--	--	1420
UCD1-012	08/21/97		SUMMER	--	--	--	--	59.1	--	--	1370
UCD1-012	08/21/97	D	SUMMER	--	--	--	--	58.7	--	--	1390
UCD1-012	11/17/97		FALL	--	--	--	--	59	--	--	1370 |Jc
UCD1-013	02/18/97		WINTER	--	--	--	--	17.2	--	--	1040
UCD1-013	05/15/97		SPRING	--	--	--	--	--	--	--	1030
UCD1-013	08/21/97		SUMMER	--	--	--	--	17.4	--	--	1020
UCD1-013	11/18/97		FALL	--	--	--	--	--	--	--	1040 |Jc
UCD1-018	02/20/97		WINTER	--	--	--	--	17.2	--	--	584.
UCD1-018	08/27/97		SUMMER	--	--	--	--	13.5	--	--	--
UCD1-019	02/19/97		WINTER	--	--	--	--	19.7	--	--	944.
UCD1-020	02/24/97		WINTER	--	--	--	--	6.53	--	--	359.
UCD1-021	02/24/97		WINTER	--	--	--	--	58.1	--	--	1020
UCD1-021	02/24/97	D	WINTER	--	--	--	--	58	--	--	987.
UCD1-022	02/25/97		WINTER	--	--	--	--	--	--	--	460.
UCD1-022	08/20/97		SUMMER	--	--	--	--	--	--	--	726.
UCD1-023	02/13/97		WINTER	--	--	--	--	--	--	--	556.
UCD1-024	02/25/97		WINTER	--	--	--	--	92.1	--	--	1060
UCD1-024	11/19/97		FALL	--	--	--	--	85.9	--	--	--
UCD1-025	02/13/97		WINTER	671.	<	<	65	11.6	0.096 B|	72.2	813.
UCD1-025	05/19/97		SPRING	630.	<	<	25.2	12.9	--	37.4	740.
UCD1-025	08/26/97		SUMMER	--	--	--	--	12	--	--	--
UCD1-025	11/18/97		FALL	--	--	--	--	12.7	--	--	--
UCD1-027Z3	02/28/97		WINTER	477.	0.52	18.9 B|	23.7	1.9	0.042 B|	40.1	535.
UCD1-027Z3	05/20/97		SPRING	557.	0.32	21.8 B|	27.4	4	--	37.8	619.
UCD1-028	11/24/97		FALL	745.	<	--	46.2	44.5	--	38.1	1010 |Jc
UCD1-034	02/12/97		WINTER	356.	<	<	23.6	0.491	0.149 B|	30.4	412.
UCD1-034	05/19/97		SPRING	389.	--	--	17.5	0.953	--	23.8	406.
UCD1-034	08/25/97		SUMMER	--	--	--	--	0.081 B|	--	--	--
UCD2-007	02/24/97		WINTER	--	--	--	--	8.28	--	--	469.
UCD2-007	08/26/97		SUMMER	--	--	--	--	6.76	--	--	--
UCD2-014	02/18/97		WINTER	--	--	--	--	7.09	--	--	767.
UCD2-014	02/18/97	D	WINTER	--	--	--	--	7.05	--	--	792.
UCD2-014	05/15/97		SPRING	--	--	--	--	9.31	--	--	868.

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Quarter	ALKALINITY, TOTAL (AS CACO3) mg/L	AMMONIA-NITROGEN mg/L	CHEMICAL OXYGEN DEMAND mg/L	CHLORIDE mg/L	NITRATE-N mg/L	PHOSPHORUS, TOTAL (AS P) mg/L	SULFATE mg/L	TOTAL DISSOLVED SOLIDS mg/L
			Analyte Units								
UCD2-014	08/21/97		SUMMER	--	--	--	--	20.3 |Jh	--	--	565.
UCD2-014	11/19/97		FALL	--	--	--	--	6.09	--	--	728. |Jc
UCD2-015	02/13/97		WINTER	--	--	--	--	2.03	--	--	378.
UCD2-015	05/19/97		SPRING	--	--	--	--	1.34	--	--	358.
UCD2-015	09/02/97		SUMMER	--	--	--	--	1.44	--	--	381.
UCD2-015	11/17/97		FALL	--	--	--	--	1.52	--	--	384. |Jc
UCD2-015	11/17/97	D	FALL	--	--	--	--	1.51	--	--	379. |Jc
UCD2-016	02/19/97		WINTER	--	--	--	--	4.52	--	--	355.
UCD2-016	05/14/97		SPRING	--	--	--	--	--	--	--	493.
UCD2-016	08/26/97		SUMMER	--	--	--	--	5.67	--	--	479.
UCD2-016	11/17/97		FALL	--	--	--	--	--	--	--	461. |Jc
UCD2-017	02/19/97		WINTER	--	--	--	--	1.47	--	--	391.
UCD2-017	08/27/97		SUMMER	--	--	--	--	1.51	--	--	--
UCD2-026	02/13/97		WINTER	320.	<	<	19.4	1.51	0.151 B|	34.6	421.
UCD2-026	05/19/97		SPRING	362.	<	<	23.6	5.91	--	36.1	442.
UCD2-026	05/19/97	D	SPRING	384.	<	<	23.9	5.96	--	36.4	456.
UCD2-026	08/26/97		SUMMER	--	--	--	--	4.31	--	--	--
UCD2-026	11/18/97		FALL	--	--	--	--	3.87	--	--	--
UCD2-027Z4	02/27/97		WINTER	349.	<	<	24.5	3.95	0.06 B|	39.7	445.
UCD2-027Z4	05/20/97		SPRING	379.	0.206	<	22.8	4.95	--	37.3	465.
UCD2-027Z4	05/21/97		SPRING	--	--	--	--	--	--	--	--
UCD2-027Z5	02/27/97		WINTER	318.	<	<	22.4	3.04	0.096 B|	36.8	389.
UCD2-027Z5	05/21/97		SPRING	346.	0.067	<	23.9	4.64	--	37	424.
UCD2-027Z6	02/26/97		WINTER	319.	<	<	18.9	2.77	0.098 B|	35	398.
UCD2-027Z6	05/21/97		SPRING	340.	<	<	20.1	2.56	--	35.1	398.
UCD2-027Z7	02/26/97		WINTER	325.	<	<	17.7	2.22	0.101 B|	34	379.
UCD2-027Z7	05/22/97		SPRING	335.	<	<	19.9	2.42	--	35.4	421.
UCD2-029	11/24/97		FALL	348.	<	--	26	8.26	--	40.8	470. |Jc
UCD2-029	11/24/97	D	FALL	342.	<	--	26.3	8.17	--	41	466. |Jc
UCD2-030	11/25/97		FALL	339.	<	--	24.3	4.80 |Jc	--	38.2	401. |Jc
UCD2-031	11/25/97		FALL	328.	<	--	20.6	3.26 |Jc	--	35.3	385. |Jc
UCD2-032	08/27/97		SUMMER	473.	--	--	22.5	11.5	--	49.4	603.
UCD2-032	11/21/97		FALL	345.	<	--	25.6	7.41 H|Jh	--	42.6	474. |Jc
UCD2-035	02/12/97		WINTER	303.	<	<	27.1	0.758	0.119 B|	35.8	395.
UCD2-035	05/13/97		SPRING	324.	<	<	25.8	0.858	--	35.9	387.
UCD2-035	08/25/97		SUMMER	--	--	--	--	0.823	--	--	--
UCD2-036	12/01/97		FALL	355.	<	--	18.5	4.2	--	39.1	450. |Jc
UCD2-037	12/01/97		FALL	311.	<	--	18.6	1.96	--	36.5	400. |Jc
UCD2-038	11/25/97		FALL	329.	<	--	18.7	1.94 |Jc	--	33.3	374. |Jc
UCD2-040	11/25/97		FALL	368.	<	--	29.4	8.28 |Jc	--	41.5	448. |Jc
UCD2-039	12/01/97		FALL	338.	<	--	25.7	2.99	--	37.3	433. |Jc
UCD4-041	11/24/97		FALL	331.	<	--	18.4	3.09	--	37.3	404. |Jc
UCD4-042	11/21/97		FALL	342.	0.138	--	22.8	5.45 H|Jh	--	44.4	467. |Jc
UCD4-043	11/21/97		FALL	346.	<	--	18.5	3.18 H|Jh	--	33.9	406. |Jc

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Quarter	TOTAL KJELDAHL NITROGEN mg/L	TOTAL ORGANIC CARBON mg/L
			Analyte Units		
UCD1-001	02/24/97		WINTER	--	1.4
UCD1-004	02/13/97		WINTER	--	1.3
UCD1-004	05/19/97		SPRING	--	1.05
UCD1-004	09/02/97		SUMMER	--	0.97 B|
UCD1-004	11/17/97		FALL	--	0.77 B|
UCD1-010	02/18/97		WINTER	--	2.7
UCD1-010	05/14/97		SPRING	--	--
UCD1-010	08/25/97		SUMMER	--	2.37
UCD1-010	11/18/97		FALL	--	2.81
UCD1-011	02/18/97		WINTER	--	1.7
UCD1-011	08/25/97		SUMMER	--	--
UCD1-012	02/18/97		WINTER	--	3
UCD1-012	05/15/97		SPRING	--	2.25
UCD1-012	08/21/97		SUMMER	--	2.92
UCD1-012	08/21/97	D	SUMMER	--	2.99
UCD1-012	11/17/97		FALL	--	2.31
UCD1-013	02/18/97		WINTER	--	1.6
UCD1-013	05/15/97		SPRING	--	1.45
UCD1-013	08/21/97		SUMMER	--	1.48
UCD1-013	11/18/97		FALL	--	1.33
UCD1-018	02/20/97		WINTER	--	1.5
UCD1-018	08/27/97		SUMMER	--	--
UCD1-019	02/19/97		WINTER	--	1.6
UCD1-020	02/24/97		WINTER	--	0.9 B|
UCD1-021	02/24/97		WINTER	--	1.3
UCD1-021	02/24/97	D	WINTER	--	1.2
UCD1-022	02/25/97		WINTER	--	1.4
UCD1-022	08/20/97		SUMMER	--	1.01
UCD1-023	02/13/97		WINTER	--	1.3
UCD1-024	02/25/97		WINTER	--	1.4
UCD1-024	11/19/97		FALL	--	--
UCD1-025	02/13/97		WINTER	0.6	1.2
UCD1-025	05/19/97		SPRING	7.38	1.05
UCD1-025	08/26/97		SUMMER	--	--
UCD1-025	11/18/97		FALL	--	--
UCD1-027Z3	02/28/97		WINTER	3.2	7.7
UCD1-027Z3	05/20/97		SPRING	8	7.57
UCD1-028	11/24/97		FALL	0.6	1.52
UCD1-034	02/12/97		WINTER	1	1.6
UCD1-034	05/19/97		SPRING	--	--
UCD1-034	08/25/97		SUMMER	--	--
UCD2-007	02/24/97		WINTER	--	0.8 B|
UCD2-007	08/26/97		SUMMER	--	--
UCD2-014	02/18/97		WINTER	--	1.7
UCD2-014	02/18/97	D	WINTER	--	1.4
UCD2-014	05/15/97		SPRING	--	1.43

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	TOTAL KJELDAHL NITROGEN mg/L	TOTAL ORGANIC CARBON mg/L
UCD2-014	08/21/97		SUMMER	--	1.06
UCD2-014	11/19/97		FALL	--	0.98 B|
UCD2-015	02/13/97		WINTER	--	1.1
UCD2-015	05/19/97		SPRING	--	1.04
UCD2-015	09/02/97		SUMMER	--	0.78 B|
UCD2-015	11/17/97		FALL	--	0.56 B|
UCD2-015	11/17/97	D	FALL	--	0.67 B|
UCD2-016	02/19/97		WINTER	--	1.3
UCD2-016	05/14/97		SPRING	--	--
UCD2-016	08/26/97		SUMMER	--	0.75 B|
UCD2-016	11/17/97		FALL	--	0.48 B|
UCD2-017	02/19/97		WINTER	--	0.9 B|
UCD2-017	08/27/97		SUMMER	--	--
UCD2-026	02/13/97		WINTER	<	0.9 B|
UCD2-026	05/19/97		SPRING	7.09	1.11
UCD2-026	05/19/97	D	SPRING	6.43	0.96 B|
UCD2-026	08/26/97		SUMMER	--	--
UCD2-026	11/18/97		FALL	--	--
UCD2-027Z4	02/27/97		WINTER	3.2	4.2
UCD2-027Z4	05/20/97		SPRING	--	--
UCD2-027Z4	05/21/97		SPRING	6.82	1.53
UCD2-027Z5	02/27/97		WINTER	0.9	1.3
UCD2-027Z5	05/21/97		SPRING	3.26	1.08
UCD2-027Z6	02/26/97		WINTER	1.6	1.3
UCD2-027Z6	05/21/97		SPRING	5.96	1.01
UCD2-027Z7	02/26/97		WINTER	2.3	1.4
UCD2-027Z7	05/22/97		SPRING	7.61	1.09
UCD2-029	11/24/97		FALL	<	1.3
UCD2-029	11/24/97	D	FALL	<	1.66
UCD2-030	11/25/97		FALL	<	1.15
UCD2-031	11/25/97		FALL	<	1.2
UCD2-032	08/27/97		SUMMER	--	6.08
UCD2-032	11/21/97		FALL	<	1.48
UCD2-035	02/12/97		WINTER	0.7	1.1
UCD2-035	05/13/97		SPRING	7.49	1.08
UCD2-035	08/25/97		SUMMER	--	--
UCD2-036	12/01/97		FALL	<	1
UCD2-037	12/01/97		FALL	<	1.49
UCD2-038	11/25/97		FALL	<	1.53
UCD2-040	11/25/97		FALL	<	1.06
UCD2-039	12/01/97		FALL	<	2.18
UCD4-041	11/24/97		FALL	<	1.51
UCD4-042	11/21/97		FALL	<	4.88
UCD4-043	11/21/97		FALL	0.66	1.17

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte / Units / Quarter	ANTIMONY ug/L		ARSENIC ug/L		BARIUM ug/L		CALCIUM ug/L	CHROMIUM ug/L		CHROMIUM, HEXAVALENT (+6) ug/L		COBALT ug/L		COPPER ug/L	
UCD1-001	02/24/97		WINTER	--		--		--		--	--		27		--		--	
UCD1-004	02/13/97		WINTER	9.3		4.2		211		39900	23.3	|Jn	17		1.6	B|	2.6	B|Jn
UCD1-004	05/19/97		SPRING	--		--		--		--	--		19		--		--	
UCD1-004	09/02/97		SUMMER	--		--		--		--	--		19		--		--	
UCD1-004	11/17/97		FALL	--		--		--		--	--		18		--		--	
UCD1-010	02/18/97		WINTER	2.1	B|	4.2		40.3		51900	77.8	|Jn	71		3.5	B|	2.7	B|Jn
UCD1-010	08/25/97		SUMMER	--		--		--		--	--		72		--		--	
UCD1-010	11/18/97		FALL	--		--		--		--	--		65	H|Jh	--		--	
UCD1-011	02/18/97		WINTER	<		3.8		311		52000	229	|Jn	252		2.2	B|	2.0	B|Jn
UCD1-011	08/25/97		SUMMER	--		--		--		--	--		253		--		--	
UCD1-012	02/18/97		WINTER	<		8.1		437		71300	176	|Jn	175		4.4	B|	2.6	B|Jn
UCD1-012	05/15/97		SPRING	--		--		--		--	--		148		--		--	
UCD1-012	08/21/97		SUMMER	--		--		--		--	--		182	H|Jh	--		--	
UCD1-012	08/21/97	D	SUMMER	--		--		--		--	--		184	H|Jh	--		--	
UCD1-012	11/17/97		FALL	--		--		--		--	--		165		--		--	
UCD1-013	02/18/97		WINTER	1.4	B|	6.1		331		74400	80.6	|Jn	76		3.5	B|	2.0	B|Jn
UCD1-013	05/15/97		SPRING	--		--		--		--	--		76		--		--	
UCD1-013	08/21/97		SUMMER	--		--		--		--	--		85	H|Jh	--		--	
UCD1-013	11/18/97		FALL	--		--		--		--	--		79	H|Jh	--		--	
UCD1-018	02/20/97		WINTER	<		4.0		172		38600	21.8	|Jn	18		1.8	B|Jn	1.7	B|Jn
UCD1-018	08/27/97		SUMMER	--		--		--		--	--		16		--		--	
UCD1-019	02/19/97		WINTER	1.2	B|	9.3		94.4		60300	173	|Jn	184		3.1	B|	2.3	B|Jn
UCD1-019	05/14/97		SPRING	--		--		--		--	--		7	B|	--		--	
UCD1-020	02/24/97		WINTER	2.6	B|Jn	4.2		100		23900	30.1	|Jn	30		1.0	B|Jn	1.3	B|Jn
UCD1-020	08/26/97		SUMMER	--		--		--		--	--		29		--		--	
UCD1-021	02/24/97		WINTER	2.5	|Jn	4.9		141		51200	57.6	|Jn	58		2.2	B|Jn	1.8	B|Jn
UCD1-021	02/24/97	D	WINTER	2.0	B|Jn	4.1		147		52800	63.3	|Jn	60		2.4	B|Jn	1.9	B|Jn
UCD1-023	02/13/97		WINTER	2.4	B|	3.9		141		39100	27.3	|Jn	21		2.7	B|	2.1	B|Jn
UCD1-024	02/25/97		WINTER	1.1	B|Jn	2.9		267		58100	34.8	|Jn	32		2.6	B|Jn	2.3	B|Jn
UCD1-025	02/13/97		WINTER	<		4.0		305		44400	355	|Jn	17		2.5	B|	2.4	B|Jn
UCD1-025	05/19/97		SPRING	<		5.1	|Jk	285		42100	347	|Jk	338		<		<	
UCD1-025	08/26/97		SUMMER	--		--		--		--	--		314		--		--	
UCD1-025	11/18/97		FALL	--		--		--		--	--		331	H|Jh	--		--	
UCD1-027Z3	02/28/97		WINTER	2.5	B|Jn	3.3		163.		41000	5.1	B|Jn	3	B|	1.7	B|Jn	1.6	B|Jn
UCD1-027Z3	05/20/97		SPRING	<		<		152		38500	1.1	B|	14		3.8	B|	<	
UCD1-028	11/24/97		FALL	<		<		202		51000	577		529		<		13.7	
UCD1-034	02/12/97		WINTER	<		3.3		155		35600	7.3	B|Jn	--		1.7	B|	2.6	B|Jn
UCD1-034	05/19/97		SPRING	<		<		96.9		38700	<		60		<		6.1	B|
UCD2-007	02/24/97		WINTER	<		4.1		148		33200	37.3	|Jn	42		1.2	B|Jn	1.5	B|Jn
UCD2-007	08/26/97		SUMMER	--		--		--		--	--		21		--		--	
UCD2-014	02/18/97		WINTER	<		3.4		258		55000	51.2	|Jn	45		3.1	B|	2.0	B|Jn
UCD2-014	02/18/97	D	WINTER	<		4.9		264		56000	53.8	|Jn	47		3.1	B|	2.3	B|Jn
UCD2-014	05/15/97		SPRING	<		<		285		55700	62.6	|Jk	42		1.1	B|	<	
UCD2-014	08/21/97		SUMMER	<		<		235	E|Jn	57800	46.2		35	H|Jh	<		3.8	B|
UCD2-014	11/19/97		FALL	<		<		241		52300	46.6		47		<		<	
UCD2-015	02/13/97		WINTER	1.2	B|	3.3		136		33100	14.7	|Jn	8	B|	1.5	B|	1.8	B|Jn
UCD2-015	05/19/97		SPRING	--		--		--		--	--		6	B|	--		--	

TABLE 5.4
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Location	Date	QA	Analyte / Units / Quarter	ANTIMONY ug/L	ARSENIC ug/L	BARIUM ug/L	CALCIUM ug/L	CHROMIUM ug/L	CHROMIUM, HEXAVALENT (+6) ug/L	COBALT ug/L	COPPER ug/L
UCD2-015	09/02/97		SUMMER	<	<	122 E|Jn	36900	<	7 B|	<	<
UCD2-015	11/17/97		FALL	--	--	--	--	--	9 B|	--	--
UCD2-015	11/17/97	D	FALL	--	--	--	--	--	12	--	--
UCD2-016	02/19/97		WINTER	<	6.2 |Jc	149	38600	34.8 |Jn	30	2.4 B|	1.6 B|Jn
UCD2-016	05/14/97		SPRING	<	<	175	43500	45.2 |Jk	34	1.5 B|	<
UCD2-016	08/26/97		SUMMER	<	<	138 E|Jn	39500	32.7	35	<	<
UCD2-016	11/17/97		FALL	<	<	152	37800	31.4	37	<	<
UCD2-017	02/19/97		WINTER	<	2.9 |Jc	128	35400	18.5 |Jn	13	1.2 B|	1.5 B|Jn
UCD2-017	08/27/97		SUMMER	--	--	--	--	--	9 B|	--	--
UCD2-026	02/13/97		WINTER	1.5 B|	6.2	95.9	36500	18.3 |Jn	14	1.3 B|	1.8 B|Jn
UCD2-026	05/19/97		SPRING	<	<	150	38700	41.6 |Jk	31	<	1.7 B|
UCD2-026	05/19/97	D	SPRING	<	6 |Jk	144	37300	40.3 |Jk	30	<	<
UCD2-026	08/26/97		SUMMER	--	--	--	--	--	21	--	--
UCD2-026	11/18/97		FALL	--	--	--	--	--	24 H|Jh	--	--
UCD2-027Z4	02/27/97		WINTER	<	3.4	136	38600	6.9 B|Jn	3 B|	1.6 B|Jn	1.8 B|Jn
UCD2-027Z4	05/21/97		SPRING	1.3 |B	<	160	41200	25.4	16	1.2 B|	<
UCD2-027Z5	02/27/97		WINTER	<	2.6	142	36700	14.2 |Jn	12	1.2 B|Jn	1.6 B|Jn
UCD2-027Z5	05/21/97		SPRING	<	<	154	39900	16.5	14	<	1.2 B|
UCD2-027Z6	02/26/97		WINTER	<	2.7	138	36100	15.6 |Jn	14	1.0 B|Jn	2.0 B|Jn
UCD2-027Z6	05/21/97		SPRING	<	<	146	38300	10.8	9 B|	<	1.2 B|
UCD2-027Z7	02/26/97		WINTER	<	3.6	150	35300	11.9 |Jn	8 B|	1.2 B|Jn	1.8 B|Jn
UCD2-027Z7	05/22/97		SPRING	<	<	175	38200	9.3 B|	8 B|	<	1.2 B|
UCD2-029	11/24/97		FALL	<	<	181	44500	16.1	10	<	<
UCD2-029	11/24/97	D	FALL	<	<	177	43700	18.2	9 B|	<	<
UCD2-030	11/25/97		FALL	<	<	166	42100	11.4	--	<	<
UCD2-031	11/25/97		FALL	<	<	150	38400	15.5	--	<	<
UCD2-032	08/27/97		SUMMER	<	<	166 E|Jn	43100	54.4	61	<	<
UCD2-032	11/21/97		FALL	<	<	179	43700	20.2	--	<	<
UCD2-035	02/12/97		WINTER	<	4.8	133	36300	11.4 |Jn	3 B|	1.8 B|	1.9 B|Jn
UCD2-035	05/13/97		SPRING	<	<	150	36800	<	<	<	1.4 B|
UCD2-036	12/01/97		FALL	<	<	91.8	35800	<	20	<	<
UCD2-037	12/01/97		FALL	<	<	119	33300	<	5 B|	<	<
UCD2-038	11/25/97		FALL	<	<	114	34400	<	--	<	<
UCD2-039	12/01/97		FALL	<	<	131	35600	<	5 B|	<	<
UCD2-040	11/25/97		FALL	<	<	160	44500	22.6	--	<	<
UCD4-041	11/24/97		FALL	<	<	90.3	33900	20.2	14	<	<
UCD4-042	11/21/97		FALL	<	<	90.0	27600	21.7	--	<	17.0
UCD4-043	11/21/97		FALL	<	<	130	36100	26.7	--	<	17.0

TABLE 5.4
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Location	Date	QA	Analyte / Units / Quarter	IRON ug/L	LEAD ug/L	MAGNESIUM ug/L	MANGANESE ug/L	MOLYBDENUM ug/L	NICKEL ug/L	POTASSIUM ug/L	SELENIUM ug/L
UCD1-001	02/24/97		WINTER	--	--	--	--	--	--	--	--
UCD1-004	02/13/97		WINTER	<	<	71400	<	1.3 B|	7.7 B|Jn	<	<
UCD1-004	05/19/97		SPRING	--	--	--	--	--	--	--	--
UCD1-004	09/02/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-004	11/17/97		FALL	--	--	--	--	--	--	--	--
UCD1-010	02/18/97		WINTER	<	<	198000	1.2 B|	1.0 B|	7.9 B|Jn	<	30.2
UCD1-010	08/25/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-010	11/18/97		FALL	--	--	--	--	--	--	--	--
UCD1-011	02/18/97		WINTER	<	<	135000	<	1.1 B|	6.6 B|Jn	<	15.5
UCD1-011	08/25/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-012	02/18/97		WINTER	<	<	215000	1.1 B|	<	11.0 B|Jn	<	21.6
UCD1-012	05/15/97		SPRING	--	--	--	--	--	--	--	--
UCD1-012	08/21/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-012	08/21/97	D	SUMMER	--	--	--	--	--	--	--	--
UCD1-012	11/17/97		FALL	--	--	--	--	--	--	--	--
UCD1-013	02/18/97		WINTER	<	<	190000	<	<	9.4 B|Jn	<	6.9
UCD1-013	05/15/97		SPRING	--	--	--	--	--	--	--	--
UCD1-013	08/21/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-013	11/18/97		FALL	--	--	--	--	--	--	--	--
UCD1-018	02/20/97		WINTER	<	<	100000	<	1.4 B|	10.7 B|Jn	<	5.6
UCD1-018	08/27/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-019	02/19/97		WINTER	<	<	167000	1.1 B|	1.5 B|	7.9 B|Jn	<	13.9
UCD1-019	05/14/97		SPRING	--	--	--	--	--	--	--	--
UCD1-020	02/24/97		WINTER	<	<	58300	<	1.8 B|	4.1 B|Jn	<	4.6
UCD1-020	08/26/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-021	02/24/97		WINTER	<	<	129000	<	1.3 B|	7.9 B|Jn	<	8.0
UCD1-021	02/24/97	D	WINTER	<	<	132000	<	1.4 B|	8.8 B|Jn	<	7.9
UCD1-023	02/13/97		WINTER	<	<	93000	11.4	1.4 B|	114 |Jn	<	4.3
UCD1-024	02/25/97		WINTER	<	<	148000	<	1.3 B|	8.7 B|Jn	<	7.3
UCD1-025	02/13/97		WINTER	<	<	135000	1.9 B|	<	6.8 B|Jn	<	9.5
UCD1-025	05/19/97		SPRING	<	2.4	120000	1.3 B|	<	9.8 B|	852. B|	5.8
UCD1-025	08/26/97		SUMMER	--	--	--	--	--	--	--	--
UCD1-025	11/18/97		FALL	--	--	--	--	--	--	--	--
UCD1-027Z3	02/28/97		WINTER	1130	<	83400	1230 |Jn	9.1 B|	30.4 |Jn	1650 B|	3.1
UCD1-027Z3	05/20/97		SPRING	1570 E|Jn	<	79400	1310	7.1 B|	218	924. B|	4.8
UCD1-028	11/24/97		FALL	<	<	169000	<	<	9.0 B|	917 B|	8.0
UCD1-034	02/12/97		WINTER	<	<	54800	27.1	1.5 B|	6.9 B|Jn	<	<
UCD1-034	05/19/97		SPRING	<	3.7	55400	27.2	<	6.8 B|	<	<
UCD2-007	02/24/97		WINTER	<	<	68700	<	2.0 B|	5.6 B|Jn	<	3.1
UCD2-007	08/26/97		SUMMER	--	--	--	--	--	--	--	--
UCD2-014	02/18/97		WINTER	<	<	140000	1.2 B|	1.2 B|	9.0 |Jn	<	6.3
UCD2-014	02/18/97	D	WINTER	<	<	144000	1.1 B|	1.2 B|	9.3 B|Jn	<	4.5
UCD2-014	05/15/97		SPRING	<	1.2 B|	138000	<	<	<	<	3.2
UCD2-014	08/21/97		SUMMER	605.	7.4 |Jn	148000	<	<	<	<	<
UCD2-014	11/19/97		FALL	<	<	132000	<	<	<	899 B|	<
UCD2-015	02/13/97		WINTER	<	<	58900	<	1.9 B|	6.7 B|Jn	<	3.7
UCD2-015	05/19/97		SPRING	--	--	--	--	--	--	--	--

TABLE 5.4
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			Analyte	IRON		LEAD		MAGNESIUM	MANGANESE		MOLYBDENUM		NICKEL		POTASSIUM		SELENIUM	
			Units	ug/L		ug/L		ug/L	ug/L		ug/L		ug/L		ug/L		ug/L	
Location	Date	QA	Quarter															
UCD2-015	09/02/97		SUMMER	<		<		62400	<		<		<		<		<	
UCD2-015	11/17/97		FALL	--		--		--	--		--		--		--		--	
UCD2-015	11/17/97	D	FALL	--		--		--	--		--		--		--		--	
UCD2-016	02/19/97		WINTER	<		<		67600	<		1.6	B|	5.4	B|Jn	<		6.8	
UCD2-016	05/14/97		SPRING	<		1.4	B|	72700	<		1.4	B|	<		1020	B|	4.8	B|
UCD2-016	08/26/97		SUMMER	<		7.3	|Jn	68900	<		<		<		<		<	
UCD2-016	11/17/97		FALL	<		<		64600	<		<		<		<		<	
UCD2-017	02/19/97		WINTER	<		<		59700	<		1.9	B|	5.5	B|Jn	<		5.1	
UCD2-017	08/27/97		SUMMER	--		--		--	--		--		--		--		--	
UCD2-026	02/13/97		WINTER	<		<		63400	1.9	B|	1.8	B|	10.7	B|Jn	<		4.4	
UCD2-026	05/19/97		SPRING	<		1.8	B|	68100	<		1.7	B|	10.6	B|	992.	B|	3.9	
UCD2-026	05/19/97	D	SPRING	<		<		65400	1.1	B|	1.7	B|	10.2	B|	861.	B|	<	
UCD2-026	08/26/97		SUMMER	--		--		--	--		--		--		--		--	
UCD2-026	11/18/97		FALL	--		--		--	--		--		--		--		--	
UCD2-027Z4	02/27/97		WINTER	<		<		69400	97.6	|Jn	2.1	B|	<		<		4.2	
UCD2-027Z4	05/21/97		SPRING	<		<		74000	27.2		2.2	B|	48.3		<		6.1	
UCD2-027Z5	02/27/97		WINTER	<		<		61500	1.5	B|Jn	1.8	B|	7.3	B|Jn	<		<	
UCD2-027Z5	05/21/97		SPRING	<		<		66900	1.9	B|	1.8	B|	10.5	B|	<		4.6	
UCD2-027Z6	02/26/97		WINTER	<		<		58400	1.9	B|Jn	1.6	B|	6.1	B|Jn	<		4.1	
UCD2-027Z6	05/21/97		SPRING	<		<		61900	2.3	B|	1.4	B|	2.1	B|	<		4.2	
UCD2-027Z7	02/26/97		WINTER	<		<		56100	44.1	|Jn	1.6	B|	7.1	B|Jn	<		4.0	
UCD2-027Z7	05/22/97		SPRING	<		<		61200	18.5		1.7	B|	7.2	B|	<		6.4	
UCD2-029	11/24/97		FALL	<		<		75400	<		<		13.2	B|Jf	<		<	
UCD2-029	11/24/97	D	FALL	<		<		73300	<		<		24.1	|Jf	<		<	
UCD2-030	11/25/97		FALL	<		<		68400	<		<		<		<		<	
UCD2-031	11/25/97		FALL	<		<		61100	<		<		<		<		<	
UCD2-032	08/27/97		SUMMER	484.		<		73100	<		<		<		<		4.2	
UCD2-032	11/21/97		FALL	<		<		72100	<		<		11.0	B|	<		<	
UCD2-035	02/12/97		WINTER	39.2	B|	<		61100	9.6	B|	2.4	B|	11.5	B|Jn	<		<	
UCD2-035	05/13/97		SPRING	80.2	B|	<		56400	7.3	B|	2.4	B|	7.8		852.	B|	<	
UCD2-036	12/01/97		FALL	2010		<		62700	66.9		<		<		1140		<	
UCD2-037	12/01/97		FALL	<		<		55900	<		<		<		1080	B|	<	
UCD2-038	11/25/97		FALL	<		<		65300	<		<		<		1090	B|	<	
UCD2-039	12/01/97		FALL	<		<		63200	7.4	B|	<		<		987	B|	<	
UCD2-040	11/25/97		FALL	<		<		74400	<		<		<		<		<	
UCD4-041	11/24/97		FALL	<		<		52400	<		<		<		1910	B|	<	
UCD4-042	11/21/97		FALL	<		<		49300	<		<		10.3	B|	40200		<	
UCD4-043	11/21/97		FALL	<		<		60700	<		<		<		1370	B|	<	

TABLE 5.4
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Location	Date	QA	Analyte Units Quarter	SODIUM ug/L		VANADIUM ug/L		ZINC ug/L	
UCD1-001	02/24/97		WINTER	--		--		--	
UCD1-004	02/13/97		WINTER	32100		6.3	B|	7.4	B|Jn
UCD1-004	05/19/97		SPRING	--		--		--	
UCD1-004	09/02/97		SUMMER	--		--		--	
UCD1-004	11/17/97		FALL	--		--		--	
UCD1-010	02/18/97		WINTER	182000		6.8	B|	6.9	B|Jn
UCD1-010	08/25/97		SUMMER	--		--		--	
UCD1-010	11/18/97		FALL	--		--		--	
UCD1-011	02/18/97		WINTER	80700		6.2	B|	5.1	B|Jn
UCD1-011	08/25/97		SUMMER	--		--		--	
UCD1-012	02/18/97		WINTER	91000		8.9	B|	5.3	B|Jn
UCD1-012	05/15/97		SPRING	--		--		--	
UCD1-012	08/21/97		SUMMER	--		--		--	
UCD1-012	08/21/97	D	SUMMER	--		--		--	
UCD1-012	11/17/97		FALL	--		--		--	
UCD1-013	02/18/97		WINTER	57900		8.2	B|	2.9	B|Jn
UCD1-013	05/15/97		SPRING	--		--		--	
UCD1-013	08/21/97		SUMMER	--		--		--	
UCD1-013	11/18/97		FALL	--		--		--	
UCD1-018	02/20/97		WINTER	34800		5.6	B|	4.2	B|Jn
UCD1-018	08/27/97		SUMMER	--		--		--	
UCD1-019	02/19/97		WINTER	70300		4.9	B|	8.8	B|Jn
UCD1-019	05/14/97		SPRING	--		--		--	
UCD1-020	02/24/97		WINTER	32600		12.5		5.8	B|Jn
UCD1-020	08/26/97		SUMMER	--		--		--	
UCD1-021	02/24/97		WINTER	93300		3.8	B|	4.5	B|Jn
UCD1-021	02/24/97	D	WINTER	95400		7.1	B|	5.3	B|Jn
UCD1-023	02/13/97		WINTER	37800		<		3.2	B|Jn
UCD1-024	02/25/97		WINTER	72200		5.2	B|	5.1	B|Jn
UCD1-025	02/13/97		WINTER	76000		3.1	B|	10.3	B|Jn
UCD1-025	05/19/97		SPRING	72300		<		32.9	
UCD1-025	08/26/97		SUMMER	--		--		--	
UCD1-025	11/18/97		FALL	--		--		--	
UCD1-027Z3	02/28/97		WINTER	82400		<		20.9	|Jn
UCD1-027Z3	05/20/97		SPRING	88600		<		19.2	B|
UCD1-028	11/24/97		FALL	112000		7.0	B|	<	
UCD1-034	02/12/97		WINTER	54400		<		14.5	B|Jn
UCD1-034	05/19/97		SPRING	51200		16.1		27.1	
UCD2-007	02/24/97		WINTER	42100		4.9	B|	5.4	B|Jn
UCD2-007	08/26/97		SUMMER	--		--		--	
UCD2-014	02/18/97		WINTER	44100		6.0	B|	5.0	B|Jn
UCD2-014	02/18/97	D	WINTER	45000		6.7	B|	7.5	B|Jn
UCD2-014	05/15/97		SPRING	43800		11.2		<	
UCD2-014	08/21/97		SUMMER	47300		5.7	B|	<	
UCD2-014	11/19/97		FALL	46300		<		<	
UCD2-015	02/13/97		WINTER	27800		<		2.7	B|Jn
UCD2-015	05/19/97		SPRING	--		--		--	

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	SODIUM ug/L		VANADIUM ug/L		ZINC ug/L	
UCD2-015	09/02/97		SUMMER	29500		7.3	B|	<	
UCD2-015	11/17/97		FALL	--		--		--	
UCD2-015	11/17/97	D	FALL	--		--		--	
UCD2-016	02/19/97		WINTER	49900		4.8	B|	4.5	B|Jn
UCD2-016	05/14/97		SPRING	54300		16.1		<	
UCD2-016	08/26/97		SUMMER	50400		6.9	B|	<	
UCD2-016	11/17/97		FALL	45500		4.6	B|	<	
UCD2-017	02/19/97		WINTER	29500		4.4	B|	4.5	B|Jn
UCD2-017	08/27/97		SUMMER	--		--		--	
UCD2-026	02/13/97		WINTER	33300		<		12.2	B|Jn
UCD2-026	05/19/97		SPRING	41500		14.2		<	
UCD2-026	05/19/97	D	SPRING	40600		12.5		<	
UCD2-026	08/26/97		SUMMER	--		--		--	
UCD2-026	11/18/97		FALL	--		--		--	
UCD2-027Z4	02/27/97		WINTER	37800		3.7	B|	40.2	|Jn
UCD2-027Z4	05/21/97		SPRING	41100		5.7	|B	28.2	
UCD2-027Z5	02/27/97		WINTER	31200		<		12.4	B|Jn
UCD2-027Z5	05/21/97		SPRING	36300		9.5	B|	11.1	B|
UCD2-027Z6	02/26/97		WINTER	32700		6.9	B|	11.5	B|Jn
UCD2-027Z6	05/21/97		SPRING	36700		12.5		15	B|
UCD2-027Z7	02/26/97		WINTER	36300		6.0	B|	16.4	B|Jn
UCD2-027Z7	05/22/97		SPRING	40500		12.2		27.0	
UCD2-029	11/24/97		FALL	38300		4.6	B|	<	
UCD2-029	11/24/97	D	FALL	37400		<		<	
UCD2-030	11/25/97		FALL	36100		5.6	B|	<	
UCD2-031	11/25/97		FALL	36800		4.6	B|	<	
UCD2-032	08/27/97		SUMMER	62900		6.9	B|	<	
UCD2-032	11/21/97		FALL	41900		4.6	B|	<	
UCD2-035	02/12/97		WINTER	34500		4.3	B|	11.2	B|Jn
UCD2-035	05/13/97		SPRING	32800		14.9		<	
UCD2-036	12/01/97		FALL	36900		<		<	
UCD2-037	12/01/97		FALL	27900		9.2		<	
UCD2-038	11/25/97		FALL	31900		4.6	B|	<	
UCD2-039	12/01/97		FALL	32900		<		<	
UCD2-040	11/25/97		FALL	39300		6.0	B|	<	
UCD4-041	11/24/97		FALL	51900		6.1	B|	<	
UCD4-042	11/21/97		FALL	89200		<		<	
UCD4-043	11/21/97		FALL	49600		4.1	B|	<	

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte / Units / Quarter	1,1,2-TRICHLOROETHANE ug/L	1,1-DICHLOROETHANE ug/L	1,1-DICHLOROETHENE ug/L	1,2-DICHLOROETHANE ug/L	1,2-DICHLOROPROPANE ug/L	1,3-DICHLOROBENZENE ug/L	BENZENE ug/L	BROMODICHLOROMETHANE ug/L
UCD1-004	05/19/97		SPRING	<	<	<	<	<	<	<	<
UCD1-010	02/18/97		WINTER	<	<	<	<	<	<	<	<
UCD1-011	02/18/97		WINTER	<	<	<	<	<	<	<	<
UCD1-011	08/25/97		SUMMER	<	<	<	<	<	<	<	<
UCD1-012	02/18/97		WINTER	1 J|	5.6	9.9	2.8	0.3 J|	<	<	8.3
UCD1-012	05/15/97		SPRING	<	7.6 J|JQ	10 J|JQ	<	<	<	<	<
UCD1-012	08/21/97		SUMMER	2.3	11 |Ji	15 |Ji	5.2 |Ji	0.7	<	<	0.9
UCD1-012	08/21/97	D	SUMMER	3.3 |Ji	13 |Ji	18 |Ji	6.0 |Ji	0.8 |Ji	<	<	0.9 |Ji
UCD1-012	11/17/97		FALL	1.0 J|	6.3	8.3	3.9	0.5 J|	<	<	0.6 J|
UCD1-013	02/18/97		WINTER	<	<	<	<	<	<	<	<
UCD1-013	05/15/97		SPRING	<	<	<	<	<	<	<	<
UCD1-013	08/21/97		SUMMER	<	<	<	<	<	<	<	<
UCD1-013	11/18/97		FALL	<	<	<	<	<	<	<	<
UCD1-020	02/24/97		WINTER	<	<	<	<	<	<	<	<
UCD1-021	02/24/97		WINTER	<	<	<	<	<	<	<	<
UCD1-021	02/24/97	D	WINTER	<	<	<	<	<	<	<	<
UCD1-023	02/13/97		WINTER	<	<	<	<	<	<	<	<
UCD1-024	02/25/97		WINTER	<	<	<	<	<	<	<	<
UCD1-024	11/19/97		FALL	<	<	<	<	<	<	<	<
UCD1-025	02/13/97		WINTER	<	<	<	<	<	<	<	<
UCD1-025	05/19/97		SPRING	<	<	<	<	<	<	<	<
UCD1-025	11/18/97		FALL	<	<	<	<	<	<	<	<
UCD1-027Z3	02/28/97		WINTER	<	<	<	<	<	<	<	<
UCD1-027Z3	05/20/97		SPRING	<	<	<	<	<	<	<	<
UCD1-028	11/24/97		FALL	<	<	<	<	<	<	<	<
UCD2-014	02/18/97		WINTER	<	<	<	<	<	<	<	<
UCD2-014	02/18/97	D	WINTER	<	<	<	<	<	<	<	<
UCD2-014	05/15/97		SPRING	<	<	<	<	<	<	<	<
UCD2-014	08/21/97		SUMMER	<	<	<	<	<	<	<	<
UCD2-016	08/26/97		SUMMER	<	<	<	<	<	<	<	<
UCD2-026	02/13/97		WINTER	<	0.2 J|	0.3 J|	0.4 J|	0.2 J|	<	<	<
UCD2-026	05/19/97		SPRING	<	<	<	<	<	<	<	<
UCD2-026	05/19/97	D	SPRING	<	<	<	<	<	<	<	<
UCD2-026	11/18/97		FALL	<	<	<	<	<	<	<	<
UCD2-027Z4	02/27/97		WINTER	<	0.4 J|	0.5 J|	0.6 J|	0.4 J|	<	<	0.3 J|
UCD2-027Z4	05/20/97		SPRING	<	<	<	<	<	<	<	<
UCD2-027Z5	02/27/97		WINTER	<	<	<	0.5 J|	0.3 J|	<	<	<
UCD2-027Z5	05/21/97		SPRING	<	<	<	0.3 J|	<	<	<	<
UCD2-027Z6	02/26/97		WINTER	<	<	<	<	<	<	<	<
UCD2-027Z6	05/21/97		SPRING	<	<	<	<	<	<	<	<
UCD2-027Z7	02/26/97		WINTER	<	<	<	<	<	<	<	<
UCD2-027Z7	05/22/97		SPRING	<	<	<	<	<	<	<	<
UCD2-029	11/24/97		FALL	<	0.8 J|	0.8 J|	1.7	1.6	<	<	<
UCD2-029	11/24/97	D	FALL	0.2 J|	0.8 J|	0.9 J|	1.7	1.6	<	<	<
UCD2-030	11/25/97		FALL	<	0.8 J|	0.6 J|	1.3	0.8 J|	<	<	<
UCD2-031	11/25/97		FALL	<	<	<	<	<	<	<	<

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	1,1,2-TRICHLOROETHANE ug/L	1,1-DICHLOROETHANE ug/L	1,1-DICHLOROETHENE ug/L	1,2-DICHLOROETHANE ug/L	1,2-DICHLOROPROPANE ug/L	1,3-DICHLOROBENZENE ug/L	BENZENE ug/L	BROMODICHLOROMETHANE ug/L
UCD2-032	11/21/97		FALL	<	**1.0**	**0.9** J|	**1.7**	**1.2**	<	<	<
UCD2-035	05/13/97		SPRING	<	<	<	<	<	<	<	<
UCD2-040	11/25/97		FALL	<	**0.8** J|	**0.8** J|	<	**1.2**	**1.5**	<	<
UCD4-041	11/24/97		FALL	<	<	<	<	<	<	<	<
UCD4-042	11/21/97		FALL	<	**0.3** J|	**0.2** J|	**0.6** J|	**0.4** J|	<	**0.3** J|	<
UCD4-043	11/21/97		FALL	<	<	<	<	<	<	<	<

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte / Units / Quarter	CHLOROFORM ug/L	DIBROMOCHLOROMETHANE ug/L	METHYLENE CHLORIDE ug/L	TETRACHLOROETHENE ug/L	TOLUENE ug/L	TRANS-1,2-DICHLOROETHENE ug/L	TRICHLOROETHENE ug/L	XYLENES (TOTAL) ug/L
UCD1-004	05/19/97		SPRING	<	<	<	<	<	<	<	0.3 J|
UCD1-010	02/18/97		WINTER	<	<	<	<	<	<	<	<
UCD1-011	02/18/97		WINTER	0.7 J|	<	<	<	<	<	<	<
UCD1-011	08/25/97		SUMMER	0.5 J|	<	<	<	<	<	<	<
UCD1-012	02/18/97		WINTER	5300	0.6 J|	0.4 J|	<	<	0.2 J|	<	<
UCD1-012	05/15/97		SPRING	4600	<	<	<	<	<	<	<
UCD1-012	08/21/97		SUMMER	7900 |Js	<	<	<	<	<	0.3 J|	<
UCD1-012	08/21/97	D	SUMMER	7000	<	<	<	<	<	<	<
UCD1-012	11/17/97		FALL	5100	<	<	<	<	<	<	<
UCD1-013	02/18/97		WINTER	1.0 J|	<	<	<	<	<	<	<
UCD1-013	05/15/97		SPRING	1.7	<	<	<	<	<	0.3 J|	<
UCD1-013	08/21/97		SUMMER	1.2	<	<	<	<	<	0.2 J|	<
UCD1-013	11/18/97		FALL	0.8 J|	<	<	<	<	<	<	<
UCD1-020	02/24/97		WINTER	<	<	<	<	<	<	<	<
UCD1-021	02/24/97		WINTER	0.4 J|	<	<	<	<	<	<	<
UCD1-021	02/24/97	D	WINTER	0.5 J|	<	<	<	<	<	<	<
UCD1-023	02/13/97		WINTER	0.5 J|	<	<	<	<	<	<	<
UCD1-024	02/25/97		WINTER	0.5 J|	<	<	0.4 J|	<	<	<	<
UCD1-024	11/19/97		FALL	0.3 J|	<	<	0.4 J|	<	<	<	<
UCD1-025	02/13/97		WINTER	1.1	<	<	<	<	<	<	<
UCD1-025	05/19/97		SPRING	1.4	<	<	<	<	<	<	<
UCD1-025	11/18/97		FALL	1.7	<	<	<	<	<	<	<
UCD1-027Z3	02/28/97		WINTER	0.7 J|	<	<	<	<	<	<	<
UCD1-027Z3	05/20/97		SPRING	0.2 J|	<	<	<	<	<	<	<
UCD1-028	11/24/97		FALL	0.4 J|	<	<	<	<	<	<	<
UCD2-014	02/18/97		WINTER	0.6 J|	<	<	<	<	<	<	<
UCD2-014	02/18/97	D	WINTER	0.6 J|	<	<	<	<	<	<	<
UCD2-014	05/15/97		SPRING	0.7	<	<	<	<	<	<	<
UCD2-014	08/21/97		SUMMER	1.1	<	0.4 J|	<	<	<	<	<
UCD2-016	08/26/97		SUMMER	<	<	<	<	0.4 J|	<	<	<
UCD2-026	02/13/97		WINTER	43	<	<	<	<	<	<	<
UCD2-026	05/19/97		SPRING	17	<	<	<	<	<	<	<
UCD2-026	05/19/97	D	SPRING	17	<	<	<	<	<	<	<
UCD2-026	11/18/97		FALL	7.5	<	<	<	<	<	<	<
UCD2-027Z4	02/27/97		WINTER	100	<	0.5 J|	<	<	<	<	<
UCD2-027Z4	05/20/97		SPRING	33	<	<	<	<	<	<	<
UCD2-027Z5	02/27/97		WINTER	38	<	<	<	<	<	<	<
UCD2-027Z5	05/21/97		SPRING	56	<	<	<	<	<	<	<
UCD2-027Z6	02/26/97		WINTER	4.9	<	<	<	<	<	<	<
UCD2-027Z6	05/21/97		SPRING	3.7	<	<	<	<	<	<	<
UCD2-027Z7	02/26/97		WINTER	0.6 J|	<	<	<	<	<	<	<
UCD2-027Z7	05/22/97		SPRING	1.2	<	<	<	<	<	<	<
UCD2-029	11/24/97		FALL	130 B|	<	<	<	<	<	<	<
UCD2-029	11/24/97	D	FALL	140 B|	<	<	<	<	<	<	<
UCD2-030	11/25/97		FALL	42	<	<	<	<	<	<	<
UCD2-031	11/25/97		FALL	48	<	<	<	<	<	<	<

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	CHLOROFORM ug/L	DIBROMOCHLOROMETHANE ug/L	METHYLENE CHLORIDE ug/L	TETRACHLOROETHENE ug/L	TOLUENE ug/L	TRANS-1,2-DICHLOROETHENE ug/L	TRICHLOROETHENE ug/L	XYLENES (TOTAL) ug/L
UCD2-032	11/21/97		FALL	**69** B|	<	<	<	<	<	<	<
UCD2-035	05/13/97		SPRING	<	<	<	<	<	<	<	**0.3** J|
UCD2-040	11/25/97		FALL	**37**	<	<	<	<	<	<	<
UCD4-041	11/24/97		FALL	**7.4**	<	<	<	<	<	<	<
UCD4-042	11/21/97		FALL	**37** B|	<	<	<	<	<	<	<
UCD4-043	11/21/97		FALL	**5.1**	<	<	<	<	<	<	<

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	ANTHRACENE ug/L	BIS(2-ETHYLHEXYL)PHTHALATE ug/L	BUTYLBENZYLPHTHALATE ug/L	DI-N-BUTYLPHTHALATE ug/L	DI-N-OCTYLPHTHALATE ug/L	PHENOL ug/L	PYRENE ug/L
UCD1-025	02/13/97		WINTER	<	**0.83** J|	--	<	<	<	<
UCD2-026	02/13/97		WINTER	<	**3.0** J|	--	<	<	<	<
UCD2-026	05/19/97		SPRING	<	**6.0** J|	<	<	<	<	<
UCD2-026	05/19/97	D	SPRING	<	**11**	<	<	<	<	<
UCD2-027Z4	05/20/97		SPRING	<	**2.6** J|	<	<	<	<	<
UCD2-027Z7	05/22/97		SPRING	<	**6.3** J|	<	<	<	<	<
UCD2-030	11/25/97		FALL	<	**17**	**0.71** J|	<	**1.4** J|	<	<
UCD2-031	11/25/97		FALL	<	**7.2** J|	**0.55** J|	<	**0.55** J|	<	<
UCD2-032	08/27/97		SUMMER	**2.0** J|	<	<	**0.60** J|	**0.97** J|	<	**1.0** J|
UCD2-032	11/21/97		FALL	<	**8.4** JB|	<	**1.1** J|	**0.97** J|	<	<
UCD2-038	11/25/97		FALL	<	**8.4** J|	<	<	<	<	<
UCD2-040	11/25/97		FALL	<	**7.0** J|	<	<	**4.4** J|	<	<
UCD4-042	11/21/97		FALL	<	**6.6**	<	<	<	**2.5** J|	<
UCD4-043	11/21/97		FALL	<	**3.5** J|	<	<	<	<	<

TABLE 5.4
SUMMARY OF CHEMICAL DETECTIONS - GROUNDWATER
PESTICIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	4,4'-DDD ug/L	ALPHA-CHLORDANE ug/L	DIELDRIN ug/L	ENDRIN ug/L	ENDRIN KETONE ug/L	GAMMA-BHC ug/L	GAMMA-CHLORDANE ug/L	HEPTACHLOR ug/L
UCD1-004	09/02/97		SUMMER	**0.007** J|	<	<	<	<	<	<	<
UCD1-013	05/15/97		SPRING	<	**0.005** JP|NJu	**0.03**	**0.011** J|	**0.005** J|	**0.004** JP|Ju	<	<
UCD1-013	08/21/97		SUMMER	<	**0.004** J|	**0.017** J|	**0.006** J|	**0.003** J|	<	**0.004** J|	<
UCD2-015	09/02/97		SUMMER	<	<	<	<	<	<	<	<
UCD2-027Z4	05/20/97		SPRING	<	<	<	<	<	<	<	**0.009** J|

TABLE 5.4
SUMMARY OF DETECTIONS - GROUNDWATER
RADIONUCLIDES
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			Analyte	AMERICIUM-241		BISMUTH-212		BISMUTH-214		CARBON-14		GROSS ALPHA		GROSS BETA		LEAD-214		PLUTONIUM-241	
			Units	pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Location	Date	QA	Quarter		MDA		MDA		MDA		MDA		MDA		MDA		MDA		MDA
UCD1-004	09/02/97		SUMMER	--		<		12.7±5.9	7.4	--		<		<		<		--	
UCD1-004	11/17/97		FALL	--		<		<		--		<		<		<		--	
UCD1-010	02/18/97		WINTER	--		<		88.±21.	18.	--		<		<		77.±17.	19.	--	
UCD1-011	02/18/97		WINTER	--		<		100±13.	9.6	--		<		<		106.±12.	8.4	--	
UCD1-012	02/18/97		WINTER	--		<		<		88.±26.	33.	<		<		<		--	
UCD1-012	05/15/97		SPRING	--		45.±34.	30.	31.±12.	13.	358.±69.	77.	<		<		33.±10.	|Jd 12.	--	
UCD1-012	08/21/97		SUMMER	--		<		18.±14.	18.	286.±74.	86.	<		<		<		--	
UCD1-012	08/21/97	D	SUMMER	--		<		<		281.±74.	86.	<		<		<		--	
UCD1-012	11/17/97		FALL	--		<		13.±10.	13.	203.±72.	97.	<		<		<		--	
UCD1-013	02/18/97		WINTER	--		<		30.±16.	19.	814.±62.	22.	<		<		35.±13.	16.	--	
UCD1-013	05/15/97		SPRING	--		<		38.±13.	14.	1800±150	80.	<		<		37.±11.	|Jd 12.	--	
UCD1-013	08/21/97		SUMMER	--		46.±33.	42.	<		1524.±98.	20.	<		<		<		--	
UCD1-013	11/18/97		FALL	--		<		<		1428.±93.	20.	<		<		<		--	
UCD1-019	02/19/97		WINTER	--		<		144.±26.	19.	--		<		<		176.±24.	21.	--	
UCD1-020	02/24/97		WINTER	--		<		<		117.±64.	97.	<		<		<		--	
UCD1-021	02/24/97		WINTER	<		<		<		177.±69.	97.	<		<		18.±11.	17.	<	
UCD1-021	02/24/97	D	WINTER	0.039±0.034	0.029	<		<		105.±63.	97.	<		<		<		<	
UCD1-022	02/25/97		WINTER	<		<		<		--		<		<		<		<	
UCD1-023	02/13/97		WINTER	--		<		<		286.±67.	65.	<		<		<		--	
UCD1-024	02/25/97		WINTER	--		<		68.±19.	19.	<		<		<		69.±16.	18.	--	
UCD1-024	11/19/97		FALL	--		<		29.±11.	13.	--		<		<		<		--	
UCD1-025	02/13/97		WINTER	0.036±0.030	0.027	<		19.±15.	19.	71.±44.	65.	<		<		<		<	
UCD1-025	05/19/97		SPRING	<		<		<		230.±60.	77.	<		<		<		<	
UCD1-027Z3	02/28/97		WINTER	<		<		<		<		<		<		<		4.7±2.9	3.4
UCD1-027Z3	05/20/97		SPRING	<		<		<		96.±50.	77.	<		<		<		<	
UCD1-034	02/12/97		WINTER	<		<		<		74.±45.	65.	<		<		<		<	
UCD1-034	05/13/97		SPRING	0.024±0.024	0.017	<		9.8±4.4	5.0	<		<		<		9.2±4.1	|Jd 5.3	<	
UCD2-007	02/24/97		WINTER	--		<		11.4±7.0	9.6	102.±63.	97.	<		<		9.4±6.2	8.9	--	
UCD2-007	08/26/97		SUMMER	--		<		<		<		<		<		<		--	
UCD2-014	02/18/97		WINTER	<		<		58.±18.	|Jf 18.	375.±37.	21.	<		<		43.±15.	19.	<	
UCD2-014	02/18/97	D	WINTER	<		<		21.5±6.8	|Jf 7.8	422.±40.	22.	<		<		25.3±6.3	7.4	<	
UCD2-014	05/15/97		SPRING	<		<		28.±12.	12.	1090±110	80.	<		<		29.±10.	|Jd 12.	<	
UCD2-014	08/21/97		SUMMER	--		<		<		711.±55.	20.	<		<		<		--	
UCD2-014	11/19/97		FALL	--		<		<		464.±42.	20.	<		<		7.5±4.9	7.2	--	
UCD2-015	09/02/97		SUMMER	--		<		10.2±5.9	7.8	--		<		<		<		--	
UCD2-015	11/17/97		FALL	--		<		10.0±5.8	7.5	--		<		<		9.0±5.2	7.6	--	
UCD2-015	11/17/97	D	FALL	--		<		<		--		<		<		<		--	
UCD2-016	02/19/97		WINTER	--		<		151.±27.	22.	--		<		<		155.±23.	19.	--	
UCD2-017	02/19/97		WINTER	--		<		144.±17.	11.	<		<		<		180.±17.	9.1	--	
UCD2-026	02/13/97		WINTER	<		<		<		69.±44.	65.	<		<		<		<	
UCD2-026	05/19/97		SPRING	0.020±0.022	0.018	<		22.7±8.2	|Jf 9.9	<		<		<		16.1±6.9	9.6	<	
UCD2-026	05/19/97	D	SPRING	<		<		<		<		<		<		<		<	
UCD2-027Z4	02/27/97		WINTER	0.043±0.049	0.039	<		<		<		<		<		<		<	
UCD2-027Z4	05/21/97		SPRING	0.033±0.029	0.018	<		<		<		<		<		<		<	
UCD2-027Z5	02/27/97		WINTER	<		<		<		<		7.9±4.8	C| 6.4	7.1±3.6	C| 5.5	<		<	
UCD2-027Z5	05/21/97		SPRING	0.016±0.018	0.014	<		<		<		<		10.6±4.0	C| 5.9	<		<	
UCD2-027Z6	02/26/97		WINTER	<		<		<		<		<		<		<		<	

TABLE 5.4
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			Analyte	AMERICIUM-241		BISMUTH-212		BISMUTH-214		CARBON-14		GROSS ALPHA		GROSS BETA		LEAD-214		PLUTONIUM-241	
			Units	pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Location	Date	QA	Quarter		MDA		MDA		MDA		MDA		MDA		MDA		MDA		MDA
UCD2-027Z6	05/21/97		SPRING	**0.021±0.024**	0.019	<		<		<		<		<		<		<	
UCD2-027Z7	02/26/97		WINTER	**0.040±0.040**	0.027	<		**24.±14.**	17.	<		<		<		<		<	
UCD2-027Z7	05/22/97		SPRING	**0.044±0.036**	0.039	<		<		<		<		<		<		<	
UCD2-029	11/24/97		FALL	--		<		<		<		<		<		<		--	
UCD2-029	11/24/97	D	FALL	--		<		<		<		<		<		<		--	
UCD2-031	11/25/97		FALL	--		<		<		<		<		<		<		--	
UCD2-035	02/12/97		WINTER	**0.026±0.025**	0.017	<		<		<		**4.1±2.8**	C| 3.9	<		<		<	
UCD2-035	05/13/97		SPRING	<		<		**10.6±4.6**	5.4	<		<		<		**8.4±4.1**	|Jd 5.3	<	
UCD2-037	12/01/97		FALL	--		<		<		<		<		<		**18.±12.**	17.	--	
UCD2-038	11/25/97		FALL	--		<		<		<		**2.5±1.7**	C|Jd 2.3	<		<		--	
UCD2-040	11/25/97		FALL	--		<		<		<		<		<		<		--	
UCD4-041	11/24/97		FALL	--		<		**16.±13.**	16.	<		<		<		<		--	
UCD4-042	11/21/97		FALL	--		<		<		<		<		**42.8±6.4**	C| 6.6	<		--	

TABLE 5.4
SUMMARY OF DETECTIONS - GROUNDWATER
RADIONUCLIDES
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			Analyte	RADIUM-226		THALLIUM-208		TRITIUM	
			Units	pCi/L		pCi/L		pCi/L	
Location	Date	QA	Quarter		MDA		MDA		MDA
UCD1-004	09/02/97		SUMMER	<		<		<	
UCD1-004	11/17/97		FALL	**0.47±0.32**	0.44	<		<	
UCD1-010	02/18/97		WINTER	--		<		<	
UCD1-011	02/18/97		WINTER	--		<		<	
UCD1-012	02/18/97		WINTER	<		<		<	
UCD1-012	05/15/97		SPRING	**0.59±0.28**	0.27	<		<	
UCD1-012	08/21/97		SUMMER	<		<		<	
UCD1-012	08/21/97	D	SUMMER	**0.73±0.35**	0.36	<		<	
UCD1-012	11/17/97		FALL	**0.53±0.31**	0.37	<		**270±160**	220
UCD1-013	02/18/97		WINTER	<		<		**18600±1200** |Jm	210
UCD1-013	05/15/97		SPRING	<		<		**18300±1200**	190
UCD1-013	08/21/97		SUMMER	<		<		**19000±1200**	190
UCD1-013	11/18/97		FALL	<		<		**19400±1300**	220
UCD1-019	02/19/97		WINTER	--		<		<	
UCD1-020	02/24/97		WINTER	<		<		<	
UCD1-021	02/24/97		WINTER	<		<		<	
UCD1-021	02/24/97	D	WINTER	<		<		<	
UCD1-022	02/25/97		WINTER	<		<		**430±160** |Jm	210
UCD1-023	02/13/97		WINTER	<		<		<	
UCD1-024	02/25/97		WINTER	**0.28±0.14**	0.048	<		<	
UCD1-024	11/19/97		FALL	--		<		--	
UCD1-025	02/13/97		WINTER	**0.28±0.20**	0.26	<		<	
UCD1-025	05/19/97		SPRING	<		<		<	
UCD1-027Z3	02/28/97		WINTER	**0.22±0.15**	0.21	<		**320±140**	190
UCD1-027Z3	05/20/97		SPRING	**0.33±0.20**	0.20	<		<	
UCD1-034	02/12/97		WINTER	<		<		<	
UCD1-034	05/13/97		SPRING	**0.28±0.21**	0.27	<		<	
UCD2-007	02/24/97		WINTER	<		<		<	
UCD2-007	08/26/97		SUMMER	<		3.6±2.7	3.5	<	
UCD2-014	02/18/97		WINTER	<		<		**5490±540** |Jm	220
UCD2-014	02/18/97	D	WINTER	<		<		**5910±560** |Jm	220
UCD2-014	05/15/97		SPRING	<		<		**9540±700**	180
UCD2-014	08/21/97		SUMMER	<		<		**4990±450**	180
UCD2-014	11/19/97		FALL	<		<		**4390±470**	230
UCD2-015	09/02/97		SUMMER	<		<		<	
UCD2-015	11/17/97		FALL	<		<		<	
UCD2-015	11/17/97	D	FALL	<		<		<	
UCD2-016	02/19/97		WINTER	**0.37±0.26**	0.34	<		<	
UCD2-017	02/19/97		WINTER	--		<		<	
UCD2-026	02/13/97		WINTER	<		<		<	
UCD2-026	05/19/97		SPRING	<		<		<	
UCD2-026	05/19/97	D	SPRING	**0.39±0.23**	0.26	<		<	
UCD2-027Z4	02/27/97		WINTER	**0.25±0.15**	0.19	<		<	
UCD2-027Z4	05/21/97		SPRING	**0.49±0.24**	0.28	<		<	
UCD2-027Z5	02/27/97		WINTER	**0.28±0.18**	0.24	<		**1070±210**	190
UCD2-027Z5	05/21/97		SPRING	<		<		<	
UCD2-027Z6	02/26/97		WINTER	0.14±0.11	0.13	<		<	

TABLE 5.4
SUMMARY OF DETECTIONS - GROUNDWATER
RADIONUCLIDES
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			Analyte	RADIUM-226		THALLIUM-208		TRITIUM	
			Units	pCi/L		pCi/L		pCi/L	
Location	Date	QA	Quarter		MDA		MDA		MDA
UCD2-027Z6	05/21/97		SPRING	<		<		<	
UCD2-027Z7	02/26/97		WINTER	<		<		<	
UCD2-027Z7	05/22/97		SPRING	<		<		<	
UCD2-029	11/24/97		FALL	<		<		<	
UCD2-029	11/24/97	D	FALL	<		<		**350±160**	220
UCD2-031	11/25/97		FALL	<		<		**310±160**	220
UCD2-035	02/12/97		WINTER	<		<		**360±150**	200
UCD2-035	05/13/97		SPRING	<		<		<	
UCD2-037	12/01/97		FALL	<		<		<	
UCD2-038	11/25/97		FALL	<		<		<	
UCD2-040	11/25/97		FALL	<		<		250±150	220
UCD4-041	11/24/97		FALL	<		<		<	
UCD4-042	11/21/97		FALL	<		<		<	

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
GENERAL CHEMICALS
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Location	Date	QA	Analyte / Units / Quarter	ALKALINITY, TOTAL (AS CACO3) mg/L		CHLORIDE mg/L		HARDNESS mg/L	NITRATE-N mg/L		SULFATE mg/L		TOTAL DISSOLVED SOLIDS mg/L		TOTAL ORGANIC CARBON mg/L	
PCD	02/20/97		WINTER	--		--		--	0.39		--		170.		3.3	
PCD	05/27/97		SPRING	--		--		249000	3.05		--		305.		3.01	
PCD	05/27/97	D	SPRING	--		--		250000	3.04		--		308.		3.04	
PCD	08/29/97		SUMMER	200.	*	23.1	*	--	1.63	*	24.7	*	261.	*	3.12	
PCD	08/29/97	D	SUMMER	190.	*	23.1	*	--	1.65	*	24.7	*	259.	*	3.32	
PCD	11/12/97		FALL	205.		25.5		--	3.02		29.8		293.	|Jc	3.49	N|Jm
PCU	02/20/97		WINTER	--		--		--	0.35		--		146.		3.3	
PCU	05/27/97		SPRING	--		--		255000	2.69		--		280.		2.87	
PCU	08/29/97		SUMMER	187.	*	13.7	*	--	1.45	*	20.7	*	204.	*	3.1	
PCU	11/12/97		FALL	206.		17.9		--	2.66		27.8		276.	|Jc	2.91	N|Jm
PCU	11/12/97	D	FALL	204.		17.9		--	2.64		27.8		286.	|Jc	3.21	
STPO	02/20/97		WINTER	--		--		--	7.37		--		561.		9	
STPO	02/20/97	D	WINTER	--		--		--	7.32		--		566.		9.1	
STPO	05/27/97		SPRING	--		--		208000	7.8		--		700.		8.26	
STPO	08/29/97		SUMMER	256.	*	139	*	--	4.96	*	76	*	629.	*	6.06	
STPO	11/12/97		FALL	216.		123		--	9.55		57.3		572.	|Jc	9.53	N|Jm

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
METALS
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Location	Date	QA	Analyte / Units / Quarter	ANTIMONY ug/L		ARSENIC ug/L		BARIUM ug/L		CALCIUM ug/L	CHROMIUM ug/L		CHROMIUM, HEXAVALENT ug/L		COBALT ug/L		COPPER ug/L	
PCD	02/20/97		WINTER	1.1	B|Jn	3.0		46.2		19200	4.7	B|Jn	<		<		2.2	B|Jn
PCD	05/27/97		SPRING	<		<		98.2		32600	7.3	B|	33		<		<	
PCD	05/27/97	D	SPRING	<		<		98.2		32700	7.6	B|	30		<		1.4	B|
PCD	08/29/97		SUMMER	<		<		78.5	E|Jn	28400	<		<		<		<	
PCD	08/29/97	D	SUMMER	<		<		77.8	E|Jn	28000	<		<		<		3.1	B|
PCD	11/12/97		FALL	<		<		108		33000	4.7	B|	4	B|	<		21.6	
PCU	02/20/97		WINTER	<		3.1		45.6		18800	4.9	B|Jn	<		<		2.1	B|Jn
PCU	05/27/97		SPRING	<		<		101		33200	7.9	B|	32		<		1.2	B|
PCU	08/29/97		SUMMER	<		<		84.2	E|Jn	28900	<		<		<		<	
PCU	11/12/97		FALL	<		<		105		31200	6.5	B|	4	B|	<		<	
PCU	11/12/97	D	FALL	<		<		103		31000	4.7	B|	4	B|	<		11.8	|Jf
STPO	02/20/97		WINTER	<		4.9		37.9		22600	3.7	B|Jn	<		<		6.2	B|Jn
STPO	02/20/97	D	WINTER	<		5.1		48.4		22300	6.9	B|Jn	<		1.2	B|Jn	8.7	B|Jn
STPO	05/27/97		SPRING	<		<		46.7		26600	2.9	B|	12		<		5.9	B|
STPO	08/29/97		SUMMER	<		3.3	B|	42.4	E|Jn	26500	<		<		<		8.9	B|
STPO	11/12/97		FALL	<		4.4	B|	48.5		23000	6.4	B|	8	B|	<		12.8	

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
METALS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte / Units / Quarter	IRON ug/L		MAGNESIUM ug/L	MANGANESE ug/L		MOLYBDENUM ug/L		NICKEL ug/L		POTASSIUM ug/L		SELENIUM ug/L	SILVER ug/L	
PCD	02/20/97		WINTER	<		25600	11.8	|Jn	<		5.5	B|Jn	1680	B|	<	<	
PCD	05/27/97		SPRING	<		40800	7	B|	<		2.8	B|	1190	B|	3.7	<	
PCD	05/27/97	D	SPRING	<		40800	7.1	B|	1.1	B|	3.1	B|	<		3.9	<	
PCD	08/29/97		SUMMER	<		37300	10.4	B|	<		<		1340	B|	<	<	
PCD	08/29/97	D	SUMMER	<		36900	<		<		<		1420	B|	<	<	
PCD	11/12/97		FALL	<		40800	<		<		<		2300		<	<	
PCU	02/20/97		WINTER	<		24800	11.5	|Jn	<		5.4	B|Jn	1350	B|	<	1.9	B|
PCU	05/27/97		SPRING	<		41800	5.7	B|	<		2.9	B|	2530	B|	5.1	<	
PCU	08/29/97		SUMMER	<		37700	<		<		<		<		<	<	
PCU	11/12/97		FALL	<		39300	<		<		<		1630	B|	<	<	
PCU	11/12/97	D	FALL	<		39000	<		<		<		1610	B|	<	<	
STPO	02/20/97		WINTER	52.5	B|	29300	3.9	B|Jn	5.6	B|	4.6	B|Jn	10200		3.6	1.1	B|
STPO	02/20/97	D	WINTER	42.7	B|	28900	5.2	B|Jn	7.5	B|	5.8	B|Jn	9510		3.9	1.8	B|
STPO	05/27/97		SPRING	28	E|Jn	34300	4.6	B|	8.4	B|	1.8	B|	8330		7	2.9	B|
STPO	08/29/97		SUMMER	<		32600	10.5	B|	11.8		<		7550		<	<	
STPO	11/12/97		FALL	87.8	B|	26700	<		<		<		12300		<	<	

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	SODIUM ug/L		VANADIUM ug/L		ZINC ug/L	
PCD	02/20/97		WINTER	12100		<		7.1	B|Jn
PCD	05/27/97		SPRING	31500		<		3.1	B|
PCD	05/27/97	D	SPRING	31300		<		6.6	B|
PCD	08/29/97		SUMMER	29600		4.5	B|	<	
PCD	08/29/97	D	SUMMER	29400		4.9	B|	<	
PCD	11/12/97		FALL	32100		<		<	
PCU	02/20/97		WINTER	11200		<		4.9	B|Jn
PCU	05/27/97		SPRING	24600		6.2	B|	4.2	B|
PCU	08/29/97		SUMMER	21100		<		<	
PCU	11/12/97		FALL	21800		<		<	
PCU	11/12/97	D	FALL	21600		<		<	
STPO	02/20/97		WINTER	143000		9.3	B|	32.3	|Jn
STPO	02/20/97	D	WINTER	141000		9.4	B|	41.9	|Jn
STPO	05/27/97		SPRING	196000		19.3		20.5	
STPO	08/29/97		SUMMER	174000		14.6	B|	58.8	|Jn
STPO	11/12/97		FALL	143000		12.4		<	

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	ACETONE		BROMODICHLOROMETHANE		BROMOFORM	CHLOROFORM		DIBROMOCHLOROMETHANE		METHYLENE CHLORIDE	
			Units	ug/L		ug/L		ug/L	ug/L		ug/L		ug/L	
Location	Date	QA	Quarter											
PCD	05/27/97		SPRING	<		0.9	J|	<	0.9		0.8	J|	<	
PCD	05/27/97	D	SPRING	<		0.8	J|	<	0.9		0.7	J|	<	
PCD	09/03/97		SUMMER	<		0.5	J|	<	0.7		<		<	
PCD	09/03/97	D	SUMMER	6.3	|Jcf	0.6		<	0.8		0.6		<	
PCD	11/12/97		FALL	2.6	J|	<		<	0.3	J|	<		<	
PCU	09/03/97		SUMMER	1.1	|Jc	<		<	<		<		<	
PCU	11/12/97	D	FALL	1.5	J|	<		<	<		<		<	
STPO	02/20/97		WINTER	<		1.4		<	4.5		<		<	
STPO	02/20/97	D	WINTER	<		1.4		<	4.7		0.4	J|	<	
STPO	05/27/97		SPRING	3.8	J|	19		2.7	14		18		0.5	J|
STPO	09/03/97		SUMMER	6.9	|Jc	19		2.9	13		18		<	
STPO	11/12/97		FALL	2.9	J|	3.1		<	4.3		1.1		1.0	J|

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	BIS(2-ETHYLHEXYL)PHTHALATE	
			Units	ug/L	
Location	Date	QA	Quarter		
STPO	02/20/97		WINTER	0.70	J
STPO	02/20/97	D	WINTER	0.56	J

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
PESTICIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	4,4'-DDD ug/L	4,4'-DDT ug/L	ALDRIN ug/L	ALPHA-CHLORDANE ug/L	HEPTACHLOR EPOXIDE ug/L
PCD	08/29/97		SUMMER	**0.01** J|	<	<	<	<
PCU	08/29/97		SUMMER	<	**0.039** |Jw	**0.003** J|	<	**0.003** J|
STPO	08/29/97		SUMMER	**0.027**	<	<	**0.007** JP|JNu	<

TABLE 5.5
SUMMARY OF CHEMICAL DETECTIONS - SURFACE WATER
RADIONUCLIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	AMERICIUM-241		BISMUTH-214		GROSS BETA		LEAD-212		LEAD-214		RADIUM-226		TRITIUM	
			Units	pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Location	Date	QA	Quarter		MDA		MDA		MDA		MDA		MDA		MDA		MDA
PCD	02/20/97		WINTER	<		<		**2.7±1.4**	2.2	<		<		<		<	
PCD	05/27/97		SPRING	<		<		<		<		<		<		**790±230**	240
PCD	05/27/97	D	SPRING	**0.026±0.025**	0.017	**23.±14.** |Jf	18.	<		**48.±14.** |Jf	15.	<		<		**710±220**	230
PCD	11/12/97		FALL	--		**11.3±9.1**	12.	<		<		<		<		<	230
PCU	02/20/97		WINTER	<		**17.1±7.5**	9.7	<		<		**10.4±6.4**	9.2	<		<	
PCU	05/27/97		SPRING	<		<		<		<		<		**0.19±0.18**	0.13	<	
PCU	11/12/97		FALL	--		--		--		--		--		--		<	
PCU	11/12/97	D	FALL	--		--		--		--		--		--		<	
STPO	02/20/97		WINTER	<		<		**19.7±4.4** C|Jf	5.6	<		<		<		<	
STPO	02/20/97	D	WINTER	--		--		--		--		--		--		<	
STPO	02/24/97	D	WINTER	<		<		**10.4±3.9** C|Jf	5.8	<		<		<		--	
STPO	05/27/97		SPRING	<		<		**13.8±5.1** C|	7.4	<		<		<		<	
STPO	11/12/97		FALL	--		--		--		--		--		--		<	

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte / Units / Quarter	ALKALINITY, TOTAL (AS CACO3) mg/L	AMMONIA-NITROGEN mg/L	CHEMICAL OXYGEN DEMAND mg/L	CHLORIDE mg/L	HARDNESS mg/L	NITRATE-N mg/L	OIL AND GREASE mg/L	PHOSPHATE, TOTAL (AS P) mg/L
LF-1	11/14/97		FALL	9.8 B|	--	--	1.12	--	1.48	--	--
LF-3	05/23/97		SPRING	155.	--	--	9.35	158	0.645	--	--
LF-3	11/26/97		FALL	65.7	--	--	16.2	55.6	--	--	--
LF-3	11/26/97	D	FALL	65.1	--	--	16.4	54.6	--	--	--
LS-1	12/10/96		FALL	--	--	--	--	--	2.0	--	--
LS-1	05/23/97		SPRING	57.8	1.28	83	88.6	--	0.961	--	0.576
LS-1	05/23/97	D	SPRING	62.1	1.06	95.6	89.1	--	0.983	1.2	0.591
LS-1	11/14/97		FALL	10.8 H|	--	--	2.18	--	0.254 H|	--	--
SD-1	12/10/96		FALL	--	--	--	--	--	0.42	--	--

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	SULFATE mg/L		SURVIVAL BIOASSAY %	TOTAL DISSOLVED SOLIDS mg/L		TOTAL KJELDAHL NITROGEN mg/L	TOTAL ORGANIC CARBON mg/L	
LF-1	11/14/97		FALL	0.898	B|	95	36.0	|Jc	--	3.93	N|Jm
LF-3	05/23/97		SPRING	18.5		100	247.		--	28.3	
LF-3	11/26/97		FALL	8.25		--	167.	|Jc	--	11.9	
LF-3	11/26/97	D	FALL	8.11		--	179.	|Jc	--	13	
LS-1	12/10/96		FALL	--		--	350		--	--	
LS-1	05/23/97		SPRING	8.47		100	283		3.29	32.1	
LS-1	05/23/97	D	SPRING	8.5		--	266		3.75	35.9	
LS-1	11/14/97		FALL	1.85		100	51		--	13.4	
SD-1	12/10/96		FALL	--		--	160		--	--	

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	ANTIMONY		ARSENIC		BARIUM		CALCIUM		CHROMIUM		COBALT		COPPER		IRON	
			Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Location	Date	QA	Quarter																
LF-1	11/14/97		FALL	4.2	B|	<		9.7	B|	2750		<		<		10.9		<	
LF-3	05/23/97		SPRING	1.1	B|	<		82	|Jn	20000		1.7	B|	1.4	B|	8.5	B|	<	
LF-3	11/26/97		FALL	<		3.1	B|	36.6		8550		<		<		15.6		<	
LF-3	11/26/97	D	FALL	<		3.1	B|	40.9		8310		<		<		15.6		910	|Jf
LS-1	12/10/96		FALL	<		15.6		293		18600		115		25.8		74		39000	
LS-1	05/23/97		SPRING	25.6		6		33.6		10500		<		1.3	B|J	<		<	
LS-1	05/23/97	D	SPRING	29		8.5		33		10100		<		1.4	B|J	<		<	
LS-1	11/14/97		FALL	4.4	B|	<		<		2290	B|	<		<		3.5	B|	95.7	
SD-1	12/10/96		FALL	<		6.9		161		9010		64		16.4		41.5		22000	

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	LEAD		MAGNESIUM		MANGANESE		MERCURY		MOLYBDENUM		NICKEL		POTASSIUM		SELENIUM
			Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L
Location	Date	QA	Quarter															
LF-1	11/14/97		FALL	<		2000	B|	<		<		<		<		2780		<
LF-3	05/23/97		SPRING	<		26100		69.7	|Jn	<		1.0	B|	9.7	B|	19300		4.4
LF-3	11/26/97		FALL	<		8320		<		<		<		23.4		27500		<
LF-3	11/26/97	D	FALL	<		8220		<		<		<		33.4		27300		<
LS-1	12/10/96		FALL	12.4		31300		570		0.79	*|Jd	4.9	B|	247		61900		<
LS-1	05/23/97		SPRING	2	B|J	7310		63.4		0.2		1.1	B|J	8.1	B|J	5170		<
LS-1	05/23/97	D	SPRING	2.3		7040		67.2		0.2		<		8.2	B|J	4520		<
LS-1	11/14/97		FALL	1.4	B|	1070	B|	11.4	B|	<		1.2	B|	2.2	B|	2160	B|	<
SD-1	12/10/96		FALL	23.5		14200		486		0.20	*|	<		140		6660		<

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	SILVER ug/L		SODIUM ug/L		VANADIUM ug/L		ZINC ug/L	
LF-1	11/14/97		FALL	<		1450	B|	<		<	
LF-3	05/23/97		SPRING	<		10900		<		18.5	B|
LF-3	11/26/97		FALL	<		9020		<		<	
LF-3	11/26/97	D	FALL	<		8700		4.5	B|	<	
LS-1	12/10/96		FALL	<		17600		73.5		183	N|Jm
LS-1	05/23/97		SPRING	<		70500		<		95.6	
LS-1	05/23/97	D	SPRING	1		68500		<		94.1	
LS-1	11/14/97		FALL	1		3500	Be|	<		43.1	
SD-1	12/10/96		FALL	<		4040		41.9		236	N|Jm

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

Location	Date	QA	Analyte Units Quarter	2-BUTANONE ug/L		ACETONE ug/L		TOLUENE ug/L		XYLENES (TOTAL) ug/L	
LF-1	11/14/97		FALL	--		5.5	|Jc	--		--	
LF-3	05/23/97		SPRING	3.3	J|	8.9		--		--	
LF-3	11/26/97		FALL	1.0	J|	--		--		--	
LF-3	11/26/97	D	FALL	--		--		--		--	
LS-1	05/23/97		SPRING	--		10		0.3	J|J	0.2	J|J
LS-1	05/23/97	D	SPRING	--		11		--		--	

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

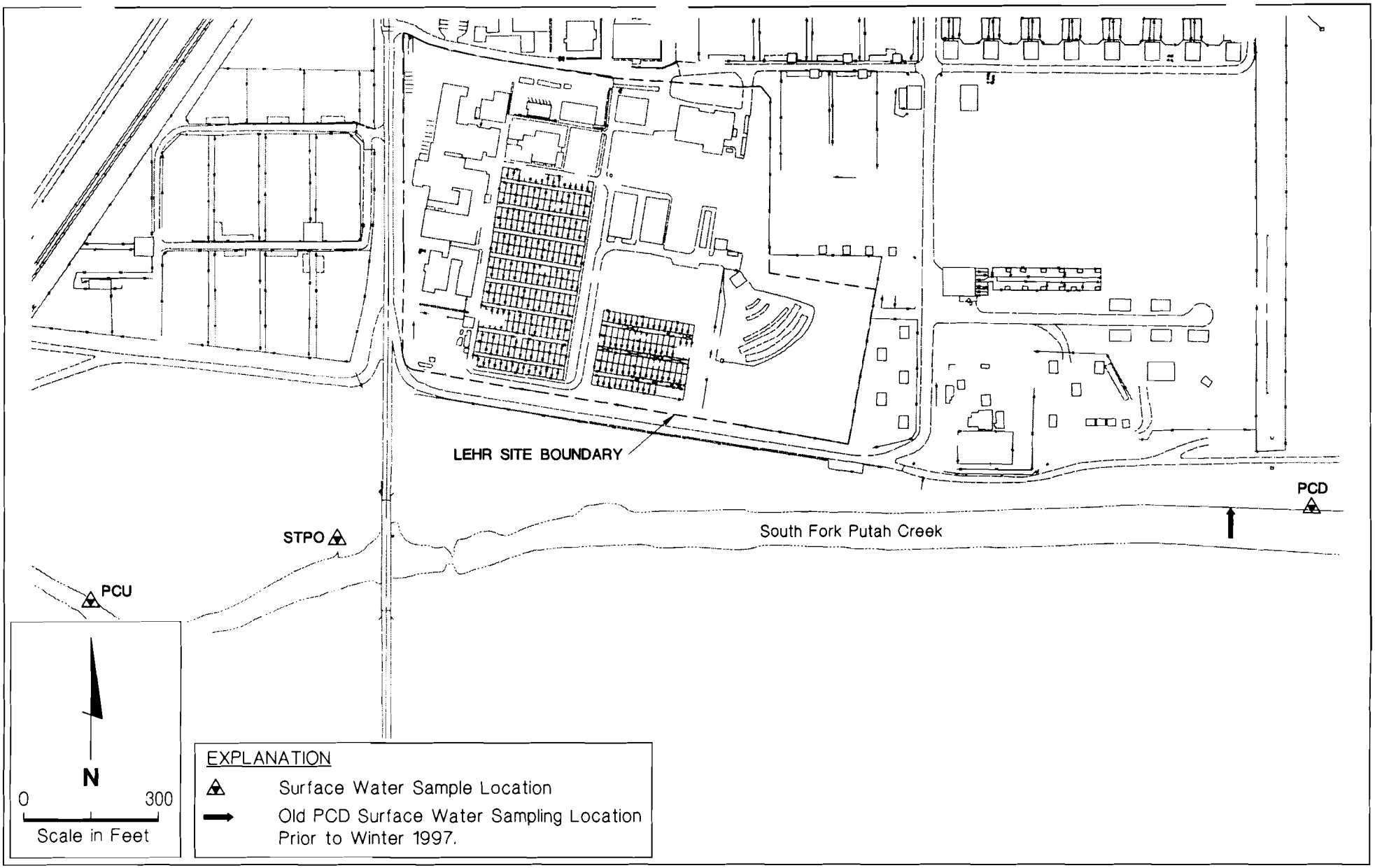
			Analyte	BIS(2-ETHYLHEXYL)PHTHALATE	
			Units	ug/L	
Location	Date	QA	Quarter		
SD-1	12/10/96		FALL	1.8	J|

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
PESTICIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	ALPHA-CHLORDANE		GAMMA-CHLORDANE	
			Units	ug/L		ug/L	
Location	Date	QA	Quarter				
LS-1	05/23/97		SPRING	**0.0078**	JP|J	**0.0097**	JP|J
LS-1	05/23/97	D	SPRING	**0.017**	P|J	**0.013**	P|J

TABLE 5.6
SUMMARY OF CHEMICAL DETECTIONS - STORM WATER
RADIONUCLIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

			Analyte	AMERICIUM-241		CARBON-14		GROSS ALPHA		GROSS BETA		RADIUM-226	
			Units	pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Location	Date	QA	Quarter		MDA		MDA		MDA		MDA		MDA
LF-1	11/14/97		FALL	--		<		<		**4.0±1.4**	2.1	<	
LF-3	05/23/97		SPRING	--		<		<		**26.2±3.5**	3.4	**0.21±0.23**	0.19
LF-3	11/26/97		FALL	--		<		<		**24.3±3.0**	2.7	<	
LF-3	11/26/97	D	FALL	--		<		<		**27.2±3.4** C|	3.1	**1.09±0.36** |Jf	0.21
LS-1	12/10/96		FALL	<		**64.±39.**	59	<		**62.3±6.8** C|	5.7	**0.42±0.23** |Jm	0.29
LS-1	05/23/97		SPRING	**0.021±0.021**	0.014	<		<		**5.4±2**	3	<	
LS-1	05/23/97	D	SPRING	<		<		<		**4.7±1.9**	2.9	<	
LS-1	11/14/97		FALL	--		<		<		**3.2±1.4**	2.1	**0.46±0.32**	0.43
SD-1	12/10/96		FALL	**0.032±0.028**	0.017	**60.±38.**	59	**4.7±2.5** C|	3.2	**11.8±2.0**	2.3	--	



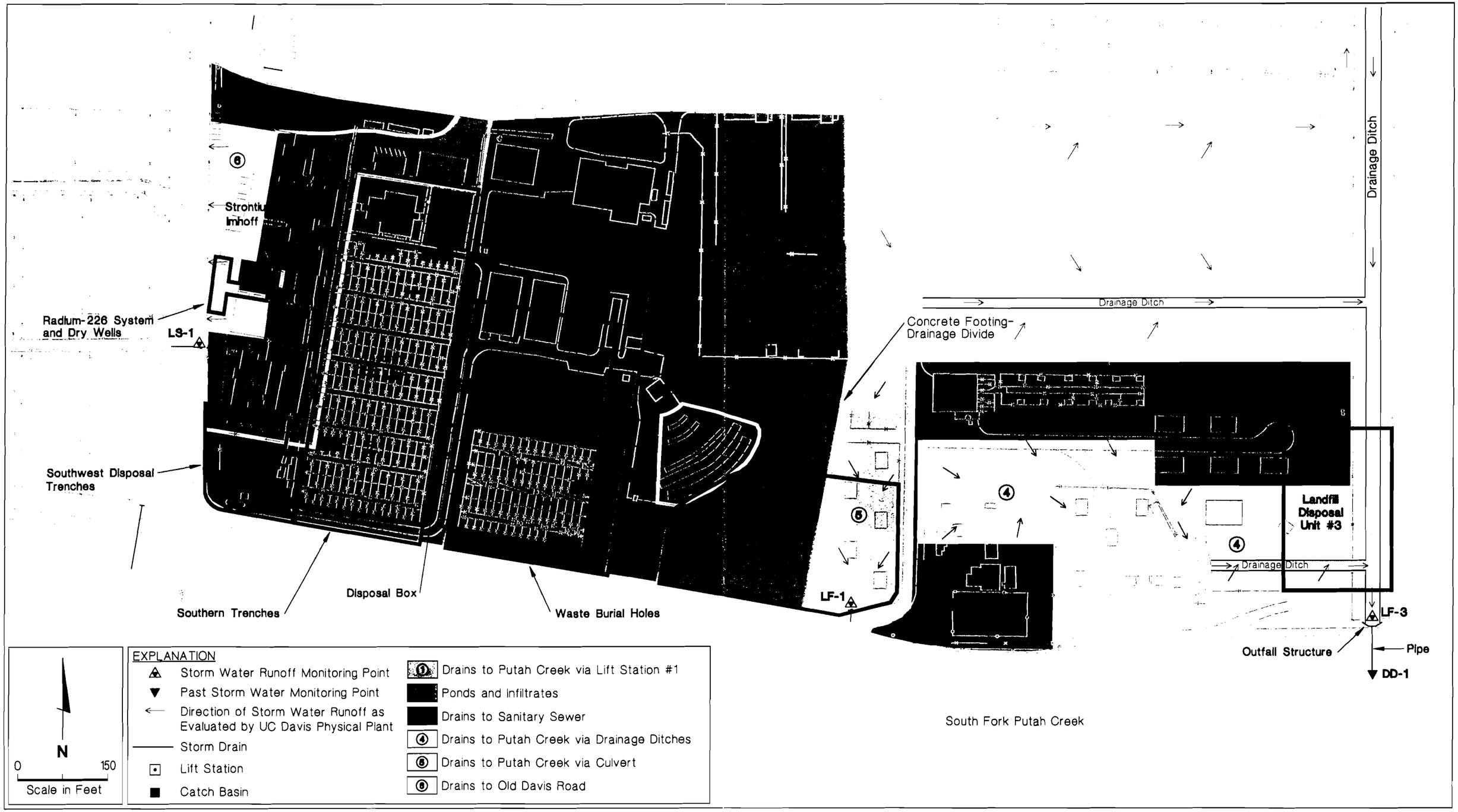
LOCATION MAP
SURFACE WATER MONITORING POINTS

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

00234-255-79801 maj 79801Z 7/27/98

FIGURE 5.1



LOCATION MAP
STORM WATER RUNOFF MONITORING POINTS

1997 Annual Report
LEHR/SCDS Environmental Restoration
Davis, California

FIGURE 5.2

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

00234-255-79801 maj 79801U7/27/98

6.0 1997 DATA QUALITY EVALUATION

This section presents the results of quality assurance and data validation activities conducted for the 1997 water monitoring program. The QA/QC program for the 1997 groundwater, surface water, and storm water monitoring was implemented in accordance with the draft Revised Quality Assurance Project Plan (QAPjP, Dames & Moore, 1997f). Included in the QAPjP are sections identifying quality control sample collection requirements and specified data quality objectives (DQOs) for the measurement data. The primary quality control features of the QA/QC program include the collection and analysis of travel blanks and duplicate water samples, laboratory quality control sample analysis, and data validation.

During 1997, sample analyses were performed by LAS Laboratories in Las Vegas, Nevada. Bioassay testing was performed by Aquatic Testing Laboratories in Ventura, California, in association with the surface and storm water monitoring. Data validation was performed by Dames & Moore in compliance with the draft Revised QAPjP, using protocols consistent with the USEPA National Functional Guidelines for Data Review (EPA, 1994a, 1994b). The purpose of data validation is to assess the ability of the analytical data to serve their intended use.

A data assessment summary for the 1997 groundwater, surface water and storm water program is presented in Section 6.1. An evaluation of the data quality for the winter, spring, and summer sampling events has been previously presented in the respective 1997 quarterly monitoring reports (Dames & Moore, 1997c, 1998d, 1998e). A discussion of each of the QA/QC samples collected during the Fall Quarter 1997 is presented in Section 6.2. The results of the data validation for the Fall Quarter 1997 are presented in Section 6.3.

Appendix A presents the data for the 1997 groundwater and storm water monitoring programs. Data validation flags have been applied to those sample results which fell outside of specified tolerance limits and, therefore, did not meet the program's quality assurance objectives. An explanation of the data qualifiers is presented at the end of this section.

6.1 1997 Data Assessment Summary

Data quality for the 1997 groundwater, surface water, and storm water was evaluated using travel blanks, field duplicates, laboratory quality control sample analysis, and data validation. In general, 1997 quality control results were satisfactory. The most significant 1997 findings are reviewed below:

- Sample analysis and data packages were incomplete for the fall 1997 monitoring event due to the closure of LAS Laboratories in January 1998. As detailed in Section 6.3 below, most discrepancies in 1997 data were noted for fall data and were the result of the LAS closure.

- Common laboratory contaminants, reported in either travel blanks or laboratory method blanks, included acetone, methylene chloride, and phthalates, and similar detections in the samples are likely due to analytical processes or laboratory supplies. Most of these data have been qualified (U) indicating bias due to extraneous contamination.

- Field duplicate results, presented in Table 6.1, indicate that the samples were collected using representative sampling techniques, and that laboratory procedures yielded reproducible data.

- The detection limit for arsenic was raised to 3.0 µg/L during the spring 1997. The QAPjP-specified limit for arsenic is 2.0 µg/L.

- Based on findings presented in the Data Quality Evaluation – winter 1997 (Dames & Moore, 1997c), corrective action measures were taken by field personnel to collect additional sample volume for specifying MS/MSD analysis for all parameters, beginning with the summer 1997 monitoring round. However, due to laboratory oversight, MS/MSD analyses were not performed as requested during fall 1997.

A total of 20,164 analytical results were validated in 1997 according to procedures outlined in the draft Revised QAPjP. Results of the validation indicate that 19,886 results (98%) were accepted and 278 results (<2%) were rejected. Accounting for sample analysis not completed during the Fall Quarter 1997, more than 95% of the data for 1997 were accepted, exceeding the quality goal of 90% completeness.

6.2 Field Quality Control Program – Fall 1997

Quality control samples collected in the field during the fall 1997, and submitted for analysis, included four duplicate samples to assess precision and representativeness, and daily travel blank samples analyzed only for VOCs to identify contaminants which may have been introduced during sample transit or during sample storage at the laboratory. Additionally, the laboratory analyzed a method blank and a method blank spike for each analytical batch to detect reagent contamination and proper instrument performance, and associated matrix spike or surrogate spike analysis to determine any matrix interferences associated with the analytical results. The results of field quality control samples are presented below.

- Chloroform and bromodichloromethane were reported in five travel blanks. Similar concentrations reported in samples UCD1-023, UCD2-014 and UCD2-039 have been qualified as anomalous (U), and may be due to contamination during sample handling procedures.

- Groundwater samples from UCD2-015 and UCD2-029, and surface water samples from location PCU were collected in duplicate and analyzed by the laboratory. Duplicate water samples were also collected on November 26, 1997 in association with a storm water event. The duplicate water samples yielded similar results, indicating representative sampling techniques. The high relative percent difference for reported results of bis(2-ethylhexyl)phthalate in the duplicate samples for location UCD2-029 are due to laboratory contamination. The elevated concentration of iron reported in sample STMW0105 (November 26, 1997), and copper in surface water location PCU, are considered estimated due to discrepancies between duplicate results.

- No MS/MSD analyses were performed in conjunction with the fall 1997 VOC, semi-VOC, or pesticides/PCBs analyses due to laboratory oversight. For these analyses, acceptable analytical

precision was demonstrated by the results of field duplicate analyses, and analytical accuracy was shown by acceptable recoveries in the laboratory control samples. As designated on the chain of custody, sample UCD2-014 was utilized for MS/MSD analyses for the remaining parameters. The laboratory randomly analyzed other samples to achieve the minimum (5 percent) requirement for MS/MSD analyses. Some sample data for TOC and Gross Alpha were qualified as estimated (J) due to associated matrix bias. For the remaining analyses, acceptable precision and accuracy was achieved.

6.3 Data Quality Evaluation – Fall 1997

The following information is provided to summarize the data validation review of the fall 1997. Validation discrepancies identified during this monitoring event include incompleteness of the data set, elevated reporting limits, use of wrong methodologies, missed holding times, laboratory QC standard failures, blank contamination, and transcription and reporting errors. As applicable, there is an explanation of irregularities, where the results were further considered to evaluate potential impacts on data quality and usability. Data qualified as estimated (J/UJ) exhibited some bias during analysis and should be considered an approximate measure of the respective analyte concentration. Data qualified as anomalous (U) should be considered a non-detect, given the adjusted reporting limit. Data qualified as rejected (R) are not useful in determining the presence or absence of the respective analyte.

6.3.1 Groundwater – Fall 1997

Due to laboratory oversight, detection limits did not comply with project specifications for all reported data. For VOCs, all detection limits are higher than those listed in the QAPjP. Additionally, the laboratory failed to complete data for the pesticides/PCBs analyses. Acetone, chloroform, and bromodichloromethane were reported in several travel blanks and laboratory blanks. The reported detections of acetone in samples UCD1-010, UCD2-040, and UCD4-042, and chloroform in samples UCD1-023 and UCD2-040, have been qualified as anomalous (U) due to blank contamination. Bromodichloromethane was not reported in any samples and no data qualification was necessary. Similarly for SVOCs, detections of bis(2-ethylhexyl)phthalate in samples UCD1-028, UCD2-029, UCD2-036, UCD2-037, UCD2-039, and UCD4-041 have been qualified as anomalous (U) due to associated laboratory blank contamination. The reported detections of trimethyl-silanol (a non-target compound) are the result of instrument column bleed and are not indigenous to the samples.

No data were rejected, and none were qualified in the alkalinity, COD, and TOC fractions. For anions, nitrate analyses for UCD2-032, UCD4-042, and UCD4-043 were performed outside holding time, and the resulting data have been qualified as estimated (J). Additionally, low levels of chromium, lead, copper., zinc, vanadium, iron, manganese, and nickel were observed in the laboratory blanks for some samples. These associated data have been qualified as anomalous (U), where appropriate.

6.3.2 Surface Water – Fall 1997

Due to laboratory oversight, no data for pesticides/PCBs were completed. For VOCs, all detection limits are higher than those listed in the QAPjP. Low-level laboratory blank contamination resulted in some

qualified data for copper, iron, lead, manganese, and zinc. The reporting limits have been adjusted for the associated bias. Hardness testing was performed using Method SM2340 instead of EPA Method 130.2 prescribed in the QAPjP. Calibration problems resulted in the estimatation of TDS results in all surface water samples. Matrix interferences were noted for TOC analysis, and associated surface water results are considered estimated. No other data were qualified for surface water analysis.

6.3.3 Storm Water – Fall 1997

Due to laboratory oversight, the pesticides/PCBs analysis was performed using EPA method 8080, rather that the specified method CLP OLM03.1(Modified). The laboratory also failed to report the required compound endrin ketone, and failed to provide the necessary calibration data for verification of PCBs, toxaphene and technical chlordane. Based on a review of the raw data provided for the pesticides results, several reporting errors were noted in the sample and quality control data, resulting in both false positive and false negative results. Due to serious deficiencies in meeting data quality objectives, the pesticides results were deemed unreliable (R). Hardness testing was performed by Method SM2340 instead of EPA Method 130.2 prescribed in the QAPjP.

No other fall 1997 data were rejected, and none were qualified in the anions, alkalinity, COD, oil and grease, or bioassay fractions. For VOCs, all detection limits are higher than those listed in the QAPjP. The reported detections of acetone in fall storm water sample LF-3 and duplicate have been qualified as anomalous (U) due to blank contamination. Similarly, blank contamination resulted in some qualified data for chromium, lead, and manganese. The reporting limits have been adjusted for the associated bias. Matrix interferences were noted for TOC analysis, and associated storm water results are considered estimated. Precision problems in the field duplicate for the Radium-226 analysis, and the MS/MSD for Gross alpha testing, indicate bias in these reported results which have been qualified as estimated.

DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY (1)

Assigned by Dames & Moore's Data Review Team

DAMES & MOORE DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not reported above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not reported above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DAMES & MOORE DATA QUALIFIER DEFINITIONS — REASON CODE DEFINITIONS

a Analytical sequence deficiency or omission.
b Gross compound breakdown (4,4'-DDT/Endrin).
c Calibration failure; poor or unstable response.
d Laboratory duplicate imprecision.
e Laboratory duplicate control sample imprecision.
f Field duplicate imprecision.
g Poor chromatography.
h Holding time violation.
i Internal standard failure.
j Poor mass spectrographic performance.
k Serial dilution imprecision.
l Laboratory control sample recovery failure.
m Matrix spike/matrix spike duplicate recovery failure.
n Interference check sample recovery failure.
o Calibration blank contamination (metals/inorganics only).
p Preparation blank contamination (metals/inorganics only).
q No valid quantitation column present.
r Linearity failure in initial calibration.
s Surrogate spike recovery failure (GC organics and GC/MS organics only).
t Instrument tuning failure.
u No valid confirmation present (GC Organics only).
w Retention time (RT) outside of RT window.
x Field blank contamination.
y Trip blank contamination
z Method blank contamination.
Q Other.

INTERPRETATION KEY

The following example shows how an analytical result which includes qualifiers assigned by both the Dames & Moore data review team and the analytical laboratory could be displayed in the data tables:

<5.20 JB | Uz

The qualifier assigned by the laboratory precedes the "|"; the qualifier assigned by the Dames & Moore data review team follows it. In this example, the result is qualified as a non-detection data to the bias introduced by contamination of the associated method blank. Presence of the analyte in the method blank is indicated by the laboratory qualifier (B). The qualifier assigned by the Dames & Moore data review team (Uz) indicates that the analyte concentration is considered to be below the adjusted detection limit (quantitation limit) based on the level of contamination in the method blank.

(1) The key to laboratory data qualifier flags follows this page.

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - GROUNDWATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION -DAVIS, CALIFORNIA

ANALYTE	SAMPLE QUARTER LOCATION DATE QA UNITS	GWGW0509 WINTER UCD2-014 02/18/97			GWGW0511 WINTER UCD2-014 02/18/97 DUPLICATE			UCD2-014 RPD(%)	GWGW0519 WINTER UCD1-021 02/24/97			GWGW0520 WINTER UCD1-021 02/24/97 DUPLICATE			UCD1-021 RPD(%)
METALS															
ANTIMONY	ug/L	--			--				2.5		|Jn	2.0		B|Jn	22%
ARSENIC	ug/L	3.4			4.9			36%	4.9			4.1			18%
BARIUM	ug/L	258			264			2%	141			147			4%
CALCIUM	ug/L	55000			56000			2%	51200			52800			3%
CHROMIUM	ug/L	51.2		|Jn	53.8		|Jn	5%	57.6		|Jn	63.3		|Jn	9%
CHROMIUM, HEXAVALENT (+6)	ug/L	45			47			4%	58			60			3%
COBALT	ug/L	3.1		B|	3.1		B|		2.2		B|Jn	2.4		B|Jn	9%
COPPER	ug/L	2.0		B|Jn	2.3		B|Jn	14%	1.8		B|Jn	1.9		B|Jn	5%
MAGNESIUM	ug/L	140000			144000			3%	129000			132000			2%
MANGANESE	ug/L	1.2		B|	1.1		B|	9%	--			--			--
MOLYBDENUM	ug/L	1.2		B|	1.2		B|		1.3		B|	1.4		B|	7%
NICKEL	ug/L	9.0		|Jn	9.3		B|Jn	3%	7.9		B|Jn	8.8		B|Jn	11%
SELENIUM	ug/L	6.3			4.5			33%	8.0			7.9			1%
SODIUM	ug/L	44100			45000			2%	93300			95400			2%
VANADIUM	ug/L	6.0		B|	6.7		B|	11%	3.8		B|	7.1		B|	61%
ZINC	ug/L	5.0		B|Jn	7.5		B|Jn	40%	4.5		B|Jn	5.3		B|Jn	16%
GENERAL CHEMICALS															
NITROGEN, NITRATE (AS N)	mg/L	7.09			7.05			1%	58.1			58			0%
TOTAL DISSOLVED SOLIDS	mg/L	767.			792.			3%	1020			987.			3%
TOTAL ORGANIC CARBON	mg/L	1.7			1.4			19%	1.3			1.2			8%
SEMI-VOLATILE COMPOUNDS															
DI-N-BUTYLPHTHALATE	ug/L	<10.			0.57		JB|Uz	-							
VOLATILE ORGANIC COMPOUNDS															
CHLOROFORM	ug/L	0.6		J|	0.6		J|		0.4		J|	0.5		J|	22%
RADIONUCLIDES			MDA			MDA				MDA			MDA		
AMERICIUM-241	pCi/L	--			--				--			0.039±0.034	0.029		--
BISMUTH-214	pCi/L	58.±18.	18.	|Jf	21.5±6.8	7.8	|Jf	23%	--			--			--
CARBON-14	pCi/L	375.±37.	21.		422.±40.	22.		3%	177.±69.	97.		105.±63.	97.		13%
LEAD-214	pCi/L	43.±15.	19.		25.3±6.3	7.4		13%	18.±11.	17.		--			--
TRITIUM	pCi/L	5490±540	220	|Jm	5910±560	220	|Jm	3%	--			--			

QA = Samples taken as part of the quality assurance program.
- = Below detection limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - GROUNDWATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION -DAVIS, CALIFORNIA

ANALYTE	SAMPLE QUARTER LOCATION DATE QA UNITS	GWGW0543 SPRING UCD2-026 05/19/97			GWGW0543 SPRING UCD2-026 05/19/97 DUPLICATE			UCD2-026 RPD(%)
METALS								
ARSENIC	ug/L	<3.0		|UJk	6		|Jk	--
BARIUM	ug/L	150			144			4%
CALCIUM	ug/L	38700			37300			4%
CHROMIUM	ug/L	41.6		|Jk	40.3		|Jk	3%
CHROMIUM, HEXAVALENT	ug/L	31			30			3%
LEAD	ug/L	1.8		B|	<1.0			--
MAGNESIUM	ug/L	68100			65400			4%
MANGANESE	ug/L	<1.0			1.1		B|	--
MOLYBDENUM	ug/L	1.7		B|	1.7		B|	
NICKEL	ug/L	10.6		B|	10.2		B|	4%
POTASSIUM	ug/L	992.		B|	861.		B|	14%
SELENIUM	ug/L	3.9			<3.0			--
SODIUM	ug/L	41500			40600			2%
VANADIUM	ug/L	14.2			12.5			13%
GENERAL CHEMICALS								
ALKALINITY, TOTAL (AS CACO3)	mg/L	362.			384.			6%
CHLORIDE	mg/L	23.6			23.9			1%
NITRATE-N	mg/L	5.91			5.96			1%
SULFATE	mg/L	36.1			36.4			1%
TOTAL DISSOLVED SOLIDS	mg/L	442.			456.			3%
TOTAL KJELDAHL NITROGEN	mg/L	7.09			6.43			10%
TOTAL ORGANIC CARBON	mg/L	1.11			0.96	B|		14%
SEMI-VOLATILE COMPOUNDS								
BIS(2-ETHYLHEXYL)PHTHALATE	ug/L	6.0		J|	11			59%
VOLATILE ORGANIC COMPOUNDS								
CHLOROFORM	ug/L	17			17			
RADIONUCLIDES			MDA			MDA		
AMERICIUM-241	pCi/L	0.020±0.022	.018		0.019±0.028	0.039		
BISMUTH-214	pCi/L	22.7±8.2	9.9	|Jf	-8±11.	18.	|Jf	
LEAD-214	pCi/L	16.1±6.9	9.6		8.±11.	16.		
RADIUM-226	pCi/L	0.11±0.13	0.20		0.39±0.23	0.26		--

QA = Samples taken as part of the quality assurance program.
- = Below detection limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - GROUNDWATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION -DAVIS, CALIFORNIA

ANALYTE	SAMPLE QUARTER LOCATION DATE QA UNITS	GWGW0553 SUMMER UCD1-012 08/21/97			GWGW0554 SUMMER UCD1-012 08/21/97 DUPLICATE			UCD1-012 RPD(%)
METALS								
CHROMIUM, HEXAVALENT	ug/L	182		H|Jh	184		H|Jh	1%
GENERAL CHEMICALS								
NITRATE-N	mg/L	59.1			58.7			1%
TOTAL DISSOLVED SOLIDS	mg/L	1370			1390			1%
TOTAL ORGANIC CARBON	mg/L	2.92			2.99			2%
VOLATILE ORGANIC COMPOUNDS								
1,1,2-TRICHLOROETHANE	ug/L	2.3			3.3		|Ji	36%
1,1-DICHLOROETHANE	ug/L	11		|Ji	13		|Ji	17%
1,1-DICHLOROETHENE	ug/L	15		|Ji	18		|Ji	18%
1,2-DICHLOROETHANE	ug/L	5.2		|Ji	6.0		|Ji	14%
1,2-DICHLOROPROPANE	ug/L	0.7			0.8		|Ji	13%
BROMODICHLOROMETHANE	ug/L	0.9			0.9		|Ji	
CHLOROFORM	ug/L	7900		|Js	7000			12%
TRICHLOROETHENE	ug/L	0.3		J|	<0.4		J|UJi	--
RADIONUCLIDES			MDA			MDA		
CARBON-14	pCi/L	286.±74.	86.		281.±74.	86.		--
BISMUTH-214	pCi/L	18.±14.	18.		-3.±13.	21.		--
RADIUM-226	pCi/L	0.36±0.29	0.42		0.73±0.35	0.36		--

QA = Samples taken as part of the quality assurance program.
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TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - GROUNDWATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION -DAVIS, CALIFORNIA

	SAMPLE	GWGW0573			GWGW0574				GWGW0589			GWGW0590			
	QUARTER	FALL			FALL				FALL			FALL			
	LOCATION	UCD2-015			UCD2-015			UCD2-015	UCD2-029			UCD2-029			UCD2-029
	DATE	11/17/97			11/17/97			RPD(%)	11/24/97			11/24/97			RPD(%)
	QA				DUPLICATE							DUPLICATE			
ANALYTE	UNITS														
METALS															
BARIUM	ug/L	NA			NA			--	181			177			2%
CALCIUM	ug/L	NA			NA			--	44500			43700			2%
CHROMIUM	ug/L	NA			NA			--	16.1			18.2			12%
CHROMIUM, HEXAVALENT (+6)	ug/L	9	B|		12			29%	10			9	B|		11%
MAGNESIUM	ug/L	NA			NA			--	75400			73300			3%
NICKEL	ug/L	NA			NA			--	13.2	B|Jf		24.1	|Jf		58%
SODIUM	ug/L	NA			NA			--	38300			37400			2%
VANADIUM	ug/L	NA			NA			--	4.6	B|		<4.0			--
GENERAL CHEMICALS								--							
ALKALINITY, TOTAL (AS CACO3)	mg/L	NA			NA			--	348.			342.			2%
CHLORIDE	mg/L	NA			NA			--	26			26.3			1%
NITRATE-N	mg/L	1.52			1.51			1%	8.26			8.17			1%
SULFATE	mg/L	NA			NA			--	40.8			41			0%
TOTAL DISSOLVED SOLIDS	mg/L	384.	|Jc		379.	|Jc		1%	470.	|Jc		466.	|Jc		1%
TOTAL ORGANIC CARBON	mg/L	0.56	B|		0.67	B|		18%	1.3			1.66			24%
VOLATILE ORGANIC COMPOUNDS															
1,1,2-TRICHLOROETHANE	ug/L	NA			NA			--	<1.0			0.2	J|		--
1,1-DICHLOROETHANE	ug/L	NA			NA			--	0.8	J|		0.8	J|		
1,1-DICHLOROETHENE	ug/L	NA			NA			--	0.8	J|		0.9	J|		12%
1,2-DICHLOROETHANE	ug/L	NA			NA			--	1.7			1.7			
1,2-DICHLOROPROPANE	ug/L	NA			NA			--	1.6			1.6			
CHLOROFORM	ug/L	NA			NA			--	130	B|		140	B|		7%
RADIONUCLIDES				MDA			MDA				MDA			MDA	
BISMUTH-214	pCi/L	10.0±5.8		7.5	-4.±11.		19.		NA			NA			
LEAD-214	pCi/L	9.0±5.2		7.6	8.±12.		18.		NA			NA			
TRITIUM	pCi/L	NA			NA				90±130		230	350±160		220	

QA = Sa[illegible]s taken as part of the quality assurance program.
- = Belo[illegible]tion limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - SURFACE WATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

ANALYTE	SAMPLE QUARTER LOCATION DATE QA UNITS	SWSW0202 WINTER STPO 02/20/97		SWSW0202 WINTER STPO 02/20/97 DUPLICATE		STPO RPD(%)
METALS						
ARSENIC	ug/L	4.9		5.1		4%
BARIUM	ug/L	37.9		48.4		24%
CALCIUM	ug/L	22600		22300		1%
CHROMIUM	ug/L	3.7	B|Jn	6.9	B|Jn	60%
COBALT	ug/L	1.0		1.2	B|Jn	18%
COPPER	ug/L	6.2	B|Jn	8.7	B|Jn	34%
IRON	ug/L	52.5	B|	42.7	B|	21%
MAGNESIUM	ug/L	29300		28900		1%
MANGANESE	ug/L	3.9	B|Jn	5.2	B|Jn	29%
MOLYBDENUM	ug/L	5.6	B|	7.5	B|	29%
NICKEL	ug/L	4.6	B|Jn	5.8	B|Jn	23%
POTASSIUM	ug/L	10200		9510		7%
SELENIUM	ug/L	3.6		3.9		8%
SILVER	ug/L	1.1	B|	1.8	B|	48%
SODIUM	ug/L	143000		141000		1%
VANADIUM	ug/L	9.3	B|	9.4	B|	1%
ZINC	ug/L	32.3	|Jn	41.9	|Jn	26%
GENERAL CHEMICALS						
NITROGEN, NITRATE (AS N)	mg/L	7.37		7.32		1%
TOTAL DISSOLVED SOLIDS	mg/L	561.		566.		1%
TOTAL ORGANIC CARBON	mg/L	9		9.1		1%
SEMI-VOLATILE COMPOUNDS						
BIS(2-ETHYLHEXYL)PHTHALATE	ug/L	0.70	J|	0.56	J|	22%
VOLATILE ORGANIC COMPOUNDS						
BROMODICHLOROMETHANE	ug/L	1.4		1.4		
CHLOROFORM	ug/L	4.5		4.7		4%
DIBROMOCHLOROMETHANE	ug/L	1.0		0.4	J|	86%
RADIONUCLIDES			MDA		MDA	
GROSS BETA	pCi/L	19.7±4.4	2.2 C|Jf	10.4±3.9	5.8 C|Jf	15%

QA = Samples taken as part of the quality assurance program.
- = Below detection limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.
* = Resampled

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - SURFACE WATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

ANALYTE	SAMPLE LOCATION DATE QA UNITS	SWSW0206 SPRING PCD 05/27/97		SWSW0207 SPRING PCD 05/27/97 DUPLICATE		PCD RPD(%)
METALS						
BARIUM	ug/L	98.2		98.2		
CALCIUM	ug/L	32600		32700		0%
CHROMIUM	ug/L	7.3	B|	7.6	B|	4%
CHROMIUM, HEXAVALENT	ug/L	33		30		10%
COPPER	ug/L	<1.0		1.4	B|	--
MAGNESIUM	ug/L	40800		40800		
MANGANESE	ug/L	7	B|	7.1	B|	1%
MOLYBDENUM	ug/L	<1.0		1.1	B|	--
NICKEL	ug/L	2.8	B|	3.1	B|	10%
POTASSIUM	ug/L	1190.0	B|	<722.0		--
SELENIUM	ug/L	3.7		3.9		5%
SODIUM	ug/L	31500		31300		1%
ZINC	ug/L	3.1	B|	6.6	B|	72%
GENERAL CHEMICALS						
HARDNESS	mg/L	249		250		0%
NITRATE-N	mg/L	3.05		3.04		0%
TOTAL DISSOLVED SOLIDS	mg/L	305.		308.		1%
TOTAL ORGANIC CARBON	mg/L	3.01		3.04		1%
VOLATILE ORGANIC COMPOUNDS						
BROMODICHLOROMETHANE	ug/L	0.9	J|	0.8	J|	12%
CHLOROFORM	ug/L	0.9		0.9		
DIBROMOCHLOROMETHANE	ug/L	0.8	J|	0.7	J|	13%
RADIONUCLIDES			MDA		MDA	
AMERICIUM-241	pCi/L	0.018±0.026	0.037	0.026±0.025	0.017	--
BISMUTH-214	pCi/L	-2.2±6.3	9.9	23.±14.	18.	--
LEAD-212	pCi/L	-8.6±5.8	9.4 |Jf	48.±14.	15. |Jf	--
TRITIUM	pCi/L	790±230	240	710±220	230	--

QA = Samples taken as part of the quality assurance program.
- = Below detection limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.
* = Rea[illegible]

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - SURFACE WATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

ANALYTE	SAMPLE QUARTER LOCATION DATE QA UNITS	SWSW0210 SUMMER PCD 08/29/97		SWSW0211 SUMMER PCD 08/29/97 DUPLICATE		PCD RPD(%)
METALS						
BARIUM	ug/L	78.5	E|Jn	77.8	E|Jn	1%
CALCIUM	ug/L	28400		28000		1%
COPPER	ug/L	<2.0		3.1	B|	--
MAGNESIUM	ug/L	37300		36900		1%
MANGANESE	ug/L	10.4	B|	<3.5	B|Uo	--
POTASSIUM	ug/L	1340	B|	1420	B|	6%
SODIUM	ug/L	29600		29400		1%
VANADIUM	ug/L	4.5	B|	4.9	B|	9%
GENERAL CHEMICALS						
ALKALINITY, TOTAL (AS CACO3)	mg/L	200.	*	190.	*	5%
CHLORIDE	mg/L	23.1	*	23.1	*	
NITRATE-N	mg/L	1.63	*	1.65	*	1%
SULFATE	mg/L	24.7	*	24.7	*	
TOTAL DISSOLVED SOLIDS	mg/L	261.	*	259.	*	1%
TOTAL ORGANIC CARBON	mg/L	3.12		3.32		6%
PESTICIDES						
4,4'-DDD	ug/L	0.01	J|	<0.009	JP|UJNzu	--
VOLATILE ORGANIC COMPOUNDS						
ACETONE	ug/L	<1.0	|Rc	6.3	|Jc	--
BROMODICHLOROMETHANE	ug/L	0.5	J|	0.6		18%
CHLOROFORM	ug/L	0.7		0.8		13%
DIBROMOCHLOROMETHANE	ug/L	<0.50		0.6		--

QA = Samples taken as part of the quality assurance program.
- = Below detection limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.
* = Resampled

TABLE 6.1
RELATIVE PERCENT DIFFERENCE FOR DUPLICATES - SURFACE WATER
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

ANALYTE	SAMPLE QUARTER LOCATION DATE QA UNITS	SWSW0212 FALL PCU 11/12/97			SWSW0213 FALL PCU 11/12/97 DUPLICATE			PCU RPD(%)
METALS								
BARIUM	ug/L	105			103			0
CALCIUM	ug/L	31200			31000			1%
CHROMIUM	ug/L	6.5	B|		4.7	B|		32%
CHROMIUM, HEXAVALENT (+6)	ug/L	0.004	B|		0.004	B|		
COPPER	ug/L	<5.7	|UJfp		11.8	|Jf		--
MAGNESIUM	ug/L	39300			39000			1%
POTASSIUM	ug/L	1630	B|		1610	B|		1%
SODIUM	ug/L	21800			21600			1%
GENERAL CHEMICALS								
ALKALINITY, TOTAL (AS CACO3)	mg/L	206.			204.			1%
CHLORIDE	mg/L	17.9			17.9			
NITRATE-N	mg/L	2.66			2.64			1%
SULFATE	mg/L	27.8			27.8			
TOTAL DISSOLVED SOLIDS	mg/L	276.	|Jc		286.	|Jc		4%
TOTAL ORGANIC CARBON	mg/L	2.91	N|Jm		3.21			10%
VOLATILE ORGANIC COMPOUNDS								
ACETONE	ug/L	<5.			1.5	J|		--
RADIONUCLIDES								
TRITIUM	pCi/L	0±120		220	-40±110		220	

QA = Samples taken as part of the quality assurance program.
- = Below detection limit or not analyzed. See completed data presented in Appendices A, B, and C for detail.
* = Re[illegible] 1

7.0 STATISTICAL ANALYSIS

Statistical analyses were conducted on reported analytical results from 1997 groundwater samples. The purpose of these analyses was to compare data from downgradient wells with data from upgradient wells to evaluate impacts to groundwater in the vicinity of the Site. Guidance for the statistical approach is based on "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities" (USEPA, 1989 and 1992), Figure 7.1, redrawn and modified from that document, presents the types of analyses conducted based on the characteristics of the data. Putah Creek water in the vicinity of the Site is influenced by two upstream sources: upstream creek flow, and discharge from the UC Davis wastewater treatment plant. As a result, surface water analytical results were not evaluated statistically and are discussed qualitatively in Section 5.0.

Data from HSU-1 and HSU-2 were included in the statistical analysis, and were evaluated separately because of their different physical and hydraulic properties (see Section 3.0). Analytical results from upgradient well UCD1-18 were used in the background calculations for HSU-1, and results for upgradient well UCD2-17 were used in the background calculations for HSU-2. HSU-1 downgradient wells included in this analysis are UCD1-1, UCD1-4, UCD1-10, UCD1-11, UCD1-12, UCD1-13, UCD1-19, UCD1-20, UCD1-21, UCD1-22, UCD1-23, UCD1-24, UCD1-25, UCD1-34, and UCD1-27Z3. Downgradient wells from HSU-2 included in this analysis are UCD2-7, UCD2-14, UCD2-15, UCD2-16, UCD2-29, UCD2-30, UCD2-31, UCD2-32, UCD2-35, UCD2-36, UCD2-37, UCD2-38, UCD2-39, UCD2-40, and EW2-1.

For this report, data from summer 1993 through fall 1997 were used to evaluate upgradient or background groundwater conditions. This data set includes the fourteen most recent quarters of sampling and was chosen so the size of the background data set for each analyte included in the statistical analysis would have at least eight data points. The USEPA (1989, 1992) recommends that the most recent six to eight data points from upgradient monitoring wells be used for statistical evaluation of background groundwater quality.

7.1 Parameters Included in Statistical Analysis

Data from HSU-1 and HSU-2 were screened for inclusion in the statistical analysis based on their importance to the Site as potential contaminants. The screening process included reviewing historical site groundwater data, and reviewing previous statistical analyses from the 1993, 1994, and 1995 Annual Water Monitoring Reports (a statistical analysis was not conducted for the 1996 Annual Report). Based on the screening, VOCs, organochlorine pesticides, tritium, carbon-14, TDS, nitrate, chromium, and hexavalent chromium were included in the statistical analysis because they are well documented site chemical constituents of concern in groundwater. Gross alpha, gross beta, cesium-137, radium-226, and strontium-90 were included to evaluate potential impacts from radionuclides to groundwater.

7.2 Statistical Methods

Once parameters were selected for statistical analysis, the process shown in Figure 7.1 was used to select the appropriate statistical method to evaluate each parameter. This process uses an initial survey of the percentage of detected and non-detected values in the upgradient wells. These methods include the following: calculation of an upper tolerance limit (UTL) with 95% confidence or adjustment of sample mean and standard deviation by Cohen's Method and calculation of a UTL. The methods and the selection process are described briefly below. A detailed description of this process and example calculations are presented in Appendix C. These tests are consistent with previous statistical evaluations conducted for Site groundwater (PNNL, 1996a; PNL, 1995).

The test selected for each comparison is dependent on the percentage of detections reported in upgradient and downgradient wells. Parameters with less than 15% detections (for example, VOCs and organochlorine pesticide compounds) were eliminated from statistical calculations because of a lack of reported detections (USEPA, 1989) in background wells. Because there were too few detections in upgradient wells and because these compounds are anthropogenic, any reported concentrations in downgradient wells suggest potential impacts to groundwater.

Parameters with greater than 15% detections in upgradient and downgradient wells and less than or equal to 50% detections in upgradient well are to be analyzed by the Test of Portions. The test compares the frequency or proportion of detections in upgradient wells, to the proportion of detections in each downgradient well. The test of proportions method was not used in the statistical analysis of 1997 groundwater data because only one constituent (hexavalent chromium in HSU-1) considered in this statistical analysis reported greater than 50% of the data as below the detection limit. Because the number of detections reported for hexavalent chromium in HSU-1 was very close to 50%, hexavalent chromium data was adjusted using Cohen's Method and a 95% UTL was calculated so that a background value can be compared to HSU-1 results.

When greater than 50% detections are present for an analytical parameter in the upgradient well, the data were evaluated by calculating a 95% UTL. The UTL calculation provides an upper limit concentration for the parameter in the upgradient well. If the percentage of detections in the upgradient well is less than 85%, but greater than 50%, the mean and standard deviation were adjusted using Cohen's Method (Cohen, 1959) before calculating the UTL. If the percentage of detections was greater than 85%, the UTL was calculated using values of one-half the detection limit for non-detections. Once this UTL concentration is established for the sample results of the upgradient well, each downgradient result is compared to the UTL value. For more discussion and details of these UTL calculations, see Appendix C.

7.3 Results

This section presents the results of the statistical comparison of upgradient and downgradient groundwater data. The specific parameters and the selected statistical methods are presented in Table 7.1.

Table 7.2 presents a summary of the results of the statistical analysis of groundwater data. A discussion of the results of the statistical analysis is presented below.

7.3.1 No Statistical Calculation

VOCs and organochlorine pesticides were evaluated for this statistical analysis, but were not reported in HSU-1 or HSU-2 background locations in data collected from summer 1993 through fall 1997. As a result, no statistical calculations were performed, and any detection reported for a downgradient location indicates potential site impacts to groundwater.

7.3.2 Upper Tolerance Limit Calculations

Table 7.2 presents a summary of the statistical analysis for parameters that were evaluated by a UTL calculation. These parameters include: total chromium, hexavalent chromium, nitrate as N, TDS, carbon-14, cesium-137, gross alpha, gross beta, radium-226, strontium-90, and tritium for both HSU-1 and HSU-2.

After calculating the UTL, analytical results from the downgradient wells were compared to the UTL value. A downgradient result that exceeds the UTL is considered to be elevated with respect to background at a 95% confidence level. Results that are below the UTL value are considered to be at background levels. Table 7.2 lists the percentage of 1997 samples in each well that exceeded a UTL. Radiological values from downgradient wells were not considered to have exceeded a UTL unless the analytical value was positive, exceeded the minimum detectable activity, and exceeded the UTL. Downgradient wells with one or more samples above a UTL are denoted in Table 7.2 by boldface type.

Several analytical parameters from downgradient wells reported concentrations in excess of the background UTL on a consistent (>50%) basis. These parameters are tritium: in well UCD1-13; carbon-14 in wells UCD1-12 and UCD1-13; total chromium, hexavalent chromium, nitrate, TDS, and gross beta in several HSU-1 wells; tritium and carbon-14 in well UCD2-14; total chromium, hexavalent chromium, nitrate, and TDS in several HSU-2 wells. In HSU-1, sporadic results (≤50% or only one reported detection) above the calculated UTL were reported for gross alpha, radium-226, strontium-90, carbon-14, and tritium; however, there are no consistent patterns to these values. In HSU-2, sporadic results above the calculated UTL were reported for carbon-14 and tritium; however, there are no consistent patterns to these values.

7.3.3 Cohen's Method

Table 7.2 presents a summary of the statistical analysis for hexavalent chromium, which was the only parameter evaluated using Cohen's Method. Cohen's Method included computing an adjusted sample mean and standard deviation and then calculating a UTL. After calculating the UTL, analytical results from the downgradient wells were compared to the UTL value as described in Section 7.3.1. Hexavalent

chromium was reported in excess of background UTL on a consistent (>50%) basis for both HSU-1 and HSU-2.

7.4 Discussion

Based on the results of the statistical analyses, nitrate, total chromium, hexavalent chromium, and TDS concentrations reported in several downgradient wells were higher at the 95% confidence level that established upgradient concentrations. Based on these statistical analyses, these four parameters appear to be elevated with respect to background groundwater beneath a large portion of the Site. Other constituents, including carbon-14, gross beta, and tritium were reported at concentrations that exceed reported upgradient concentrations at the 95% confidence level in only a few wells. These parameters appear to be consistently elevated beneath small or localized portions of the Site. These results are discussed further below.

- Nitrate concentrations are reported consistently above the upgradient UTL value in 16 downgradient wells during 1997 monitoring. These wells include UCD1-10, UCD1-12, UCD1-21, UCD1-24, and UCD1-28 in HSU-1, and UCD2-7, UCD2-14, UCD2-16, UCD2-26, UCD2-27Z4, UCD2-29, UCD2-30, UCD2-31, UCD2-32, UCD2-36, and UCD2-40 in HSU-2. These results are consistent with previous statistical evaluations.

- Total chromium and hexavalent chromium exhibit similar patterns, as both parameters are reported consistently higher than background in HSU-1 wells UCD1-10, UCD1-11, UCD1-12, UCD1-13, UCD1-19, UCD1-21, UCD1-25, and UCD1-28, and HSU-2 wells UCD2-7, UCD2-14, and UCD2-16. These results are similar to previous results and show that chromium and hexavalent chromium are elevated with respect to background over a large portion of the Site.

- TDS concentrations were reported consistently above the upgradient UTL value in fifteen downgradient wells during 1997 monitoring. These wells include UCD1-10, UCD1-12, UCD1-13, UCD1-19, UCD1-24, and UCD1-28 in HSU-1, and UCD2-7, UCD2-14, UCD2-16, UCD2-27Z4, UCD2-29, UCD2-32, UCD2-36, and UCD2-40 in HSU-2. These results are consistent with previous statistical evaluations.

- Several other parameters are consistently reported above background, but in fewer wells and over smaller areas than parameters described above. Tritium concentrations reported were evaluated to be above background levels in wells UCD1-13, UCD2-14, UCD2-31, and UCD2-40. Well UCD2-31 was only sampled for this analyte once in 1997, and this reported value does not appear to be consistent with previous results. Well UCD2-40 was installed in November 1997 and was only sampled once for this analyte in 1997. This well will be monitored quarterly for this parameter for one year, as presented in the Revised FSP (Dames & Moore, 1997a). Carbon-14 was reported above background levels in HSU-1 wells UCD1-12, UCD1-13, UCD1-23, UCD1-24, and UCD1-25, and HSU-2 well UCD2-14. Well UCD1-24 was only sampled for this analyte once in 1997, and this reported value does not appear to be consistent with previous results. Gross beta was reported above background levels in wells UCD1-10, UCD1-19, and UCD1-28.

In general, the results of the statistical evaluation are supported by the graphs and tables presented in Section 4.0, and are consistent with the statistical analyses conducted for the previous annual water monitoring reports (PNNL, 1993, 1994, and 1995). These results show that potential site constituents

most consistently reported above background include nitrate, chromium/hexavalent chromium, TDS, tritium, and carbon-14.

TABLE 7.1
PARAMETERS INCLUDED IN STATISTICAL ANALYSIS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

Parameter		HSU-1		HSU-2	
		Background % Non Detects [a]	Statistical Test	Background %Non Detects [a]	Statistical Test
METALS	Hexavalent Chromium	23%	Cohen's Method, UTL Calculation	54%	Cohen's Method, UTL Calculation
	Total Chromium	0%	UTL Calculation	0%	UTL Calculation
CHEMICALS	Nitrate, N	0%	UTL Calculation	0%	UTL Calculation
	TDS	0%	UTL Calculation	0%	UTL Calculation
RADIONUCLIDES [b]	Carbon-14	100%	UTL Calculation	80%	UTL Calculation
	Cesium-137	87%	UTL Calculation	100%	UTL Calculation
	Gross Alpha	100%	UTL Calculation	90%	UTL Calculation
	Gross Beta	100%	UTL Calculation	78%	UTL Calculation
	Radium-226	50%	UTL Calculation	50%	UTL Calculation
	Strontium-90	62%	UTL Calculation	75%	UTL Calculation
	Tritium	100%	UTL Calculation	100%	UTL Calculation

[a] Background data for HSU-1 and HSU-2 from wells UCD1-18 and UCD2-17, respectively.

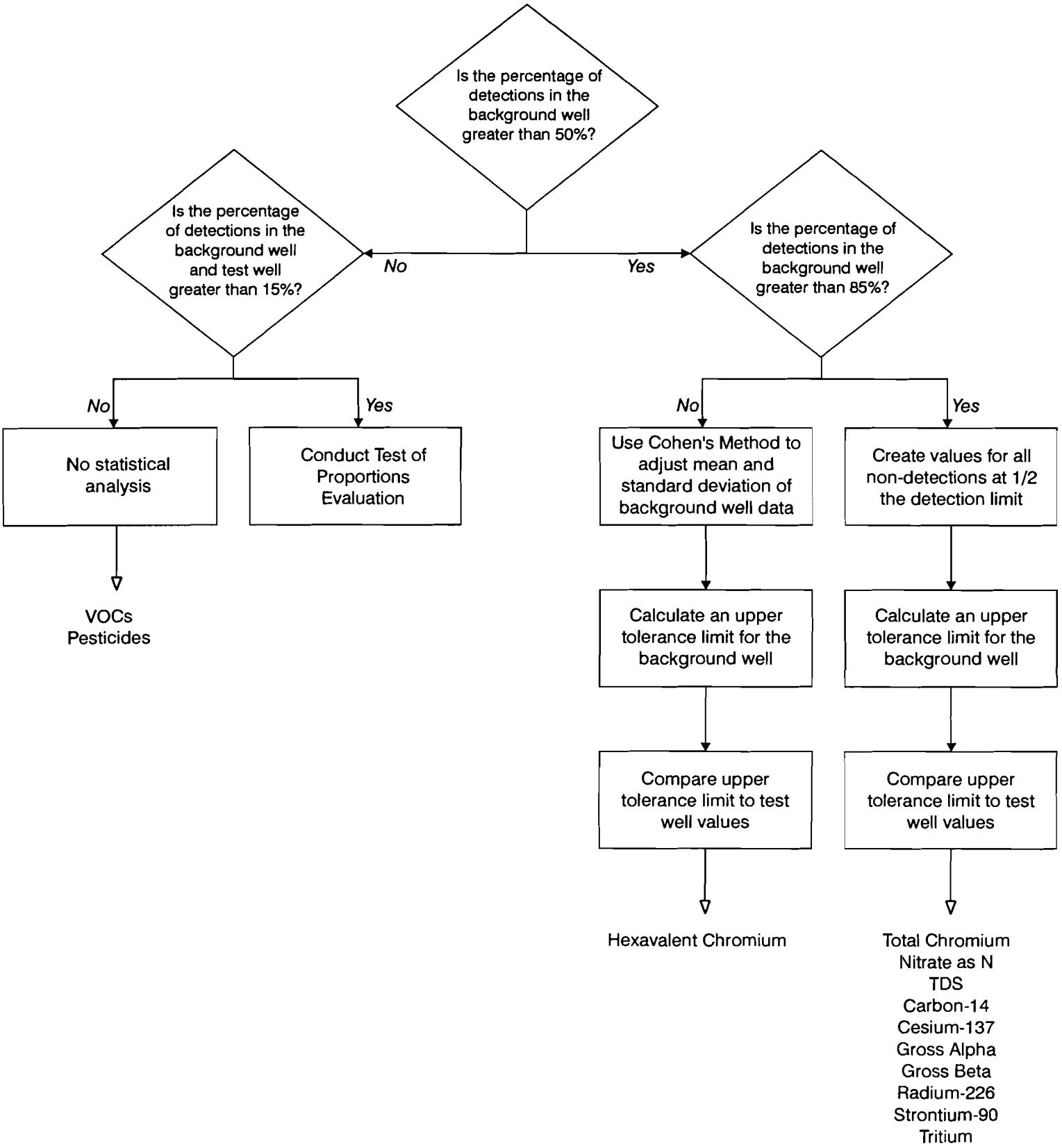
[b] UTL values for radionuclides were calculated using the analytical values; counting error was not incorporated into the calculation.

TABLE 7.2
RESULTS IN DOWNGRADIENT WELLS EXCEEDING UTL
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

	HSU-1										
	METALS		GENERAL CHEMICALS		RADIONUCLIDES						
Well	CHROMIUM ug/L	HEXAVALENT CHROMIUM ug/L	NITRATE-N mg/L	TDS mg/L	C-14 pCi/L	Cs-137 pCi/L	Gross α pCi/L	Gross ß pCi/L	Ra-226 pCi/L	Sr-90 pCi/L	TRITIUM pCi/L
95,95 UTL	34.8	38	33.57	826	95.9	11.4	5.5	3.5	0.7	1.72	262
UCD1-001	-	<	<	<	-	-	-	-	-	-	-
UCD1-004	<	<	<	<	-	<	<	<	<	<	<
UCD1-010	100%	75%	100%	100%	-	<	50%	100%	-	-	<
UCD1-011	100%	100%	<	<	-	<	<	<	-	-	<
UCD1-012	100%	100%	100%	100%	100%	<	50%	50%	33%	<	25%
UCD1-013	100%	100%	<	100%	100%	<	50%	50%	<	<	100%
UCD1-019	100%	50%	<	100%	-	<	<	100%	-	-	<
UCD1-020	<	<	<	<	50%	<	<	<	<	<	<
UCD1-021	100%	100%	100%	100%	50%	<	<	<	<	50%	<
UCD1-022	-	<	-	<	<	<	<	<	<	<	50%
UCD1-023	<	<	-	<	100%	<	<	<	-	<	<
UCD1-024	<	<	100%	100%	100%	<	<	<	-	<	<
UCD1-025	100%	75%	<	<	67%	<	<	<	<	<	<
UCD1-27Z3	<	<	<	<	50%	<	50%	50%	<	<	50%
UCD1-028	100%	100%	100%	100%	<	<	<	100%	<	<	<
UCD1-034	<	33%	<	<	50%	<	<	<	<	<	<

TABLE 7.2
RESULTS IN DOWNGRADIENT WELLS EXCEEDING UTL
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

	HSU-2										
	METALS		GENERAL CHEMICALS		RADIONUCLIDES						
Well	CHROMIUM ug/L	HEXAVALENT CHROMIUM ug/L	NITRATE-N mg/L	TDS mg/L	C-14 pCi/L	Cs-137 pCi/L	Gross α pCi/L	Gross ß pCi/L	Ra-226 pCi/L	Sr-90 pCi/L	TRITIUM pCi/L
95,95 UTL	23.2	26.77	3.14	436	183.6	6.4	47.8	16.9	0.54	1.36	209
UCD2-007	100%	50%	100%	100%	50%	<	<	<	<	<	<
UCD2-014	100%	100%	100%	100%	100%	<	<	<	<	<	100%
UCD2-015	<	<	<	<	-	<	<	<	<	<	<
UCD2-016	100%	100%	100%	75%	-	<	<	<	<	<	<
UCD2-026	50%	25%	75%	50%	<	<	<	<	<	<	<
UCD2-027Z4	50%	<	100%	100%	<	<	<	<	<	<	<
UCD2-027Z5	<	<	50%	<	<	<	<	<	<	<	50%
UCD2-027Z6	<	<	<	<	<	<	<	<	<	<	<
UCD2-027Z7	<	<	<	<	<	<	<	<	<	<	<
UCD2-029	<	<	100%	100%	<	<	<	<	<	<	50%
UCD2-30	<	-	100%	<	<	<	<	<	<	<	<
UCD2-31	<	-	100%	<	<	<	<	<	<	<	100%
UCD2-32	50%	100%	100%	100%	<	<	<	<	<	<	<
UCD2-35	<	<	<	<	<	<	<	<	<	<	33%
UCD2-36	<	<	100%	100%	<	<	<	<	<	<	-
UCD2-37	<	<	<	<	<	<	<	<	<	<	<
UCD2-38	<	-	<	<	<	<	<	<	<	<	<
UCD2-39	<	<	<	<	<	<	<	<	<	<	<
UCD2-40	<	-	100%	100%	<	<	<	<	<	<	100%



STATISTICAL TEST SELECTION FLOW CHART

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Figure 7.1

8.0 LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CLP SOW OLC	USEPA Contract Laboratory Program Statement of Work for Low Concentration Organic Analysis
CLP SOW OLM	USEPA Contract Laboratory Program Statement of Work for Organic Analysis Multi-media, Multi-concentration
CLP SOW ILM	USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis Multi-media, Multi-concentration
CRDL	Contract required detection limit
D	duplicate sample
DOE	(U.S.) Department of Energy
DQO	data quality objective
EC	electrical conductivity
EE/CA	engineering evaluation/cost analysis
Eh	Oxidation-reduction potential
EPA	(U.S.) Environmental Protection Agency
EW	extraction well
F	fall quarter
FSP	UC Davis Field Sampling Plan
GEL	General Engineering Laboratories, Inc.
HSU	hydrostratigraphic unit
ILC	Low Concentration Water Inorganics (USEPA Contract Laboratory Program)
IRA	Interim Remedial Action
IW	injection well
LAS	Lockhead Analytical Services Laboratory, located in Las Vegas, Nevada
LEHR	Laboratory for Energy-Related Health Research
LF	landfill
LS	lift station (stormwater sample location)
MCL	Maximum Contaminant Level
MDA	minimum detectable activity
mg/L	milligrams per liter
MS/MSD	matrix spike/matrix spike duplicate
MSLD	mean sea level datum
mV	millivolts
NA	not analyzed
ND	not detected
NR	not required
PARCC	precision, accuracy, representativeness, completeness, and comparability
PCB	polychlorinated biphenyls
PCD	Putah Creek Downstream (surface water sampling location)
pCi/L	picocuries per liter
PCU	Putah Creek Upstream (surface water sampling location)
PNL	Pacific Northwest Laboratory
PNNL	Pacific Northwest National Laboratory
PRG	Preliminary Remedial Goal
QA	quality assurance
QAPjP	quality assurance project plan

QC	quality control
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RPD	relative percent difference
SCDS	South Campus Disposal Site
SOW	statement of work
Sp	spring quarter
STPO	UC Davis wastewater treatment plant outfall (surface water sampling location)
Su	summer quarter
SVOC	semivolatile organic compound
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TOC	total organic carbon
UC	University of California, Davis
μg/L	micrograms per liter
μS/cm	micro-Sieverts per centimeter
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTL	Upper Tolerance Limit
VOC	volatile organic compound
W	winter quarter

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Appendix A

Complete Analytical Results for Groundwater, Surface Water, and Storm Water

DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY (1)

Assigned by Dames & Moore's Data Review Team

DAMES & MOORE DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DAMES & MOORE DATA QUALIFIER DEFINITIONS — REASON CODE DEFINITIONS

a Analytical sequence deficiency or omission.
b Gross compound breakdown (4,4'-DDT/Endrin).
c Calibration failure; poor or unstable response.
d Laboratory duplicate imprecision.
e Laboratory duplicate control sample imprecision.
f Field duplicate imprecision.
g Poor chromatography.
h Holding time violation.
i Internal standard failure.
j Poor mass spectrographic performance.
k Serial dilution imprecision.
l Laboratory control sample recovery failure.
m Matrix spike/matrix spike duplicate recovery failure.
n Interference check sample recovery failure.
o Calibration blank contamination (metals/inorganics only).
p Preparation blank contamination (metals/inorganics only).
q No valid quantitation column present.
r Linearity failure in initial calibration.
s Surrogate spike recovery failure (GC organics and GC/MS organics only).
t Instrument tuning failure.
u No valid confirmation present (GC Organics only).
w Retention time (RT) outside of RT window.
x Field blank contamination.
y Trip blank contamination
z Method blank contamination.
Q Other.

INTERPRETATION KEY

The following example shows how an analytical result which includes qualifiers assigned by both the Dames & Moore data review team and the analytical laboratory could be displayed in the data tables:

<5.20 JB|Uz

The qualifier assigned by the laboratory precedes the "|"; the qualifier assigned by the Dames & Moore data review team follows it. In this example, the result is qualified as a non-detection data to the bias introduced by contamination of the associated method blank. Presence of the analyte in the method blank is indicated by the laboratory qualifier (B). The qualifier assigned by the Dames & Moore data review team (Uz) indicates that the analyte concentration is considered to be below the adjusted detection limit (quantitation limit) based on the level of contamination in the method blank.

(1) The key to laboratory data qualifier flags follows this page.

Lockheed Analytical Services
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/09/1996]

For Use On The Analytical Data Reporting Forms	
A	*For CLP analyses Only* -- The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL).
C	Constituent confirmed by GC/MS analysis. *[pesticide/PCB analyses only]*
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to surrogates being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	*Estimated value* -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs *(For CLP Reporting Only)*.
N	*For CLP Reporting Only* -- Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	*For CLP Reporting Only* -- The percent difference between the concentrations detected on both GC columns was greater than 25 percent *[pesticide/PCB analyses only]*.
U	*For CLP Reporting Only* -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "*as received*" basis. A value in the % moisture cell indicates that data are reported based on a "*dry weight*" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a[1]	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

[1] Used as footnote designations on the QC Summary Form.

Lockheed Analytical Services
DATA QUALIFIERS FOR INORGANIC ANALYSES
[Revised 08/28/92]

For Use on the Analytical Data Reporting Forms	
B	*For CLP Analyses Only* -- Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	*For Routine, Non-CLP Analyses Only* -- Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL).
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	*For CLP Analyses Only* -- Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	*For CLP Reporting Only* -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	*For AAS Only* -- Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a[1]	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

[1] Used as footnote designations on the QC summary form.

Lockheed Analytical Services

DATA QUALIFIERS FOR RADIOCHEMICAL ANALYSES

[Revised 04/05/96]

For Use on the Analytical Data Reporting Forms	
B	Any constituent that was detected in the associated method blank at a concentration was greater than the reporting detection limit (RDL).
C	The minimum detectable activity exceeded the RDL due to the residue weight limitations forcing a volume reduction.
D	Constituent detected in the diluted sample.
E	Constituent concentration exceeded the calibration or attenuation curve range.
F	*For Alpha Spectrometry Only*-- Full width half max exceeded the acceptance limits.
H	Sample analysis performed outside of method-specified maximum holding time requirement.
Y	Chemical yield exceeded acceptance limits.
For Use on the QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for laboratory control standard and matrix spike; and RPD for replicate analyses) exceeded acceptance limits.
a[1]	The spike recovery and/or RPD for matrix spike and duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the MDA.

[1] Used as foot note designations on the QC summary form.

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
FIELD PARAMETERS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-001	UCD1-004	UCD1-004	UCD1-004	UCD1-004	UCD1-010	UCD1-010	UCD1-010	UCD1-010	UCD1-011
		Quarter	WINTER	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER
		Sample ID	GWGW0521	GWGW0504	GWGW0540	GWGW0568	GWGW0575	GWGW0512	GWGW0534	GWGW0559	GWGW0577	GWGW0510
		Date	02/24/97	02/13/97	05/19/97	09/02/97	11/17/97	02/18/97	05/14/97	08/25/97	11/18/97	02/18/97
Analyte	CRDL	Units										
EH-F	--	mvolts	117	--	97	135	84	119	107	57	65	136
PH-F	--		6.94	8.16	7.28	7.06	6.38	7.22	7.31	7.08	7.2	7.38
EC-F	--	umhos/cm	1050	778	817	828	685	1895	1969	2320	1924	1288
TEMPERATURE	--	deg C	19.1	18.0	18.1	17.9	17.9	18.5	18.9	18.7	18	18.4
TURBIDITY-F	--	ntu	1.13	1.7	1.28	2.71	1.1	0.06	1.15	5.7	0.74	0.01

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FIELD PARAMETERS
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		Location	UCD1-011	UCD1-012	UCD1-012	UCD1-012	UCD1-012	UCD1-013	UCD1-013	UCD1-013	UCD1-013	UCD1-018
		Quarter	SUMMER	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER
		Sample ID	GWGW0560	GWGW0507	GWGW0537	GWGW0553	GWGW0572	GWGW0508	GWGW0538	GWGW0555	GWGW0580	GWGW0516
		Date	08/25/97	02/18/97	05/15/97	08/21/97	11/17/97	02/18/97	05/15/97	08/21/97	11/18/97	02/20/97
Analyte	CRDL	Units										
EH-F	--	mvolts	73	225	152	94	28	143	122	107	68	118
PH-F	--		7.17	7.18	7.05	7.21	6.57	6.92	6.9	6.97	7.07	7.28
EC-F	--	umhos/cm	1470	2060	2200	2530	1968	1350	1575	1799	1471	922
TEMPERATURE	--	deg C	18.4	18.9	19.4	19.3	18.9	18.7	18.8	18.8	18.6	17.9
TURBIDITY-F	--	ntu	1.65	0.1	3.23	5.42	1.78	0.08	1.1	4.3	0.5	0.18

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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-018	UCD1-019	UCD1-019	UCD1-020	UCD1-020	UCD1-021	UCD1-021	UCD1-022	UCD1-022	UCD1-023
		Quarter	SUMMER	WINTER	SPRING	WINTER	SUMMER	WINTER	FALL	WINTER	SUMMER	WINTER
		Sample ID	GWGW0567	GWGW0513	GWGW0536	GWGW0517	GWGW0563	GWGW0519	GWGW0581	GWGW0522	GWGW0552	GWGW0506
		Date	08/27/97	02/19/97	05/14/97	02/24/97	08/26/97	02/24/97	11/19/97	02/25/97	08/20/97	02/13/97
Analyte	CRDL	Units										
EH-F	--	mvolts	87	159	94	161	89	117	71	182	128	--
PH-F	--		7.33	6.67	7.37	7.34	7.41	7.28	7 16	7 31	7.21	7.83
EC-F	--	umhos/cm	1046	1450	1384	614	706	1482	1417	1140	1296	979
TEMPERATURE	--	deg C	18.1	19.2	19.7	19.2	19.4	19.8	19.5	19	19.3	18.9
TURBIDITY-F	--	ntu	3.4	0.6	1.95	0.37	2.2	1.23	0.5	0.58	4.98	1.6

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		Location	UCD1-023	UCD1-023	UCD1-024	UCD1-024	UCD1-025	UCD1-025	UCD1-025	UCD1-025	UCD1-027Z3	UCD1-027Z3
		Quarter	SUMMER	FALL	WINTER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING
		Sample ID	GWGW0551	GWGW0582	GWGW0523	GWGW0583	GWGW0502	GWGW0542	GWGW0561	GWGW0578	GWGW0528	GWGW0545
		Date	08/20/97	11/19/97	02/25/97	11/19/97	02/13/97	05/19/97	08/26/97	11/18/97	02/28/97	05/20/97
Analyte	CRDL	Units										
EH-F	--	mvolts	103	32	138	72	--	82	110	144	--	-56
PH-F	--		7.2	7.09	7.18	7.04	7.62	7.33	7.03	7.3	7.25	6.98
EC-F	--	umhos/cm	970	827	1600	1495	1407	1175	1317	1211	831	945
TEMPERATURE	--	deg C	19	18.8	19.7	19.6	18.8	19	19	18.6	17.9	20
TURBIDITY-F	--	ntu	3.57	0.88	0.25	0.53	0.91	3.04	4.65	0.67	0.19	2.4

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		Location	UCD1-028	UCD1-034	UCD1-034	UCD1-034	UCD1-034	UCD2-007	UCD2-007	UCD2-014	UCD2-014	UCD2-014
		Quarter	FALL	WINTER	SPRING	SPRING	SUMMER	WINTER	SUMMER	WINTER	SPRING	SUMMER
		Sample ID	GWGW0588	GWGW0500	GWGW0532	GWGW0532	GWGW0557	GWGW0518	GWGW0564	GWGW0509	GWGW0539	GWGW0556
		Date	11/24/97	02/12/97	05/13/97	05/19/97	08/25/97	02/24/97	08/26/97	02/18/97	05/15/97	08/21/97
Analyte	CRDL	Units										
EH-F	--	mvolts	33	--	41	143	4	128	95	142	120	111
PH-F	--		7.57	7.12	7.36	7.54	7.38	7.33	7.21	7.07	7.04	7.06
EC-F	--	umhos/cm	1527	699	617	685	720	742	833	1219	1353	1434
TEMPERATURE	--	deg C	19.6	18.5	19.3	18.8	18.9	18.5	18.5	18.5	19	18.4
TURBIDITY-F	--	ntu	8.13	4.51	47.4	31.1	5	1.56	3	0.18	1.12	1.72

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
FIELD PARAMETERS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD2-014	UCD2-015	UCD2-015	UCD2-015	UCD2-015	UCD2-016	UCD2-016	UCD2-016	UCD2-016	UCD2-017
		Quarter	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER
		Sample ID	GWGW0535	GWGW0505	GWGW0541	GWGW0570	GWGW0573	GWGW0514	GWGW0533	GWGW0565	GWGW0576	GWGW0515
		Date	11/19/97	02/13/97	05/19/97	09/02/97	11/17/97	02/19/97	05/14/97	08/26/97	11/17/97	02/19/97
Analyte	CRDL	Units										
EH-F	--	mvolts	91	--	73	69	50	109	107	103	54	96
PH-F	--		7.07	8.51	7.62	7.35	6.78	6.98	7.45	7.3	6.79	7
EC-F	--	umhos/cm	1080	678	626	718	575	715	806	865	685	616
TEMPERATURE	--	deg C	18.1	17.8	18.1	17.7	17.5	18.6	18.7	18.3	18.1	18
TURBIDITY-F	--	ntu	0.5	0.8	2.15	2.3	0.4	0.32	1.95	1.5	0.45	0.19

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1997 ANNUAL WATER MONITORING REPORT
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		Location	UCD2-017	UCD2-026	UCD2-026	UCD2-026	UCD2-026	UCD2-027Z4	UCD2-027Z4	UCD2-027Z5	UCD2-027Z5	UCD2-027Z6
		Quarter	SUMMER	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	WINTER	SPRING	WINTER
		Sample ID	GWGW0566	GWGW0503	GWGW0543	GWGW0562	GWGW0579	GWGW0527	GWGW0546	GWGW0526	GWGW0547	GWGW0525
		Date	08/27/97	02/13/97	05/19/97	08/26/97	11/15/97	02/27/97	05/20/97	02/27/97	05/21/97	02/26/97
Analyte	CRDL	Units										
EH-F	--	mvolts	89	--	88	93	98	83	123	146	112	137
PH-F	--		7.37	8.07	7.42	7.25	7.4	7.43	7.54	7.88	7.25	7.46
EC-F	--	umhos/cm	715	726	755	797	646	709	729	680	693	634
TEMPERATURE	--	deg C	17.9	18.3	18.8	18.6	18.2	17.9	18.9	19.1	19.2	18
TURBIDITY-F	--	ntu	1.17	0.2	1.2	2.05	0.31	0.53	0.84	0.54	0.81	0.26

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD2-027Z6	UCD2-027Z7	UCD2-027Z7	UCD2-029	UCD2-030	UCD2-031	UCD2-032	UCD2-032	UCD2-035	UCD2-035
		Quarter	SPRING	WINTER	SPRING	FALL	FALL	FALL	SUMMER	FALL	WINTER	SPRING
		Sample ID	GWGW0548	GWGW0524	GWGW0549	GWGW0589	GWGW0591	GWGW0592	GWGW0569	GWGW0585	GWGW0501	GWGW0531
		Date	05/21/97	02/26/97	05/22/97	11/24/97	11/25/97	11/25/97	08/27/97	11/21/97	02/12/97	05/13/97
Analyte	CRDL	Units										
EH-F	--	mvolts	114	118	128	35	48	35	100	33	--	22
PH-F	--		7.21	7.44	7.39	7.65	8.08	7.58	7.35	7.6	7.12	7.54
EC-F	--	umhos/cm	670	698	649	717	609	620	1041	719	686	642
TEMPERATURE	--	deg C	20.2	21	19.3	18.6	17.5	18.5	19.2	18.3	18.4	18.3
TURBIDITY-F	--	ntu	0.9	0.23	0.55	1.97	1.97	30	1.02	0.44	2.12	1.22

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
FIELD PARAMETERS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD2-035	UCD2-036	UCD2-037	UCD2-038	UCD2-039	UCD2-040	UCD4-041	UCD4-042	UCD4-043
		Quarter	SUMMER	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL
		Sample ID	GWGW0558	GWGW0596	GWGW0595	GWGW0594	GWGW0597	GWGW0593	GWGW0587	GWGW0584	GWGW0586
		Date	08/25/97	12/01/97	12/01/97	11/25/97	12/01/97	11/25/97	11/24/97	11/21/97	11/21/97
Analyte	CRDL	Units									
EH-F	--	mvolts	13	43	57	31	76	38	18	25	69
PH-F	--		7.37	7.46	7.34	7.68	7.5	7.6	7.82	7.76	7.67
EC-F	--	umhos/cm	740	671	577	605	644	729	619	656	635
TEMPERATURE	--	deg C	17.9	19.1	17.9	17.7	18.5	18.5	19.3	18.6	18.8
TURBIDITY-F	--	ntu	1.85	>200	4.13	19.9	8.03	15.72	8.87	0.43	1.05

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-001	UCD1-004	UCD1-004	UCD1-004	UCD1-004	UCD1-010	UCD1-010	UCD1-010	UCD1-010	UCD1-011	UCD1-011
		Quarter	WINTER	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SUMMER
		Sample ID	GWGW0521	GWGW0504	GWGW0540	GWGW0568	GWGW0575	GWGW0512	GWGW0534	GWGW0559	GWGW0577	GWGW0510	GWGW0560
		Date	02/24/97	02/13/97	05/19/97	09/02/97	11/17/97	02/18/97	05/14/97	08/25/97	11/18/97	02/18/97	08/25/97
		QA											
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	--	--	--	--	--	--	--	--	--
AMMONIA-NITROGEN	0.05	mg/L	--	--	--	--	--	--	--	--	--	--	--
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	--	--	--	--	--	--	--	--	--
CHLORIDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
FORMALDEHYDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
NITRATE-N	0.1	mg/L	**12.8**	**2.02**	**3.89**	**3.5**	**3.19**	**42.2**	**44.8**	**47.3**	**47.3**	**28.8**	**24.6**
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
SULFATE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
TOTAL DISSOLVED SOLIDS	20	mg/L	**66.0**	**447.**	**489.**	**453.**	**440.** |Jc	**1360**	**1360**	**1490**	**1550** |Jc	**77.0**	--
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	--	--	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	1.0	mg/L	**1.4**	**1.3**	**1.05**	**0.97** B|	**0.77** B|	**2.7**	--	**2.37**	**2.81**	**1.7**	--

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		Location	UCD1-012	UCD1-012	UCD1-012	UCD1-012	UCD1-012	UCD1-013	UCD1-013	UCD1-013	UCD1-013	UCD1-018	UCD1-018
		Quarter	WINTER	SPRING	SUMMER	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SUMMER
		Sample ID	GWGW0507	GWGW0537	GWGW0553	GWGW0554	GWGW0572	GWGW0508	GWGW0538	GWGW0555	GWGW0580	GWGW0516	GWGW0567
		Date	02/18/97	05/15/97	08/21/97	08/21/97	11/17/97	02/18/97	05/15/97	08/21/97	11/18/97	02/20/97	08/27/97
		QA				DUPLICATE							
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	--	--	--	--	--	--	--	--	--
AMMONIA-NITROGEN	0.05	mg/L	--	--	--	--	--	--	--	--	--	--	--
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	--	--	--	--	--	--	--	--	--
CHLORIDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
FORMALDEHYDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
NITRATE-N	0.1	mg/L	**50.7**	**56.3**	**59.1**	**58.7**	**59**	**17.2**	--	**17.4**	--	**17.2**	**13.5**
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
SULFATE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
TOTAL DISSOLVED SOLIDS	20	mg/L	**1320**	**1420**	**1370**	**1390**	**1370** |Jc	**1040**	**1030**	**1020**	**1040** |Jc	**584.**	--
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	--	--	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	1.0	mg/L	**3**	**2.25**	**2.92**	**2.99**	**2.31**	**1.6**	**1.45**	**1.48**	**1.33**	**1.5**	--

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		Location	UCD1-019	UCD1-020	UCD1-021	UCD1-021	UCD1-022	UCD1-022	UCD1-023	UCD1-024	UCD1-024	UCD1-025	UCD1-025
		Quarter	WINTER	WINTER	WINTER	WINTER	WINTER	SUMMER	WINTER	WINTER	FALL	WINTER	SPRING
		Sample ID	GWGW0513	GWGW0517	GWGW0519	GWGW0520	GWGW0522	GWGW0552	GWGW0506	GWGW0523	GWGW0583	GWGW0502	GWGW0542
		Date	02/19/97	02/24/97	02/24/97	02/24/97	02/25/97	08/20/97	02/13/97	02/25/97	11/19/97	02/13/97	05/19/97
		QA				DUPLICATE							
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	--	--	--	--	--	--	--	671.	630.
AMMONIA-NITROGEN	0.05	mg/L	--	--	--	--	--	--	--	--	--	<0.05	<0.050
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	--	--	--	--	--	--	--	<9.	<9.0
CHLORIDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	65	25.2
FORMALDEHYDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	<0.05	<0.050
NITRATE-N	0.1	mg/L	19.7	6.53	58.1	58	--	--	--	92.1	85.9	11.6	12.9
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	--	--	--	--	--	--	--	0.096 B|	--
SULFATE	1.0	mg/L	--	--	--	--	--	--	--	--	--	72.2	37.4
TOTAL DISSOLVED SOLIDS	20	mg/L	944.	359.	1020	987.	460.	726.	556.	1060	--	813.	740.
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	--	--	--	--	--	--	--	--	0.6	7.38
TOTAL ORGANIC CARBON	1.0	mg/L	1.6	0.9 B|	1.3	1.2	1.4	1.01	1.3	1.4	--	1.2	1.05

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		Location	UCD1-025	UCD1-025	UCD1-027Z3	UCD1-027Z3	UCD1-028	UCD1-034	UCD1-034	UCD1-034	UCD2-007	UCD2-007	UCD2-014
		Quarter	SUMMER	FALL	WINTER	SPRING	FALL	WINTER	SPRING	SUMMER	WINTER	SUMMER	WINTER
		Sample ID	GWGW0561	GWGW0578	GWGW0528	GWGW0545	GWGW0588	GWGW0500	GWGW0532	GWGW0557	GWGW0518	GWGW0564	GWGW0509
		Date	08/26/97	11/18/97	02/28/97	05/20/97	11/24/97	02/12/97	05/19/97	08/25/97	02/24/97	08/26/97	02/18/97
		QA											
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	477.	557.	745.	356.	389.	--	--	--	--
AMMONIA-NITROGEN	0.05	mg/L	--	--	0.52	0.32	<0.050	<0.05	--	--	--	--	--
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	18.9 B|	21.8 B|	--	<9.	--	--	--	--	--
CHLORIDE	1.0	mg/L	--	--	23.7	27.4	46.2	23.6	17.5	--	--	--	--
FORMALDEHYDE	1.0	mg/L	--	--	<0.05	<0.050	--	<0.05	--	--	--	--	--
NITRATE-N	0.1	mg/L	12	12.7	1.9	4	44.5	0.491	0.953	0.081 B|	8.28	6.76	7.09
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	0.042 B|	--	--	0.149 B|	--	--	--	--	--
SULFATE	1.0	mg/L	--	--	40.1	37.8	38.1	30.4	23.8	--	--	--	--
TOTAL DISSOLVED SOLIDS	20	mg/L	--	--	535.	619.	1010 |Jc	412.	406.	--	469.	--	767.
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	--	3.2	8	0.6	1	--	--	--	--	--
TOTAL ORGANIC CARBON	1.0	mg/L	--	--	7.7	7.57	1.52	1.6	--	--	0.8 B|	--	1.7

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		Location	UCD2-014	UCD2-014	UCD2-014	UCD2-014	UCD2-015	UCD2-015	UCD2-015	UCD2-015	UCD2-015	UCD2-016	UCD2-016
		Quarter	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	FALL	WINTER	SPRING
		Sample ID	GWGW0511	GWGW0539	GWGW0556	GWGW0535	GWGW0505	GWGW0541	GWGW0570	GWGW0573	GWGW0574	GWGW0514	GWGW0533
		Date	02/18/97	05/15/97	08/21/97	11/19/97	02/13/97	05/19/97	09/02/97	11/17/97	11/17/97	02/19/97	05/14/97
		QA	DUPLICATE								DUPLICATE		
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	--	--	--	--	--	--	--	--	--
AMMONIA-NITROGEN	0.05	mg/L	--	--	--	--	--	--	--	--	--	--	--
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	--	--	--	--	--	--	--	--	--
CHLORIDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
FORMALDEHYDE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
NITRATE-N	0.1	mg/L	**7.05**	**9.31**	**20.3** Jh	**6.09**	**2.03**	**1.34**	**1.44**	**1.52**	**1.51**	**4.52**	--
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
SULFATE	1.0	mg/L	--	--	--	--	--	--	--	--	--	--	--
TOTAL DISSOLVED SOLIDS	20	mg/L	**792.**	**868.**	**565.**	**728.** Jc	**378.**	**358.**	**381.**	**384.** Jc	**379.** Jc	**355.**	**493.**
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	--	--	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	1.0	mg/L	**1.4**	**1.43**	**1.06**	**0.98** B	**1.1**	**1.04**	**0.78** B	**0.56** B	**0.67** B	**1.3**	--

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Analyte	RDL	Units	UCD2-016 SUMMER GWGW0565 08/26/97	UCD2-016 FALL GWGW0576 11/17/97	UCD2-017 WINTER GWGW0515 02/19/97	UCD2-017 SUMMER GWGW0566 08/27/97	UCD2-026 WINTER GWGW0503 02/13/97	UCD2-026 SPRING GWGW0543 05/19/97	UCD2-026 SPRING GWGW0544 05/19/97 DUPLICATE	UCD2-026 SUMMER GWGW0562 08/26/97	UCD2-026 FALL GWGW0579 11/18/97	UCD2-027Z4 WINTER GWGW0527 02/27/97	UCD2-027Z4 SPRING GWGW0546 05/20/97
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	--	--	320.	362.	384.	--	--	349.	379.
AMMONIA-NITROGEN	0.05	mg/L	--	--	--	--	<0.05	<0.050	<0.050	--	--	<0.05	0.206
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	--	--	<9.	<9.0	<9.0	--	--	<9.	<9.0
CHLORIDE	1.0	mg/L	--	--	--	--	19.4	23.6	23.9	--	--	24.5	22.8
FORMALDEHYDE	1.0	mg/L	--	--	--	--	<0.05	<0.050	<0.050	--	--	<0.05	<0.050
NITRATE-N	0.1	mg/L	5.67	--	1.47	1.51	1.51	5.91	5.96	4.31	3.87	3.95	4.95
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	--	--	0.151 B|	--	--	--	--	0.06 B|	--
SULFATE	1.0	mg/L	--	--	--	--	34.6	36.1	36.4	--	--	39.7	37.3
TOTAL DISSOLVED SOLIDS	20	mg/L	479.	461. |Jc	391.	--	421.	442.	456.	--	--	445.	465.
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	--	--	--	<0.2	7.09	6.43	--	--	3.2	--
TOTAL ORGANIC CARBON	1.0	mg/L	0.75 B|	0.48 B|	0.9 B|	--	0.9 B|	1.11	0.96 B|	--	--	4.2	--

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		Location	UCD2-027Z4	UCD2-027Z5	UCD2-027Z5	UCD2-027Z6	UCD2-027Z6	UCD2-027Z7	UCD2-027Z7	UCD2-029	UCD2-029	UCD2-030	UCD2-031
		Quarter	SPRING	WINTER	SPRING	WINTER	SPRING	WINTER	SPRING	FALL	FALL	FALL	FALL
		Sample ID	GWGW0546	GWGW0526	GWGW0547	GWGW0525	GWGW0548	GWGW0524	GWGW0549	GWGW0589	GWGW0590	GWGW0591	GWGW0592
		Date	05/21/97	02/27/97	05/21/97	02/26/97	05/21/97	02/26/97	05/22/97	11/24/97	11/24/97	11/25/97	11/25/97
		QA									DUPLICATE		
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	318.	346.	319.	340.	325.	335.	348.	342.	339.	328.
AMMONIA-NITROGEN	0.05	mg/L	--	<0.05	0.067	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
CHEMICAL OXYGEN DEMAND	50	mg/L	--	<9.	<9.0	<9.	<9.0	<9.	<9.0	--	--	--	--
CHLORIDE	1.0	mg/L	--	22.4	23.9	18.9	20.1	17.7	19.9	26	26.3	24.3	20.6
FORMALDEHYDE	1.0	mg/L	--	<0.05	<0.050	<0.05	<0.050	<0.05	<0.050	--	--	--	--
NITRATE-N	0.1	mg/L	--	3.04	4.64	2.77	2.56	2.22	2.42	8.26	8.17	4.80 |Jc	3.26 |Jc
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	0.096 B|	--	0.098 B|	--	0.101 B|	--	--	--	--	--
SULFATE	1.0	mg/L	--	36.8	37	35	35.1	34	35.4	40.8	41	38.2	35.3
TOTAL DISSOLVED SOLIDS	20	mg/L	--	389.	424.	398.	398.	379.	421.	470. |Jc	466. |Jc	401. |Jc	385. |Jc
TOTAL KJELDAHL NITROGEN	0.5	mg/L	6.82	0.9	3.26	1.6	5.96	2.3	7.61	<0.50	<0.50	<0.50	<0.50
TOTAL ORGANIC CARBON	1.0	mg/L	1.53	1.3	1.08	1.3	1.01	1.4	1.09	1.3	1.66	1.15	1.2

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		Location	UCD2-032	UCD2-032	UCD2-035	UCD2-035	UCD2-035	UCD2-036	UCD2-037	UCD2-038	UCD2-039	UCD2-040	UCD4-041
		Quarter	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	FALL	FALL	FALL	FALL	FALL
		Sample ID	GWGW0569	GWGW0585	GWGW0501	GWGW0531	GWGW0558	GWGW0596	GWGW0595	GWGW0594	GWGW0597	GWGW0593	GWGW0587
		Date	08/27/97	11/21/97	02/12/97	05/13/97	08/25/97	12/01/97	12/01/97	11/25/97	12/01/97	11/25/97	11/24/97
		QA											
Analyte	RDL	Units											
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	473.	345.	303.	324.	--	355.	311.	329.	338.	368.	331.
AMMONIA-NITROGEN	0.05	mg/L	--	<0.050	<0.05	<0.050	--	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
CHEMICAL OXYGEN DEMAND	50	mg/L	--	--	<9.	<9.0	--	--	--	--	--	--	--
CHLORIDE	1.0	mg/L	22.5	25.6	27.1	25.8	--	18.5	18.6	18.7	25.7	29.4	18.4
FORMALDEHYDE	1.0	mg/L	--	--	<0.05	<0.050	--	--	--	--	--	--	--
NITRATE-N	0.1	mg/L	11.5	7.41 H|Jh	0.758	0.858	0.823	4.2	1.96	1.94 |Jc	2.99	8.28 |Jc	3.09
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--	--	0.119 B|	--	--	--	--	--	--	--	--
SULFATE	1.0	mg/L	49.4	42.6	35.8	35.9	--	39.1	36.5	33.3	37.3	41.5	37.3
TOTAL DISSOLVED SOLIDS	20	mg/L	603.	474. |Jc	395.	387.	--	450. |Jc	400. |Jc	374. |Jc	433. |Jc	448. |Jc	404. |Jc
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--	<0.50	0.7	7.49	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
TOTAL ORGANIC CARBON	1.0	mg/L	6.08	1.48	1.1	1.08	--	1	1.49	1.53	2.18	1.06	1.51

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		Location	UCD4-042		UCD4-043	
		Quarter	FALL		FALL	
		Sample ID	GWGW0584		GWGW0586	
		Date	11/21/97		11/21/97	
		QA				
Analyte	RDL	Units				
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	**342.**		**346.**	
AMMONIA-NITROGEN	0.05	mg/L	**0.138**		<0.050	
CHEMICAL OXYGEN DEMAND	50	mg/L	--		--	
CHLORIDE	1.0	mg/L	**22.8**		**18.5**	
FORMALDEHYDE	1.0	mg/L	--		--	
NITRATE-N	0.1	mg/L	**5.45**	H|Jh	**3.18**	H|Jh
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--		--	
SULFATE	1.0	mg/L	**44.4**		**33.9**	
TOTAL DISSOLVED SOLIDS	20	mg/L	**467.**	|Jc	**406.**	|Jc
TOTAL KJELDAHL NITROGEN	0.5	mg/L	<0.50		**0.66**	
TOTAL ORGANIC CARBON	1.0	mg/L	**4.88**		**1.17**	

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METALS
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		Location	UCD1-001	UCD1-004	UCD1-004	UCD1-004	UCD1-004	UCD1-010	UCD1-010	UCD1-010	UCD1-010	UCD1-011
		Quarter	WINTER	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER
		Sample ID	GWGW0521	GWGW0504	GWGW0540	GWGW0568	GWGW0575	GWGW0512	GWGW0534	GWGW0559	GWGW0577	GWGW0510
		Date	02/24/97	02/13/97	05/19/97	09/02/97	11/17/97	02/18/97	05/14/97	08/25/97	11/18/97	02/18/97
		QA										
Analyte	CRDL	Units										
ANTIMONY	5.0	ug/L	--	**9.3**	--	--	--	**2.1** B|	--	--	--	<1.0
ARSENIC	2.0	ug/L	--	**4.2**	--	--	--	**4.2**	--	--	--	**3.8** B|
BARIUM	20	ug/L	--	**211**	--	--	--	**40.3**	--	--	--	**311**
BERYLLIUM	1.0	ug/L	--	<1.0	--	--	--	<1.0	--	--	--	<1.0
CADMIUM	1.0	ug/L	--	<1.0	--	--	--	<1.0	--	--	--	<1.0
CALCIUM	2000	ug/L	--	**39900**	--	--	--	**51900**	--	--	--	**52000**
CHROMIUM	10	ug/L	--	**23.3** |Jn	--	--	--	**77.8** |Jn	--	--	--	**229** |Jn
CHROMIUM, HEXAVALENT (+6)	10	ug/L	**27**	**17**	**19**	**19**	**18**	**71**	<3	**72**	**65** H|Jh	**252**
COBALT	10	ug/L	--	**1.6** B|	--	--	--	**3.5** B|	--	--	--	**2.2** B|
COPPER	10	ug/L	--	**2.6** B|Jn	--	--	--	**2.7** B|Jn	--	--	--	**2.0** B|Jn
IRON	100	ug/L	--	<27.0	--	--	--	<27.0	--	--	--	<27
LEAD	2.0	ug/L	--	<1.0	--	--	--	<1.0	--	--	--	<1.0
MAGNESIUM	2000	ug/L	--	**71400**	--	--	--	**198000**	--	--	--	**135000**
MANGANESE	15	ug/L	--	<1.0	--	--	--	**1.2** B|	--	--	--	<1.0
MERCURY	0.2	ug/L	--	<0.20	--	--	--	<0.20	--	--	--	<0.20
MOLYBDENUM	10	ug/L	--	**1.3** B|	--	--	--	**1.0** B|	--	--	--	**1.1** B|
NICKEL	20	ug/L	--	**7.7** B|Jn	--	--	--	**7.9** B|Jn	--	--	--	**6.6** B|Jn
POTASSIUM	2000	ug/L	--	<1340	--	--	--	<1340	--	--	--	<1340
SELENIUM	3.0	ug/L	--	<3.0	--	--	--	**30.2**	--	--	--	**15.5**
SILVER	10	ug/L	--	<1.0	--	--	--	<1.0	--	--	--	<1.0
SODIUM	2000	ug/L	--	**32100**	--	--	--	**182000**	--	--	--	**80700**
THALLIUM	10	ug/L	--	<1.0	--	--	--	<1.0	--	--	--	<1.0
VANADIUM	10	ug/L	--	**6.3** B|	--	--	--	**6.8** B|	--	--	--	**6.2** B|
ZINC	20	ug/L	--	**7.4** B|Jn	--	--	--	**6.9** B|Jn	--	--	--	**5.1** B|

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
METALS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-011	UCD1-012		UCD1-012		UCD1-012		UCD1-012		UCD1-012		UCD1-013		UCD1-013		UCD1-013		UCD1-013	
		Quarter	SUMMER	WINTER		SPRING		SUMMER		SUMMER		FALL		WINTER		SPRING		SUMMER		FALL	
		Sample ID	GWGW0560	GWGW0507		GWGW0537		GWGW0553		GWGW0554		GWGW0572		GWGW0508		GWGW0538		GWGW0555		GWGW0580	
		Date	08/25/97	02/18/97		05/15/97		08/21/97		08/21/97		11/17/97		02/18/97		05/15/97		08/21/97		11/18/97	
		QA								DUPLICATE											
Analyte	CRDL	Units																			
ANTIMONY	5.0	ug/L	--	<1.0		--		--		--		--		1.4	B|	--		--		--	
ARSENIC	2.0	ug/L	--	8.1		--		--		--		--		6.1		--		--		--	
BARIUM	20	ug/L	--	437		--		--		--		--		331		--		--		--	
BERYLLIUM	1.0	ug/L	--	<1.0		--		--		--		--		<1.0		--		--		--	
CADMIUM	1.0	ug/L	--	<1.0		--		--		--		--		<1.0		--		--		--	
CALCIUM	2000	ug/L	--	71300		--		--		--		--		74400		--		--		--	
CHROMIUM	10	ug/L	--	176	|Jn	--		--		--		--		80.6	|Jn	--		--		--	
CHROMIUM, HEXAVALENT (+6)	10	ug/L	253	175		148		182	H|Jh	184	H|Jh	165		76		76		85	H|Jh	79	H|Jh
COBALT	10	ug/L	--	4.4	B|	--		--		--		--		3.5	B|	--		--		--	
COPPER	10	ug/L	--	2.6	B|Jn	--		--		--		--		2.0	B|Jn	--		--		--	
IRON	100	ug/L	--	<27.0		--		--		--		--		<27.0		--		--		--	
LEAD	2.0	ug/L	--	<1.0		--		--		--		--		<1.0		--		--		--	
MAGNESIUM	2000	ug/L	--	215000		--		--		--		--		190000		--		--		--	
MANGANESE	15	ug/L	--	1.1	B|	--		--		--		--		<1.0		--		--		--	
MERCURY	0.2	ug/L	--	<0.20		--		--		--		--		<0.20		--		--		--	
MOLYBDENUM	10	ug/L	--	<1.0		--		--		--		--		<1.0		--		--		--	
NICKEL	20	ug/L	--	11.0	B|Jn	--		--		--		--		9.4	B|Jn	--		--		--	
POTASSIUM	2000	ug/L	--	<1340		--		--		--		--		<1340		--		--		--	
SELENIUM	3.0	ug/L	--	21.6		--		--		--		--		6.9		--		--		--	
SILVER	10	ug/L	--	<1.0		--		--		--		--		<1.0		--		--		--	
SODIUM	2000	ug/L	--	91000		--		--		--		--		57900		--		--		--	
THALLIUM	10	ug/L	--	<1.0		--		--		--		--		<1.0		--		--		--	
VANADIUM	10	ug/L	--	8.9	B|	--		--		--		--		8.2	B|	--		--		--	
ZINC	20	ug/L	--	5.3	B|Jn	--		--		--		--		2.9	B|Jn	--		--		--	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
METALS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-018		UCD1-018		UCD1-019		UCD1-019		UCD1-020		UCD1-020		UCD1-021		UCD1-021		UCD1-023		UCD1-024	
		Quarter	WINTER		SUMMER		WINTER		SPRING		WINTER		SUMMER		WINTER		WINTER		WINTER		WINTER	
		Sample ID	GWGW0516		GWGW0567		GWGW0513		GWGW0536		GWGW0517		GWGW0563		GWGW0519		GWGW0520		GWGW0506		GWGW0523	
		Date	02/20/97		08/27/97		02/19/97		05/14/97		02/24/97		08/26/97		02/24/97		02/24/97		02/13/97		02/25/97	
		QA															DUPLICATE					
Analyte	CRDL	Units																				
ANTIMONY	5.0	ug/L	<1.0		--		1.2	B|	--		2.6	B|Jn	--		2.5	|Jn	2.0	B|Jn	2.4	B|	1.1	B|Jn
ARSENIC	2.0	ug/L	4.0		--		9.3		--		4.2		--		4.9		4.1		3.9		2.9	
BARIUM	20	ug/L	172		--		94.4		--		100		--		141		147		141		267	
BERYLLIUM	1.0	ug/L	<1.0		--		<1.0		--		<1.0		--		<1.0		<1.0		<1.0		<1.0	
CADMIUM	1.0	ug/L	<1.0		--		<1.0		--		<1.0		--		<1.0		<1.0		<1.0		<1.0	
CALCIUM	2000	ug/L	38600		--		60300		--		23900		--		51200		52800		39100		58100	
CHROMIUM	10	ug/L	21.8	|Jn	--		173	|Jn	--		30.1	|Jn	--		57.6	|Jn	63.3	|Jn	27.3	|Jn	34.8	|Jn
CHROMIUM, HEXAVALENT (+6)	10	ug/L	18		16		184		7	B|	30		29		58		60		21		32	
COBALT	10	ug/L	1.8	B|Jn	--		3.1	B|	--		1.0	B|Jn	--		2.2	B|Jn	2.4	B|Jn	2.7	B|	2.6	B|Jn
COPPER	10	ug/L	1.7	B|Jn	--		2.3	B|Jn	--		1.3	B|Jn	--		1.8	B|Jn	1.9	B|Jn	2.1	B|Jn	2.3	B|Jn
IRON	100	ug/L	<27.0		--		<27.0		--		<27.0		--		<27.0		<27.0		<27.0		<27.0	
LEAD	2.0	ug/L	<1.0		--		<1.0		--		<1.0		--		<1.0		<1.0		<1.0		<1.0	
MAGNESIUM	2000	ug/L	100000		--		167000		--		58300		--		129000		132000		93000		148000	
MANGANESE	15	ug/L	<1.0		--		1.1	B|	--		<1.0		--		<1.0		<1.0		11.4	B|	<1.0	
MERCURY	0.2	ug/L	<0.20		--		<0.20		--		<0.20		--		<0.20		<0.20		<0.20		<0.20	
MOLYBDENUM	10	ug/L	1.4	B|	--		1.5	B|	--		1.8	B|	--		1.3	B|	1.4	B|	1.4	B|	1.3	B|
NICKEL	20	ug/L	10.7	B|Jn	--		7.9	B|Jn	--		4.1	B|Jn	--		7.9	B|Jn	8.8	B|Jn	114	|Jn	8.7	B|Jn
POTASSIUM	2000	ug/L	<1340		--		<1340		--		<1340		--		<1340		<1340		<1340		<1340	
SELENIUM	3.0	ug/L	5.6		--		13.9		--		4.6		--		8.0		7.9		4.3		7.3	
SILVER	10	ug/L	<1.0		--		<1.0		--		<1.0		--		<1.0		<1.0		<1.0		<1.0	
SODIUM	2000	ug/L	34800		--		70300		--		32600		--		93300		95400		37800		72200	
THALLIUM	10	ug/L	<1.0		--		<1.0		--		<1.0		--		<1.0		<1.0		<1.0		<1.0	
VANADIUM	10	ug/L	5.6	B|	--		4.9	B|	--		12.5		--		3.8	B|	7.1	B|	<3.0		5.2	B|
ZINC	20	ug/L	4.2	B|Jn	--		8.8	B|Jn	--		5.8	B|Jn	--		4.5	B|Jn	5.3	B|Jn	3.2	B|Jn	5.1	B|Jn

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METALS
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		Location	UCD1-025		UCD1-025		UCD1-025	UCD1-025		UCD1-027Z3		UCD1-027Z3		UCD1-028		UCD1-034		UCD1-034		UCD1-034
		Quarter	WINTER		SPRING		SUMMER	FALL		WINTER		SPRING		FALL		WINTER		SPRING		SUMMER
		Sample ID	GWGW0502		GWGW0542		GWGW0561	GWGW0578		GWGW0528		GWGW0545		GWGW0588		GWGW0500		GWGW0532		GWGW0557
		Date	02/13/97		05/19/97		08/26/97	11/18/97		02/28/97		05/20/97		11/24/97		02/12/97		05/19/97		08/25/97
		QA																		
Analyte	CRDL	Units																		
ANTIMONY	5.0	ug/L	<1.0		<1.0		--	--		**2.5**	B|Jn	<1.0		<2.0		<1.0		<1.0		--
ARSENIC	2.0	ug/L	**4.0**		**5.1**	|Jk	--	--		**3.3**		<3.0		<3.0		**3.3**		<3.0	|UJk	--
BARIUM	20	ug/L	**305**		**285**		--	--		**163.**		**152**		**202**		**155**		**96.9**		--
BERYLLIUM	1.0	ug/L	<1.0		<1.0		--	--		<1.0		<1.0		<1.0		<1.0		<1.0		--
CADMIUM	1.0	ug/L	<1.0		<1.0		--	--		<1.0		<1.0		<1.0		<1.0		<1.0		--
CALCIUM	2000	ug/L	**44400**		**42100**		--	--		**41000**		**38500**		**51000**		**35600**		**38700**		--
CHROMIUM	10	ug/L	**355**	|Jn	**347**	|Jk	--	--		**5.1**	B|Jn	**1.1**	B|	**577**		**7.3**	B|Jn	<8.3	B|UJk	--
CHROMIUM, HEXAVALENT (+6)	10	ug/L	**17**		**338**		**314**	**331**	H|Jh	**3.0**	B|	**14**		**529**		<3.0		**60**		<3
COBALT	10	ug/L	**2.5**	B|	<1.0		--	--		**1.7**	B|Jn	**3.8**	B|	<5.0		**1.7**	B|	<1.0		--
COPPER	10	ug/L	**2.4**	B|Jn	<1.0		--	--		**1.6**	B|Jn	<1.0		**13.7**		**2.6**	B|Jn	**6.1**	B|	--
IRON	100	ug/L	<27.0		<11.1	B|Up	--	--		**1130**		**1570**	E|Jn	<26.0	B|Uo	<27.0		<6.0		--
LEAD	2.0	ug/L	<1.0		**2.4**		--	--		<1.0		<1.0		<1.8	B|Up	<1.0		**3.7**		--
MAGNESIUM	2000	ug/L	**135000**		**120000**		--	--		**83400**		**79400**		**169000**		**54800**		**55400**		--
MANGANESE	15	ug/L	**1.9**	B|	**1.3**	B|	--	--		**1230**	|Jn	**1310**		<2.0		**27.1**		**27.2**		--
MERCURY	0.2	ug/L	<0.20		<0.20		--	--		<0.20		<0.20		<0.2		<0.20		<0.20		--
MOLYBDENUM	10	ug/L	<1.0		<1.0		--	--		**9.1**	B|	**7.1**	B|	<7.0		**1.5**	B|	<1.0		--
NICKEL	20	ug/L	**6.8**	B|Jn	**9.8**	B|	--	--		**30.4**	|Jn	**218**		**9.0**	B|	**6.9**	B|Jn	**6.8**	B|	--
POTASSIUM	2000	ug/L	<1340		**852.**	B|	--	--		**1650**	B|	**924.**	B|	**917**	B|	<1340		<722.		--
SELENIUM	3.0	ug/L	**9.5**		**5.8**		--	--		**3.1**		**4.8**		**8.0**		<3.0		<3.0		--
SILVER	10	ug/L	<1.0		<1.0		--	--		<1.0		<1.0		<4.0		<1.0		<1.0		--
SODIUM	2000	ug/L	**76000**		**72300**		--	--		**82400**		**88600**		**112000**		**54400**		**51200**		--
THALLIUM	10	ug/L	<1.0		<1.0		--	--		<1.0		<1.0		<1.0		<1.0		<1.0		--
VANADIUM	10	ug/L	**3.1**	B|	<9.4	B|Up	--	--		<3.0		<3.0		**7.0**	B|	<3.0		**16.1**		--
ZINC	20	ug/L	**10.3**	B|Jn	**32.9**		--	--		**20.9**	|Jn	**19.2**	B|	<30.4	|Up	**14.5**	B|Jn	**27.1**		--

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ANALYTICAL RESULTS FOR GROUNDWATER
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		Location	UCD2-007		UCD2-007		UCD2-014		UCD2-014		UCD2-014		UCD2-014		UCD2-014		UCD2-015		UCD2-015		UCD2-015	
		Quarter	WINTER		SUMMER		WINTER		WINTER		SPRING		SUMMER		FALL		WINTER		SPRING		SUMMER	
		Sample ID	GWGW0518		GWGW0564		GWGW0509		GWGW0511		GWGW0539		GWGW0556		GWGW0535		GWGW0505		GWGW0541		GWGW0570	
		Date	02/24/97		08/26/97		02/18/97		02/18/97		05/15/97		08/21/97		11/19/97		02/13/97		05/19/97		09/02/97	
		QA							DUPLICATE													
Analyte	CRDL	Units																				
ANTIMONY	5.0	ug/L	<1.0		--		<1.0		<1.0		<1.0		<2.0		<2.0		1.2	B|	--		<2.0	
ARSENIC	2.0	ug/L	4.1		--		3.4		4.9		<4.4	B|UJk	<3.0		<3.0		3.3		--		<3.0	
BARIUM	20	ug/L	148		--		258		264		285		235	E|Jn	241		136		--		122	E|Jn
BERYLLIUM	1.0	ug/L	<1.0		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		--		<1.0	
CADMIUM	1.0	ug/L	<1.0		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		--		<1.0	
CALCIUM	2000	ug/L	33200		--		55000		56000		55700		57800		52300		33100		--		36900	
CHROMIUM	10	ug/L	37.3	|Jn	--		51.2	|Jn	53.8	|Jn	62.6	|Jk	46.2		46.6		14.7	|Jn	--		<3.4	B|Up
CHROMIUM, HEXAVALENT (+6)	10	ug/L	42		21		46		47		42		35	H|Jh	47		8	B|	6	B|	7	B|
COBALT	10	ug/L	1.2	B|Jn	--		3.1	B|	3.1	B|	1.1	B|	<1.0		<5.0		1.5	B|	--		<1.0	
COPPER	10	ug/L	1.5	B|Jn	--		2.0	B|Jn	2.3	B|Jn	<1.0		3.8	B|	<3.9	B|Up	1.8	B|Jn	--		<2.0	
IRON	100	ug/L	<27.0		--		<27.0		<27.0		<6.0		605.		<12.0		<27.0		--		<349.	|Uo
LEAD	2.0	ug/L	<1.0		--		<1.0		<1.0		1.2	B|	7.4	|Jn	<2.5	|Up	<1.0		--		<1.0	
MAGNESIUM	2000	ug/L	68700		--		140000		144000		138000		148000		132000		58900		--		62400	
MANGANESE	15	ug/L	<1.0		--		1.2	B|	1.1	B|	<1.0		<1.0		<2.0		<1.0		--		<1.0	
MERCURY	0.2	ug/L	<0.20		--		<0.20		<0.20		<0.20		<0.2		<0.2		<0.20		--		<0.2	
MOLYBDENUM	10	ug/L	2.0	B|	--		1.2	B|	1.2	B|	<1.0		<1.5	B|Uo	<7.0		1.9	B|	--		<1.8	B|Uo
NICKEL	20	ug/L	5.6	B|Jn	--		9.0	|Jn	9.3	B|Jn	<4.8	B|Up	<4.2	B|Uo	<9.0		6.7	B|Jn	--		<2.8	B|Uo
POTASSIUM	2000	ug/L	<1340		--		<1340		<1340		<722.		<729		899	B|	<1340		--		<729.0	
SELENIUM	3.0	ug/L	3.1		--		6.3		4.5		3.2		<3.0		<3.0		3.7		--		<3.0	
SILVER	10	ug/L	<1.0		--		<1.0		<1.0		<1.0		<1.0		<4.0		<1.0		--		<1.0	
SODIUM	2000	ug/L	42100		--		44100		45000		43800		47300		46300		27800		--		29500	
THALLIUM	10	ug/L	<1.0		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		--		<1.0	
VANADIUM	10	ug/L	4.9	B|	--		6.0	B|	6.7	B|	11.2		5.7	B|	<4.0		<3.0		--		7.3	B|
ZINC	20	ug/L	5.4	B|Jn	--		5.0	B|Jn	7.5	B|Jn	<9.6	B|Up	<18.9	|Up	<11.9	B|Up	2.7	B|Jn	--		<7.7	B|Up

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METALS
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		Location	UCD2-015		UCD2-015	UCD2-016		UCD2-016		UCD2-016		UCD2-016		UCD2-017		UCD2-017		UCD2-026		UCD2-026	
		Quarter	FALL		FALL	WINTER		SPRING		SUMMER		FALL		WINTER		SUMMER		WINTER		SPRING	
		Sample ID	GWGW0573		GWGW0574	GWGW0514		GWGW0533		GWGW0565		GWGW0576		GWGW0515		GWGW0566		GWGW0503		GWGW0543	
		Date	11/17/97		11/17/97	02/19/97		05/14/97		08/26/97		11/17/97		02/19/97		08/27/97		02/13/97		05/19/97	
		QA			DUPLICATE																
Analyte	CRDL	Units																			
ANTIMONY	5.0	ug/L	--		--	<1.0		<1.0		<2.0		<2.0		<1.0		--		**1.5**	B|	<1.0	
ARSENIC	2.0	ug/L	--		--	**6.2**	|Jc	<3.0	|UJk	<3.0		<3.0		**2.9**	|Jc	--		**6.2**		<3.0	|UJk
BARIUM	20	ug/L	--		--	**149**		**175**		**138**	E|Jn	**152**		**128**		--		**95.9**		**150**	
BERYLLIUM	1.0	ug/L	--		--	<1.0	|UJc	<1.0		<1.0		<1.0		<1.0	|UJc	--		<1.0		<1.0	
CADMIUM	1.0	ug/L	--		--	<1.0		<1.0		<1.0		<1.0		<1.0		--		<1.0		<1.0	
CALCIUM	2000	ug/L	--		--	**38600**		**43500**		**39500**		**37800**		**35400**		--		**36500**		**38700**	
CHROMIUM	10	ug/L	--		--	**34.8**	|Jn	**45.2**	|Jk	**32.7**		**31.4**		**18.5**	|Jn	--		**18.3**	|Jn	**41.6**	|Jk
CHROMIUM, HEXAVALENT (+6)	10	ug/L	**9**	B|	**12**	**30**		**34**		**35**		**37**		**13**		**9**	B|	**14**		**31**	
COBALT	10	ug/L	--		--	**2.4**	B|	**1.5**	B|	<1.7	B|Uo	<5.0		**1.2**	B|	--		**1.3**	B|	<1.0	
COPPER	10	ug/L	--		--	**1.6**	B|Jn	<1.0		<2.0		<8.1	B|Up	**1.5**	B|Jn	--		**1.8**	B|Jn	**1.7**	B|
IRON	100	ug/L	--		--	<27.0		<24.8	B|Up	<442.	|Uo	<12.0		<27.0		--		<27.0		<7.2	B|Up
LEAD	2.0	ug/L	--		--	<1.0		**1.4**	B|	**7.3**	|Jn	<3.2	|Up	<1.0		--		<1.0		**1.8**	B|
MAGNESIUM	2000	ug/L	--		--	**67600**		**72700**		**68900**		**64600**		**59700**		--		**63400**		**68100**	
MANGANESE	15	ug/L	--		--	<1.0		<1.0		<1.0		<2.0		<1.0		--		**1.9**	B|	<1.0	
MERCURY	0.2	ug/L	--		--	<0.20		<0.20		<0.2		<0.2		<0.20		--		<0.20		<0.20	
MOLYBDENUM	10	ug/L	--		--	**1.6**	B|	**1.4**	B|	<1.5	B|Uo	<7.0		**1.9**	B|	--		**1.8**	B|	**1.7**	B|
NICKEL	20	ug/L	--		--	**5.4**	B|Jn	<3.2	B|Up	<2.1	B|Uo	<11.4	B|Uo	**5.5**	B|Jn	--		**10.7**	B|Jn	**10.6**	B|
POTASSIUM	2000	ug/L	--		--	<1340		**1020**	B|	<729.0		<729		<1340		--		<1340		**992.**	B|
SELENIUM	3.0	ug/L	--		--	**6.8**		**4.8**	B|	<3.0		<3.0		**5.1**		--		**4.4**		**3.9**	
SILVER	10	ug/L	--		--	<1.0		<1.0		<1.0		<4.0		<1.0		--		<1.0		<1.0	
SODIUM	2000	ug/L	--		--	**49900**		**54300**		**50400**		**45500**		**29500**		--		**33300**		**41500**	
THALLIUM	10	ug/L	--		--	<1.0		<1.0		<1.0		<1.0		<1.0		--		<1.0		<1.0	
VANADIUM	10	ug/L	--		--	**4.8**	B|	**16.1**		**6.9**	B|	**4.6**	B|	**4.4**	B|	--		<3.0		**14.2**	
ZINC	20	ug/L	--		--	**4.5**	B|Jn	<11.7	B|Up	<11.5	|Up	<21.0	|Up	**4.5**	B|Jn	--		**12.2**	B|Jn	<14.2	B|Up

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		Location	UCD2-026		UCD2-026		UCD2-026		UCD2-027Z4		UCD2-027Z4		UCD2-027Z5		UCD2-027Z5		UCD2-027Z6		UCD2-027Z6		UCD2-027Z7	
		Quarter	SPRING		SUMMER		FALL		WINTER		SPRING		WINTER		SPRING		WINTER		SPRING		WINTER	
		Sample ID	GWGW0544		GWGW0562		GWGW0579		GWGW0527		GWGW0546		GWGW0526		GWGW0547		GWGW0525		GWGW0548		GWGW0524	
		Date	05/19/97		08/26/97		11/18/97		02/27/97		05/21/97		02/27/97		05/21/97		02/26/97		05/21/97		02/26/97	
		QA	DUPLICATE																			
Analyte	CRDL	Units																				
ANTIMONY	5.0	ug/L	<1.0		--		--		<1.0		1.3	|B	<1.0		<1.0		<1.0		<1.0		<1.0	
ARSENIC	2.0	ug/L	6	|Jk	--		--		3.4		<3.0		2.6		<3.0		2.7		<3.0		3.6	
BARIUM	20	ug/L	144		--		--		136		160		142		154		138		146		150	
BERYLLIUM	1.0	ug/L	<1.0		--		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CADMIUM	1.0	ug/L	<1.0		--		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CALCIUM	2000	ug/L	37300		--		--		38600		41200		36700		39900		36100		38300		35300	
CHROMIUM	10	ug/L	40.3	|Jk	--		--		6.9	B|Jn	25.4		14.2	|Jn	16.5		15.6	|Jn	10.8		11.9	|Jn
CHROMIUM, HEXAVALENT (+6)	10	ug/L	30		21		24	H|Jh	3.0	B|	16		12		14		14		9	B|	8	B|
COBALT	10	ug/L	<1.0		--		--		1.6	B|Jn	1.2	B|	1.2	B|Jn	<1.0		1.0	B|Jn	<1.0		1.2	B|Jn
COPPER	10	ug/L	<1.0		--		--		1.8	B|Jn	<1.0		1.6	B|Jn	1.2	B|	2.0	B|Jn	1.2	B|	1.8	B|Jn
IRON	100	ug/L	<6.0		--		--		<27.0		<6.0		<27.0		<6.0	E|	<27.0		<6.0	E|	<27.0	
LEAD	2.0	ug/L	<1.0		--		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
MAGNESIUM	2000	ug/L	65400		--		--		69400		74000		61500		66900		58400		61900		56100	
MANGANESE	15	ug/L	1.1	B|	--		--		97.6	|Jn	27.2		1.5	B|Jn	1.9	B|	1.9	B|Jn	2.3	B|	44.1	|Jn
MERCURY	0.2	ug/L	<0.20		--		--		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20		<0.20	
MOLYBDENUM	10	ug/L	1.7	B|	--		--		2.1	B|	2.2	B|	1.8	B|	1.8	B|	1.6	B|	1.4	B|	1.6	B|
NICKEL	20	ug/L	10.2	B|	--		--		<20.0	|Jn	48.3		7.3	B|Jn	10.5	B|	6.1	B|Jn	2.1	B|	7.1	B|Jn
POTASSIUM	2000	ug/L	861.	B|	--		--		<1340		<722.		<1340		<722.		<1340		<722.		<1340	
SELENIUM	3.0	ug/L	<3.0		--		--		4.2		6.1		<3.0		4.6		4.1		4.2		4.0	
SILVER	10	ug/L	<1.0		--		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
SODIUM	2000	ug/L	40600		--		--		37800		41100		31200		36300		32700		36700		36300	
THALLIUM	10	ug/L	<1.0		--		--		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
VANADIUM	10	ug/L	12.5		--		--		3.7	B|	5.7	|B	<3.0		9.5	B|	6.9	B|	12.5		6.0	B|
ZINC	20	ug/L	<19.4	B|Up	--		--		40.2	|Jn	28.2		12.4	B|Jn	11.1	B|	11.5	B|Jn	15	B|	16.4	B|Jn

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		Location	UCD2-027Z7		UCD2-029		UCD2-029		UCD2-030		UCD2-031		UCD2-032		UCD2-032		UCD2-035		UCD2-035		UCD2-035
		Quarter	SPRING		FALL		FALL		FALL		FALL		SUMMER		FALL		WINTER		SPRING		SUMMER
		Sample ID	GWGW0549		GWGW0589		GWGW0590		GWGW0591		GWGW0592		GWGW0569		GWGW0585		GWGW0501		GWGW0531		GWGW0558
		Date	05/22/97		11/24/97		11/24/97		11/25/97		11/25/97		08/27/97		11/21/97		02/12/97		05/13/97		08/25/97
		QA					DUPLICATE														
Analyte	CRDL	Units																			
ANTIMONY	5.0	ug/L	<1.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<1.0		--
ARSENIC	2.0	ug/L	<3.0		<3.0		<3.0		<3.0		<3.0		<3.0		<3.0		**4.8**		<3.0	|UJk	--
BARIUM	20	ug/L	**175**		**181**		**177**		**166**		**150**		**166**	E|Jn	**179**		**133**		**150**		--
BERYLLIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		--
CADMIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		--
CALCIUM	2000	ug/L	**38200**		**44500**		**43700**		**42100**		**38400**		**43100**		**43700**		**36300**		**36800**		--
CHROMIUM	10	ug/L	**9.3**	B|	**16.1**		**18.2**		**11.4**		**15.5**		**54.4**		**20.2**		**11.4**	|Jn	<5.2	B|UJk	--
CHROMIUM, HEXAVALENT (+6)	10	ug/L	**8**	B|	**10**		**9**	B|	--		--		**61**		--		**3.0**	B|	<3		<3
COBALT	10	ug/L	<1.0		<5.0		<5.0		<5.0		<5.0		<1.0		<5.0		**1.8**	B|	<1.0		--
COPPER	10	ug/L	**1.2**	B|	<6.7	B|Up	<7.6	B|Up	<10.0	B|Up	<4.8	B|Up	<2.0		<6.2	B|Up	**1.9**	B|Jn	**1.4**	B|	--
IRON	100	ug/L	<6.0	E|	<47.2	B|Uo	<25.6	B|Uo	<20.0	B|Uo	<12.0		**484.**		<12.0		**39.2**	B|	**80.2**	B|	--
LEAD	2.0	ug/L	<1.0		<2.7	|Up	<2.3	|Up	<1.7	B|Up	<2.1	|Up	<2.1	B|UJn	<2.2	|Up	<1.0		<1.0		--
MAGNESIUM	2000	ug/L	**61200**		**75400**		**73300**		**68400**		**61100**		**73100**		**72100**		**61100**		**56400**		--
MANGANESE	15	ug/L	**18.5**		<4.4	B|Uo	<4.7	B|Uo	<2.0		<2.0		<1.8	B|Uo	<2.0		**9.6**	B|	**7.3**	B|	--
MERCURY	0.2	ug/L	<0.20		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.20		<0.20		--
MOLYBDENUM	10	ug/L	**1.7**	B|	<7.0		<7.0		<7.0		<7.0		<1.6	B|Uo	<7.0		**2.4**	B|	**2.4**	B|	--
NICKEL	20	ug/L	**7.2**	B|	**13.2**	B|Jf	**24.1**	|Jf	<9.0		<9.0		<3.5	B|Uo	**11.0**	B|	**11.5**	B|Jn	**7.8**		--
POTASSIUM	2000	ug/L	<722.		<729		<729		<729		<729		<729.0		<729		<1340		**852.**	B|	--
SELENIUM	3.0	ug/L	**6.4**		<3.0		<3.0		<3.0		<3.0		**4.2**		<3.0		<3.0		<3.0		--
SILVER	10	ug/L	<1.0		<4.0		<4.0		<4.0		<4.0		<1.0		<4.0		<1.0		<1.0		--
SODIUM	2000	ug/L	**40500**		**38300**		**37400**		**36100**		**36800**		**62900**		**41900**		**34500**		**32800**		--
THALLIUM	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		--
VANADIUM	10	ug/L	**12.2**		**4.6**	B|	<4.0		**5.6**	B|	**4.6**	B|	**6.9**	B|	**4.6**	B|	**4.3**	B|	**14.9**		--
ZINC	20	ug/L	**27.0**		<21.0	|Up	<32.0	|Up	<28.1	|Up	<13.5	B|Up	<27.6	|UJnp	<27.6	|Up	**11.2**	B|Jn	<14.2	B|Up	--

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METALS
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		Location	UCD2-036		UCD2-037		UCD2-038		UCD2-039		UCD2-040		UCD4-041		UCD4-042		UCD4-043	
		Quarter	FALL		FALL		FALL		FALL		FALL		FALL		FALL		FALL	
		Sample ID	GWGW0596		GWGW0595		GWGW0594		GWGW0597		GWGW0593		GWGW0587		GWGW0584		GWGW0586	
		Date	12/01/97		12/01/97		11/25/97		12/01/97		11/25/97		11/24/97		11/21/97		11/21/97	
		QA																
Analyte	CRDL	Units																
ANTIMONY	5.0	ug/L	<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0	
ARSENIC	2.0	ug/L	<3.0		<3.0		<3.0		<3.0		<3.0		<3.0		<3.0		<3.0	
BARIUM	20	ug/L	**91.8**		**119**		**114**		**131**		**160**		**90.3**		**90.0**		**130**	
BERYLLIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CADMIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CALCIUM	2000	ug/L	**35800**		**33300**		**34400**		**35600**		**44500**		**33900**		**27600**		**36100**	
CHROMIUM	10	ug/L	<25.8	|Uo	<6.3	B|Uo	<3.2	B|Uo	<7.3	B|Uo	**22.6**		**20.2**		**21.7**		**26.7**	
CHROMIUM, HEXAVALENT (+6)	10	ug/L	**20**		**5**	B|	--		**5**	B|	--		**14**		--		--	
COBALT	10	ug/L	<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0	
COPPER	10	ug/L	<7.1	|Up	<2.9	B|Up	<8.6	B|Up	<4.4	B|Up	<2.0		<10.4	|Uo	**17.0**		**17.0**	
IRON	100	ug/L	**2010**		<12.0		<55.8	B|Uo	<12.0		<12.0		<12.0		<13.7	B|Uo	<12.0	
LEAD	2.0	ug/L	<5.4	|Up	<2.4	B|Up	<3.3	|Up	<1.9	B|Up	<1.8	B|Up	<1.6	B|Up	<4.0	|Up	<2.8	|Up
MAGNESIUM	2000	ug/L	**62700**		**55900**		**65300**		**63200**		**74400**		**52400**		**49300**		**60700**	
MANGANESE	15	ug/L	**66.9**		<2.0		<19.7	|Uo	**7.4**	B|	<12.9	B|Uo	<20.6	|Uo	<2.0	B|Uo	<13.2	B|Uo
MERCURY	0.2	ug/L	<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
MOLYBDENUM	10	ug/L	<7.0		<7.0		<7.0		<7.0		<7.0		<7.0		<7.0		<7.0	
NICKEL	20	ug/L	<9.0		<9.0		<9.0		<9.0		<9.0		<9.0		**10.3**	B|	<9.0	
POTASSIUM	2000	ug/L	**1140**		**1080**	B|	**1090**	B|	**987**	B|	<729		**1910**	B|	**40200**		**1370**	B|
SELENIUM	3.0	ug/L	<3.0		<3.0		<3.0		<3.0		<3.0		<3.0		<3.0		<3.0	
SILVER	10	ug/L	<4.0		<4.0		<4.0		<4.0		<4.0		<4.0		<4.0		<4.0	
SODIUM	2000	ug/L	**36900**		**27900**		**31900**		**32900**		**39300**		**51900**		**89200**		**49600**	
THALLIUM	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
VANADIUM	10	ug/L	<11.5	|Uo	**9.2**		**4.6**	B|	<8.3	|Uo	**6.0**	B|	**6.1**	B|	<4.0		**4.1**	B|
ZINC	20	ug/L	<16.3	B|Up	<5.6	B|Up	<15.0	B|Up	<9.4	B|Up	<7.5	B|Up	<40.9	|Up	<44.8	|Up	<37.0	|Up

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VOLATILE ORGANIC COMPOUNDS
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		Location	UCD1-004		UCD1-004		UCD1-004		UCD1-004		UCD1-010		UCD1-010		UCD1-010		UCD1-011		UCD1-011	
		Quarter	WINTER		SPRING		SUMMER		FALL		WINTER		SPRING		SUMMER		FALL		WINTER		SUMMER	
		Sample ID	GWGW0504		GWGW0540		GWGW0568		GWGW0575		GWGW0512		GWGW0534		GWGW0559		GWGW0577		GWGW0510		GWGW0560	
		Date	02/13/97		05/19/97		09/02/97		11/17/97		02/18/97		05/14/97		08/25/97		11/18/97		02/18/97		08/25/97	
		QA																				
Analyte	CRDL	Units																				
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,1-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,1-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0	|Rc	<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	|Rc	<0.50	
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,2-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
2-BUTANONE	0.5	ug/L	<5.0	|Rc	<5.0		<1.0		<5.0		<5.0	|Rc	<5.0		<1.0		<5.0		<5.0	|Rc	<1.0	
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<1.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0		<1.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<1.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0		<1.0	
ACETONE	1.0	ug/L	<5.0	|Rc	<5.0		<1.0	|Rc	<5.		<1.3	J|Rc	<5.0		<1.0	|Rc	<1.3	JB|Uz	<5.0	|Rc	<1.0	|Rc
BENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
BROMOFORM	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CHLOROFORM	0.5	ug/L	<1.0		<0.50		<0.50		<1.0		<1.0		<0.50		<0.50		<1.0		**0.7**	J|	**0.5**	J|
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0		<0.2	JB|Uz	<2.0		<2.0		<2.0		<0.50		<2.0		<2.0		<0.50	
STYRENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
TOLUENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<0.3	J|Uy	<0.50		<1.0		<1.0		<0.50	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<0.50	
XYLENES (TOTAL)	1.0	ug/L	<1.0		**0.3**	J|	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-012		UCD1-012		UCD1-012		UCD1-012		UCD1-012		UCD1-013		UCD1-013		UCD1-013		UCD1-013		UCD1-018	
		Quarter	WINTER		SPRING		SUMMER		SUMMER		FALL		WINTER		SPRING		SUMMER		FALL		WINTER	
		Sample ID	GWGW0507		GWGW0537		GWGW0553		GWGW0554		GWGW0572		GWGW0508		GWGW0538		GWGW0555		GWGW0580		GWGW0516	
		Date	02/18/97		05/15/97		08/21/97		08/21/97		11/17/97		02/18/97		05/15/97		08/21/97		11/18/97		02/20/97	
		QA							DUPLICATE													
Analyte	CRDL	Units																				
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1	J|	<25.		**2.3**		**3.3**	|Ji	**1.0**	J|	<1.0		<1.0		<0.50		<1.0		<1.0	
1,1-DICHLOROETHANE	0.5	ug/L	**5.6**		**7.6**	J|JQ	**11**	|Ji	**13**	|Ji	**6.3**		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1-DICHLOROETHENE	0.5	ug/L	**9.9**		**10**	J|JQ	**15**	|Ji	**18**	|Ji	**8.3**		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	|Rc
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DICHLOROETHANE	0.5	ug/L	**2.8**		<25.		**5.2**	|Ji	**6.0**	|Ji	**3.9**		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DICHLOROPROPANE	0.5	ug/L	**0.3**	J|	<25.		**0.7**		**0.8**	|Ji	**0.5**	J|	<1.0		<1.0		<0.50		<1.0		<1.0	
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
2-BUTANONE	0.5	ug/L	<5.0	|Rc	<130		<1.0	|UJi	<1.0	|UJi	<5.0		<5.0	|Rc	<5.0		<1.0		<5.0		<5.0	|Rc
2-HEXANONE	0.5	ug/L	<5.0		<130		<1.0		<1.0	|UJi	<5.0		<5.0		<5.0		<1.0		<5.0		<5.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<130		<1.0		<1.0	|UJi	<5.0		<5.0		<5.0		<1.0		<5.0		<5.0	
ACETONE	1.0	ug/L	<5.0	|Rc	<130		<1.0	|Rc	<1.0	|Rc	<5.		<5.0	|Rc	<5.0		<1.0	|Rc	<5.		<5.0	|Rc
BENZENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMODICHLOROMETHANE	0.5	ug/L	**8.3**		<25.		**0.9**		**0.9**	|Ji	**0.6**	J|	<1.0		<1.0		<0.50		<1.0		<1.0	
BROMOFORM	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMOMETHANE	1.0	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CARBON DISULFIDE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CHLOROBENZENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CHLOROETHANE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CHLOROFORM	0.5	ug/L	**5300**		**4600**		**7900**	|Js	**7000**		**5100**		<1.0	J|	**1.7**		**1.2**		**0.8**	J|	<1.0	
CHLOROMETHANE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
DIBROMOCHLOROMETHANE	0.5	ug/L	**0.6**	J|	<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
ETHYLBENZENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
METHYLENE CHLORIDE	0.5	ug/L	**0.4**	J|	<50.		<0.5	J|UJy	<0.6	|UJyi	<2.0		<2.0		<2.0		<0.5	J|Uy	<2.0		<2.0	
STYRENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TETRACHLOROETHENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TOLUENE	0.5	ug/L	<1.0		<9.5	J|Uy	<0.50		<0.50	|UJi	<1.0		<1.0		<0.4	J|Uy	<0.50		<1.0		<1.0	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	**0.2**	J|	<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<25.		<0.50		<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TRICHLOROETHENE	0.5	ug/L	<1.0		<25.		**0.3**	J|	<0.4	J|UJi	<1.0		<1.0		**0.3**	J|	**0.2**	J|	<1.0		<1.0	
VINYL CHLORIDE	0.5	ug/L	<1.0		<25.		<0.50	|UJi	<0.50	|UJi	<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<25.		<1.0		<1.0	|UJi	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

APPENDIX A
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		Location	UCD1-019		UCD1-020		UCD1-021		UCD1-021		UCD1-023		UCD1-023		UCD1-024		UCD1-024		UCD1-025		UCD1-025
		Quarter	WINTER		WINTER		WINTER		WINTER		WINTER		FALL		WINTER		FALL		WINTER		SPRING
		Sample ID	GWGW0513		GWGW0517		GWGW0519		GWGW0520		GWGW0506		GWGW0582		GWGW0523		GWGW0583		GWGW0502		GWGW0542
		Date	02/19/97		02/24/97		02/24/97		02/24/97		02/13/97		11/19/97		02/25/97		11/19/97		02/13/97		05/19/97
		QA							DUPLICATE												
Analyte	CRDL	Units																			
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,1-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,1-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0	|Rc	<1.0		<1.0		<1.0	|Rc	<1.0		<1.0		<1.0		<1.0	|Rc	<1.0
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,2-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
2-BUTANONE	0.5	ug/L	<5.0	|Rc	<5.0	|Rc	<5.0	|Rc	<5.0	|Rc	<5.0	|Rc	<5.0		<5.0	|Rc	<5.0		<5.0	|Rc	<5.0
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0
ACETONE	1.0	ug/L	<5.0	|Rc	<1.5	J|Rc	<5.0	|Rc	<5.0	|Rc	<5.0	|Rc	<5.		<1.1	JB|Rc	<5.		<5.0	|Rc	<5.0
BENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
BROMOFORM	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CHLOROFORM	0.5	ug/L	<1.0		<1.0		**0.4**	J|	**0.5**	J|	**0.5**	J|	<0.3	J|Uy	**0.5**	J|	**0.3**	J|	**1.1**		**1.4**
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0
STYRENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		**0.4**	J|	**0.4**	J|	<1.0		<1.0
TOLUENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-025		UCD1-025		UCD1-027Z3		UCD1-027Z3		UCD1-028		UCD1-034		UCD1-034		UCD1-034		UCD2-007		UCD2-014	
		Quarter	SUMMER		FALL		WINTER		SPRING		FALL		WINTER		SPRING		SUMMER		WINTER		WINTER	
		Sample ID	GWGW0561		GWGW0578		GWGW0528		GWGW0545		GWGW0588		GWGW0500		GWGW0532		GWGW0557		GWGW0518		GWGW0509	
		Date	08/26/97		11/18/97		02/28/97		05/20/97		11/24/97		02/12/97		05/13/97		08/25/97		02/24/97		02/18/97	
		QA																				
Analyte	CRDL	Units																				
1,1,1-TRICHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1-DICHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,1-DICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0	|Rc	<1.0		<0.50		<1.0	|Rc	<1.0	
1,2-DIBROMOETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DICHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DICHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,2-DICHLOROPROPANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,3-DICHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
1,4-DICHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
2-BUTANONE	0.5	ug/L	<1.0		<5.0		<5.0	|Rc	<5.0		<5.0		<5.0	|Rc	<5.0		<1.0		<5.0	|Rc	<5.0	|Rc
2-HEXANONE	0.5	ug/L	<1.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<1.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0	
ACETONE	1.0	ug/L	<1.0	|Rc	<5.		<5.0	|Rc	<5.0		<5.		<5.0	|Rc	<5.0		<1.0	|Rc	<5.0	|Rc	<5.0	|Rc
BENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMOCHLOROMETHANE	1.0	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMODICHLOROMETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMOFORM	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
BROMOMETHANE	1.0	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CARBON DISULFIDE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CARBON TETRACHLORIDE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CHLOROFORM	0.5	ug/L	<2.6	|Uy	**1.7**		**0.7**	J|	**0.2**	J|	**0.4**	J|	<1.0		<0.50		<0.50		<1.0		**0.6**	J|
CHLOROMETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
DIBROMOCHLOROMETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
ETHYLBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
METHYLENE CHLORIDE	0.5	ug/L	<0.50		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<0.5	J|Uz	<2.0		<2.0	
STYRENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TETRACHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TOLUENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<0.3	J|Uy	<0.50		<1.0		<1.0	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
TRICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
VINYL CHLORIDE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
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		Location	UCD2-014		UCD2-014		UCD2-014		UCD2-014		UCD2-015		UCD2-015		UCD2-015		UCD2-015		UCD2-016	
		Quarter	WINTER		SPRING		SUMMER		FALL		WINTER		SPRING		SUMMER		FALL		WINTER	
		Sample ID	GWGW0511		GWGW0539		GWGW0556		GWGW0535		GWGW0505		GWGW0541		GWGW0570		GWGW0573		GWGW0574		GWGW0514	
		Date	02/18/97		05/15/97		08/21/97		11/19/97		02/13/97		05/19/97		09/02/97		11/17/97		11/17/97		02/19/97	
		QA	DUPLICATE																DUPLICATE			
Analyte	CRDL	Units																				
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,1-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,1-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	|Rc
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,2-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
2-BUTANONE	0.5	ug/L	<5.0	|Rc	<5.0		<1.0		<5.0		<5.0	|Rc	<5.0		<1.0		<5.0		<5.0		<5.0	|Rc
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<1.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0		<5.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<1.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0		<5.0	
ACETONE	1.0	ug/L	<5.0	|Rc	<5.0		<1.0	|Rc	<5.0		<5.0	|Rc	<5.0		<1.0	|Rc	<5.		<5.		<5.0	|Rc
BENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
BROMOFORM	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CHLOROFORM	0.5	ug/L	**0.6**	J|	**0.7**		**1.1**		<1.0	J|Uy	<1.0		<0.50		<0.50		<1.0		<1.0		<1.0	
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0		**0.4**	J|	<2.0		<2.0		<2.0		<0.2	JB|Uz	<2.0		<2.0		<0.2	JB|Uz
STYRENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
TOLUENE	0.5	ug/L	<1.0		<0.3	J|Uy	<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
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		Location	UCD2-016		UCD2-017		UCD2-026		UCD2-026		UCD2-026		UCD2-026		UCD2-027Z4		UCD2-027Z4		UCD2-027Z5	
		Quarter	SUMMER		WINTER		WINTER		SPRING		SPRING		SUMMER		FALL		WINTER		SPRING		WINTER	
		Sample ID	GWGW0565		GWGW0515		GWGW0503		GWGW0543		GWGW0544		GWGW0562		GWGW0579		GWGW0527		GWGW0546		GWGW0526	
		Date	08/26/97		02/19/97		02/13/97		05/19/97		05/19/97		08/26/97		11/18/97		02/27/97		05/20/97		02/27/97	
		QA									DUPLICATE											
Analyte	CRDL	Units																				
1,1,1-TRICHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,1-DICHLOROETHANE	0.5	ug/L	<0.50		<1.0		**0.2**	J|	<1.0		<1.0		<0.50		<1.0		**0.4**	J|	<1.0		<1.0	
1,1-DICHLOROETHENE	0.5	ug/L	<0.50		<1.0		**0.3**	J|	<1.0		<1.0		<0.50		<1.0		**0.5**	J|	<1.0		<1.0	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<0.50		<1.0	|Rc	<1.0	|Rc	<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,2-DIBROMOETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,2-DICHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,2-DICHLOROETHANE	0.5	ug/L	<0.50		<1.0		**0.4**	J|	<1.0		<1.0		<0.50		<1.0		**0.6**	J|	<1.0		**0.5**	J|
1,2-DICHLOROPROPANE	0.5	ug/L	<0.50		<1.0		**0.2**	J|	<1.0		<1.0		<0.50		<1.0		**0.4**	J|	<1.0		**0.3**	J|
1,3-DICHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
1,4-DICHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
2-BUTANONE	0.5	ug/L	<1.0		<5.0	|Rc	<5.0	|Rc	<5.0		<5.0		<1.0		<5.0		<5.0	|Rc	<5.0		<5.0	|Rc
2-HEXANONE	0.5	ug/L	<1.0		<5.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0		<5.0		<5.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<1.0		<5.0		<5.0		<5.0		<5.0		<1.0		<5.0		<5.0		<5.0		<5.0	
ACETONE	1.0	ug/L	<1.0	|Rc	<5.0	|Rc	<5.0	|Rc	<5.0		<5.0		<1.0	|Rc	<5.		<5.0	|Rc	<5.0		<5.0	|Rc
BENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
BROMOCHLOROMETHANE	1.0	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
BROMODICHLOROMETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		**0.3**	J|	<1.0		<1.0	
BROMOFORM	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
BROMOMETHANE	1.0	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CARBON DISULFIDE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CARBON TETRACHLORIDE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CHLOROBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CHLOROETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CHLOROFORM	0.5	ug/L	<0.50		<1.0		**43**		**17**		**17**		<6.9	|Uy	**7.5**		**100**		**33**		**38**	
CHLOROMETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
DIBROMOCHLOROMETHANE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
ETHYLBENZENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
METHYLENE CHLORIDE	0.5	ug/L	<0.50		<0.2	JB|Uy	<2.0		<2.0		<2.0		<0.50		<2.0		**0.5**	J|	<2.0		<2.0	
STYRENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
TETRACHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
TOLUENE	0.5	ug/L	**0.4**	J|	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
TRICHLOROETHENE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
VINYL CHLORIDE	0.5	ug/L	<0.50		<1.0		<1.0		<1.0		<1.0		<0.50		<1.0		<1.0		<1.0		<1.0	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

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VOLATILE ORGANIC COMPOUNDS
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		Location	UCD2-027Z5		UCD2-027Z6		UCD2-027Z6		UCD2-027Z7		UCD2-027Z7		UCD2-029		UCD2-029		UCD2-030		UCD2-031		UCD2-032	
		Quarter	SPRING		WINTER		SPRING		WINTER		SPRING		FALL		FALL		FALL		FALL		SUMMER	
		Sample ID	GWGW0547		GWGW0525		GWGW0548		GWGW0524		GWGW0549		GWGW0589		GWGW0590		GWGW0591		GWGW0592		GWGW0569	
		Date	05/21/97		02/26/97		05/21/97		02/26/97		05/22/97		11/24/97		11/24/97		11/25/97		11/25/97		08/27/97	
		QA													DUPLICATE							
Analyte	CRDL	Units																				
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		**0.2**	J|	<1.0		<1.0		<0.50	
1,1-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		**0.8**	J|	**0.8**	J|	**0.8**	J|	<1.0		<0.50	
1,1-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		**0.8**	J|	**0.9**	J|	**0.6**	J|	<1.0		<0.50	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
1,2-DICHLOROETHANE	0.5	ug/L	**0.3**	J|	<1.0		<1.0		<1.0		<1.0		**1.7**		**1.7**		**1.3**		<1.0		<0.50	
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		**1.6**		**1.6**		**0.8**	J|	<1.0		<0.50	
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
2-BUTANONE	0.5	ug/L	<5.0		<5.0	|Rc	<5.0		<5.0	|Rc	<5.0		<5.0		<5.0		<5.0		<5.0		<1.0	
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<1.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<5.0		<1.0	
ACETONE	1.0	ug/L	<5.0		<5.0	|Rc	<5.0		<5.0	|Rc	<5.0		<5.		<5.		<5.		<5.		<1.0	|Rc
BENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
BROMOFORM	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CHLOROFORM	0.5	ug/L	**56**		**4.9**		**3.7**		**0.6**	J|	**1.2**		**130**	B|	**140**	B|	**42**		**48**		<0.50	
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<0.4	JB|Ua
STYRENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
TOLUENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD2-032		UCD2-035		UCD2-035		UCD2-035		UCD2-036	UCD2-037	UCD2-038	UCD2-039	UCD2-040		UCD4-041
		Quarter	FALL		WINTER		SPRING		SUMMER		FALL	FALL	FALL	FALL	FALL		FALL
		Sample ID	GWGW0585		GWGW0501		GWGW0531		GWGW0558		GWGW0596	GWGW0595	GWGW0594	GWGW0597	GWGW0593		GWGW0587
		Date	11/21/97		02/12/97		05/13/97		08/25/97		12/01/97	12/01/97	11/25/97	12/01/97	11/25/97		11/24/97
		QA															
Analyte	CRDL	Units															
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,1-DICHLOROETHANE	0.5	ug/L	**1.0**		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	**0.8**	J|	<1.0
1,1-DICHLOROETHENE	0.5	ug/L	**0.9**	J|	<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	**0.8**	J|	<1.0
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,2-DICHLOROETHANE	0.5	ug/L	**1.7**		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
1,2-DICHLOROPROPANE	0.5	ug/L	**1.2**		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	**1.2**		<1.0
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	**1.5**		<1.0
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
2-BUTANONE	0.5	ug/L	<5.0		<5.0	|Rc	<5.0		<1.0		<5.0	<5.0	<5.0	<5.0	<5.0		<5.0
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<5.0		<1.0		<5.0	<5.0	<5.0	<5.0	<5.0		<5.0
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<5.0		<1.0		<5.0	<5.0	<5.0	<5.0	<5.0		<5.0
ACETONE	1.0	ug/L	<5.		<5.0	|Rc	<5.0		<3.4	|Rcy	<5.	<5.	<5.	<5.	<5.	JB|Uz	<5.
BENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
BROMOFORM	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CHLOROFORM	0.5	ug/L	**69**	B|	<1.0		<0.50		<0.50		<1.0	<1.0	<1.0	<1.5	**37**	|Uy	**7.4**
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0		<2.0		<0.50		<2.0	<2.0	<2.0	<2.0	<2.0		<2.0
STYRENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
TOLUENE	0.5	ug/L	<1.0		<1.0		<0.3	J|Uy	<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<0.50		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		**0.3**	J|	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0		<1.0

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
VOLATILE ORGANIC COMPOUNDS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD4-042		UCD4-043
		Quarter	FALL		FALL
		Sample ID	GWGW0584		GWGW0586
		Date	11/21/97		11/21/97
		QA			
Analyte	CRDL	Units			
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0
1,1-DICHLOROETHANE	0.5	ug/L	**0.3**	J|	<1.0
1,1-DICHLOROETHENE	0.5	ug/L	**0.2**	J|	<1.0
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0
1,2-DICHLOROETHANE	0.5	ug/L	**0.6**	J|	<1.0
1,2-DICHLOROPROPANE	0.5	ug/L	**0.4**	J|	<1.0
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0
2-BUTANONE	0.5	ug/L	<5.0		<5.0
2-HEXANONE	0.5	ug/L	<5.0		<5.0
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0
ACETONE	1.0	ug/L	<2.9	JB|Uz	<5.
BENZENE	0.5	ug/L	**0.3**	J|	<1.0
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0
BROMOFORM	0.5	ug/L	<1.0		<1.0
BROMOMETHANE	1.0	ug/L	<1.0		<1.0
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0
CHLOROETHANE	0.5	ug/L	<1.0		<1.0
CHLOROFORM	0.5	ug/L	**37**	B|	**5.1**
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0
STYRENE	0.5	ug/L	<1.0		<1.0
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0
TOLUENE	0.5	ug/L	<1.0		<1.0
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0

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ANALYTICAL RESULTS FOR GROUNDWATER
SEMI-VOLATILE ORGANIC COMPOUNDS
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		Location	UCD1-004	UCD1-010	UCD1-012	UCD1-013	UCD1-018	UCD1-020	UCD1-025
		Quarter	WINTER	WINTER	WINTER	WINTER	WINTER	WINTER	WINTER
		Sample ID	GWGW0504	GWGW0512	GWGW0507	GWGW0508	GWGW0516	GWGW0517	GWGW0502
		Date	02/13/97	02/18/97	02/18/97	02/18/97	02/20/97	02/24/97	02/13/97
		QA							
Analyte	CRDL	Units							
1,2,4-TRICHLOROBENZENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
1,2-DICHLOROBENZENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
1,3-DICHLOROBENZENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
1,4-DICHLOROBENZENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2,4,5-TRICHLOROPHENOL	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
2,4,6-TRICHLOROPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2,4-DICHLOROPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2,4-DIMETHYLPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2,4-DINITROPHENOL	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
2,4-DINITROTOLUENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2,6-DINITROTOLUENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2-CHLORONAPHTHALENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2-CHLOROPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2-METHYL-4,6-DINITROPHENOL	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
2-METHYLNAPHTHALENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2-METHYLPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
2-NITROANILINE	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
2-NITROPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
3,3'-DICHLOROBENZIDINE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
3-NITROANILINE	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	--	--	--	--	--	--	--
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
4-CHLORO-3-METHYLPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
4-CHLOROANILINE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
4-METHYLPHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
4-NITROANILINE	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
4-NITROPHENOL	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
ACENAPHTHENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
ACENAPHTHYLENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
ANTHRACENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BENZO(A)ANTHRACENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BENZO(A)PYRENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BENZO(B)FLUORANTHENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BENZO(G,H,I)PERYLENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BENZO(K)FLUORANTHENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BENZYL BUTYL PHTHALATE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<1.0 JB|Uz	0.83' J|
BUTYLBENZYLPHTHALATE	10	ug/L	--	--	--	--	--	--	--
CARBAZOLE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
CHRYSENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
DI-N-BUTYLPHTHALATE	10	ug/L	<11.	<10.	<10.	<0.74 JB|Uz	<10.	<10.	<11.
DI-N-OCTYLPHTHALATE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
DIBENZO(A,H)ANTHRACENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
DIBENZOFURAN	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
DIETHYLPHTHALATE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
DIMETHYLPHTHALATE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
FLUORANTHENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
FLUORENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
HEXACHLOROBENZENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
HEXACHLOROBUTADIENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
HEXACHLOROETHANE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
INDENO(1,2,3-CD)PYRENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
ISOPHORONE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
N-NITROSODIPHENYLAMINE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
NAPHTHALENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
NITROBENZENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
PENTACHLOROPHENOL	25	ug/L	<27.	<26.	<26.	<26.	<26.	<25.	<27.
PHENANTHRENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
PHENOL	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.
PYRENE	10	ug/L	<11.	<10.	<10.	<10.	<10.	<10.	<11.

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-025	UCD1-027Z3	UCD1-027Z3	UCD1-028	UCD1-034	UCD1-034	UCD2-014
		Quarter	SPRING	WINTER	SPRING	FALL	WINTER	SPRING	WINTER
		Sample ID	GWGW0542	GWGW0528	GWGW0545	GWGW0588	GWGW0500	GWGW0532	GWGW0509
		Date	05/19/97	02/28/97	05/20/97	11/24/97	02/12/97	05/13/97	02/18/97
		QA							
Analyte	CRDL	Units							
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
1,2-DICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
1,3-DICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
1,4-DICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2,4,5-TRICHLOROPHENOL	25	ug/L	<25.	<25.	<25.	<26.	<26.	<26.	<25.
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2,4-DICHLOROPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2,4-DIMETHYLPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2,4-DINITROPHENOL	25	ug/L	<25.	<25.	<25.	<26.	<26	<26.	<25.
2,4-DINITROTOLUENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2,6-DINITROTOLUENE	10	ug/L	<10.	<10.	<10	<10.0	<11	<10.	<10.
2-CHLORONAPHTHALENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2-CHLOROPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2-METHYL-4,6-DINITROPHENOL	25	ug/L	--	<25.	--	--	<26.	--	<25.
2-METHYLNAPHTHALENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2-METHYLPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
2-NITROANILINE	25	ug/L	<25.	<25.	<25.	<26.	<26.	<26.	<25.
2-NITROPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10. |Rc	<10.
3-NITROANILINE	25	ug/L	<25.	<25.	<25.	<26.	<26.	<26.	<25.
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	<25.	--	<25.	<26.	--	<26.	--
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
4-CHLOROANILINE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
4-METHYLPHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
4-NITROANILINE	25	ug/L	<25.	<25.	<25.	<26.	<26.	<26.	<25.
4-NITROPHENOL	25	ug/L	<25.	<25.	<25.	<26.	<26.	<26.	<25.
ACENAPHTHENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
ACENAPHTHYLENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
ANTHRACENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BENZO(A)ANTHRACENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BENZO(A)PYRENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BENZO(B)FLUORANTHENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BENZO(G,H,I)PERYLENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BENZO(K)FLUORANTHENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BENZYL BUTYL PHTHALATE	10	ug/L	--	<10.	--	--	<11.	--	<10.
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<10.	<10.	<10.	<2.5 JB|Uz	<11.	<10.	<10.
BUTYLBENZYLPHTHALATE	10	ug/L	<10.	--	<10.	<10.0	--	<10.	--
CARBAZOLE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
CHRYSENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
DI-N-BUTYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
DI-N-OCTYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
DIBENZOFURAN	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
DIETHYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
DIMETHYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
FLUORANTHENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
FLUORENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
HEXACHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
HEXACHLOROBUTADIENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
HEXACHLOROETHANE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
ISOPHORONE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
N-NITROSODIPHENYLAMINE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
NAPHTHALENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
NITROBENZENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
PENTACHLOROPHENOL	25	ug/L	<25.	<25.	<25.	<26.	<26.	<26.	<25.
PHENANTHRENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
PHENOL	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.
PYRENE	10	ug/L	<10.	<10.	<10.	<10.0	<11.	<10.	<10.

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SEMI-VOLATILE ORGANIC COMPOUNDS
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		Location	UCD2-014	UCD2-015	UCD2-017	UCD2-026	UCD2-026	UCD2-026	UCD2-027Z4
		Quarter	WINTER	WINTER	WINTER	WINTER	SPRING	SPRING	WINTER
		Sample ID	GWGW0511	GWGW0505	GWGW0515	GWGW0503	GWGW0543	GWGW0544	GWGW0527
		Date	02/18/97	02/13/97	02/19/97	02/13/97	05/19/97	05/19/97	02/27/97
		QA	DUPLICATE					DUPLICATE	
Analyte	CRDL	Units							
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
1,2-DICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
1,3-DICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
1,4-DICHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2,4,5-TRICHLOROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2,4-DICHLOROPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2,4-DIMETHYLPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2,4-DINITROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
2,4-DINITROTOLUENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2,6-DINITROTOLUENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2-CHLORONAPHTHALENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2-CHLOROPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2-METHYL-4,6-DINITROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	--	--	<28.
2-METHYLNAPHTHALENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2-METHYLPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
2-NITROANILINE	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
2-NITROPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
3-NITROANILINE	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	--	--	--	--	<26.	<26.	--
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
4-CHLOROANILINE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
4-METHYLPHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
4-NITROANILINE	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
4-NITROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
ACENAPHTHENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
ACENAPHTHYLENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
ANTHRACENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BENZO(A)ANTHRACENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BENZO(A)PYRENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BENZO(B)FLUORANTHENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BENZO(G,H,I)PERYLENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BENZO(K)FLUORANTHENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BENZYL BUTYL PHTHALATE	10	ug/L	<10.	<10.	<10.	<11.	--	--	<11.
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<10.	<10.	<10.	**3.0** J|	**6.0** J|	**11**	<11.
BUTYLBENZYLPHTHALATE	10	ug/L	--	--	--	--	<10.	<10.	--
CARBAZOLE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
CHRYSENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
DI-N-BUTYLPHTHALATE	10	ug/L	<0.57 JB|Uz	<10.	<10.	<11.	<10.	<10.	<11.
DI-N-OCTYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
DIBENZOFURAN	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
DIETHYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
DIMETHYLPHTHALATE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
FLUORANTHENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
FLUORENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
HEXACHLOROBENZENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
HEXACHLOROBUTADIENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
HEXACHLOROETHANE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
ISOPHORONE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
N-NITROSODIPHENYLAMINE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
NAPHTHALENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
NITROBENZENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
PENTACHLOROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<28.
PHENANTHRENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
PHENOL	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.
PYRENE	10	ug/L	<10.	<10.	<10.	<11.	<10.	<10.	<11.

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SEMI-VOLATILE ORGANIC COMPOUNDS
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		Location	UCD2-027Z4		UCD2-027Z5		UCD2-027Z5		UCD2-027Z6		UCD2-027Z6		UCD2-027Z7		UCD2-027Z	
		Quarter	SPRING		WINTER		SPRING		WINTER		SPRING		WINTER		SPRING	
		Sample ID	GWGW0546		GWGW0526		GWGW0547		GWGW0525		GWGW0548		GWGW0524		GWGW0549	
		Date	05/20/97		02/27/97		05/21/97		02/26/97		05/21/97		02/26/97		05/22/97	
		QA														
Analyte	CRDL	Units														
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
1,2-DICHLOROBENZENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
1,3-DICHLOROBENZENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
1,4-DICHLOROBENZENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2,4,5-TRICHLOROPHENOL	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2,4-DICHLOROPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2,4-DIMETHYLPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2,4-DINITROPHENOL	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
2,4-DINITROTOLUENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2,6-DINITROTOLUENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2-CHLORONAPHTHALENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2-CHLOROPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2-METHYL-4,6-DINITROPHENOL	25	ug/L	--		<29.		--		<28.		--		<26.		--	
2-METHYLNAPHTHALENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2-METHYLPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
2-NITROANILINE	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
2-NITROPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
3-NITROANILINE	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	<26.		--		<26.		--		<26.		--		<26.	
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
4-CHLOROANILINE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
4-METHYLPHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
4-NITROANILINE	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
4-NITROPHENOL	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
ACENAPHTHENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
ACENAPHTHYLENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
ANTHRACENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BENZO(A)ANTHRACENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BENZO(A)PYRENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BENZO(B)FLUORANTHENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BENZO(G,H,I)PERYLENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BENZO(K)FLUORANTHENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BENZYL BUTYL PHTHALATE	10	ug/L	--		<11.		--		<11.		--		<10.		--	
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	**2.6**	J|	<0.93	JB|Uz	<10.		<11.		<10.		<10.		**6.3**	J|
BUTYLBENZYLPHTHALATE	10	ug/L	<10.		--		<10.		--		<10.		--		<11.	
CARBAZOLE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
CHRYSENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
DI-N-BUTYLPHTHALATE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
DI-N-OCTYLPHTHALATE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
DIBENZOFURAN	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
DIETHYLPHTHALATE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
DIMETHYLPHTHALATE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
FLUORANTHENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
FLUORENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
HEXACHLOROBENZENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
HEXACHLOROBUTADIENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
HEXACHLOROETHANE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
ISOPHORONE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
N-NITROSODIPHENYLAMINE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
NAPHTHALENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
NITROBENZENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
PENTACHLOROPHENOL	25	ug/L	<26.		<29.		<26.		<28.		<26.		<26.		<26.	
PHENANTHRENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
PHENOL	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	
PYRENE	10	ug/L	<10.		<11.		<10.		<11.		<10.		<10.		<11.	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
SEMI-VOLATILE ORGANIC COMPOUNDS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD2-029		UCD2-029		UCD2-030		UCD2-031		UCD2-032		UCD2-032		UCD2-035
		Quarter	FALL		FALL		FALL		FALL		SUMMER		FALL		WINTER
		Sample ID	GWGW0589		GWGW0590		GWGW0591		GWGW0592		GWGW0569		GWGW0585		GWGW0501
		Date	11/24/97		11/24/97		11/25/97		11/25/97		08/27/97		11/21/97		02/12/97
		QA			DUPLICATE										
Analyte	CRDL	Units													
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
1,2-DICHLOROBENZENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
1,3-DICHLOROBENZENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
1,4-DICHLOROBENZENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2,4,5-TRICHLOROPHENOL	25	ug/L	<26.		<26.		<25.		<26.		<27.		<26.		<26.
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2,4-DICHLOROPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2,4-DIMETHYLPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2,4-DINITROPHENOL	25	ug/L	<26.		<26.		<25.		<26.		<27.		<26.		<26.
2,4-DINITROTOLUENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11		<10.		<10.
2,6-DINITROTOLUENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2-CHLORONAPHTHALENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2-CHLOROPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2-METHYL-4,6-DINITROPHENOL	25	ug/L	--		--		--		--		--		--		<26.
2-METHYLNAPHTHALENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2-METHYLPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
2-NITROANILINE	25	ug/L	<26.		<26.		<25.		<26.		<27.		<20.		<26.
2-NITROPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
3-NITROANILINE	25	ug/L	<26.		<26.		<25.		<26.		<27.		<26.		<26.
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	<26.		<26.		<25.		<26.		<27.		<26.		--
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
4-CHLOROANILINE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
4-METHYLPHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
4-NITROANILINE	25	ug/L	<26.		<26.		<25.		<26.		<27.		<20.		<26.
4-NITROPHENOL	25	ug/L	<26.		<26.		<25.		<26.		<27.		<26.		<26.
ACENAPHTHENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
ACENAPHTHYLENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
ANTHRACENE	10	ug/L	<10.0		<10.		<10.0		<10.0		**2.0**	J|	<10.		<10.
BENZO(A)ANTHRACENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BENZO(A)PYRENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BENZO(B)FLUORANTHENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BENZO(G,H,I)PERYLENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BENZO(K)FLUORANTHENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BENZYL BUTYL PHTHALATE	10	ug/L	--		--		--		--		--		--		<10.
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<5.1	JB|Uz	<0.70	JB|Uz	**17**		**7.2**	J|	<12	B|Uz	**8.4**	JB|	<10.
BUTYLBENZYLPHTHALATE	10	ug/L	<10.0		<10.		**0.71**	J|	**0.55**	J|	<11.		<10.		--
CARBAZOLE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
CHRYSENE	10	ug/L	<10.0		<10		<10.0		<10.0		<11.		<10.		<10.
DI-N-BUTYLPHTHALATE	10	ug/L	<10.0		<10.		<10.0		<10.0		**0.60**	J|	**1.1**	J|	<10.
DI-N-OCTYLPHTHALATE	10	ug/L	<10.0		<10.		**1.4**	J|	**0.55**	J|	**0.97**	J|	**0.97**	J|	<10.
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
DIBENZOFURAN	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
DIETHYLPHTHALATE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
DIMETHYLPHTHALATE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
FLUORANTHENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
FLUORENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
HEXACHLOROBENZENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
HEXACHLOROBUTADIENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
HEXACHLOROETHANE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
ISOPHORONE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
N-NITROSODIPHENYLAMINE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
NAPHTHALENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
NITROBENZENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
PENTACHLOROPHENOL	25	ug/L	<26.		<26.		<25.		<26.		<27.		<26.		<26.
PHENANTHRENE	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
PHENOL	10	ug/L	<10.0		<10.		<10.0		<10.0		<11.		<10.		<10.
PYRENE	10	ug/L	<10.0		<10.		<10.0		<10.0		**1.0**	J|	<10.		<10.

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SEMI-VOLATILE ORGANIC COMPOUNDS
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD2-035		UCD2-036		UCD2-037		UCD2-038		UCD2-039		UCD2-040		UCD4-041	
		Quarter	SPRING		FALL		FALL		FALL		FALL		FALL		FALL	
		Sample ID	GWGW0531		GWGW0596		GWGW0595		GWGW0594		GWGW0597		GWGW0593		GWGW0587	
		Date	05/13/97		12/01/97		12/01/97		11/25/97		12/01/97		11/25/97		11/24/97	
		QA														
Analyte	CRDL	Units														
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
1,2-DICHLOROBENZENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
1,3-DICHLOROBENZENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
1,4-DICHLOROBENZENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2,4,5-TRICHLOROPHENOL	25	ug/L	<26.		<20.		<26.		<26.		<26.		<27		<26.	
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2,4-DICHLOROPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2,4-DIMETHYLPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2,4-DINITROPHENOL	25	ug/L	<26.		<20		<26		<26.		<26.		<27.		<26.	
2,4-DINITROTOLUENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2,6-DINITROTOLUENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2-CHLORONAPHTHALENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2-CHLOROPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2-METHYL-4,6-DINITROPHENOL	25	ug/L	--		--		--		--		--		--		--	
2-METHYLNAPHTHALENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2-METHYLPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
2-NITROANILINE	25	ug/L	<26.		<20.		<26.		<26.		<26.		<27.		<26.	
2-NITROPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.	|Rc	<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
3-NITROANILINE	25	ug/L	<26.		<26.		<26.		<26.		<26.		<27.		<26.	
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	<26.		<26.		<26.		<26.		<26.		<27.		<26.	
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
4-CHLOROANILINE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
4-METHYLPHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
4-NITROANILINE	25	ug/L	<26.		<26.		<26.		<26.		<26.		<11.		<26.	
4-NITROPHENOL	25	ug/L	<26.		<26.		<26.		<26.		<26.		<27.		<26.	
ACENAPHTHENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
ACENAPHTHYLENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
ANTHRACENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BENZO(A)ANTHRACENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BENZO(A)PYRENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BENZO(B)FLUORANTHENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BENZO(G,H,I)PERYLENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BENZO(K)FLUORANTHENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BENZYL BUTYL PHTHALATE	10	ug/L	--		--		--		--		--		--		--	
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<10.		<4.1	JB|Uz	<4.0	JB|Uz	8.4	J|	<8.4	JB|Uz	7.0	J|	<2.1	JB|Uz
BUTYLBENZYLPHTHALATE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
CARBAZOLE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
CHRYSENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
DI-N-BUTYLPHTHALATE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
DI-N-OCTYLPHTHALATE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		4.4	J|	<10.0	
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
DIBENZOFURAN	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
DIETHYLPHTHALATE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
DIMETHYLPHTHALATE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
FLUORANTHENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
FLUORENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
HEXACHLOROBENZENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
HEXACHLOROBUTADIENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
HEXACHLOROETHANE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
ISOPHORONE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
N-NITROSODIPHENYLAMINE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
NAPHTHALENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
NITROBENZENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
PENTACHLOROPHENOL	25	ug/L	<26.		<26.		<26.		<26.		<26.		<27.		<26.	
PHENANTHRENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
PHENOL	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	
PYRENE	10	ug/L	<10.		<10.0		<10.0		<10.0		<10.0		<11.		<10.0	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD4-042		UCD4-043	
		Quarter	FALL		FALL	
		Sample ID	GWGW0584		GWGW0586	
		Date	11/21/97		11/21/97	
		QA				
Analyte	CRDL	Units				
1,2,4-TRICHLOROBENZENE	10	ug/L	<5.1		<5.1	
1,2-DICHLOROBENZENE	10	ug/L	--		--	
1,3-DICHLOROBENZENE	10	ug/L	--		--	
1,4-DICHLOROBENZENE	10	ug/L	--		--	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<5.1		<5.1	
2,4,5-TRICHLOROPHENOL	25	ug/L	<20.		<20.	
2,4,6-TRICHLOROPHENOL	10	ug/L	<5.1		<5.1	
2,4-DICHLOROPHENOL	10	ug/L	<5.1		<5.1	
2,4-DIMETHYLPHENOL	10	ug/L	<5.1		<5.1	
2,4-DINITROPHENOL	25	ug/L	<20		<20.	
2,4-DINITROTOLUENE	10	ug/L	<5.1		<5.1	
2,6-DINITROTOLUENE	10	ug/L	<5.1		<5.1	
2-CHLORONAPHTHALENE	10	ug/L	<5.1		<5.1	
2-CHLOROPHENOL	10	ug/L	<5.1		<5.1	
2-METHYL-4,6-DINITROPHENOL	25	ug/L	--		--	
2-METHYLNAPHTHALENE	10	ug/L	<5.1		<5.1	
2-METHYLPHENOL	10	ug/L	<5.1		<5.1	
2-NITROANILINE	25	ug/L	<20.		<20.	
2-NITROPHENOL	10	ug/L	<5.1		<5.1	
3,3'-DICHLOROBENZIDINE	10	ug/L	<5.1		<5.1	
3-NITROANILINE	25	ug/L	<20.		<20.	
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	<20.		<20.	
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<5.1		<5.1	
4-CHLORO-3-METHYLPHENOL	10	ug/L	<5.1		<5.1	
4-CHLOROANILINE	10	ug/L	<5.1	|UJh	<5.1	|UJh
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<5.1		<5.1	
4-METHYLPHENOL	10	ug/L	<5.1		<5.1	
4-NITROANILINE	25	ug/L	<20.		<20.	
4-NITROPHENOL	25	ug/L	<20.		<20.	
ACENAPHTHENE	10	ug/L	<5.1		<5.1	
ACENAPHTHYLENE	10	ug/L	<5.1		<5.1	
ANTHRACENE	10	ug/L	<5.1		<5.1	
BENZO(A)ANTHRACENE	10	ug/L	<5.1		<5.1	
BENZO(A)PYRENE	10	ug/L	<5.1		<5.1	
BENZO(B)FLUORANTHENE	10	ug/L	<5.1		<5.1	
BENZO(G,H,I)PERYLENE	10	ug/L	<5.1		<5.1	
BENZO(K)FLUORANTHENE	10	ug/L	<5.1		<5.1	
BENZYL BUTYL PHTHALATE	10	ug/L	--		--	
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<5.1		<5.1	
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<5.1		<5.1	
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	**6.6**		**3.5**	J|
BUTYLBENZYLPHTHALATE	10	ug/L	<5.1		<5.1	
CARBAZOLE	10	ug/L	--		--	
CHRYSENE	10	ug/L	<5.1		<5.1	
DI-N-BUTYLPHTHALATE	10	ug/L	<5.1		<5.1	
DI-N-OCTYLPHTHALATE	10	ug/L	<5.1		<5.1	
DIBENZO(A,H)ANTHRACENE	10	ug/L	<5.1		<5.1	
DIBENZOFURAN	10	ug/L	<5.1		<5.1	
DIETHYLPHTHALATE	10	ug/L	<5.1		<5.1	
DIMETHYLPHTHALATE	10	ug/L	<5.1		<5.1	
FLUORANTHENE	10	ug/L	<5.1		<5.1	
FLUORENE	10	ug/L	<5.1		<5.1	
HEXACHLOROBENZENE	10	ug/L	<5.1		<5.1	
HEXACHLOROBUTADIENE	10	ug/L	<5.1		<5.1	
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<5.1		<5.1	
HEXACHLOROETHANE	10	ug/L	<5.1		<5.1	
INDENO(1,2,3-CD)PYRENE	10	ug/L	<5.1		<5.1	
ISOPHORONE	10	ug/L	<5.1		<5.1	
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<5.1		<5.1	
N-NITROSODIPHENYLAMINE	10	ug/L	<5.1		<5.1	
NAPHTHALENE	10	ug/L	<5.1		<5.1	
NITROBENZENE	10	ug/L	<5.1		<5.1	
PENTACHLOROPHENOL	25	ug/L	<20.		<20.	
PHENANTHRENE	10	ug/L	<5.1		<5.1	
PHENOL	10	ug/L	**2.5**	J|	<5.1	
PYRENE	10	ug/L	<5.1		<5.1	

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
PESTICIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	UCD1-004		UCD1-004		UCD1-004		UCD1-010		UCD1-011		UCD1-012		UCD1-012		UCD1-012		UCD1-012		UCD1-013	
		Quarter	WINTER		SPRING		SUMMER		WINTER		WINTER		WINTER		SPRING		SUMMER		SUMMER		WINTER	
		Sample ID	GWGW0504		GWGW0540		GWGW0568		GWGW0512		GWGW0510		GWGW0507		GWGW0537		GWGW0553		GWGW0554		GWGW0508	
		Date	02/13/97		05/19/97		09/02/97		02/18/97		02/18/97		02/18/97		05/15/97		08/21/97		08/21/97		02/18/97	
		QA																	DUPLICATE			
Analyte	CRDL	Units																				
4,4'-DDD	0.02	ug/L	<0.022	|UJs	<0.021		**0.007**	J|	<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
4,4'-DDE	0.02	ug/L	<0.022	|UJs	<0.021		<0.021	|UJc	<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020	|UJc	<0.021	|UJc	<0.021	|UJs
4,4'-DDT	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
ALDRIN	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
ALPHA-BHC	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
ALPHA-CHLORDANE	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
AROCLOR-1016	0.2	ug/L	<0.22	|UJs	<0.21		<0.21		<0.20	|UJs	<0.21		<0.20	|UJs	<0.21		<0.20		<0.21		<0.21	|UJs
AROCLOR-1221	0.4	ug/L	<0.43	|UJs	<0.42		<0.41		<0.41	|UJs	<0.42		<0.41	|UJs	<0.41		<0.41		<0.41		<0.41	|UJs
AROCLOR-1232	0.2	ug/L	<0.22	|UJs	<0.21		<0.21		<0.20	|UJs	<0.21		<0.20	|UJs	<0.21		<0.20		<0.21		<0.21	|UJs
AROCLOR-1242	0.2	ug/L	<0.22	|UJs	<0.21		<0.21		<0.20	|UJs	<0.21		<0.20	|UJs	<0.21		<0.20		<0.21		<0.21	|UJs
AROCLOR-1248	0.2	ug/L	<0.22	|UJs	<0.21		<0.21		<0.20	|UJs	<0.21		<0.20	|UJs	<0.21		<0.20		<0.21		<0.21	|UJs
AROCLOR-1254	0.2	ug/L	<0.22	|UJs	<0.21		<0.21		<0.20	|UJs	<0.21		<0.20	|UJs	<0.21		<0.20		<0.21		<0.21	|UJs
AROCLOR-1260	0.2	ug/L	<0.22	|UJs	<0.21		<0.21		<0.20	|UJs	<0.21		<0.20	|UJs	<0.21		<0.20		<0.21		<0.21	|UJs
BETA-BHC	0.01	ug/L	<0.011	|UJs	<0.01		<0.010	|UJc	<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010	|UJc	<0.010	|UJc	<0.01	|UJs
DELTA-BHC	0.01	ug/L	<0.011	|UJs	<0.01		<0.010	|UJc	<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010	|UJc	<0.010	|UJc	<0.01	|UJs
DIELDRIN	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.019	JP|UJ
ENDOSULFAN I	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
ENDOSULFAN II	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
ENDOSULFAN SULFATE	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
ENDRIN	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
ENDRIN ALDEHYDE	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
ENDRIN KETONE	0.02	ug/L	<0.022	|UJs	<0.021		<0.021		<0.02	|UJs	<0.021		<0.02	|UJs	<0.021		<0.020		<0.021		<0.021	|UJs
GAMMA-BHC	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
GAMMA-CHLORDANE	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
HEPTACHLOR	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.011	|UJs	<0.01		<0.010		<0.01	|UJs	<0.01		<0.01	|UJs	<0.01		<0.010		<0.010		<0.01	|UJs
METHOXYCHLOR	0.1	ug/L	<0.11	|UJs	<0.1		<0.10		<0.10	|UJs	<0.10		<0.10	|UJs	<0.1		<0.10		<0.10		<0.10	|UJs
TOXAPHENE	1.0	ug/L	<1.1	|UJs	<1		<1.0		<1.0	|UJs	<1.0		<1.0	|UJs	<1		<1.0		<1.0		<1.0	|UJs

APPENDIX A
ANALYTICAL RESULTS FOR GROUNDWATER
PESTICIDES
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		Location	UCD1-013		UCD1-013		UCD1-018		UCD1-019		UCD1-020		UCD1-024	UCD1-025		UCD1-025	UCD1-027Z3	UCD1-027Z3
		Quarter	SPRING		SUMMER		WINTER		WINTER		WINTER		WINTER	WINTER		SPRING	WINTER	SPRING
		Sample ID	GWGW0538		GWGW0555		GWGW0516		GWGW0513		GWGW0517		GWGW0523	GWGW0502		GWGW0542	GWGW0528	GWGW0545
		Date	05/15/97		08/21/97		02/20/97		02/19/97		02/24/97		02/25/97	02/13/97		05/19/97	02/28/97	05/20/97
		QA																
Analyte	CRDL	Units																
4,4'-DDD	0.02	ug/L	<0.021		<0.021		<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
4,4'-DDE	0.02	ug/L	<0.021		<0.021	|UJc	<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
4,4'-DDT	0.02	ug/L	<0.021		<0.021		<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
ALDRIN	0.01	ug/L	<0.01		<0.010		<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
ALPHA-BHC	0.01	ug/L	<0.01		<0.010		<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
ALPHA-CHLORDANE	0.01	ug/L	**0.005**	JP|NJu	**0.004**	J|	<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
AROCLOR-1016	0.2	ug/L	<0.21		<0.21		<0.20	|UJs	<0.21	|UJs	<0.21	|UJs	<0.20	<0.21	|UJs	<0.2	<0.20	<0.22
AROCLOR-1221	0.4	ug/L	<0.41		<0.41		<0.41	|UJs	<0.41	|UJs	<0.42	|UJs	<0.41	<0.42	|UJs	<0.41	<0.40	<0.44
AROCLOR-1232	0.2	ug/L	<0.21		<0.21		<0.20	|UJs	<0.21	|UJs	<0.21	|UJs	<0.20	<0.21	|UJs	<0.2	<0.20	<0.22
AROCLOR-1242	0.2	ug/L	<0.21		<0.21		<0.20	|UJs	<0.21	|UJs	<0.21	|UJs	<0.20	<0.21	|UJs	<0.2	<0.20	<0.22
AROCLOR-1248	0.2	ug/L	<0.21		<0.21		<0.20	|UJs	<0.21	|UJs	<0.21	|UJs	<0.20	<0.21	|UJs	<0.2	<0.20	<0.22
AROCLOR-1254	0.2	ug/L	<0.21		<0.21		<0.20	|UJs	<0.21	|UJs	<0.21	|UJs	<0.20	<0.21	|UJs	<0.2	<0.20	<0.22
AROCLOR-1260	0.2	ug/L	<0.21		<0.21		<0.20	|UJs	<0.21	|UJs	<0.21	|UJs	<0.20	<0.21	|UJs	<0.2	<0.20	<0.22
BETA-BHC	0.01	ug/L	<0.01		<0.010	|UJc	<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
DELTA-BHC	0.01	ug/L	<0.01		<0.010	|UJc	<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
DIELDRIN	0.02	ug/L	**0.03**		**0.017**	J|	<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
ENDOSULFAN I	0.01	ug/L	<0.01		<0.010		<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
ENDOSULFAN II	0.02	ug/L	<0.021		<0.021		<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
ENDOSULFAN SULFATE	0.02	ug/L	<0.021		<0.021		<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
ENDRIN	0.02	ug/L	**0.011**	J|	**0.006**	J|	<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
ENDRIN ALDEHYDE	0.02	ug/L	<0.021		<0.021		<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
ENDRIN KETONE	0.02	ug/L	**0.005**	J|	**0.003**	J|	<0.02	|UJs	<0.021	|UJs	<0.021	|UJs	<0.02	<0.021	|UJs	<0.02	<0.02	<0.022
GAMMA-BHC	0.01	ug/L	**0.004**	JP|Ju	<0.010		<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
GAMMA-CHLORDANE	0.01	ug/L	<0.01		**0.004**	J|	<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
HEPTACHLOR	0.01	ug/L	<0.01		<0.010		<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.01		<0.010		<0.01	|UJs	<0.01	|UJs	<0.01	|UJs	<0.01	<0.011	|UJs	<0.01	<0.01	<0.011
METHOXYCHLOR	0.1	ug/L	<0.1		<0.10		<0.10	|UJs	<0.10	|UJs	<0.10	|UJs	<0.10	<0.11	|UJs	<0.1	<0.10	<0.11
TOXAPHENE	1.0	ug/L	<1		<1.0		<1.0	|UJs	<1.0	|UJs	<1.0	|UJs	<1.0	<1.1	|UJs	<1	<1.0	<1.1

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ANALYTICAL RESULTS FOR GROUNDWATER
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		Location	UCD1-034		UCD1-034	UCD2-007	UCD2-014		UCD2-014	UCD2-014	UCD2-014		UCD2-015		UCD2-015	UCD2-015	
		Quarter	WINTER		SPRING	WINTER	WINTER		WINTER	SPRING	SUMMER		WINTER		SPRING	SUMMER	
		Sample ID	GWGW0500		GWGW0532	GWGW0518	GWGW0509		GWGW0511	GWGW0539	GWGW0556		GWGW0505		GWGW0541	GWGW0570	
		Date	02/12/97		05/13/97	02/24/97	02/18/97		02/18/97	05/15/97	08/21/97		02/13/97		05/19/97	09/02/97	
		QA							DUPLICATE								
Analyte	CRDL	Units															
4,4'-DDD	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	**0.002**	JP|Ru
4,4'-DDE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02	|UJc	<0.021	|UJs	<0.021	<0.02	|UJc
4,4'-DDT	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
ALDRIN	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
ALPHA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
ALPHA-CHLORDANE	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
AROCLOR-1016	0.2	ug/L	<0.21	|UJs	<0.21	<0.20	<0.21	|UJs	<0.20	<0.2	<0.20		<0.21	|UJs	<0.21	<0.20	
AROCLOR-1221	0.4	ug/L	<0.42	|UJs	<0.41	<0.41	<0.41	|UJs	<0.41	<0.4	<0.41		<0.42	|UJs	<0.42	<0.40	
AROCLOR-1232	0.2	ug/L	<0.21	|UJs	<0.21	<0.20	<0.21	|UJs	<0.20	<0.2	<0.20		<0.21	|UJs	<0.21	<0.20	
AROCLOR-1242	0.2	ug/L	<0.21	|UJs	<0.21	<0.20	<0.21	|UJs	<0.20	<0.2	<0.20		<0.21	|UJs	<0.21	<0.20	
AROCLOR-1248	0.2	ug/L	<0.21	|UJs	<0.21	<0.20	<0.21	|UJs	<0.20	<0.2	<0.20		<0.21	|UJs	<0.21	<0.20	
AROCLOR-1254	0.2	ug/L	<0.21	|UJs	<0.21	<0.20	<0.21	|UJs	<0.20	<0.2	<0.20		<0.21	|UJs	<0.21	<0.20	
AROCLOR-1260	0.2	ug/L	<0.21	|UJs	<0.21	<0.20	<0.21	|UJs	<0.20	<0.2	<0.20		<0.21	|UJs	<0.21	<0.20	
BETA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010	|UJc	<0.01	|UJs	<0.01	<0.010	|UJc
DELTA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010	|UJc	<0.01	|UJs	<0.01	<0.010	|UJc
DIELDRIN	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
ENDOSULFAN I	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
ENDOSULFAN II	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
ENDOSULFAN SULFATE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
ENDRIN	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
ENDRIN ALDEHYDE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
ENDRIN KETONE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02	<0.021	|UJs	<0.02	<0.02	<0.02		<0.021	|UJs	<0.021	<0.02	
GAMMA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
GAMMA-CHLORDANE	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
HEPTACHLOR	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.01	|UJs	<0.01	<0.01	<0.01	|UJs	<0.01	<0.01	<0.010		<0.01	|UJs	<0.01	<0.010	
METHOXYCHLOR	0.1	ug/L	<0.1	|UJs	<0.1	<0.10	<0.10	|UJs	<0.10	<0.1	<0.10		<0.1	|UJs	<0.1	<0.10	
TOXAPHENE	1.0	ug/L	<1.0	|UJs	<1	<1.0	<1.0	|UJs	<1.0	<1	<1.0		<1.0	|UJs	<1	<1.0	

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ANALYTICAL RESULTS FOR GROUNDWATER
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		Location	UCD2-017	UCD2-026		UCD2-026	UCD2-026	UCD2-027Z4	UCD2-027Z4	UCD2-027Z5	UCD2-027Z5	UCD2-027Z6	UCD2-027Z6
		Quarter	WINTER	WINTER		SPRING	SPRING	WINTER	SPRING	WINTER	SPRING	WINTER	SPRING
		Sample ID	GWGW0515	GWGW0503		GWGW0543	GWGW0544	GWGW0527	GWGW0546	GWGW0526	GWGW0547	GWGW0525	GWGW0548
		Date	02/19/97	02/13/97		05/19/97	05/19/97	02/27/97	05/20/97	02/27/97	05/21/97	02/26/97	05/21/97
		QA					DUPLICATE						
Analyte	CRDL	Units											
4,4'-DDD	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
4,4'-DDE	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
4,4'-DDT	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
ALDRIN	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
ALPHA-BHC	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
ALPHA-CHLORDANE	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
AROCLOR-1016	0.2	ug/L	<0.20	<0.21	UJs	<0.21	<0.21	<0.22	<0.2	<0.22	<0.21	<0.22	<0.2
AROCLOR-1221	0.4	ug/L	<0.41	<0.42	UJs	<0.43	<0.42	<0.43	<0.41	<0.43	<0.41	<0.44	<0.4
AROCLOR-1232	0.2	ug/L	<0.20	<0.21	UJs	<0.21	<0.21	<0.22	<0.2	<0.22	<0.21	<0.22	<0.2
AROCLOR-1242	0.2	ug/L	<0.20	<0.21	UJs	<0.21	<0.21	<0.22	<0.2	<0.22	<0.21	<0.22	<0.2
AROCLOR-1248	0.2	ug/L	<0.20	<0.21	UJs	<0.21	<0.21	<0.22	<0.2	<0.22	<0.21	<0.22	<0.2
AROCLOR-1254	0.2	ug/L	<0.20	<0.21	UJs	<0.21	<0.21	<0.22	<0.2	<0.22	<0.21	<0.22	<0.2
AROCLOR-1260	0.2	ug/L	<0.20	<0.21	UJs	<0.21	<0.21	<0.22	<0.2	<0.22	<0.21	<0.22	<0.2
BETA-BHC	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
DELTA-BHC	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
DIELDRIN	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
ENDOSULFAN I	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
ENDOSULFAN II	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
ENDOSULFAN SULFATE	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
ENDRIN	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
ENDRIN ALDEHYDE	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
ENDRIN KETONE	0.02	ug/L	<0.02	<0.021	UJs	<0.021	<0.021	<0.022	<0.02	<0.022	<0.021	<0.022	<0.02
GAMMA-BHC	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
GAMMA-CHLORDANE	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
HEPTACHLOR	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	**0.009** J	<0.011	<0.01	<0.011	<0.01
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.01	<0.011	UJs	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01	<0.011	<0.01
METHOXYCHLOR	0.1	ug/L	<0.10	<0.11	UJs	<0.11	<0.1	<0.11	<0.1	<0.11	<0.1	<0.11	<0.1
TOXAPHENE	1.0	ug/L	<1.0	<1.1	UJs	<1.1	<1	<1.1	<1	<1.1	<1	<1.1	<1

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PESTICIDES
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		Location	UCD2-027Z7		UCD2-027Z7		UCD2-032		UCD2-035		UCD2-035
		Quarter	WINTER		SPRING		SUMMER		WINTER		SPRING
		Sample ID	GWGW0524		GWGW0549		GWGW0569		GWGW0501		GWGW0531
		Date	02/26/97		05/22/97		08/27/97		02/12/97		05/13/97
		QA									
Analyte	CRDL	Units									
4,4'-DDD	0.02	ug/L	<0.022		<0.021		<0.018	J|UJs	<0.021	|UJs	<0.021
4,4'-DDE	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
4,4'-DDT	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
ALDRIN	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
ALPHA-BHC	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
ALPHA-CHLORDANE	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
AROCLOR-1016	0.2	ug/L	<0.22		<0.21		<0.21	|UJs	<0.21	|UJs	<0.21
AROCLOR-1221	0.4	ug/L	<0.43		<0.42		<0.41	|UJs	<0.43	|UJs	<0.41
AROCLOR-1232	0.2	ug/L	<0.22		<0.21		<0.21	|UJs	<0.21	|UJs	<0.21
AROCLOR-1242	0.2	ug/L	<0.22		<0.21		<0.21	|UJs	<0.21	|UJs	<0.21
AROCLOR-1248	0.2	ug/L	<0.22		<0.21		<0.21	|UJs	<0.21	|UJs	<0.21
AROCLOR-1254	0.2	ug/L	<0.22		<0.21		<0.21	|UJs	<0.21	|UJs	<0.21
AROCLOR-1260	0.2	ug/L	<0.22		<0.21		<0.21	|UJs	<0.21	|UJs	<0.21
BETA-BHC	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
DELTA-BHC	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
DIELDRIN	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
ENDOSULFAN I	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
ENDOSULFAN II	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
ENDOSULFAN SULFATE	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
ENDRIN	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
ENDRIN ALDEHYDE	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
ENDRIN KETONE	0.02	ug/L	<0.022		<0.021		<0.021	|UJs	<0.021	|UJs	<0.021
GAMMA-BHC	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
GAMMA-CHLORDANE	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
HEPTACHLOR	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.011		<0.011		<0.010	|UJs	<0.011	|UJs	<0.01
METHOXYCHLOR	0.1	ug/L	<0.11		<0.11		<0.10	|UJs	<0.11	|UJs	<0.1
TOXAPHENE	1.0	ug/L	<1.1		<1.1		<1.0	|UJs	<1.1	|UJs	<1

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		Location	UCD1-004			UCD1-004			UCD1-004			UCD1-004			UCD1-010			UCD1-010			UCD1-011		
		Quarter	WINTER			SPRING			SUMMER			FALL			WINTER			FALL			WINTER		
		Sample ID	GWGW0504			GWGW0540			GWGW0568			GWGW0575			GWGW0512			GWGW0577			GWGW0510		
		Date	02/13/97			05/19/97			09/02/97			11/17/97			02/18/97			11/18/97			02/18/97		
		QA																					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-2.±22.		39.	6.±21.		34.	7.1±7.5		12.	-15.2±7.8		39.	-20.±18.		39.	12.±15.		24.	-2.0±6.9		15.
AMERICIUM-241	0.1	pCi/L	--			--			--			--			--			--			--		
BISMUTH-212	70	pCi/L	30.±52.		67.	6.±32.	|Jd	55.	-7.6±8.3		25.	-14.±27.		77.	-16.±24.		73.	-9.±31.		45.	-7.±11.		29.
BISMUTH-214	10	pCi/L	-3.±11.		19.	-1.±13.		20.	12.7±5.9		7.4	6.±13.		20.	88.±21.		18.	-3.6±8.0		14.	100±13.		9.6
CARBON-14	20	pCi/L	--			--			--			--			--			--			--		
CESIUM-137	4.0	pCi/L	-1.9±4.7		8.4	0.6±6.2		8.3	-1.1±1.1		3.4	-1.7±5.3		9.3	-1.8±4.3		11.	-0.2±3.3		5.5	-1.1±2.2		4.1
COBALT-60	4.0	pCi/L	5.2±3.5		9.1	1.4±4.2		7.4	-0.7±1.5		3.5	2.3±3.9		7.4	-1.8±2.6		8.4	-0.5±1.3		5.5	0.1±1.8		3.4
GROSS ALPHA	2.0	pCi/L	3.0±2.9	C|	4.5	4.5±4.9	C|Jm	7.9	-1.0±2.4	C|	5.8	1.3±4.4	C|	8.5	7.0±8.0	C|	13.	3.7±8.3	C|Jd	15.	1.5±5.8	C|	11.
GROSS BETA	3.0	pCi/L	1.1±2.0	C|	3.4	0.9±4.5	C|	7.8	-0.6±2.7	C|	4.8	-0.5±5.1	C|	9.1	4.4±6.2	C|	10.	3.8±7.9	C|	14.	1.9±4.5	C|	7.8
LEAD-210	380	pCi/L	50±110		170	20±110		170	130±280		380	-90±110		180	20±110		180	-26.±96		150	20±310		440
LEAD-212	10	pCi/L	1.6±9.2		13.	-0.3±9.0		13.	0.3±4.7		7.0	-1.±10.		16.	-1.1±9.9		15.	4.7±7.2		10.	6.2±5.4		7.5
LEAD-214	10	pCi/L	6.±11.		15.	-9.1±6.3		19.	4.9±5.2		8.2	6.±12.		18.	77.±17.		19.	-0.5±7.7		12.	106.±12.		8.4
PLUTONIUM-241	1.0	pCi/L	--			--			--			--			--			--			--		
POTASSIUM-40	55	pCi/L	2.±67.		110	-3.±75.		120	11.±28.		44.	19.±68.		110	-21.±69.		120	12.±46.		71.	10±28.		43.
RADIUM-226	1.0	pCi/L	0.08±0.15		0.28	0.00±0.14		0.31	0.29±0.24		0.34	0.47±0.32		0.44	--			--			--		
STRONTIUM-89,90	1.0	pCi/L	0.35±0.34		0.56	-0.04±0.23		0.41	0.05±0.31		0.53	-0.04±0.24		0.42	--			--			--		
THALLIUM-208	5.0	pCi/L	-7.9±3.6		12.	-2.1±6.8		10.	1.9±2.7		3.7	-0.2±6.7		10.	1.8±6.8		9.8	-0.1±4.6		6.8	0.7±2.9		4.2
THORIUM-234	170	pCi/L	-4.±70.		180	-24.±70.		180	-4.±48.		170	18.±70.		190	-14.±72.		200	39.±62.		170	-3.±50.		190
TRITIUM	300	pCi/L	70±110		190	110±140		240	110±110		190	50±120		220	120±120		190	--			70±110		190
URANIUM-235(GAMMA)	10	pCi/L	0±25.		37.	6.±28.		41.	4.±15.		22.	6.±29.		43.	-15.±16.		45.	0±21.		33.	-8.±10.		27.

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		Location	UCD1-012			UCD1-012			UCD1-012			UCD1-012			UCD1-012			UCD1-013			UCD1-013		
		Quarter	WINTER			SPRING			SUMMER			SUMMER			FALL			WINTER			SPRING		
		Sample ID	GWGW0507			GWGW0537			GWGW0553			GWGW0554			GWGW0572			GWGW0508			GWGW0538		
		Date	02/18/97			05/15/97			08/21/97			08/21/97			11/17/97			02/18/97			05/15/97		
		QA										DUPLICATE											
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-9.±16.		44.	-15.±17.		29.	-7.±23.		41.	-12.±14.		36.	-2.±16.		27.	-19.±14.		38.	3.±18.		27.
AMERICIUM-241	0.1	pCi/L	--			--			--			--			--			--			--		
BISMUTH-212	70	pCi/L	-8.±51.		69.	45.±34.		30.	-22.±22.		71.	36.±39.		63.	-27.±19.		55.	11.±46		63.	-12.±37.		50.
BISMUTH-214	10	pCi/L	19.±16.		20.	31.±12.		13.	18.±14.		18.	-3.±13.		21.	13.±10.		13.	30.±16.		19.	38.±13.		14.
CARBON-14	20	pCi/L	88.±26.		33.	358.±69.		77.	286.±74.		86.	281.±74.		86.	203.±72.		97.	814.±62.		22.	1800±150		80.
CESIUM-137	4.0	pCi/L	2.2±7.9		9.9	-0.2±5.6		7.0	-2.8±3.0		9.4	2.3±6.6		8.9	-4.5±3.4		6.5	-2.7±3.3		9.7	3.6±3.8		6.1
COBALT-60	4.0	pCi/L	-2.1±1.8		9.4	-0.6±2.4		6.6	1.2±3.7		8.2	2.7±3.8		7.2	-0.7±1.7		4.7	-0.3±1.4		9.1	-1.1±2.9		7.0
GROSS ALPHA	2.0	pCi/L	10.6±9.4	C|	14.	13.±11.	C|	17.	1.2±8.3	C|	17.	4.4±8.2	C|	15.	0.3±9.8	C|	20.	3.6±6.4	C|	11.	4.8±6.8	C|	12.
GROSS BETA	3.0	pCi/L	3.4±7.4	C|	13.	0.2±7.0	C|	12.	7.0±8.2	C|	14.	3.9±8.0	C|	14.	6.0±9.8	C|	17.	2.3±5.5	C|	9.5	6.1±6.4	C|	11.
LEAD-210	380	pCi/L	70±130		190	-53.±82.		120	-50±110		180	10±110		170	27.±92.		140	-60±110		180	26.±77.		110
LEAD-212	10	pCi/L	-1±11.		15.	5.3±7.4		9.4	2.±10.		15.	3.±11.		15.	0.4±7.7		11.	-0.7±9.4		14.	-1.±7.5		9.8
LEAD-214	10	pCi/L	15.±14.		20.	33.±10.	|Jd	12.	2.±11.		19.	-4.±11.		18.	10.0±9.0		14.	35.±13.		16.	37.±11.	|Jd	12.
PLUTONIUM-241	1.0	pCi/L	--			--			--			--			--			--			--		
POTASSIUM-40	55	pCi/L	-21.±79.		130	27.±54.		71.	-45.±65.		130	12.±64.		98.	-7.±46.		73.	7.±68.		110	-10.±54.		77.
RADIUM-226	1.0	pCi/L	0.08±0.15		0.27	0.59±0.28		0.27	0.36±0.29		0.42	0.73±0.35		0.36	0.53±0.31		0.37	0.30±0.23		0.33	0.15±0.15		0.23
STRONTIUM-89,90	1.0	pCi/L	0.28±0.34		0.57	0.02±0.20	Y|Js	0.35	0.05±0.30		0.51	0.07±0.30		0.53	0.04±0.32		0.55	0.21±0.31		0.52	0.10±0.22	Y|Js	0.37
THALLIUM-208	5.0	pCi/L	-0.1±7.6		11.	2.9±5.3		6.7	-5.6±3.5		11.	-2.3±6.9		10.	0.8±4.7		6.8	3.3±7.2		10.	-0.6±5.4		7.3
THORIUM-234	170	pCi/L	-21.±84.		210	-8.±56.		140	62.±69.		180	-55.±73.		200	27.±62.		170	-31.±72.		190	30.±55.		120
TRITIUM	300	pCi/L	110±110		190	80±110		180	-30.±97.		190	-74.±91.		190	270±160		220	18600±1200	|Jm	210	18300±1200		190
URANIUM-235(GAMMA)	10	pCi/L	18.±29.		38.	-6.±21.		30.	-22.±15.		45.	2.±28.		43	-1.±20.		31.	-16.±15.		41.	-7.±20.		31.

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		Location	UCD1-013			UCD1-013			UCD1-018			UCD1-019			UCD1-020			UCD1-020			UCD1-021		
		Quarter	SUMMER			FALL			WINTER			WINTER			WINTER			SUMMER			WINTER		
		Sample ID	GWGW0555			GWGW0580			GWGW0516			GWGW0513			GWGW0517			GWGW0563			GWGW0519		
		Date	08/21/97			11/18/97			02/20/97			02/19/97			02/24/97			08/26/97			02/24/97		
		QA																					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-19.5±9.2		42.	2.2±7.3		13.	11.±20.		30.	1±23.		41.	6.6±9.5		18.	10±21.		36.	-10±15.		38.
AMERICIUM-241	0.1	pCi/L	--			--			--			--			--			--			0.009±0.020		0.034
BISMUTH-212	70	pCi/L	46.±33.		42.	2.±17.		24.	13.±44.		60.	-25.±37.		73.	9.±23.		33.	-1±41		73.	-3.±49.		70.
BISMUTH-214	10	pCi/L	5.±14.		22.	-2.4±4.3		8.4	5.±14.		20.	144.±26.		19.	6.4±6.6		9.8	12.±14.		18.	1.±12.		18.
CARBON-14	20	pCi/L	1524.±98.		20.	1428.±93.		20.	50.±58.		97.	--			117.±64.		97.	14.±48.		86.	177.±69.		97.
CESIUM-137	4.0	pCi/L	0.6±5.7		10.	0.5±1.8		3.0	-2.0±3.1		9.3	0.2±5.7		10.	-0.9±2.0		3.6	5.3±4.7		7.1	-3.7±3.2		9.8
COBALT-60	4.0	pCi/L	-0.9±3.3		11.	-0.1±1.3		2.6	-1.±3.2		9.8	-0.9±3.9		9.6	-1.6±1.2		4.5	-0.4±4.1		8.0	-3.1±2.7		11.
GROSS ALPHA	2.0	pCi/L	9.8±8.2	C|	12.	5.9±7.4	C|Jd	12.	3.3±4.9	C|	8.3	5.4±6.6	C|	11.	0.8±2.2	C|	4.3	1.1±2.3	C|	4.3	1.±5.7	C|	11.
GROSS BETA	3.0	pCi/L	3.0±7.3	C|	13.	4.5±8.1	C|	14.	2.3±3.8	C|	6.4	8.6±6.3	C|	10.	-0.3±2.4	C|	4.3	0.2±2.0	C|	3.5	-0.6±5.1	C|	9.2
LEAD-210	380	pCi/L	-10±110		170	-20±310		440	-20±100		160	-10±110		170	130±410		550	-30±110		170	30±110		170
LEAD-212	10	pCi/L	8.±10.		14.	2.7±4.5		6.4	0.9±9.0		13.	-2.±10.		15.	2.4±6.1		9.1	5.±10.		14.	-1.3±9.0		14.
LEAD-214	10	pCi/L	2.±11.		18.	-0.4±5.0		8.4	5.±11.		17.	176.±24.		21.	7.0±5.8		8.8	6.±12.		19.	18.±11.		17.
PLUTONIUM-241	1.0	pCi/L	--			--			--			--			--			--			0.4±2.6		3.3
POTASSIUM-40	55	pCi/L	-18.±59.		110	-1±28.		46.	32.±69.		110	-35.±73.		130	-22.±31.		57.	-46.±19.		120	17.±77.		130
RADIUM-226	1.0	pCi/L	0.24±0.20		0.25	0.42±0.33		0.43	--			--			0.18±0.14		0.20	0.17±0.20		0.31	0.051±0.073	|Jf	0.12
STRONTIUM-89,90	1.0	pCi/L	-0.08±0.26		0.46	0.21±0.35		0.60	--			--			-0.07±0.22		0.38	0.24±0.27		0.45	0.08±0.22	|Jf	0.38
THALLIUM-208	5.0	pCi/L	2.3±7.4		11.	1.3±2.6		3.7	5.7±6.7		8.2	-0.9±7.8		12.	0.1±3.4		5.1	3.9±7.1		9.8	-1.2±6.7		10.
THORIUM-234	170	pCi/L	-8.±71.		190	20.±48.		170	-9.±70.		180	33.±75.		190	40.±59.		200	-23.±72.		190	37.±71.		180
TRITIUM	300	pCi/L	19000±1200		190	19400±1300		220	120±140		240	130±140		240	70±120	|Jm	210	-37.±96.		190	80±120	|Jm	200
URANIUM-235(GAMMA)	10	pCi/L	2.±28.		44.	-2.±14.		22.	-15.±21.		39.	16.±31.		46.	5.±18.		26.	-14.±28.		46.	-10±26.		42.

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		Location	UCD1-021			UCD1-021			UCD1-022			UCD1-022			UCD1-023			UCD1-023			UCD1-024		
		Quarter	WINTER			FALL			WINTER			SUMMER			WINTER			SUMMER			WINTER		
		Sample ID	GWGW0520			GWGW0581			GWGW0522			GWGW0552			GWGW0506			GWGW0551			GWGW0523		
		Date	02/24/97			11/19/97			02/25/97			08/20/97			02/13/97			08/20/97			02/25/97		
		QA	DUPLICATE																				
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-9.±10.		37.	--			-1±18.		34.	--			1.±20.		34.	--			7.±19.		35.
AMERICIUM-241	0.1	pCi/L	0.039±0.034		0.029	--			0.005±0.016		0.034	0.012±0.017		0.017	--			--			--		
BISMUTH-212	70	pCi/L	-4.±52.		76.	--			5.±49.		70.	--			8.±43.		57.	--			34.±46.		55.
BISMUTH-214	10	pCi/L	4.±13.		20.	--			10±13.		18.	--			17.±14.		19.	--			68.±19.		19.
CARBON-14	20	pCi/L	105.±63.		97.	-24.±51.		97.	--			6.±47.		86.	286.±67.		65.	--			92.±62.		96.
CESIUM-137	4.0	pCi/L	1.4±7.4		10.	--			1.3±5.9		7.7	--			-0.8±5.3		9.1	--			4.3±7.4		9.4
COBALT-60	4.0	pCi/L	-2.4±3.7		10.	--			-2.5±3.4		8.5	--			-1.1±3.8		8.4	--			-2.1±3.8		8.4
GROSS ALPHA	2.0	pCi/L	5.4±6.5	C|	11.	--			0.7±4.2	C|	8.7	2.0±4.9	C|	9.2	-0.3±2.4	C|	5.4	-0.2±3.5	C|	7.4	0.1±4.8	C|	10.
GROSS BETA	3.0	pCi/L	-0.7±5.0	C|	8.9	--			-0.3±4.5	C|	8.0	2.9±4.6	C|	7.8	1.4±2.6	C|	4.4	1.1±3.6	C|	6.3	2.8±5.6	C|	9.5
LEAD-210	380	pCi/L	50±100		150	--			-32.±97.		160	--			-30±110		170	--			50±110		170
LEAD-212	10	pCi/L	1.6±9.3		14.	--			-0.2±9.3		14.	--			1.8±9.4		14.	--			8.±10.		14.
LEAD-214	10	pCi/L	5.±11.		17.	--			14.±11.		16.	--			15.±12.		17.	--			69.±16.		18.
PLUTONIUM-241	1.0	pCi/L	0.6±2.6		3.2	--			0.5±2.7		3.6	0.7±2.3	|JI	4.2	--			--			--		
POTASSIUM-40	55	pCi/L	-39.±70.		130	--			16.±70.		110	--			-3.±73.		120	--			-43.±70.		130
RADIUM-226	1.0	pCi/L	0.37±0.18	|Uz	0.15	0.07±0.22		0.43	0.21±0.16		0.23	0.24±0.26		0.41	-0.03±0.16		0.37	0.00±0.13		0.30	0.28±0.14		0.048
STRONTIUM-89,90	1.0	pCi/L	2.35±0.38	|Uz	0.44	-0.01±0.14		0.25	0.54±0.58		0.97	0.02±0.32		0.57	0.20±0.30		0.51	0.04±0.33		0.57	-0.04±0.18		0.31
THALLIUM-208	5.0	pCi/L	2.5±6.3		8.4	--			5.1±5.9		6.9	--			1.±6.4		9.6	--			-2.6±6.6		10.
THORIUM-234	170	pCi/L	-14.±68.		180	--			-33.±69.		180	--			-6.±72.		180	--			10.±73.		190
TRITIUM	300	pCi/L	100±120	|Jm	210	--			430±160	|Jm	210	10±100		190	40±110		200	100±110		190	160±140	|Jm	220
URANIUM-235(GAMMA)	10	pCi/L	17.±27.		38.	--			-7.±26.		40.	--			--			--			-6.±22.		44.

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		Location	UCD1-024			UCD1-025			UCD1-025			UCD1-025			UCD1-025			UCD1-027Z3			UCD1-027Z3		
		Quarter	FALL			WINTER			SPRING			SUMMER			FALL			WINTER			SPRING		
		Sample ID	GWGW0583			GWGW0502			GWGW0542			GWGW0561			GWGW0578			GWGW0528			GWGW0545		
		Date	11/19/97			02/13/97			05/19/97			08/26/97			11/18/97			02/28/97			05/20/97		
		QA																					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	3.±15.		28.	-11.±17.		36.	-9.9±8.1		39.	--			--			2.6±9.6		15.	11.±22.		35.
AMERICIUM-241	0.1	pCi/L	--			0.036±0.030		0.027	0.015±0.027		0.044	--			--			0.008±0.025		0.051	0.028±0.028		0.031
BISMUTH-212	70	pCi/L	5.±33.		46.	4.±49.		70.	29.±37.	|Jd	58.	--			--			0±21.		30.	-1.±32.	|Jd	58.
BISMUTH-214	10	pCi/L	29.±11.		13.	19.±15.		19.	2.±11.		17.	--			--			1.7±6.2		9.7	5.±12.		17.
CARBON-14	20	pCi/L	--			71.±44.		65.	230.±60.		77.	0.00±47.		86.	-4.±53.		97.	-11.±52.		96.	96.±50.		77.
CESIUM-137	4.0	pCi/L	0.9±3.6		5.8	5.3±6.7		8.0	-2.4±3.1		9.5	--			--			0.9±3.2		4.2	-2.9±2.7		9.0
COBALT-60	4.0	pCi/L	-2.4±1.3		5.8	-0.1±2.9		7.0	-1.4±3.1		12.	--			--			0.9±1.7		3.3	-2.7±3.2		12.
GROSS ALPHA	2.0	pCi/L	0.5±5.4	C|Jd	11.	5.3±5.6	C|	8.7	2.0±4.9	C|	9.4	--			--			6.4±5.0	C|	7.1	1.9±4.6	C|Jm	8.7
GROSS BETA	3.0	pCi/L	-4.7±6.8	C|	13.	3.4±4.8	C|	8.2	4.5±6.6	C|	11.	--			--			2.4±4.1	C|	7.0	5.1±5.1	C|	8.4
LEAD-210	380	pCi/L	-64.±94.		150	-40±110		170	-10±100		170	--			--			170±430		600	-20±110		170
LEAD-212	10	pCi/L	1.2±7.6		11.	3.6±9.4		13.	-0.1±9.7		14.	--			--			2.4±5.6		8.3	5.1±9.3		13.
LEAD-214	10	pCi/L	5.3±8.9		14.	13.±11.		16.	-3.±11.		18.	--			--			0.5±5.8		9.6	-5.±10.		17.
PLUTONIUM-241	1.0	pCi/L	--			0.3±3.5		4.5	0.4±2.1	|Jl	3.8	--			--			4.7±2.9		3.4	-0.2±2.0	|Jl	3.6
POTASSIUM-40	55	pCi/L	-2.±42.		68.	-14.±62.		100	-8.±65.		110	--			--			-28.±31.		59.	-41.±70.		130
RADIUM-226	1.0	pCi/L	--			0.28±0.20		0.26	0.14±0.18		0.29	--			--			0.22±0.15		0.21	0.33±0.20		0.20
STRONTIUM-89,90	1.0	pCi/L	--			0.18±0.28		0.47	0.06±0.24		0.42	--			--			0.43±0.37		0.61	0.22±0.23	Y|Js	0.38
THALLIUM-208	5.0	pCi/L	-2.4±5.0		7.6	3.7±7.0		9.5	4.9±7.0		9.5	--			--			1.2±3.3		4.7	0.7±6.6		9.6
THORIUM-234	170	pCi/L	-27.±61.		170	-29.±68.		180	0±70.		180	--			--			-20.±60.		230	-34.±70.		180
TRITIUM	300	pCi/L	--			80±110		190	110±140		230	-23.±99.		190	60±130		230	320±140		190	40±130		240
URANIUM-235(GAMMA)	10	pCi/L	-9.±18.		32.	5.±27.		40.	-13.±21.		39.	--			--			2.±18.		28.	10.±28.		42.

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		Location	UCD1-028			UCD1-034			UCD1-034			UCD1-034			UCD2-007			UCD2-007			UCD2-014		
		Quarter	FALL			WINTER			SPRING			SUMMER			WINTER			SUMMER			WINTER		
		Sample ID	GWGW0588			GWGW0500			GWGW0532			GWGW0557			GWGW0518			GWGW0564			GWGW0509		
		Date	11/24/97			02/12/97			05/13/97			08/25/97			02/24/97			08/26/97			02/18/97		
		QA																					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	13.±23.		39.	10.±21.		33.	-3.4±5.8		9.9	--			2.4±9.1		17.	4.3±7.8		14.	3.±22.		37.
AMERICIUM-241	0.1	pCi/L	--			0.021±0.025		0.030	0.024±0.024		0.017	--			--			--			0.021±0.028	|Uz	0.034
BISMUTH-212	70	pCi/L	-26.±20.		73.	6.±50.		70.	10±13.		14.	--			-2.±19.		29	0±19.		26.	29.±38.		61.
BISMUTH-214	10	pCi/L	1.±13.		20.	2.±13.		21.	9.8±4.4		5.0	--			11.4±7.0		9.6	1.8±5.4		8.1	58.±18.	|Jf	18.
CARBON-14	20	pCi/L	-58.±47.		97.	74.±45.		65.	-1.±42.		77.	--			102.±63.		97.	-6.±46.		86.	375.±37.		21.
CESIUM-137	4.0	pCi/L	-0.4±5.0		9.3	0.2±5.0		8.4	-0.80±0.55		2.2	--			0.5±2.2		3.6	-0.4±1.3		3.5	3.1±5.3		8.6
COBALT-60	4.0	pCi/L	0.6±3.5		8.2	0.3±3.3		6.9	-0.42±0.51		1.3	--			0.8±1.8		3.8	-1.83±0.96		3.1	-2.0±2.8		11.
GROSS ALPHA	2.0	pCi/L	5.4±7.1	C|Jd	12.	2.1±2.7	C|	4.6	0.9±2.7	C|	5.1	--			0.7±2.8	C|	5.5	0.2±2.2	C|	4.8	6.8±6.7	C|	11.
GROSS BETA	3.0	pCi/L	6.6±7.4	C|	12.	2.9±2.5	C|	4.1	2.6±2.4	C|	4.0	--			-0.8±2.5	C|	4.5	2.4±2.6	C|	4.2	-0.9±4.1	C|	7.3
LEAD-210	380	pCi/L	-40±110		170	0±100		170	110±220		270	--			40±400		560	0±280		390	30±110		170
LEAD-212	10	pCi/L	11.±11.		14.	1.9±9.4		14.	-1.0±3.6		4.9	--			6.6±6.0		8.4	-0.2±4.7		7.1	7.8±9.3		12.
LEAD-214	10	pCi/L	2.±12.		19.	9.±11.		15.	9.2±4.1	|Jd	5.3	--			9.4±6.2		8.9	-0.1±4.8		8.1	43.±15.		19.
PLUTONIUM-241	1.0	pCi/L	--			1.8±3.3		3.8	0.4±2.3	|Jl	4.0	--			--			--			0.5±2.5		3.2
POTASSIUM-40	55	pCi/L	63.±77.		100	-3.±71.		120	1.±20.		29.	--			-16.±33.		59.	-13.±25.		44.	3.±72.		120
RADIUM-226	1.0	pCi/L	0.07±0.22		0.43	0.18±0.21		0.34	0.28±0.21		0.27	--			0.017±0.098		0.20	0.00±0.20		0.43	0.03±0.19		0.38
STRONTIUM-89,90	1.0	pCi/L	0.11±0.15		0.25	0.35±0.33		0.55	0.09±0.23		0.39	--			-0.01±0.20		0.35	0.1±0.27		0.46	-0.07±0.31		0.55
THALLIUM-208	5.0	pCi/L	-1.7±6.5		10.	-1.2±7.1		11.	-1.6±2.1		3.0	--			1.3±3.5		5.1	3.6±2.7		3.5	2.2±6.6		9.5
THORIUM-234	170	pCi/L	77.±74.		180	49.±71.		190	-3.±36.		120	--			0±61.		210	9.±46.		160	65.±71.		180
TRITIUM	300	pCi/L	0±120		230	170±130		200	20±100		180	-16.±99.		190	80±120	|Jm	210	130±120		190	5490±540	|Jm	220
URANIUM-235(GAMMA)	10	pCi/L	-7.±23.		44.	25.±27.		39.	0±12.		16.	--			1.±18.		26.	9.±15.		22.	-2.±28.		43.

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		Location	UCD2-014			UCD2-014			UCD2-014			UCD2-014			UCD2-015			UCD2-015			UCD2-015		
		Quarter	WINTER			SPRING			SUMMER			FALL			WINTER			SPRING			SUMMER		
		Sample ID	GWGW0511			GWGW0539			GWGW0556			GWGW0535			GWGW0505			GWGW0541			GWGW0570		
		Date	02/18/97			05/15/97			08/21/97			11/19/97			02/13/97			05/19/97			09/02/97		
		QA	DUPLICATE																				
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-4.7±9.2		15.	-3.±17.		25.	-11.±12.		42.	-1.6±7.6		14.	8.±23.		39.	-4.±20.		37.	0.7±7.6		14.
AMERICIUM-241	0.1	pCi/L	0.026±0.035	|Uz	0.046	0.009±0.017		0.029	--			--			--			--			--		
BISMUTH-212	70	pCi/L	3.±18.		25.	-14.±13.		48.	-9.±34.		65.	0±16.		23.	17.±44.		58.	19.±47.	|Jd	61.	3.±17.		22.
BISMUTH-214	10	pCi/L	21.5±6.8	|Jf	7.8	28.±12.		12.	7.±14.		19.	3.8±5.5		8.1	6.±13.		18.	5.±13.		18.	10.2±5.9		7.8
CARBON-14	20	pCi/L	422.±40.		22.	1090±110		80.	711.±55.		20.	464.±42.		20.	--			--			--		
CESIUM-137	4.0	pCi/L	2.1±1.8		2.7	0.1±5.2		6.5	-4.2±3.9		11.	1.3±1.6		2.4	-4.8±3.4		11.	-5.6±3.3		10.	-1.2±1.1		3.4
COBALT-60	4.0	pCi/L	-1.±1.1		3.7	0.5±2.5		6.8	-0.2±4.0		10.	0.7±1.3		2.6	-1.3±3.6		12.	-2.8±2.0		12.	-0.2±1.4		3.5
GROSS ALPHA	2.0	pCi/L	4.0±4.9	C|	8.0	2.9±5.4	C|	9.8	2.3±5.2	C|	9.6	6.2±6.4	C|Jd	10.	1.±1.6	C|	2.9	1.6±3.8	C|Jm	7.0	1.8±2.4	C|	4.0
GROSS BETA	3.0	pCi/L	3.8±4.3	C|	7.1	2.1±5.1	C|	8.7	-0.5±5.4	C|	9.6	-0.4±5.5	C|	9.7	1.1±1.3		2.2	-2.0±3.6	C|	6.6	-0.1±2.2	C|	3.9
LEAD-210	380	pCi/L	-80±280		410	-40.±82.		120	10±110		170	0±290		410	-49.±99.		160	-45.±96.		160	70±270		370
LEAD-212	10	pCi/L	1.5±4.7		7.0	2.2±7.2		9.2	3.3±9.8		14.	-0.9±4.7		7.1	1.9±9.3		13.	3.6±9.4		13.	0.7±4.7		6.9
LEAD-214	10	pCi/L	25.3±6.3		7.4	29.±10.	|Jd	12.	3.±11.		18.	7.5±4.9		7.2	5.±11.		18.	8.±11.		15.	5.5±5.2		8.1
PLUTONIUM-241	1.0	pCi/L	0.3±2.7		3.6	-2.4±2.3	|Jl	4.7	--			--			--			--			--		
POTASSIUM-40	55	pCi/L	4.±26.		43.	-3.±55.		79.	-5.±70.		110	6.±25.		40.	24.±74.		110	10±74.		120	18.±27.		40.
RADIUM-226	1.0	pCi/L	0.10±0.17		0.30	0.15±0.20		0.32	0.13±0.23		0.40	0.15±0.18		0.28	-0.03±0.13		0.31	0.23±0.19		0.24	0.13±0.16		0.24
STRONTIUM-89,90	1.0	pCi/L	0.07±0.34		0.59	-0.06±0.21		0.38	0.12±0.31		0.53	0.11±0.32		0.55	0.09±0.32		0.56	0.04±0.22		0.39	0.00±0.26		0.45
THALLIUM-208	5.0	pCi/L	1.1±2.7		3.9	0.5±5.2		6.9	-5.5±3.6		11.	-1.±2.5		3.9	1.3±6.8		9.8	-2.9±6.7		10.	1.±2.6		3.7
THORIUM-234	170	pCi/L	-19.±48.		170	12.±55.		130	-8.±71.		190	10.±48.		170	-31.±69.		180	-16.±68.		180	6.±48.		170
TRITIUM	300	pCi/L	5910±560	|Jm	220	9540±700		180	4990±450		180	4390±470		230	110±120		200	-80±110		230	10±100		180
URANIUM-235(GAMMA)	10	pCi/L	5.±16.		23.	-3.±21.		30.	5.±23.		41.	-2.±12.		21.	-13.±22.		43.	-21.±14.		40.	0±15.		22.

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		Location	UCD2-015			UCD2-015			UCD2-016			UCD2-016			UCD2-017			UCD2-026			UCD2-026		
		Quarter	FALL			FALL			WINTER			SUMMER			WINTER			WINTER			SPRING		
		Sample ID	GWGW0573			GWGW0574			GWGW0514			GWGW0565			GWGW0515			GWGW0503			GWGW0543		
		Date	11/17/97			11/17/97			02/19/97			08/26/97			02/19/97			02/13/97			05/19/97		
		QA				DUPLICATE																	
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-3.8±7.4		14.	15.±22.		36.	14.±24.		42.	-0.1±7.7		14.	2.5±8.5		15.	-8.±13.		41.	-5.3±9.8		19.
AMERICIUM-241	0.1	pCi/L	--			--			--			--			--			0.007±0.021		0.038	0.020±0.022		0.018
BISMUTH-212	70	pCi/L	5.±15.		20.	31.±36.		56.	-2.±46.		66.	10.±17.		21.	5.±19.		26.	13.±49.		65.	-5.±21.	Jd	31.
BISMUTH-214	10	pCi/L	10.0±5.8		7.5	-4.±11.		19.	151.±27.		22.	3.6±5.2		7.5	144.±17.		11.	9.±13.		20.	22.7±8.2	Jf	9.9
CARBON-14	20	pCi/L	--			--			--			--			-10±52.		97.	69.±44.		65.	56.±47.		77.
CESIUM-137	4.0	pCi/L	-0.5±1.2		3.3	-0.1±6.9		9.7	3.3±7.0		9.1	0±2.1		2.9	-1.6±2.2		4.1	-0.2±5.1		8.7	0.8±2.7		3.6
COBALT-60	4.0	pCi/L	-0.3±1.2		2.9	-0.1±4.5		9.8	-4.7±2.8		11.	0.4±1.2		2.5	-0.5±1.2		3.4	-2.7±2.9		11.	1.1±1.7		3.7
GROSS ALPHA	2.0	pCi/L	-0.1±2.1	C|	4.5	1.±2.2	C|	4.2	1.3±3.5	C|	6.5	1.3±2.5	C|	4.6	-0.4±2.4	C|	5.4	2.5±2.8	C|	4.5	1.4±3.4	C|Jm	6.5
GROSS BETA	3.0	pCi/L	0.4±2.3	C|	4.0	1.8±2.2		3.7	1.8±2.7	C|	4.6	2.3±2.8	C|	4.8	-1.1±2.5	C|	4.5	1.5±2.2	C|	3.8	-0.4±3.7	C|	6.6
LEAD-210	380	pCi/L	-80±300		430	-60±110		180	40±120		180	-120±280		400	50±340		480	-20±100		170	70±420		580
LEAD-212	10	pCi/L	3.6±4.6		6.5	2.±10.		15.	7.±10.		14.	0.6±4.6		6.7	2.4±5.5		8.1	-0.3±9.4		14.	-1.4±5.9		9.0
LEAD-214	10	pCi/L	9.0±5.2		7.6	8.±12.		18.	155.±23.		19.	2.5±4.8		7.5	180.±17.		9.1	7.±11		16.	16.1±6.9		9.6
PLUTONIUM-241	1.0	pCi/L	--			--			--			--			--			1.8±3.2		3.5	0.5±2.4	Jl	4.3
POTASSIUM-40	55	pCi/L	-2.±27.		44.	40.±68.		95.	1.±80.		130	3.±27.		43.	-2.±26.		44.	-64.±29.		130	-7.±33.		56.
RADIUM-226	1.0	pCi/L	0.03±0.21		0.42	0.03±0.11		0.24	0.37±0.26		0.34	0.13±0.20		0.35	--			0.21±0.22		0.34	0.11±0.13		0.20
STRONTIUM-89,90	1.0	pCi/L	0.00±0.32		0.57	0.09±0.27		0.47	-0.02±0.28		0.50	-0.01±0.29		0.51	--			0.40±0.34		0.56	0.20±0.22		0.37
THALLIUM-208	5.0	pCi/L	0.5±2.4		3.5	-0.2±7.7		11.	-3.0±6.8		11.	0.9±2.7		3.8	-1.8±2.7		4.3	-3.1±7.4		12.	2.2±3.3		4.7
THORIUM-234	170	pCi/L	0±48.		170	-22.±72.		190	29.±76.		200	19.±48.		160	-4.±52.		200	35.±72.		180	22.±62.		220
TRITIUM	300	pCi/L	70±130		230	0±120		230	0±120		230	30±100		190	100±140		240	70±110		190	0±120		240
URANIUM-235(GAMMA)	10	pCi/L	-6.±12.		21.	-27.±22.		42.	-3.±31.		47.	-5.±12.		22.	1±19.		29.	-4.±25.		38.	-20.2±9.8		30.

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		Location	UCD2-026			UCD2-026			UCD2-026			UCD2-027Z4			UCD2-027Z4			UCD2-027Z5			UCD2-027Z5		
		Quarter	SPRING			SUMMER			FALL			WINTER			SPRING			WINTER			SPRING		
		Sample ID	GWGW0544			GWGW0562			GWGW0579			GWGW0527			GWGW0546			GWGW0526			GWGW0547		
		Date	05/19/97			08/26/97			11/18/97			02/27/97			05/21/97			02/27/97			05/21/97		
		QA	DUPLICATE																				
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-11.±12.		42.	--			--			1±21.		40.	-1.±21.		37.	2.±18.		33.	-7.7±7.2		16.
AMERICIUM-241	0.1	pCi/L	0.019±0.028		0.039	--			--			0.043±0.049		0.039	0.033±0.029		0.018	0.073±0.072		0.079	0.016±0.018		0.014
BISMUTH-212	70	pCi/L	8.±45.	|Jd	61.	--			--			-17.±51.		79.	-8.±24.	|Jd	71.	0±47.		69.	7.±19.	|Jd	27.
BISMUTH-214	10	pCi/L	-8.±11.	|Jf	18.	--			--			6.±13.		19.	-2.±12.		20.	-5.±11.		18.	0.6±6.2		9.2
CARBON-14	20	pCi/L	18.±44.		77.	3.±47.		86.	-10±52.		97.	-6.±52.		96.	41.±46.		77.	-14.±51		96.	16.±44.		77.
CESIUM-137	4.0	pCi/L	0.9±5.9		8.1	--			--			0.3±6.2		8.5	2.4±6.4		8.6	-1.±3.5		9.7	0.4±2.9		4.0
COBALT-60	4.0	pCi/L	-1.6±3.2		9.2	--			--			0.9±3.3		8.6	-1.8±2.0		9.8	-2.6±2.6		10.	0.3±1.3		2.6
GROSS ALPHA	2.0	pCi/L	1.7±2.1	C|	3.4	--			--			4.8±3.9	C|	5.5	4.3±4.4	C|Jm	6.9	7.9±4.8	C|	6.4	-0.4±2.9	C|Jm	6.5
GROSS BETA	3.0	pCi/L	2.2±2.2		3.6	--			--			3.7±3.6	C|	5.8	2.9±3.8	C|	6.4	7.1±3.6	C|	5.5	10.6±4.0	C|	5.9
LEAD-210	380	pCi/L	0±100		160	--			--			30±110		170	-11.±96.		150	-10±100		160	-100±390		560
LEAD-212	10	pCi/L	0.3±8.8		13.	--			--			3.2±9.3		13.	1.2±9.0		13.	1.0±9.6		14.	-1.4±5.4		8.3
LEAD-214	10	pCi/L	8.±11.		16.	--			--			5.±11.		17.	0±11.		17.	3.±11.		18.	3.2±5.9		9.1
PLUTONIUM-241	1.0	pCi/L	0±1.9	|Jl	3.4	--			--			-0.4±2.5		3.7	2.6±2.5	|Jl	4.0	1.0±2.7		3.7	0.7±2.3	|Jl	4.0
POTASSIUM-40	55	pCi/L	10±72.		120	--			--			4.±71.		110	37.±64.		95.	-14.±70.		110	-7.±34.		57.
RADIUM-226	1.0	pCi/L	0.39±0.23		0.26	--			--			0.25±0.15		0.19	0.49±0.24		0.28	0.28±0.18		0.24	0.043±0.10		0.20
STRONTIUM-89,90	1.0	pCi/L	0.01±0.20	Y|Js	0.36	--			--			0.09±0.32		0.56	0.07±0.20	Y|Js	0.35	0.05±0.32		0.57	-0.03±0.23		0.40
THALLIUM-208	5.0	pCi/L	0.2±7.2		11.	--			--			-0.1±6.9		10.	1.9±6.7		9.6	0.3±6.2		8.8	1.2±3.2		4.6
THORIUM-234	170	pCi/L	-32.±67.		170	--			--			-3.±71.		180	-18.±68.		170	37.±69.		180	1.±62.		230
TRITIUM	300	pCi/L	50±130		240	-37.±95.		190	10±120		230	70±110		190	60±130		230	1070±210		190	40±130		240
URANIUM-235(GAMMA)	10	pCi/L	-11.±14.		41.	--			--			7.±26.		39.	2.±26.		39.	4.±27.		41.	-9.±15.		27.

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		Location	UCD2-027Z6			UCD2-027Z6			UCD2-027Z7			UCD2-027Z7			UCD2-029			UCD2-029			UCD2-030		
		Quarter	WINTER			SPRING			WINTER			SPRING			FALL			FALL			FALL		
		Sample ID	GWGW0525			GWGW0548			GWGW0524			GWGW0549			GWGW0589			GWGW0590			GWGW0591		
		Date	02/26/97			05/21/97			02/26/97			05/22/97			11/24/97			11/24/97			11/25/97		
		QA																DUPLICATE					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	3.4±9.6		17.	12.±20.		29.	-17.±17.		41.	1.6±9.9		17.	11.±20.		35.	-7.±20.		37.	-2.±22.		42.
AMERICIUM-241	0.1	pCi/L	0.00±0.00		0.032	0.021±0.024		0.019	0.040±0.040		0.027	0.044±0.036		0.039	--			--			--		
BISMUTH-212	70	pCi/L	-4.±19.		28.	43.±35.	|Jd	49.	-17.±45.		70.	4.±23.	|Jd	33.	1±43.		61.	20.±53.		73.	-14.±19.		66.
BISMUTH-214	10	pCi/L	4.6±6.3		9.1	-11.±10.		20.	24.±14.		17.	0.1±6.7		10.	-7.±11.		19.	-1.±12.		20.	5.±12.		18.
CARBON-14	20	pCi/L	-3.±53.		96.	71.±48.		77.	-6.±52.		96.	16.±44.		77.	-7.±52.		97.	-44.±48.		97.	2.±53.		97.
CESIUM-137	4.0	pCi/L	-2.0±1.6		4.6	-3.5±3.4		10.	-0.8±3.2		9.2	-1.1±1.4		4.1	-3.0±3.0		9.4	0.6±4.9		8.8	-4.4±3.2		10.
COBALT-60	4.0	pCi/L	-0.49±0.65		4.4	-2.5±2.7		11.	1.2±3.1		3.2	-0.2±1.7		3.7	-0.7±2.1		8.1	-2.8±2.6		10.	-1.6±1.6		10.
GROSS ALPHA	2.0	pCi/L	3.4±3.2	C|	4.9	3.8±3.8	C|Jm	5.9	5.4±4.0	C|	5.6	3.0±3.7	C|Jm	6.2	4.1±3.5	C|Jd	4.9	0.3±3.3	C|Jd	7.0	1.7±3.0	C|Jd	5.3
GROSS BETA	3.0	pCi/L	1.9±3.0	C|	5.0	1.5±3.5	C|	5.9	4.9±3.9	C|	6.2	-0.4±3.6	C|	6.3	1.6±3.1	C|	5.3	0.4±4.2	C|	7.4	1.7±3.6	C|	6.1
LEAD-210	380	pCi/L	-260±410		620	50±110		160.	20±110		170	180±410		560	-50±110		180	-20±110		170	-30±110		180
LEAD-212	10	pCi/L	-3.4±5.6		8.8	3.±10.		15.	-0.3±9.5		14.	1.4±5.5		8.2	1±10.		15.	7.±10.		14.	-2.±10.		15.
LEAD-214	10	pCi/L	-0.3±5.7		9.5	-8.1±7.3		17.	11.±12.		19.	0.6±5.7		9.5	3.±11.		18.	-4.2±9.0		20.	-3.±12.		19.
PLUTONIUM-241	1.0	pCi/L	0±3.2		5.1	-0.7±2.0	|Jl	3.8	0.4±2.9		4.2	0.6±1.9	|Jl	3.4	--			--			--		
POTASSIUM-40	55	pCi/L	-3.±33.		57.	30.±81.		120	-18.±64.		110	4.±37.		59.	27.±71.		110	-16.±74.		120	27.±80.		120
RADIUM-226	1.0	pCi/L	0.14±0.11		0.13	0.12±0.18		0.31	0.18±0.14		0.19	0.04±0.15		0.28	0.00±0.21		0.45	0.07±0.23		0.44	0.36±0.28		0.39
STRONTIUM-89,90	1.0	pCi/L	0.06±0.31		0.55	0.04±0.21		0.36	0.11±0.31		0.54	-0.09±0.21		0.37	-0.03±0.15		0.26	-0.06±0.20		0.36	0.14±0.30		0.51
THALLIUM-208	5.0	pCi/L	1.1±3.6		5.2	3.0±6.8		9.5	0.9±6.9		10.	0.2±3.1		4.6	-2.4±6.4		10.	7.1±7.2		9.2	2.1±6.4		9.1
THORIUM-234	170	pCi/L	-45.±60.		230	-18.±70.		180	-7.±70.		190	-5.±60.		220	22.±70.		190	31.±71.		180	29.±70.		180
TRITIUM	300	pCi/L	10±100		190	80±140		240	50±110		190	80±140		240	90±130		230	350±160		220	50±120		210
URANIUM-235(GAMMA)	10	pCi/L	-14.9±9.5		30.	14.±26.		39.	-6.±26.		41.	-12.±10.		29.	5.±28.		42.	19.±28.		40.	15.±27.		40.

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		Location	UCD2-031			UCD2-032			UCD2-032			UCD2-035			UCD2-035			UCD2-035			UCD2-036		
		Quarter	FALL			SUMMER			FALL			WINTER			SPRING			SUMMER			FALL		
		Sample ID	GWGW0592			GWGW0569			GWGW0585			GWGW0501			GWGW0531			GWGW0558			GWGW0596		
		Date	11/25/97			08/27/97			11/21/97			02/12/97			05/13/97			08/25/97			12/01/97		
		QA																					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	3.±15.		25.	-0.5±7.3		14.	-4.4±5.5		14.	6.±22.		38.	-0.5±5.9		9.9	--			4.±22.		42.
AMERICIUM-241	0.1	pCi/L	--			--			--			0.026±0.025		0.017	0.019±0.027		0.038	--			0.01±0.018	|Uz	0.028
BISMUTH-212	70	pCi/L	-4.±31.		44.	14.±16.		18.	1±16.		24.	-30.±25.		74.	-2.±13.		17.	--			-9.±48.		73.
BISMUTH-214	10	pCi/L	5.4±9.2		13.	0.7±5.3		8.1	5.9±5.5		8.1	1.±13.		20.	10.6±4.6		5.4	--			8.±14.		20.
CARBON-14	20	pCi/L	-44.±48.		97.	40.±51.		86.	-58.±47.		97.	54.±42.		65.	66.±48.		77.	--			17.±51.		91.
CESIUM-137	4.0	pCi/L	-0.7±3.3		5.7	0.5±2.2		2.9	-1.7±1.8		3.4	0.2±6.2		8.5	0.1±1.8		2.1	--			2.3±4.8		8.3
COBALT-60	4.0	pCi/L	-0.9±1.4		7.1	-0.54±0.90		2.7	-0.3±1.0		3.3	1.9±4.4		8.4	0.69±0.93		1.9	--			2.7±3.8		7.4
GROSS ALPHA	2.0	pCi/L	2.3±2.9	C|Jd	4.8	-0.1±2.1	C|	4.5	-0.3±3.3	C|Jd	7.0	4.1±2.8	C|	3.9	2.0±3.0	C|	5.1	--			0.8±3.0	C|	6.1
GROSS BETA	3.0	pCi/L	-0.3±2.5	C|	4.5	2.0±2.6	C|	4.4	0.7±3.6	C|	6.3	1.7±1.8		3.0	1.5±2.6	C|	4.5	--			2.2±4.0	C|	6.9
LEAD-210	380	pCi/L	-29.±88.		140	-70±300		430	-70±290		410	-30±110		170	20±220		270	--			40±110		170
LEAD-212	10	pCi/L	4.3±7.5		11.	-0.3±4.5		6.8	3.4±4.5		6.4	1.8±9.0		13.	-1.1±3.5		4.8	--			-3.4±9.5		14.
LEAD-214	10	pCi/L	2.6±8.6		14.	1.0±4.9		7.7	1.5±4.7		7.6	-2.2±8.9		17.	8.4±4.1	|Jd	5.3	--			9.±12.		18.
PLUTONIUM-241	1.0	pCi/L	--			--			--			0±3.1		3.5	0.8±2.3	|Jl	4.3	--			0±1.9		3.4
POTASSIUM-40	55	pCi/L	-16.±47.		78.	0±22.		38.	4.±24.		39.	18.±67.		100	3.±21.		29.	--			69.±80.		110
RADIUM-226	1.0	pCi/L	0.03±0.18		0.37	0.08±0.15		0.28	0.1±0.21		0.39	0.07±0.17		0.32	0.14±0.16		0.26	--			0.00±0.12		0.29
STRONTIUM-89,90	1.0	pCi/L	0.01±0.31		0.55	0.31±0.30		0.50	-0.06±0.15		0.26	0.04±0.33		0.58	0.03±0.21		0.37	--			0.08±0.33		0.56
THALLIUM-208	5.0	pCi/L	1.3±4.6		6.6	1.2±2.6		3.7	1.7±2.7		3.7	-0.5±6.5		9.7	0.4±2.1		2.7	--			-2.5±7.2		11.
THORIUM-234	170	pCi/L	23.±61.		160	6.±47.		160	-13.±46.		160	13.±68.		180	17.±38.		120	--			-29.±74.		190
TRITIUM	300	pCi/L	310±160		220	-37.±95.		190	100±130		230	360±150		200	100±110		180	-10±100		190	0±120		220
URANIUM-235(GAMMA)	10	pCi/L	-8.±21.		33.	-8.9±8.0		24.	-5.±14.		23.	31.±27.		38.	1±12.		16.	--			2.±27.		42.

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		Location	UCD2-037			UCD2-038			UCD2-039			UCD2-040			UCD4-041			UCD4-042			UCD4-043		
		Quarter	FALL			FALL			FALL			FALL			FALL			FALL			FALL		
		Sample ID	GWGW0595			GWGW0594			GWGW0597			GWGW0593			GWGW0587			GWGW0584			GWGW0586		
		Date	12/01/97			11/25/97			12/01/97			11/25/97			11/24/97			11/21/97			11/21/97		
		QA																					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-11.±16.		37.	4.±15.		24.	0±23.		41.	-5.5±7.3		15.	3.±22.		38.	1.±15.		26.	0±7.1		13
AMERICIUM-241	0.1	pCi/L	--			--			0.040±0.029	|Uz	0.015	--			--			--			--		
BISMUTH-212	70	pCi/L	20.±48.		63.	13.±30.		40.	20.±42.		52.	2.±17.		25.	1.±45.		63.	-16.±17.		50.	1±15.		21.
BISMUTH-214	10	pCi/L	5.±14.		21.	5.9±8.8		12.	8.±14.		20.	-0.3±4.9		7.8	16.±13.		16.	7.5±9.5		14.	1.2±5.1		8.1
CARBON-14	20	pCi/L	-15.±45.		85.	-15.±52.		97.	33.±51.		87.	-36.±49.		97.	-27.±50.		97.	-12.±52.		97.	-1.±53.		97.
CESIUM-137	4.0	pCi/L	2.8±6.9		9.0	-0.6±3.7		6.3	0.1±6.4		8.8	0.9±1.5		2.4	-2.7±3.1		9.4	-2.4±3.3		6.0	0.1±1.8		3.1
COBALT-60	4.0	pCi/L	1.6±3.8		8.1	-1.9±2.4		6.2	1.2±3.5		8.1	-0.4±1.3		3.1	-0.7±2.2		8.8	-2.3±2.0		6.0	0.9±1.2		2.1
GROSS ALPHA	2.0	pCi/L	1.5±2.8	C|	5.0	2.5±1.7	C|Jd	2.3	2.3±3.4	C|	5.9	-1.3±2.3	C|Jd	5.8	3.4±3.2	C|Jd	4.9	1.7±3.3	C|Jd	6.0	0.8±3.1	C|Jd	6.1
GROSS BETA	3.0	pCi/L	0.5±3.3	C|	5.7	0.9±1.6		2.8	-0.6±3.8	C|	6.8	1.7±2.9	C|	5.0	2.4±2.8	C|	4.7	42.8±6.4	C|	6.6	1.4±3.9	C|	6.8
LEAD-210	380	pCi/L	0±110		180	-50.±95.		150	.40±120		180	130±290		380	-20±110		180	-37.±91.		140	30±290		400
LEAD-212	10	pCi/L	1±10.		15.	1.7±7.2		10.	12.±10.		14.	1.5±4.5		6.6	5.±11.		16.	2.3±7.4		11.	0.4±4.7		6.8
LEAD-214	10	pCi/L	18.±12.		17.	4.9±8.2		13.	14.±12.		19.	-0.3±4.4		7.3	5.±11.		17.	3.2±8.2		13.	-3.4±3.6		7.6
PLUTONIUM-241	1.0	pCi/L	--			--			-0.6±1.9		3.7	--			--			--			--		
POTASSIUM-40	55	pCi/L	-29.±69.		120	-22.±40.		71.	-1.±75.		120	21.±26.		38.	4.±69.		110	23.±52.		77.	14.±27.		41.
RADIUM-226	1.0	pCi/L	0.18±0.17		0.22	0.09±0.15		0.27	0.03±0.18		0.37	0.23±0.27		0.44	0.25±0.21		0.26	0.29±0.24		0.33	0.19±0.23		0.35
STRONTIUM-89,90	1.0	pCi/L	0.22±0.33		0.56	-0.01±0.30		0.52	0.04±0.35		0.61	-0.04±0.28		0.50	0.14±0.18		0.29	-0.02±0.14		0.25	-0.01±0.23		0.40
THALLIUM-208	5.0	pCi/L	2.9±6.7		9.4	-2.3±4.5		6.9	3.2±6.9		9.5	0.9±2.7		3.8	1.2±6.1		8.8	2.0±4.8		6.7	1.7±2.7		3.7
THORIUM-234	170	pCi/L	-18.±70.		190	0±60.		160	2.±70.		190	-2.±46.		160	-9.±70.		190	-52.±60.		170	4.±46.		160
TRITIUM	300	pCi/L	30±120		220	30±120		220	80±130		230	250±150		220	50±130		230	-40±120		230	30±120		230
URANIUM-235(GAMMA)	10	pCi/L	-3.±29.		44.	-3.±22.		34.	-7.±23.		41.	1±14.		20.	5.±28.		43.	-1.±21.		33.	2.±14.		21.

Table 6-10. Vadose Zone Modeling Results Using Detailed Generalized Southwest Trenches Lithology, Southwest Trenches, LEHR Site, UC Davis, California

COC	NUFT Soil Result (mg/kg) or (pCi/g)	Depth Interval of Contamination	Half Life (years)	Time to Peak at Ground Water Goal Level (years)	Ground Water Goal Conc. (µg/L) or (pCi/L)	Goal Reference
Methyl Mercury	0.973	3-7 ft	N/A	5,004	3.7	PRG
Mercury Sulfide	2.74	3-7 ft	N/A	5,004	11.0	MCL
Mercury, Elemental	0.529	3-7 ft	N/A	5,004	2.0	MCL
Methyl Mercury	0.026	3-7 ft	N/A	5,000	0.10	1/2 BG DL
Mercury Sulfide	0.026	3-7 ft	NA	5,000	0.10	1/2 BG DL
Mercury, Elemental	0.026	3-7 ft	N/A	5,000	0.10	1/2 BG DL
Cesium-137	1.01E+10	10-12 ft	30.07	464	1.5	PRG
Cesium-137	>1.01E+10	5-8 ft	30.07	500	1.5	PRG
Cesium-137	9,527	10-12 ft	30.07	400	1.50E-06	PRG x 10^{-6}
Cesium-137	3.23E+08	5-8 ft	30.07	500	1.50E-06	PRG x 10^{-6}
Nitrogen (for NO_3)	1.70	5-20 ft	N/A	10	10,000	MCL
Nitrogen (for NO_3)	1.76	10-21 ft	N/A	0	10,000	MCL
Tritiated Water	3.51	0-25 ft	12.3	0	20,000	MCL
Carbon-14 Methanol	0.00672	0-25 ft	5730	10	46	PRG

Notes Assumes 10.8 centimeters per year Infiltration Rate.

Abbreviations and Acronyms:

BG	background
COC	Contaminant of Concern
DL	detection limit
ft	feet
MCL	State of California Primary Maximum Contaminant Level for Ground Water
mg/kg	milligrams per kilogram
N/A	Not applicable
NO3	Nitrate
NUFT	Non-isothermal, unsaturated flow and Transport model
pCi/g	picoCuries per gram
pCi/L	picoCuries per liter
PRG	U.S. Environmental Protection Agency Region IX Preliminary Remediation Goal for Tap Water
µg/L	micrograms per liter

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		Location	PCD	PCD	PCD	PCD	PCU	PCU	PCU	PCU	PCU	STPO	STPO
		Quarter	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	FALL	WINTER	SPRING
		Sample ID	SWSW0200	SWSW0206	SWSW0210	SWSW0215	SWSW0201	SWSW0204	SWSW0208	SWSW0212	SWSW0212	SWSW0202	SWSW0205
		Date	02/20/97	05/27/97	08/29/97	11/12/97	02/20/97	05/27/97	08/29/97	11/12/97	11/20/97	02/20/97	05/27/97
		QA											
Analyte	CRDL	Units											
EC-F	--	umhos/cm	253	542	555	428	235	518	507	399	395	995	1105
EH-F	--	mvolts	167	164	107	137	196	77	108	91	83	218	117
PH-F	--		8.37	8	7.84	6.21	8.13	8.1	7.94	6.43	7.85	7	7.34
TEMPERATURE	--	degrees C	11	21.8	22.4	14.6	11.9	23.2	23	14.6	13.2	20.8	25.2
TURBIDITY-F	--	ntu	36.5	11.48	24.3	11.73	42.0	14.02	14.07	12.44	7.11	8.02	5.98

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		Location	STPO	STPO
		Quarter	SUMMER	FALL
		Sample ID	SWSW0209	SWSW0214
		Date	08/29/97	11/12/97
		QA		
Analyte	CRDL	Units		
EC-F	--	umhos/cm	1120	926
EH-F	--	mvolts	121	89
PH-F	--		7.12	6.64
TEMPERATURE	--	degrees C	26.8	22.6
TURBIDITY-F	--	ntu	7.75	9.36

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		Location	PCD	PCD	PCD	PCD	PCD	PCD	PCU	PCU	PCU	PCU
		Quarter	WINTER	SPRING	SPRING	SUMMER	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL
		Sample ID	SWSW0200	SWSW0206	SWSW0207	SWSW0210	SWSW0211	SWSW0215	SWSW0201	SWSW0204	SWSW0208	SWSW0212
		Date	02/20/97	05/27/97	05/27/97	08/29/97	08/29/97	11/12/97	02/20/97	05/27/97	08/29/97	11/12/97
		QA			DUPLICATE		DUPLICATE					
Analyte	CRDL	Units										
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	--	--	--	200. *	190. *	205.	--	--	187. *	206.
CHLORIDE	1.0	mg/L	--	--	--	23.1 *	23.1 *	25.5	--	--	13.7 *	17.9
HARDNESS	10	mg/L	--	249000	250000	--	--	--	--	255000	--	--
NITRATE-N	0.1	mg/L	0.39	3.05	3.04	1.63 *	1.65 *	3.02	0.35	2.69	1.45 *	2.66
SULFATE	1.0	mg/L	--	--	--	24.7 *	24.7 *	29.8	--	--	20.7 *	27.8
SURVIVAL BIOASSAY		%	--	100	100	100	100	100	--	100	100	100
TOTAL DISSOLVED SOLIDS	20	mg/L	170.	305.	308.	261. *	259. *	293. |Jc	146.	280.	204. *	276. |Jc
TOTAL ORGANIC CARBON	1.0	mg/L	3.3	3.01	3.04	3.12	3.32	3.49 N|Jm	3.3	2.87	3.1	2.91 N|Jm

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		Location	PCU		STPO	STPO	STPO		STPO		STPO	
		Quarter	FALL		WINTER	WINTER	SPRING		SUMMER		FALL	
		Sample ID	SWSW0213		SWSW0202	SWSW0203	SWSW0205		SWSW0209		SWSW0214	
		Date	11/12/97		02/20/97	02/20/97	05/27/97		08/29/97		11/12/97	
		QA	DUPLICATE			DUPLICATE						
Analyte	CRDL	Units										
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	204.		--	--	--		256.	*	216.	
CHLORIDE	1.0	mg/L	17.9		--	--	--		139	*	123	
HARDNESS	10	mg/L	--		--	--	208000		--		--	
NITRATE-N	0.1	mg/L	2.64		7.37	7.32	7.8		4.96	*	9.55	
SULFATE	1.0	mg/L	27.8		--	--	--		76	*	57.3	
SURVIVAL BIOASSAY		%	100		--	--	100		100		--	
TOTAL DISSOLVED SOLIDS	20	mg/L	286.	Jc	561.	566.	700.		629.	*	572.	Jc
TOTAL ORGANIC CARBON	1.0	mg/L	3.21		9	9.1	8.26		6.06		9.53	NJm

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		Location	PCD		PCD		PCD		PCD		PCD		PCD		PCU		PCU		PCU		PCU	
		Quarter	WINTER		SPRING		SPRING		SUMMER		SUMMER		FALL		WINTER		SPRING		SUMMER		FALL	
		Sample ID	SWSW0200		SWSW0206		SWSW0207		SWSW0210		SWSW0211		SWSW0215		SWSW0201		SWSW0204		SWSW0208		SWSW0212	
		Date	02/20/97		05/27/97		05/27/97		08/29/97		08/29/97		11/12/97		02/20/97		05/27/97		08/29/97		11/12/97	
		QA					DUPLICATE				DUPLICATE											
Analyte	CRDL	Units																				
ANTIMONY	5.0	ug/L	1.1	B|Jn	<1.0		<1.0		<2.0		<2.0		<2.0		<1.0		<1.0		<2.0		<2.0	
ARSENIC	2.0	ug/L	3.0		<3.0		<3.0		<3.0		<3.0		<3.0		3.1		<3.0		<3.0		<3.0	
BARIUM	20	ug/L	46.2		98.2		98.2		78.5	E|Jn	77.8	E|Jn	108		45.6		101		84.2	E|Jn	105	
BERYLLIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CADMIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CALCIUM	2000	ug/L	19200		32600		32700		28400		28000		33000		18800		33200		28900		31200	
CHROMIUM	10	ug/L	4.7	B|Jn	7.3	B|	7.6	B|	<2.1	B|Up	<2.2	B|Up	4.7	B|	4.9	B|Jn	7.9	B|	<4.8	B|Up	6.5	B|
CHROMIUM, HEXAVALENT (+6)	10	ug/L	<3		33		30		<3	•	<3	•	4	B|	<3		32		<3	•	4	B|
COBALT	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<5.0		<1.0		<1.0		<1.0		<5.0	
COPPER	10	ug/L	2.2	B|Jn	<1.0		1.4	B|	<2.0		3.1	B|	21.6		2.1	B|Jn	1.2	B|	<2.0		<5.7	B|UJfo
IRON	100	ug/L	<27.0		<6.0	E|	<6.0	E|	<319.	|Uo	<341.	|Uo	<30.4	B|Uo	<27.0		<6.0	E|	<369	|Uo	<14.0	B|Uo
LEAD	2.0	ug/L	<1.0		<1.0		<1.0		<1.9	B|Up	<1.3	B|Up	<2.3	|Up	<1.0		<1.0		<1.1	B|Up	<3.1	|Up
MAGNESIUM	2000	ug/L	25600		40800		40800		37300		36900		40800		24800		41800		37700		39300	
MANGANESE	15	ug/L	11.8	|Jn	7	B|	7.1	B|	10.4	B|	<3.5	B|Uo	<7.4	B|Uo	11.5	|Jn	5.7	B|	<5.6	B|Uo	<4.3	B|Uo
MERCURY	0.2	ug/L	<0.20		<0.20		<0.20		<0.2		<0.2		<0.2		<0.20		<0.20		<0.2		<0.2	
MOLYBDENUM	10	ug/L	<1.0		<1.0		1.1	B|	<1.6	B|Uo	<1.6	B|Uo	<7.0		<1.0		<1.0		<1.0		<7.0	
NICKEL	20	ug/L	5.5	B|Jn	2.8	B|	3.1	B|	<3.9	B|Uo	<3.4	B|Uo	<9.0		5.4	B|Jn	2.9	B|	<4.0	B|Uo	<9.0	
POTASSIUM	2000	ug/L	1680	B|	1190	B|	<722.		1340	B|	1420	B|	2300		1350	B|	2530	B|	<729.0		1630	B|
SELENIUM	3.0	ug/L	<3.0		3.7		3.9		<3.0		<3.0		<3.0		<3.0		5.1		<3.0		<3.0	
SILVER	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<4.0		1.9	B|	<1.0		<1.0		<4.0	
SODIUM	2000	ug/L	12100		31500		31300		29600		29400		32100		11200		24600		21100		21800	
THALLIUM	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
VANADIUM	10	ug/L	<3.0		<3.0		<3.0		4.5	B|	4.9	B|	<4.0		<3.0		6.2	B|	<4.0		<4.0	
ZINC	20	ug/L	7.1	B|Jn	3.1	B|	6.6	B|	<20.8	|UJnp	<10.2	B|Up	<46.9	|Up	4.9	B|Jn	4.2	B|	<14.3	B|Up	<20.3	|Up

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		Location	PCU		STPO		STPO		STPO		STPO		STPO	
		Quarter	FALL		WINTER		WINTER		SPRING		SUMMER		FALL	
		Sample ID	SWSW0213		SWSW0202		SWSW0203		SWSW0205		SWSW0209		SWSW0214	
		Date	11/12/97		02/20/97		02/20/97		05/27/97		08/29/97		11/12/97	
		QA	DUPLICATE				DUPLICATE							
Analyte	CRDL	Units												
ANTIMONY	5.0	ug/L	<2.0		<1.0		<1.0		<1.0		<2.0		<2.0	
ARSENIC	2.0	ug/L	<3.0		4.9		5.1		<3.0		3.3	B|	4.4	B|
BARIUM	20	ug/L	103		37.9		48.4		46.7		42.4	E|Jn	48.5	
BERYLLIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CADMIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
CALCIUM	2000	ug/L	31000		22600		22300		26600		26500		23000	
CHROMIUM	10	ug/L	4.7	B|	3.7	B|Jn	6.9	B|Jn	2.9	B|	<3.6	B|Up	6.4	B|
CHROMIUM, HEXAVALENT (+6)	10	ug/L	4	B|	<3		<3		12		<3	*	8	B|
COBALT	10	ug/L	<5.0		<1.0		1.2	B|Jn	<1.0		<1.0		<5.0	
COPPER	10	ug/L	11.8	|Jf	6.2	B|Jn	8.7	B|Jn	5.9	B|	8.9	B|	12.8	
IRON	100	ug/L	<61.8	B|Uo	52.5	B|	42.7	B|	28	E|Jn	<318.	|Uo	87.8	B|
LEAD	2.0	ug/L	<1.9	B|Up	<1.		<1.0		<1.0		<1.9	B|Up	<3.5	|Up
MAGNESIUM	2000	ug/L	39000		29300		28900		34300		32600		26700	
MANGANESE	15	ug/L	<4.4	B|Uo	3.9	B|Jn	5.2	B|Jn	4.6	B|	10.5	B|	<6.9	B|Uo
MERCURY	0.2	ug/L	<0.2		<0.20		<0.20		<0.20		<0.2		<0.2	
MOLYBDENUM	10	ug/L	<7.0		5.6	B|	7.5	B|	8.4	B|	11.8		<7.0	
NICKEL	20	ug/L	<11.4	B|Uo	4.6	B|Jn	5.8	B|Jn	1.8	B|	<2.1	B|Uo	<9.0	
POTASSIUM	2000	ug/L	1610	B|	10200		9510		8330		7550		12300	
SELENIUM	3.0	ug/L	<3.0		3.6		3.9		7		<3.0		<3.0	
SILVER	10	ug/L	<4.0		1.1	B|	1.8	B|	2.9	B|	<1.0		<4.0	
SODIUM	2000	ug/L	21600		143000		141000		196000		174000		143000	
THALLIUM	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	
VANADIUM	10	ug/L	<4.0		9.3	B|	9.4	B|	19.3		14.6	B|	12.4	
ZINC	20	ug/L	<19.2	B|Up	32.3	|Jn	41.9	|Jn	20.5		58.8	|Jn	<61.0	|Up

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	PCD	PCD	PCD	PCD	PCD	PCD	PCU	PCU	PCU	PCU
		Quarter	WINTER	SPRING	SPRING	SUMMER	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL
		Sample ID	SWSW0200	SWSW0206	SWSW0207	SWSW0210	SWSW0211	SWSW0215	SWSW0201	SWSW0204	SWSW0208	SWSW0212
		Date	02/20/97	05/27/97	05/27/97	09/03/97	09/03/97	11/12/97	02/20/97	05/27/97	09/03/97	11/12/97
		QA			DUPLICATE		DUPLICATE					
Analyte	CRDL	Units										
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,1-DICHLOROETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,1-DICHLOROETHENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0 |Rc	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0 |Rc	<1.0	<0.50	<1.0
1,2-DIBROMOETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,2-DICHLOROETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
2-BUTANONE	0.5	ug/L	<5.0 |Rc	<5.0	<5.0	<1.0	<1.0	<5.0	<5.0 |Rc	<5.0	<1.0	<5.0
2-HEXANONE	0.5	ug/L	<5.0	<5.0	<5.0	<1.0	<1.0	<5.0	<5.0	<5.0	<1.0	<5.0
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0	<5.0	<5.0	<1.0	<1.0	<5.0	<5.0	<5.0	<1.0	<5.0
ACETONE	1.0	ug/L	<5.0 |Rc	<5.0	<5.0	<1.0 |Rcf	**6.3** |Jcf	**2.6** J|	<5.0 |Rc	<5.0	**1.1** |Jc	<5.
BENZENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
BROMOCHLOROMETHANE	1.0	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
BROMODICHLOROMETHANE	0.5	ug/L	<1.0	**0.9** J|	**0.8** J|	**0.5** J|	**0.6**	<1.0	<1.0	<1.0	<0.50	<1.0
BROMOFORM	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
BROMOMETHANE	1.0	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CARBON DISULFIDE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CARBON TETRACHLORIDE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CHLOROBENZENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CHLOROETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CHLOROFORM	0.5	ug/L	<1.0	**0.9**	**0.9**	**0.7**	**0.8**	**0.3** J|	<1.0	<0.50	<0.50	<1.0
CHLOROMETHANE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0	**0.8** J|	**0.7** J|	<0.50	**0.6**	<1.0	<1.0	<1.0	<0.50	<1.0
ETHYLBENZENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
METHYLENE CHLORIDE	0.5	ug/L	<2.0	<2.0	<2.0	<0.50	<1.1 B|UJz	<2.0	<2.0	<2.0	<0.50	<2.0
STYRENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
TETRACHLOROETHENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
TOLUENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
TRICHLOROETHENE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
VINYL CHLORIDE	0.5	ug/L	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0
XYLENES (TOTAL)	1.0	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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		Location	PCU		STPO		STPO		STPO		STPO		STPO	
		Quarter	FALL		WINTER		WINTER		SPRING		SUMMER		FALL	
		Sample ID	SWSW0213		SWSW0202		SWSW0203		SWSW0205		SWSW0209		SWSW0214	
		Date	11/12/97		02/20/97		02/20/97		05/27/97		09/03/97		11/12/97	
		QA	DUPLICATE				DUPLICATE							
Analyte	CRDL	Units												
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,1-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,1-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0	|Rc	<1.0	|Rc	<1.0		<0.50		<1.0	
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,2-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
2-BUTANONE	0.5	ug/L	<5.0		<5.0	|Rc	<5.0	|Rc	<5.0		<1.0		<5.0	
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<5.0		<5.0		<1.0		<5.0	
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<5.0		<5.0		<1.0		<5.0	
ACETONE	1.0	ug/L	**1.5**	J|	<5.0	|Rc	<4.0	J|Rc	**3.8**	J|	**6.9**	|Jc	**2.9**	J|
BENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		**1.4**		**1.4**		**19**		**19**		**3.1**	
BROMOFORM	0.5	ug/L	<1.0		<1.0		<1.0		**2.7**		**2.9**		<1.0	
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CHLOROFORM	0.5	ug/L	<1.0		**4.5**		**4.7**		**14**		**13**		**4.3**	
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		**0.4**	J|	**18**		**18**		**1.1**	
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.4	|Uy	<2.5	|Uy	**0.5**	J|	<2.6	B|Uz	**1.0**	J|
STYRENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
TOLUENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<0.50		<1.0	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0	

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
SEMI-VOLATILE ORGANIC COMPOUNDS
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		Location	PCD	PCD	PCD	PCU	PCU	STPO	STPO
		Quarter	WINTER	SPRING	SPRING	WINTER	SPRING	WINTER	WINTER
		Sample ID	SWSW0200	SWSW0206	SWSW0207	SWSW0201	SWSW0204	SWSW0202	SWSW0203
		Date	02/20/97	05/27/97	05/27/97	02/20/97	05/27/97	02/20/97	02/20/97
		QA			DUPLICATE				DUPLICATE
Analyte	CRDL	Units							
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
1,2-DICHLOROBENZENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
1,3-DICHLOROBENZENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
1,4-DICHLOROBENZENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2,4,5-TRICHLOROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<26.
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2,4-DICHLOROPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2,4-DIMETHYLPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2,4-DINITROPHENOL	25	ug/L	<26.	<26. |Rc	<26. |Rc	<26.	<26. |Rc	<26.	<26.
2,4-DINITROTOLUENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2,6-DINITROTOLUENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2-CHLORONAPHTHALENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2-CHLOROPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2-METHYL-4,6-DINITROPHENOL	25	ug/L	<26.	--	--	<26.	--	<26.	<26.
2-METHYLNAPHTHALENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2-METHYLPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
2-NITROANILINE	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<26.
2-NITROPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.	<11. |Rc	<10. |Rc	<10.	<10. |Rc	<10.	<10.
3-NITROANILINE	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<26.
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	--	<26. |Rc	<26. |Rc	--	<26. |Rc	--	--
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
4-CHLOROANILINE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
METHYLPHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
ITROANILINE	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<26.
-NITROPHENOL	25	ug/L	<26.	<26.	<26.	<26.	<26.	<26.	<26.
ACENAPHTHENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
ACENAPHTHYLENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
ANTHRACENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BENZO(A)ANTHRACENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BENZO(A)PYRENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BENZO(B)FLUORANTHENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BENZO(G,H,I)PERYLENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BENZO(K)FLUORANTHENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BENZYL BUTYL PHTHALATE	10	ug/L	<10.	--	--	<10.	--	<10.	<10.
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<10.	<11.	<6.8 JB|Uz	<10.	<4.5 JB|Uz	**0.70** J|	**0.56** J|
BUTYLBENZYLPHTHALATE	10	ug/L	--	<11.	<10.	--	<10.	--	--
CARBAZOLE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
CHRYSENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
DI-N-BUTYLPHTHALATE	10	ug/L	<10.	<11.	<10.	<0.55 JB|Uz	<10.	<10.	<10.
DI-N-OCTYLPHTHALATE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
DIBENZOFURAN	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
DIETHYLPHTHALATE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
DIMETHYLPHTHALATE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
FLUORANTHENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
FLUORENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
HEXACHLOROBENZENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
HEXACHLOROBUTADIENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
HEXACHLOROETHANE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
ISOPHORONE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
-NITROSODIPHENYLAMINE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
HTHALENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
ROBENZENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
PENTACHLOROPHENOL	25	ug/L	<26.	<26. |Rc	<26. |Rc	<26.	<26. |Rc	<26.	<26.
PHENANTHRENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
PHENOL	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.
PYRENE	10	ug/L	<10.	<11.	<10.	<10.	<10.	<10.	<10.

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	STPO	
		Quarter	SPRING	
		Sample ID	SWSW0205	
		Date	05/27/97	
		QA		
Analyte	CRDL	Units		
1,2,4-TRICHLOROBENZENE	10	ug/L	<10.	
1,2-DICHLOROBENZENE	10	ug/L	<10.	
1,3-DICHLOROBENZENE	10	ug/L	<10.	
1,4-DICHLOROBENZENE	10	ug/L	<10.	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10	
2,4,5-TRICHLOROPHENOL	25	ug/L	<26.	
2,4,6-TRICHLOROPHENOL	10	ug/L	<10.	
2,4-DICHLOROPHENOL	10	ug/L	<10.	
2,4-DIMETHYLPHENOL	10	ug/L	<10.	
2,4-DINITROPHENOL	25	ug/L	<26.	|Rc
2,4-DINITROTOLUENE	10	ug/L	<10.	
2,6-DINITROTOLUENE	10	ug/L	<10.	
2-CHLORONAPHTHALENE	10	ug/L	<10.	
2-CHLOROPHENOL	10	ug/L	<10.	
2-METHYL-4,6-DINITROPHENOL	25	ug/L	--	
2-METHYLNAPHTHALENE	10	ug/L	<10.	
2-METHYLPHENOL	10	ug/L	<10.	
2-NITROANILINE	25	ug/L	<26.	
2-NITROPHENOL	10	ug/L	<10.	
3,3'-DICHLOROBENZIDINE	10	ug/L	<10.	|Rc
3-NITROANILINE	25	ug/L	<26.	
4,6-DINITRO-2-METHYLPHENOL	25	ug/L	<26.	|Rc
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10.	
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10.	
4-CHLOROANILINE	10	ug/L	<10.	
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10.	
4-METHYLPHENOL	10	ug/L	<10.	
4-NITROANILINE	25	ug/L	<26.	
4-NITROPHENOL	25	ug/L	<26.	
ACENAPHTHENE	10	ug/L	<10.	
ACENAPHTHYLENE	10	ug/L	<10.	
ANTHRACENE	10	ug/L	<10.	
BENZO(A)ANTHRACENE	10	ug/L	<10.	
BENZO(A)PYRENE	10	ug/L	<10.	
BENZO(B)FLUORANTHENE	10	ug/L	<10.	
BENZO(G,H,I)PERYLENE	10	ug/L	<10.	
BENZO(K)FLUORANTHENE	10	ug/L	<10.	
BENZYL BUTYL PHTHALATE	10	ug/L	--	
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10.	
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10.	
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<2.1	JB|Uz
BUTYLBENZYLPHTHALATE	10	ug/L	<10.	
CARBAZOLE	10	ug/L	<10.	
CHRYSENE	10	ug/L	<10.	
DI-N-BUTYLPHTHALATE	10	ug/L	<10.	
DI-N-OCTYLPHTHALATE	10	ug/L	<10.	
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10.	
DIBENZOFURAN	10	ug/L	<10.	
DIETHYLPHTHALATE	10	ug/L	<10.	
DIMETHYLPHTHALATE	10	ug/L	<10.	
FLUORANTHENE	10	ug/L	<10.	
FLUORENE	10	ug/L	<10.	
HEXACHLOROBENZENE	10	ug/L	<10.	
HEXACHLOROBUTADIENE	10	ug/L	<10.	
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10.	
HEXACHLOROETHANE	10	ug/L	<10.	
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10.	
ISOPHORONE	10	ug/L	<10.	
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10.	
N-NITROSODIPHENYLAMINE	10	ug/L	<10.	
NAPHTHALENE	10	ug/L	<10.	
NITROBENZENE	10	ug/L	<10.	
PENTACHLOROPHENOL	25	ug/L	<26.	|Rc
PHENANTHRENE	10	ug/L	<10.	
PHENOL	10	ug/L	<10.	
PYRENE	10	ug/L	<10.	

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
PESTICIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	PCD		PCD	PCD		PCD		PCD		PCU		PCU		STPO		STPO	
		Quarter	WINTER		SPRING	SPRING		SUMMER		SUMMER		WINTER		SPRING		SUMMER		WINTER		WINTER
		Sample ID	SWSW0200		SWSW0206	SWSW0207		SWSW0210		SWSW0211		SWSW0201		SWSW0204		SWSW0208		SWSW0202		SWSW0203
		Date	02/20/97		05/27/97	05/27/97		08/29/97		08/29/97		02/20/97		05/27/97		08/29/97		02/20/97		02/20/97
		QA				DUPLICATE				DUPLICATE										DUPLICATE
Analyte	CRDL	Units																		
4,4'-DDD	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		**0.01**	J|	<0.009	JP|UJN	<0.021		<0.02		<0.009	JP|Ru	<0.02	|UJs	<0.02	|UJs
4,4'-DDE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJc	<0.021	|UJc	<0.021		<0.02		<0.021	|UJc	<0.02	|UJs	<0.02	|UJs
4,4'-DDT	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.003	JP|Ru	<0.021	|UJs	<0.021		<0.02		**0.039**	|Jw	<0.02	|UJs	<0.02	|UJs
ALDRIN	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		**0.003**	J|	<0.01	|UJs	<0.01	|UJs
ALPHA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		<0.010		<0.01	|UJs	<0.01	|UJs
ALPHA-CHLORDANE	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		<0.010		<0.01	|UJs	<0.01	|UJs
AROCLOR-1016	0.2	ug/L	<0.21	|UJs	<0.21	<0.2		<0.20	|UJs	<0.21	|UJs	<0.21		<0.2		<0.21		<0.20	|UJs	<0.20	|UJs
AROCLOR-1221	0.4	ug/L	<0.41	|UJs	<0.42	<0.41		<0.41	|UJs	<0.41	|UJs	<0.43		<0.4		<0.41		<0.41	|UJs	<0.41	|UJs
AROCLOR-1232	0.2	ug/L	<0.21	|UJs	<0.21	<0.2		<0.20	|UJs	<0.21	|UJs	<0.21		<0.2		<0.21		<0.20	|UJs	<0.20	|UJs
AROCLOR-1242	0.2	ug/L	<0.21	|UJs	<0.21	<0.2		<0.20	|UJs	<0.21	|UJs	<0.21		<0.2		<0.21		<0.20	|UJs	<0.20	|UJs
AROCLOR-1248	0.2	ug/L	<0.21	|UJs	<0.21	<0.2		<0.20	|UJs	<0.21	|UJs	<0.21		<0.2		<0.21		<0.20	|UJs	<0.20	|UJs
AROCLOR-1254	0.2	ug/L	<0.21	|UJs	<0.21	<0.2		<0.20	|UJs	<0.21	|UJs	<0.21		<0.2		<0.21		<0.20	|UJs	<0.20	|UJs
AROCLOR-1260	0.2	ug/L	<0.21	|UJs	<0.21	<0.2		<0.20	|UJs	<0.21	|UJs	<0.21		<0.2		<0.21		<0.20	|UJs	<0.20	|UJs
BETA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJc	<0.010	|UJc	<0.011		<0.01		<0.010	|UJc	<0.01	|UJs	<0.01	|UJs
DELTA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJc	<0.010	|UJc	<0.011		<0.01		<0.010	|UJc	<0.01	|UJs	<0.01	|UJs
DIELDRIN	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJs	<0.021	|UJs	<0.021		<0.02		<0.021		<0.02	|UJs	<0.02	|UJs
ENDOSULFAN I	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		<0.010		<0.01	|UJs	<0.01	|UJs
ENDOSULFAN II	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJs	<0.021	|UJs	<0.021		<0.02		<0.021		<0.02	|UJs	<0.02	|UJs
ENDOSULFAN SULFATE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJs	<0.021	|UJs	<0.021		<0.02		<0.021		<0.02	|UJs	<0.02	|UJs
ENDRIN	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJs	<0.021	|UJs	<0.021		<0.02		<0.021		<0.02	|UJs	<0.02	|UJs
ENDRIN ALDEHYDE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJs	<0.021	|UJs	<0.021		<0.02		<0.021		<0.02	|UJs	<0.02	|UJs
ENDRIN KETONE	0.02	ug/L	<0.021	|UJs	<0.021	<0.02		<0.02	|UJs	<0.021	|UJs	<0.021		<0.02		<0.021		<0.02	|UJs	<0.02	|UJs
GAMMA-BHC	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		<0.010		<0.01	|UJs	<0.01	|UJs
GAMMA-CHLORDANE	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		<0.010		<0.01	|UJs	<0.01	|UJs
HEPTACHLOR	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		<0.010		<0.01	|UJs	<0.01	|UJs
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.01	|UJs	<0.01	<0.01		<0.010	|UJs	<0.010	|UJs	<0.011		<0.01		**0.003**	J|	<0.01	|UJs	<0.01	|UJs
METHOXYCHLOR	0.1	ug/L	<0.10	|UJs	<0.1	<0.1		<0.10	|UJs	<0.10	|UJs	<0.11		<0.1		<0.10		<0.10	|UJs	<0.10	|UJs
TOXAPHENE	1.0	ug/L	<1.0	|UJs	<1	<1		<1.0	|UJs	<1.0	|UJs	<1.1		<1		<1.0		<1.0	|UJs	<1.0	|UJs

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
PESTICIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	STPO	STPO	
		Quarter	SPRING	SUMMER	
		Sample ID	SWSW0205	SWSW0209	
		Date	05/27/97	08/29/97	
		QA			
Analyte	CRDL	Units			
4,4'-DDD	0.02	ug/L	<0.021	**0.027**	
4,4'-DDE	0.02	ug/L	<0.021	<0.021	|UJc
4,4'-DDT	0.02	ug/L	<0.021	<0.021	|UJs
ALDRIN	0.01	ug/L	<0.01	<0.010	|UJs
ALPHA-BHC	0.01	ug/L	<0.01	<0.010	|UJs
ALPHA-CHLORDANE	0.01	ug/L	<0.01	**0.007**	JP|JNu
AROCLOR-1016	0.2	ug/L	<0.21	<0.21	|UJs
AROCLOR-1221	0.4	ug/L	<0.42	<0.41	|UJs
AROCLOR-1232	0.2	ug/L	<0.21	<0.21	|UJs
AROCLOR-1242	0.2	ug/L	<0.21	<0.21	|UJs
AROCLOR-1248	0.2	ug/L	<0.21	<0.21	|UJs
AROCLOR-1254	0.2	ug/L	<0.21	<0.21	|UJs
AROCLOR-1260	0.2	ug/L	<0.21	<0.21	|UJs
BETA-BHC	0.01	ug/L	<0.01	<0.010	|UJc
DELTA-BHC	0.01	ug/L	<0.01	<0.007	JP|Ru
DIELDRIN	0.02	ug/L	<0.021	<0.021	|UJs
ENDOSULFAN I	0.01	ug/L	<0.01	<0.010	|UJs
ENDOSULFAN II	0.02	ug/L	<0.021	<0.021	|UJs
ENDOSULFAN SULFATE	0.02	ug/L	<0.021	<0.021	|UJs
ENDRIN	0.02	ug/L	<0.021	<0.021	|UJs
ENDRIN ALDEHYDE	0.02	ug/L	<0.021	<0.021	|UJs
ENDRIN KETONE	0.02	ug/L	<0.021	<0.021	|UJs
GAMMA-BHC	0.01	ug/L	<0.01	<0.010	|UJs
GAMMA-CHLORDANE	0.01	ug/L	<0.01	<0.010	|UJs
HEPTACHLOR	0.01	ug/L	<0.01	<0.010	|UJs
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.01	<0.010	|UJs
METHOXYCHLOR	0.1	ug/L	<0.1	<0.10	|UJs
TOXAPHENE	1.0	ug/L	<1	<1.0	|UJs

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
RADIONUCLIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	PCD			PCD			PCD			PCD			PCD			PCD			PCU		
		Quarter	WINTER			SPRING			SPRING			SUMMER			SUMMER			FALL			WINTER		
		Sample ID	SWSW0200			SWSW0206			SWSW0207			SWSW0210			SWSW0211			SWSW0215			SWSW0201		
		Date	02/20/97			05/27/97			05/27/97			08/29/97			08/29/97			11/12/97			02/20/97		
		QA							DUPLICATE						DUPLICATE								
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-11.±11.		38.	7.2±9.7		18.	-13.±17.		35.	-4.1±3.3		14.	-4.5±5.8		14.	5.±15.		23.	1.7±9.4		17.
AMERICIUM-241	0.1	pCi/L	0.022±0.033	|Uz	0.046	0.018±0.026		0.037	0.026±0.025		0.017	--			--			--			0.007±0.014	|Uz	0.020
BISMUTH-212	70	pCi/L	3.±46.		65.	2.±20.	|Jd	29.	25.±44.	|Jd	73.	16.±16.		17.	11.±17.		20.	-22.±19.		53.	13.±22.		30.
BISMUTH-214	10	pCi/L	1.±12.		19.	-2.2±6.3	|Jf	9.9	23.±14.	|Jf	18.	0.7±4.2		7.4	-0.8±5.1		8.1	11.3±9.1		12.	17.1±7.5		9.7
CARBON-14	20	pCi/L	-12.±52.		97.	58.±47.		77.	33.±45.		77.	25.±50.		86.	-9.±46.		86.	-36.±49.		97.	-18.±51.		97.
CESIUM-137	4.0	pCi/L	1.4±7.0		9.5	-0.5±1.2		3.8	3.3±6.7		8.6	-1.6±1.3		3.7	1.1±2.4		3.1	-1.2±3.4		5.9	0.1±2.3		3.9
COBALT-60	4.0	pCi/L	3.3±3.6		8.6	-1.3±1.2		3.5	-0.4±4.1		8.8	-0.9±1.0		3.0	0.1±1.2		2.5	0.6±2.4		4.4	-1.5±1.2		4.6
GROSS ALPHA	2.0	pCi/L	0.2±1.0	C|Jm	2.1	2.5±2.8	C|Jm	4.5	0.4±2.4	C|Jm	4.8	1.7±2.1	C|	3.4	-0.3±1.4	C|	3.4	-0.4±1.3	C|	3.2	0.2±1.1	C|Jm	2.2
GROSS BETA	3.0	pCi/L	2.7±1.4		2.2	-0.7±2.7	C|	4.8	2.7±2.8	C|	4.6	2.7±1.8		2.9	1.±1.8	C|	3.1	2.5±2.0		3.3	1.8±1.4		2.3
LEAD-210	380	pCi/L	-50.±98.		160	330±400		510	-40±100		170	-60±290		410	40±280		380	3.±94.		140	130±420		570
LEAD-212	10	pCi/L	6.9±9.5		13.	-8.6±5.8	|Jf	9.4	48.±14.	|Jf	15.	0.3±4.6		6.9	0±4.4		6.7	0.4±7.7		11.	2.2±5.9		8.7
LEAD-214	10	pCi/L	8.±10.		16.	1.9±5.8		9.0	10±11.		16.	1.8±4.7		7.6	-1.0±4.7		7.7	4.6±8.7		13.	10.4±6.4		9.2
PLUTONIUM-241	1.0	pCi/L	1.8±2.6		3.3	1.5±1.7	|Jl	2.9	0.7±1.9	|Jl	3.3	--			--			--			2.1±2.4		2.7
POTASSIUM-40	55	pCi/L	-33.±72.		130	-11.±31.		54.	-36.±69.		120	12.±25.		38.	17.±26.		38.	18.±49.		70.	-10.±35.		60.
RADIUM-226	1.0	pCi/L	0.26±0.25		0.38	0.16±0.19		0.30	0.05±0.13		0.25	0.00±0.14		0.34	0.07±0.18		0.35	-0.03±0.20		0.44	0.34±0.26		0.37
STRONTIUM-89,90	1.0	pCi/L	0.13±0.28	|Jm	0.48	0.22±0.27		0.45	0.17±0.28		0.47	0.27±0.34		0.57	0.16±0.26		0.44	0.11±0.34		0.58	-0.12±0.26	|Jm	0.47
THALLIUM-208	5.0	pCi/L	1.1±6.9		9.7	0.1±3.3		5.0	9.1±8.9		12.	1.6±2.7		3.8	1.1±2.6		3.6	0.5±4.7		6.7	1.±3.4		5.0
THORIUM-234	170	pCi/L	32.±69.		170	-28.±60.		220	16.±72.		190	65.±47.		160	0±47.		170	36.±62.		170	33.±60.		220
TRITIUM	300	pCi/L	-40±120		250	790±230		240	710±220		230	-16.±99.		190	-52.±93.		190	20±120		230	160±150		240
URANIUM-235(GAMMA	10	pCi/L	-2.±26.		40.	-7.±18.		28.	-1±22.		36.	-13.1±8.1		23.	-4.±12.		21.	12.±21.		32.	-7.±15.		26.

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER RADIONUCLIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	PCU			PCU			PCU			PCU			STPO			STPO			STPO		
		Quarter	SPRING			SUMMER			FALL			FALL			WINTER			WINTER			SPRING		
		Sample ID	SWSW0204			SWSW0208			SWSW0212			SWSW0213			SWSW0202			SWSW0203			SWSW0205		
		Date	05/27/97			08/29/97			11/12/97			11/12/97			02/20/97			02/24/97			05/27/97		
		QA										DUPLICATE						DUPLICATE					
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	16.±21.		38.	--			--			--			20.±20.		33.	-0.9±9.7		18.	-2.8±9.5		18.
AMERICIUM-241	0.1	pCi/L	0.023±0.026		0.034	--			--			--			0.017±0.025	|Uz	0.035	0.009±0.019		0.026	0.022±0.026		0.032
BISMUTH-212	70	pCi/L	-20.±31.	|Jd	61.	--			--			--			10.±37.		48.	1.±21.		30.	7.±19.	|Jd	27.
BISMUTH-214	10	pCi/L	-4.±12.		19.	--			--			--			9.±13.		17.	5.0±6.3		9.5	-0.4±6.6		10.
CARBON-14	20	pCi/L	-9.±42.		77.	--			--			--			10.±54.		97.	10.±54.		97.	45.±46.		77.
CESIUM-137	4.0	pCi/L	-0.9±3.9		10.	--			--			--			-2.9±2.8		9.1	-0.6±1.9		3.4	0.9±2.9		3.8
COBALT-60	4.0	pCi/L	-1.6±2.2		9.5	--			--			--			-1.1±3.0		7.9	-0.9±1.1		4.6	0.2±1.8		4.0
GROSS ALPHA	2.0	pCi/L	2.0±2.6	C|Jm	4.4	--			--			--			0.6±3.1	C|Jm	6.1	0.3±3.0	C|Jm	6.2	4.1±4.5	C|Jm	6.9
GROSS BETA	3.0	pCi/L	-0.2±2.7	C|	4.8	--			--			--			19.7±4.4	C|Jf	5.6	10.4±3.9	C|Jf	5.8	13.8±5.1	C|	7.4
LEAD-210	380	pCi/L	-30±110		170	--			--			--			-47.±99.		160	-70±410		580	-210±400		590
LEAD-212	10	pCi/L	-2.5±8.7		13.	--			--			--			-6.3±9.6		15.	1.8±5.8		8.7	-3.7±5.6		8.7
LEAD-214	10	pCi/L	-4.±11.		17.	--			--			--			-4.2±8.2		16.	-0.1±5.7		9.4	0.1±5.9		9.6
PLUTONIUM-241	1.0	pCi/L	-0.6±2.3	|Jl	4.3	--			--			--			0±2.5		3.4	-0.8±2.7		3.9	-1.6±2.7	|Jl	5.3
POTASSIUM-40	55	pCi/L	-30.±72.		130	--			--			--			26.±75.		120	-10.±33		58.	4.±31.		51.
RADIUM-226	1.0	pCi/L	0.19±0.18		0.13	--			--			--			0.06±0.16		0.30	0.09±0.12		0.21	-0.020±0.10		0.24
STRONTIUM-89,90	1.0	pCi/L	0.02±0.30		0.52	--			--			--			0.02±0.29	|Jm	0.51	-0.12±0.18	|Jm	0.32	-0.03±0.26		0.46
THALLIUM-208	5.0	pCi/L	0.6±6.9		10.	--			--			--			1.5±6.8		9.4	-0.7±3.3		5.1	0.7±3.3		4.9
THORIUM-234	170	pCi/L	-14.±69.		180	--			--			--			-24.±68.		170	46.±62.		200	-35.±59.		220
TRITIUM	300	pCi/L	10±130		240	-10±100		190	0±120		220	-40±110		220	90±130		230	70±140		240	70±130		240
URANIUM-235(GAMMA	10	pCi/L	12.±25.		37.	--			--			--			2.±27.		40.	2.±18.		27.	-12.5±4.6		28.

APPENDIX A
ANALYTICAL RESULTS FOR SURFACE WATER
RADIONUCLIDES
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	STPO		STPO	
		Quarter	SUMMER		FALL	
		Sample ID	SWSW0209		SWSW0214	
		Date	08/29/97		11/12/97	
		QA				
Analyte	CRDL	Units		MDA		MDA
ACTINIUM-228	20	pCi/L	--		--	
AMERICIUM-241	0.1	pCi/L	--		--	
BISMUTH-212	70	pCi/L	--		--	
BISMUTH-214	10	pCi/L	--		--	
CARBON-14	20	pCi/L	--		--	
CESIUM-137	4.0	pCi/L	--		--	
COBALT-60	4.0	pCi/L	--		--	
GROSS ALPHA	2.0	pCi/L	--		--	
GROSS BETA	3.0	pCi/L	--		--	
LEAD-210	380	pCi/L	--		--	
LEAD-212	10	pCi/L	--		--	
LEAD-214	10	pCi/L	--		--	
PLUTONIUM-241	1.0	pCi/L	--		--	
POTASSIUM-40	55	pCi/L	--		--	
RADIUM-226	1.0	pCi/L	--		--	
STRONTIUM-89,90	1.0	pCi/L	--		--	
THALLIUM-208	5.0	pCi/L	--		--	
THORIUM-234	170	pCi/L	--		--	
TRITIUM	300	pCi/L	60±110	190	0±120	220
URANIUM-235(GAMMA	10	pCi/L	--		--	

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
FIELD PARAMETERS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	LF-1	LF-3	LF-3	LS-1	LS-1	LS-1	LS-1	SD-1
		Quarter	FALL	SPRING	FALL	FALL	SPRING	SPRING	FALL	FALL
		Sample ID	STMW0103	STMW0101	STMW0104	SW001	RWSW0015	STMW0102	RWSW0016	SW002
		Date	11/14/97	05/23/97	11/26/97	12/10/96	05/23/97	05/23/97	11/14/97	12/10/96
		QA								
Analyte	CRDL	Units								
EC-F	--	umhos/cm	490	340	168	401	NA	434	420	718
EH-F	--	mvolts	159	--	142	--	NA	--	109	--
PH-F	--		7.3	7.62	7.82	7.88	NA	8.1	6.28	8.26
TEMPERATURE	--	degrees C	11.2	18.3	13.3	13.28	NA	21.9	12.9	13.56
TURBIDITY-F	--	ntu	>200	11.45	>100	>200	NA	41	33.7	>200

NA = Weiss Data Not Availabe (note: STMW0102 was only analyzed for Bioassay).
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APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
GENERAL CHEMICALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	LF-1		LF-3		LF-3		LF-3		LS-1		LS-1		LS-1		LS-1		LS-1		SD-1	
		Quarter	FALL		SPRING		FALL		FALL		FALL		SPRING		SPRING		SPRING		FALL		FALL	
		Sample ID	STMW0103		STMW0101		STMW0104		STMW0105		SW001		RWSW0014		RWSW0015		STMW0102		RWSW0016		SW002	
		Date	11/14/97		05/23/97		11/26/97		11/26/97		12/10/96		05/23/97		05/23/97		05/23/97		11/14/97		12/10/96	
		QA							DUPLICATE						DUPLICATE							
Analyte	CRDL	Units																				
ALKALINITY, TOTAL (AS CACO3)	10	mg/L	9.8	B|	155.		65.7		65.1		--		57.8		62.1		--		10.8	H|	--	
AMMONIA-NITROGEN	0.05	mg/L	--		--		--		--		--		1.28		1.06		--		--		--	
CHEMICAL OXYGEN DEMAND	50	mg/L	--		--		--		--		--		83		95.6		--		--		--	
CHLORIDE	1.0	mg/L	1.12		9.35		16.2		16.4		--		88.6		89.1		--		2.18		--	
FORMALDEHYDE	1.0	mg/L	--		--		--		--		--		<0.05		<0.05		--		--		--	
HARDNESS	10	mg/L	--		158		55.6		54.6		--		--		--		--		--		--	
NITRATE-N	0.1	mg/L	1.48		0.645		--		--		2.0		0.961		0.983		--		0.254	H|	0.42	
OIL AND GREASE	2.0	mg/L	<1.0		<1.0		--		--		<1.1		<1.1		1.2		--		--		<1	
PHOSPHORUS, TOTAL (AS P)	1.0	mg/L	--		--		--		--		--		0.576		0.591		--		--		--	
SULFATE	1.0	mg/L	0.898	B|	18.5		8.25		8.11		--		8.47		8.5		--		1.85		--	
SURVIVAL BIOASSAY		%	95		100		--		--		--		--		--		100		100		--	
TOTAL DISSOLVED SOLIDS	20	mg/L	36.0	|Jc	247.		167.	|Jc	179.	|Jc	350		283		266		--		51		160	
TOTAL KJELDAHL NITROGEN	0.5	mg/L	--		--		--		--		--		3.29		3.75		--		--		--	
TOTAL ORGANIC CARBON	1.0	mg/L	3.93	N|Jm	28.3		11.9		13		--		32.1		35.9		--		13.4		--	

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
METALS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	LF-1		LF-3		LF-3		LF-3		LS-1		LS-1		LS-1		LS-1		SD-1	
		Quarter	FALL		SPRING		FALL		FALL		FALL		SPRING		SPRING		FALL		FALL	
		Sample ID	STMW0103		STMW0101		STMW0104		STMW0105		SW001		RWSW0014		RWSW0015		RWSW0016		SW002	
		Date	11/14/97		05/23/97		11/26/97		11/26/97		12/10/96		05/23/97		05/23/97		11/14/97		12/10/96	
		QA							DUPLICATE						DUPLICATE					
Analyte	CRDL	Units																		
ANTIMONY	5.0	ug/L	4.2	B|	1.1	B|	<2.0		<2.0		<2		25.6		29		4.4	B|	<2	
ARSENIC	2.0	ug/L	<3.0		<3.0		3.1	B|	3.1	B|	15.6		6		8.5		<3		6.9	
BARIUM	20	ug/L	9.7	B|	82	|Jn	36.6		40.9		293		33.6		33		<1		161	
BERYLLIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1		<1	
CADMIUM	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1		<1	
CALCIUM	2000	ug/L	2750		20000		8550		8310		18600		10500		10100		2290	B|	9010	
CHROMIUM	10	ug/L	<3.0		1.7	B|	<3.0		<3.5	B|Uo	115		<1		<1		<1		64	
CHROMIUM, HEXAVALENT (+6)	10	ug/L	<3.0		<3		--		--		<0.02		<3		<3		<3		<0.02	
COBALT	10	ug/L	<5.0		1.4	B|	<5.0		<5.0		25.8		1.3	B|J	1.4	B|J	<1		16.4	
COPPER	10	ug/L	10.9		8.5	B|	15.6		15.6		74		<22.2	|UJz	<21.2	|UJz	3.5	B|	41.5	
IRON	100	ug/L	<13.7	B|Uo	<6.0	E|	<64.7	B|UJfc	910	|Jf	39000		<116	|UJz	<123	|UJz	95.7		22000	
LEAD	2.0	ug/L	<2.2	|Up	<1.0		<2.7	|Up	<1.9	B|Up	12.4		2	B|J	2.3		1.4	B|	23.5	
MAGNESIUM	2000	ug/L	2000	B|	26100		8320		8220		31300		7310		7040		1070	B|	14200	
MANGANESE	15	ug/L	<2.8	B|Uo	69.7	|Jn	<5.8	B|Uo	<19.8	|Uo	570		63.4		67.2		11.4	B|	486	
MERCURY	0.2	ug/L	<0.2		<0.20		<0.2		<0.2		0.79	*|Jd	0.2		0.2		<0.2		0.20	*|
MOLYBDENUM	10	ug/L	<7.0		1.0	B|	<7.0		<7.0		4.9	B|	1.1	B|J	<1		1.2	B|	<1	
NICKEL	20	ug/L	<9.0		9.7	B|	23.4		33.4		247		8.1	B|J	8.2	B|J	2.2	B|	140	
POTASSIUM	2000	ug/L	2780		19300		27500		27300		61900		5170		4520		2160	B|	6660	
SELENIUM	3.0	ug/L	<3.0		4.4		<3.0		<3.0		<3		<3		<3		<3		<3	
SILVER	10	ug/L	<4.0		<1.0		<4.0		<4.0		<1		<0.01		1		1		<1	
SODIUM	2000	ug/L	1450	B|	10900		9020		8700		17600		70500		68500		3500	Be|	4040	
THALLIUM	10	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1		<1	
VANADIUM	10	ug/L	<4.0		<3.0		<4.0		4.5	B|	73.5		<12.3	|UJz	<4.8	B|UJz	<2		41.9	
ZINC	20	ug/L	<57.3	|Up	18.5	B|	<41.9	|Up	<31.7	|Up	183	N|Jm	95.6		94.1		43.1		236	N|Jm

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	LF-1		LF-3		LF-3		LF-3		LS-1		LS-1		LS-1		SD-1	
		Quarter	FALL		SPRING		FALL		FALL		FALL		SPRING		SPRING		FALL	
		Sample ID	STMW0103		STMW0101		STMW0104		STMW0105		SW001		RWSW0014		RWSW0015		SW002	
		Date	11/14/97		05/23/97		11/26/97		11/26/97		12/10/96		05/23/97		05/23/97		12/10/96	
		QA							DUPLICATE						DUPLICATE			
Analyte	CRDL	Units																
1,1,1-TRICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,1,2,2-TETRACHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,1,2-TRICHLOROETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,1-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,1-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,2-DIBROMOETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,2-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,2-DICHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,2-DICHLOROPROPANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,3-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
1,4-DICHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
2-BUTANONE	0.5	ug/L	<5.0		**3.3**	J|	**1.0**	J|	<5.0		<5	|Rc	<5		<5		<5	|Rc
2-HEXANONE	0.5	ug/L	<5.0		<5.0		<5.0		<5.0		<5		<5		<5		<5	
4-METHYL-2-PENTANONE	1.0	ug/L	<5.0		<5.0		<5.0		<5.0		<5		<5		<5		<5	
ACETONE	1.0	ug/L	**5.5**	|Jc	**8.9**		<5.6	B|Uz	<4.7	JB|Uz	<5	|Rc	**10**		**11**		<5	|Rc
BENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
BROMOCHLOROMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
BROMODICHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
BROMOFORM	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
BROMOMETHANE	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CARBON DISULFIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CARBON TETRACHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CHLOROBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CHLOROETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CHLOROFORM	0.5	ug/L	<1.0		<0.50		<1.0		<1.0		<1		<1		<1		<1	
CHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CIS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
CIS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
DIBROMOCHLOROMETHANE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
ETHYLBENZENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
METHYLENE CHLORIDE	0.5	ug/L	<2.0		<2.0		<2.0		<2.0		<0.5	J|Uy	<2		<2		<0.5	J|Uy
STYRENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
TETRACHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
TOLUENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		**0.3**	J|J	<1		<1	
TRANS-1,2-DICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
TRANS-1,3-DICHLOROPROPENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
TRICHLOROETHENE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
VINYL CHLORIDE	0.5	ug/L	<1.0		<1.0		<1.0		<1.0		<1		<1		<1		<1	
XYLENES (TOTAL)	1.0	ug/L	<1.0		<1.0		<1.0		<1.0		<1		**0.2**	J|J	<1		<1	

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
SEMI-VOLATILE ORGANIC COMPOUNDS
1997 ANNUAL WATER MONITORING REPORT
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		Location	LS-1	LS-1	LS-1	SD-1
		Quarter	FALL	SPRING	SPRING	FALL
		Sample ID	SW001	RWSW0014	RWSW0015	SW002
		Date	12/10/96	05/23/97	05/23/97	12/10/96
		QA			DUPLICATE	
Analyte	CRDL	Units				
1,2,4-TRICHLOROBENZENE	10	ug/L	<10	<10	<10	<10
1,2-DICHLOROBENZENE	10	ug/L	<10	<10	<10	<10
1,3-DICHLOROBENZENE	10	ug/L	<10	<10	<10	<10
1,4-DICHLOROBENZENE	10	ug/L	<10	<10	<10	<10
2,2'-OXYBIS(1-CHLOROPROPANE)	10	ug/L	<10	<10	<10	<10
2,4,5-TRICHLOROPHENOL	25	ug/L	<25	<26	<26	<25
2,4,6-TRICHLOROPHENOL	10	ug/L	<10	<10	<10	<10
2,4-DICHLOROPHENOL	10	ug/L	<10	<10	<10	<10
2,4-DIMETHYLPHENOL	10	ug/L	<10	<10	<10	<10
2,4-DINITROPHENOL	25	ug/L	<25	<26	<26	<25
2,4-DINITROTOLUENE	10	ug/L	<10	<10	<10	<10
2,6-DINITROTOLUENE	10	ug/L	<10	<10	<10	<10
2-CHLORONAPHTHALENE	10	ug/L	<10	<10	<10	<10
2-CHLOROPHENOL	10	ug/L	<10	<10	<10	<10
2-METHYL-4,6-DINITROPHENOL	25	ug/L	<25	<26	<26	<25
2-METHYLNAPHTHALENE	10	ug/L	<10	<10	<10	<10
2-METHYLPHENOL	10	ug/L	<10	<10	<10	<10
2-NITROANILINE	25	ug/L	<25	<26	<26	<25
2-NITROPHENOL	10	ug/L	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	10	ug/L	<10	<10 U|UJc	<10 U|UJc	<10
3-NITROANILINE	25	ug/L	<25	<26	<26	<25
4-BROMOPHENYL-PHENYLETHER	10	ug/L	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	10	ug/L	<10	<10	<10	<10
4-CHLOROANILINE	10	ug/L	<10	<10	<10	<10
4-CHLOROPHENYL-PHENYLETHER	10	ug/L	<10	<10	<10	<10
4-METHYLPHENOL	10	ug/L	<10	<10	<10	<10
4-NITROANILINE	25	ug/L	<25	<26	<26	<25
4-NITROPHENOL	25	ug/L	<25	<26	<26	<25
ACENAPHTHENE	10	ug/L	<10	<10	<10	<10
ACENAPHTHYLENE	10	ug/L	<10	<10	<10	<10
ANTHRACENE	10	ug/L	<10	<10	<10	<10
BENZO(A)ANTHRACENE	10	ug/L	<10	<10	<10	<10
BENZO(A)PYRENE	10	ug/L	<10	<10	<10	<10
BENZO(B)FLUORANTHENE	10	ug/L	<10	<10	<10	<10
BENZO(G,H,I)PERYLENE	10	ug/L	<10	<10	<10	<10
BENZO(K)FLUORANTHENE	10	ug/L	<10	<10	<10	<10
BENZYL BUTYL PHTHALATE	10	ug/L	<10	<10	<10	<10
BIS(2-CHLOROETHOXY)METHANE	10	ug/L	<10	<10	<10	<10
BIS(2-CHLOROETHYL)ETHER	10	ug/L	<10	<10	<10	<10
BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	<10	<10	<10	**1.8** J|
CARBAZOLE	10	ug/L	<10	<10	<10	<10
CHRYSENE	10	ug/L	<10	<10	<10	<10
DI-N-BUTYLPHTHALATE	10	ug/L	<10	<10	<10	<10
DI-N-OCTYLPHTHALATE	10	ug/L	<10	<10	<10	<10
DIBENZO(A,H)ANTHRACENE	10	ug/L	<10	<10	<10	<10
DIBENZOFURAN	10	ug/L	<10	<10	<10	<10
DIETHYLPHTHALATE	10	ug/L	<10	<10	<10	<10
DIMETHYLPHTHALATE	10	ug/L	<10	<10	<10	<10
FLUORANTHENE	10	ug/L	<10	<10	<10	<10
FLUORENE	10	ug/L	<10	<10	<10	<10
HEXACHLOROBENZENE	10	ug/L	<10	<10	<10	<10
HEXACHLOROBUTADIENE	10	ug/L	<10	<10	<10	<10
HEXACHLOROCYCLOPENTADIENE	10	ug/L	<10	<10	<10	<10
HEXACHLOROETHANE	10	ug/L	<10	<10	<10	<10
INDENO(1,2,3-CD)PYRENE	10	ug/L	<10	<10	<10	<10
ISOPHORONE	10	ug/L	<10	<10	<10	<10
N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	<10	<10	<10	<10
N-NITROSODIPHENYLAMINE	10	ug/L	<10	<10	<10	<10
NAPHTHALENE	10	ug/L	<10	<10	<10	<10
NITROBENZENE	10	ug/L	<10	<10	<10	<10
PENTACHLOROPHENOL	25	ug/L	<25	<26	<26	<25
PHENANTHRENE	10	ug/L	<10	<10	<10	<10
PHENOL	10	ug/L	<10	<10	<10	<10
PYRENE	10	ug/L	<10	<10	<10	<10

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
PESTICIDES
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		Location	LF-1		LF-3		LS-1		LS-1		LS-1		SD-1	
		Quarter	FALL		SPRING		FALL		SPRING		SPRING		FALL	
		Sample ID	STMW0103		STMW0101		SW001		RWSW0014		RWSW0015		SW002	
		Date	11/14/97		05/23/97		12/10/96		05/23/97		05/23/97		12/10/96	
		QA									DUPLICATE			
Analyte	CRDL	Units												
4,4'-DDD	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
4,4'-DDE	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
4,4'-DDT	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
ALDRIN	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
ALPHA-BHC	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
ALPHA-CHLORDANE	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	**0.0078**	JP|J	**0.017**	P|J	<0.01	|UJs
AROCLOR-1016	0.2	ug/L	<1.0	|Rc	<0.21		<0.21	|UJs	<0.21		<0.21		<0.21	|UJs
AROCLOR-1221	0.4	ug/L	<2.0	|Rc	<0.42		<0.42	|UJs	<0.41		<0.42		<0.41	|UJs
AROCLOR-1232	0.2	ug/L	<1.0	|Rc	<0.21		<0.21	|UJs	<0.21		<0.21		<0.21	|UJs
AROCLOR-1242	0.2	ug/L	<1.0	|Rc	<0.21		<0.21	|UJs	<0.21		<0.21		<0.21	|UJs
AROCLOR-1248	0.2	ug/L	<1.0	|Rc	<0.21		<0.21	|UJs	<0.21		<0.21		<0.21	|UJs
AROCLOR-1254	0.2	ug/L	<1.0	|Rc	<0.21		<0.21	|UJs	<0.21		<0.21		<0.21	|UJs
AROCLOR-1260	0.2	ug/L	<1.0	|Rc	<0.21		<0.21	|UJs	<0.21		<0.21		<0.21	|UJs
BETA-BHC	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
DELTA-BHC	0.01	ug/L	<0.02	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
DIELDRIN	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
ENDOSULFAN I	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
ENDOSULFAN II	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
ENDOSULFAN SULFATE	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
ENDRIN	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
ENDRIN ALDEHYDE	0.02	ug/L	<0.10	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
ENDRIN KETONE	0.02	ug/L	–	|Rc	<0.021		<0.021	|UJs	<0.021		<0.021		<0.021	|UJs
GAMMA-BHC	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
GAMMA-CHLORDANE	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	**0.0097**	JP|J	**0.013**	P|J	<0.01	|UJs
HEPTACHLOR	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
HEPTACHLOR EPOXIDE	0.01	ug/L	<0.05	|Rc	<0.01		<0.011	|UJs	<0.01		<0.01		<0.01	|UJs
METHOXYCHLOR	0.1	ug/L	<0.05	|Rc	<0.1		<0.11	|UJs	<0.1		<0.1		<0.1	|UJs
TOXAPHENE	1.0	ug/L	<5.0	|Rc	<1		<1.1	|UJs	<1		<1		<1	|UJs

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER
RADIONUCLIDES
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LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	LF-1			LF-3			LF-3			LF-3			LS-1			LS-1			LS-1		
		Quarter	FALL			SPRING			FALL			FALL			FALL			SPRING			SPRING		
		Sample ID	STMW0103			STMW0101			STMW0104			STMW0105			SW001			RWSW0014			RWSW0015		
		Date	11/14/97			05/23/97			11/26/97			11/26/97			12/10/96			05/23/97			05/23/97		
		QA										DUPLICATE									DUPLICATE		
Analyte	CRDL	Units			MDA			MDA			MDA			MDA			MDA			MDA			MDA
ACTINIUM-228	20	pCi/L	-3.±15.		26.	5.±22.		40.	6.±16.		26.	3.±22.		36.	-3.±22.		37	-5.1±8.7		18	-24±16		42
AMERICIUM-241	0.1	pCi/L	--			--			--			--			0.024±0.034		0.045	0.021±0.021		0.014	0.01±0.025		0.045
BISMUTH-212	70	pCi/L	-13.±17.		50.	-52.±24.		79.	4.±29.		40.	0±50.		73.	20.±53.		71	-12.3±8.2		30	6±51		71
BISMUTH-214	10	pCi/L	4.9±8.4		12.	4.±13.		19.	1.3±9.8		15.	11.±14.		19.	1.±12.		19	2.9±6.5		9.4	11±12		17
CARBON-14	20	pCi/L	2.±53.		97.	10.±43.		77.	-4.±53.		97.	-21.±51.		97.	64.±39.		59	67±48		77	22±44		77
CESIUM-137	4.0	pCi/L	-3.5±3.7		6.9	0.6±6.3		8.8	-1.1±3.5		6.0	5.0±5.1		8.0	0.3±4.5		8	2.5±2.9		3.4	1.5±6.2		8.3
COBALT-60	4.0	pCi/L	-2.7±1.8		6.0	1.8±4.9		9.8	-1.9±1.6		7.2	0.5±6.4		10.	-2.3±1.9		9.6	1.1±1.6		2.8	-1.8±2		9.2
GROSS ALPHA	2.0	pCi/L	0.51±0.69		1.2	1.9±1.9	C|	2.9	-0.26±0.82	C|Jd	2.0	0.2±1.0	C|Jd	2.1	6.8±5.0	C|	7	-0.3±1.4	C|	3.1	0.3±1.4	C|	2.7
GROSS BETA	3.0	pCi/L	4.0±1.4		2.1	26.2±3.5		3.4	24.3±3.0		2.7	27.2±3.4	C|	3.1	62.3±6.8	C|	5.7	5.4±2		3	4.7±1.9		2.9
LEAD-210	380	pCi/L	-17.±89.		140.	-16.±97.		160	-48.±92.		150	-10±110		170	10±98.		150	-20±420		590	-21±98		160
LEAD-212	10	pCi/L	0.9±7.7		11.	3.3±9.2		13.	0.7±7.8		12.	5.1±9.8		14.	5.8±9.2		13	-2.8±5.9		9.2	-1.9±9.5		14
LEAD-214	10	pCi/L	-2.3±8.2		14.	-6.1±8.1		17.	3.1±8.7		14.	-7.5±9.0		19.	-2.±11.		18	0.5±5.7		9.2	2±11		17
PLUTONIUM-241	1.0	pCi/L	--			--			--			--			0.8±2.7	|Uz	3.1	-0.3±2.6		3.6	-0.5±2.6		3.7
POTASSIUM-40	55	pCi/L	32.±48.		66.	-12.±65.		110	17.±50.		74.	29.±79.		120	42.±67.		100	-5±32		55	-12±65		110
RADIUM-226	1.0	pCi/L	0.03±0.20		0.41	0.21±0.23		0.19	0.03±0.20	|Jf	0.41	1.09±0.36	|Jf	0.21	0.42±0.23	|Jm	0.29	0.11±0.17		0.3	0.14±0.13		0.19
STRONTIUM-89,90	1.0	pCi/L	0.05±0.41		0.71	0.20±0.22		0.37	0.16±0.29		0.50	0.08±0.26		0.45	0.82±0.25	|UJz,	0.36	0.16±0.18	Y|	0.31	0.03±0.17	Y|	0.3
THALLIUM-208	5.0	pCi/L	0±5.1		7.4	2.3±6.5		9.2	2.1±4.8		6.8	-1.7±6.4		9.9	-0.1±6.4		9.8	-0.9±3.4		5.2	2.4±6.4		9
THORIUM-234	170	pCi/L	4.±60.		170	8.±69.		180	-58.±60.		170	54.±71.		170	-4.±68.		170	-18±61		220	-34±68		180
TRITIUM	300	pCi/L	60±120		220	110±140		240	50±120		220	-30±110		220	100±140		240	80±140		240	-60±110		230
URANIUM-235(GAMMA)	10	pCi/L	-17.±21.		34.	-30.±21.		41.	6.±22.		33.	-1±27.		40.	9.±27.		40	-6±19		29	-7±26		40

APPENDIX A
ANALYTICAL RESULTS FOR STORM WATER RADIONUCLIDES
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION - DAVIS, CALIFORNIA

		Location	LS-1		SD-1		
		Quarter	FALL		FALL		
		Sample ID	RWSW0016		SW002		
		Date	11/14/97		12/10/96		
		QA					
Analyte	CRDL	Units		MDA			MDA
ACTINIUM-228	20	pCi/L	-19±17	35	-2.7±9.1		18
AMERICIUM-241	0.1	pCi/L	--		0.032±0.028		0.017
BISMUTH-212	70	pCi/L	3±37	68	3.±21.		30
BISMUTH-214	10	pCi/L	6±14	20	6.5±6.7		9.8
CARBON-14	20	pCi/L	-39±49	97	60.±38		59
CESIUM-137	4.0	pCi/L	1.9±7.1	9.4	0.7±3.0		4.1
COBALT-60	4.0	pCi/L	-3.6±2	9.8	-0.4±1.1		3.4
GROSS ALPHA	2.0	pCi/L	0.21±0.58	1.1	4.7±2.5	C|	3.2
GROSS BETA	3.0	pCi/L	3.2±1.4	2.1	11.8±2.0		2.3
LEAD-210	380	pCi/L	-20±110	170	-210±410		610
LEAD-212	10	pCi/L	-3±10	15	1.7±5.9		8.5
LEAD-214	10	pCi/L	-2.2±8.7	16	2.6±6.0		9.8
PLUTONIUM-241	1.0	pCi/L	--		0.8±2.7	|Uz	3.2
POTASSIUM-40	55	pCi/L	34±70	99	6.±36.		57
RADIUM-226	1.0	pCi/L	0.46±0.32	0.43	0.28±0.22	|Jm	0.31
STRONTIUM-89,90	1.0	pCi/L	0.21±0.32	0.54	0.17±0.20	Y|UJ	0.34
THALLIUM-208	5.0	pCi/L	1.8±6.8	9.5	1.2±3.3		4.9
THORIUM-234	170	pCi/L	-3±72	190	-6.±61		210
TRITIUM	300	pCi/L	-5±98	180	30±130		240
URANIUM-235(GAMMA)	10	pCi/L	-17±23	44	-6.±14.		28

Appendix B

Time Series Graphs

EXPLANATION
CONCENTRATION VS. TIME PLOTS

Features - Concentration versus time plots represent data histories for water monitoring locations. These graphs additionally include a data analysis which identifies statistically significant trends, detects and identifies outlying and unusual values, and provides control charting using RCRA methodologies.

All graphs have the following features:

- The set of short horizontal marks immediately to the right of the vertical axis shows the vertical component of each measurement. (The exact location of the mark is offset by a small random amount making sets of equal measurements appear as a heavy band. Marks corresponding to outlying measurements are highlighted. This density plot summarizes the distribution of all measurements.

- Different symbols on the graph represent measurement values. Small triangles mark measurements which are below the detection limit. Filled circles mark outlying measurements. All other measurements are marked by an X.

- Dashed lines join measurements except where the interval between sampling dates is more than twice the average interval. Out of scale measurements are also not connected to their neighboring measurements.

- Short horizontal lines show the detection limit for measurements which fall below this level.

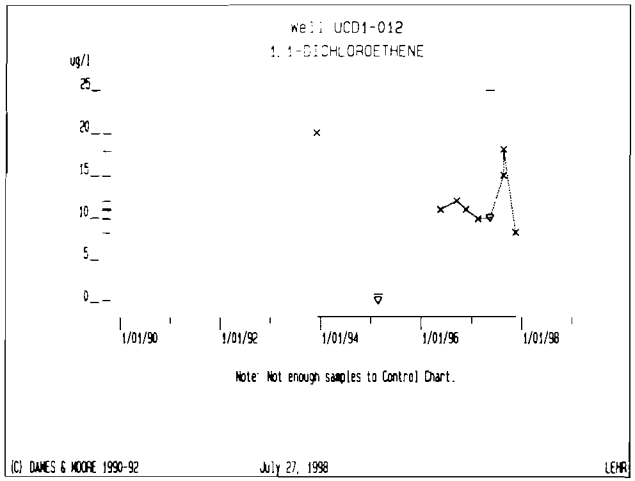
Trends - In cases where the data show a trend, the graphs are displayed as a trend chart. Trends are identified by a least-squares linear fit to the data. If the slope is significantly different from zero (as determined by a two-tailed Student's t-test with 1 percent significance) then the fitted line is drawn and control-charting (see below) is not attempted. If more than 50 percent of the data values are non-detect the fitted line is not drawn, but a message to that effect is displayed instead. Trends are not calculated if there are less than three values or more than 40 percent of the results are non-detect.

Control Charts - If the data meet certain statistical criteria, a control chart is created. The control chart algorithm is essentially that described in *Evaluation of Control Chart Methodologies for RCRA Waste Sites*, by T.H. Starks and G.T. Flatmanm 1989. It is a combined Shewart-CUSUM methodology, with a learning period of 12 samples, followed by updating of the estimated sample mean and standard deviation 4, 8, 12, 20, and 32 samples beyond the learning stage. A control chart has the following characteristics in addition to those of a basic graph:

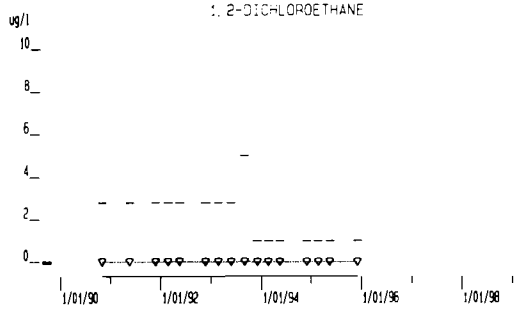
- Three horizontal lines which begin dashed and then change to solid indicate the control limits of the control chart. The top line represents the upper control limit, the center line represents the running mean of the measurements, and the bottom line indicates the lower control limit.

- Unfilled circles represent out of control measurements.

- The lower half of the screen plots the absolute cumulative difference between the data and a small deviation from the running mean to assist in recognizing localized trends. This chart shows whether an out-of-control point is the result of an increase or decrease in the mean.


well UCD1-012
1,1-DICHLOROETHENE
ug/l
25
20
15
10
5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

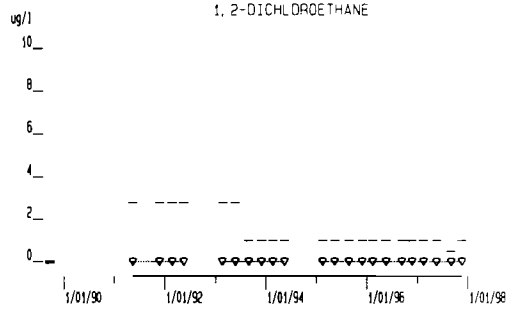
Well UCD1-001
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

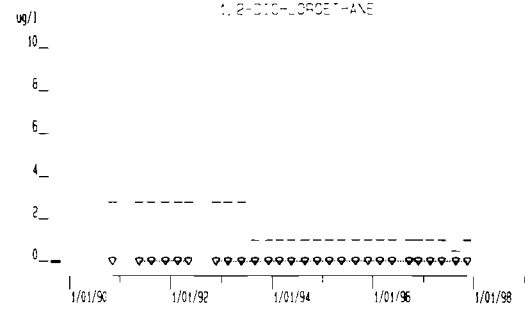
Well UCD1-004
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

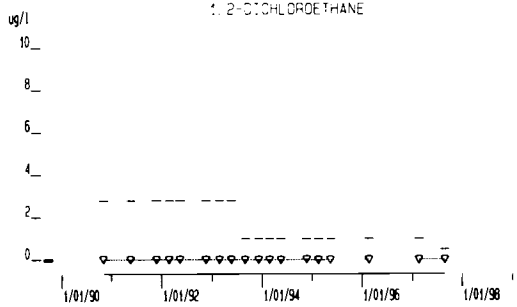
Well UCD1-010
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

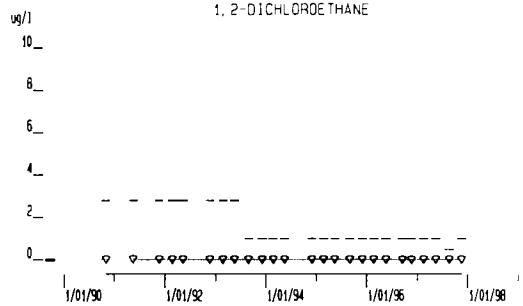
Well UCD1-011
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

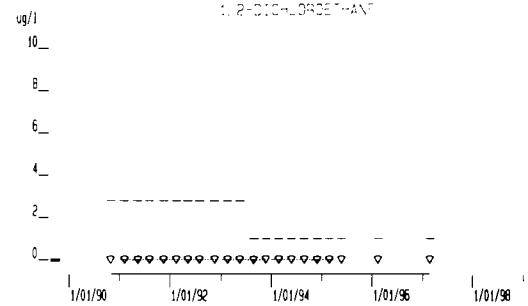
Well UCD1-013
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

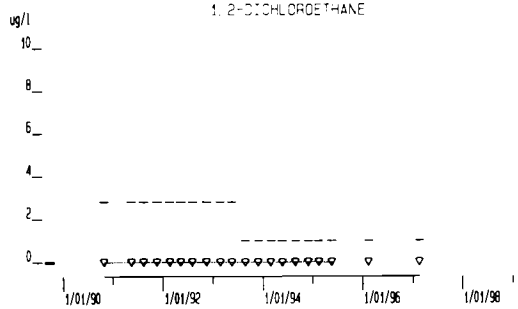
Well UCD1-018
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

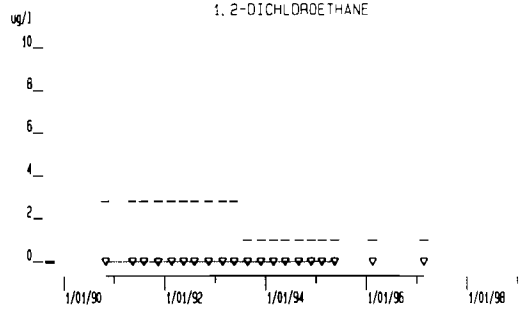
Well UCD1-019
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

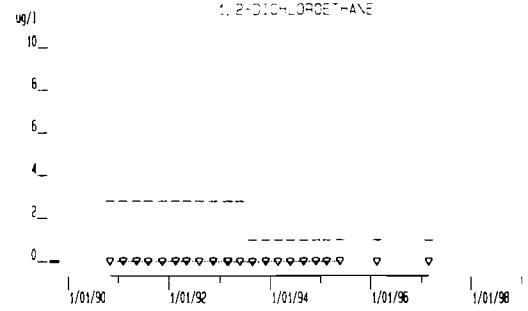
Well UCD1-020
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

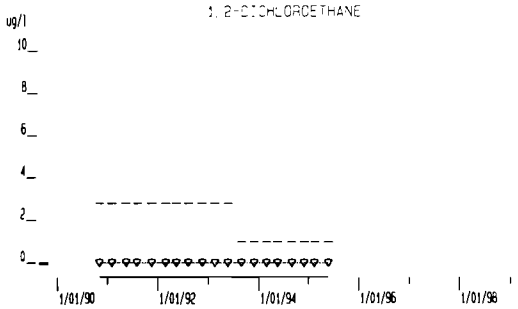
Well UCD1-021
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

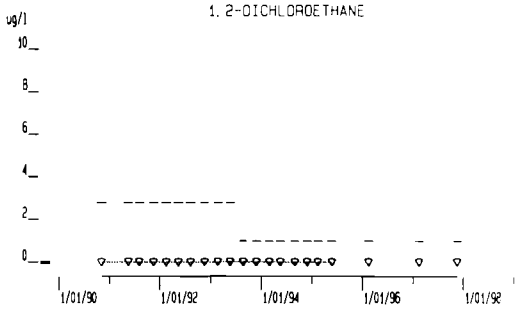
Well UCD1-022
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

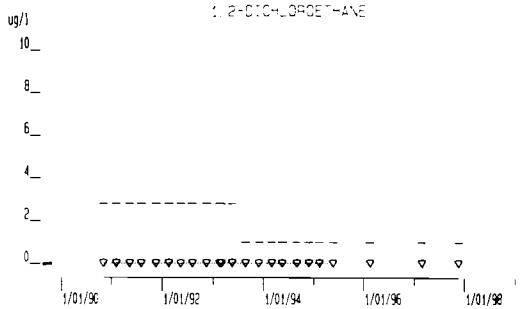
Well UCD1-023
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

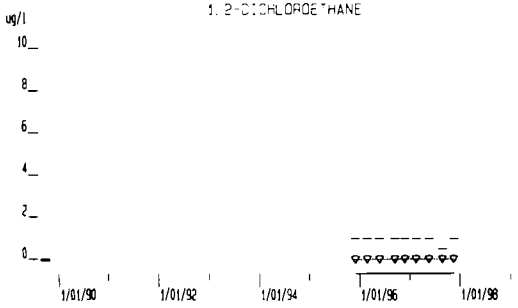
Well UCD1-024
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

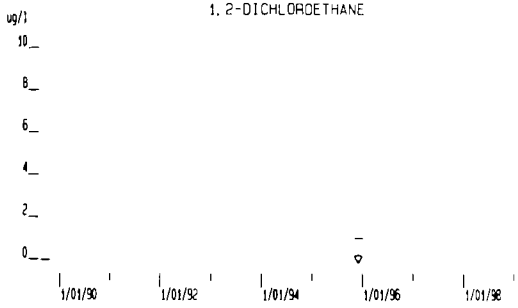
Well UCD1-025
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

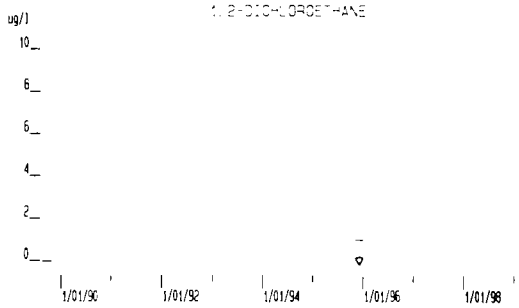
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z1
1,2-DICHLOROETHANE



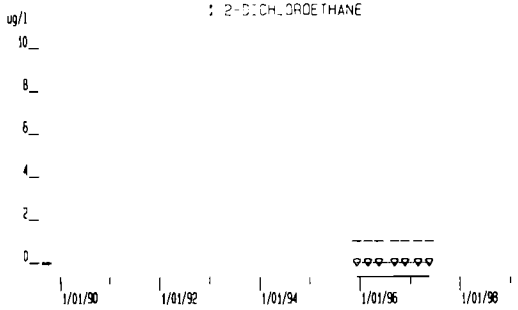
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z2
1,2-DICHLOROETHANE



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

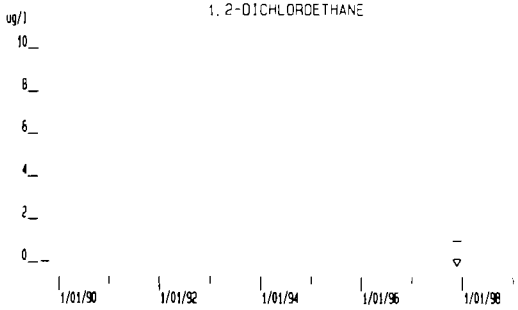
Well UCD1-027Z3
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

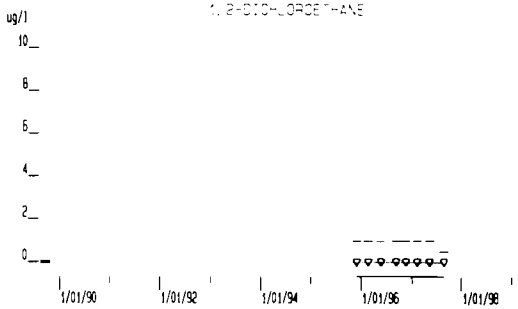
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-028
1,2-DICHLOROETHANE



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

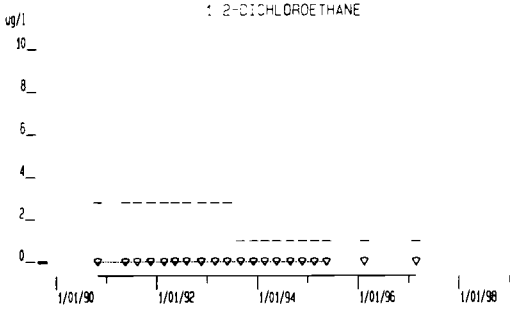
Well UCD1-034
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

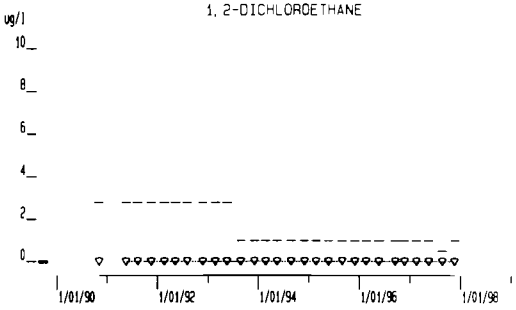
Well UCD2-007
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

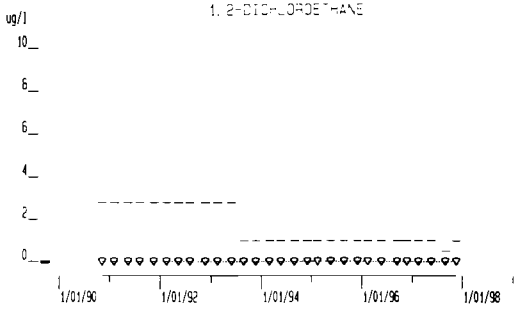
Well UCD2-014
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

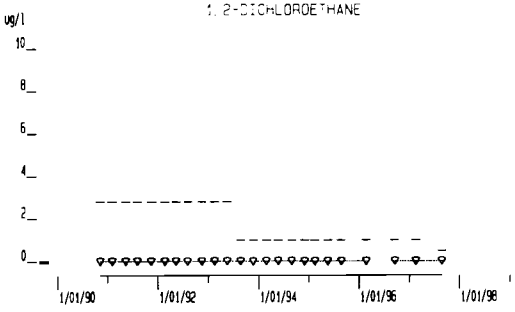
Well UCD2-015
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

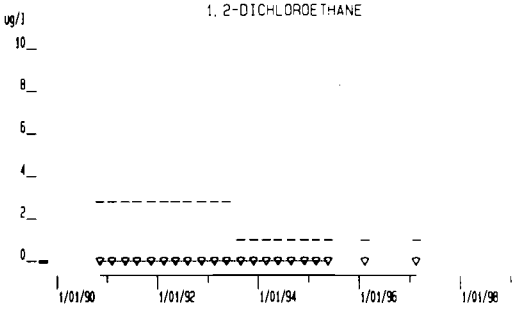
Well UCD2-016
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

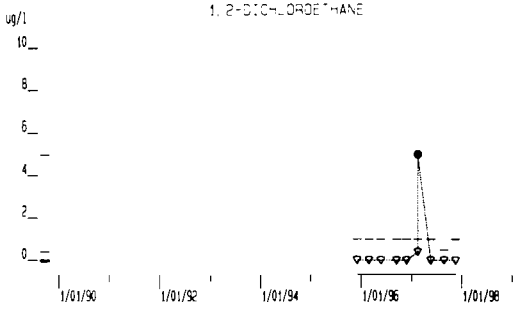
Well UCD2-017
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

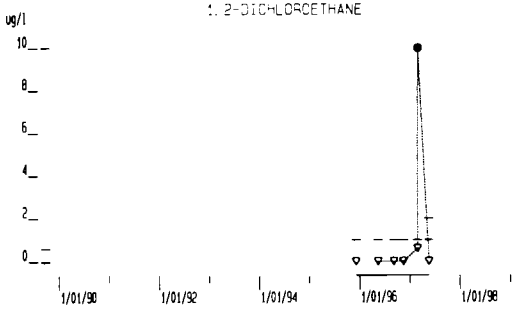
Well UCD2-026
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

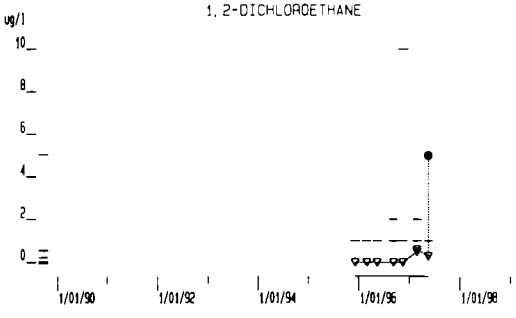
Well UCD2-027Z4
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

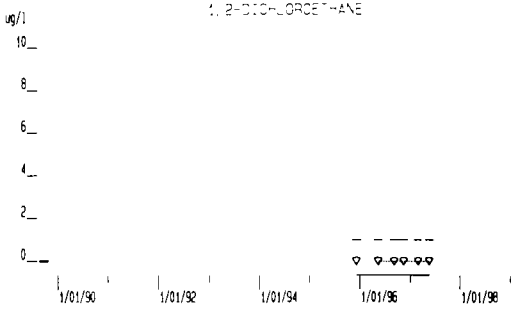
Well UCD2-027Z5
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

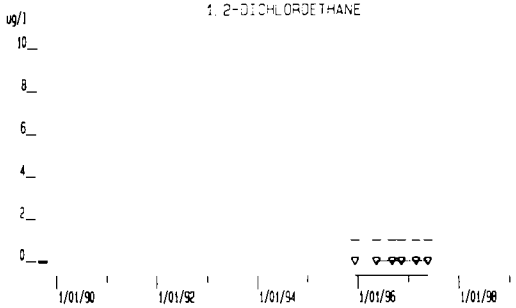
Well UCD2-027Z6
1, 2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

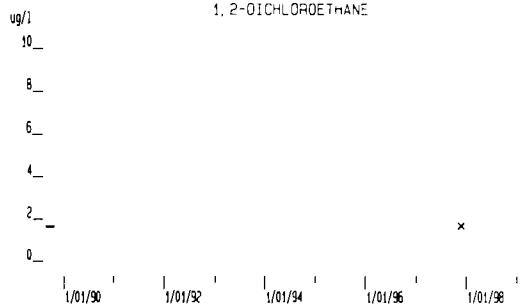
Well UCD2-027Z7
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

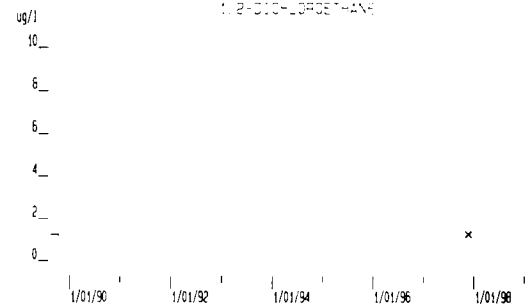
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-029
1,2-DICHLOROETHANE



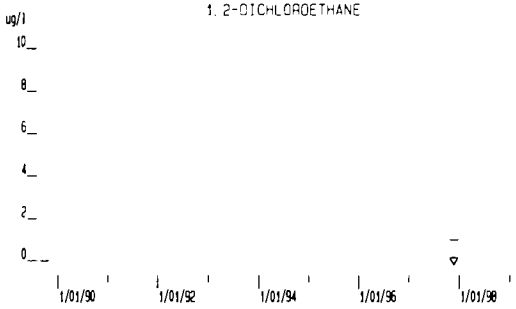
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-030
1,2-DICHLOROETHANE



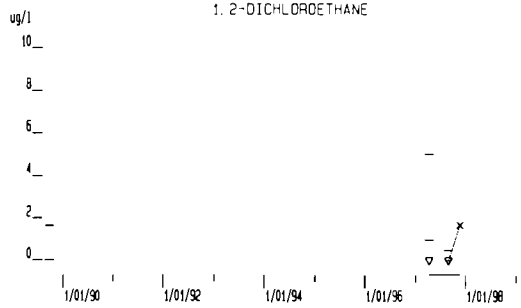
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-031
1,2-DICHLOROETHANE



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

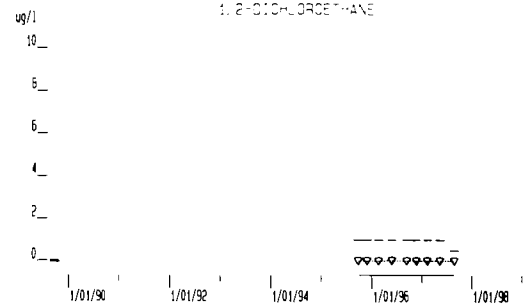
Well UCD2-032
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

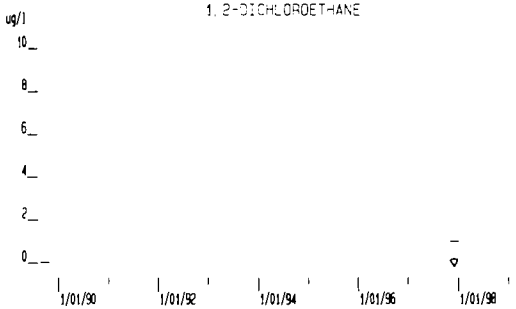
Well UCD2-033
1,2-DICHLOROETHANE



Note: Control Chart not tried, More than 25% non detects.

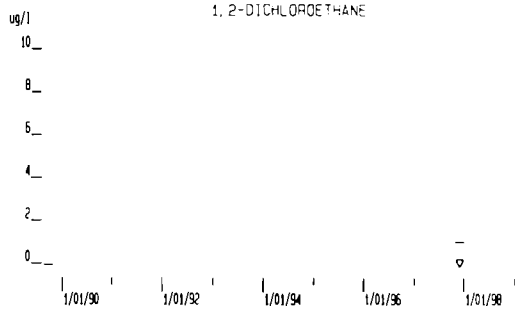
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-036
1,2-DICHLOROETHANE



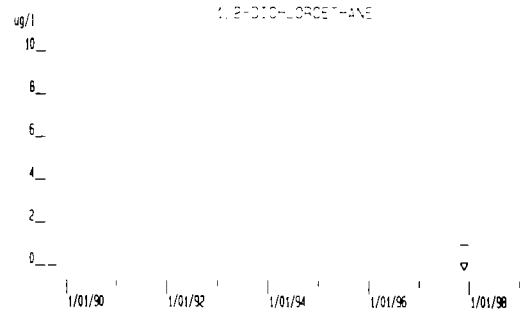
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-037
1,2-DICHLOROETHANE

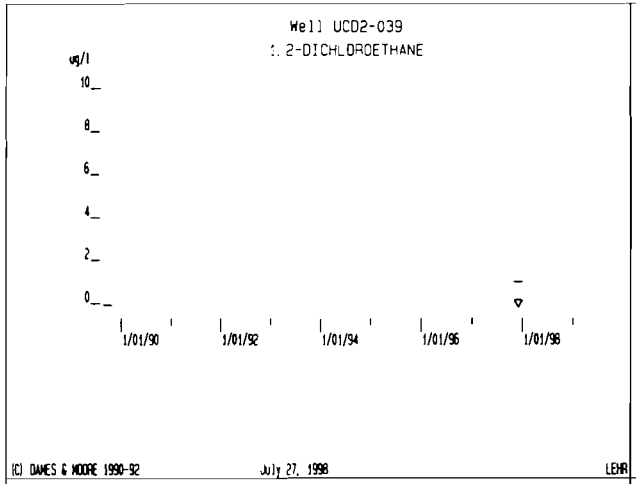


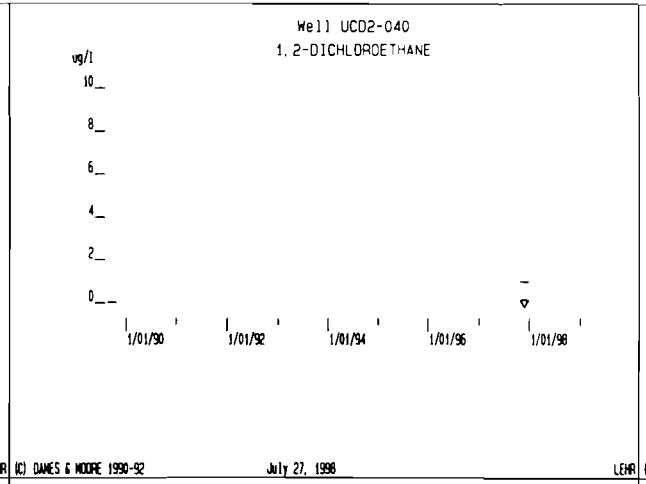
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

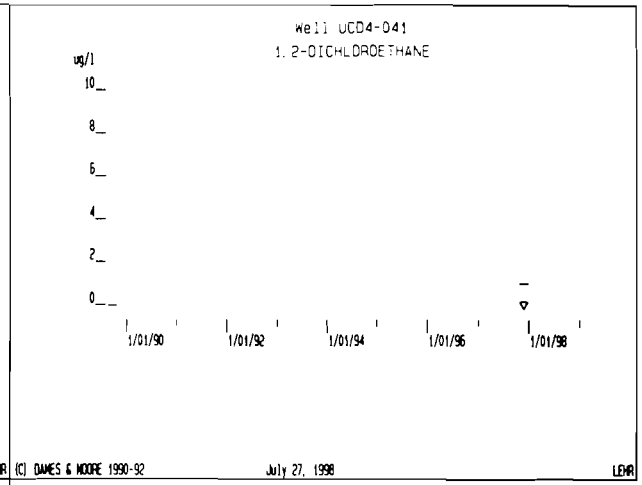
Well UCD2-038
1,2-DICHLOROETHANE

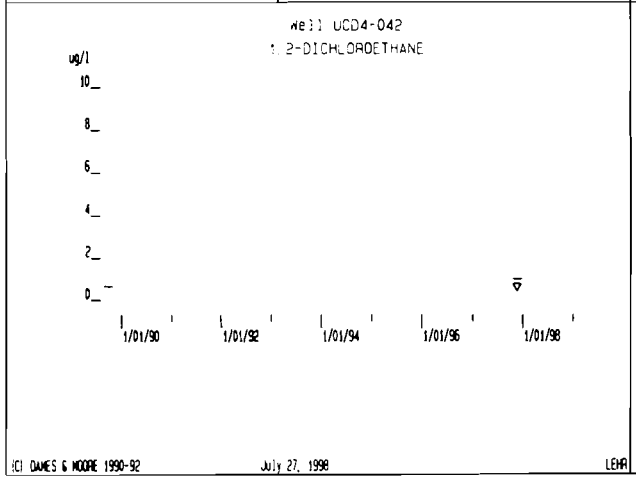


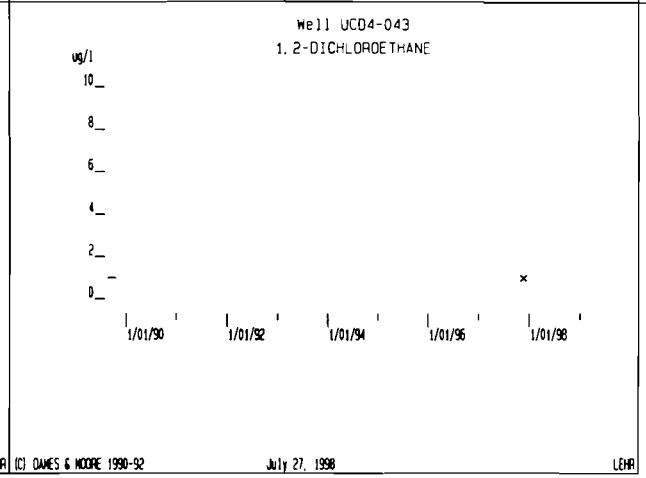
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

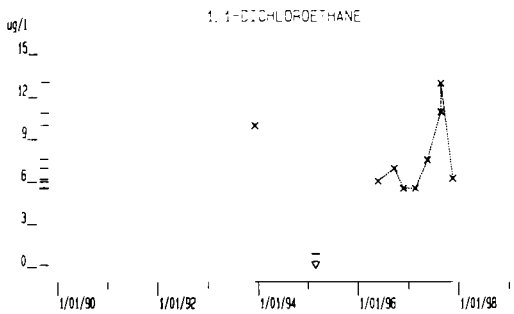

Well UCD2-039
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD2-040
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD4-041
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD4-042
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD4-043
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

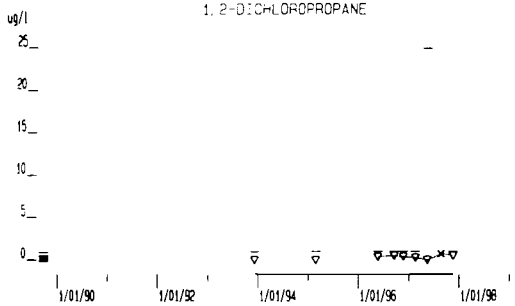


Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-012

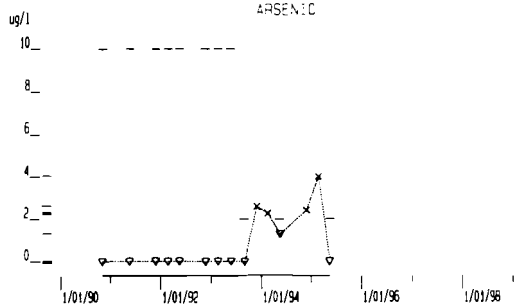
1,2-DICHLOROPROPANE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

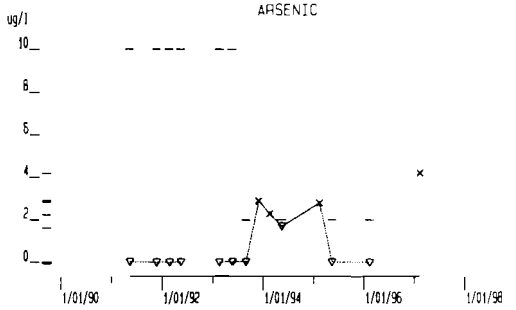
Well UCD1-001
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

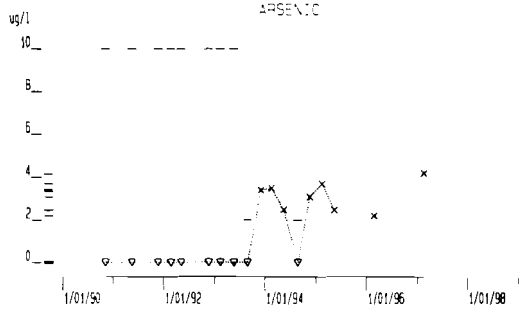
Well UCD1-004
ARSENIC



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-010
ARSENIC

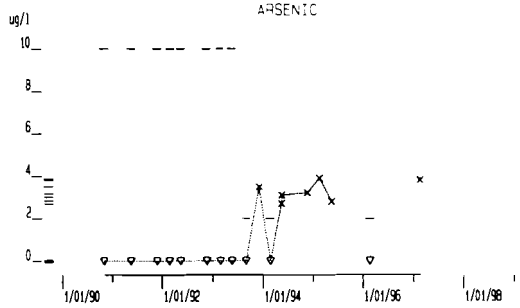


Note: Not trended, More than 40% non detects.

Warning: High serial correlation

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

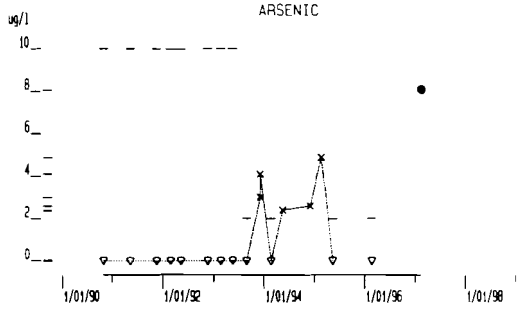
Well UCD1-011
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

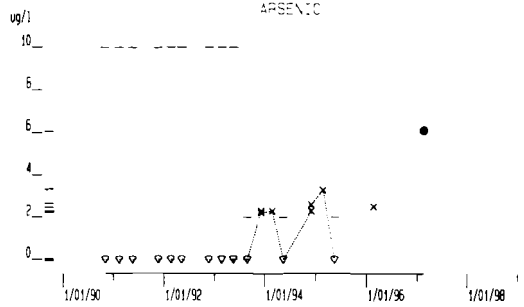
Well UCD1-012
ARSENIC



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

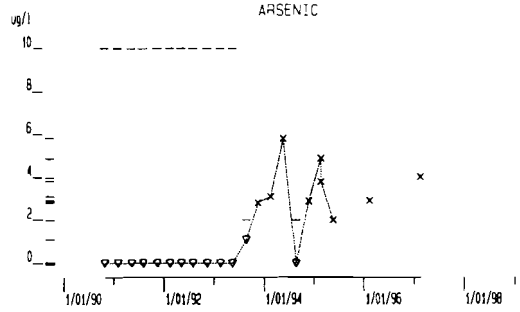
Well UCD1-013
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-018
ARSENIC

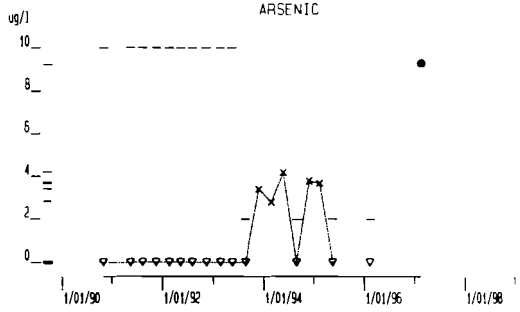


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

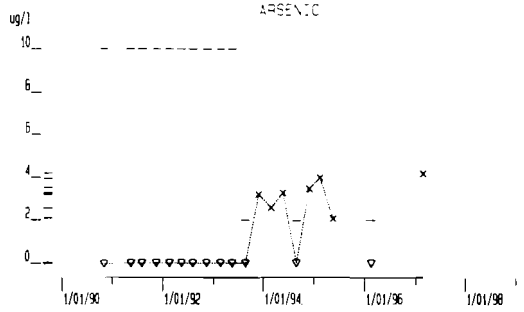
Well UCD1-019
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

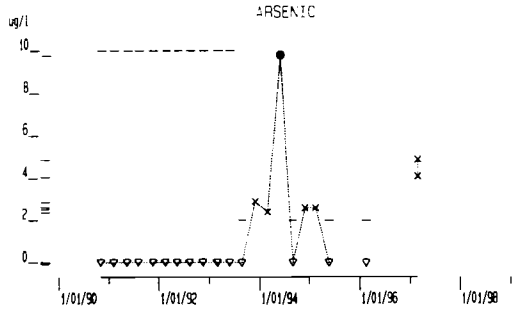
Well UCD1-020
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

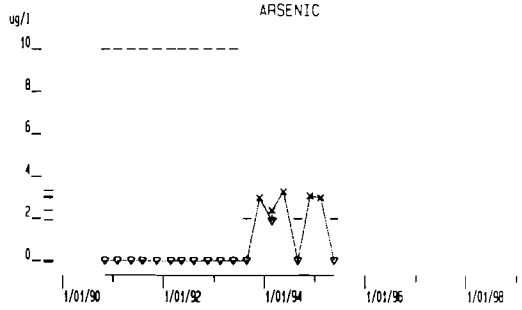
Well UCD1-021
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

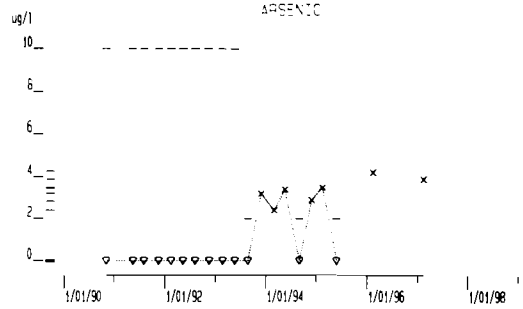
Well UCD1-022
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

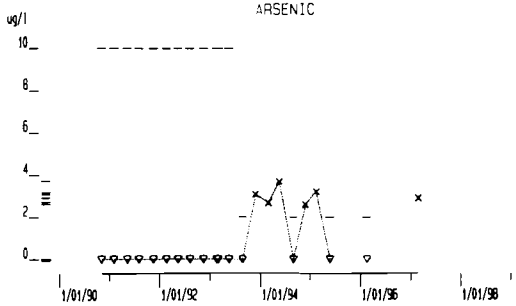
Well UCD1-023
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

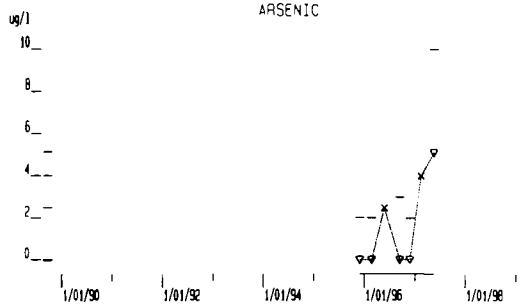
Well UCD1-024
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

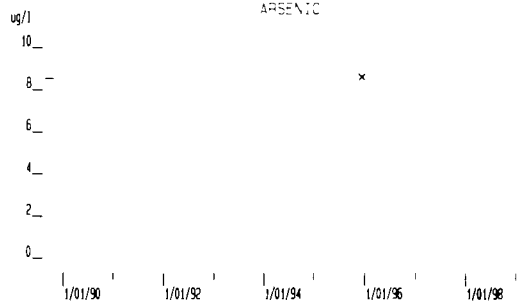
Well UCD1-025
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

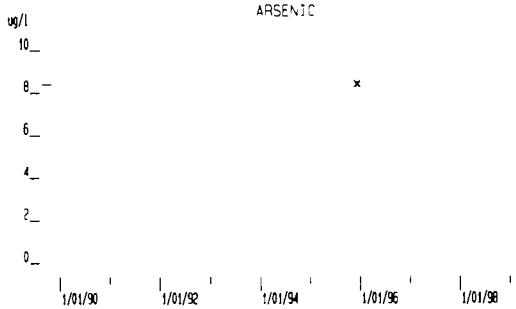
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z1
ARSENIC



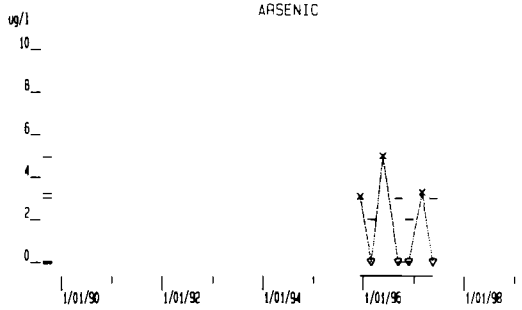
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z2
ARSENIC



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

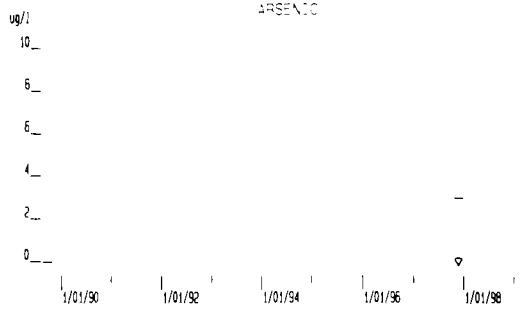
Well UCD1-027Z3
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

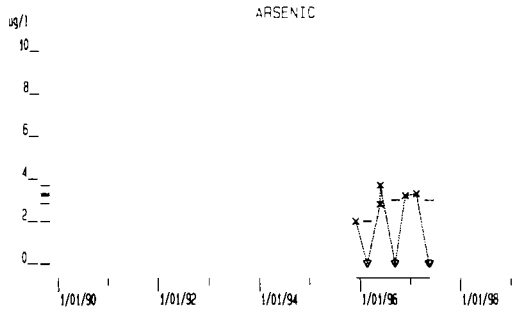
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-028
ARSENIC



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

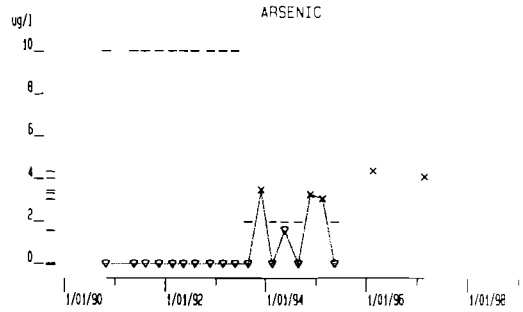
Well UCD1-034
ARSENIC



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

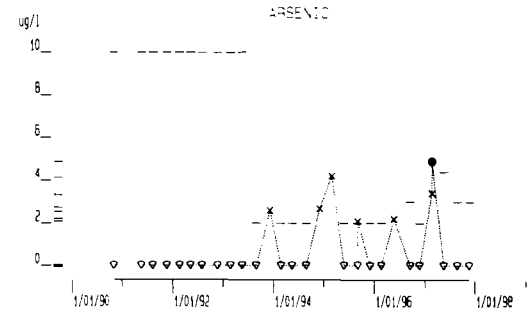
Well UCD2-007
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

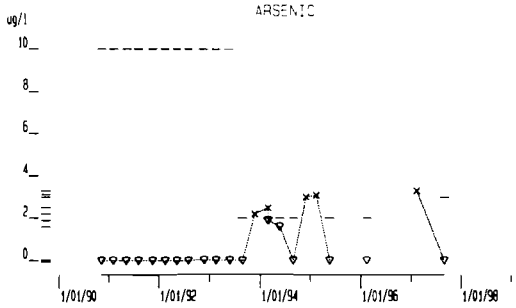
Well UCD2-014
ARSENIC



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

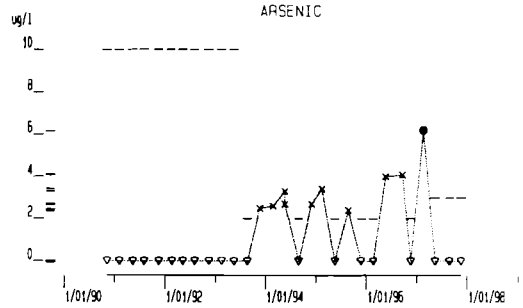
Well UCD2-015
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

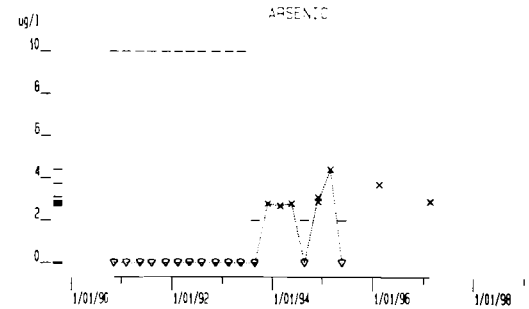
Well UCD2-016
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

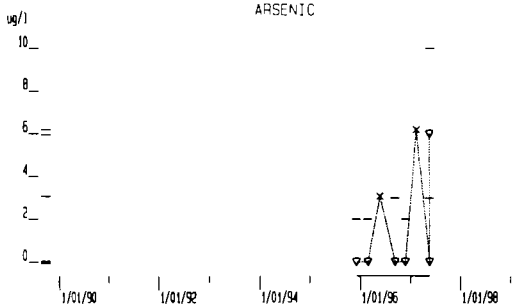
Well UCD2-017
ARSENIC



Note: Not trended, More than 40% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

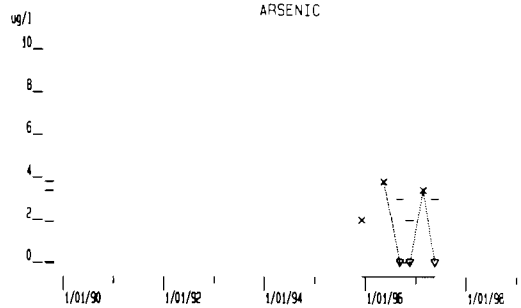
Well UCD2-026
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

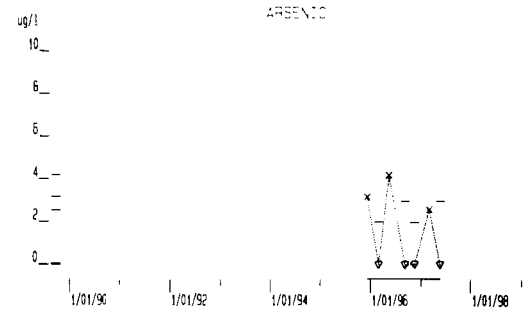
Well UCD2-027Z4
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

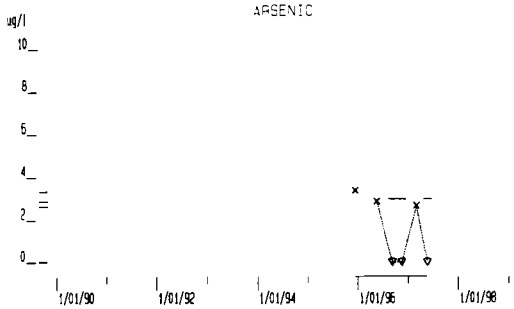
Well UCD2-027Z5
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

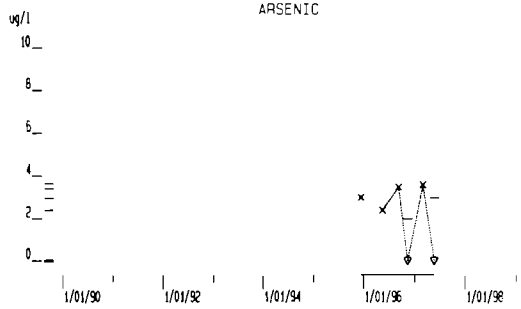
Well UCD2-027Z6
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

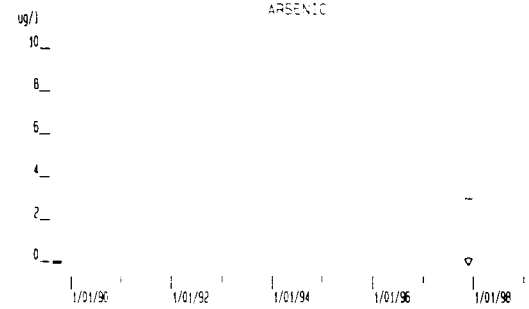
Well UCD2-027Z7
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

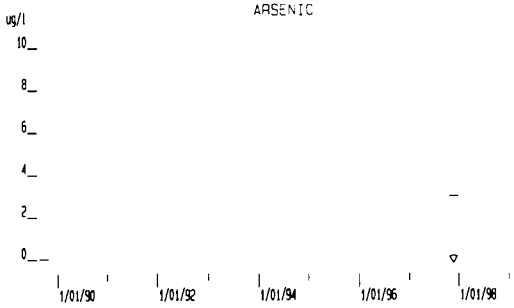
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-029
ARSENIC



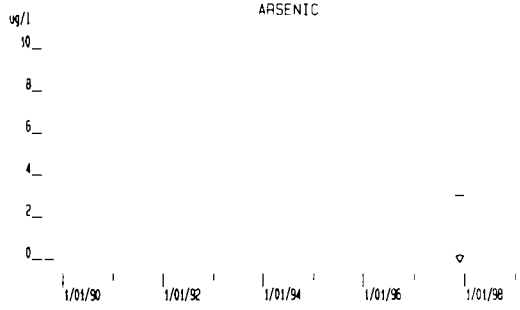
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-030
ARSENIC



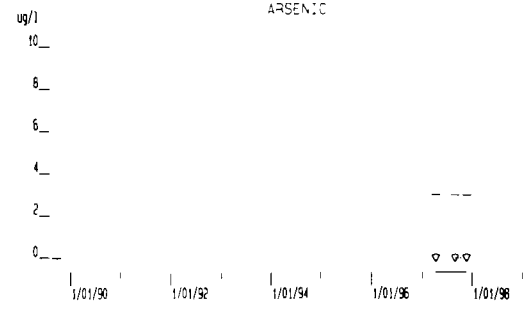
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-031
ARSENIC



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

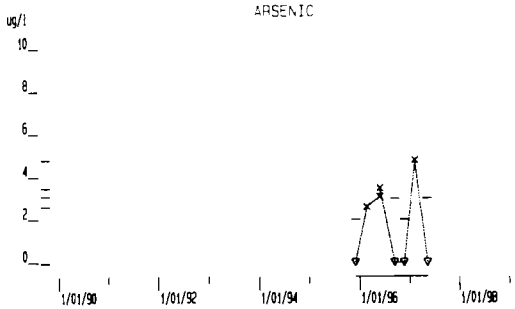
Well UCD2-032
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

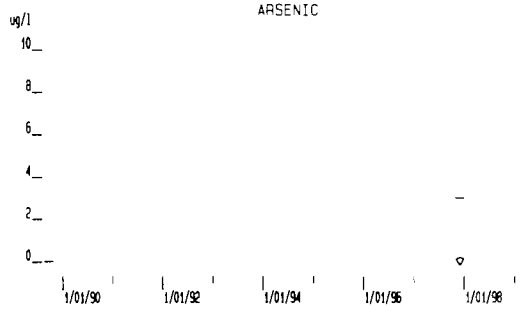
Well UCD2-035
ARSENIC



Note: Control Chart not tried, More than 25% non detects.

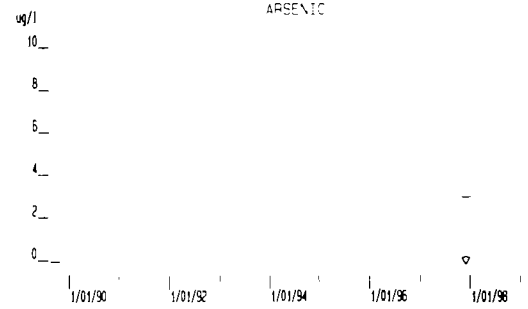
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-036
ARSENIC

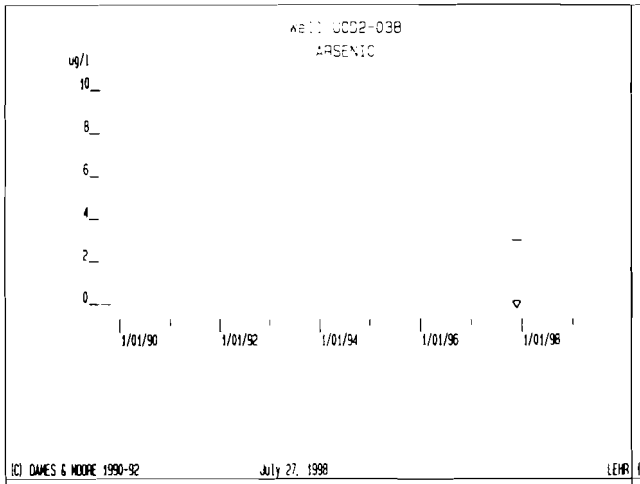


(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-037
ARSENIC



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR


Well UCD2-038
ARSENIC
ug/l
10
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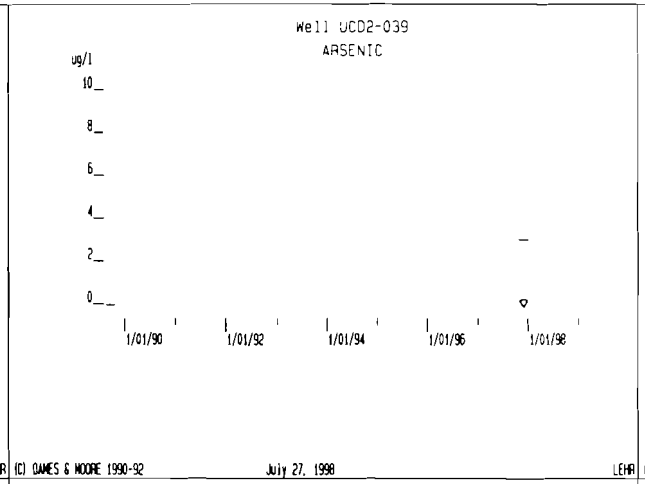
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD2-039
ARSENIC
ug/l
10
8
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4
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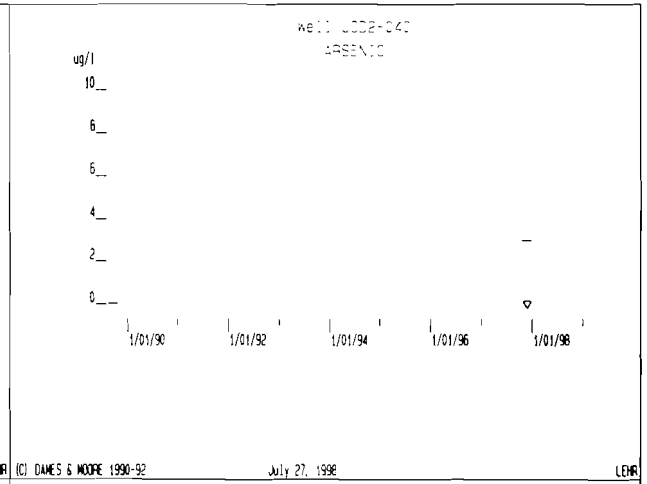
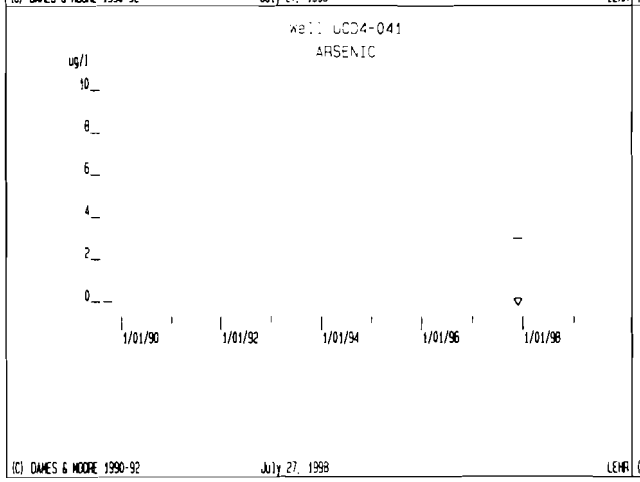
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD2-040
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD4-041
ARSENIC
ug/l
10
8
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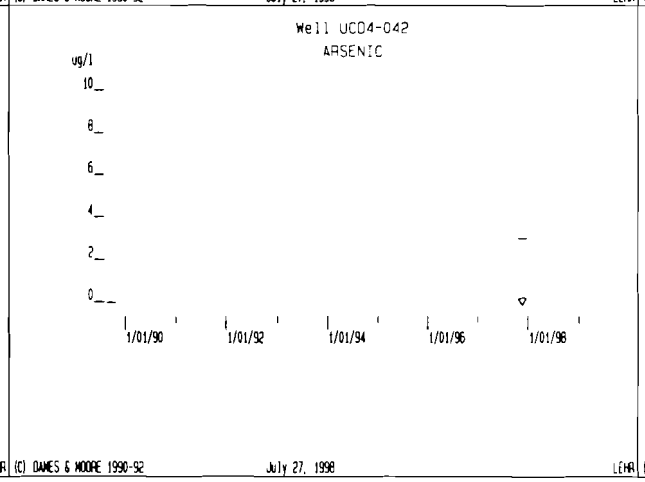
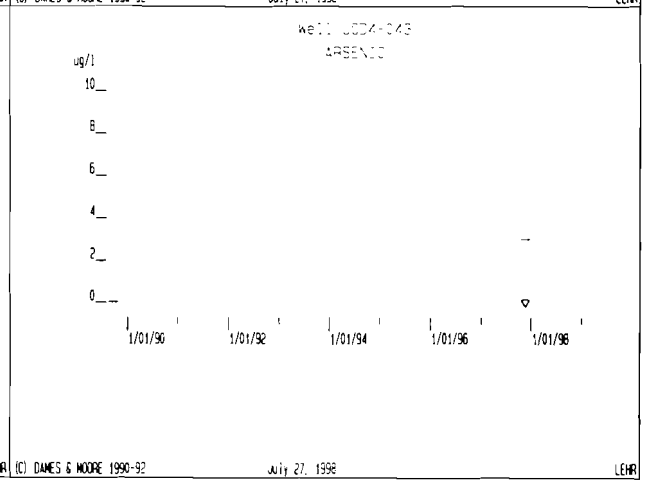
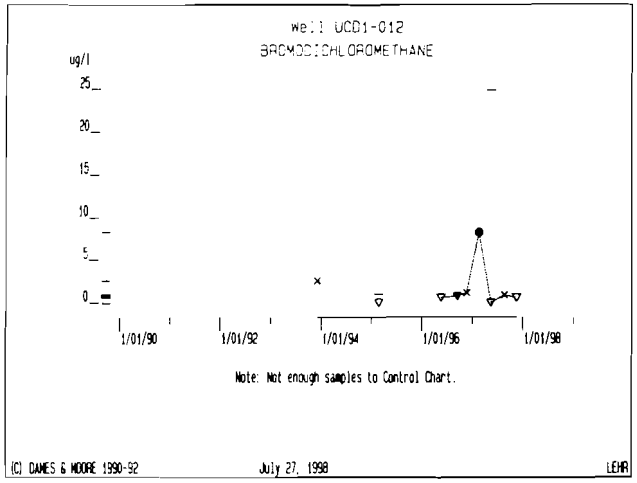
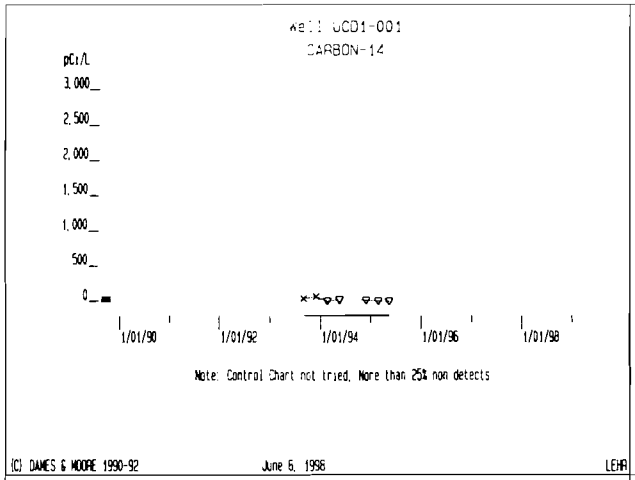
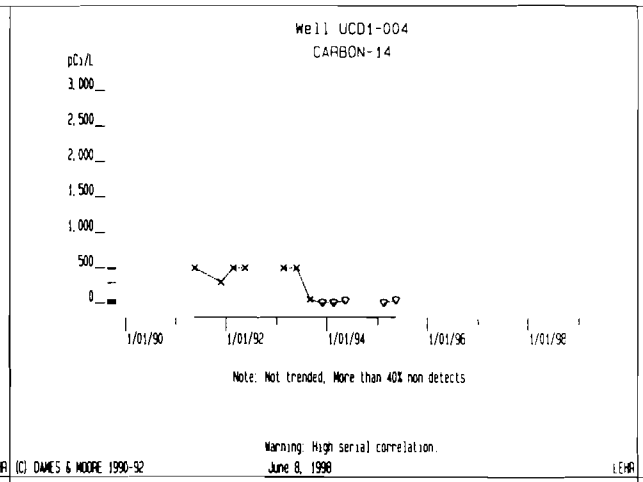
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

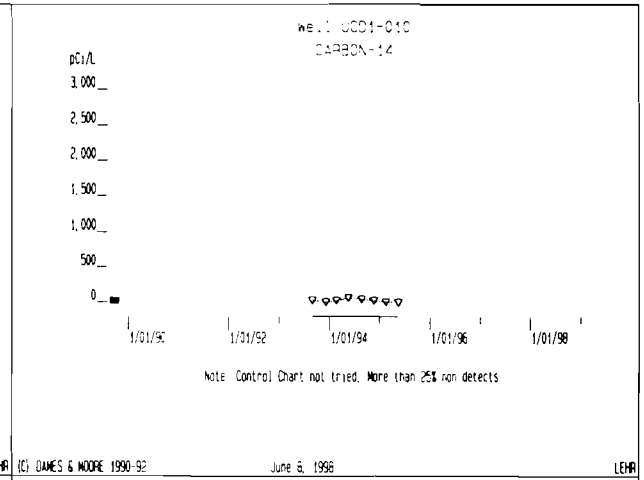

Well UCD4-042
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

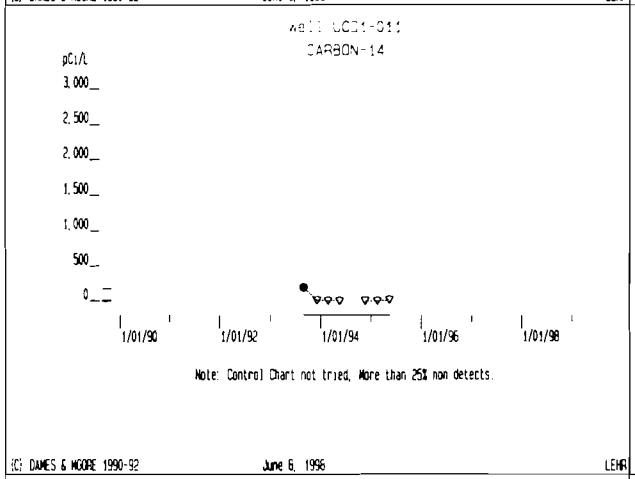

Well UCD4-043
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

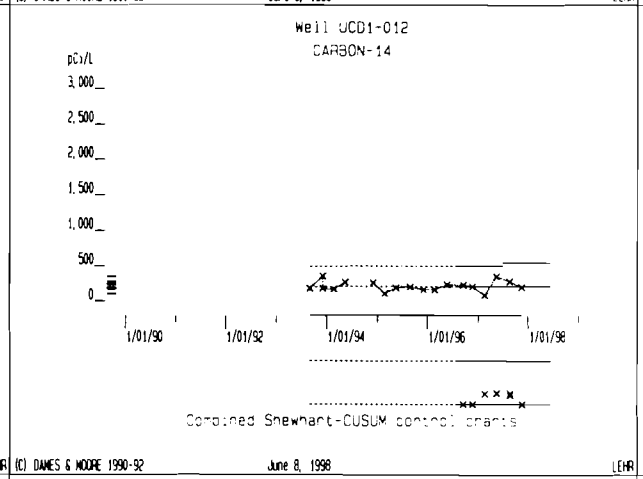

well UCD1-012
BROMODICHLOROMETHANE
ug/l
25
20
15
10
5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

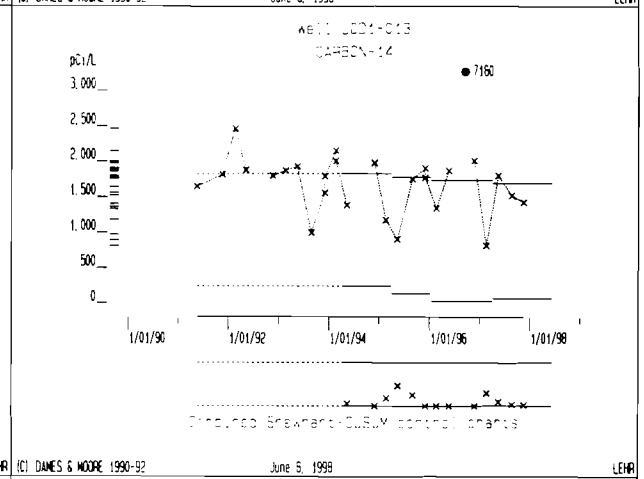

Well UCD1-001
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

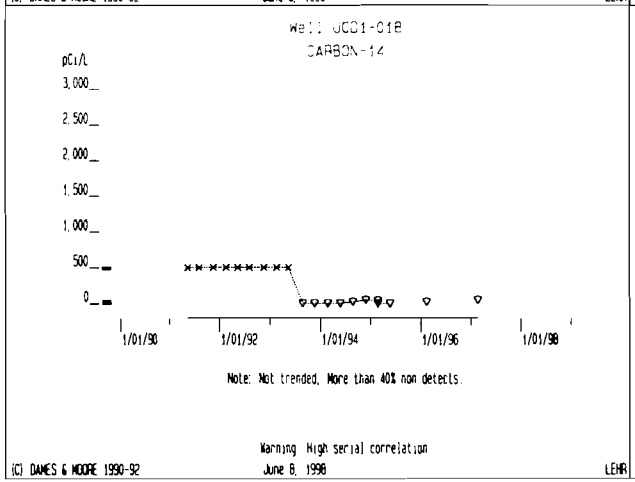

Well UCD1-004
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

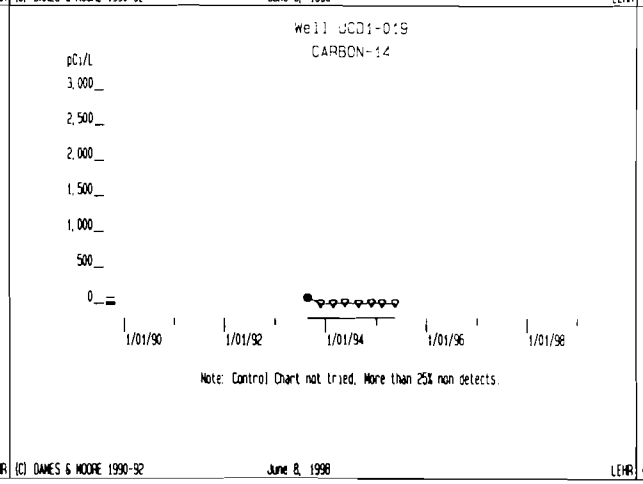

Well UCD1-010
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

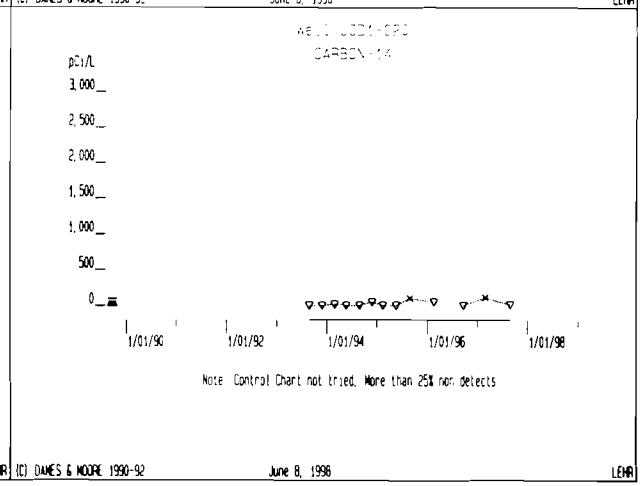

Well UCD1-011
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

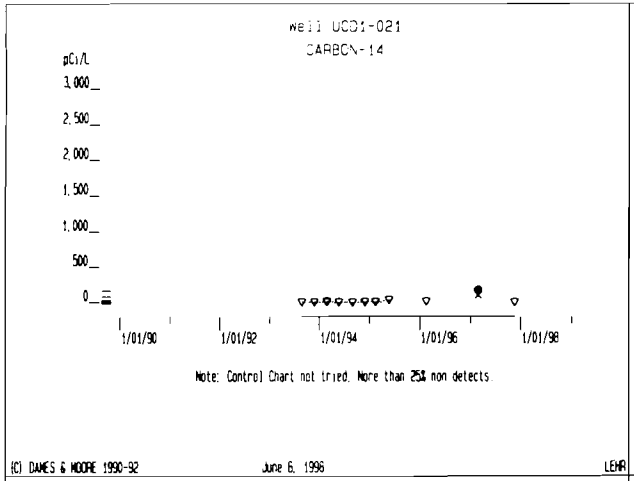

Well UCD1-012
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

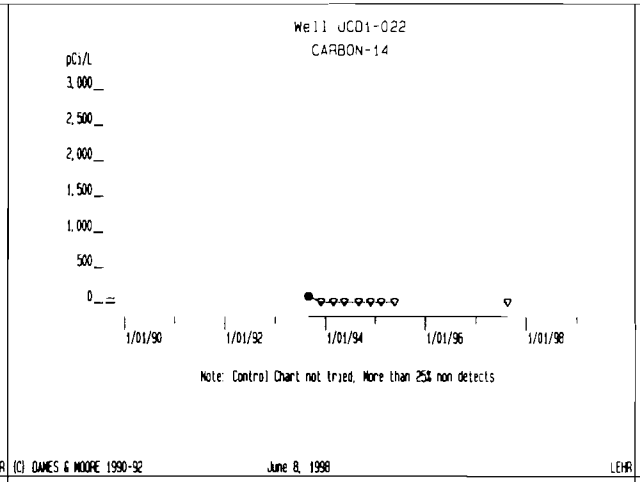

Well UCD1-013
CARBON-14
pCi/L
7160
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

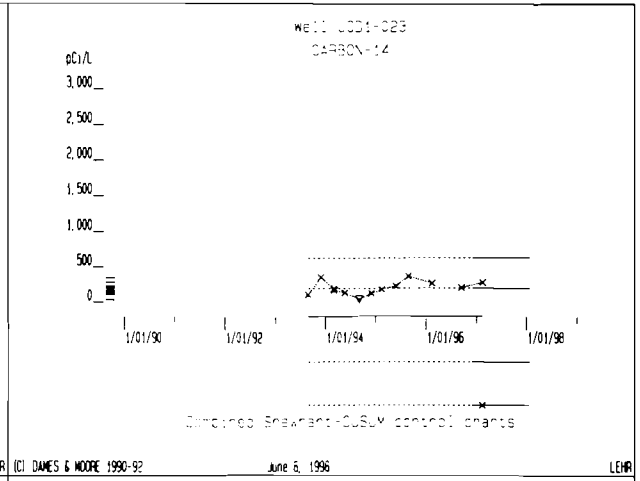

Well UCD1-018
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

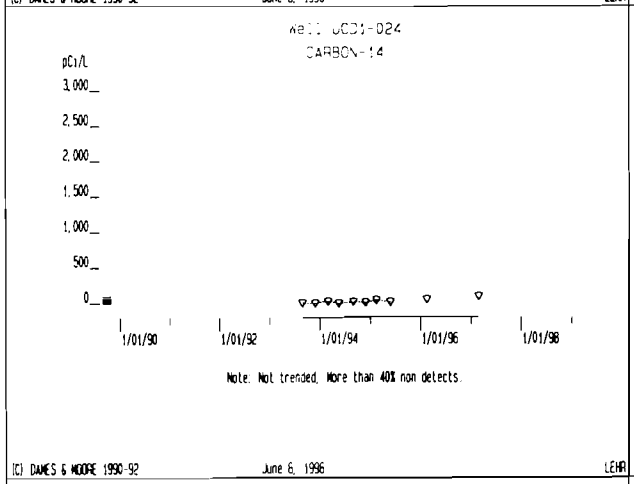

Well UCD1-019
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

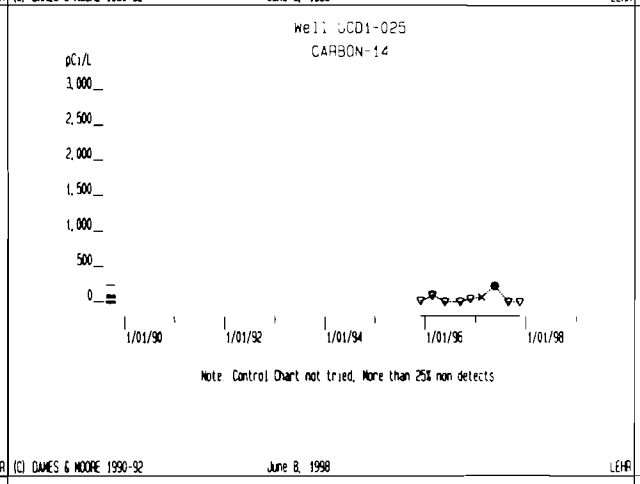

Well UCD1-020
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

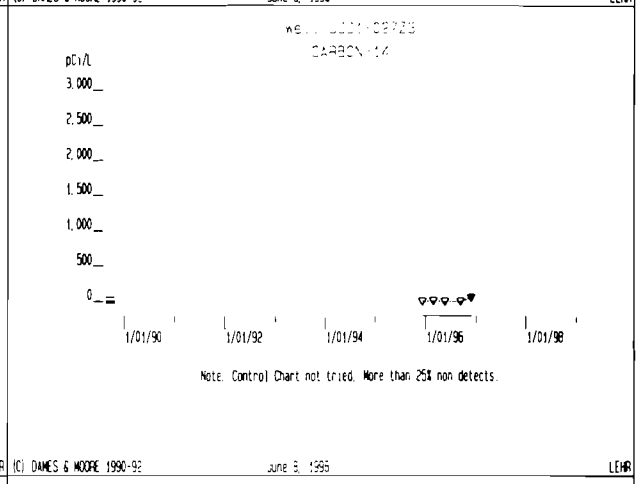

Well UCD1-021
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR

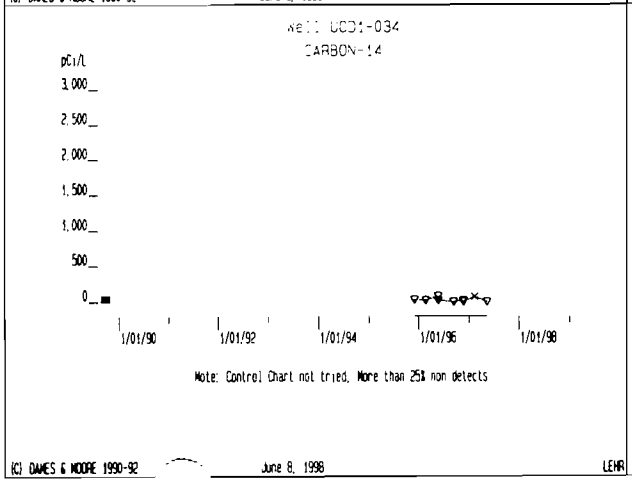

Well UCD1-022
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

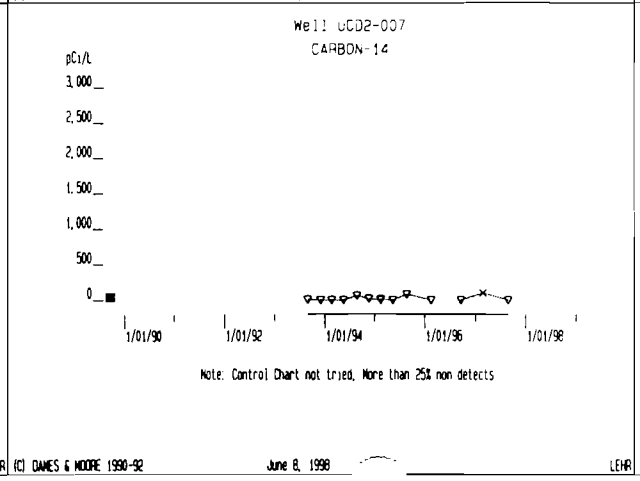

Well UCD1-023
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR

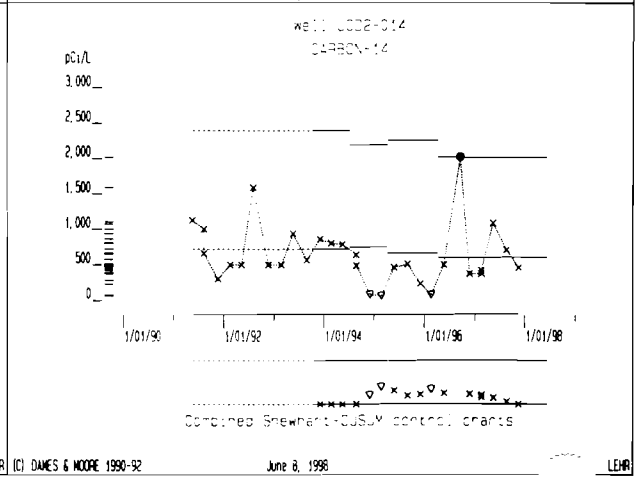

Well UCD1-024
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR

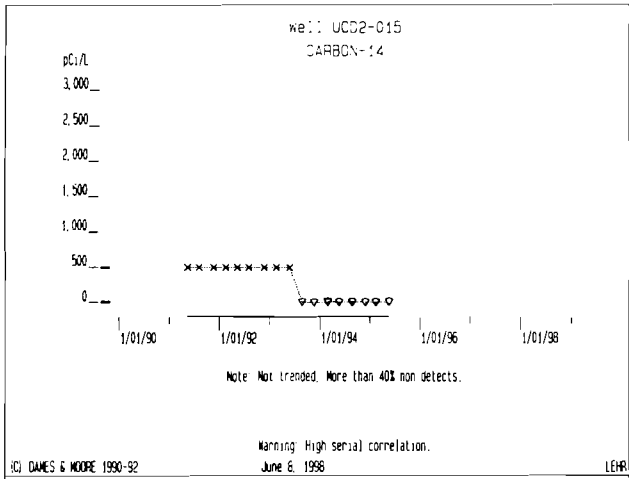

Well UCD1-025
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

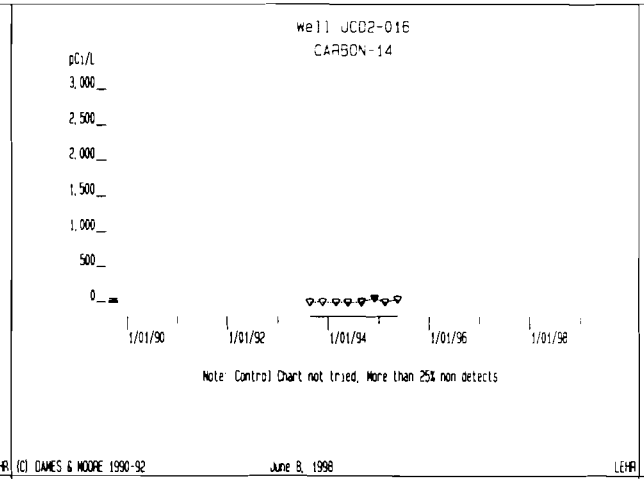

CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR

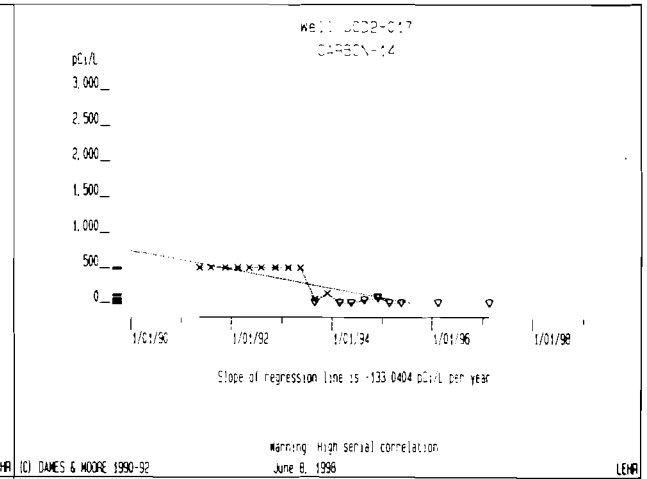

Well UCD1-034
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

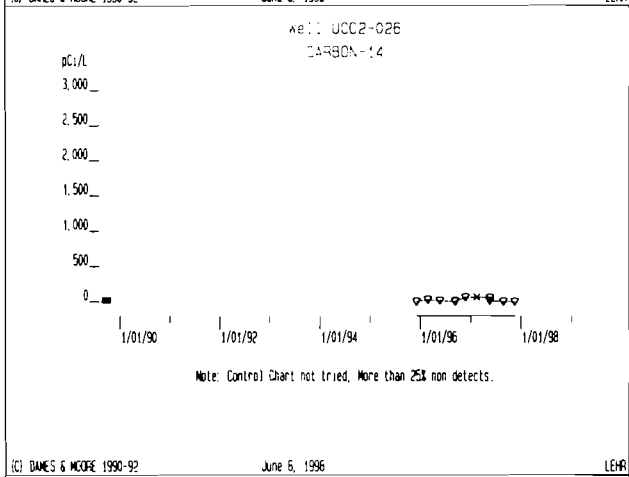

Well UCD2-007
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

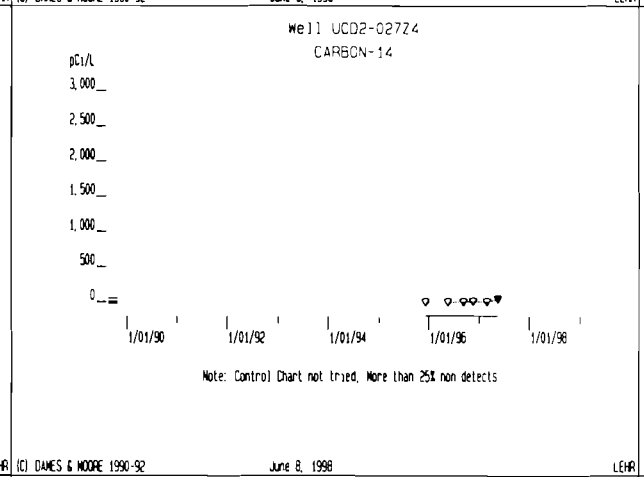

CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

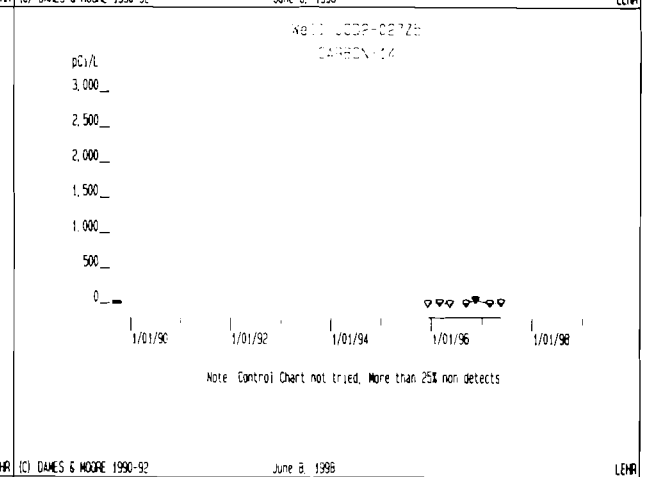

well UCD2-015
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

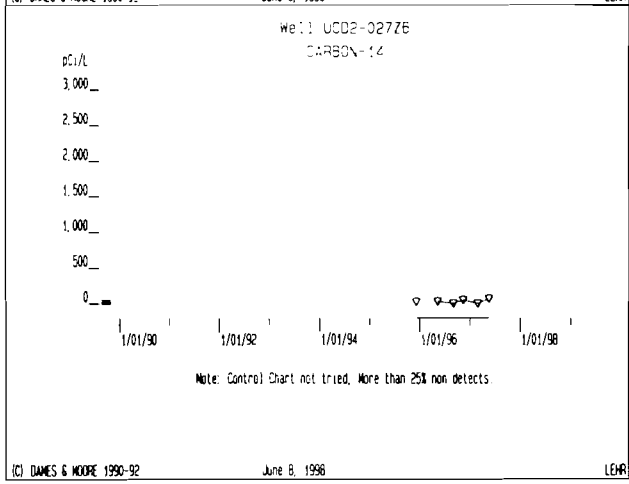

well UCD2-016
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

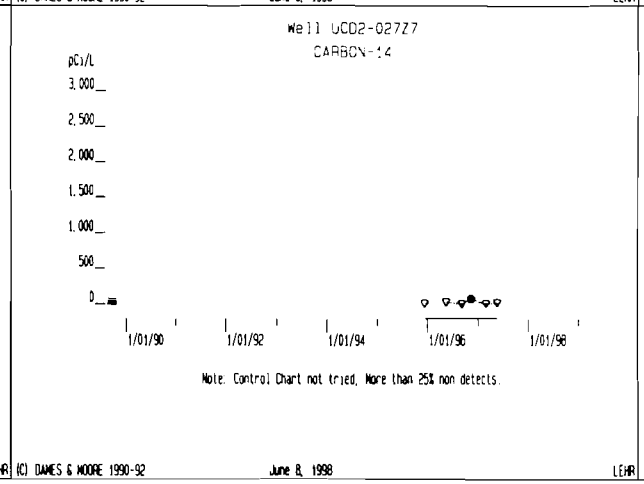

well UCD2-017
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -133.0404 pCi/L per year
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

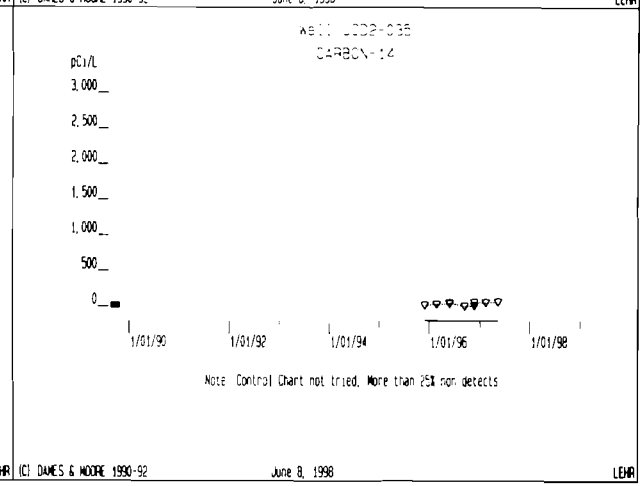

well UCD2-026
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


well UCD2-027Z4
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

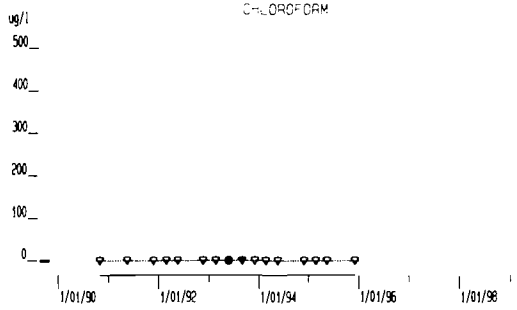

pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


well UCD2-027Z6
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


well UCD2-027Z7
CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


CARBON-14
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

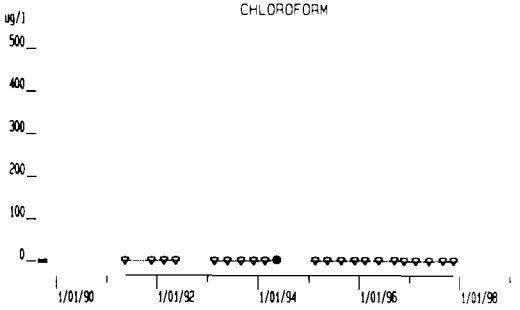
Well UCD1-001
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

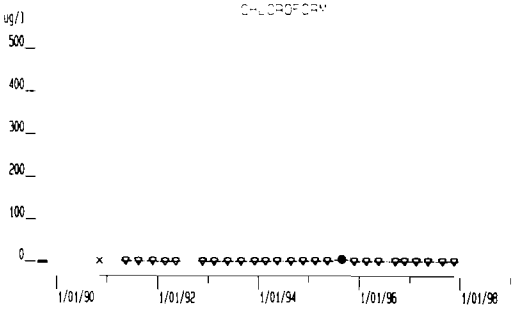
Well UCD1-004
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

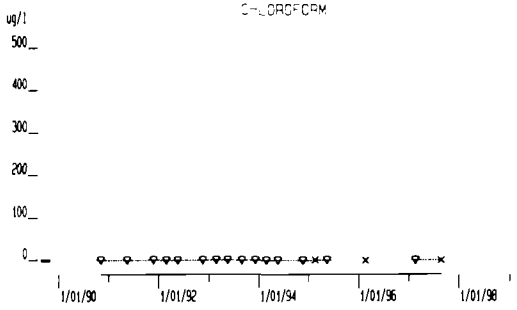
Well UCD1-010
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-011
CHLOROFORM

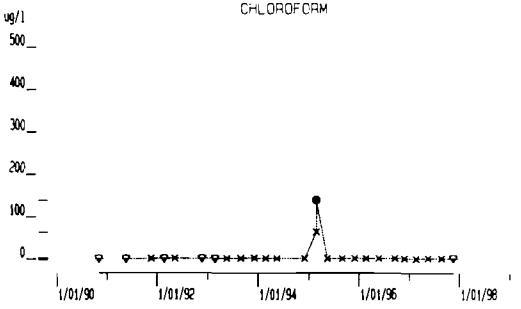


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

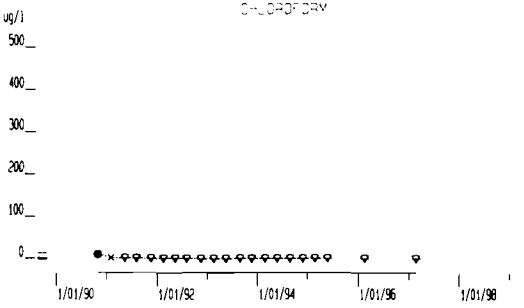
Well UCD1-013
CHLOROFORM



Note: Variability does not appear Gaussian.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

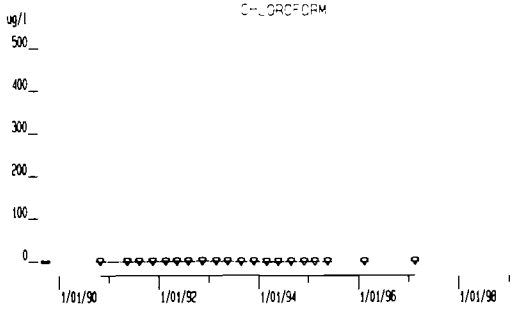
Well UCD1-018
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

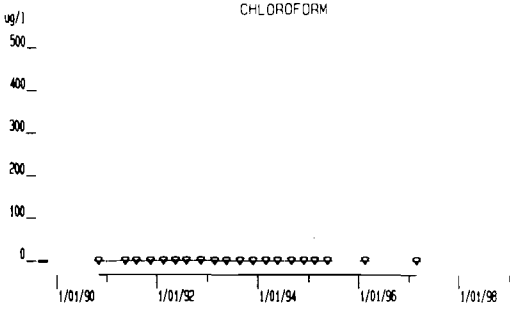
Well UCD1-019
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

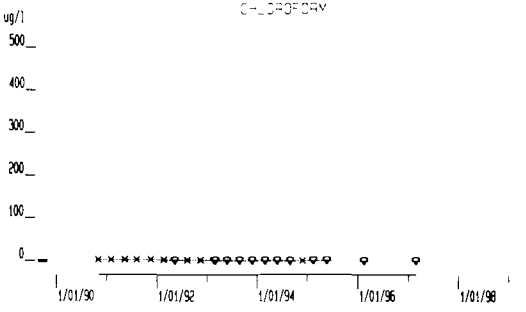
Well UCD1-020
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-021
CHLOROFORM

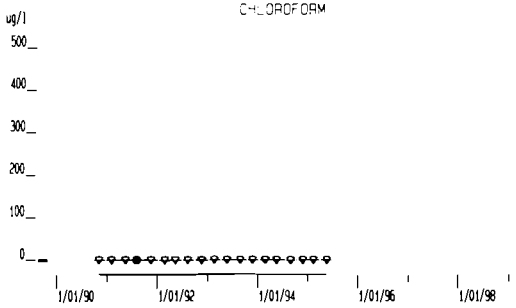


Note: Not trended, More than 40% non detects

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

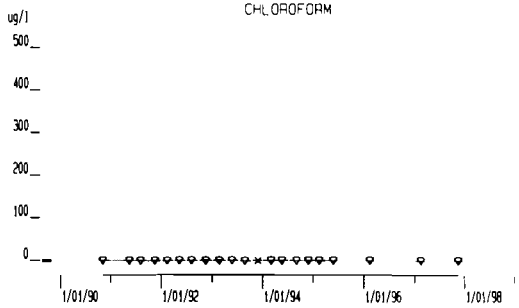
Well UCD1-022
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-023
CHLOROFORM

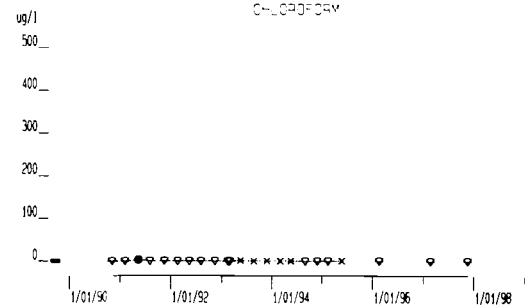


Note: Control Chart not tried, More than 25% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-024
CHLOROFORM

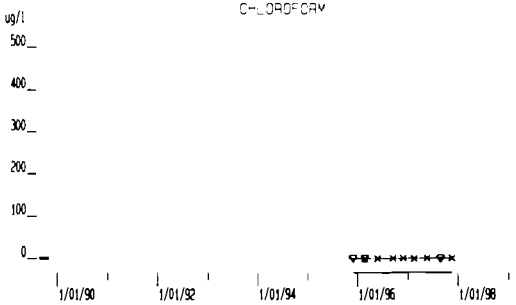


Note: Control Chart not tried, More than 25% non detects

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

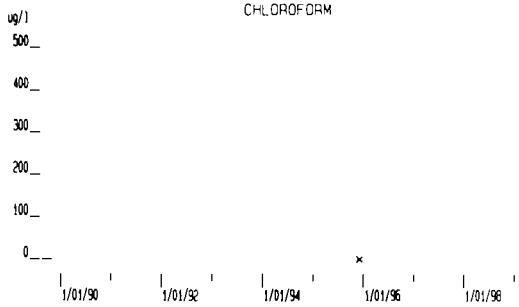
Well UCD1-025
CHLOROFORM



Note: Not enough samples to Control Chart.

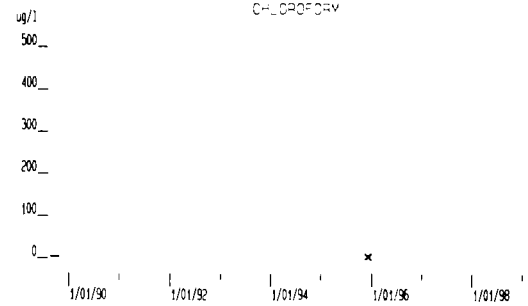
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z1
CHLOROFORM



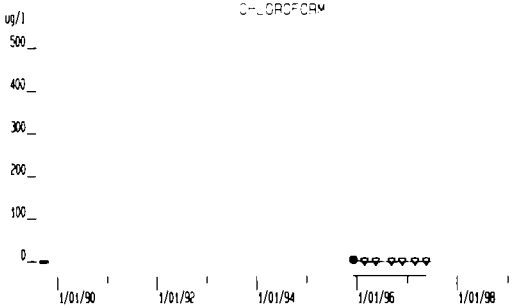
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z2
CHLOROFORM



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

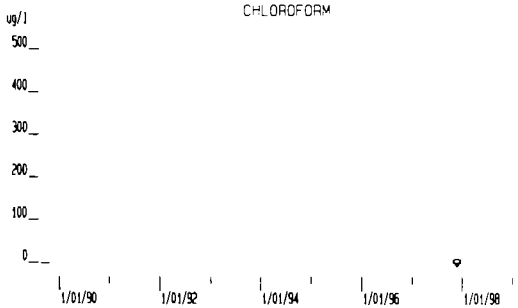
Well UCD1-027Z3
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

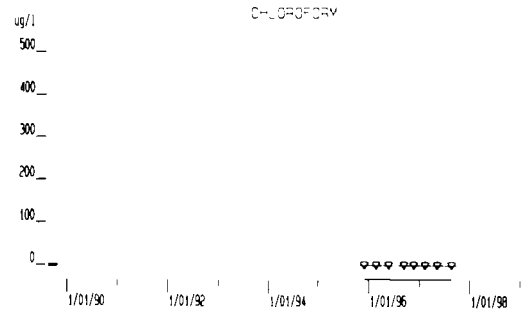
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-028
CHLOROFORM



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

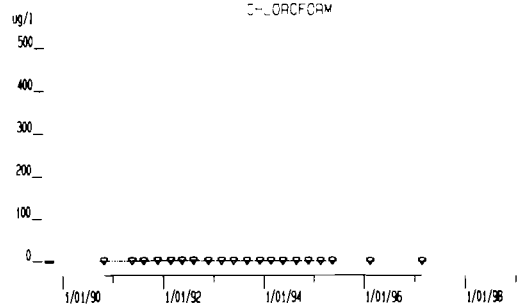
Well UCD1-034
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

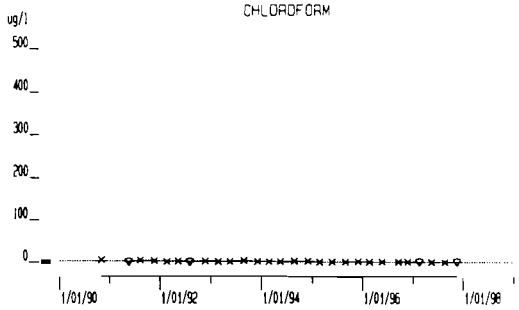
Well UCD2-007
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

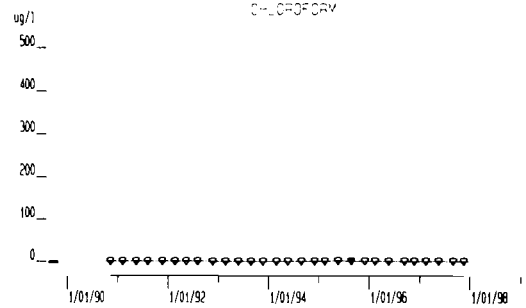
Well UCD2-014
CHLOROFORM



Slope of regression line is -0.3485 ug/l per year

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

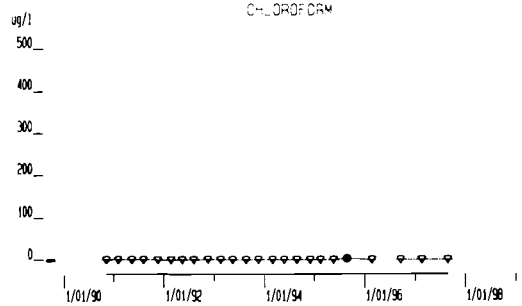
Well UCD2-015
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

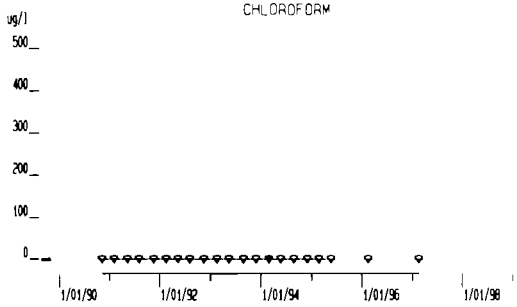
Well UCD2-016
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

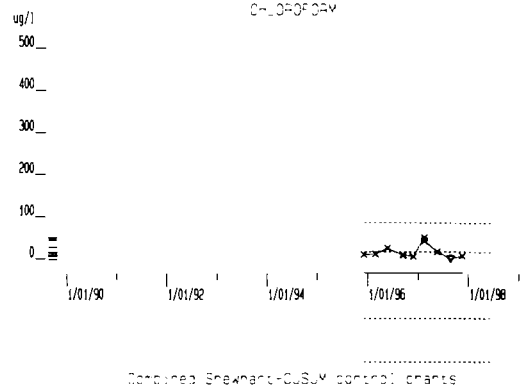
Well UCD2-017
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

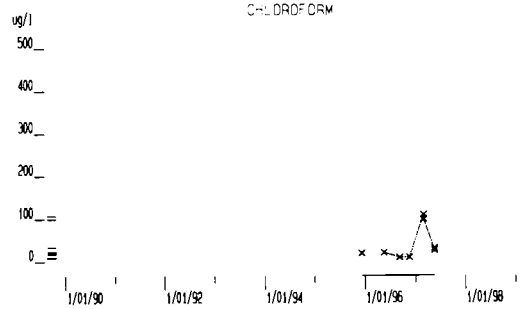
Well UCD2-018
CHLOROFORM



Combined Shewhart-CUSUM control charts

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

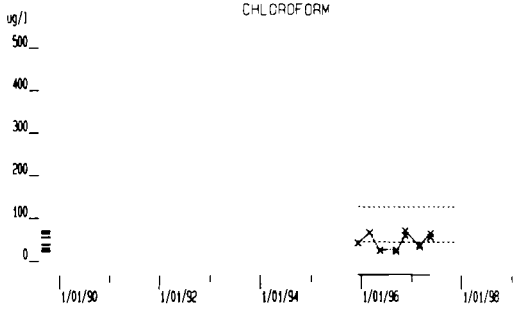
Well UCD2-027Z4
CHLOROFORM



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

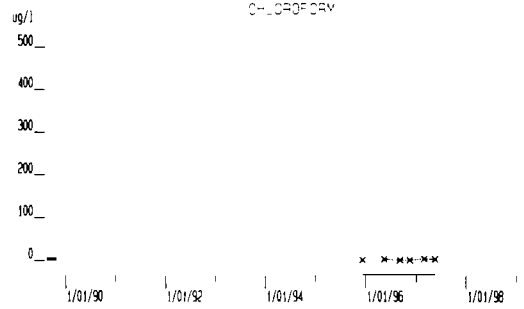
Well UCD2-027Z5
CHLOROFORM



Combined Shewhart-CUSUM control charts

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

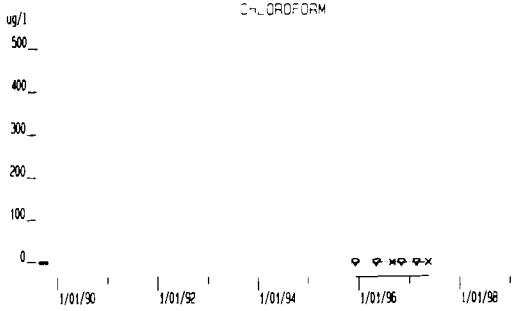
Well UCD2-027Z6
CHLOROFORM



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

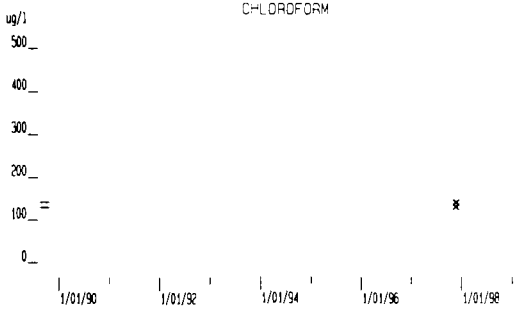
Well UCD2-027Z7
CHLOROFORM



Note: Not enough samples to Control Chart.

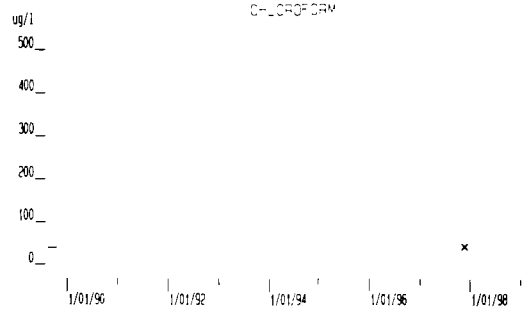
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-029
CHLOROFORM



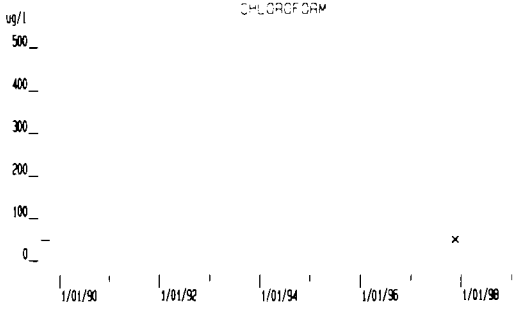
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-030
CHLOROFORM



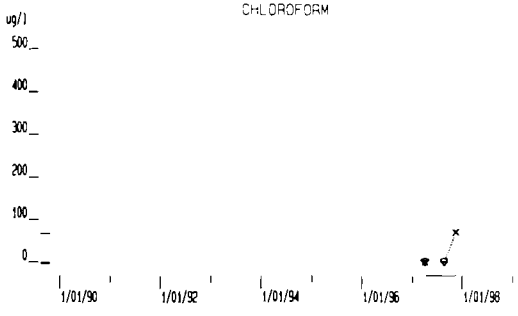
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-031
CHLOROFORM



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

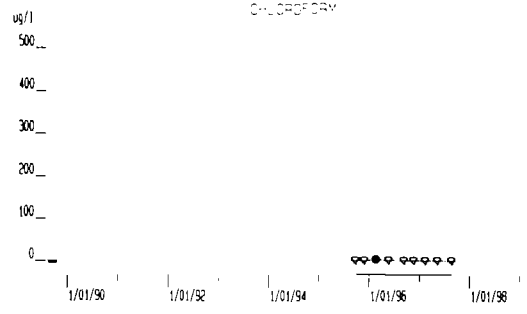
Well UCD2-032
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

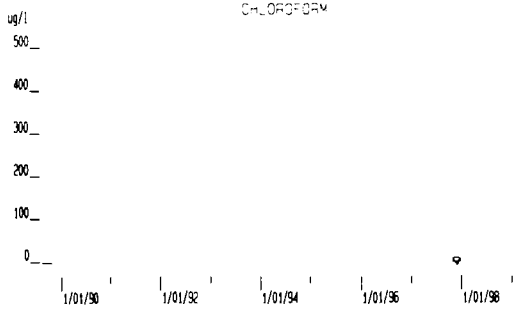
Well UCD2-033
CHLOROFORM



Note: Control Chart not tried, More than 25% non detects.

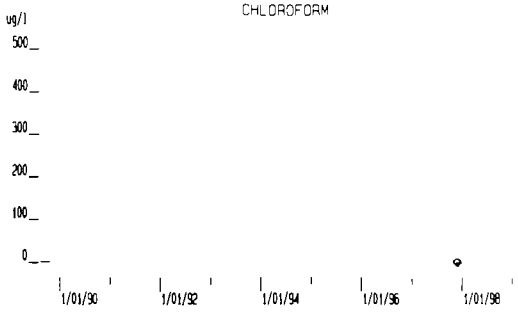
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-036
CHLOROFORM



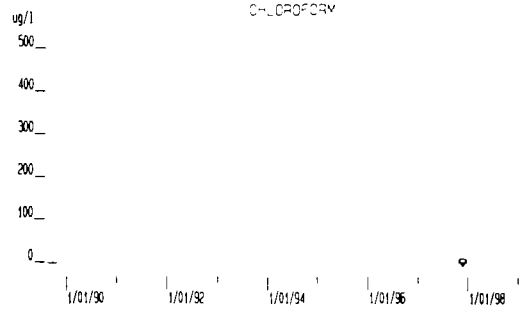
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-037
CHLOROFORM

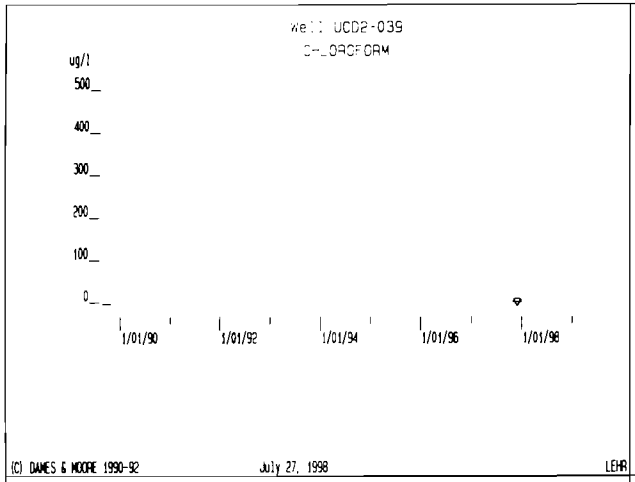


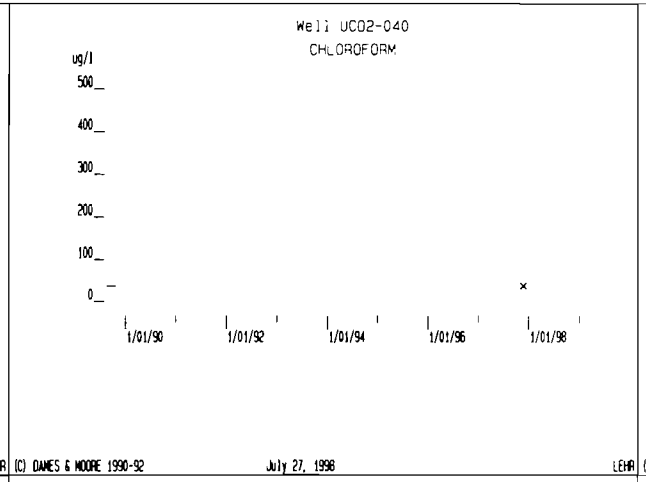
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

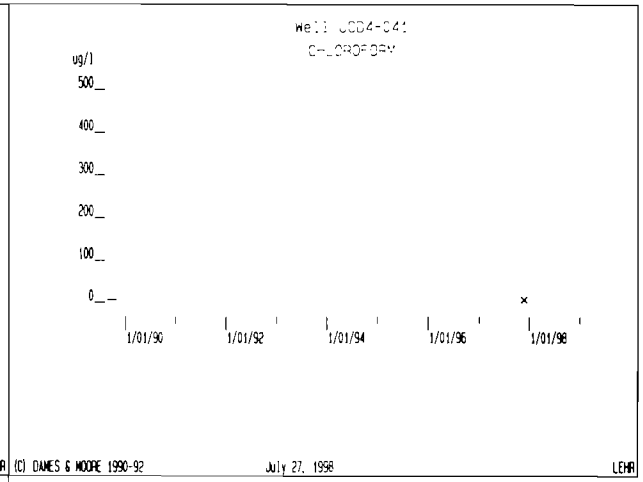
Well UCD2-038
CHLOROFORM

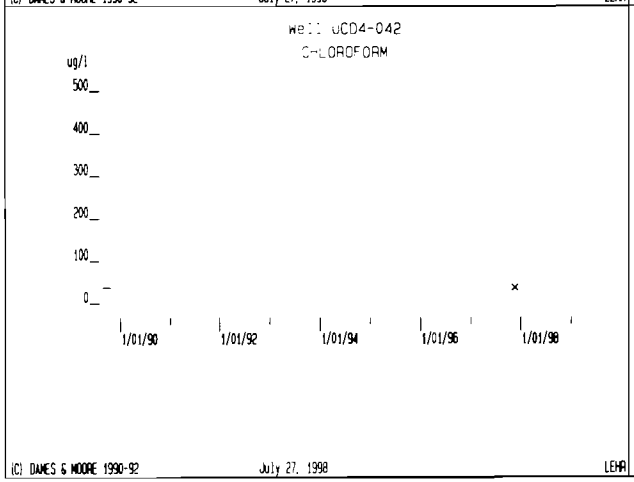


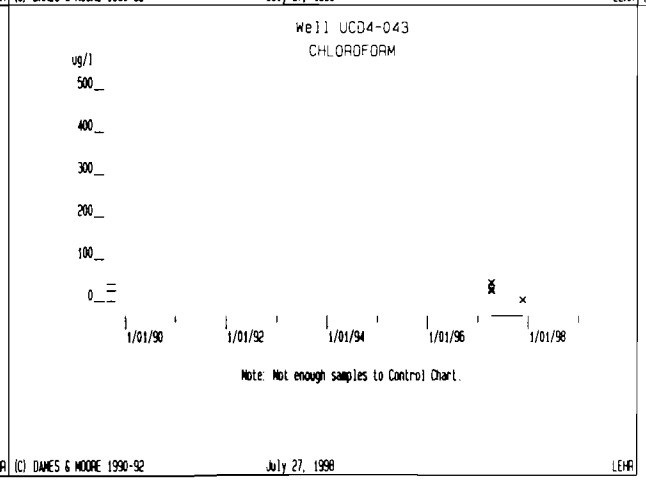
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

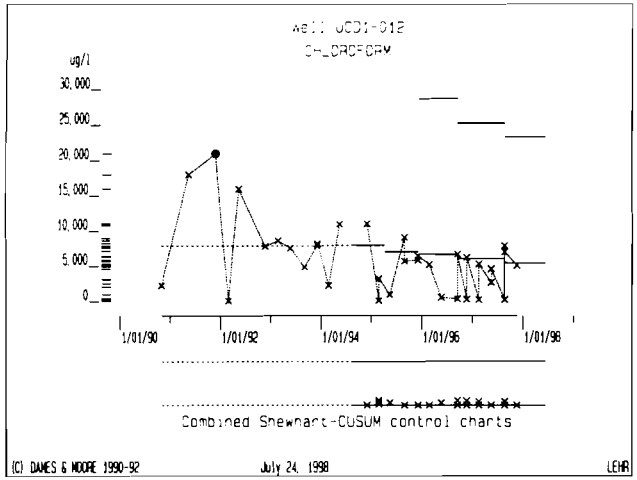

Well UCD2-039
CHLOROFORM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

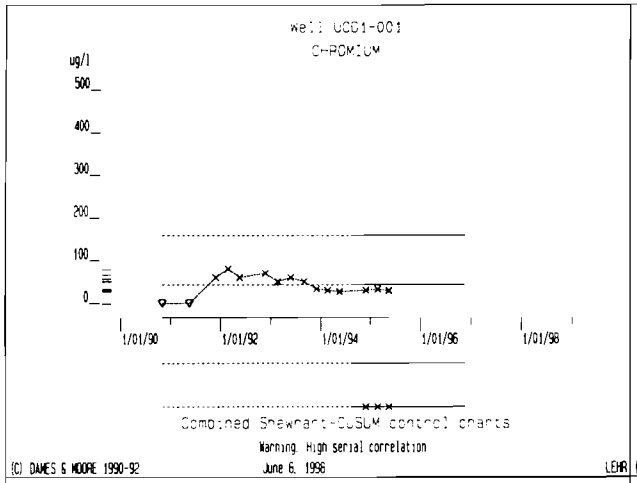

Well UCD2-040
CHLOROFORM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

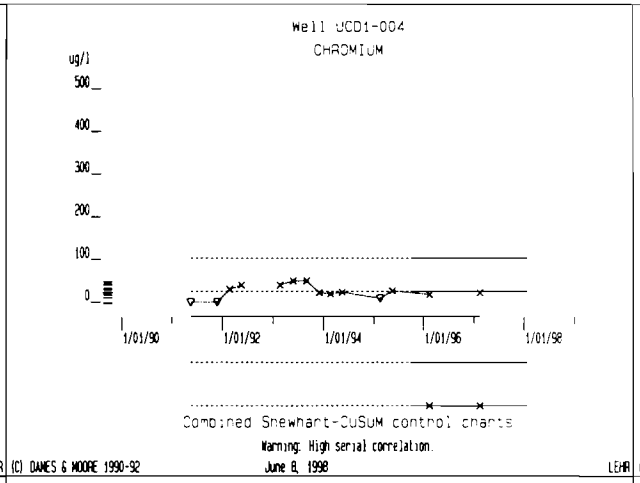

Well UCD4-041
CHLOROFORM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

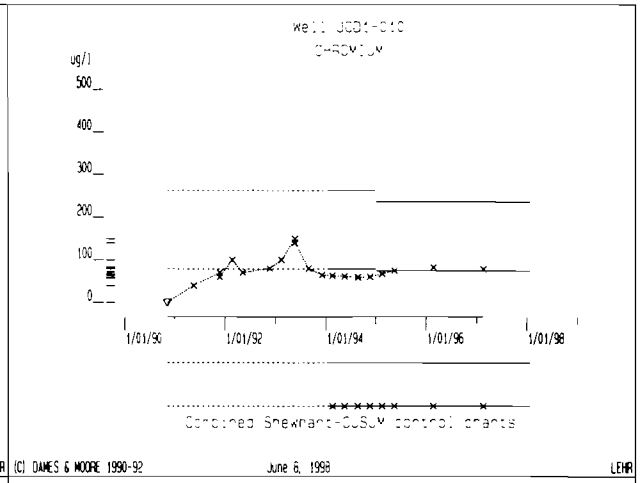

Well UCD4-042
CHLOROFORM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

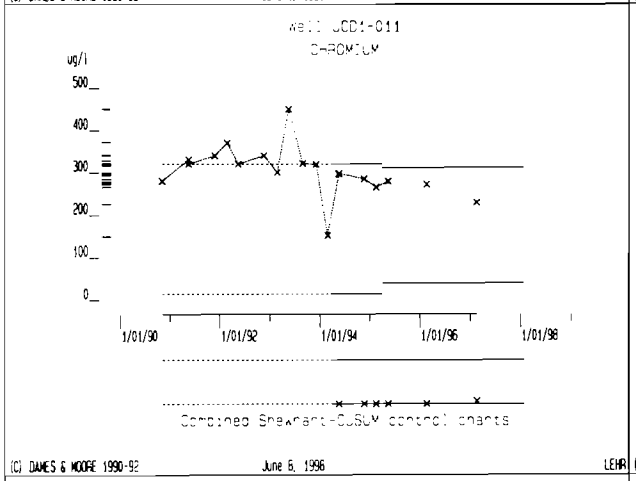

Well UCD4-043
CHLOROFORM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

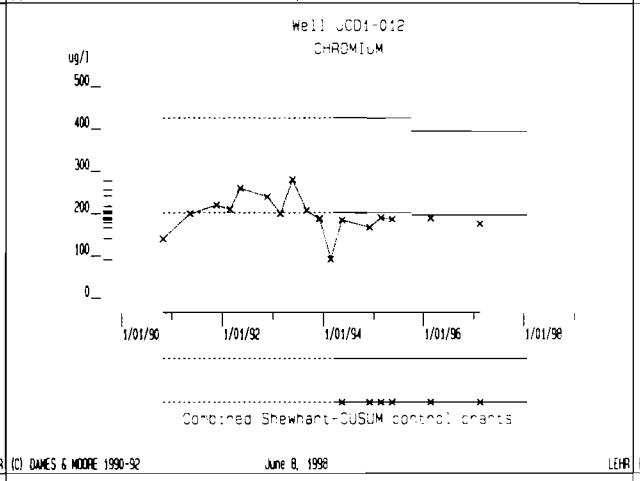

Well UCD1-012
CHLOROFORM
ug/l
30,000
25,000
20,000
15,000
10,000
5,000
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

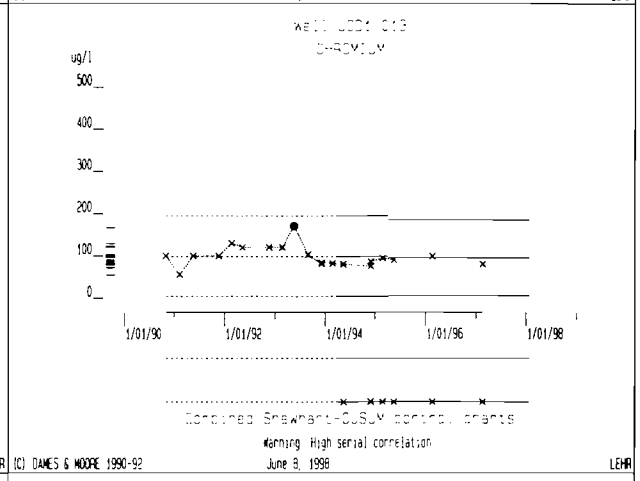

Well UCD1-001
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CuSUM control charts
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR


Well UCD1-004
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CuSUM control charts
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CuSUM control charts
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR


Well UCD1-011
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CuSUM control charts
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR


Well UCD1-012
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CuSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


ug/l
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400
300
200
100
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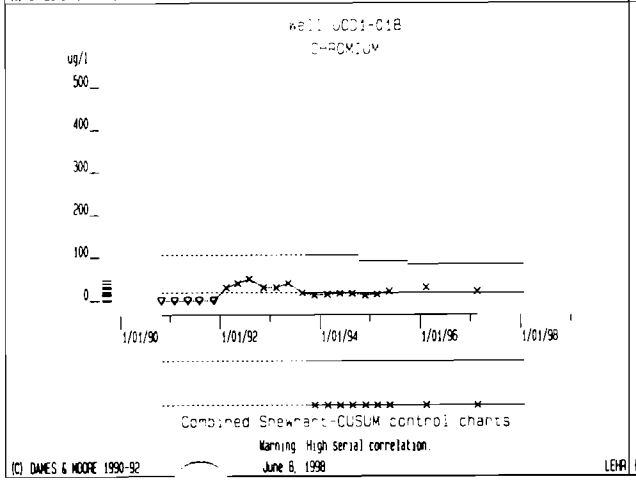
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD1-018
CHROMIUM
ug/l
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400
300
200
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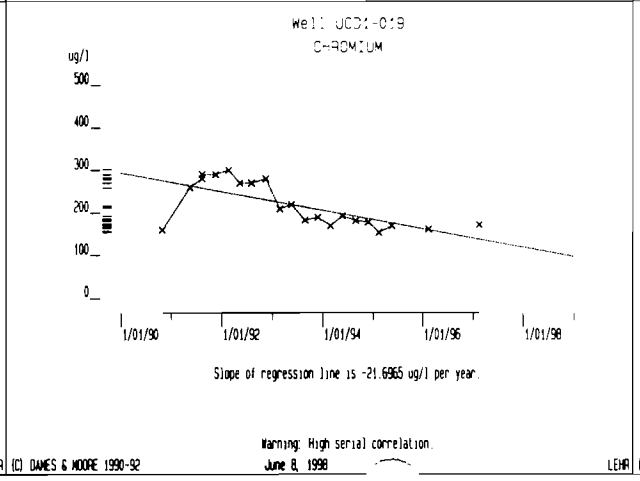
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR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CHROMIUM
ug/l
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200
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1/01/90
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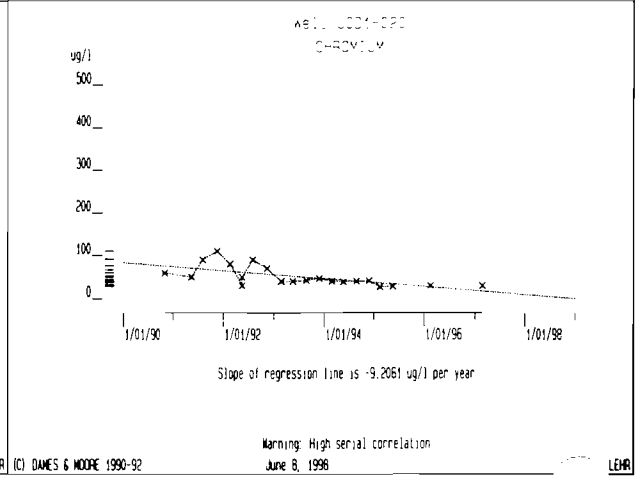
1/01/94
1/01/96
1/01/98
Slope of regression line is -21.6965 ug/l per year.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


ug/l
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200
100
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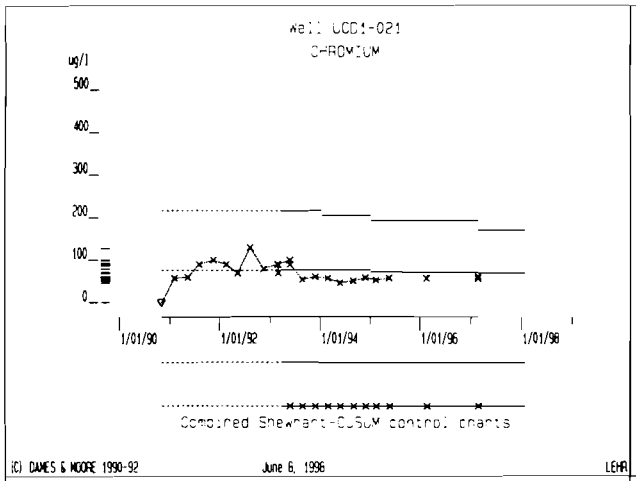
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -9.2061 ug/l per year
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR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CHROMIUM
ug/l
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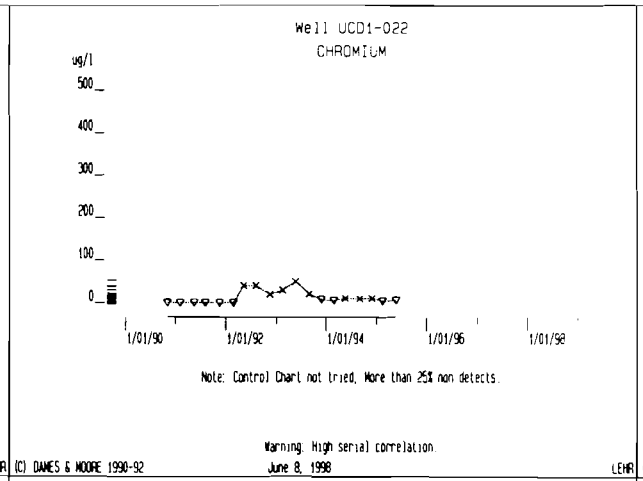
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR


Well UCD1-022
CHROMIUM
ug/l
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400
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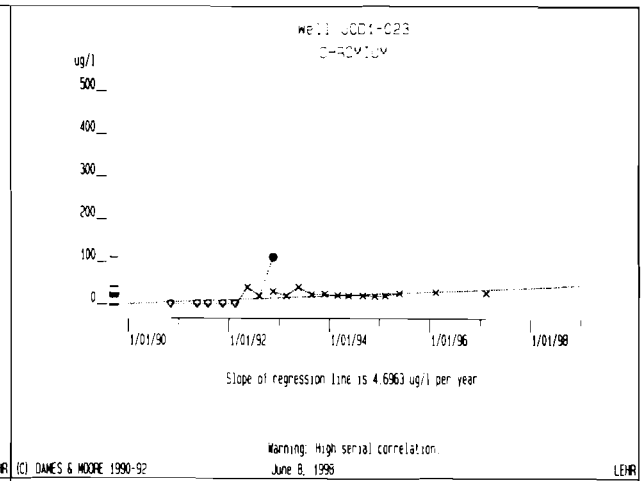
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR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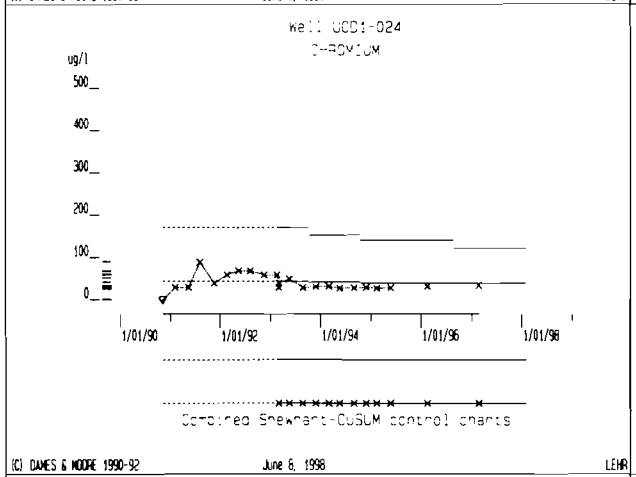
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is 4.6963 ug/l per year
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD1-024
CHROMIUM
ug/l
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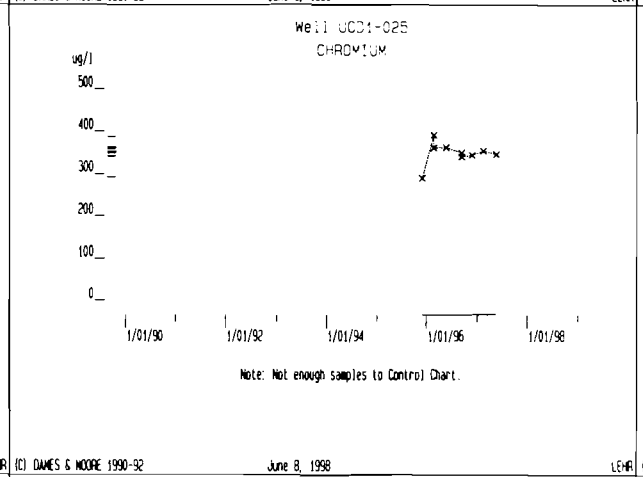
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR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CHROMIUM
ug/l
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400
300
200
100
0
1/01/90
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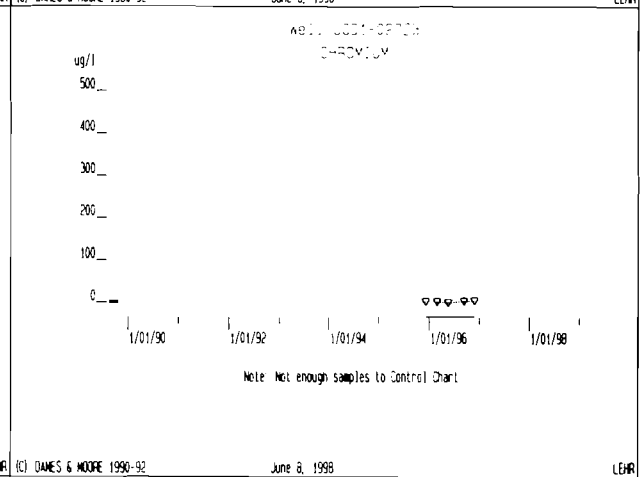
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


CHROMIUM
ug/l
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400
300
200
100
0
1/01/90
1/01/92
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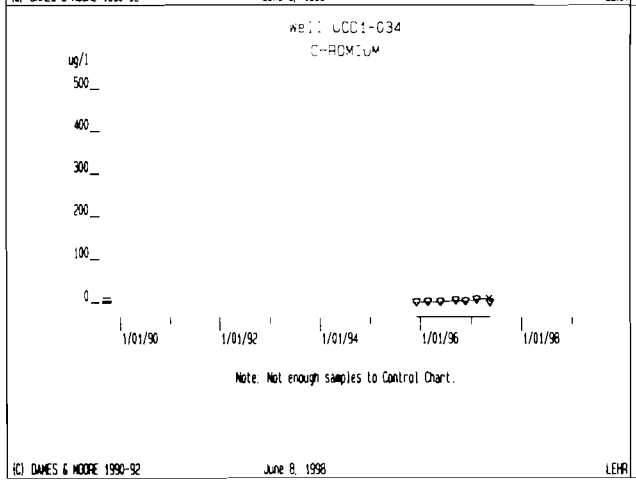
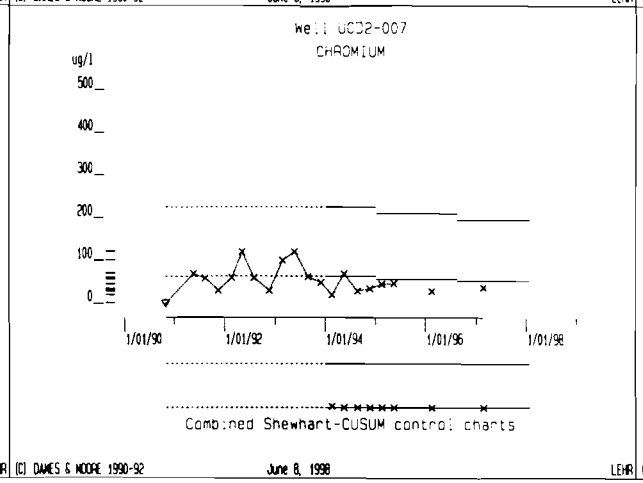
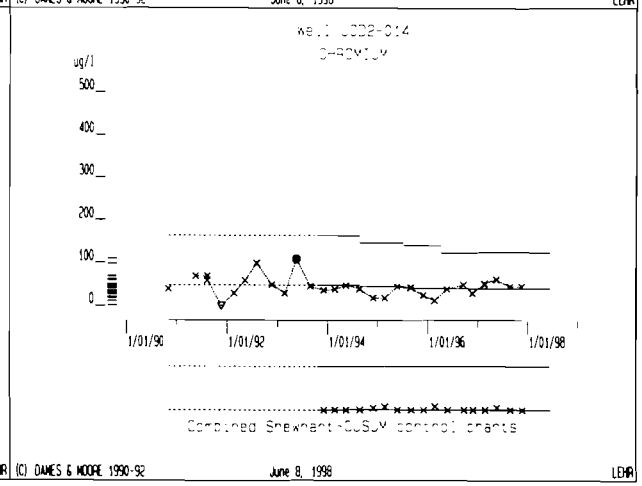
1/01/96
1/01/98
Note: Not enough samples to Control Chart
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD1-034
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD2-007
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


CHROMIUM
ug/l
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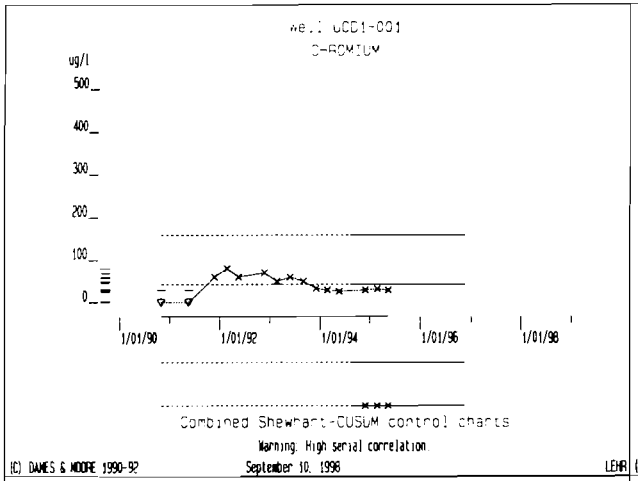
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


well UCD1-001
CHROMIUM
ug/l
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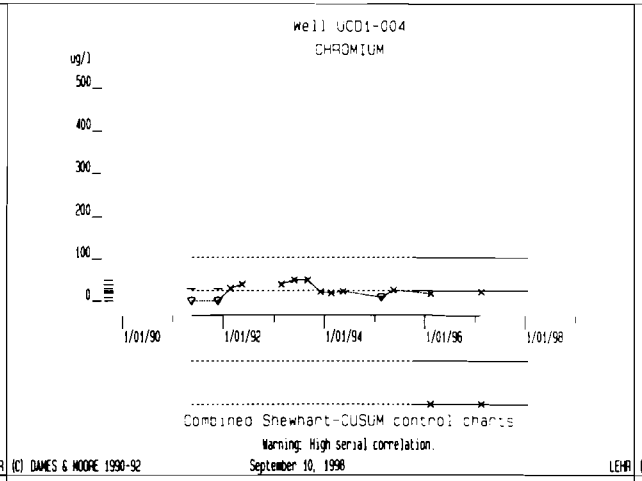
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR


Well UCD1-004
CHROMIUM
ug/l
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400
300
200
100
0
1/01/90
1/01/92
1/01/94
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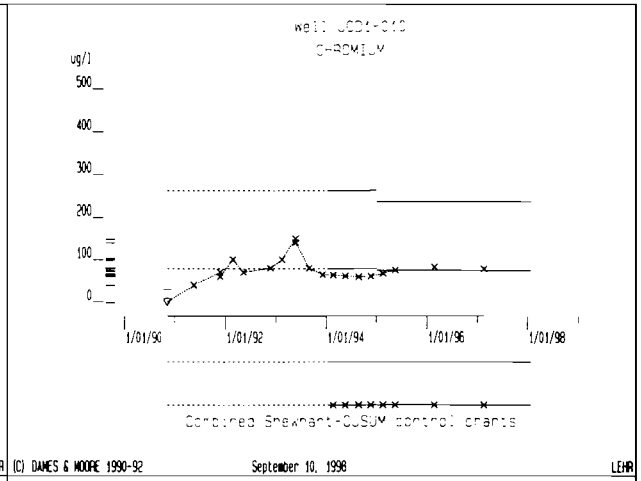
Combined Shewhart-CUSUM control charts
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR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CHROMIUM
ug/l
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1/01/90
1/01/92
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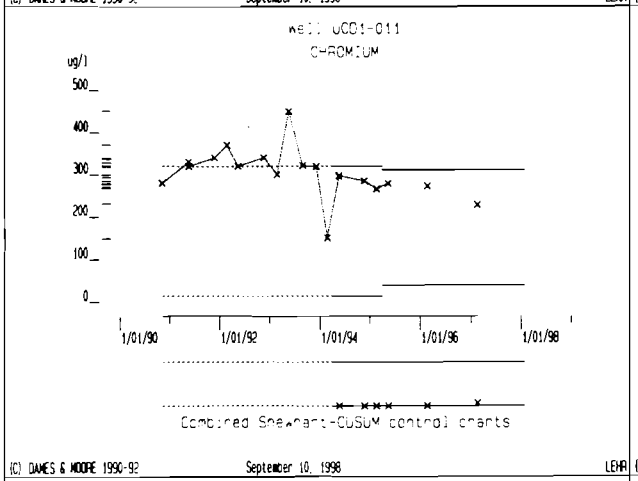
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR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CHROMIUM
ug/l
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200
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1/01/90
1/01/92
1/01/94
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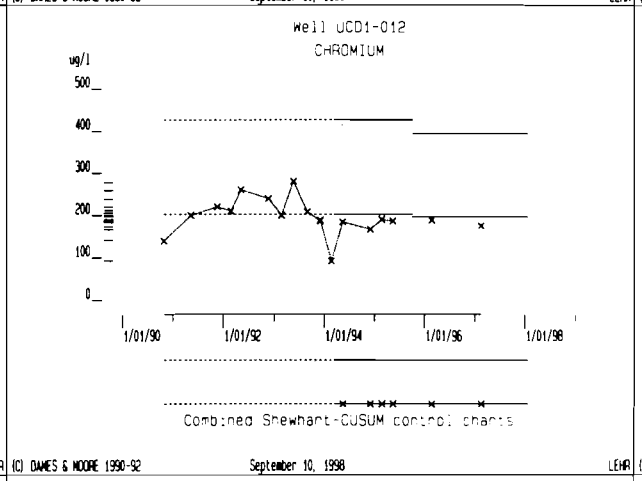
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR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ug/l
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200
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1/01/92
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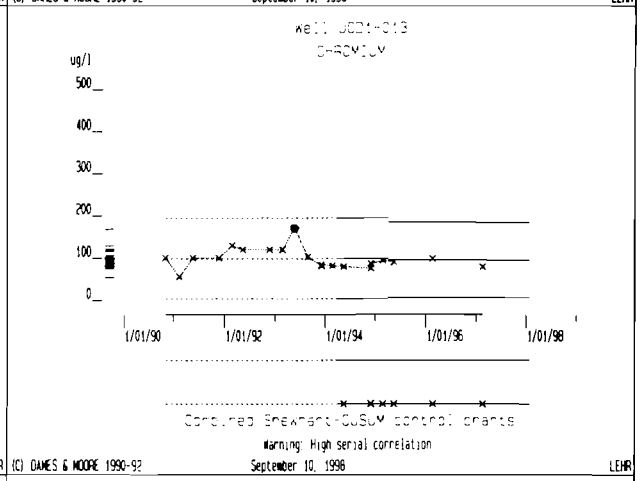
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR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CHROMIUM
ug/l
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1/01/90
1/01/92
1/01/94
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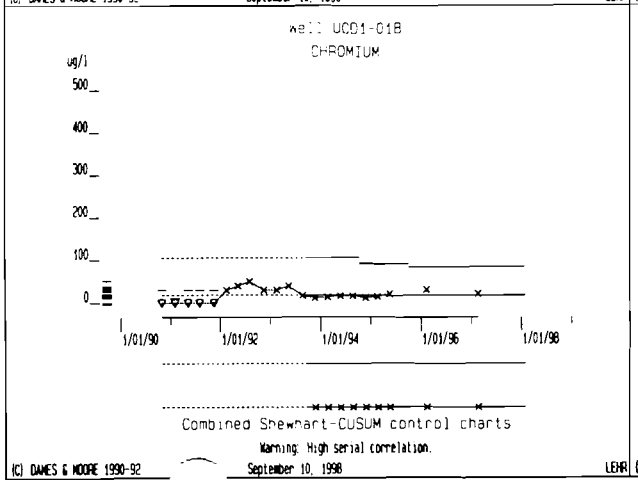
1/01/98
Combined Shewhart-CUSUM control charts
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR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CHROMIUM
ug/l
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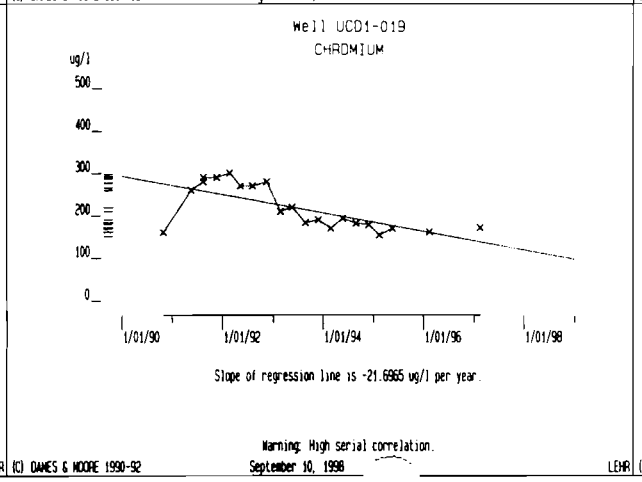
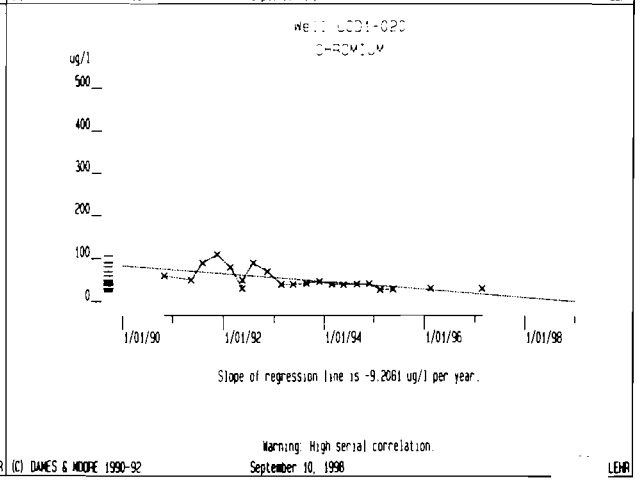
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR


Well UCD1-019
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -21.6965 ug/l per year.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR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CHROMIUM
ug/l
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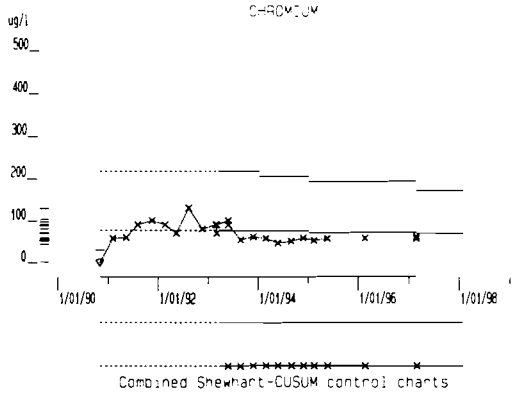
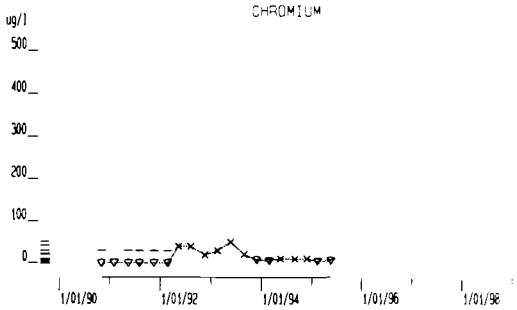
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -9.2061 ug/l per year.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

Well UCD1-021
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-022
CHROMIUM

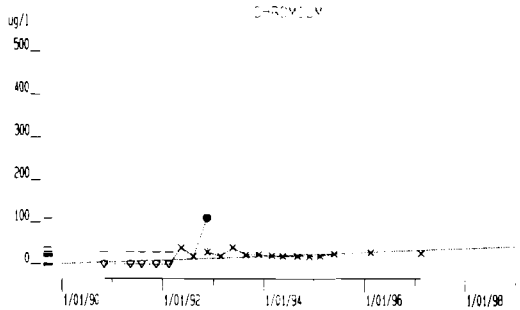


Note. Control Chart not tried, More than 25% non detects.

Warning. High serial correlation.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-023
CHROMIUM

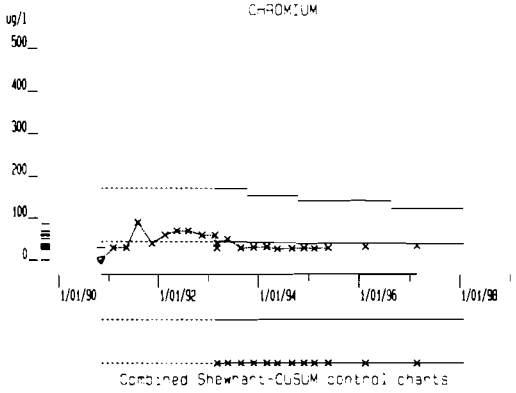


Slope of regression line is 4.6963 ug/l per year

Warning. High serial correlation.

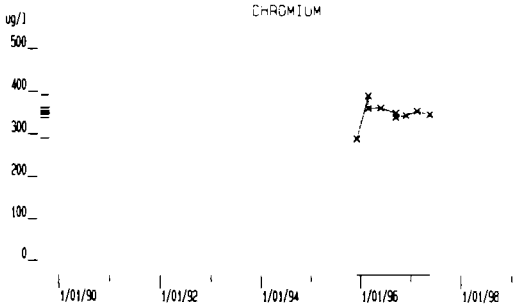
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-024
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

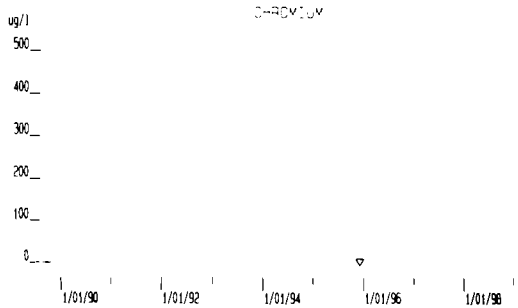
Well UCD1-025
CHROMIUM



Note: Not enough samples to Control Chart.

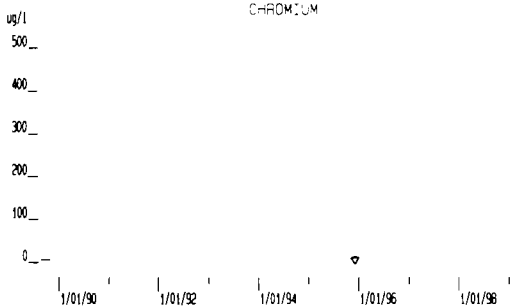
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z1
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z2
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z3
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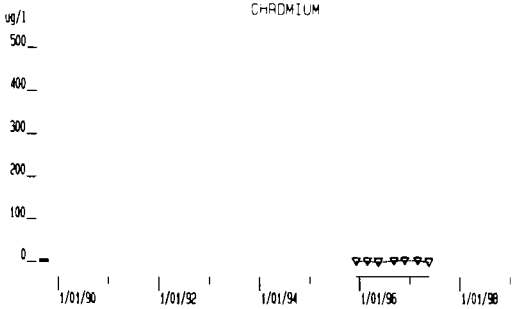
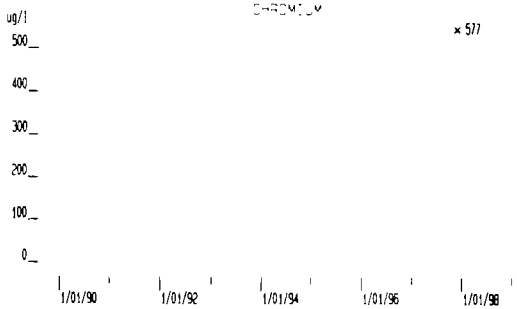


Note: Not enough samples to Control Chart.

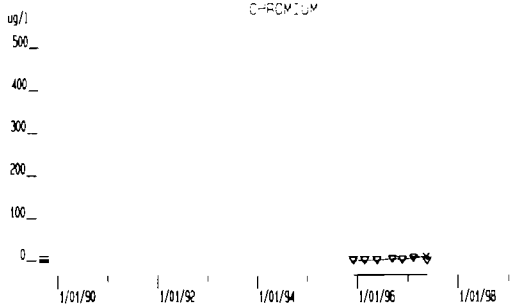
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-028
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

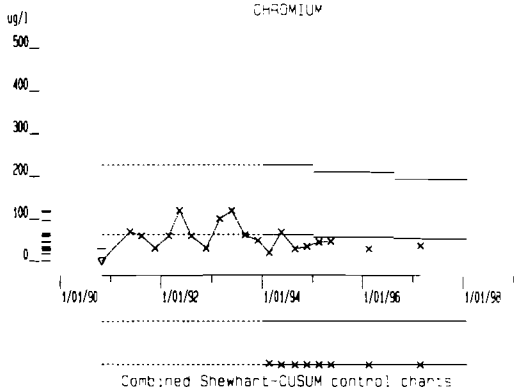
Well UCD1-034
CHROMIUM



Note: Not enough samples to Control Chart.

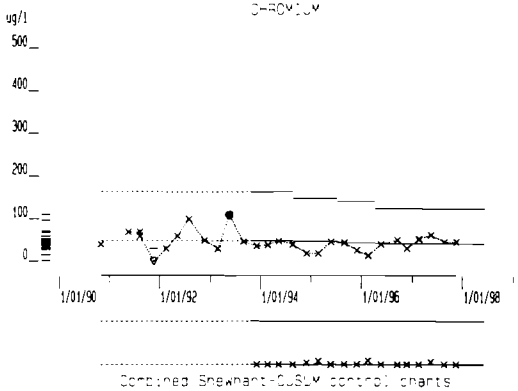
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-007
CHROMIUM



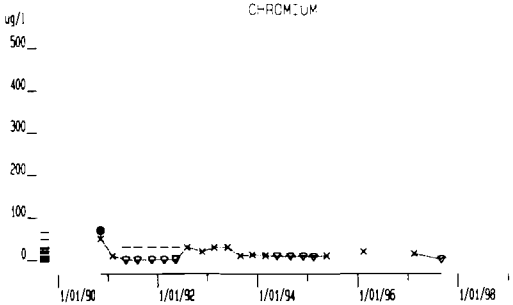
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-014
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

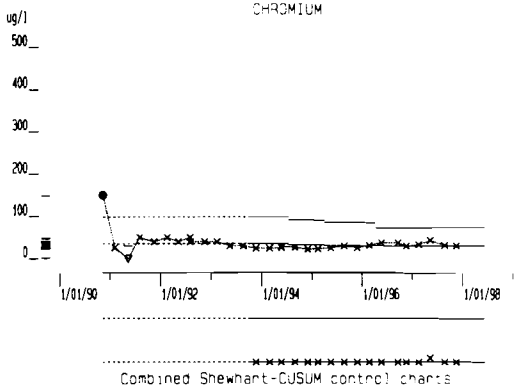
Well UCD2-015
CHROMIUM



Note: Control Chart not tried, More than 25% non detects.

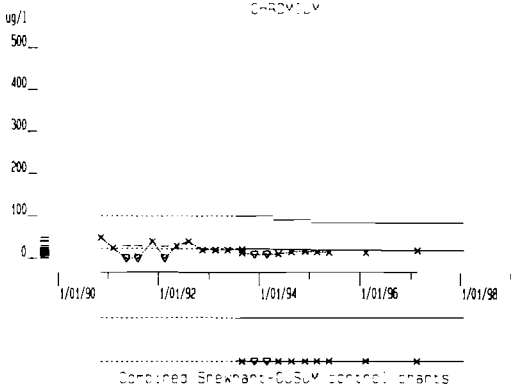
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-016
CHROMIUM



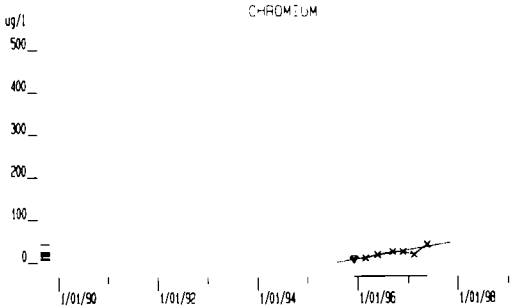
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-017
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

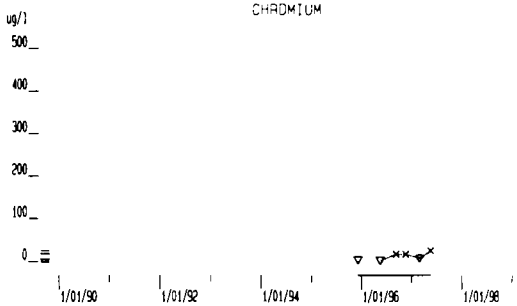
Well UCD2-026
CHROMIUM



Slope of regression line is 20.3071 ug/l per year.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

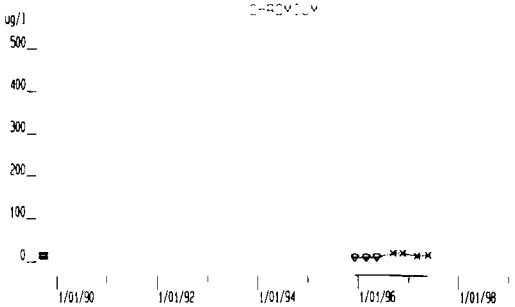
Well UCD2-027Z4
CHROMIUM



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

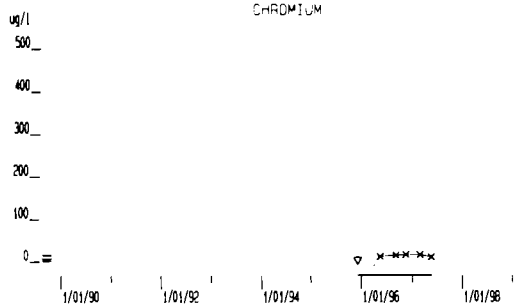
Well UCD2-027Z5
CHROMIUM



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

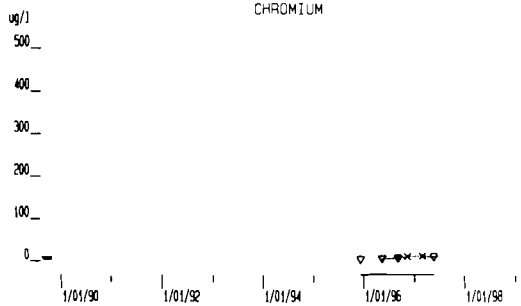
Well UCD2-027Z6
CHROMIUM



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

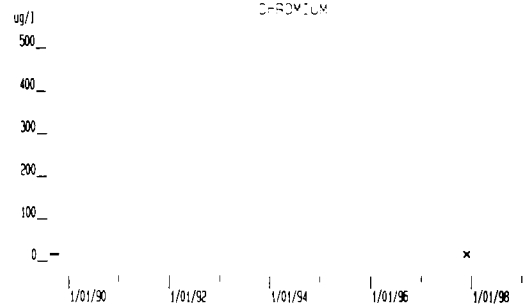
Well UCD2-027Z7
CHROMIUM



Note: Not enough samples to Control Chart.

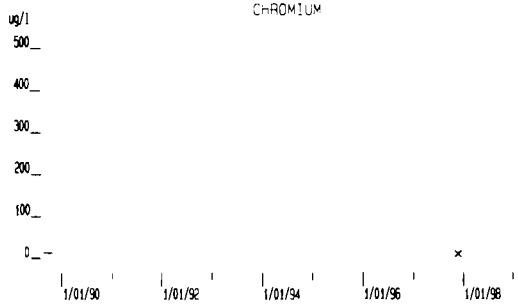
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-029
CHROMIUM



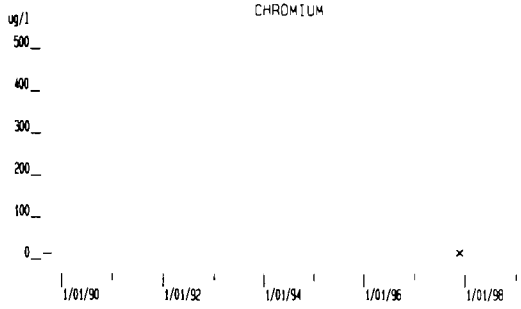
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-030
CHROMIUM



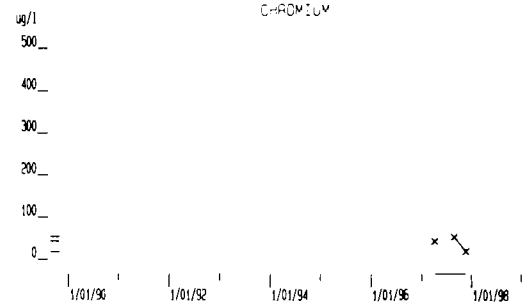
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-031
CHROMIUM



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

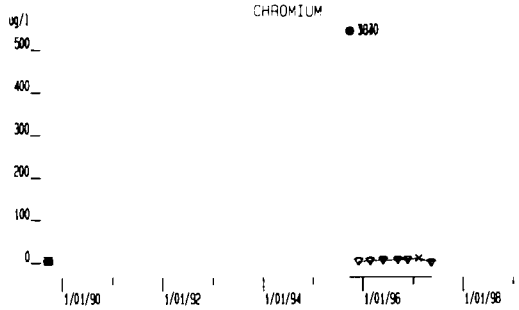
Well UCD2-032
CHROMIUM



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

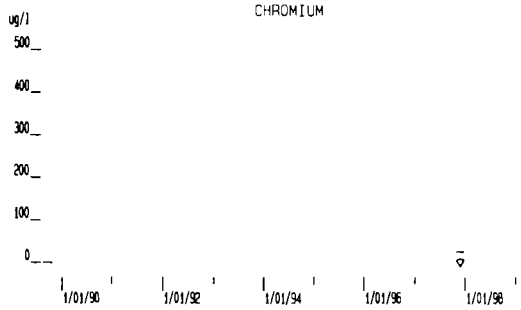
Well UCD2-035
CHROMIUM



Note: Not enough samples to Control Chart.

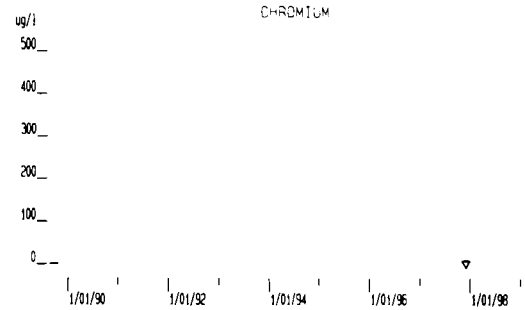
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-036
CHROMIUM

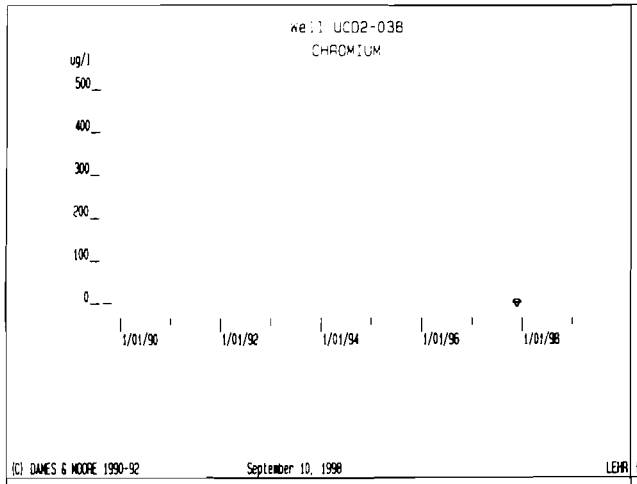


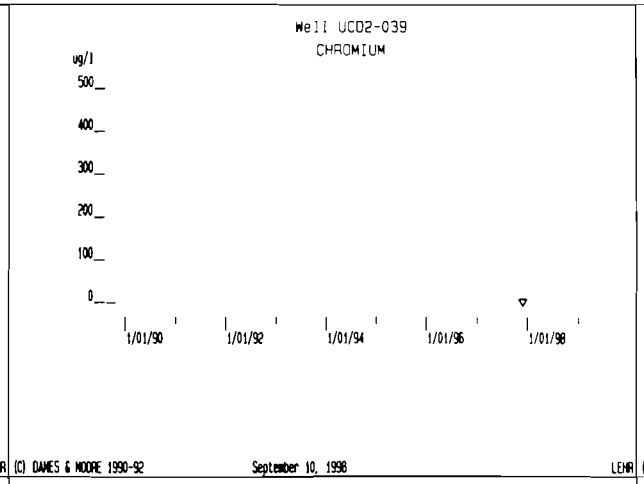
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

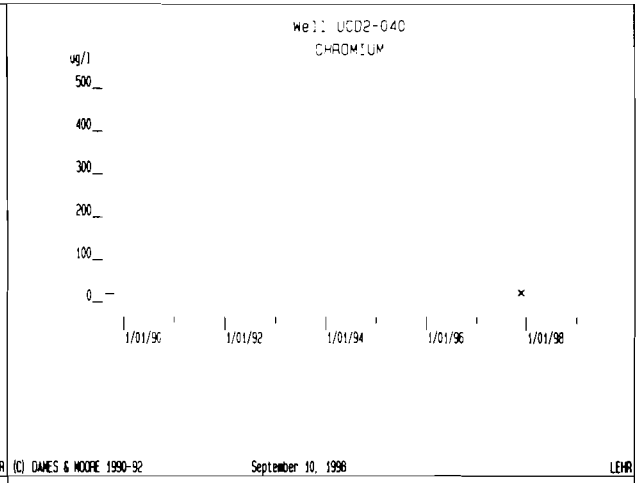
Well UCD2-037
CHROMIUM

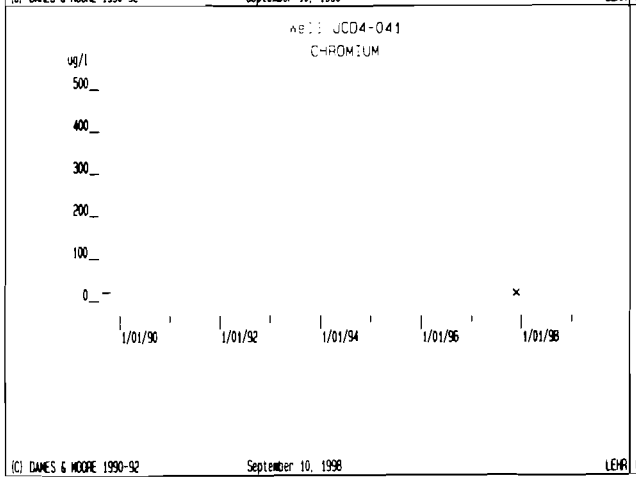


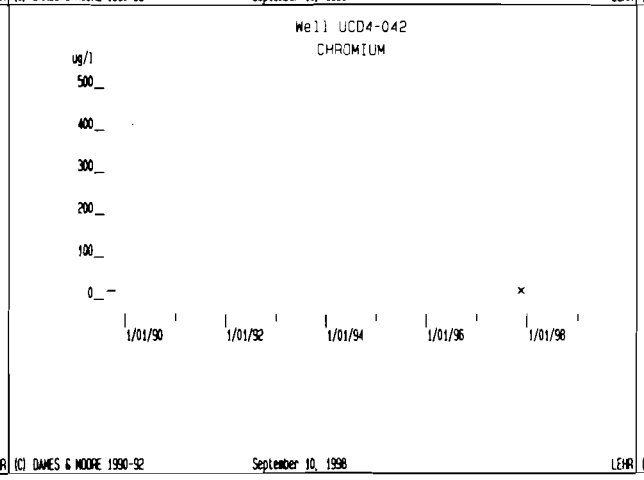
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

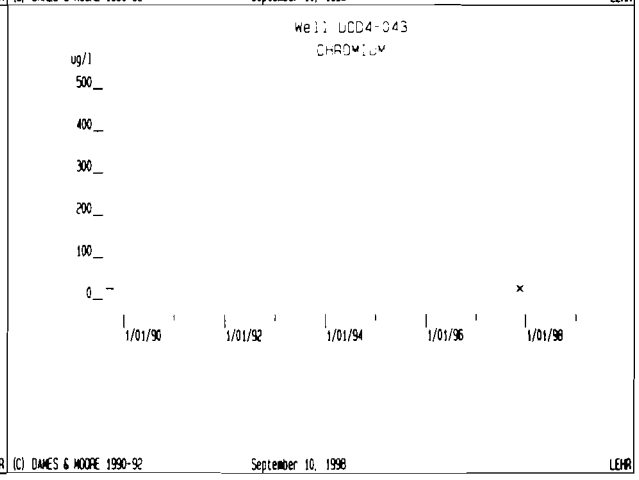

Well UCD2-038
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR


Well UCD2-039
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

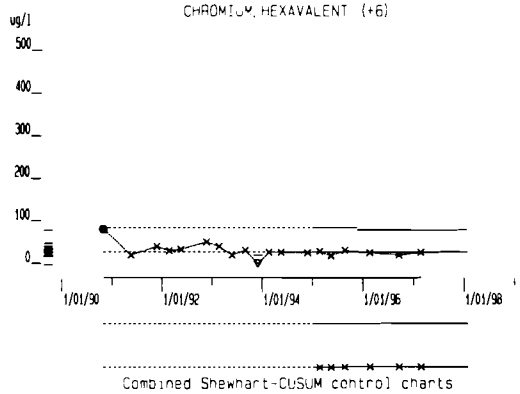

Well UCD2-040
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR


Well UCD4-041
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR


Well UCD4-042
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

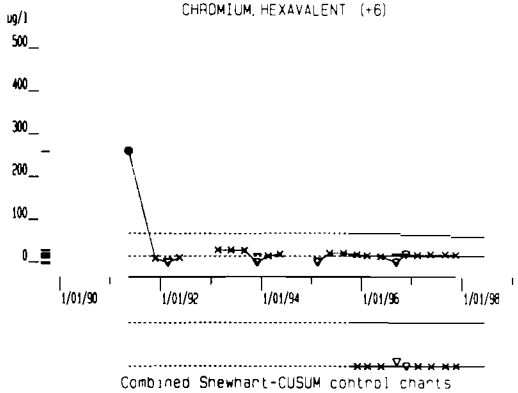

Well UCD4-043
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

Well UCD1-001
CHROMIUM, HEXAVALENT (+6)



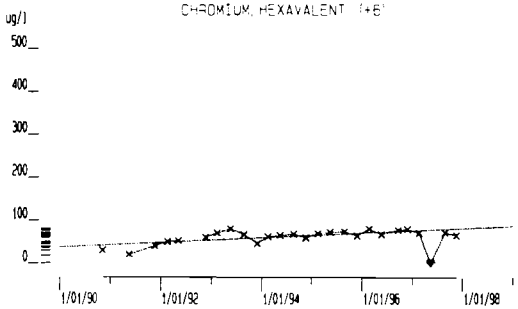
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-004
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-010
CHROMIUM, HEXAVALENT (+6)

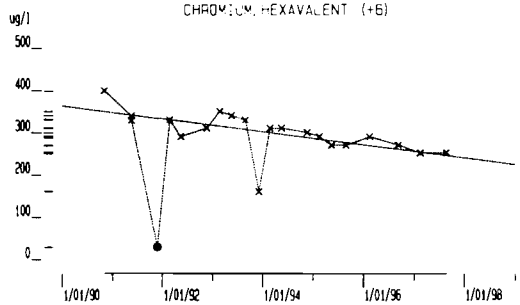


Slope of regression line is 5.5267 ug/l per year.

Warning: High serial correlation

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

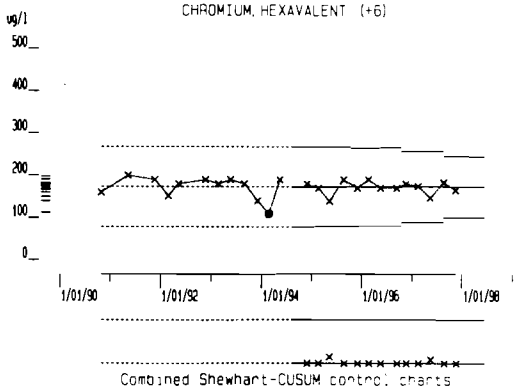
Well UCD1-011
CHROMIUM, HEXAVALENT (+6)



Slope of regression line is -15.3669 ug/l per year

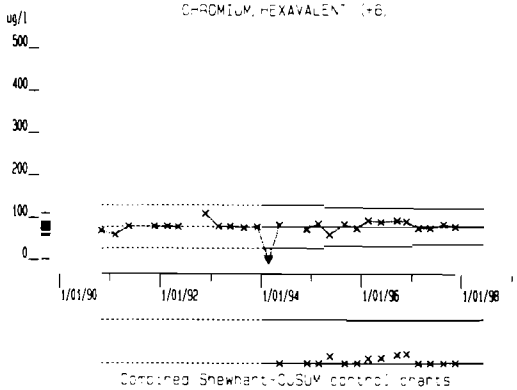
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-012
CHROMIUM, HEXAVALENT (+6)



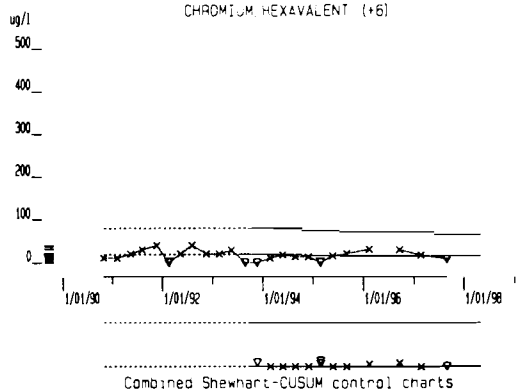
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-013
CHROMIUM, HEXAVALENT (+6)



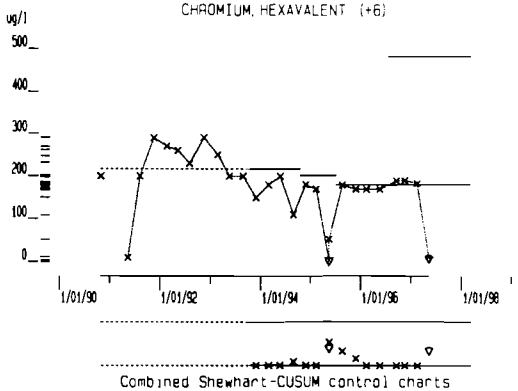
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-018
CHROMIUM, HEXAVALENT (+6)



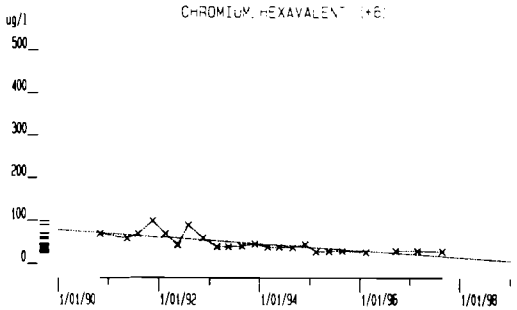
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-019
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-020
CHROMIUM, HEXAVALENT (+6)

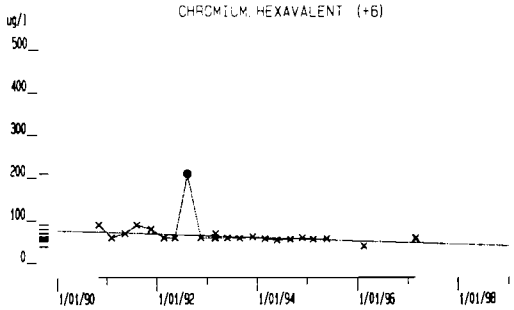


Slope of regression line is -8.0336 ug/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

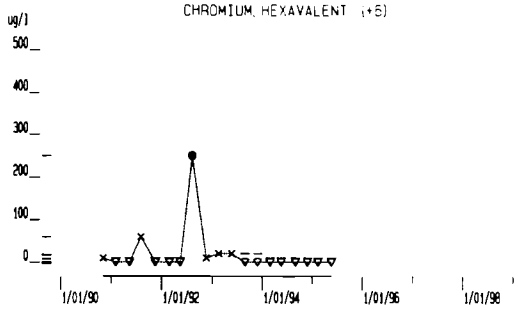
Well UCD1-021
CHROMIUM, HEXAVALENT (+6)



Slope of regression line is -3.8397 ug/l per year.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

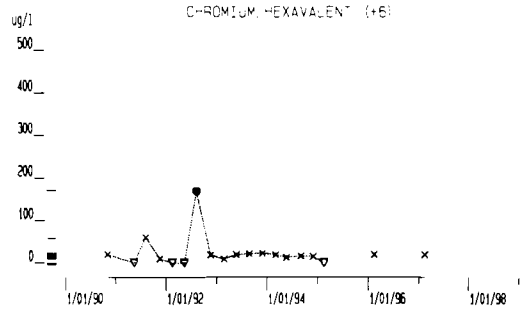
Well UCD1-022
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

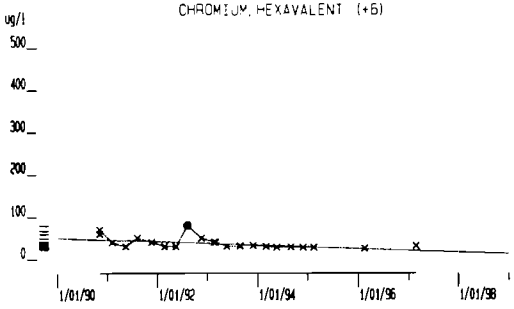
Well UCD1-023
CHROMIUM, HEXAVALENT (+6)



Note: Variability does not appear Gaussian

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

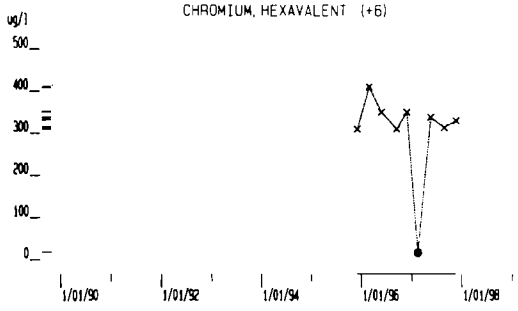
Well UCD1-024
CHROMIUM, HEXAVALENT (+6)



Slope of regression line is -4.2930 ug/l per year.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

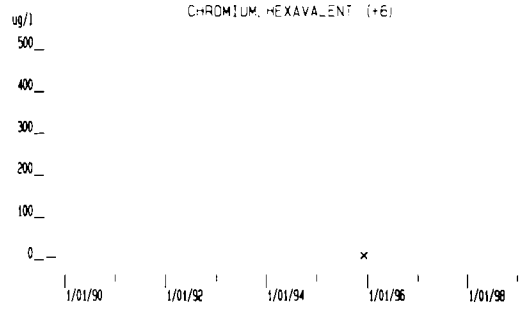
Well UCD1-025
CHROMIUM, HEXAVALENT (+6)



Note: Not enough samples to Control Chart.

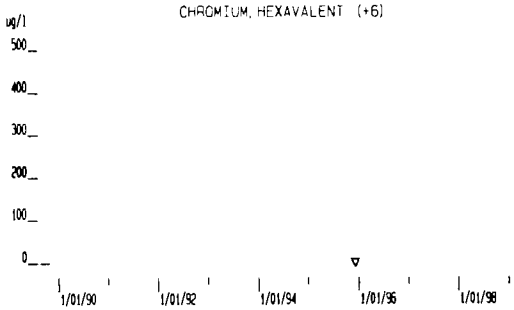
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z1
CHROMIUM, HEXAVALENT (+6)



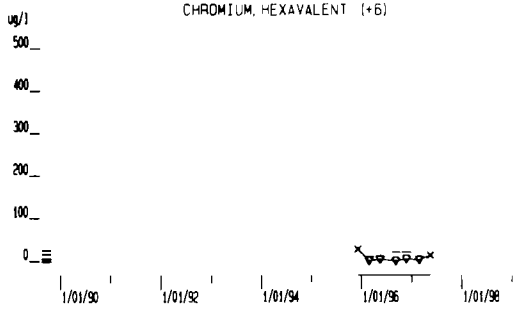
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z2
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

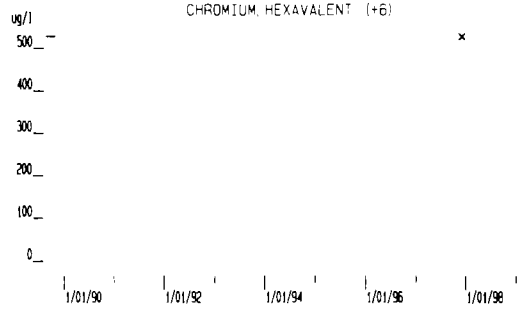
Well UCD1-027Z3
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

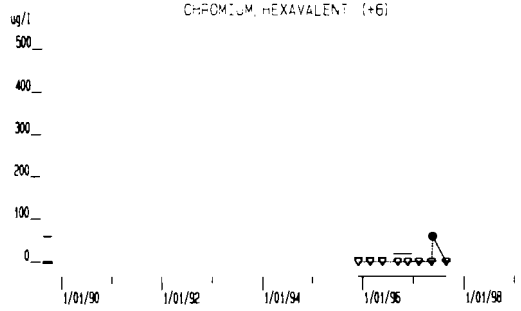
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-028
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

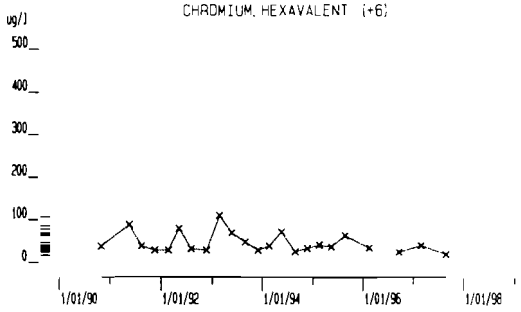
Well UCD1-034
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

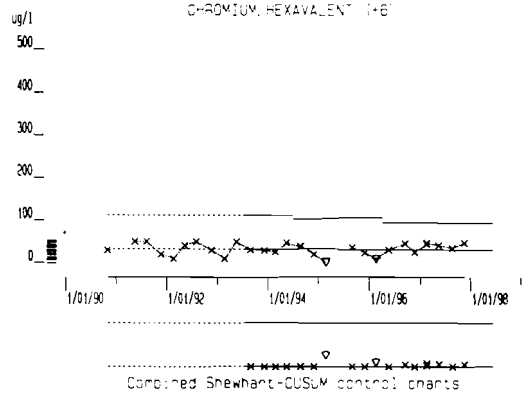
Well UCD2-007
CHROMIUM, HEXAVALENT (+6)



Note: Variability does not appear Gaussian.

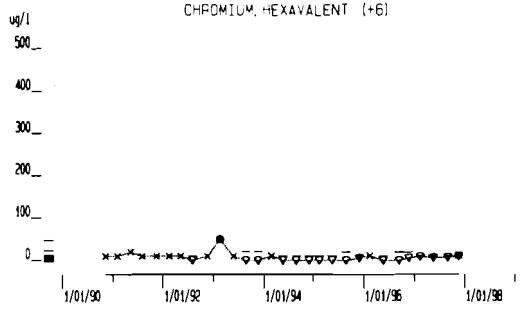
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-014
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-015
CHROMIUM, HEXAVALENT (+6)

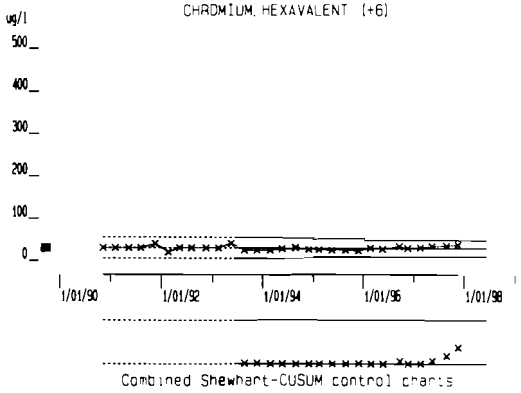


Note: Control Chart not tried, More than 25% non detects.

Warning: High serial correlation.

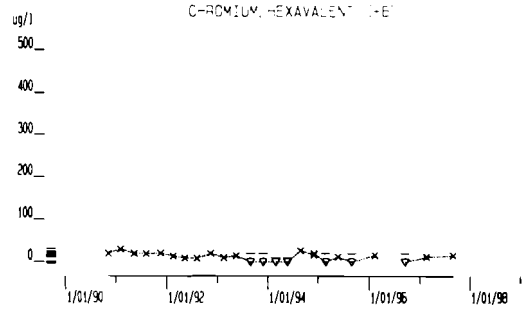
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-016
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

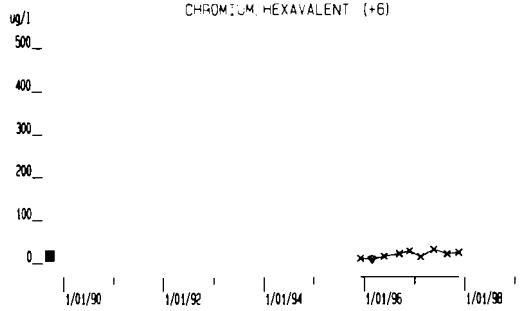
Well UCD2-017
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

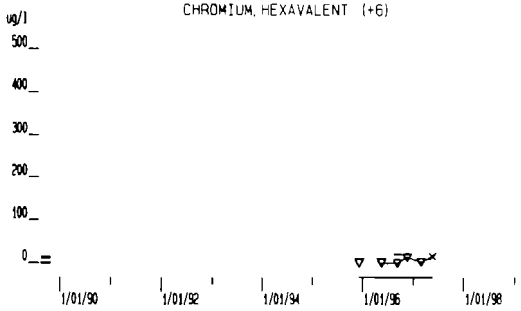
Well UCD2-026
CHROMIUM, HEXAVALENT (+6)



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

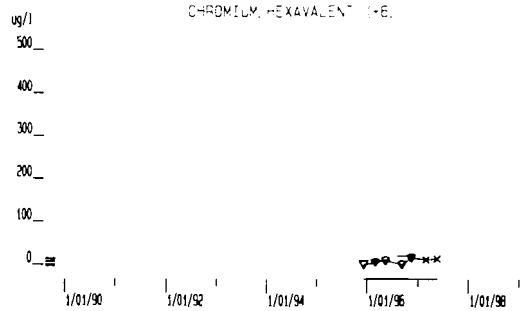
Well UCD2-027Z4
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

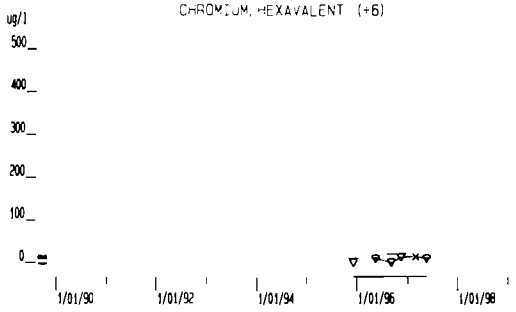
Well UCD2-027Z5
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

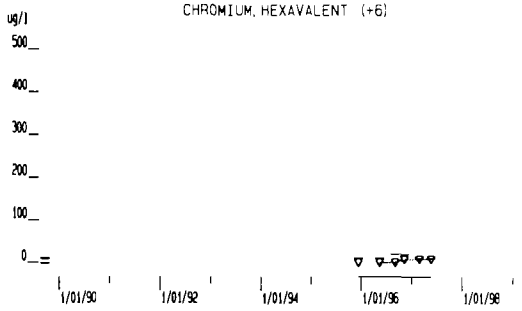
Well UCD2-027Z6
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

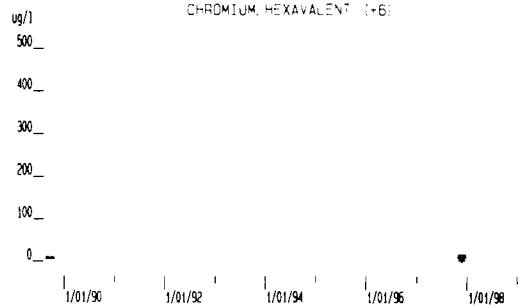
Well UCD2-027Z7
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

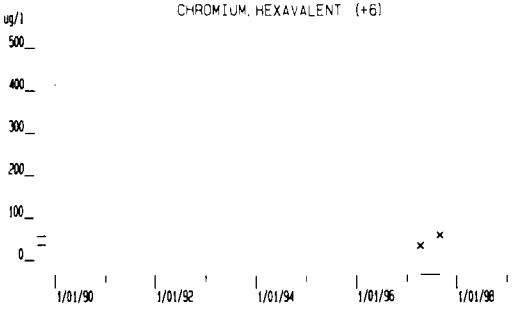
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-029
CHROMIUM, HEXAVALENT (+6)



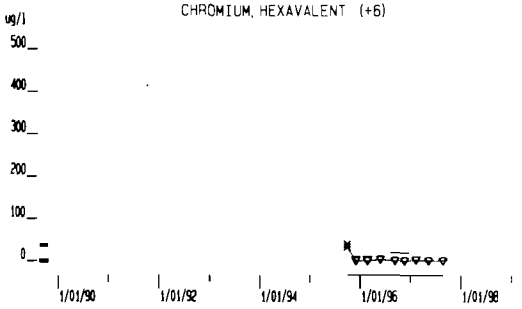
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-032
CHROMIUM, HEXAVALENT (+6)



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

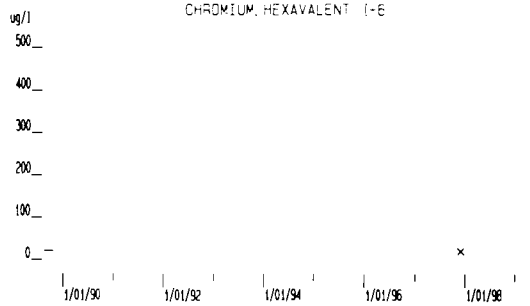
Well UCD2-035
CHROMIUM, HEXAVALENT (+6)



Note: Control Chart not tried, More than 25% non detects.

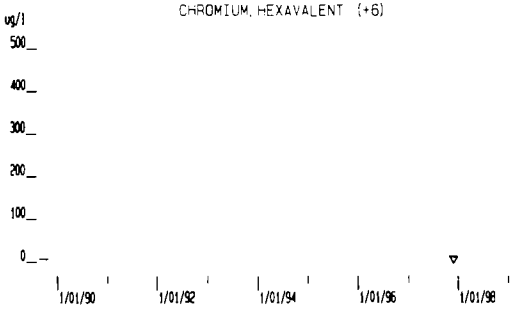
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-036
CHROMIUM, HEXAVALENT (+6



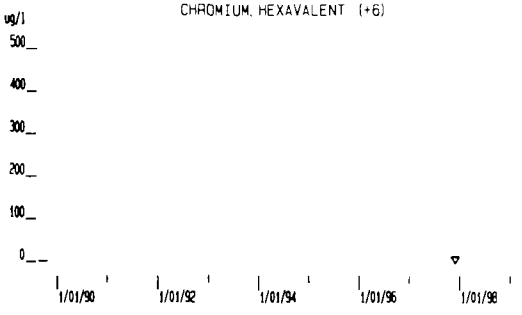
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-037
CHROMIUM, HEXAVALENT (+6)



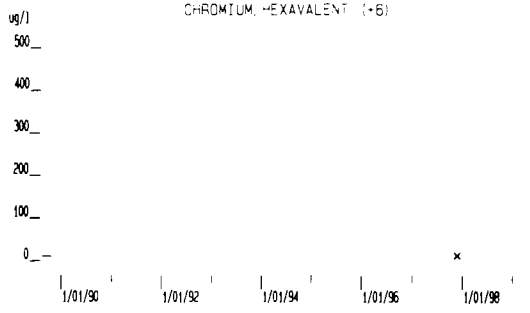
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-039
CHROMIUM, HEXAVALENT (+6)

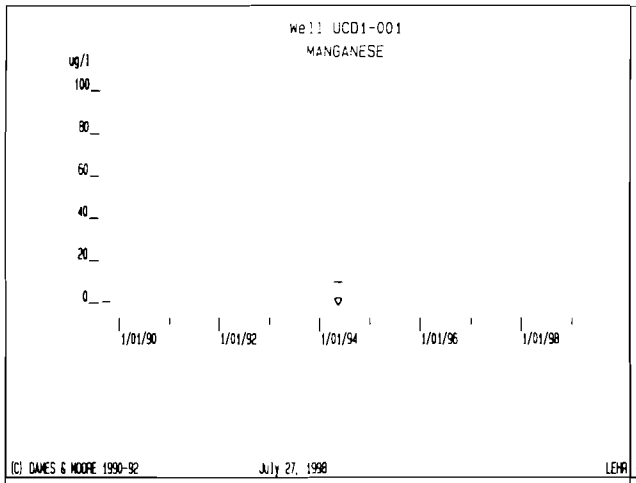


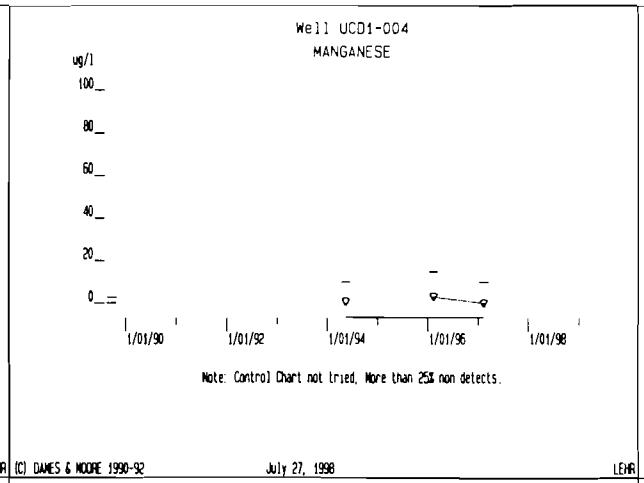
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

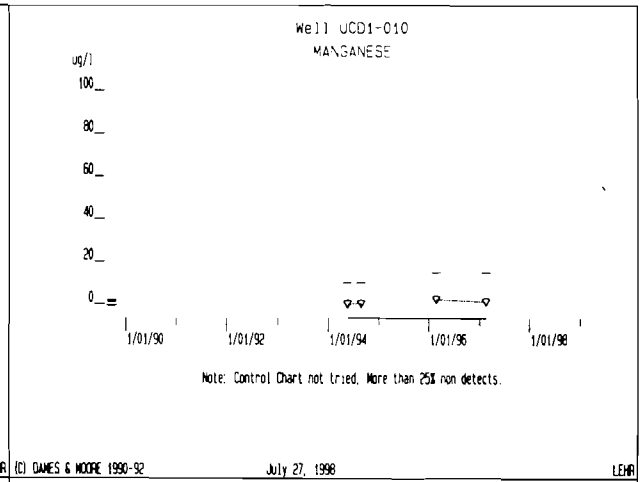
Well UCD4-041
CHROMIUM, HEXAVALENT (+6)

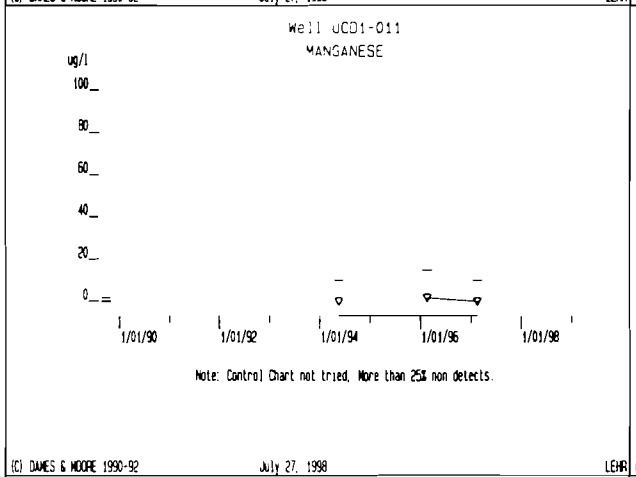


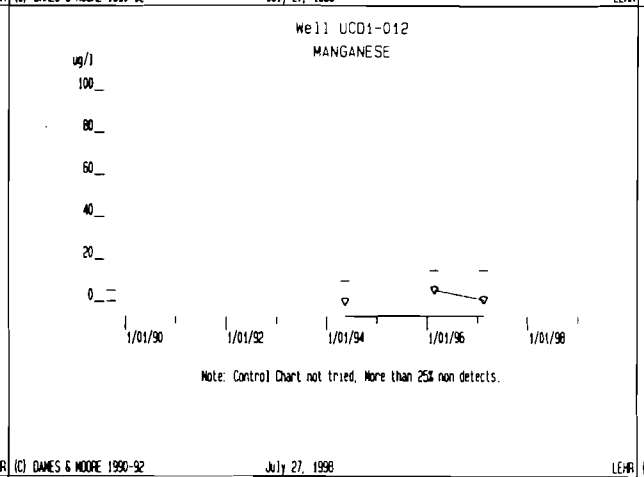
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

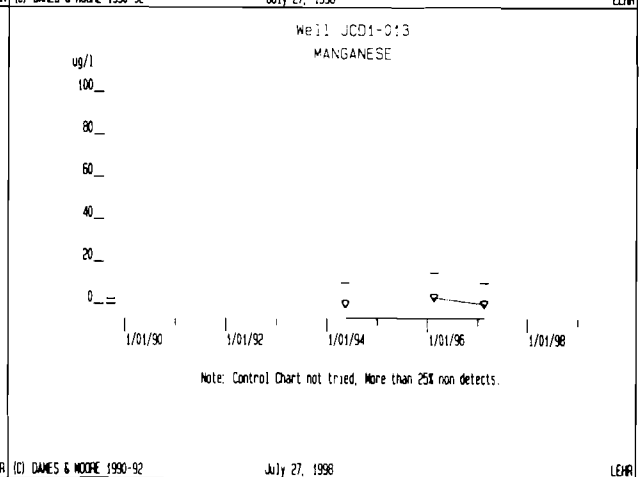

Well UCD1-001
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

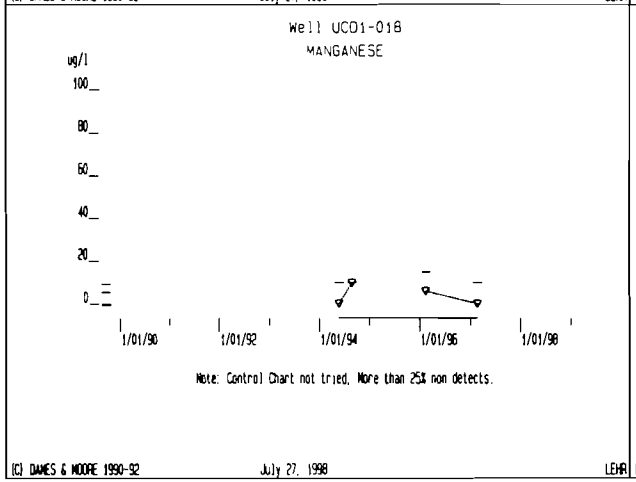

Well UCD1-004
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

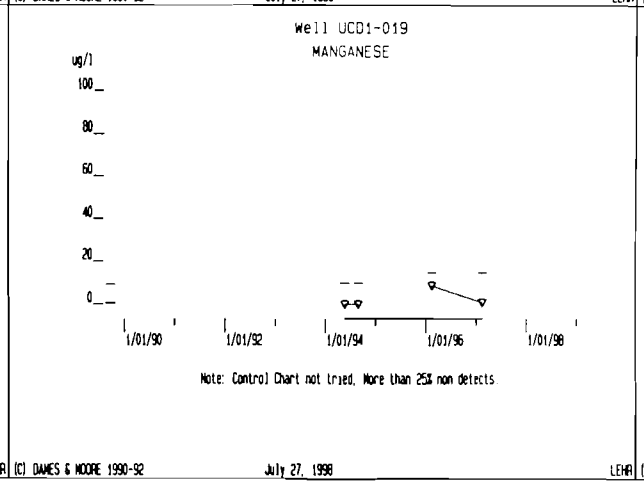

Well UCD1-010
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

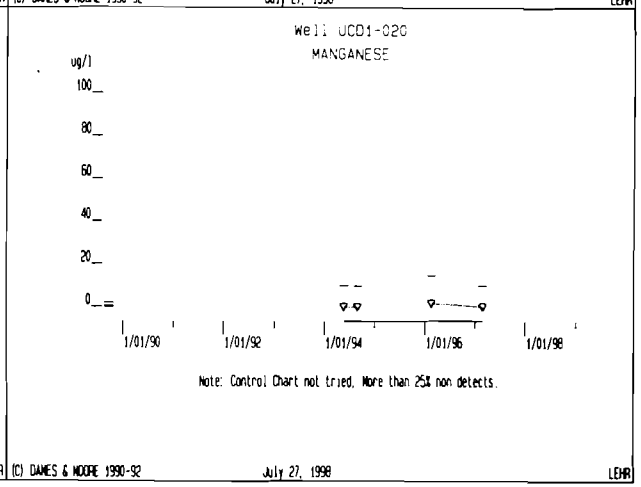

Well UCD1-011
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

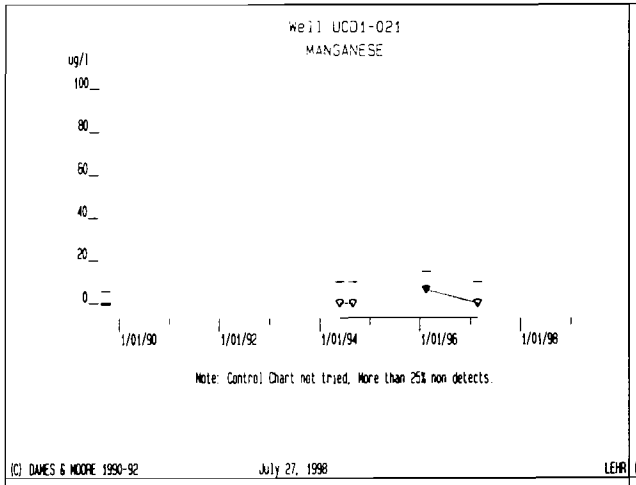

Well UCD1-012
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

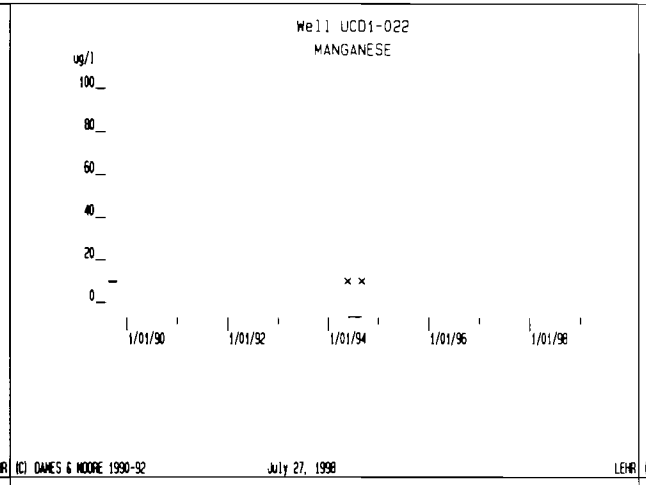

Well UCD1-013
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

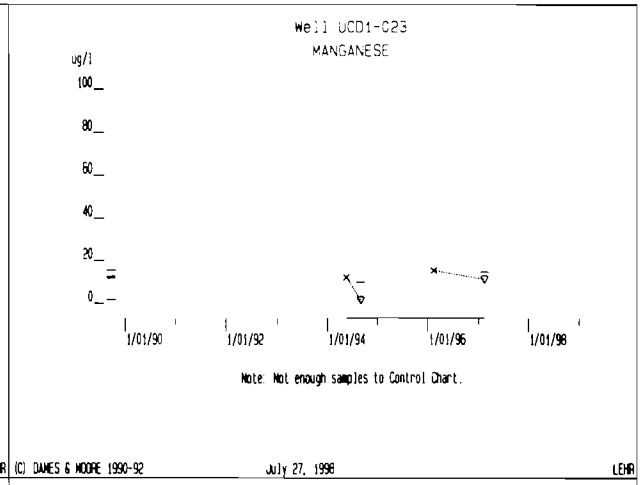

Well UCD1-018
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

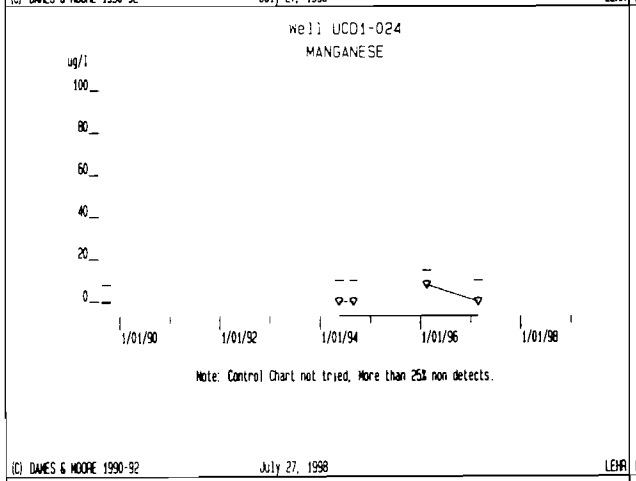

Well UCD1-019
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

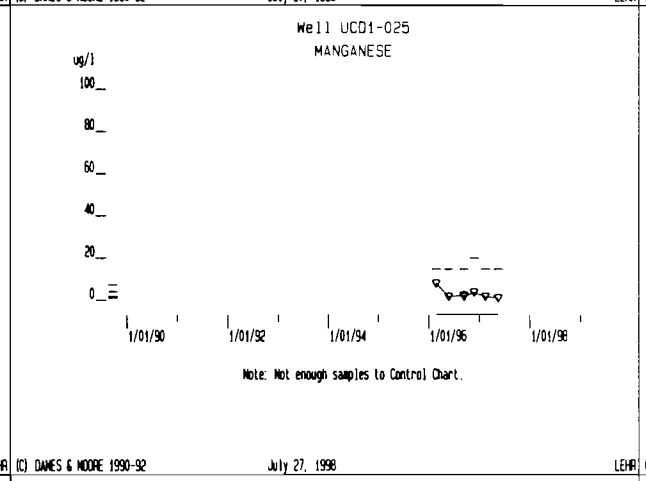

Well UCD1-020
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

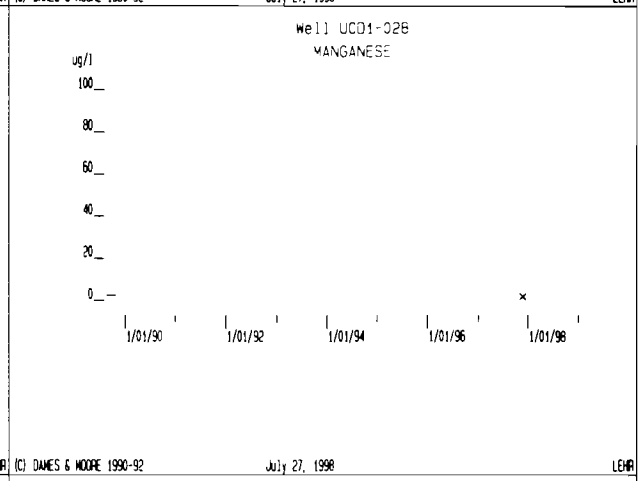

Well UCD1-021
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

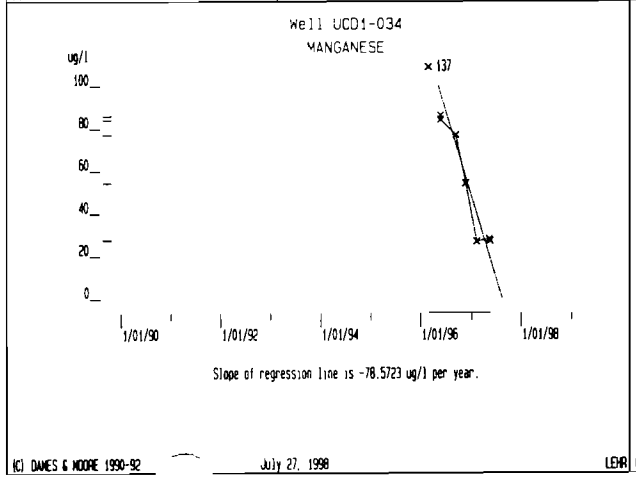

Well UCD1-022
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

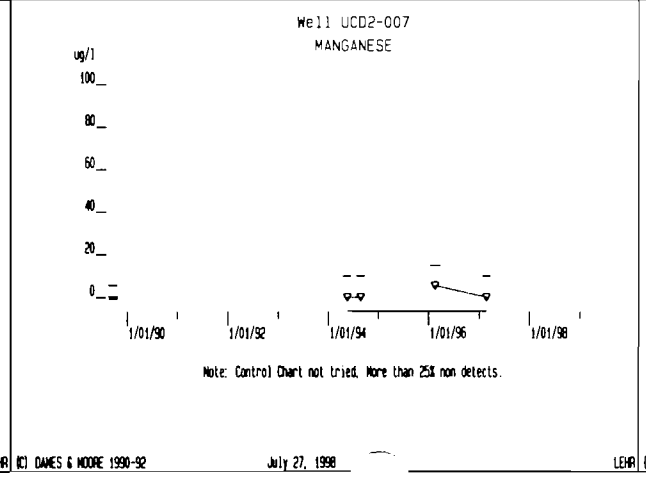

Well UCD1-023
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

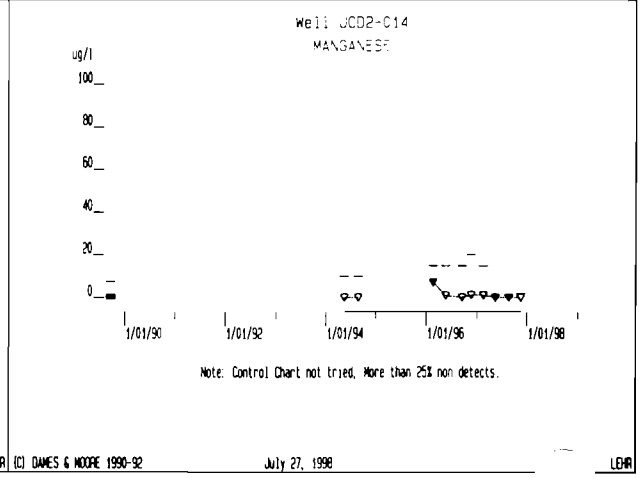

Well UCD1-024
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD1-025
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

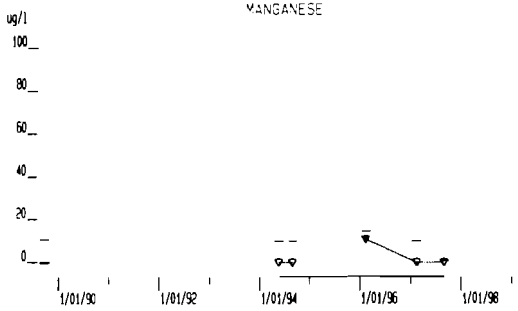

Well UCD1-028
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD1-034
MANGANESE
ug/l
100
80
60
40
20
0
x 137
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -78.5723 ug/l per year.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD2-007
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD2-014
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

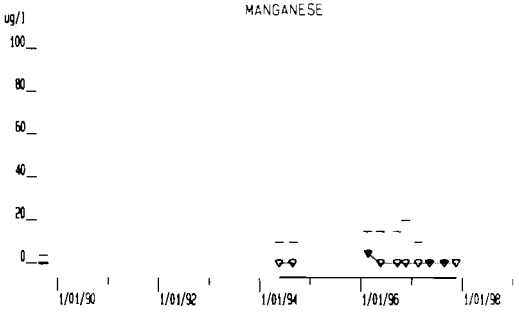
Well UCD2-015
MANGANESE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

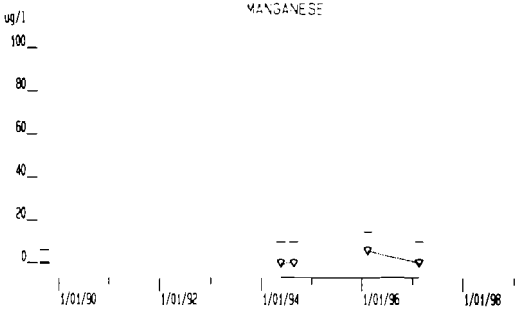
Well UCD2-016
MANGANESE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

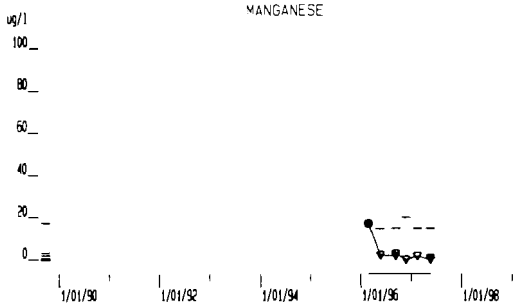
Well UCD2-017
MANGANESE



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

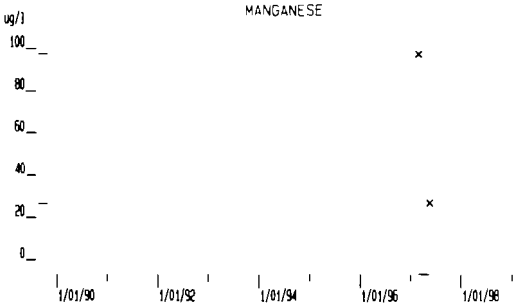
Well UCD2-026
MANGANESE



Note: Control Chart not tried, More than 25% non detects.

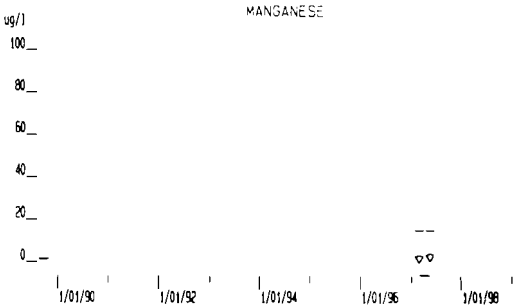
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-027Z4
MANGANESE



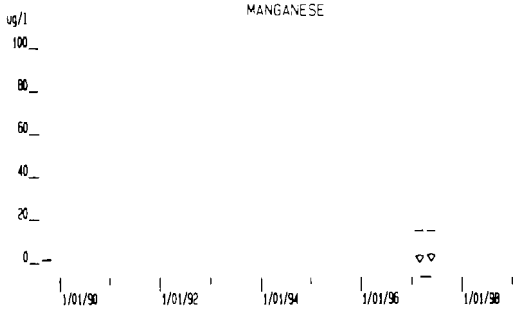
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-027Z5
MANGANESE



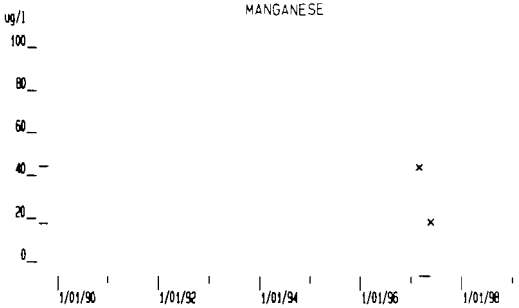
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-027Z6
MANGANESE



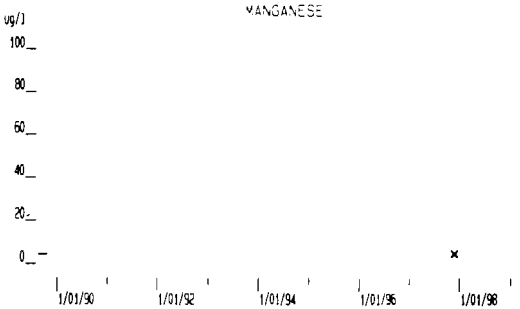
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-027Z7
MANGANESE



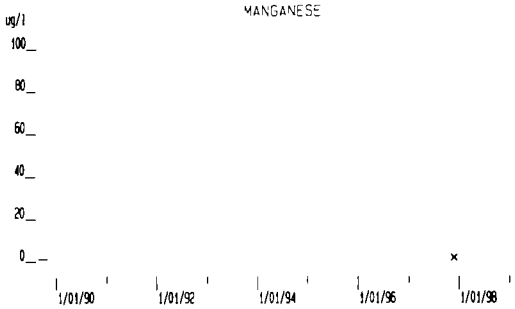
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-029
MANGANESE



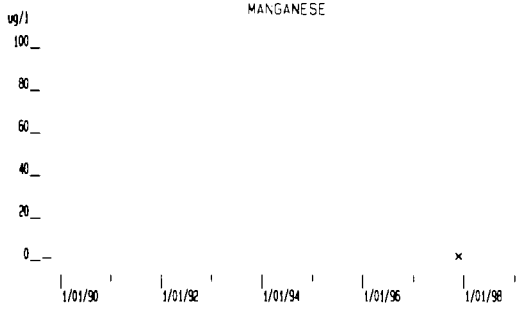
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-030
MANGANESE



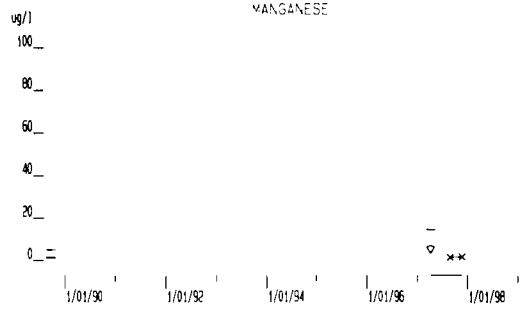
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-031
MANGANESE



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

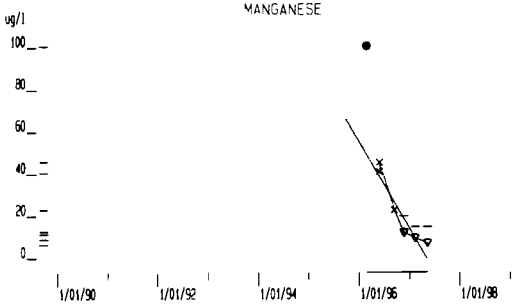
Well UCD2-032
MANGANESE



Note: Control Chart not tried. More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

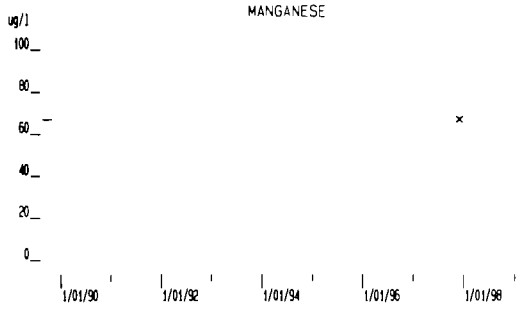
Well UCD2-035
MANGANESE



Slope of regression line is -41.0881 ug/l per year.

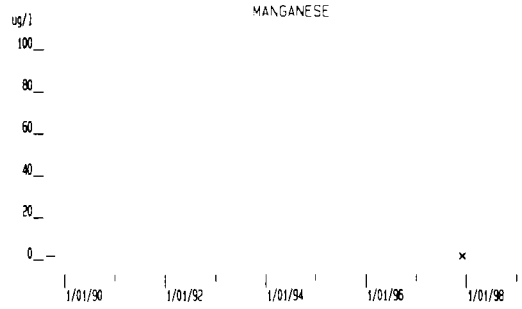
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-036
MANGANESE



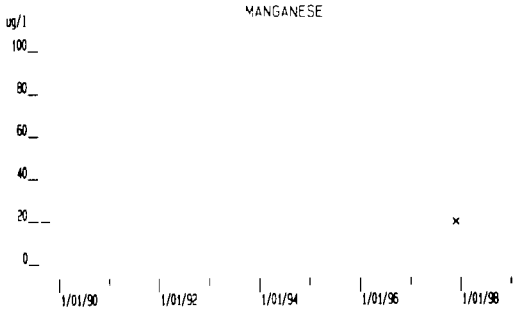
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-037
MANGANESE



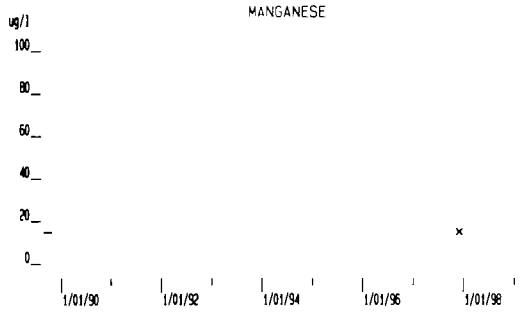
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-038
MANGANESE



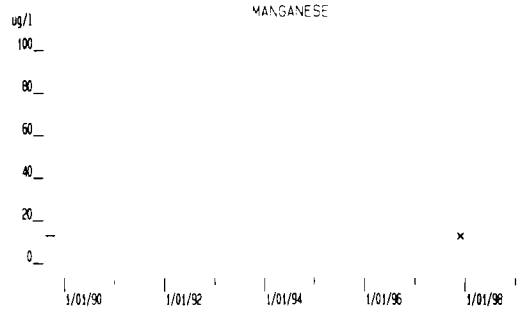
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-039
MANGANESE

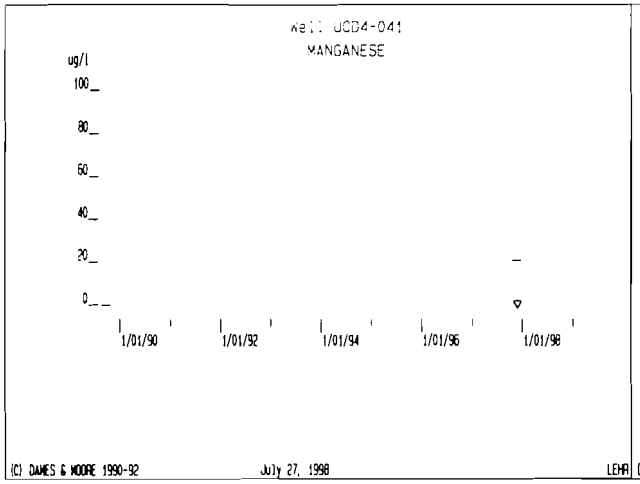


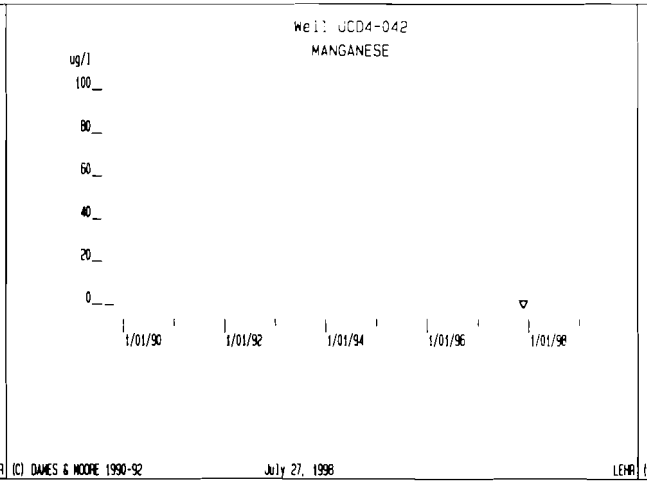
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

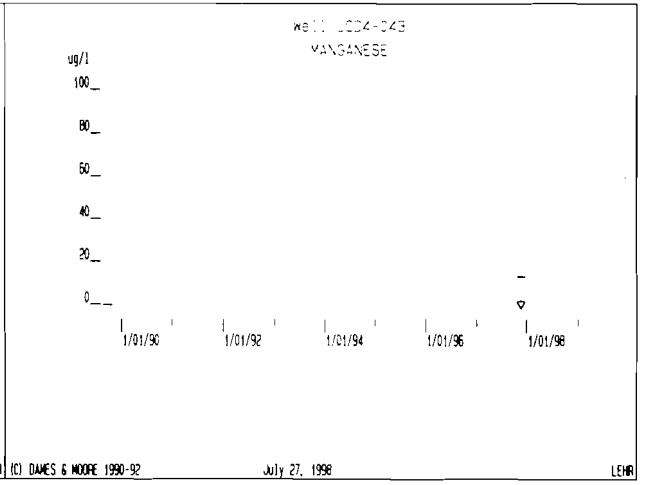
Well UCD2-040
MANGANESE

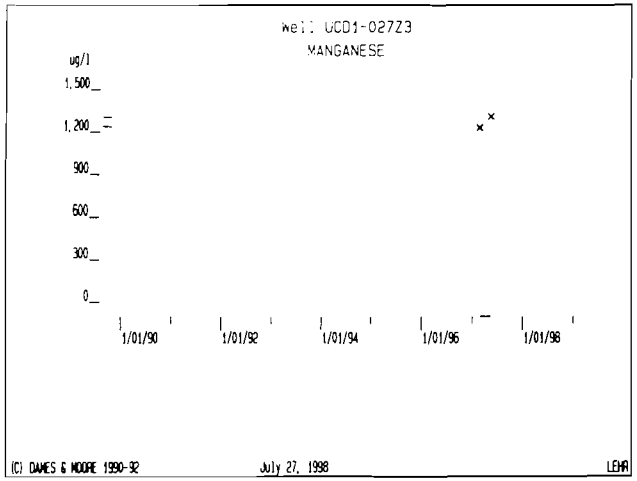


(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

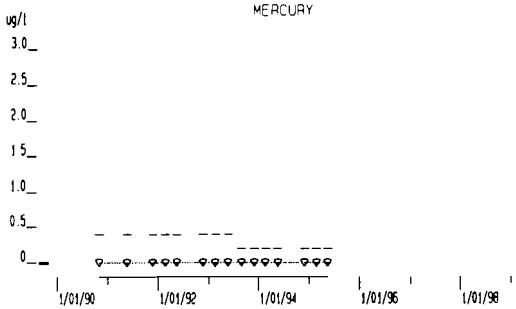

well UCD4-041
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


well UCD4-042
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


well UCD4-043
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD1-02723
MANGANESE
ug/l
1,500
1,200
900
600
300
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

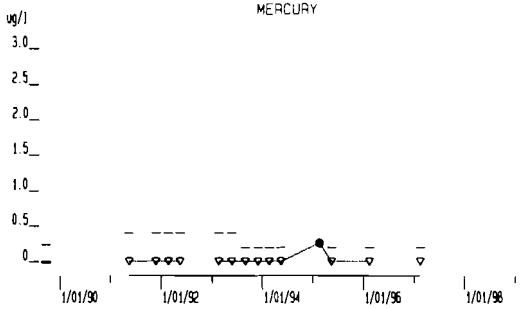
Well UCD1-001
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

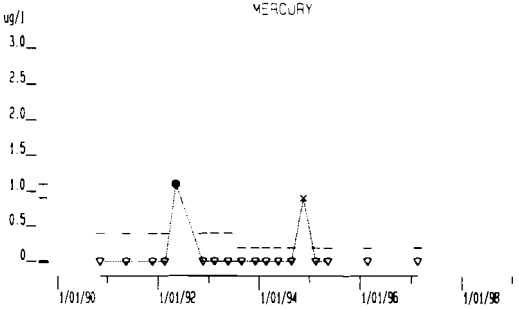
Well UCD1-004
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

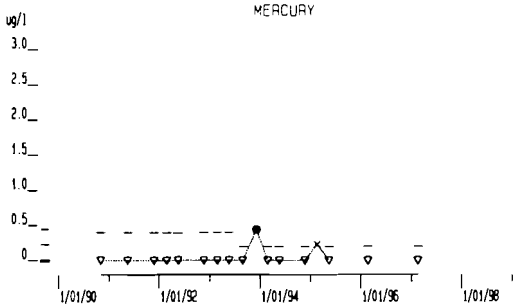
Well UCD1-010
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

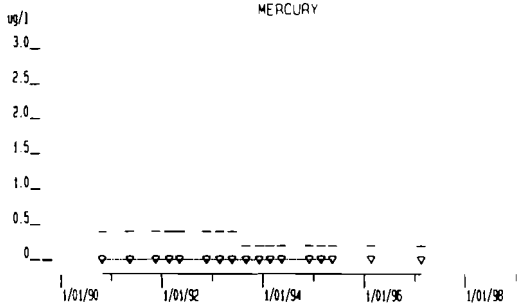
Well UCD1-011
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

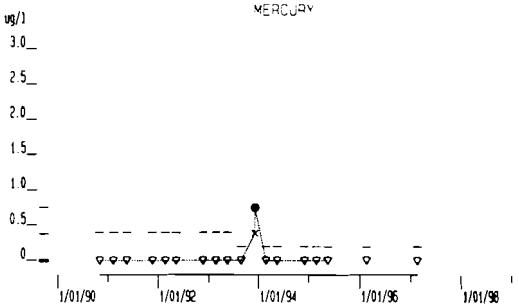
Well UCD1-012
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

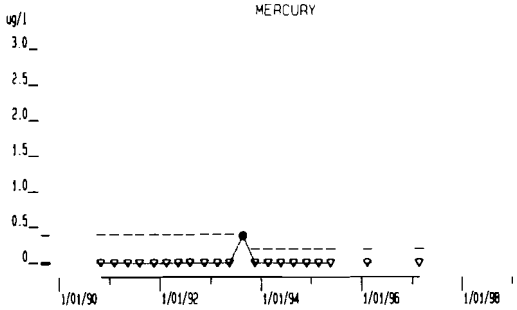
Well UCD1-013
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

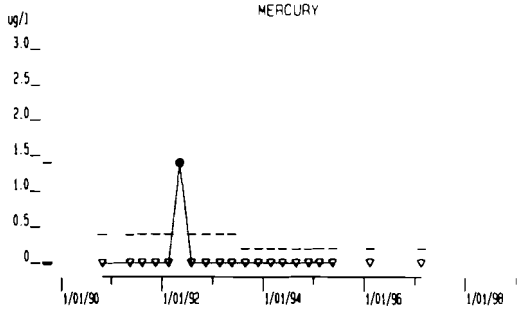
Well UCD1-018
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

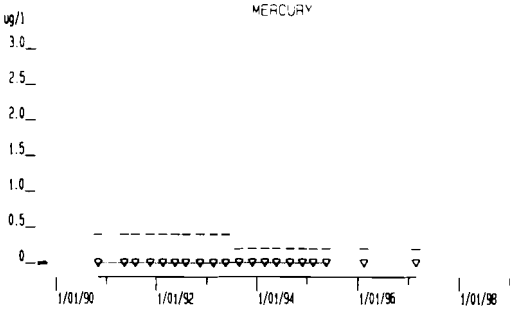
Well UCD1-019
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

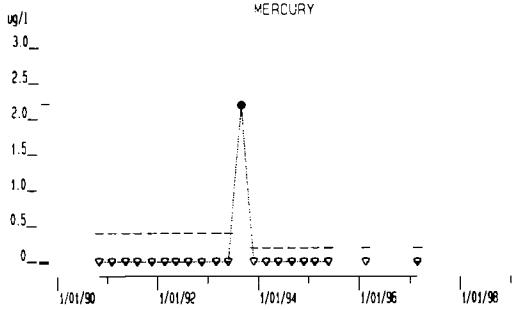
Well UCD1-020
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

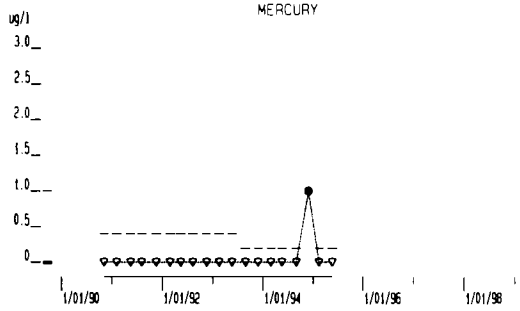
Well UCD1-021
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

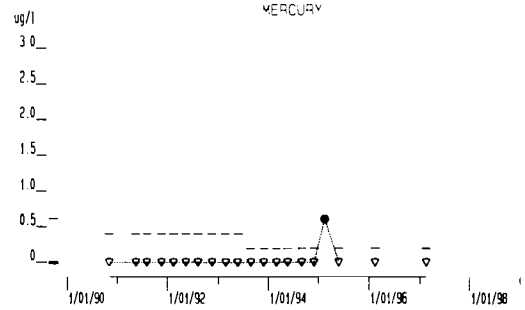
Well UCD1-022
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

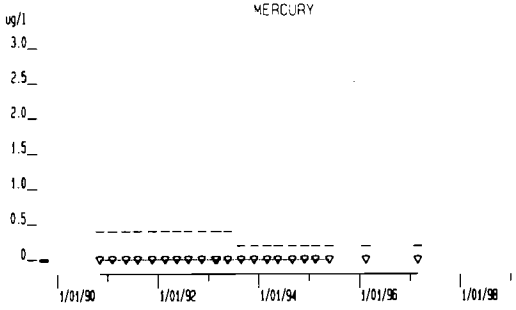
Well UCD1-023
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

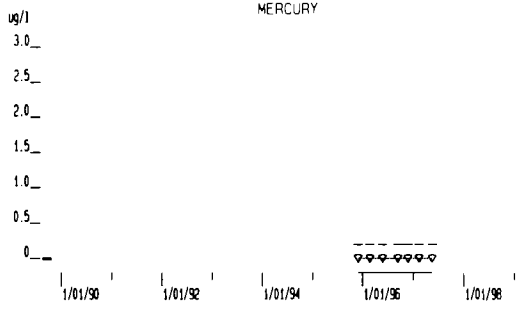
Well UCD1-024
MERCURY



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

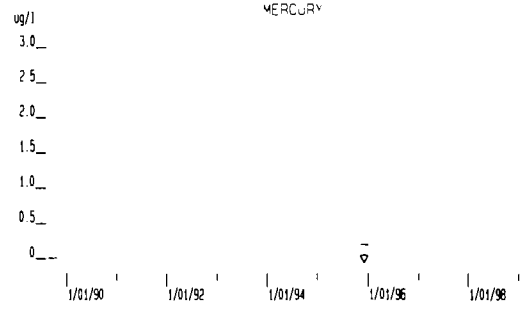
Well UCD1-025
MERCURY



Note: Control Chart not tried, More than 25% non detects.

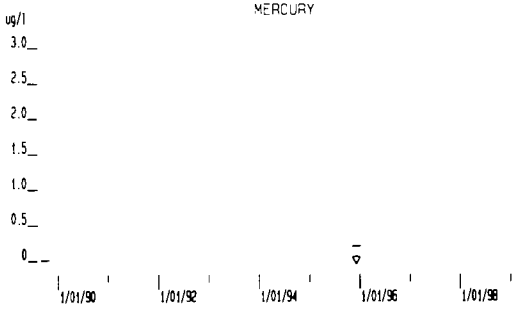
(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

Well UCD1-027Z1
MERCURY



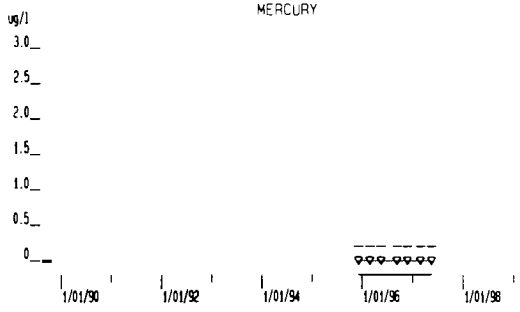
(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

Well UCD1-027Z2
MERCURY



(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

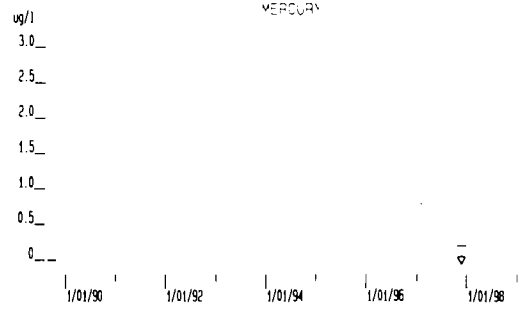
Well UCD1-027Z3
MERCURY



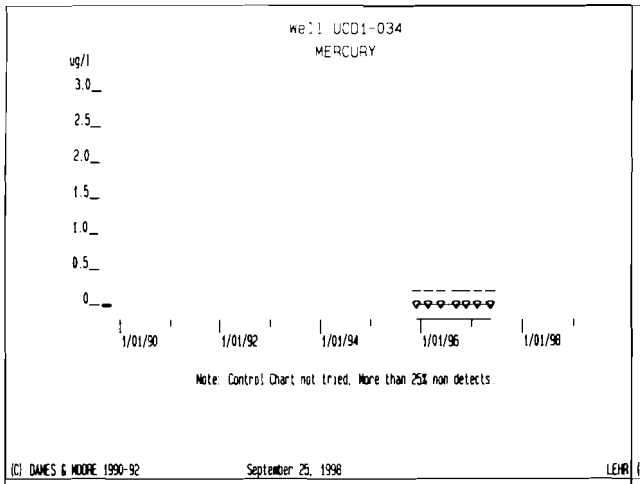
Note: Control Chart not tried, More than 25% non detects.

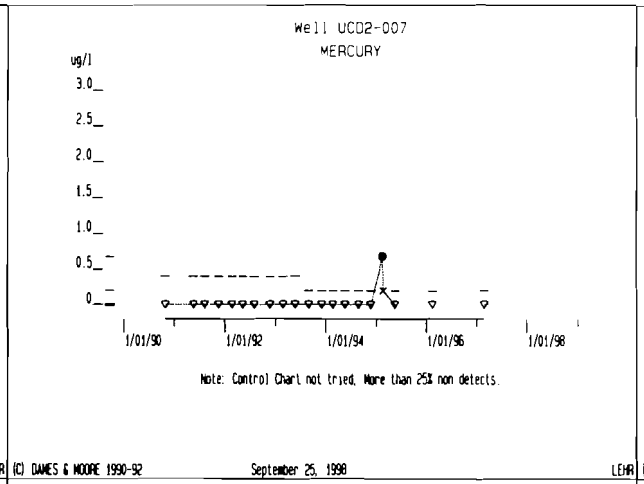
(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

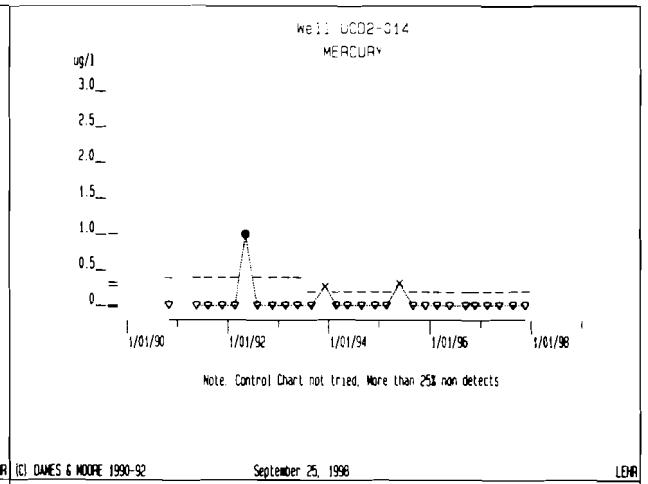
Well UCD1-028
MERCURY

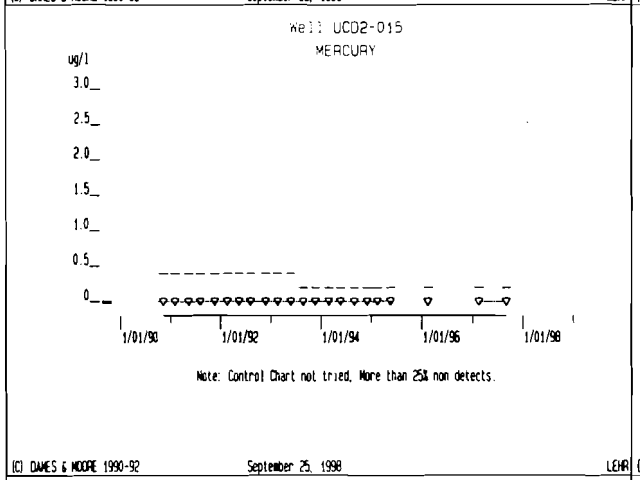


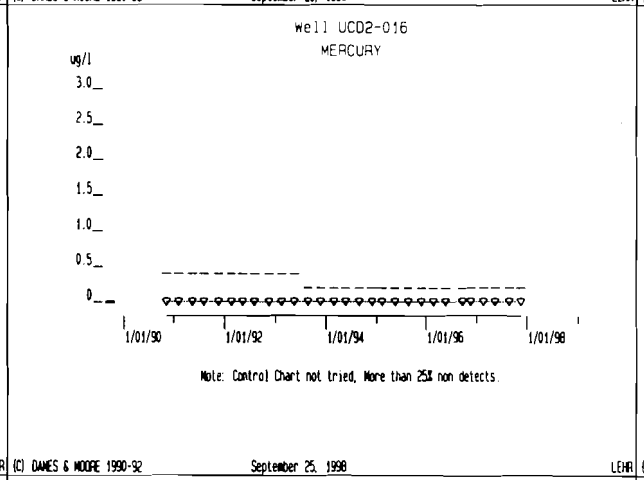
(C) DAMES & MOORE 1990-92 September 25, 1998 LEHR

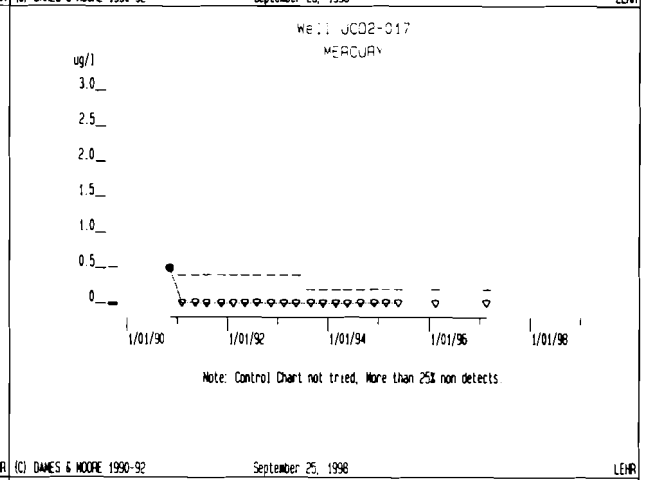

Well UCD1-034
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

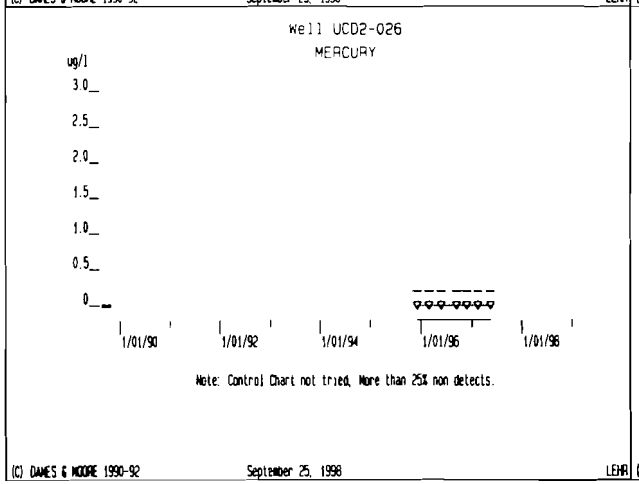

Well UCD2-007
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

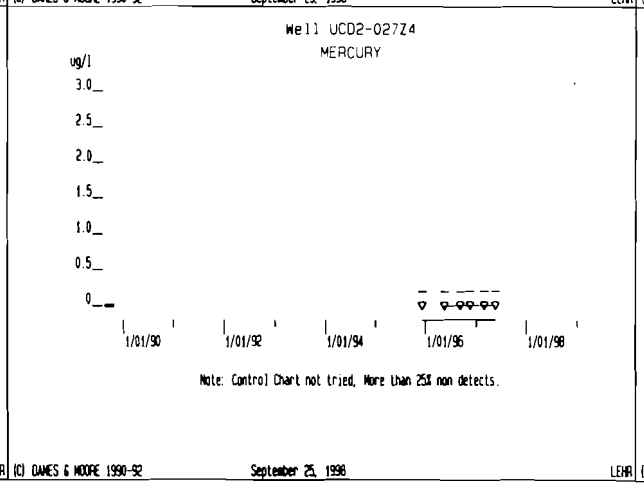

Well UCD2-014
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

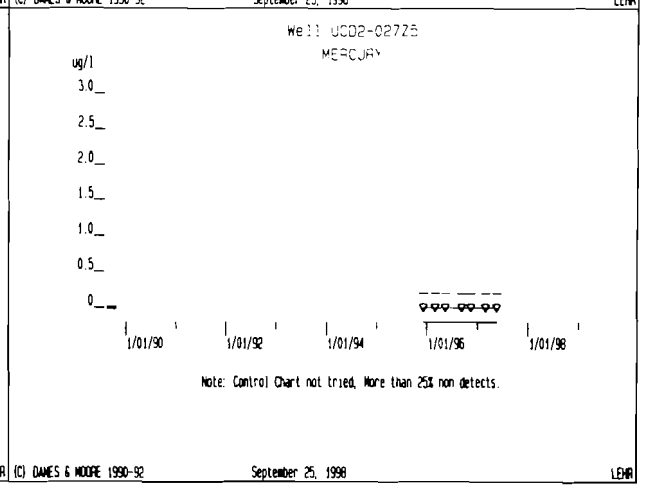

Well UCD2-015
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

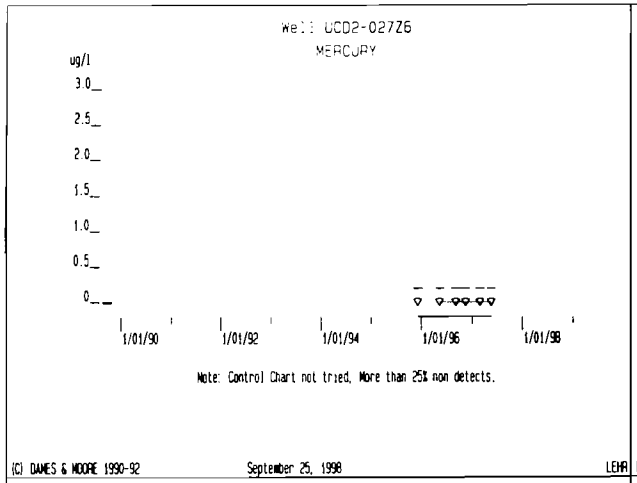

Well UCD2-016
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

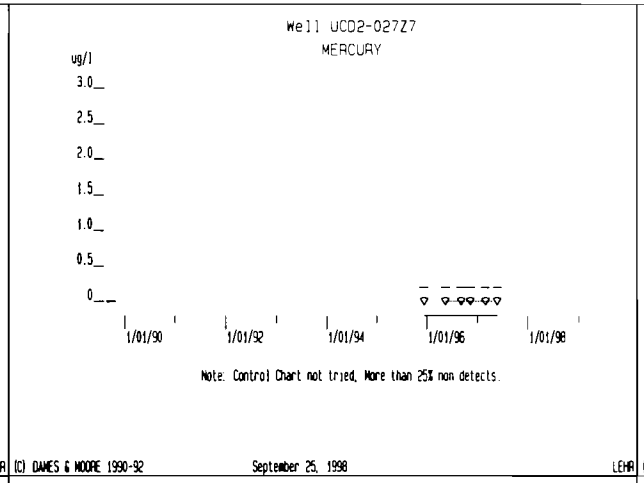

Well UCD2-017
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

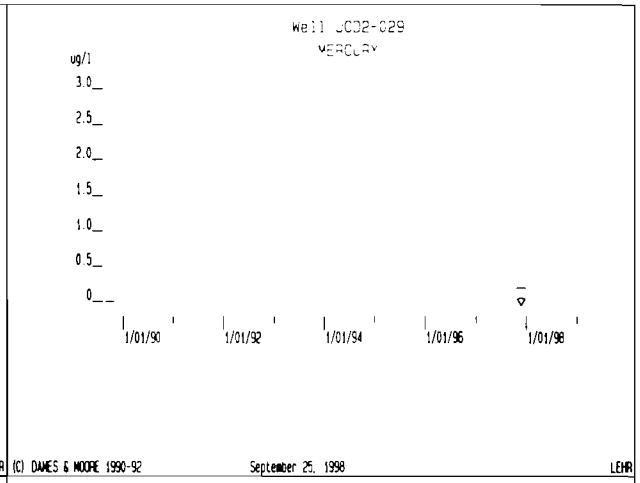

Well UCD2-026
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

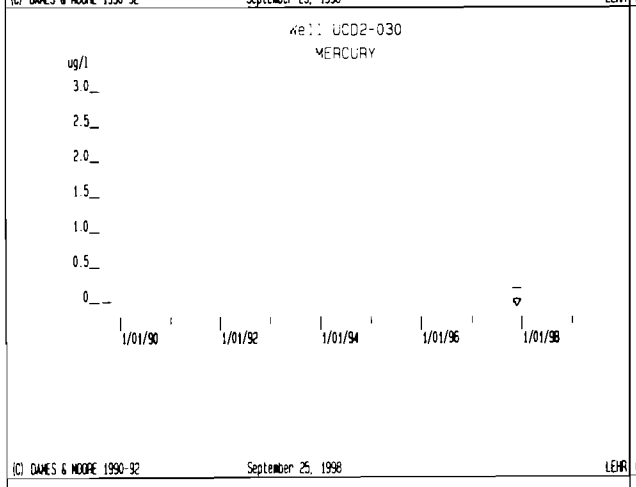

Well UCD2-027Z4
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

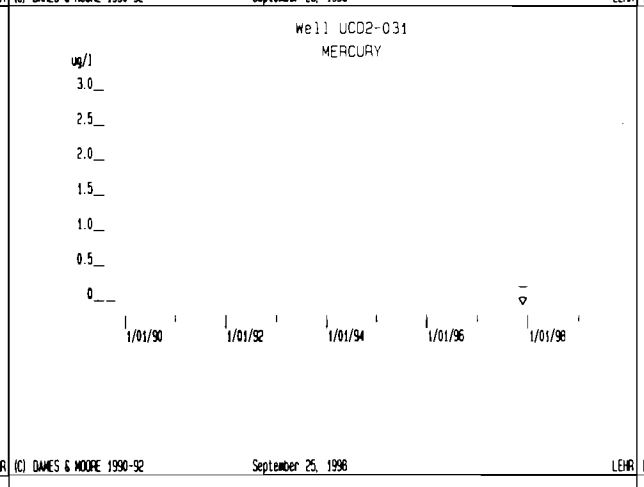

Well UCD2-027Z5
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

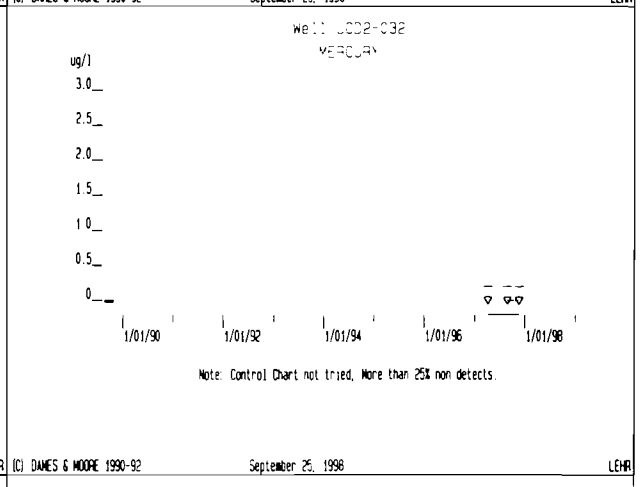

Well UCD2-027Z6
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

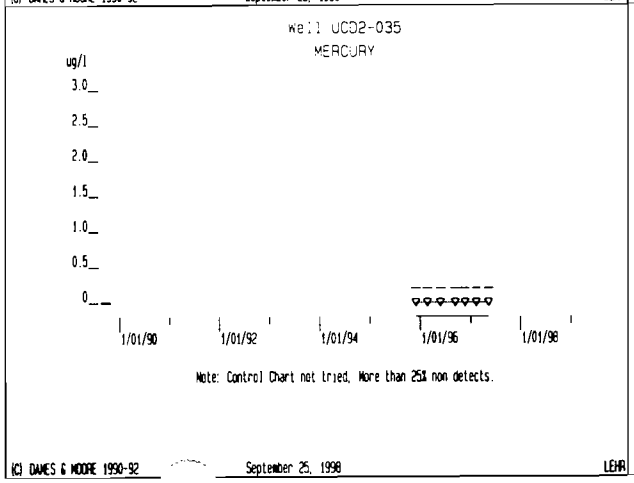

Well UCD2-027Z7
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

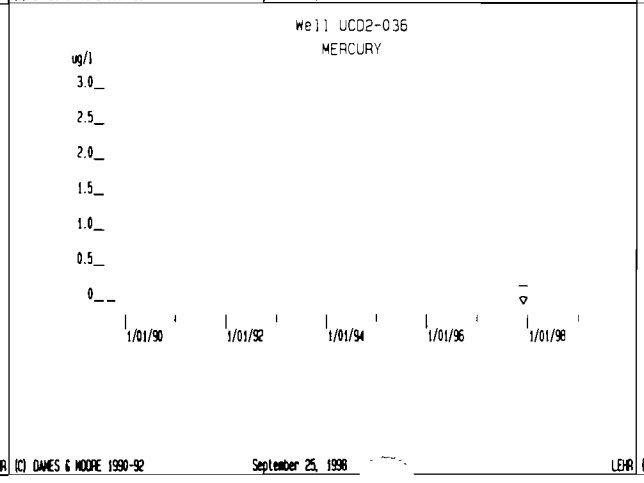

Well UCD2-029
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

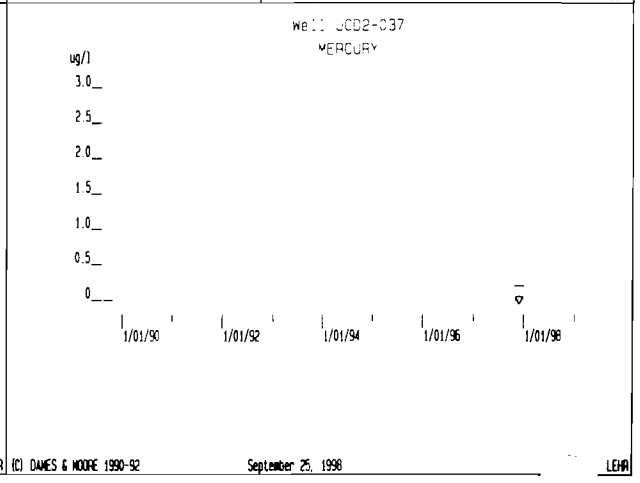

Well UCD2-030
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

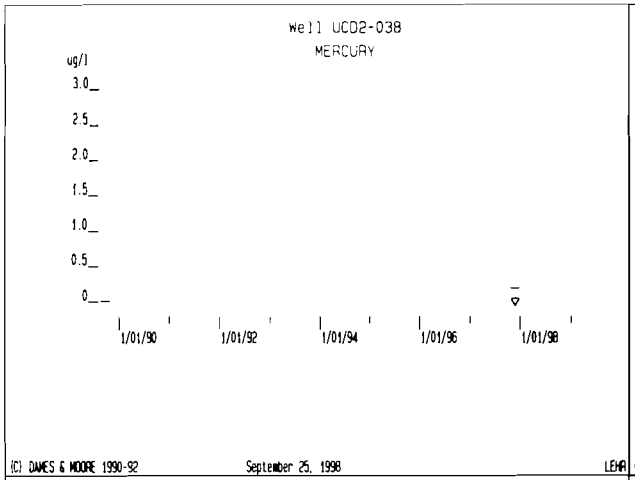

Well UCD2-031
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

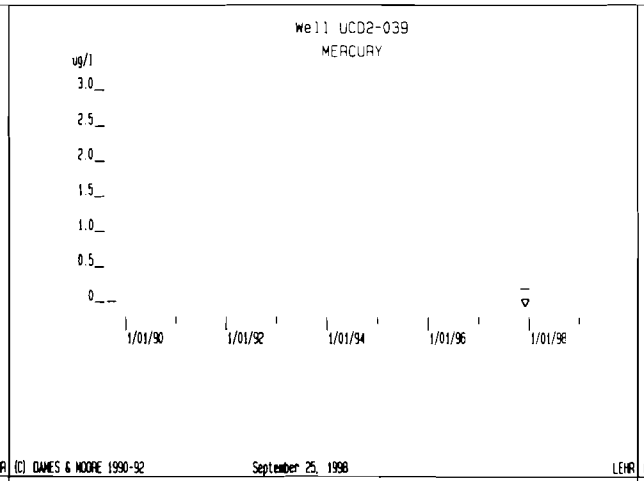

Well UCD2-032
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

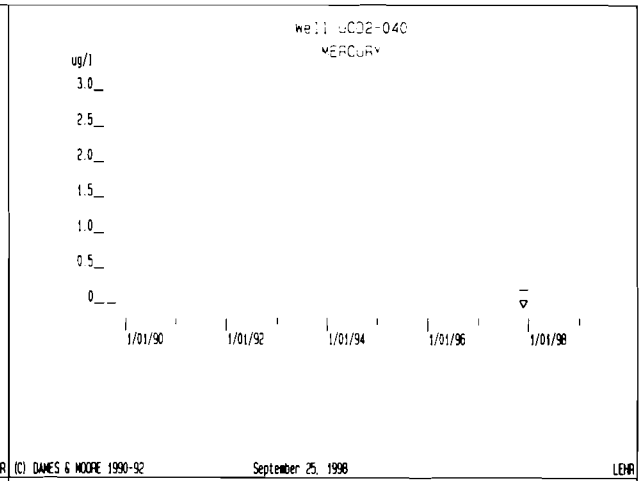

Well UCD2-035
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

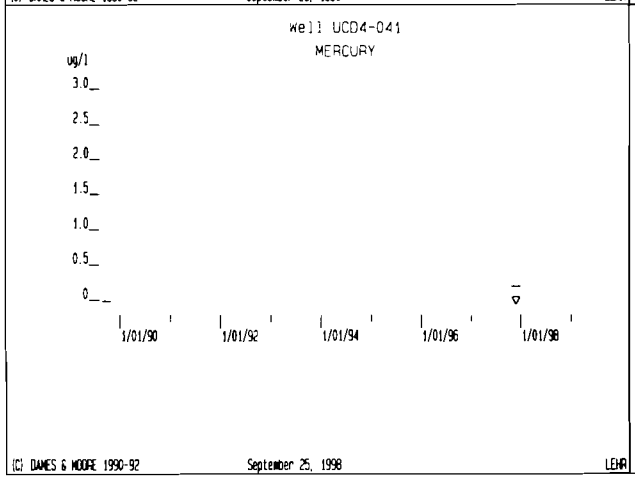

Well UCD2-036
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

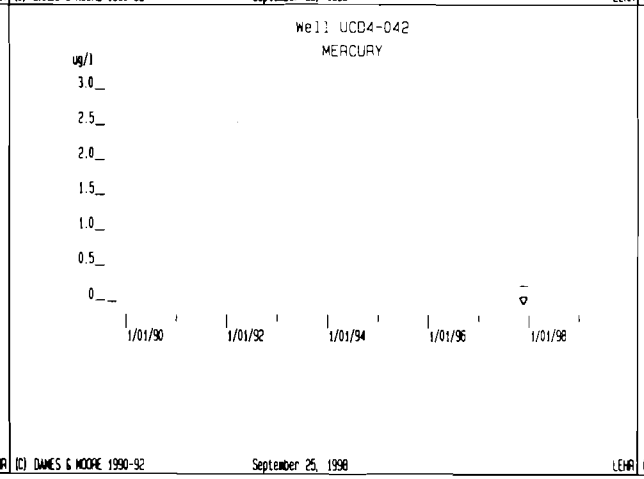

Well UCD2-037
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

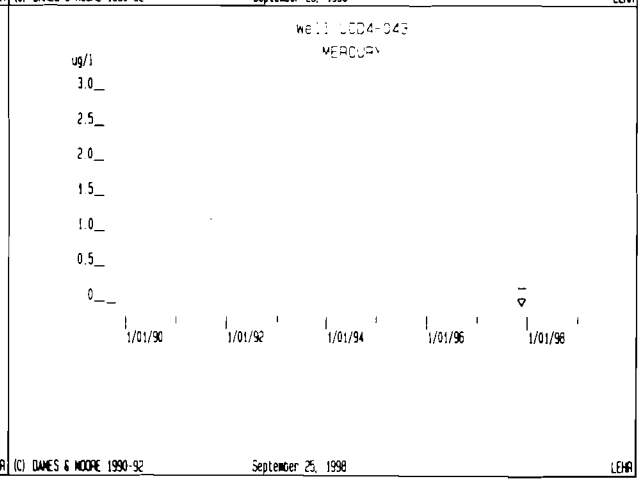

Well UCD2-038
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR


Well UCD2-039
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

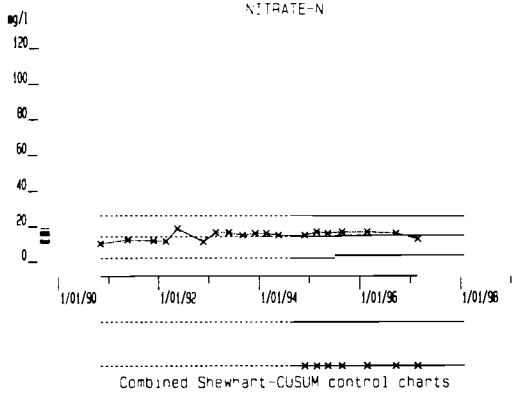

Well UCD2-040
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR


Well UCD4-041
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR


Well UCD4-042
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

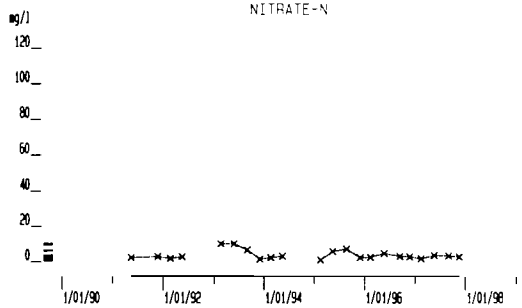

Well UCD4-043
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 25, 1998
LEHR

Well UCD1-001
NITRATE-N



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

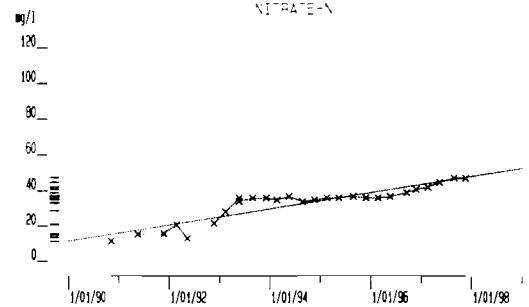
Well UCD1-004
NITRATE-N



Note: Variability does not appear Gaussian.

Warning: High serial correlation.
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

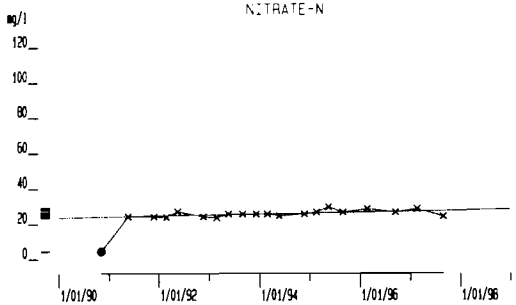
Well UCD1-010
NITRATE-N



Slope of regression line is 4.5936 mg/l per year.

Warning: High serial correlation.
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

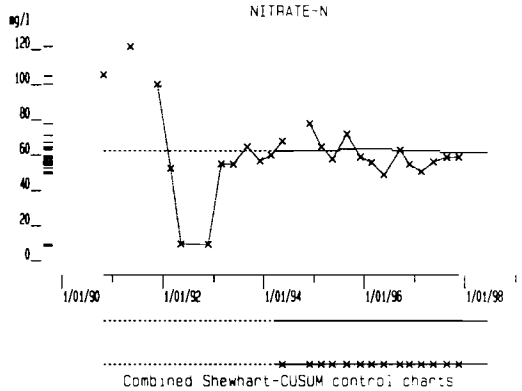
Well UCD1-011
NITRATE-N



Slope of regression line is 0.5380 mg/l per year.

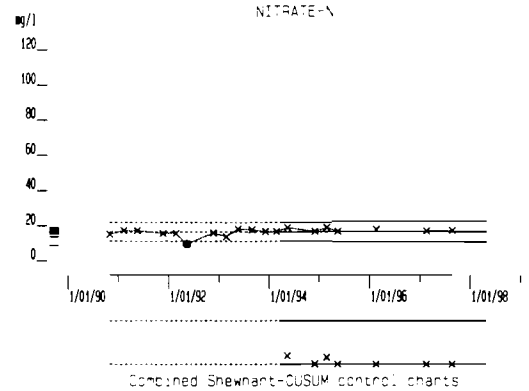
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-012
NITRATE-N



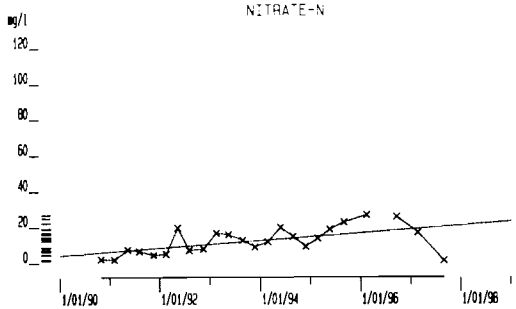
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-013
NITRATE-N



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

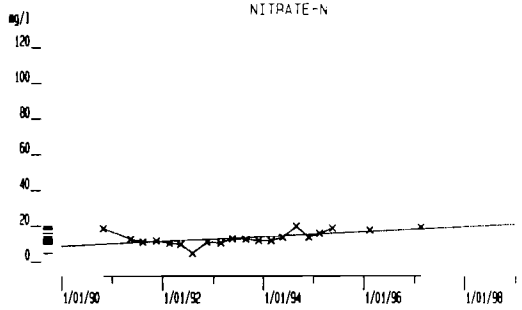
Well UCD1-018
NITRATE-N



Slope of regression line is 2.0903 mg/l per year.

Warning: High serial correlation.
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

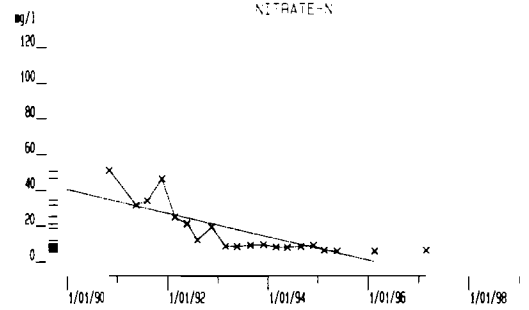
Well UCD1-019
NITRATE-N



Slope of regression line is 1.3663 mg/l per year.

Warning: High serial correlation.
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

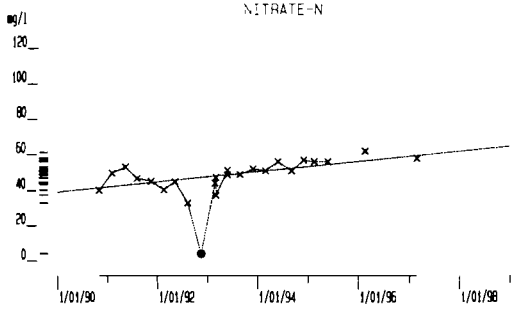
Well UCD1-020
NITRATE-N



Slope of regression line is -6.6063 mg/l per year.

Warning: High serial correlation.
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-021
NITRATE-N

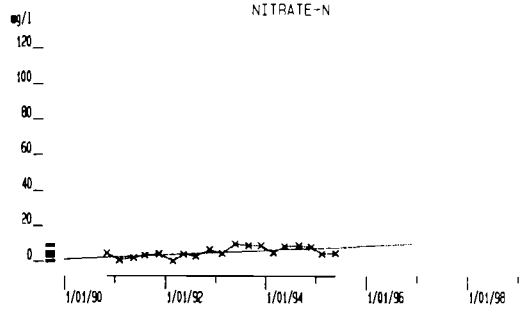


Slope of regression line is 2.8550 mg/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-022
NITRATE-N

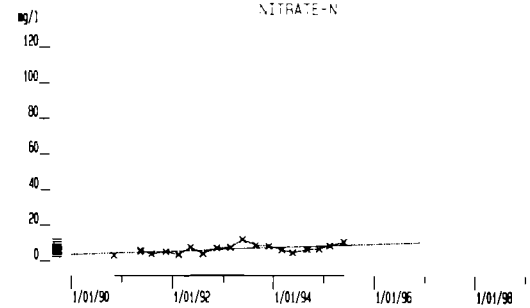


Slope of regression line is 1.2411 mg/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

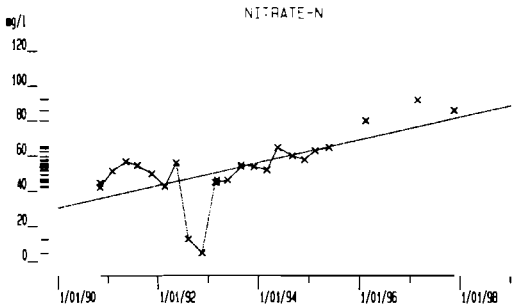
Well UCD1-023
NITRATE-N



Slope of regression line is 1.0023 mg/l per year.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-024
NITRATE-N

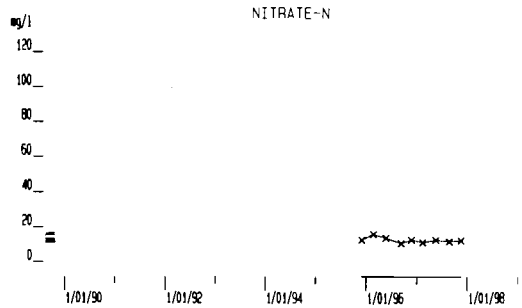


Slope of regression line is 6.4516 mg/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

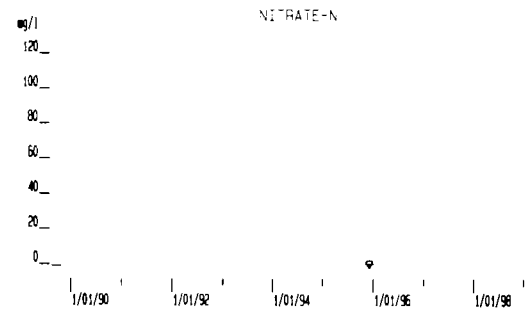
Well UCD1-025
NITRATE-N



Note: Not enough samples to Control Chart.

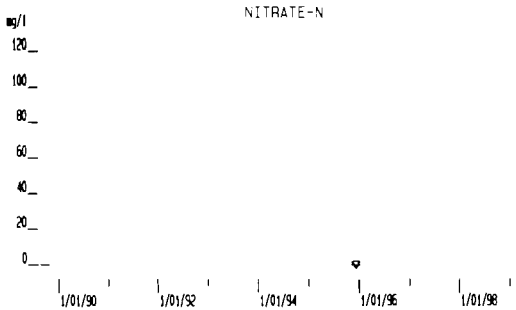
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z1
NITRATE-N



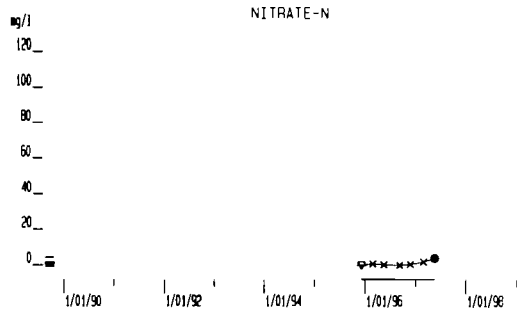
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z2
NITRATE-N



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

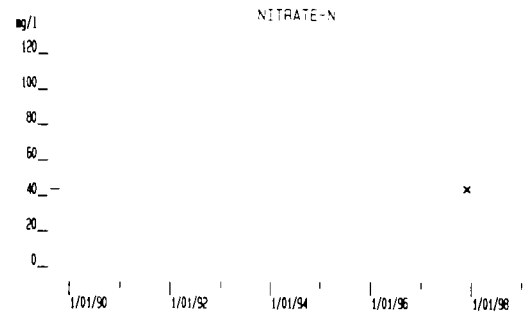
Well UCD1-027Z3
NITRATE-N



Note: Not enough samples to Control Chart.

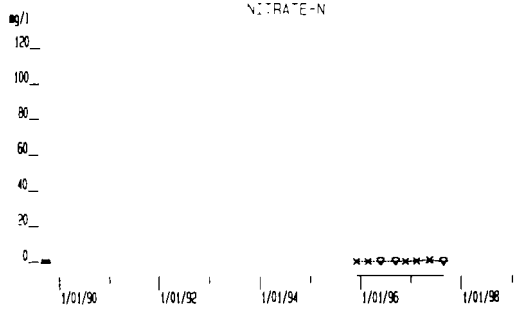
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-028
NITRATE-N



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

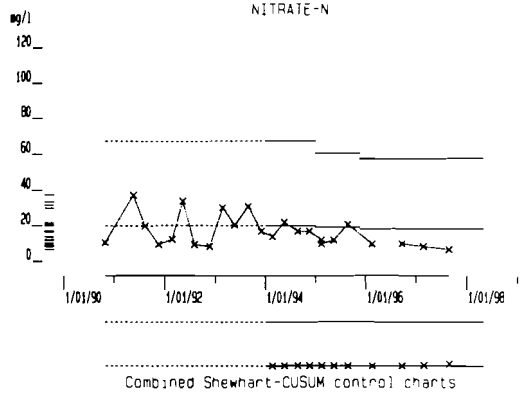
Well UCD1-034
NITRATE-N



Note: Not enough samples to Control Chart.

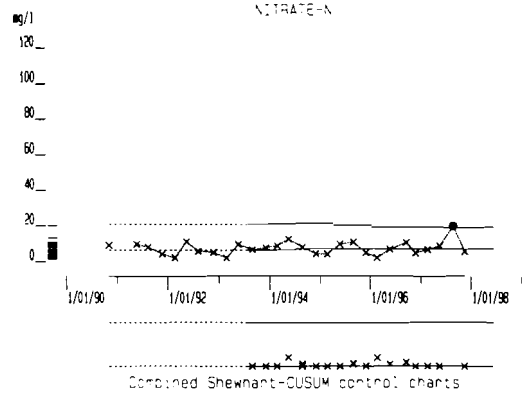
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-007
NITRATE-N



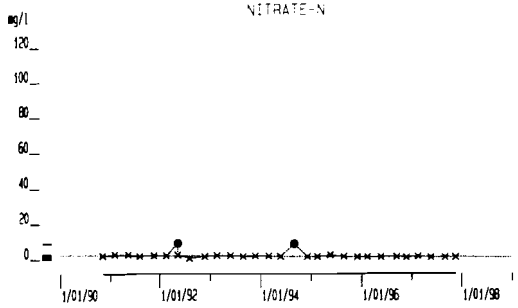
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-014
NITRATE-N



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-015
NITRATE-N

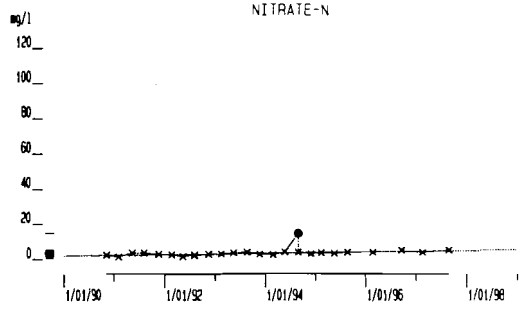


Slope of regression line is -0.1516 mg/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-016
NITRATE-N

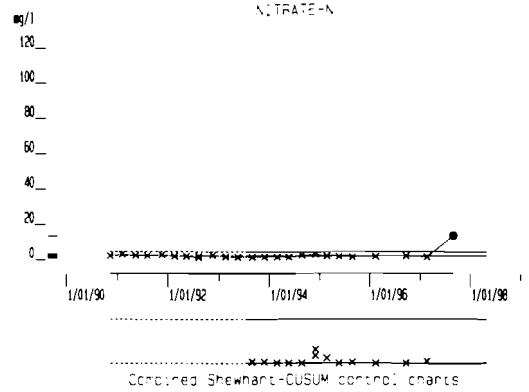


Slope of regression line is 0.3691 mg/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

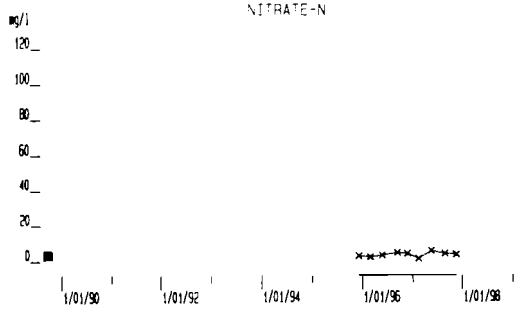
Well UCD2-017
NITRATE-N



Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

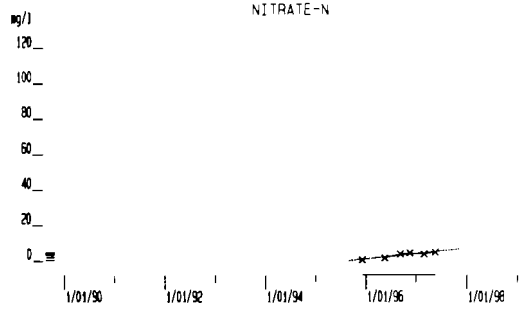
Well UCD2-026
NITRATE-N



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

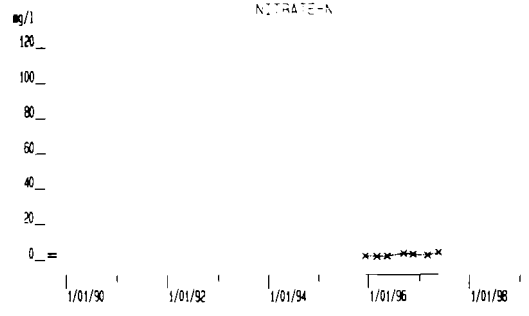
Well UCD2-027Z4
NITRATE-N



Slope of regression line is 3.0348 mg/l per year.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

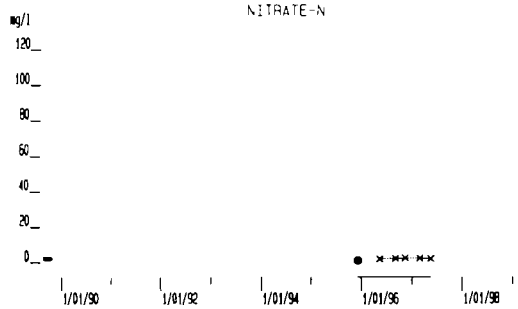
Well UCD2-027Z5
NITRATE-N



Note: Not enough samples to Control Chart

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

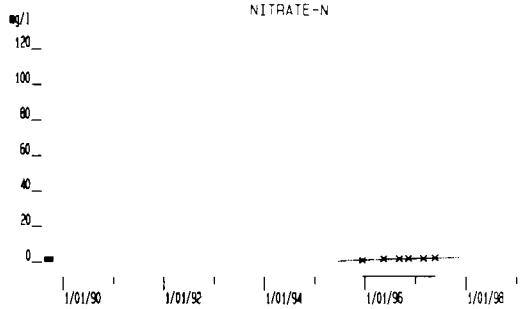
Well UCD2-02726
NITRATE-N



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

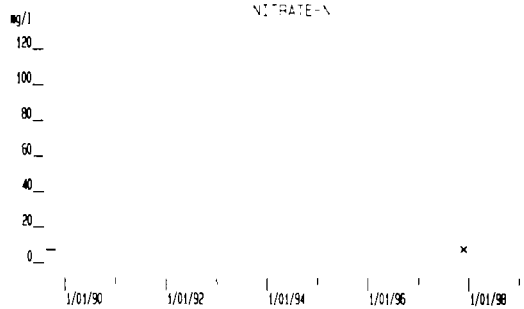
Well UCD2-02727
NITRATE-N



Slope of regression line is 0.7667 mg/l per year.

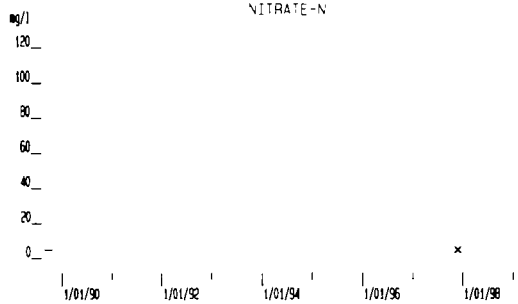
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-029
NITRATE-N



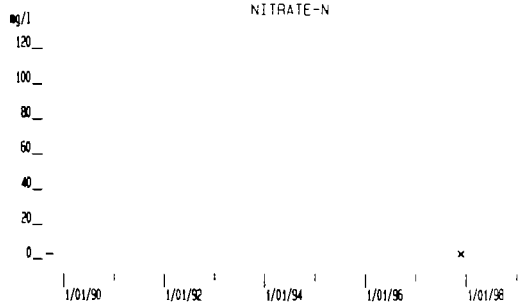
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-030
NITRATE-N



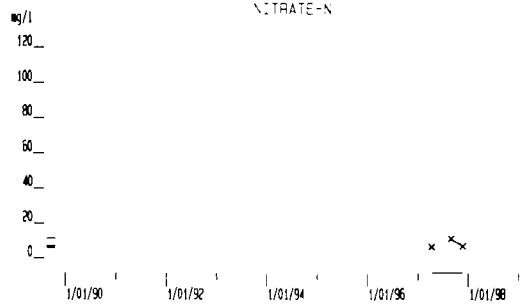
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-031
NITRATE-N



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

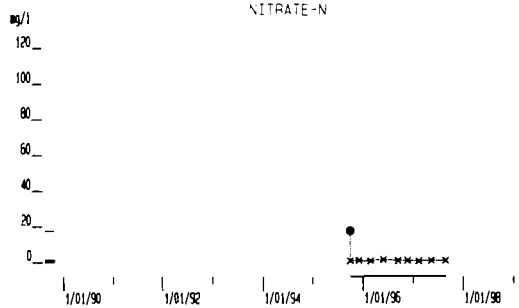
Well UCD2-032
NITRATE-N



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

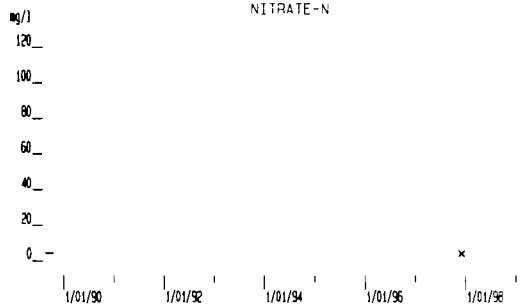
Well UCD2-035
NITRATE-N



Note: Not enough samples to Control Chart.

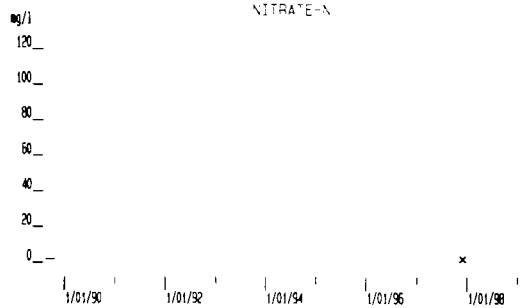
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-036
NITRATE-N

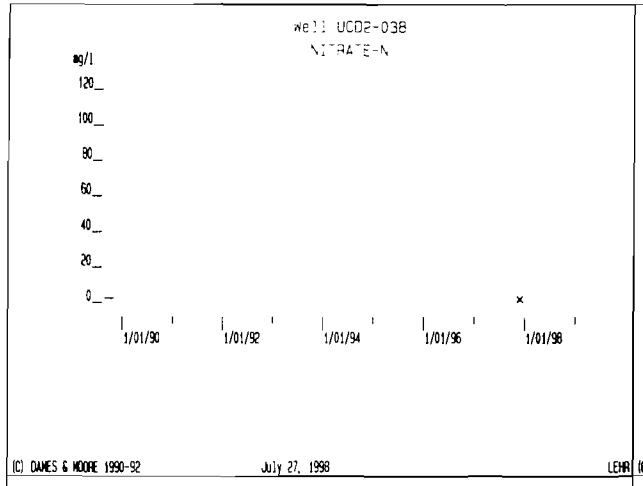


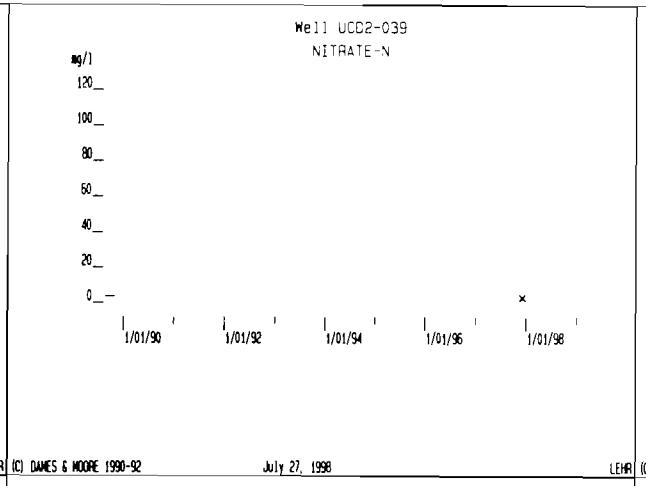
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

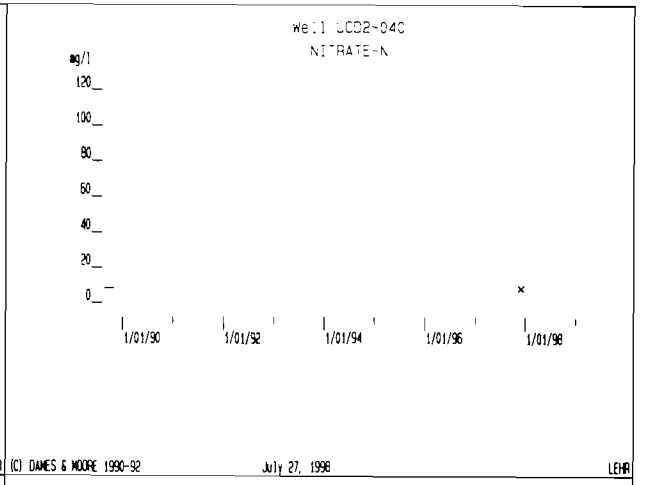
Well UCD2-037
NITRATE-N

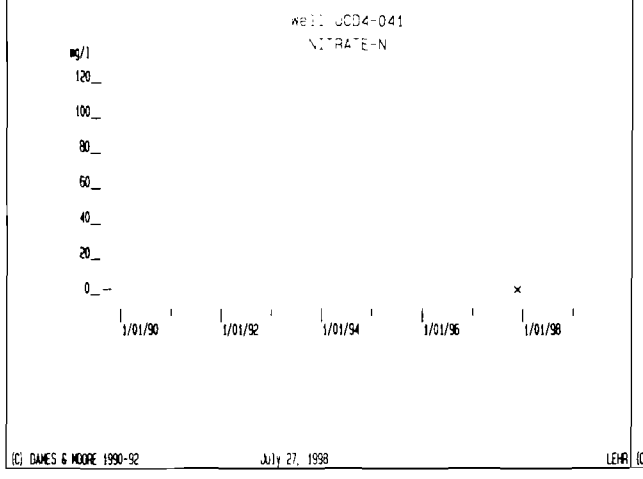


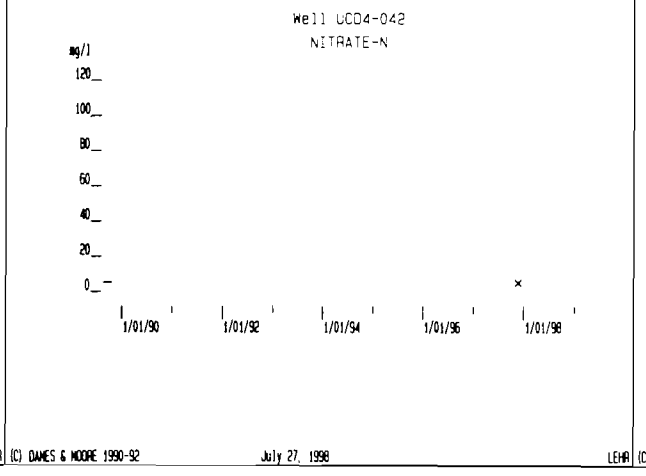
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

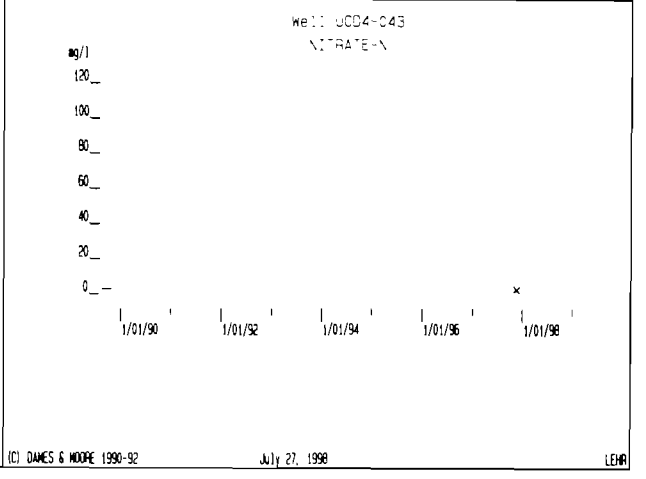

Well UCD2-038
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

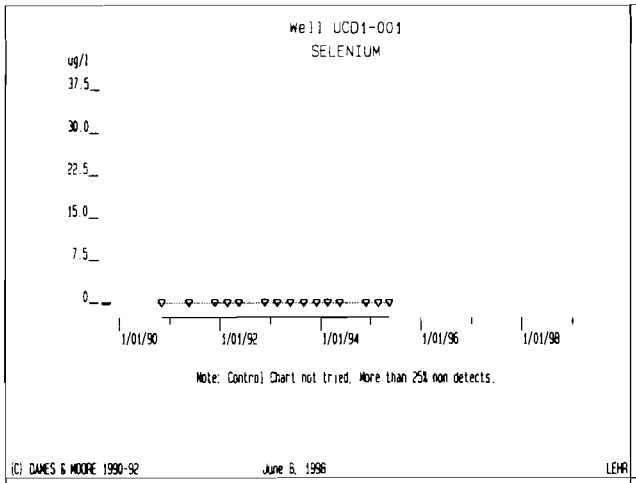

Well UCD2-039
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

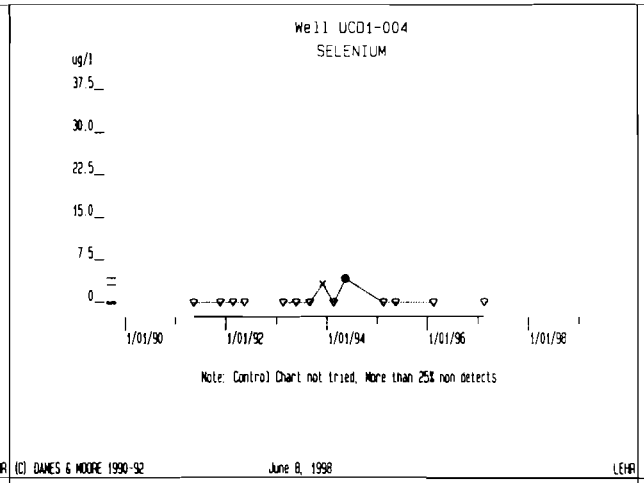

Well UCD2-040
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

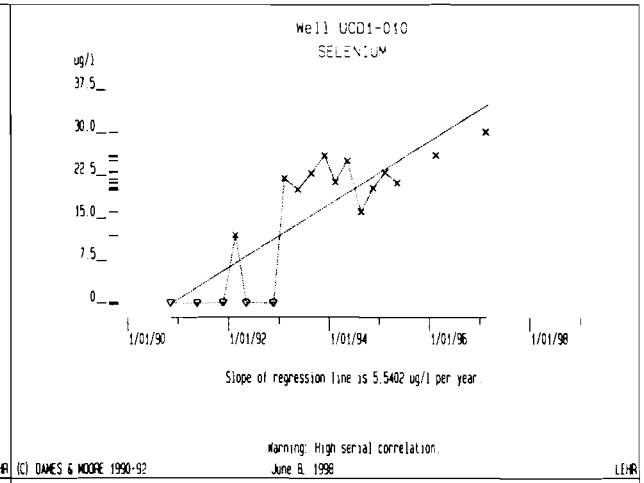

Well UCD4-041
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

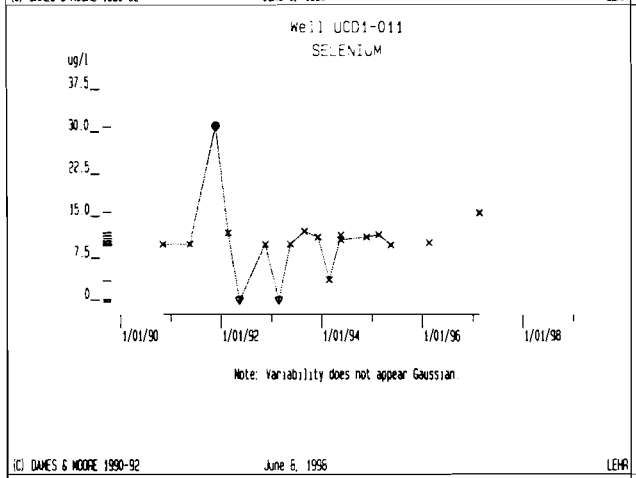

Well UCD4-042
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

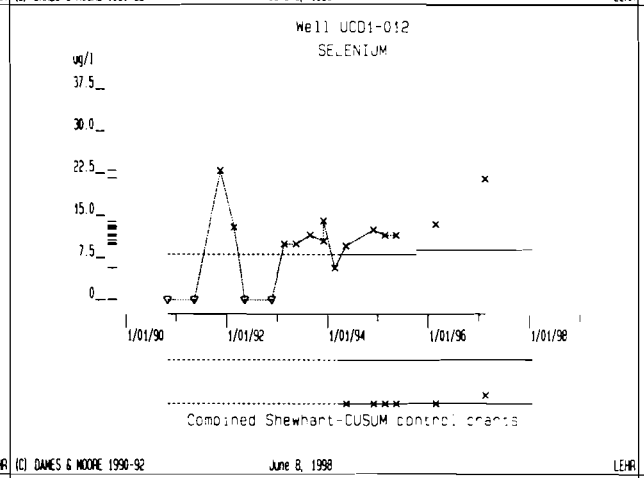

Well UCD4-043
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

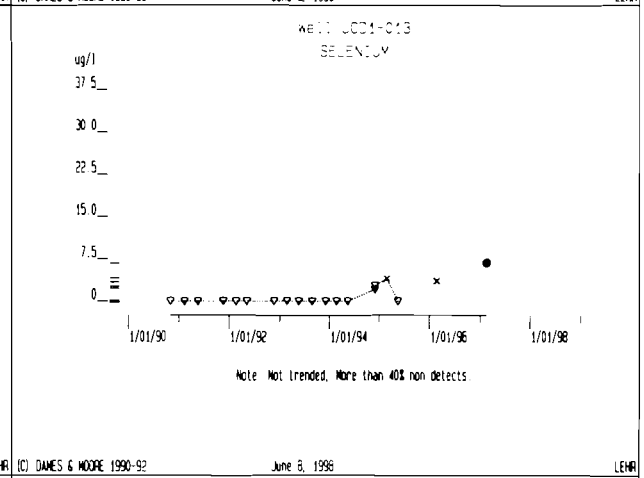

Well UCD1-001
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

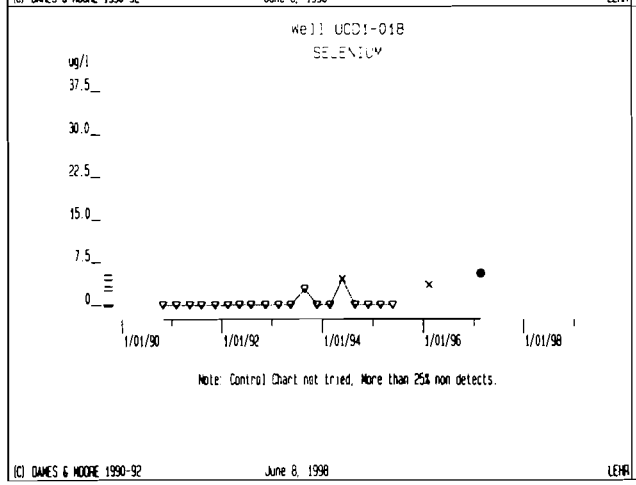

Well UCD1-004
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

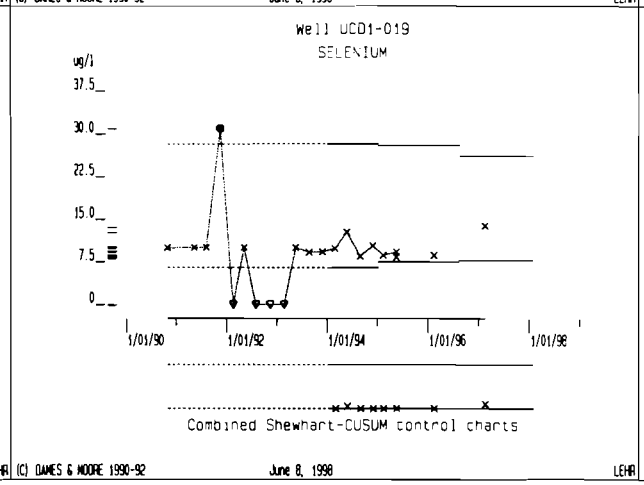

Well UCD1-010
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is 5.5402 ug/l per year.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

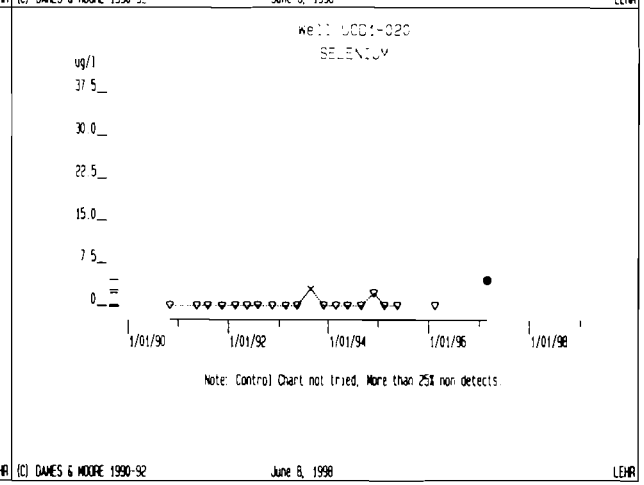

Well UCD1-011
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Variability does not appear Gaussian.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

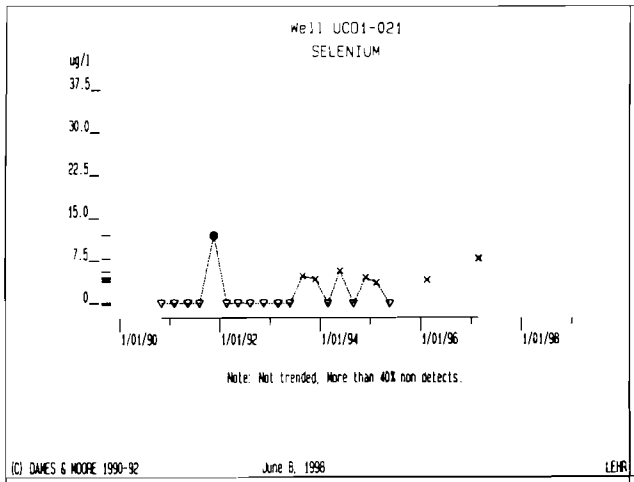

Well UCD1-012
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

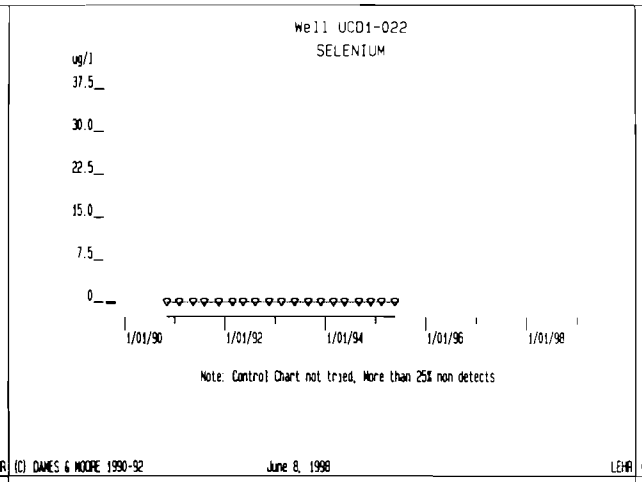

Well UCD1-013
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

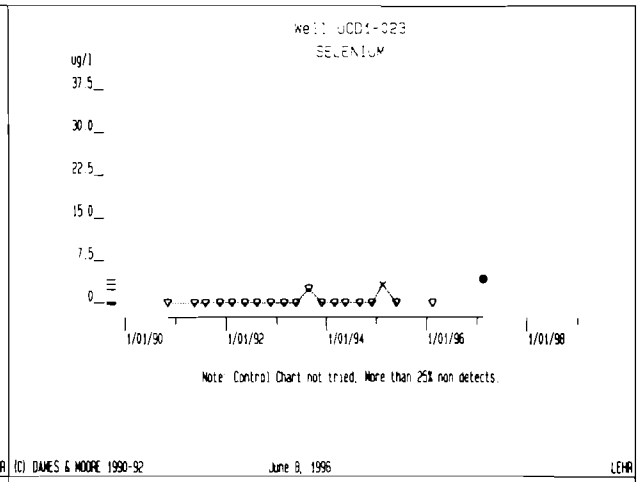

Well UCD1-018
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

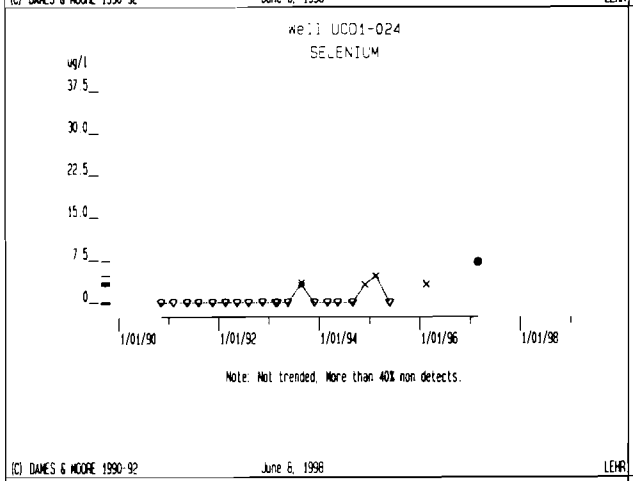

Well UCD1-019
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

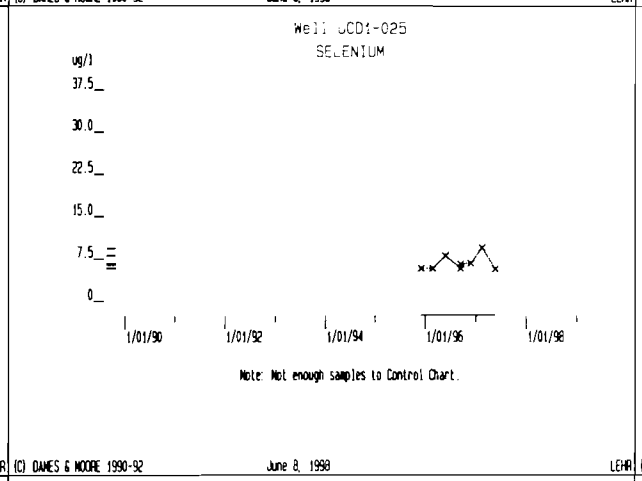

Well UCD1-020
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

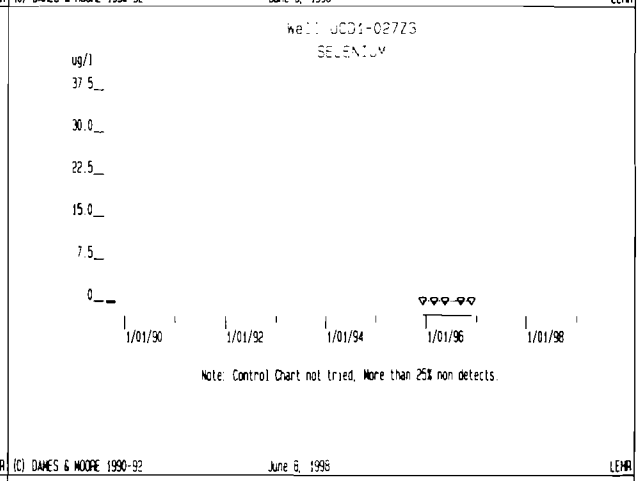

Well UCD1-021
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

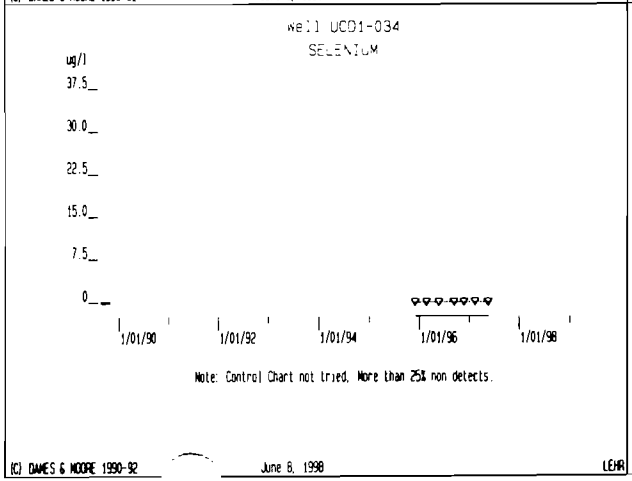

Well UCD1-022
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

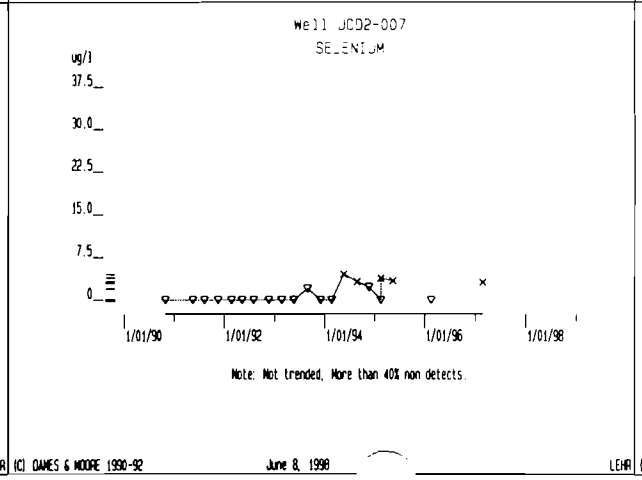

Well UCD1-023
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

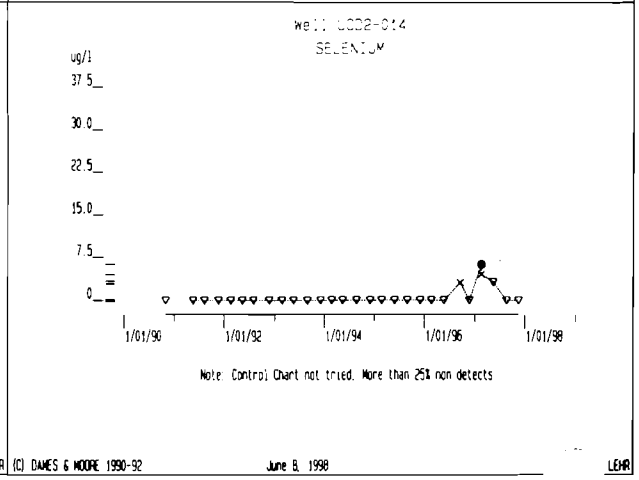

Well UCD1-024
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

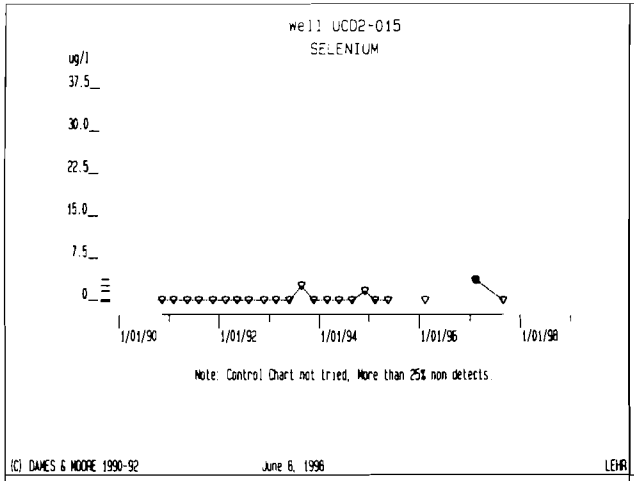

Well UCD1-025
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not enough samples to Control Chart.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

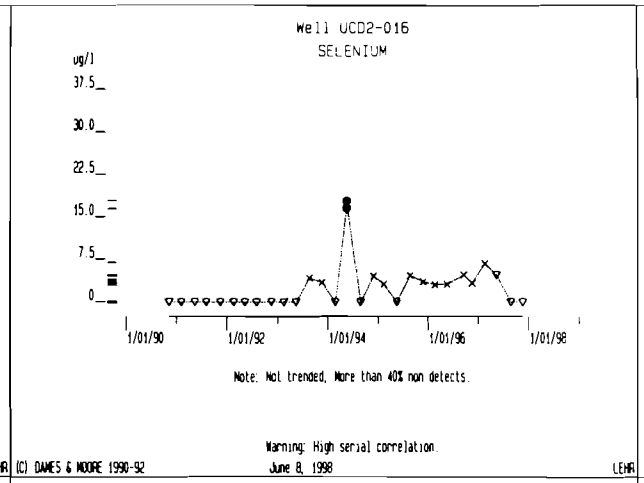

Well UCD1-027Z3
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

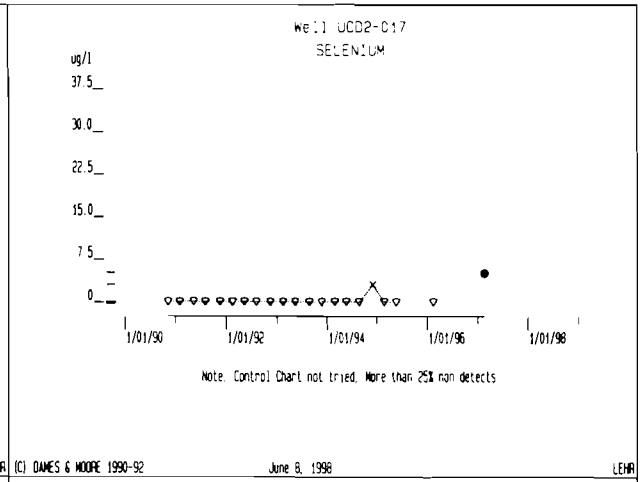

Well UCD1-034
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

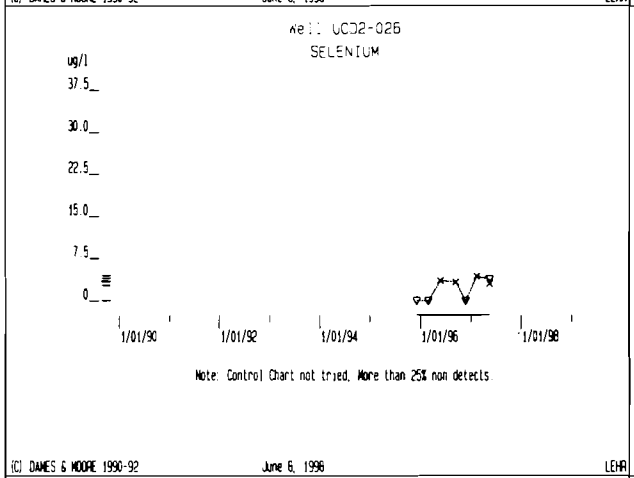

Well UCD2-007
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

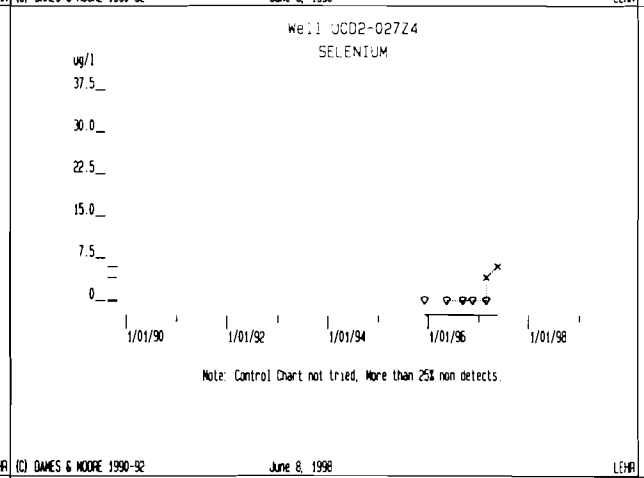

Well UCD2-014
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

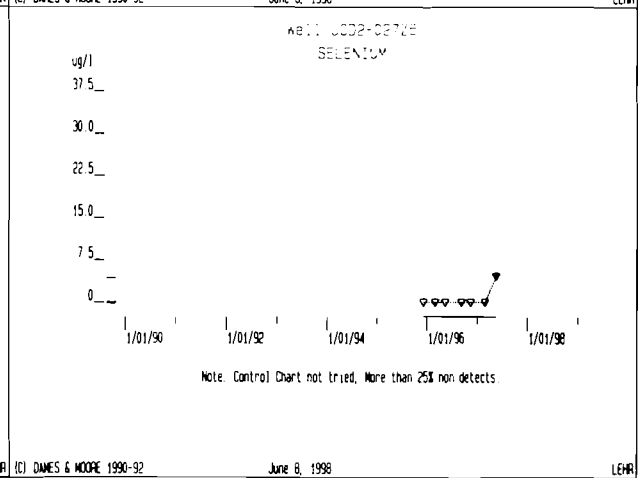

Well UCD2-015
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

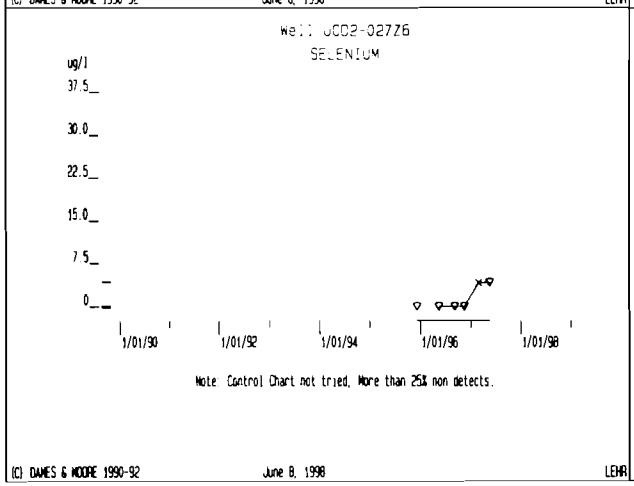

Well UCD2-016
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

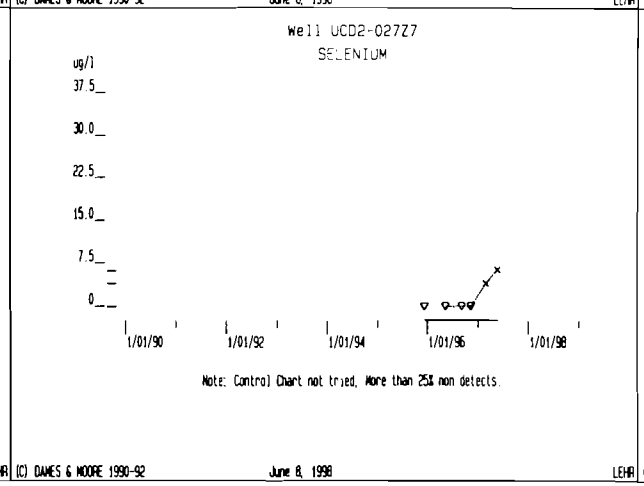

Well UCD2-017
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

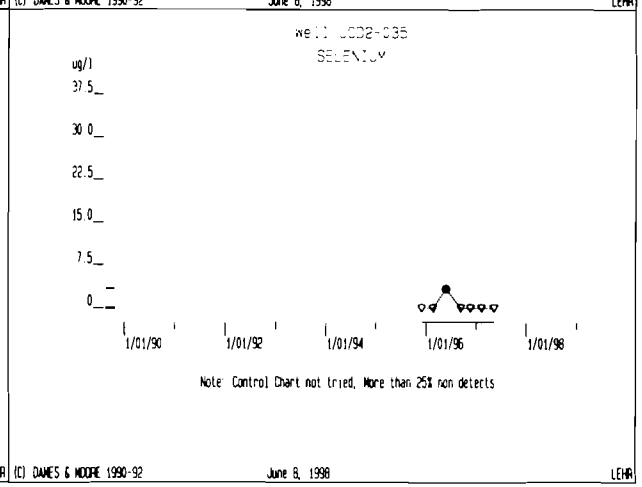

Well UCD2-026
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD2-027Z4
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

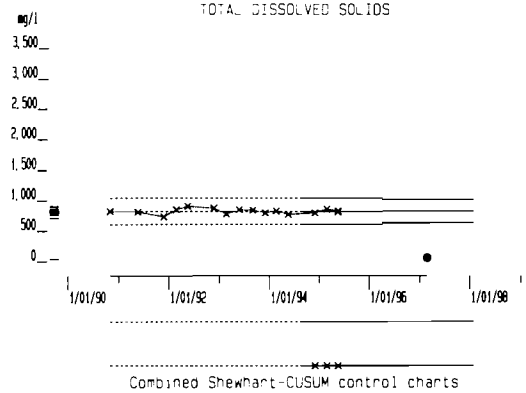

Well UCD2-027Z5
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD2-027Z6
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


Well UCD2-027Z7
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

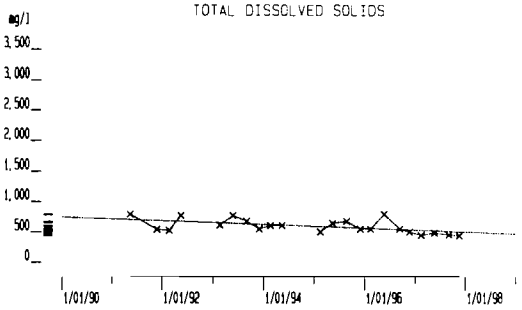

Well UCD2-035
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

Well UCD1-001
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

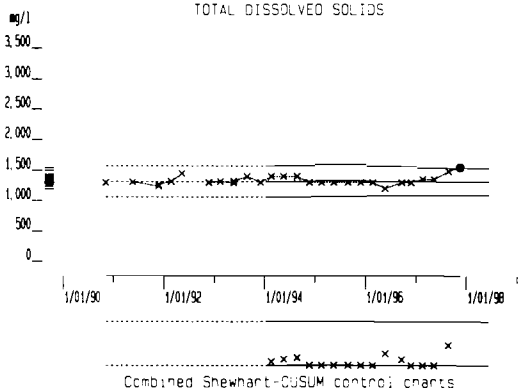
Well UCD1-004
TOTAL DISSOLVED SOLIDS



Slope of regression line is -30.3940 mg/l per year.

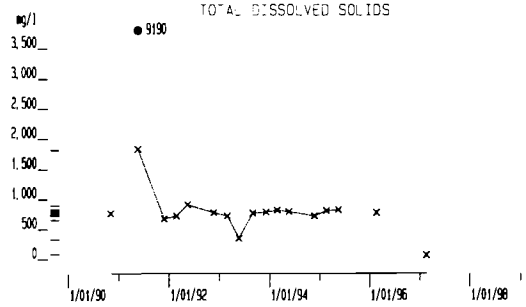
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-010
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

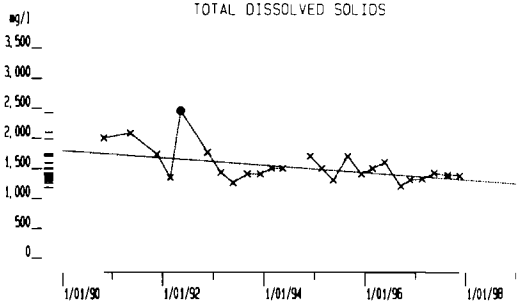
Well UCD1-011
TOTAL DISSOLVED SOLIDS



Note: Variability does not appear Gaussian.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-012
TOTAL DISSOLVED SOLIDS

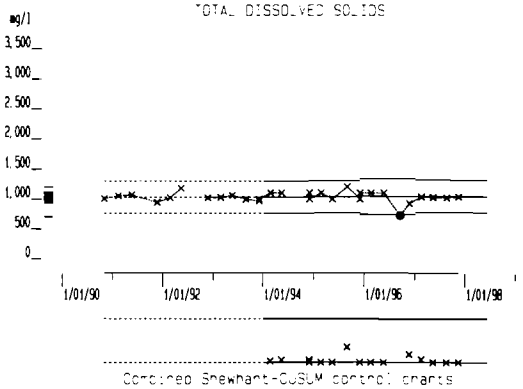


Slope of regression line is -61.1132 mg/l per year.

Warning: High serial correlation.

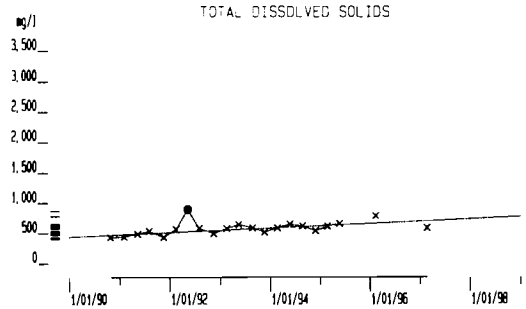
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-013
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-018
TOTAL DISSOLVED SOLIDS

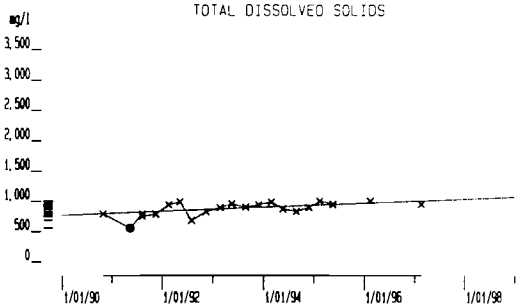


Slope of regression line is 36.1039 mg/l per year.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

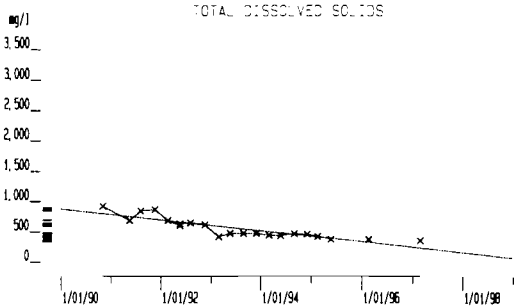
Well UCD1-019
TOTAL DISSOLVED SOLIDS



Slope of regression line is 32.8511 mg/l per year.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-020
TOTAL DISSOLVED SOLIDS

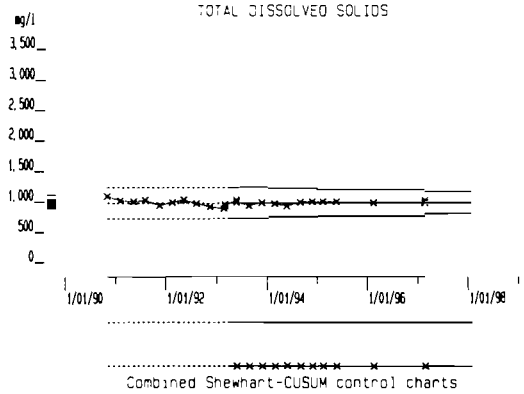


Slope of regression line is -88.8998 mg/l per year.

Warning: High serial correlation

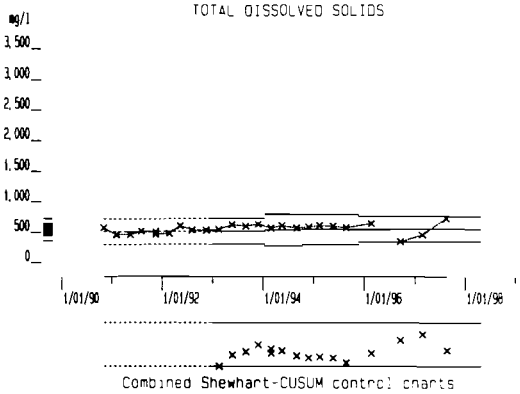
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-021
TOTAL DISSOLVED SOLIDS



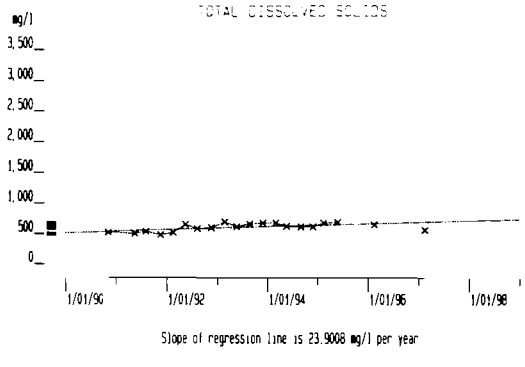
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-022
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-023
TOTAL DISSOLVED SOLIDS

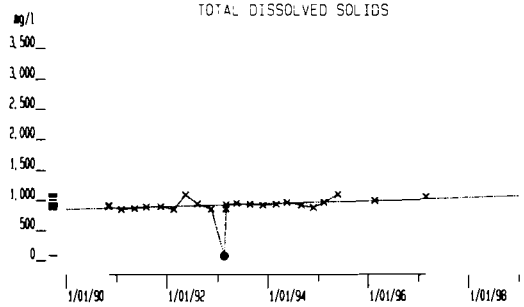


Slope of regression line is 23.9008 mg/l per year

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

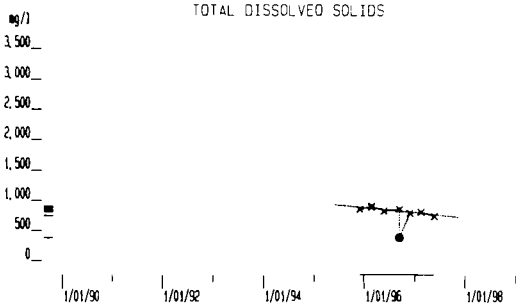
Well UCD1-024
TOTAL DISSOLVED SOLIDS



Slope of regression line is 23.6632 mg/l per year.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

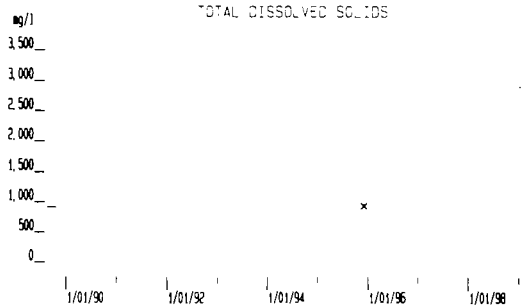
Well UCD1-025
TOTAL DISSOLVED SOLIDS



Slope of regression line is -88.2032 mg/l per year.

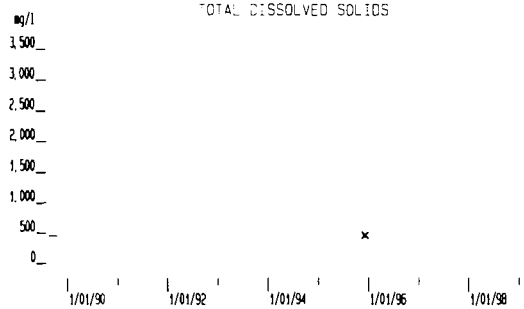
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z1
TOTAL DISSOLVED SOLIDS



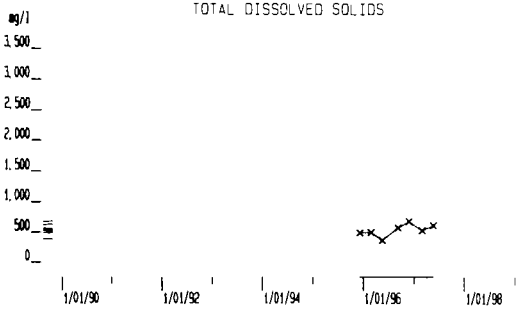
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-027Z2
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

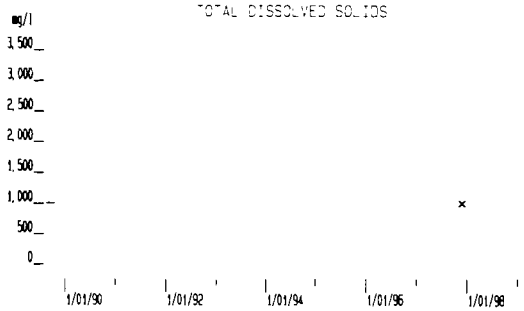
Well UCD1-027Z3
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart.

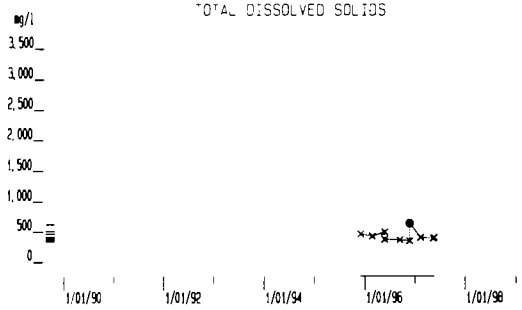
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD1-028
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

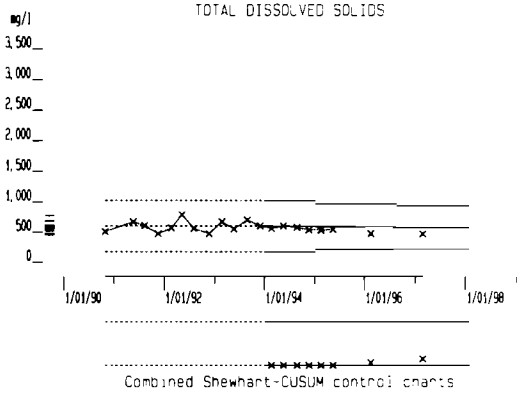
Well UCD1-034
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

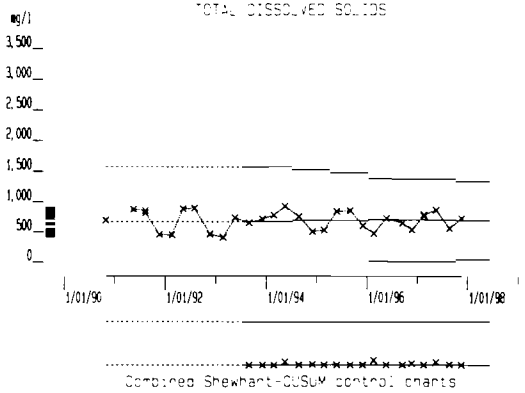
Well UCD2-007
TOTAL DISSOLVED SOLIDS



Combined Shewhart-CUSUM control charts

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

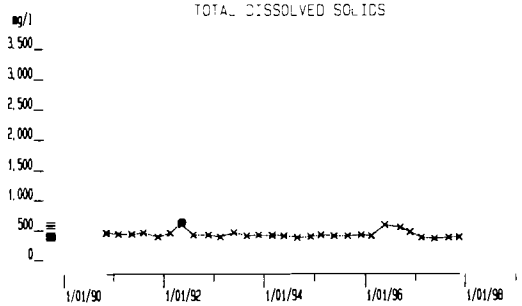
Well UCD2-014
TOTAL DISSOLVED SOLIDS



Combined Shewhart-CUSUM control charts

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-015
TOTAL DISSOLVED SOLIDS

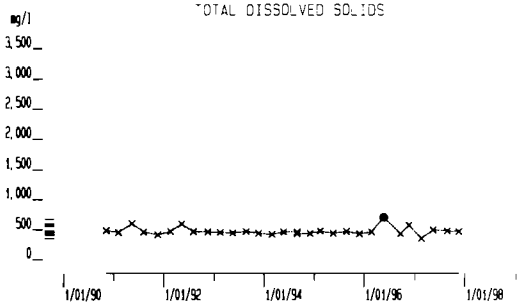


Note: Variability does not appear Gaussian.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

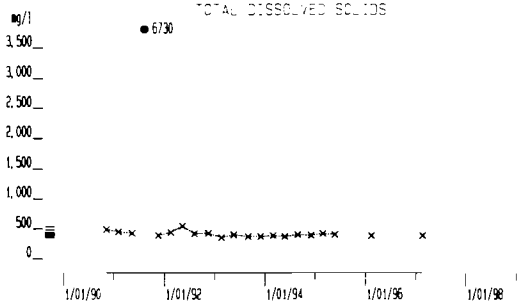
Well UCD2-016
TOTAL DISSOLVED SOLIDS



Note: Variability does not appear Gaussian.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

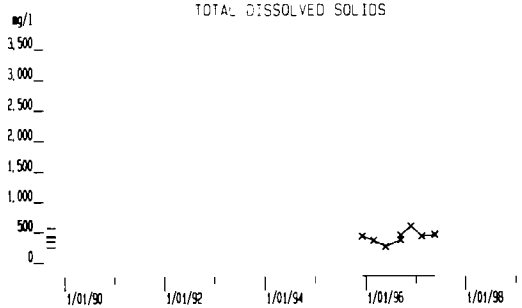
Well UCD2-017
TOTAL DISSOLVED SOLIDS



Note: Variability does not appear Gaussian.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

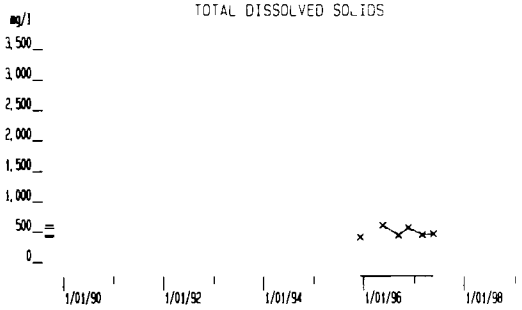
Well UCD2-026
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

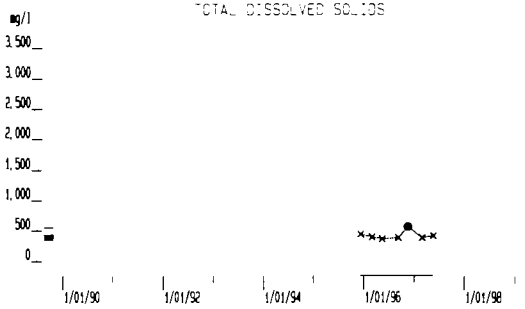
Well UCD2-027Z4
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

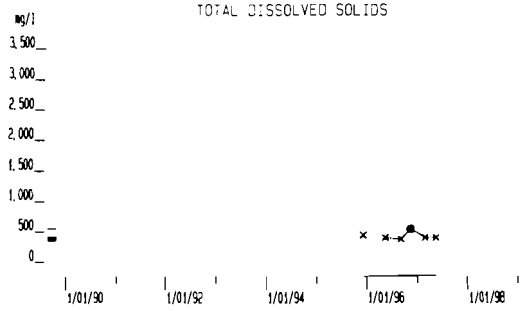
Well UCD2-027Z5
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

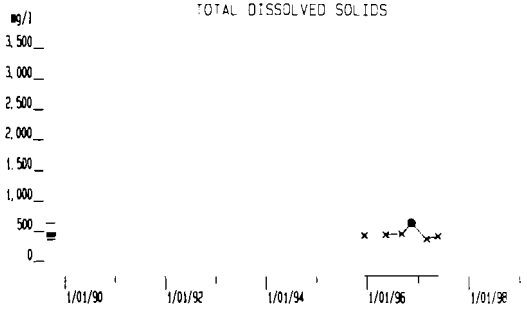
Well UCD2-027Z6
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart.

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

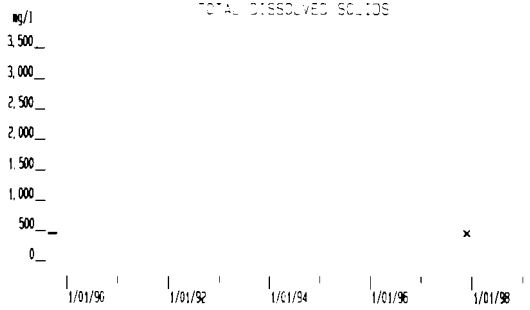
Well UCD2-027Z7
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart

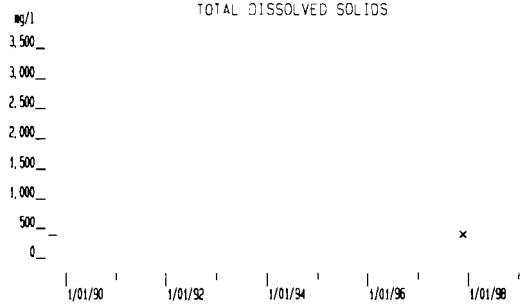
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-029
TOTAL DISSOLVED SOLIDS



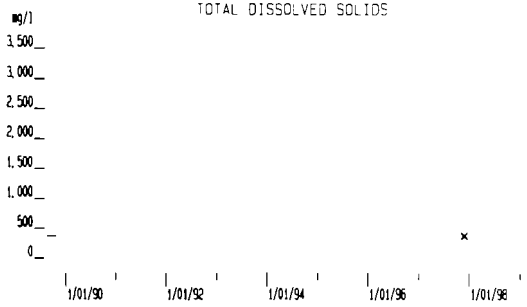
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-030
TOTAL DISSOLVED SOLIDS



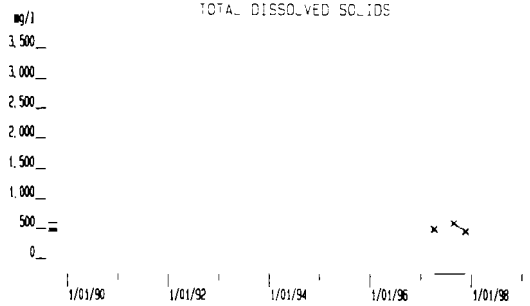
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-031
TOTAL DISSOLVED SOLIDS



(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

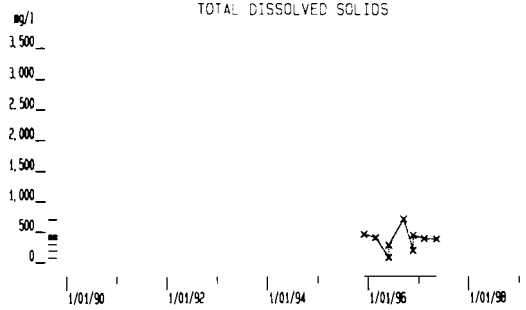
Well UCD2-032
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart

(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

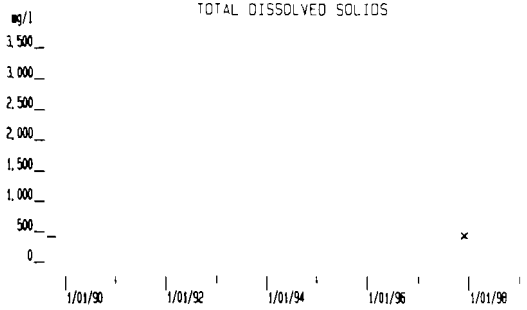
Well UCD2-035
TOTAL DISSOLVED SOLIDS



Note: Not enough samples to Control Chart.

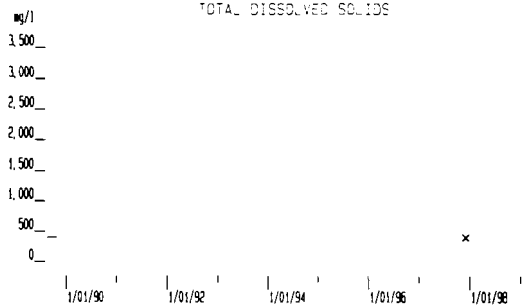
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

Well UCD2-036
TOTAL DISSOLVED SOLIDS

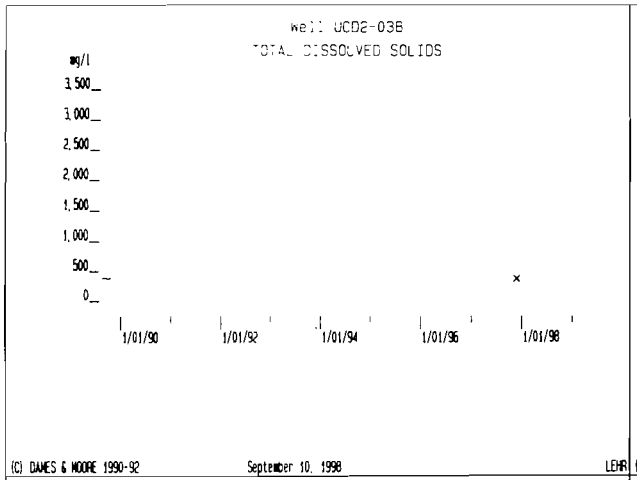


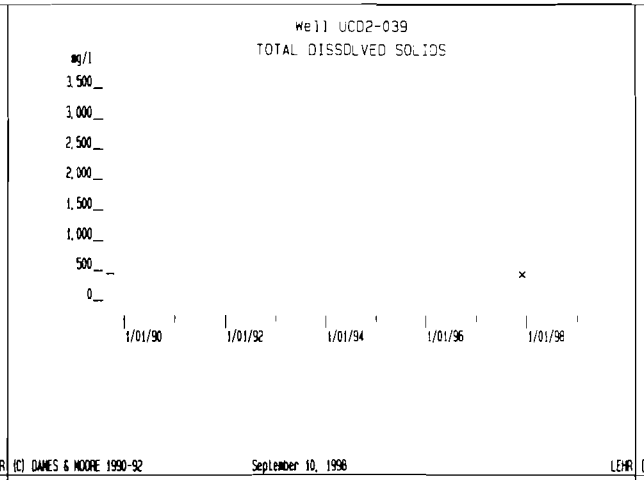
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

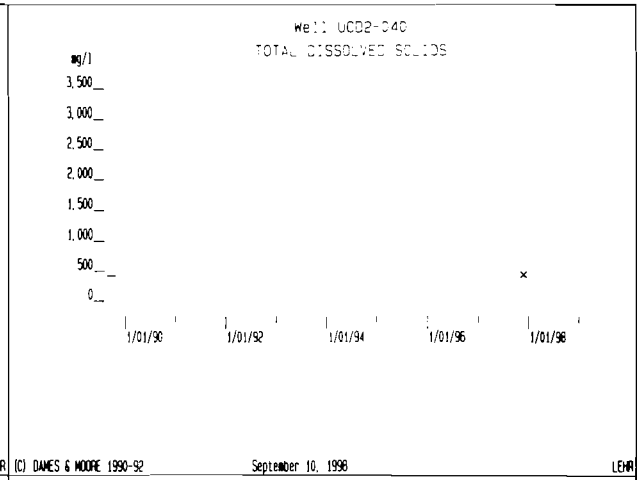
Well UCD2-037
TOTAL DISSOLVED SOLIDS

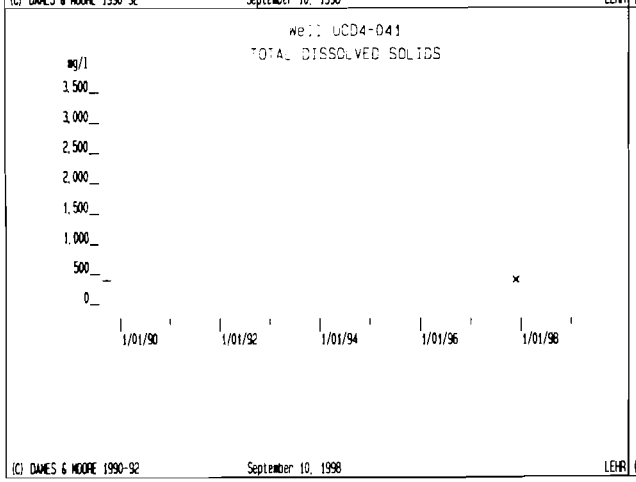


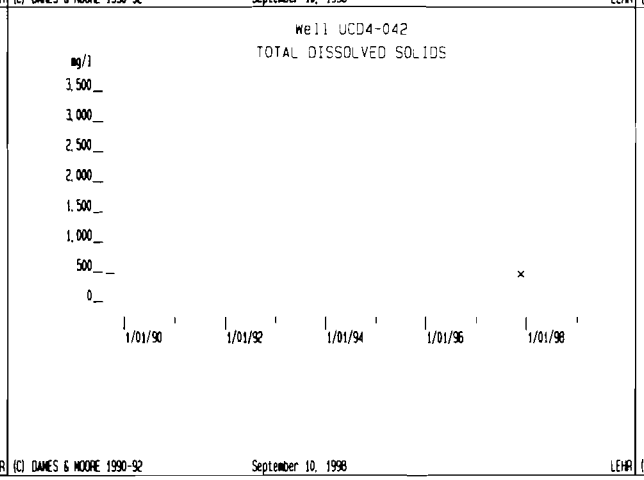
(C) DAMES & MOORE 1990-92 September 10, 1998 LEHR

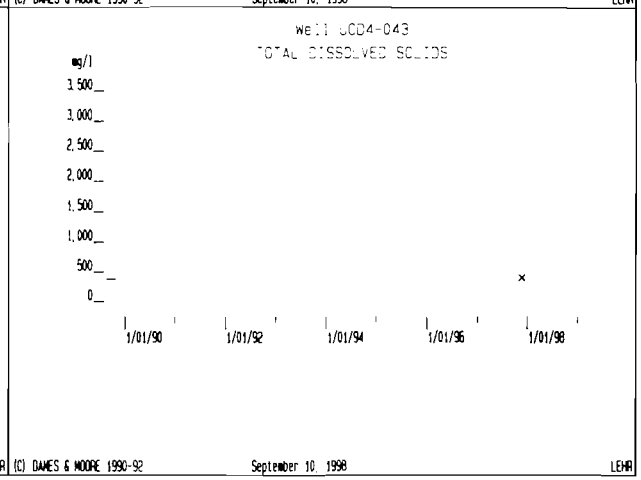

well UCD2-038
TOTAL DISSOLVED SOLIDS
mg/l
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

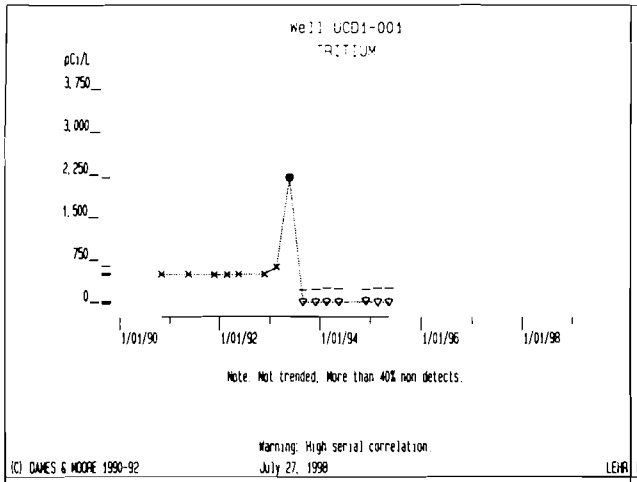

well UCD2-039
TOTAL DISSOLVED SOLIDS
mg/l
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

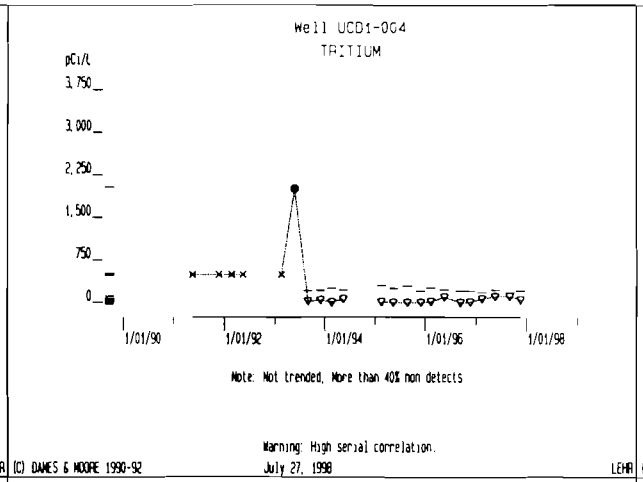

well UCD2-040
TOTAL DISSOLVED SOLIDS
mg/l
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

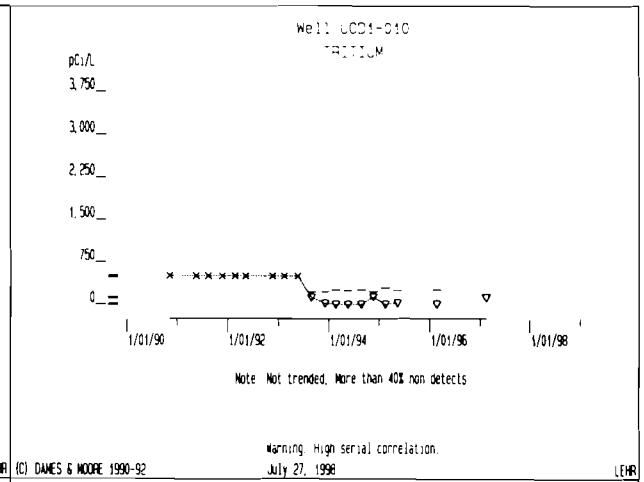

well UCD4-041
TOTAL DISSOLVED SOLIDS
mg/l
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

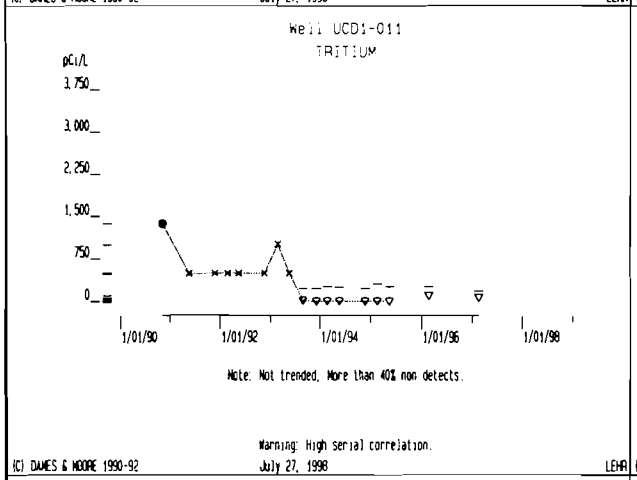

well UCD4-042
TOTAL DISSOLVED SOLIDS
mg/l
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

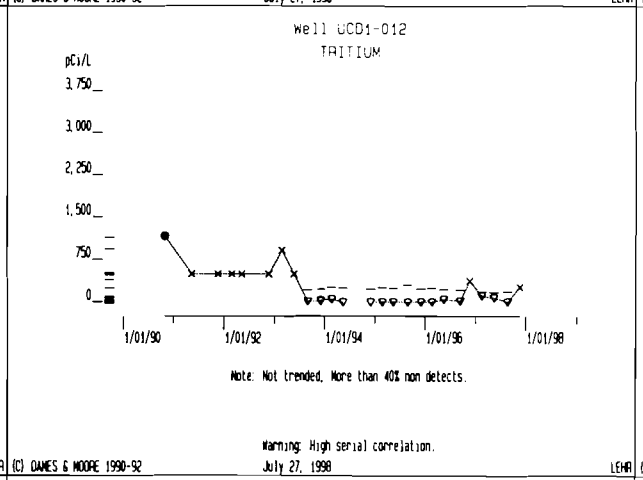

well UCD4-043
TOTAL DISSOLVED SOLIDS
mg/l
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
September 10, 1998
LEHR

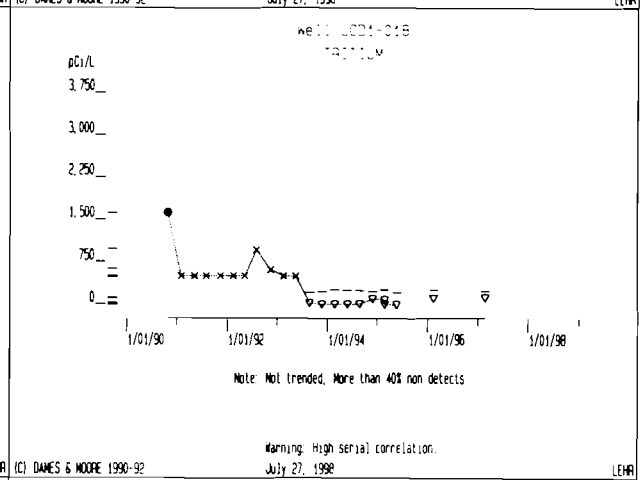

Well UCD1-001
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

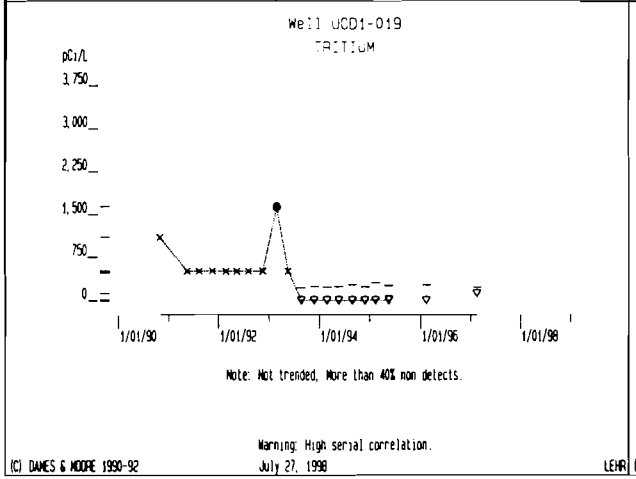

Well UCD1-004
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

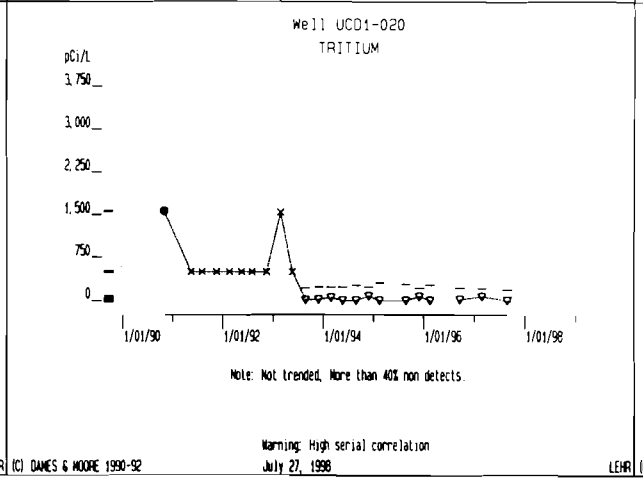

Well UCD1-010
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

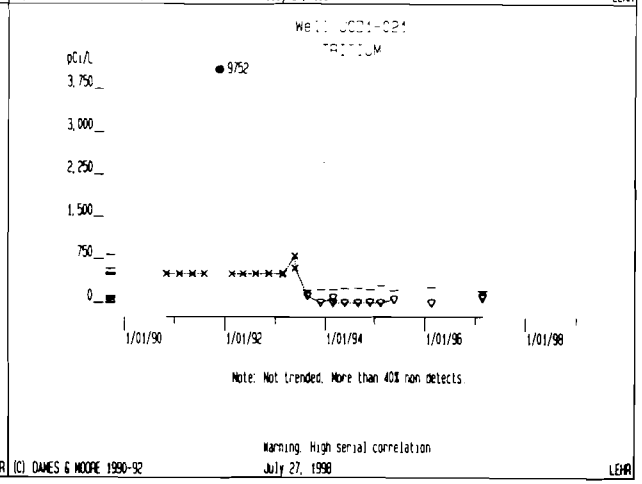

Well UCD1-011
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD1-012
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

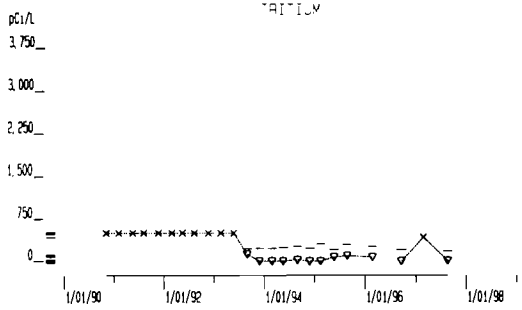

pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD1-019
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


Well UCD1-020
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects.
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR


pCi/L
9752
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

Well UCD1-022
TRITIUM

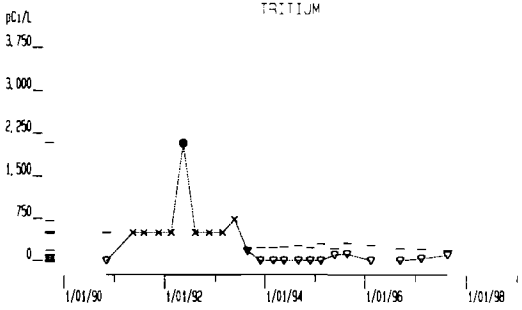


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-023
TRITIUM

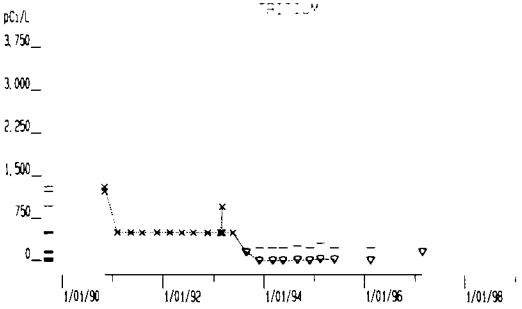


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-024
TRITIUM

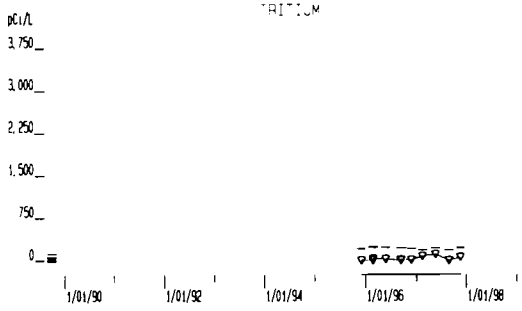


Note: Not trended, More than 40% non detects.

Warning: High serial correlation

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

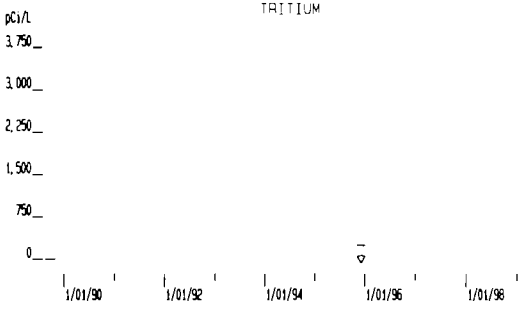
Well UCD1-025
TRITIUM



Note: Control Chart not tried, More than 25% non detects.

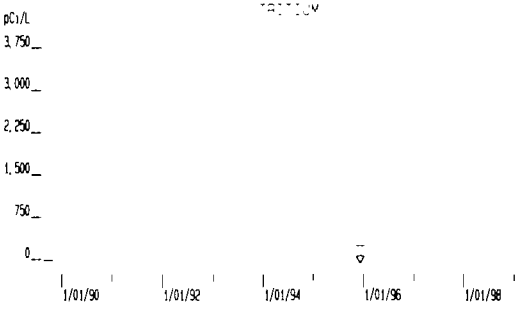
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z1
TRITIUM



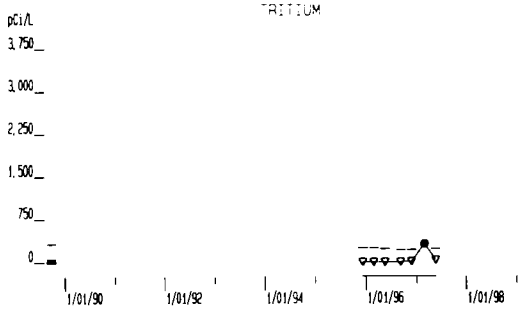
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-027Z2
TRITIUM



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

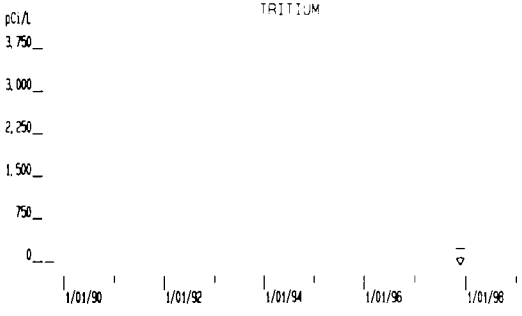
Well UCD1-027Z3
TRITIUM



Note: Control Chart not tried, More than 25% non detects.

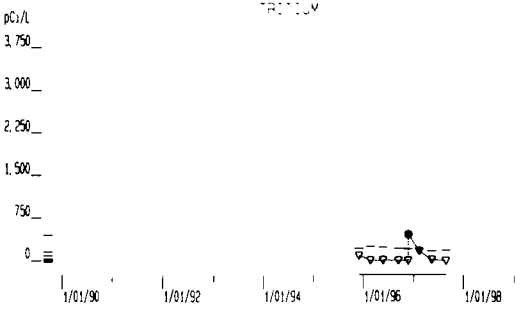
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD1-028
TRITIUM



(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

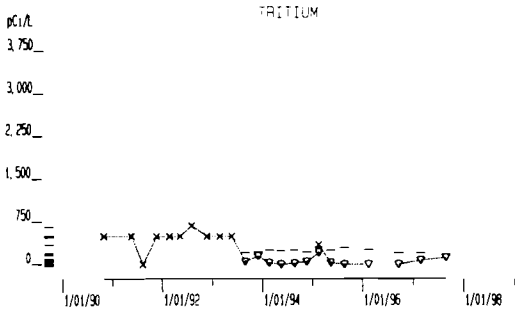
Well UCD1-034
TRITIUM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-007
TRITIUM

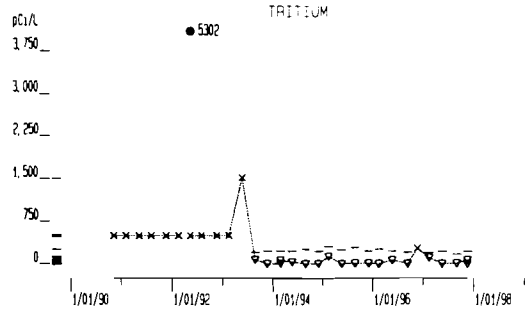


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-015
TRITIUM

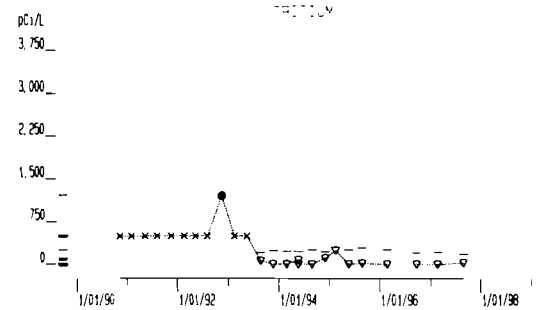


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-016
TRITIUM

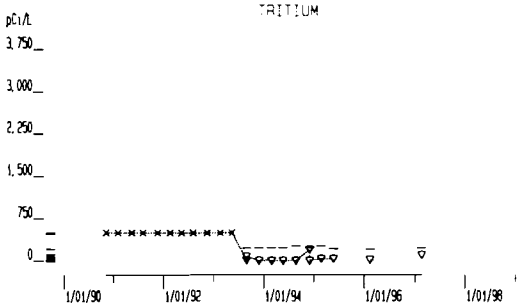


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

Well UCD2-017
TRITIUM

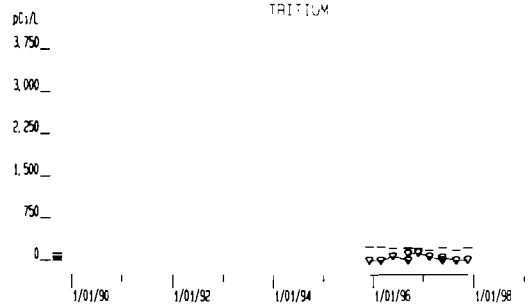


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

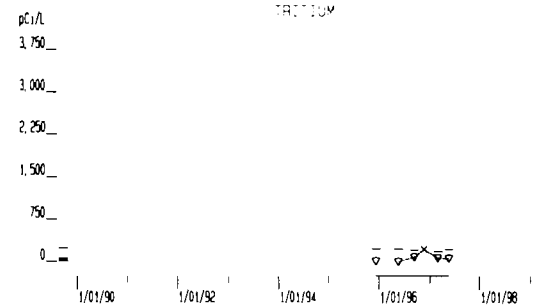
Well UCD2-026
TRITIUM



Note: Control Chart not tried, More than 25% non detects

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

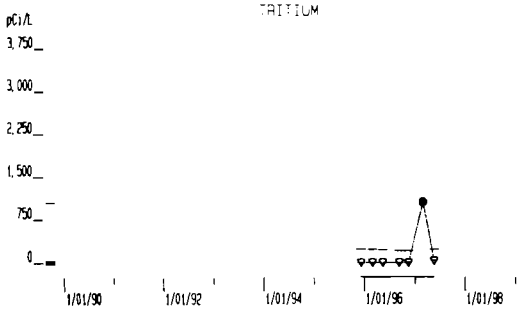
Well UCD2-027Z4
TRITIUM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

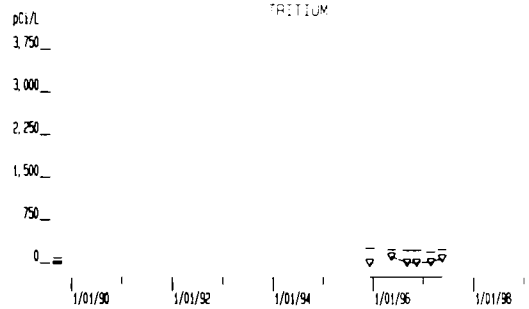
Well UCD2-027Z5
TRITIUM



Note: Control Chart not tried, More than 25% non detects.

(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

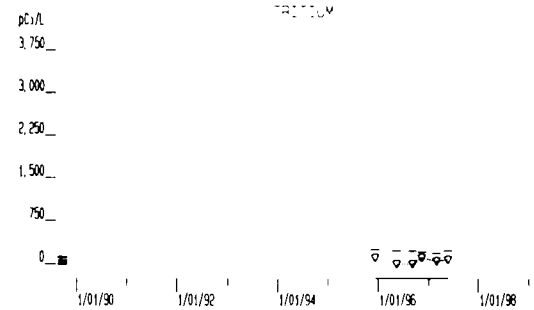
Well UCD2-027Z6
TRITIUM



Note: Control Chart not tried, More than 25% non detects.

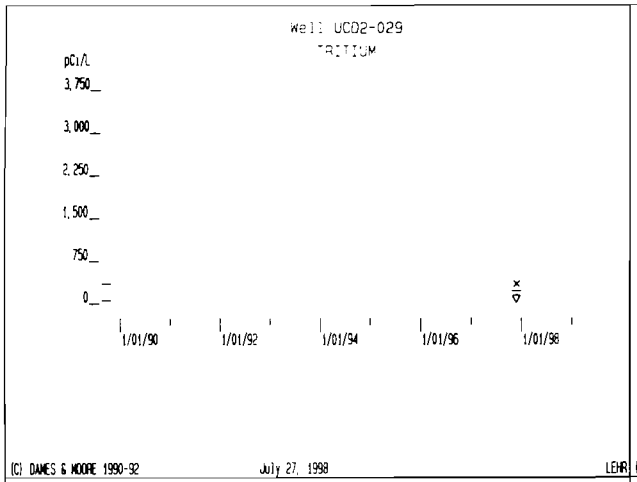
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

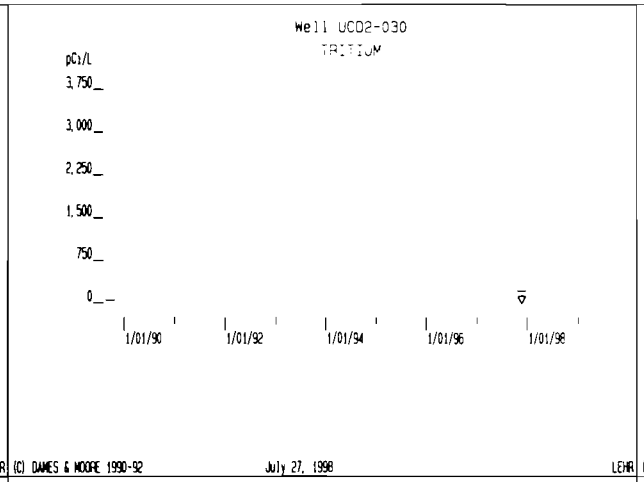
Well UCD2-027Z7
TRITIUM

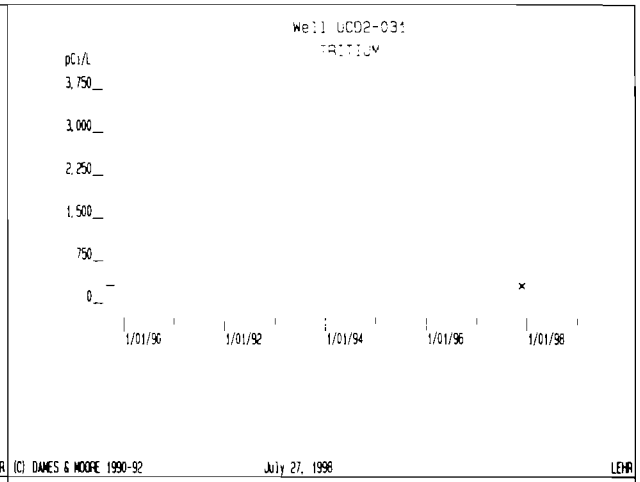


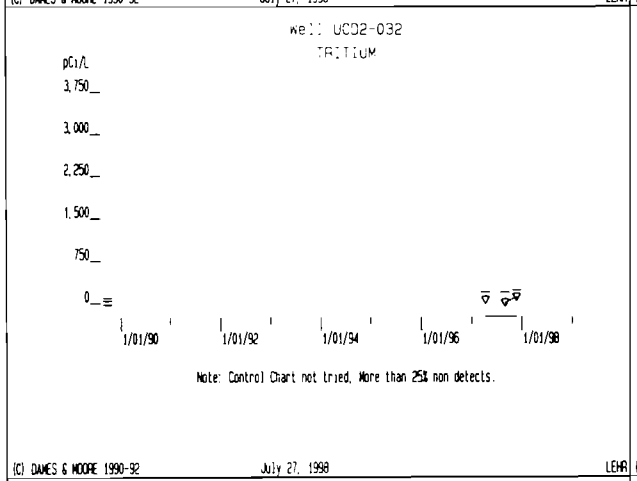
Note: Control Chart not tried, More than 25% non detects.

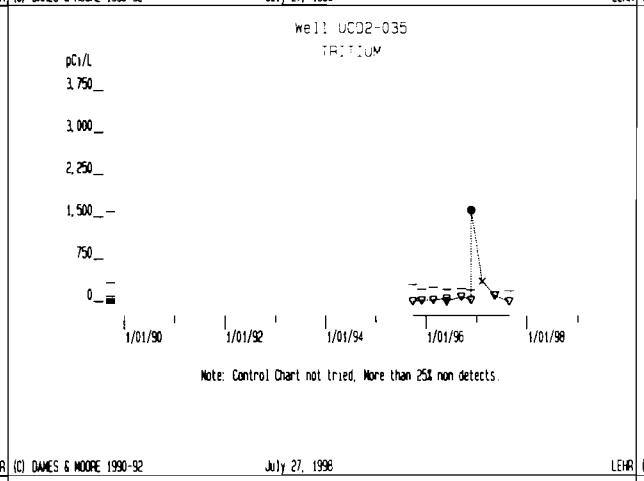
(C) DAMES & MOORE 1990-92 July 27, 1998 LEHR

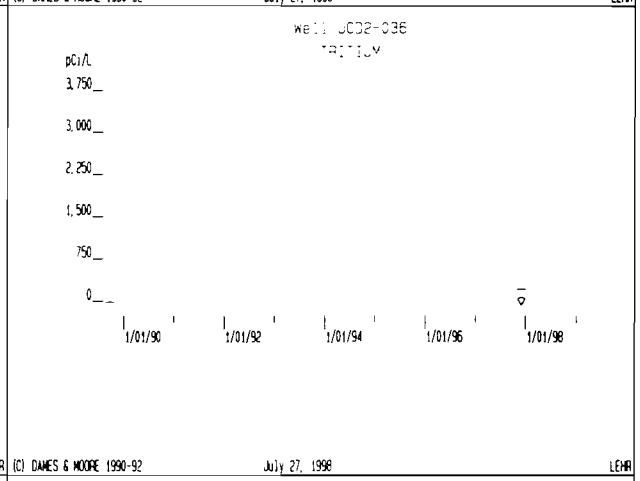

Well UCD2-029
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

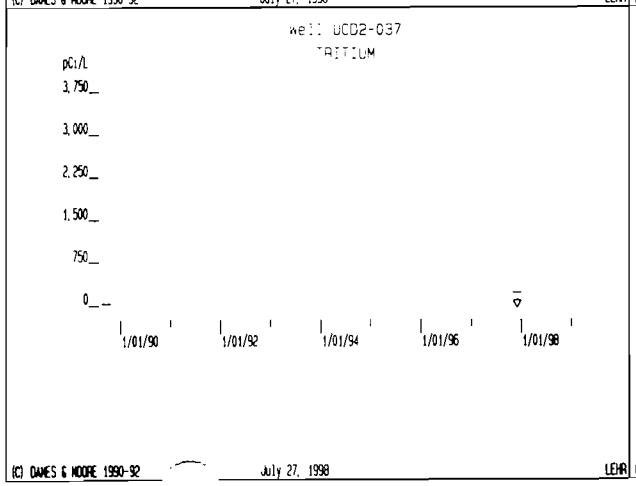

Well UCD2-030
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

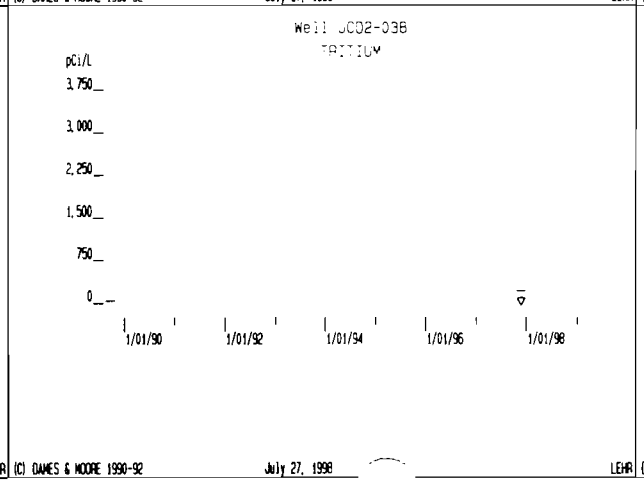

Well UCD2-031
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

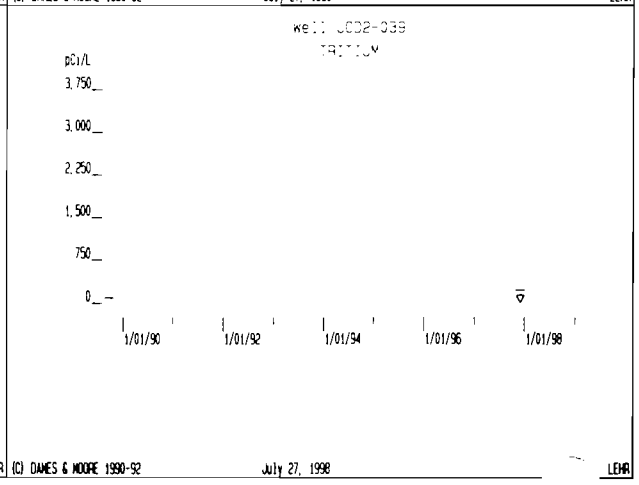

Well UCD2-032
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

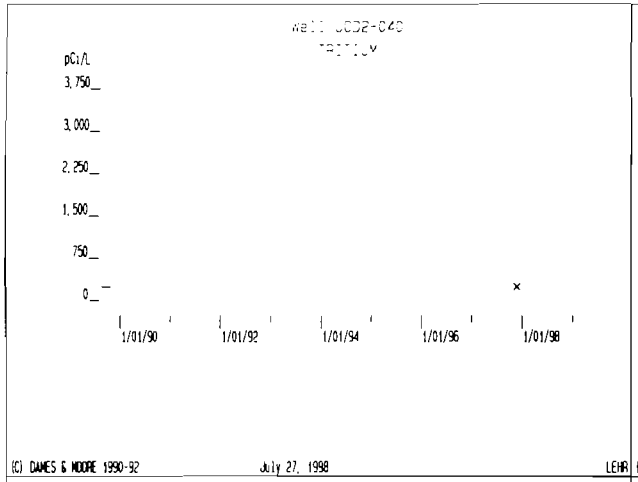

Well UCD2-035
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

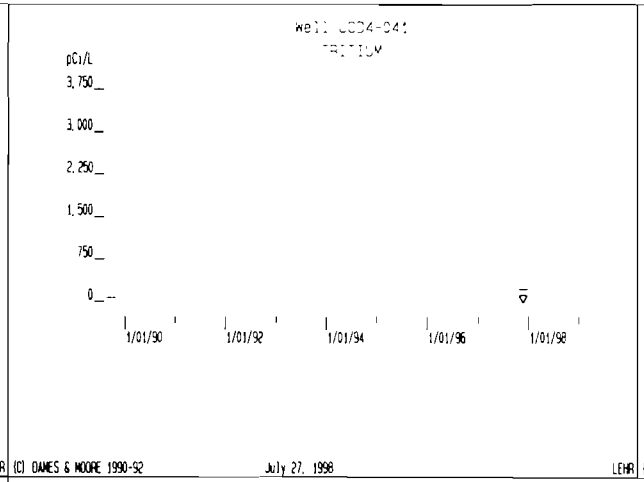

Well UCD2-036
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

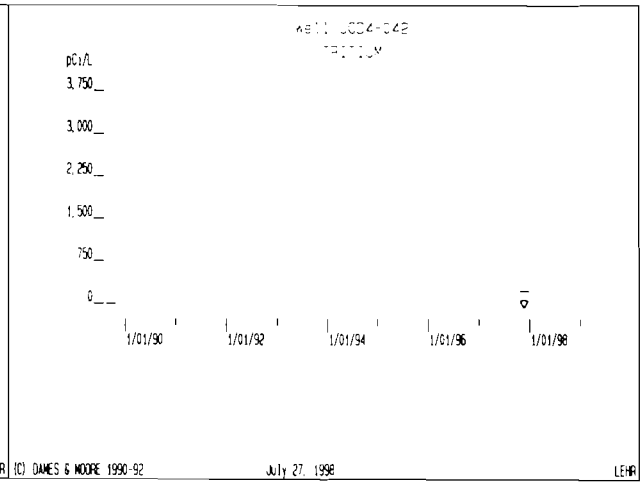

Well UCD2-037
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

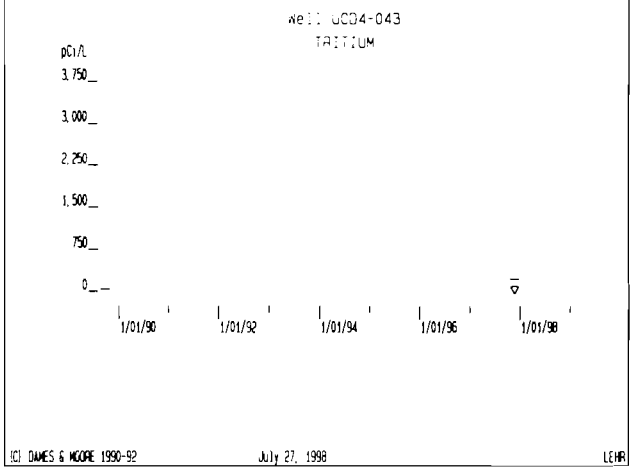

Well UCD2-038
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

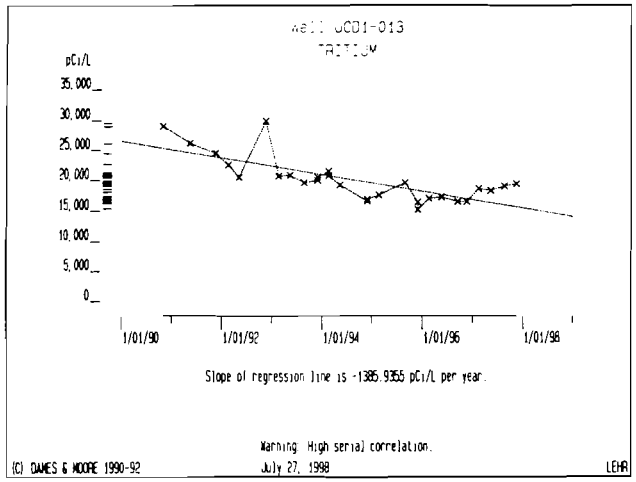

Well UCD2-039
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

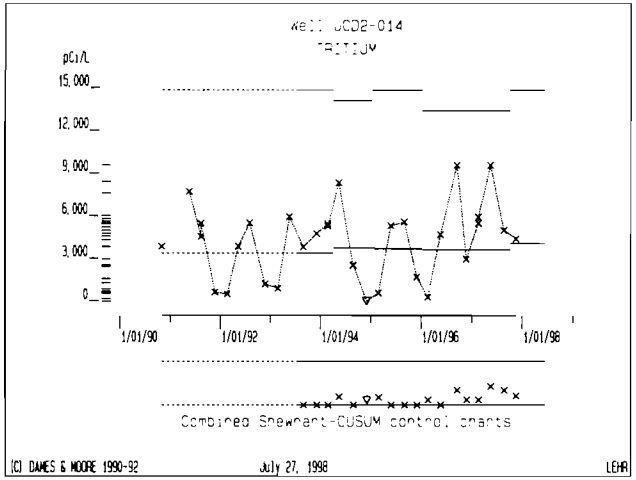

well CC02-040
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

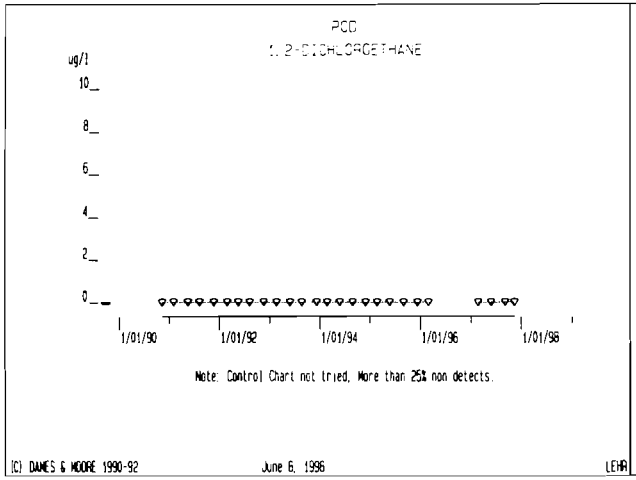

well CC04-041
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

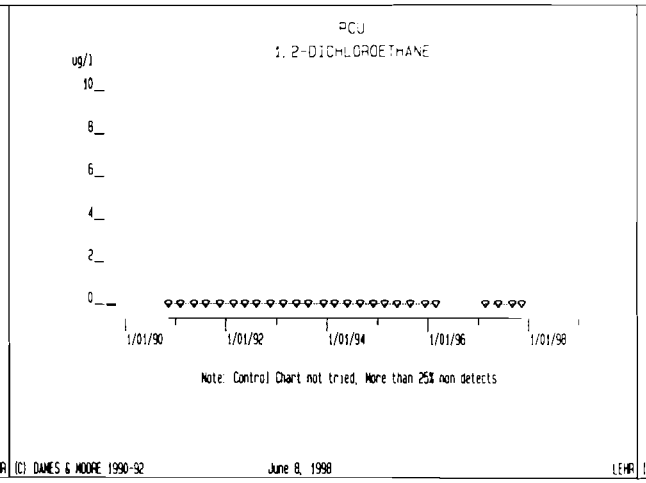

well CC04-042
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

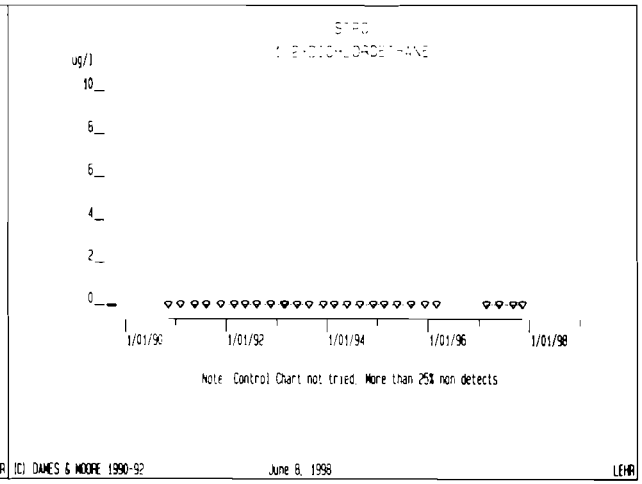

well CC04-043
TRITIUM
pCi/L
3,750
3,000
2,250
1,500
750
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

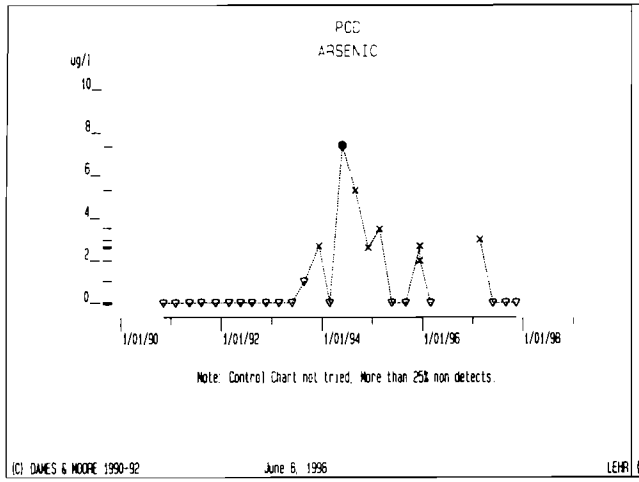

Well UCD1-013
TRITIUM
pCi/L
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -1385.9355 pCi/L per year.
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

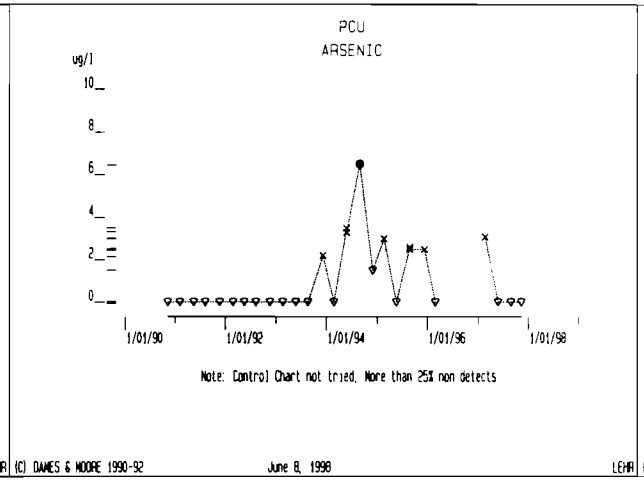

Well UCD2-014
TRITIUM
pCi/L
15,000
12,000
9,000
6,000
3,000
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
July 27, 1998
LEHR

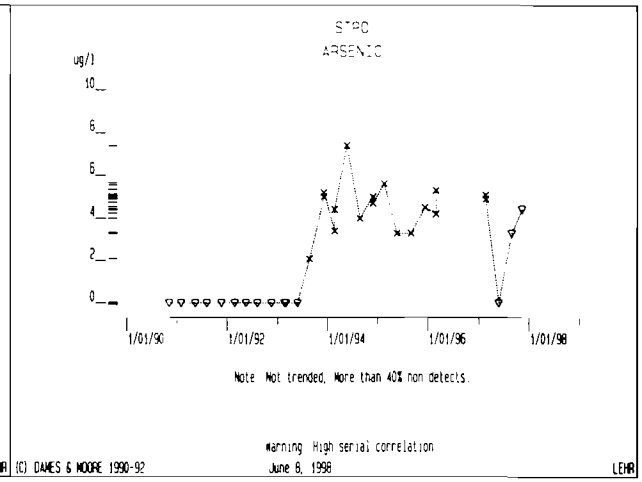

PCD
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

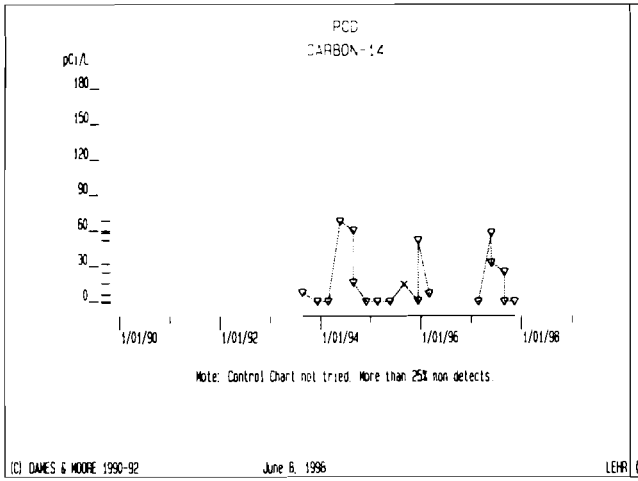

PCU
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

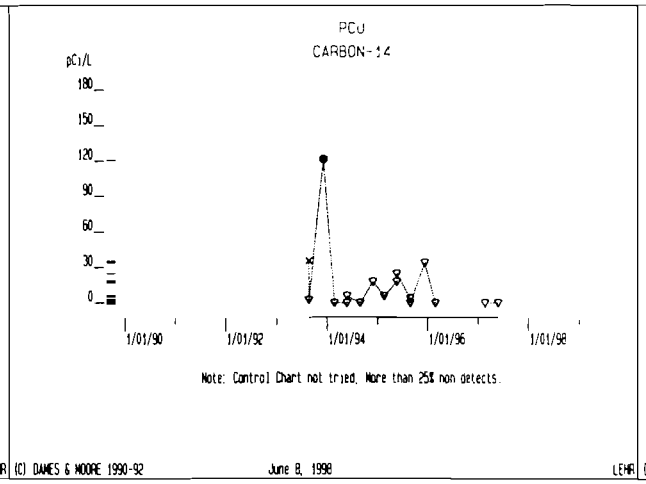

STPC
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

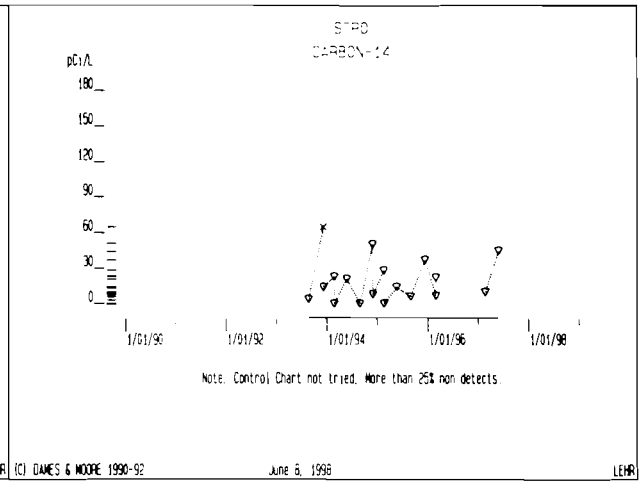

PCD
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

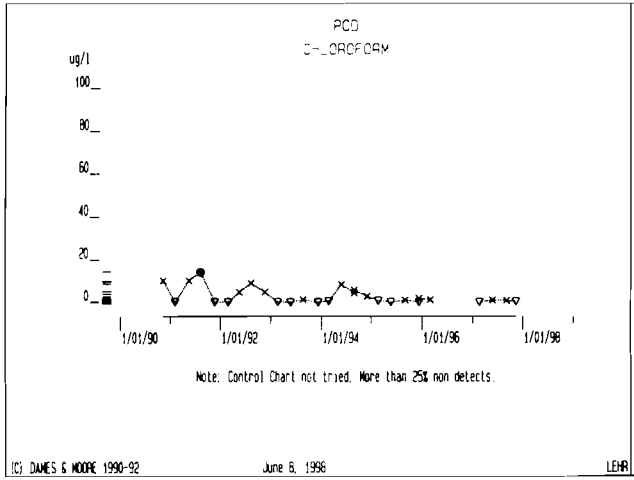

PCU
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

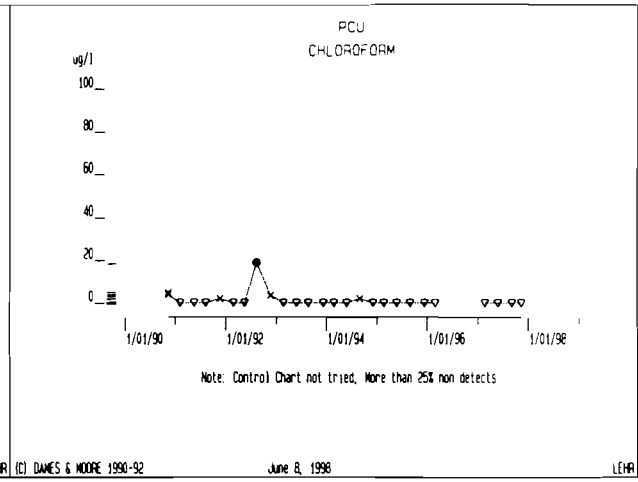

STPC
ARSENIC
ug/l
10
6
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note Not trended, More than 40% non detects.
Warning High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

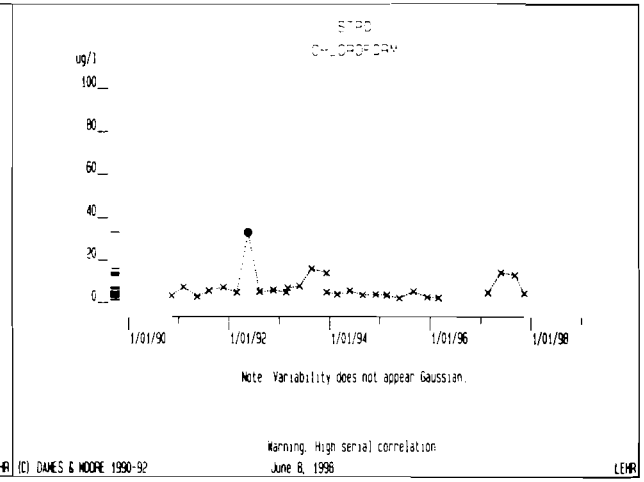

PCD
CARBON-14
pCi/L
180
150
120
90
60
30
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR

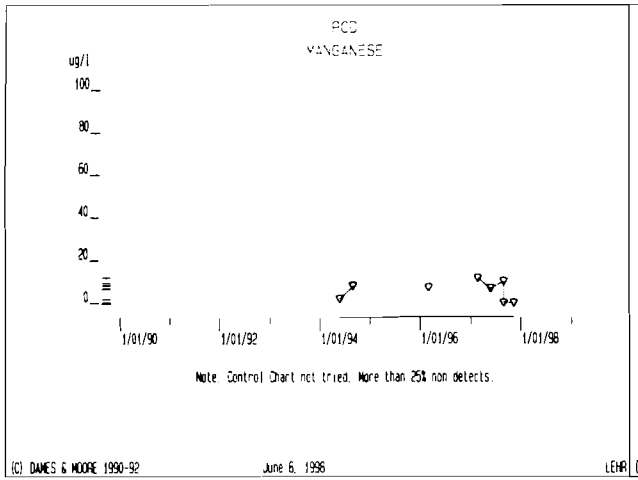

PCU
CARBON-14
pCi/L
180
150
120
90
60
30
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

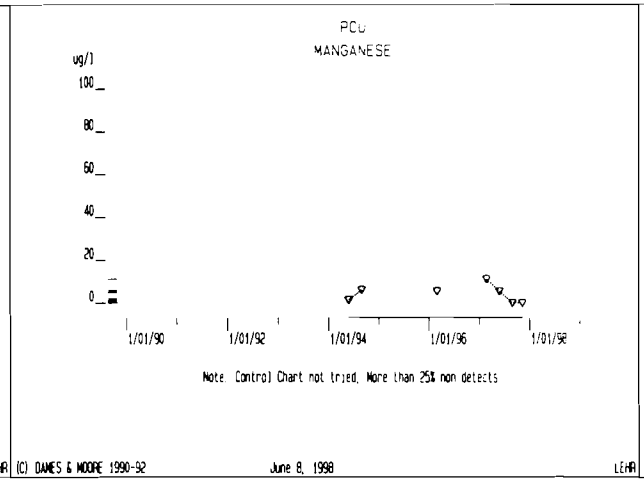

SFPO
CARBON-14
pCi/L
180
150
120
90
60
30
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1996
LEHR

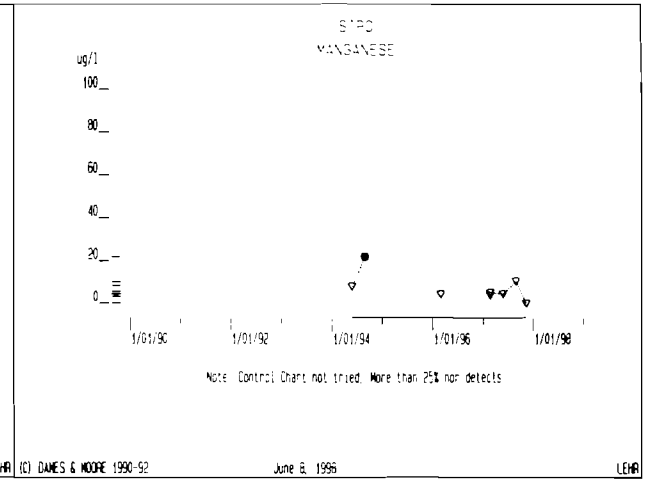

PCD
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

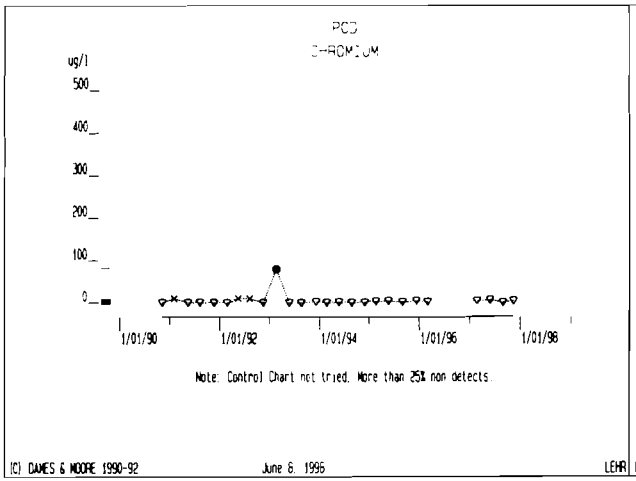

PCU
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

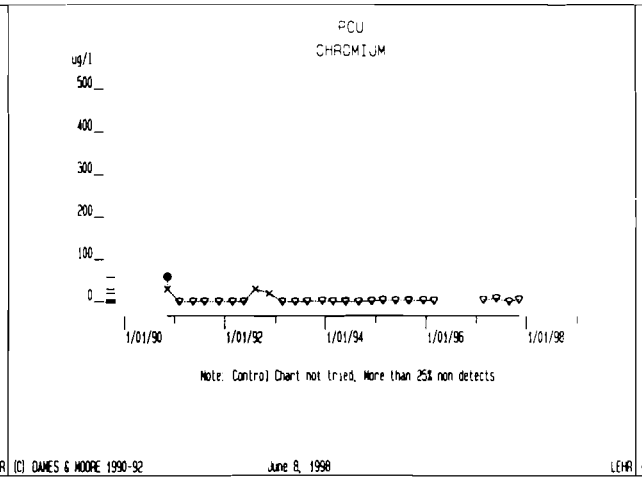

STPD
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Variability does not appear Gaussian.
Warning, High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

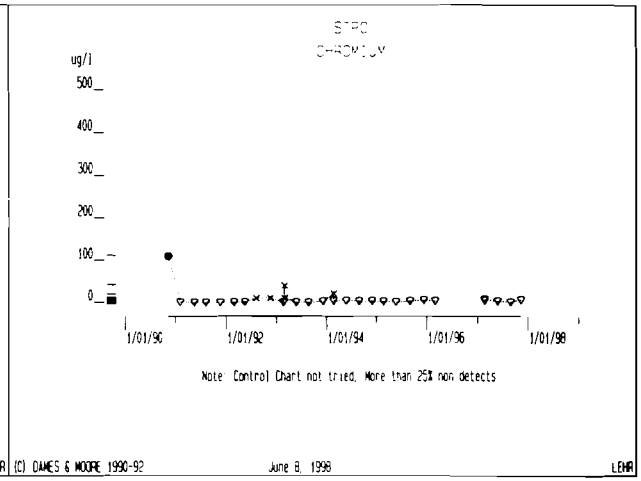

PCD
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

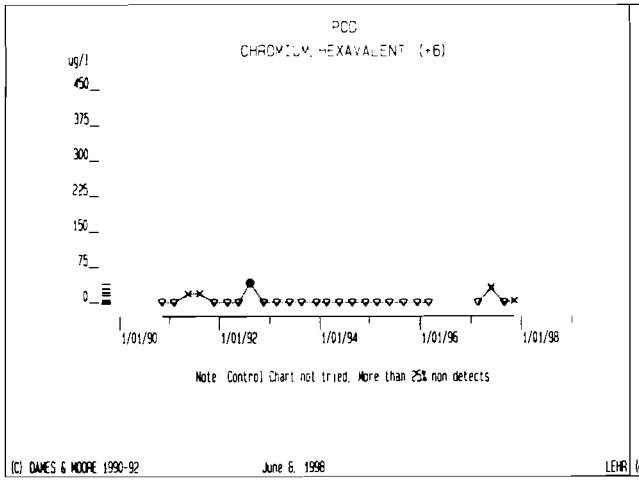

PCU
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

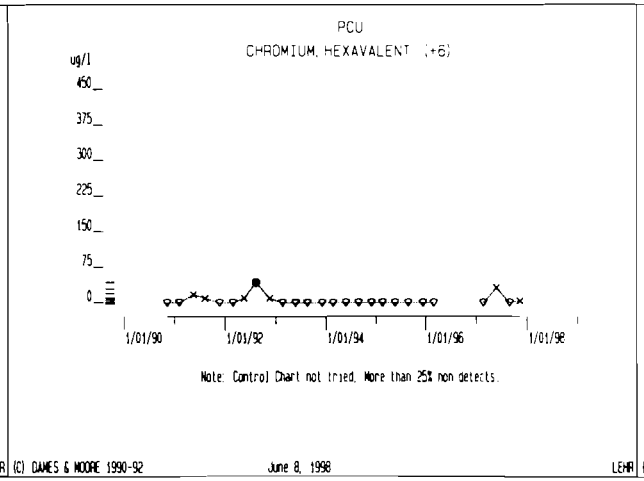

SIPC
MANGANESE
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

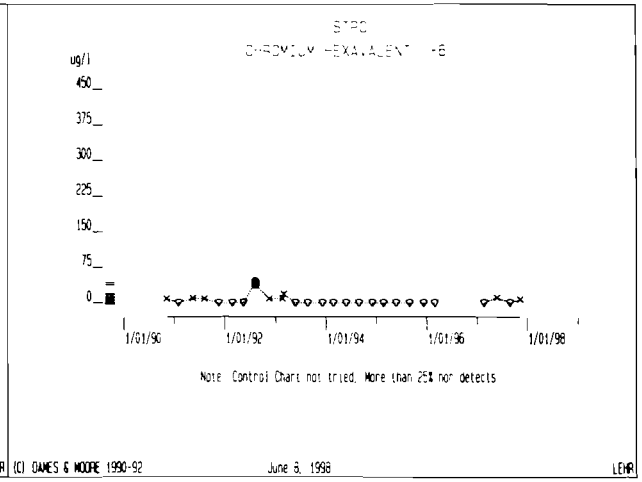

PCD
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

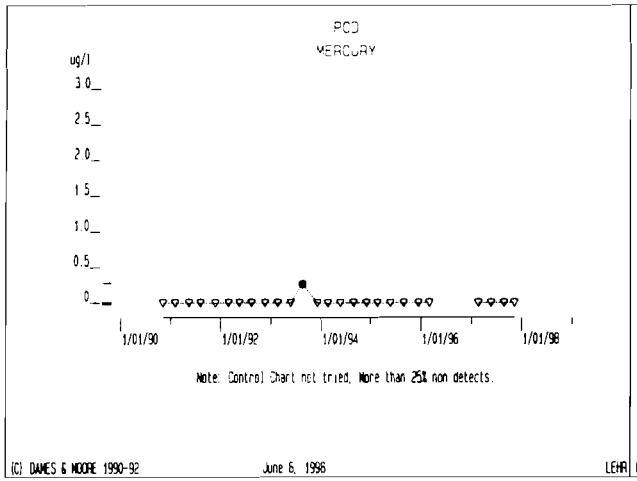

PCU
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

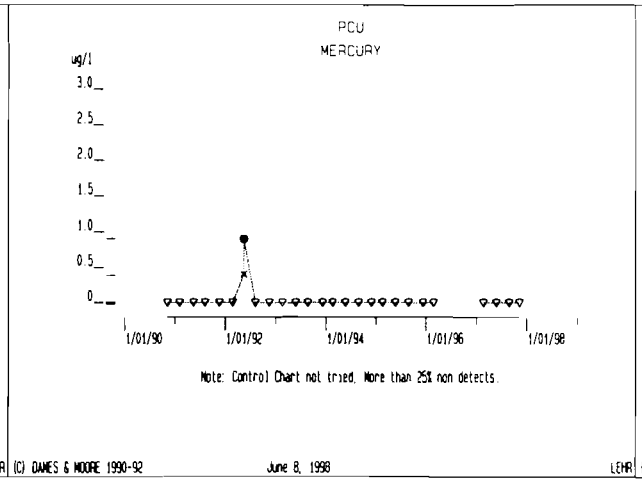

STPC
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried. More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

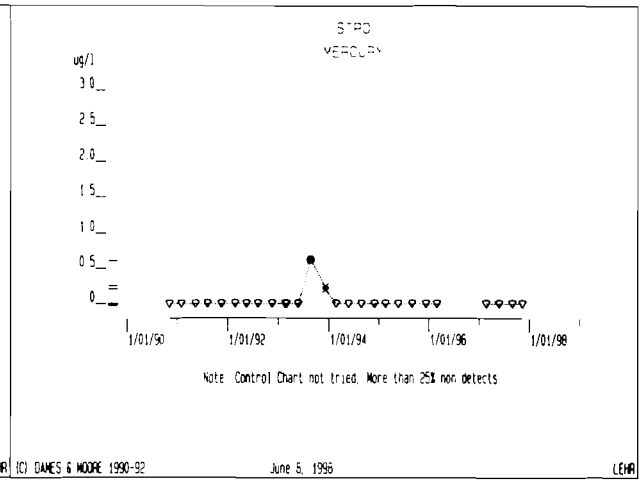

PCC
CHROMIUM, HEXAVALENT (+6)
ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

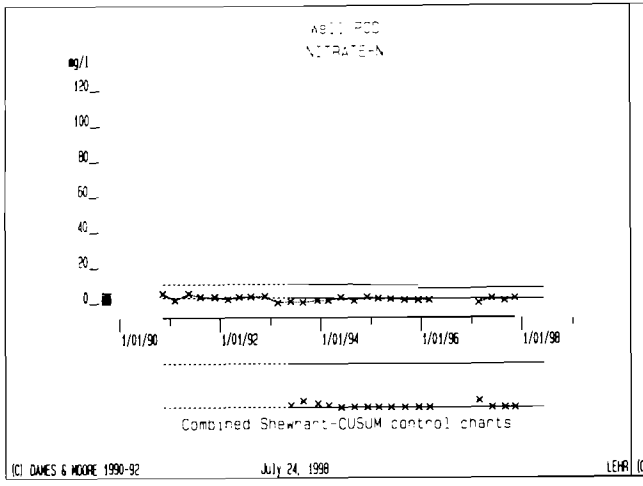

PCU
CHROMIUM, HEXAVALENT (+6)
ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

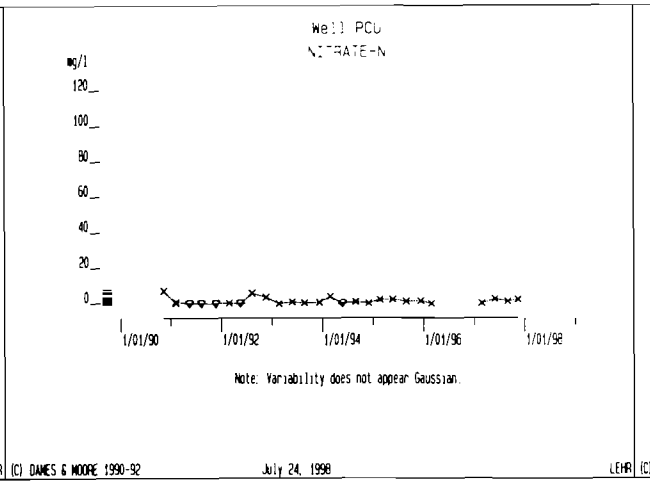

ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

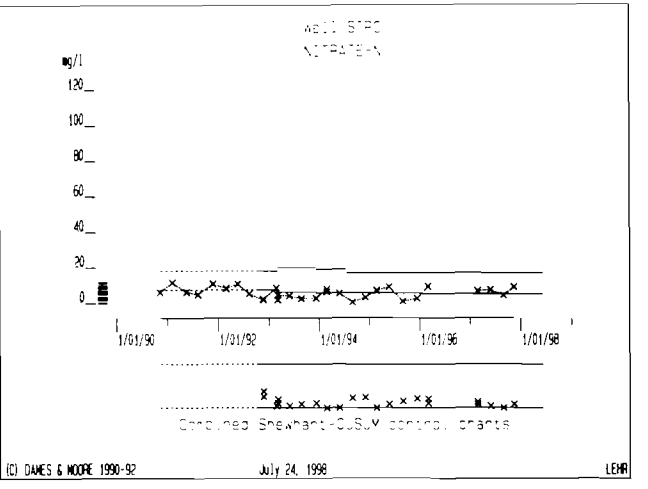

PCD
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

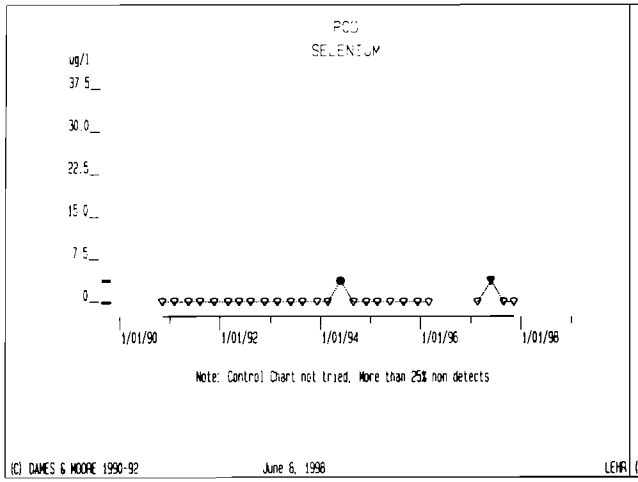

PCU
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

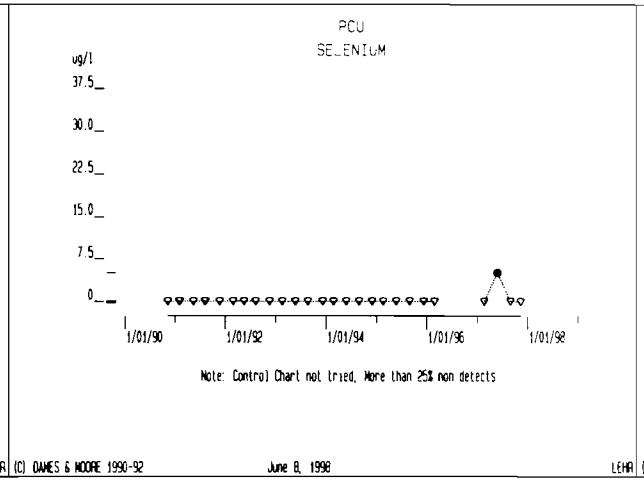

STPD
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 5, 1998
LEHR

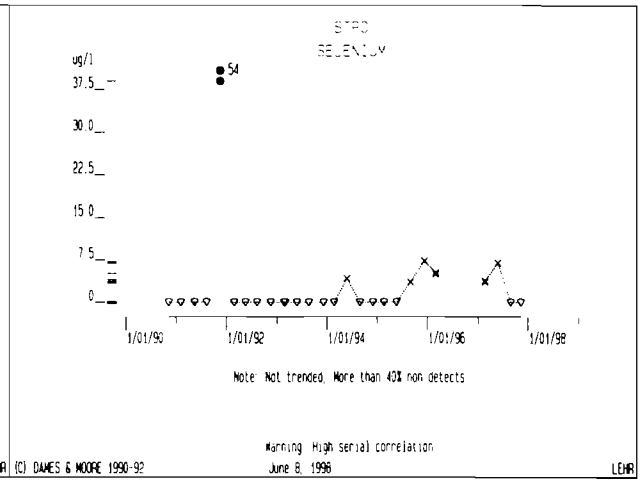

Well PCU
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

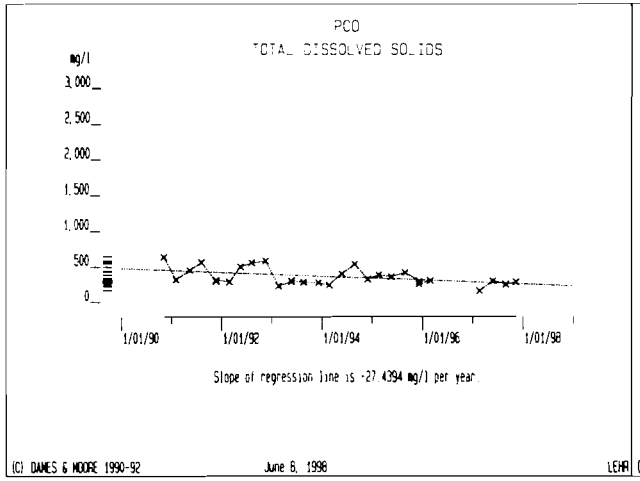

Well PCU
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Variability does not appear Gaussian.
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

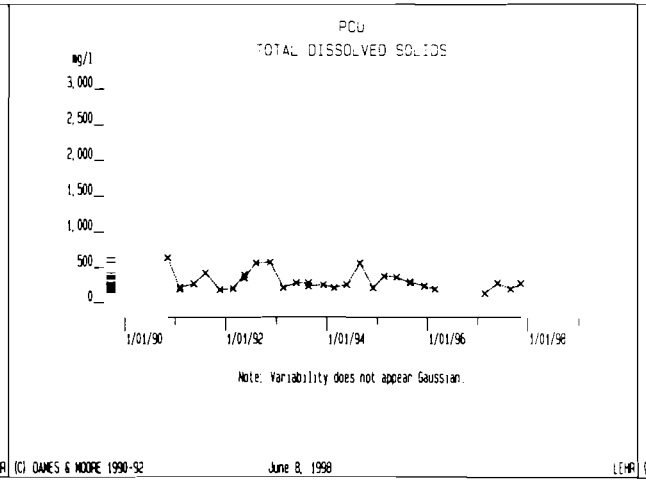

Well STPC
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

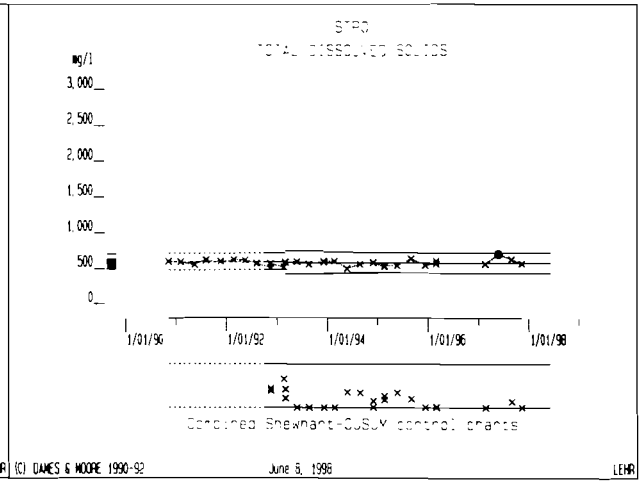

PCU
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

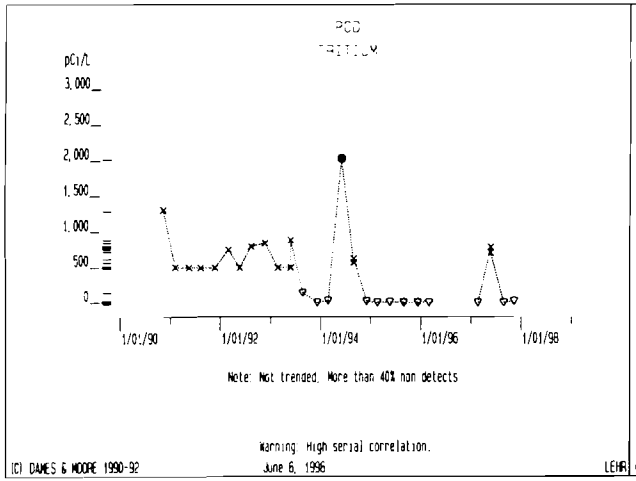

PCU
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

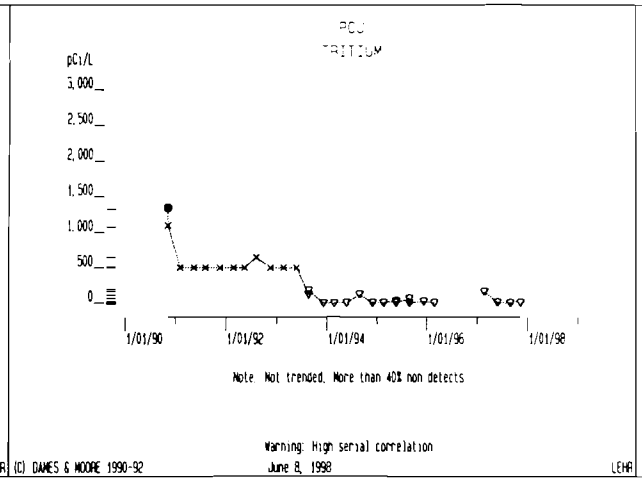

SYPO
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
54
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended, More than 40% non detects
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

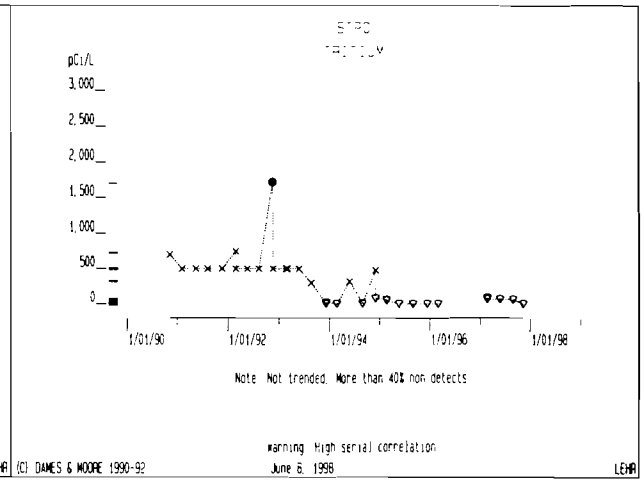

PCO
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -27.4394 mg/l per year.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

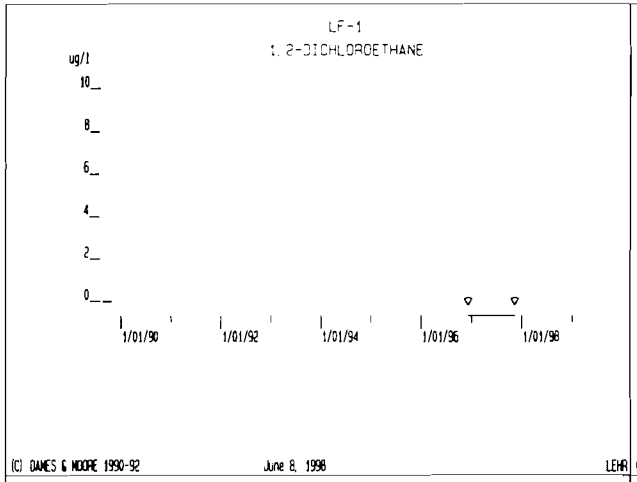

PCU
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Variability does not appear Gaussian.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

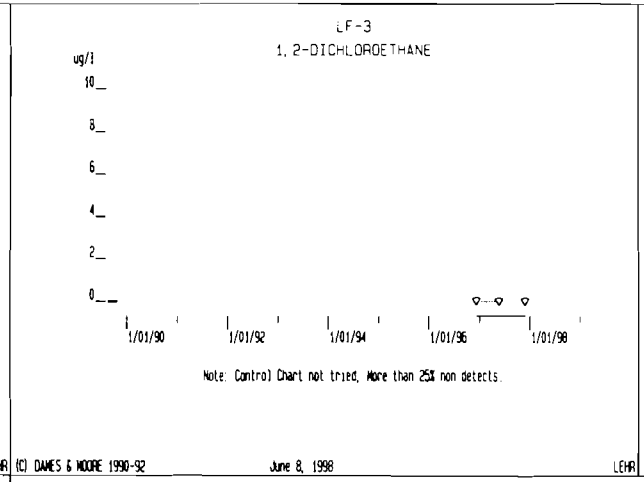

STPO
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Combined Shewhart-CUSUM control charts
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

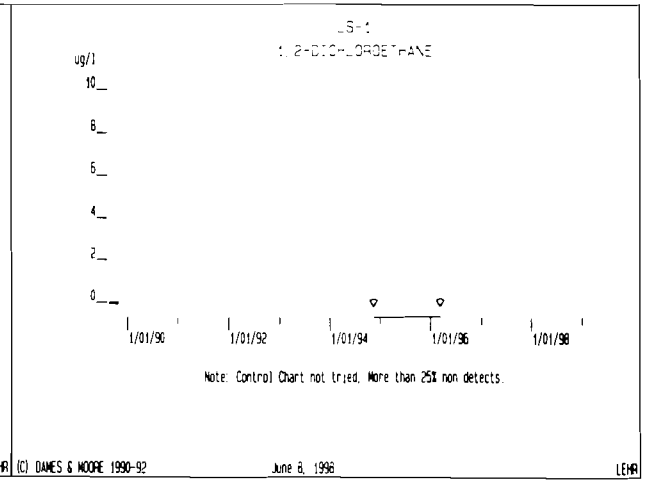

PCD
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended. More than 40% non detects
Warning: High serial correlation.
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

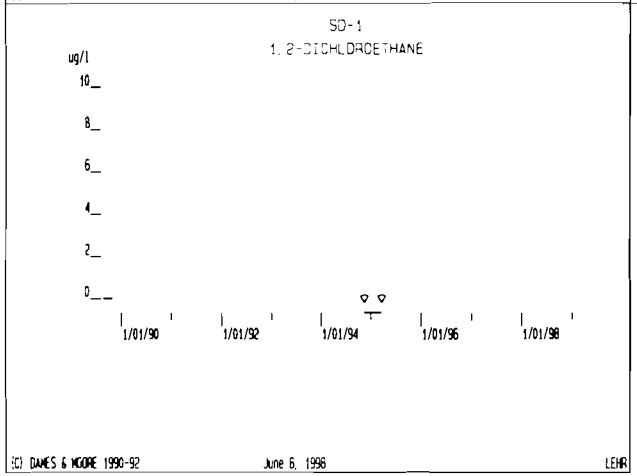

PCD
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended. More than 40% non detects
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

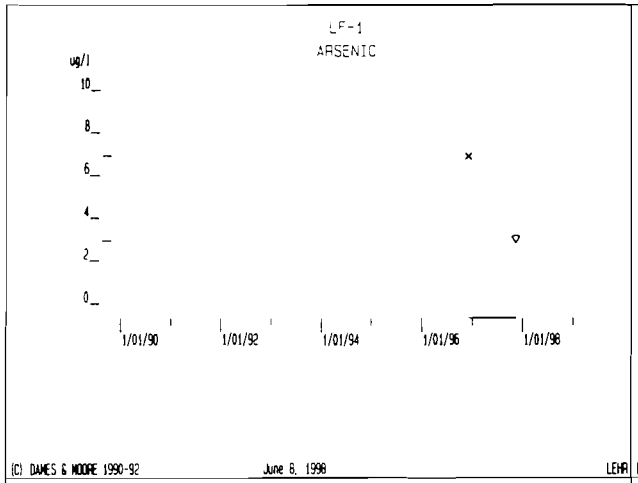

SFPD
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Not trended. More than 40% non detects
Warning: High serial correlation
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

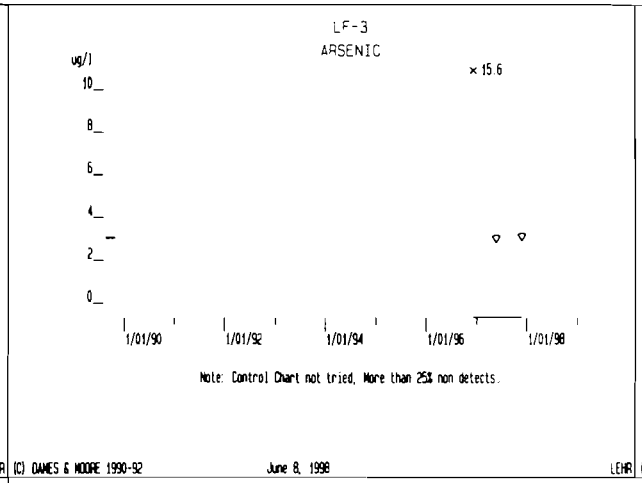

LF-1
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

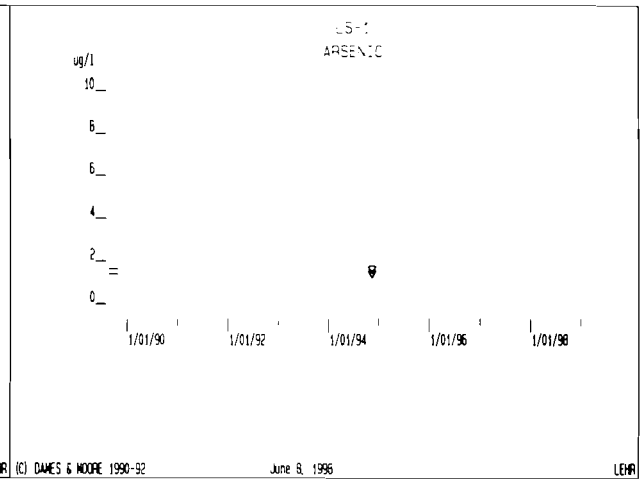

LF-3
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

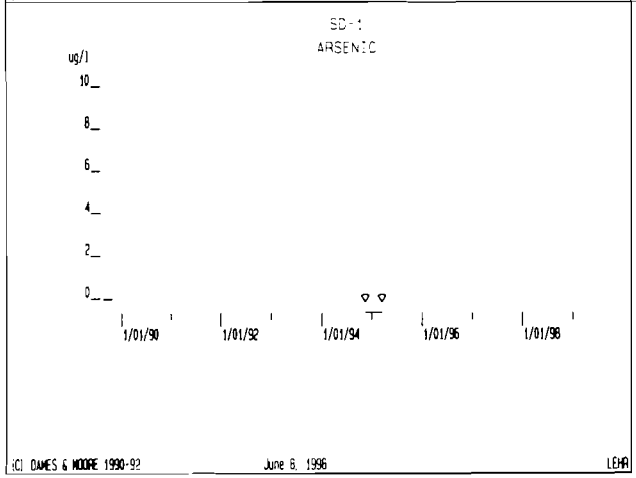

LS-1
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

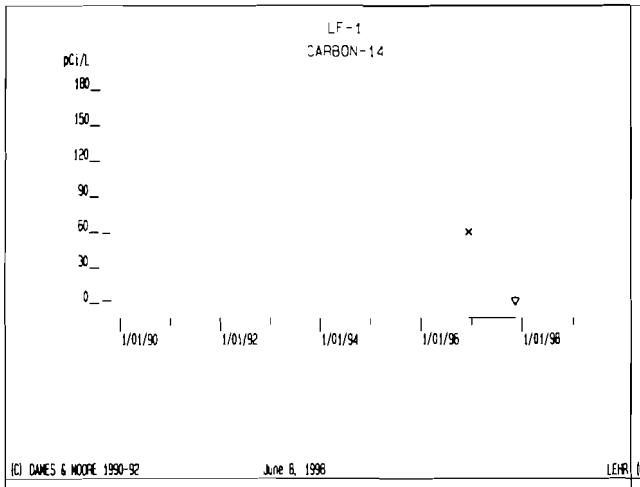

SD-1
1,2-DICHLOROETHANE
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

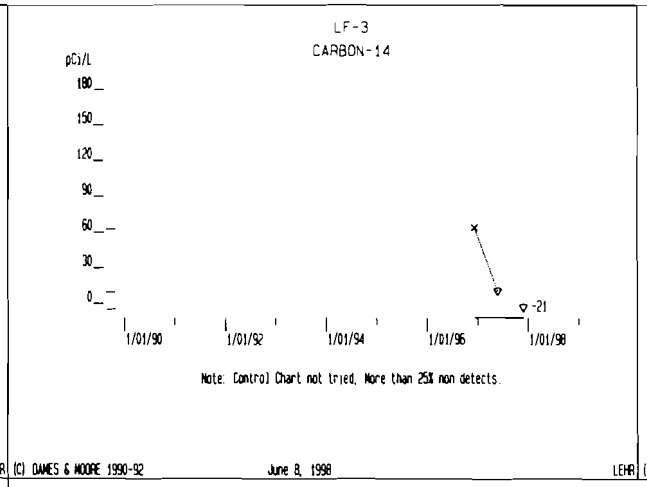

LF-1
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

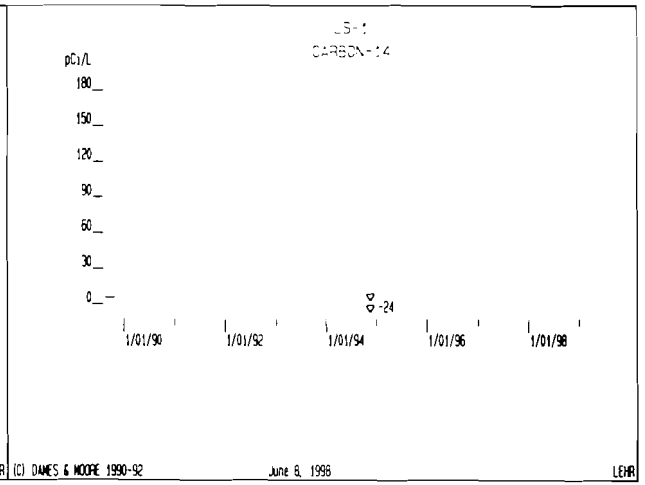

LF-3
ARSENIC
ug/l
10
8
6
4
2
0
15.6
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

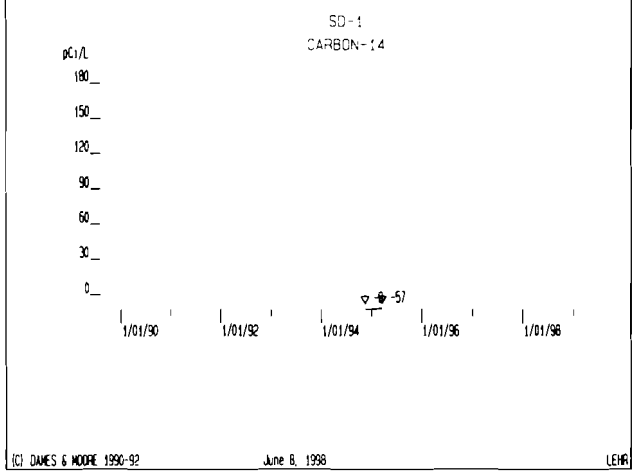

LS-1
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

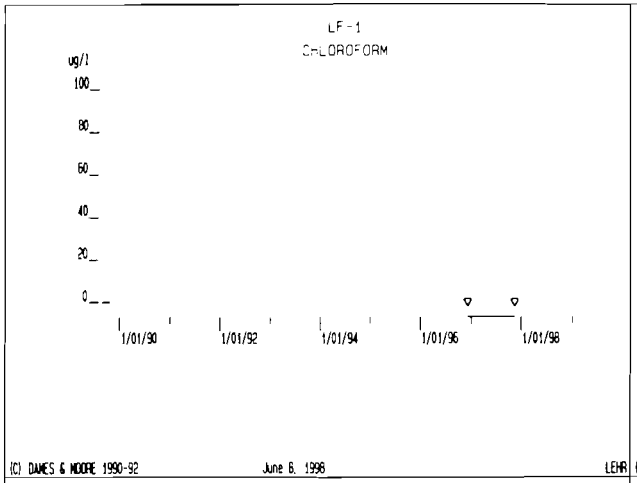

SD-1
ARSENIC
ug/l
10
8
6
4
2
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

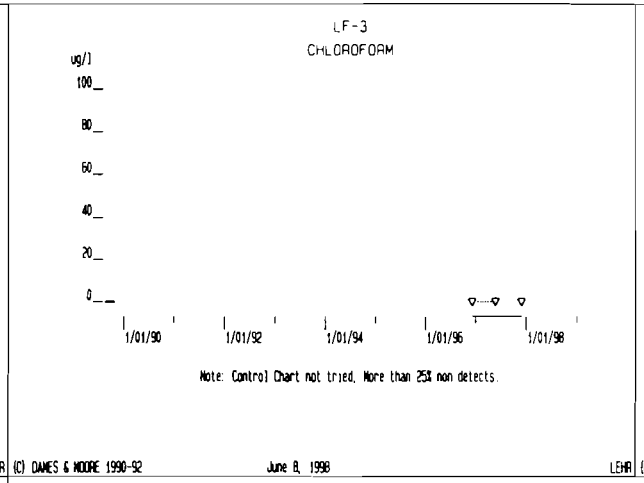

LF-1
CARBON-14
pCi/L
180
150
120
90
60
30
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

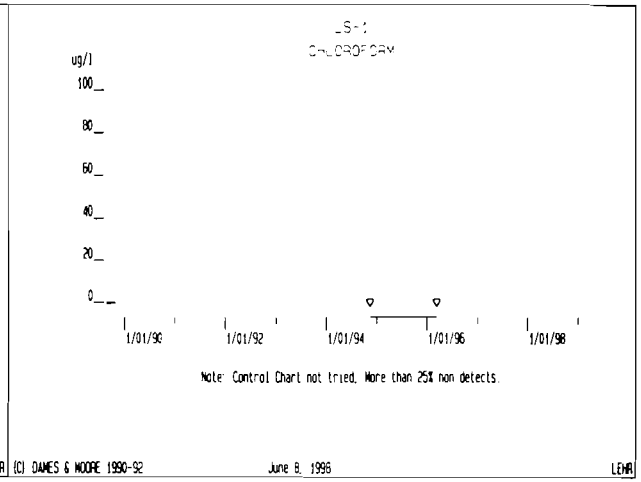

LF-3
CARBON-14
pCi/L
180
150
120
90
60
30
0
-21
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

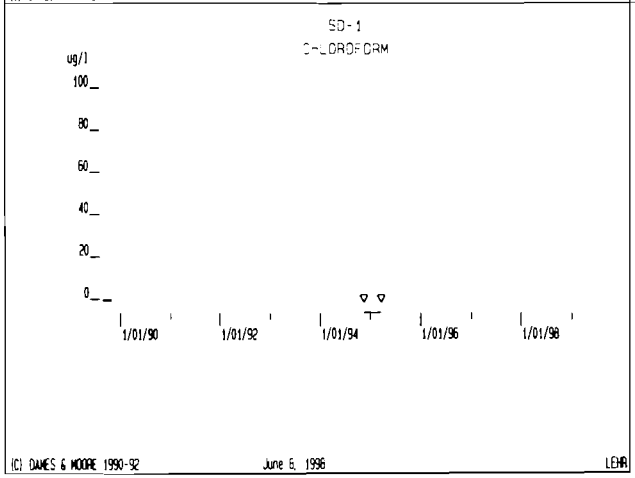

LS-1
CARBON-14
pCi/L
180
150
120
90
60
30
0
-24
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

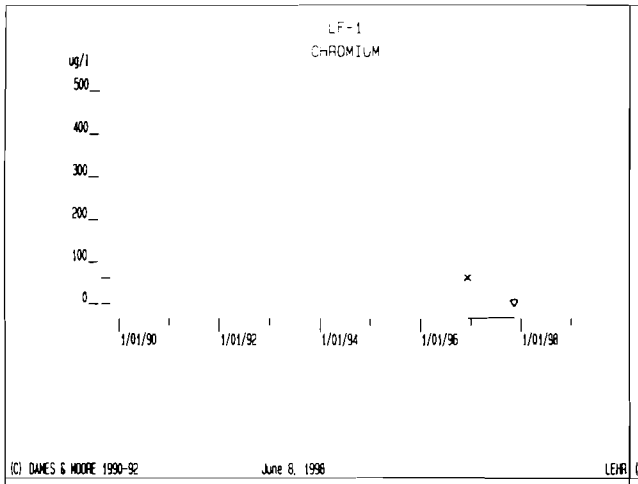

SD-1
CARBON-14
pCi/L
180
150
120
90
60
30
0
-57
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

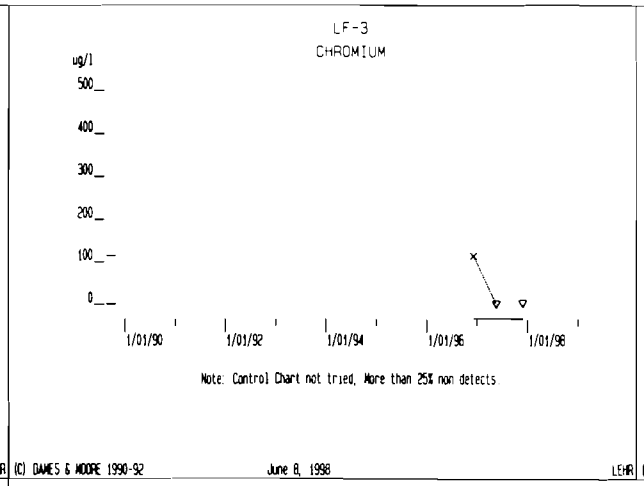

LF-1
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

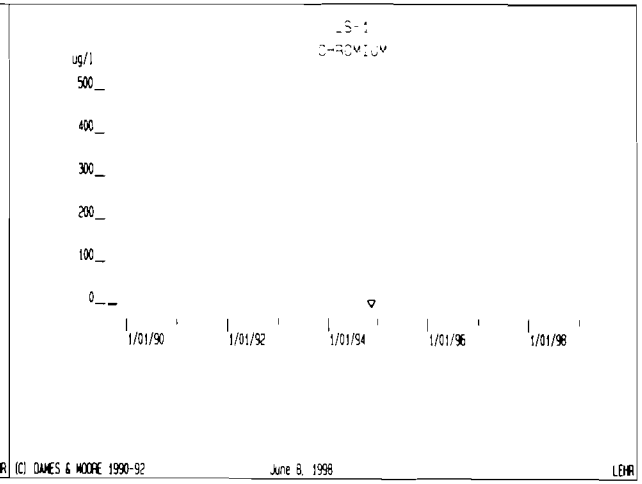

LF-3
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

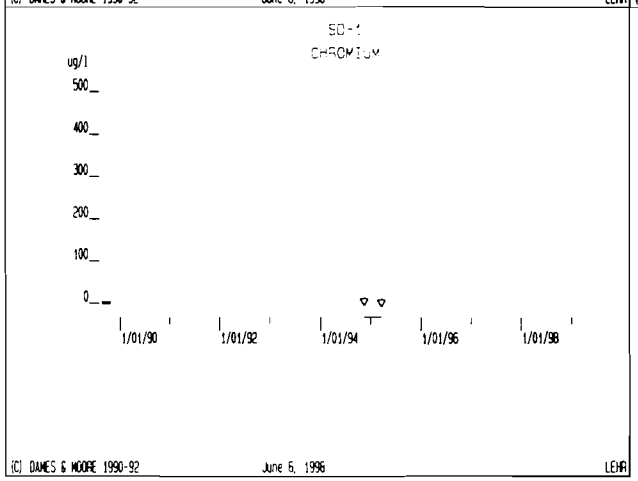

LS-1
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

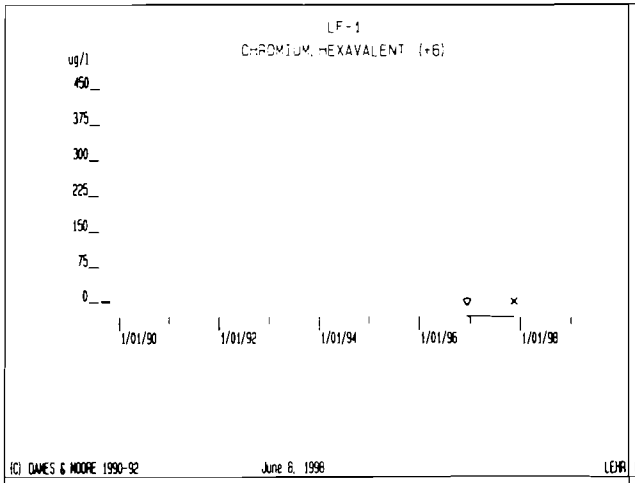

SD-1
CHLOROFORM
ug/l
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

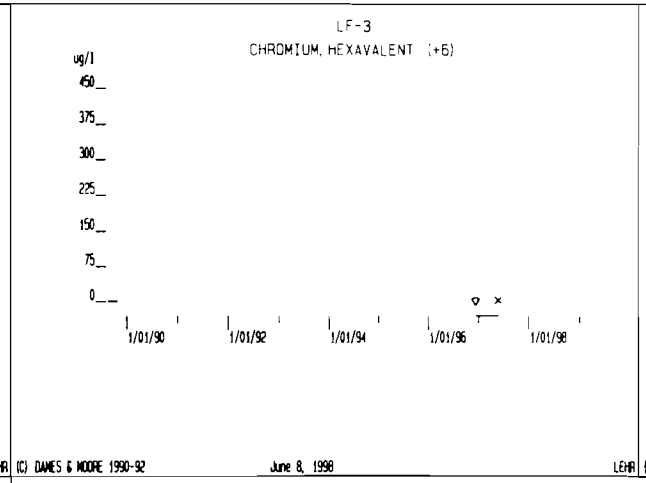

LF-1
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

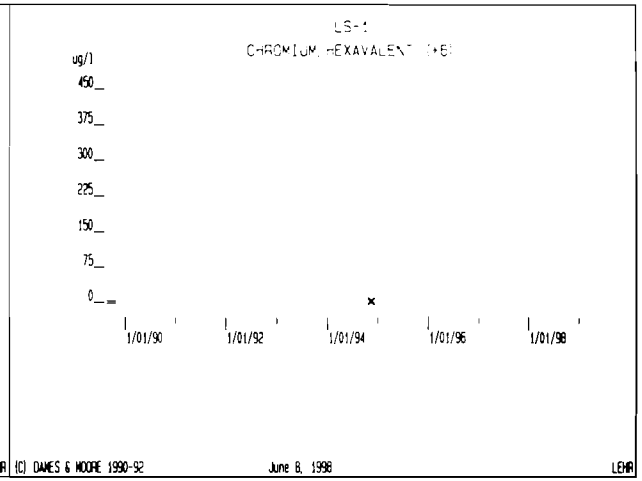

LF-3
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

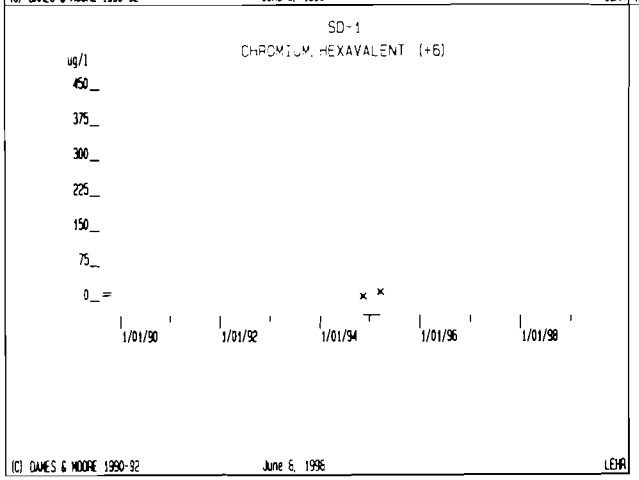

LS-1
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

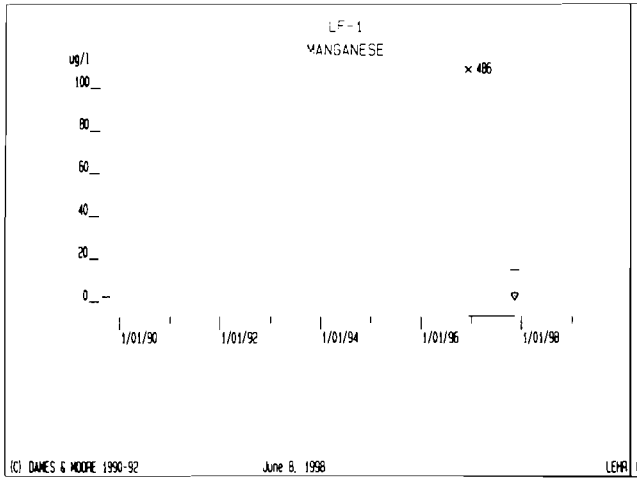

SD-1
CHROMIUM
ug/l
500
400
300
200
100
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

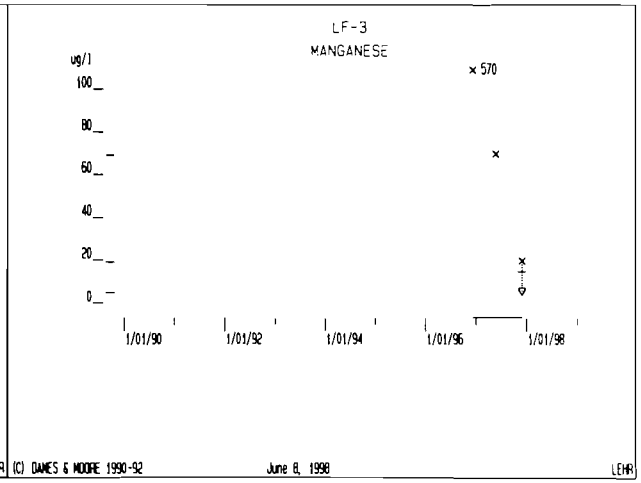

LF-1
CHROMIUM, HEXAVALENT (+6)
ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

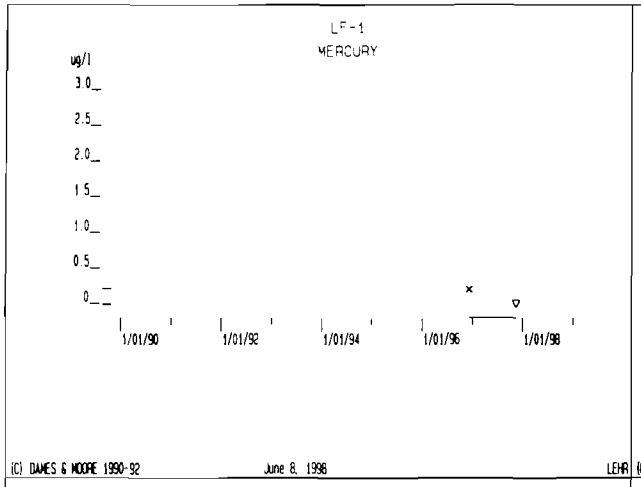

LF-3
CHROMIUM, HEXAVALENT (+6)
ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

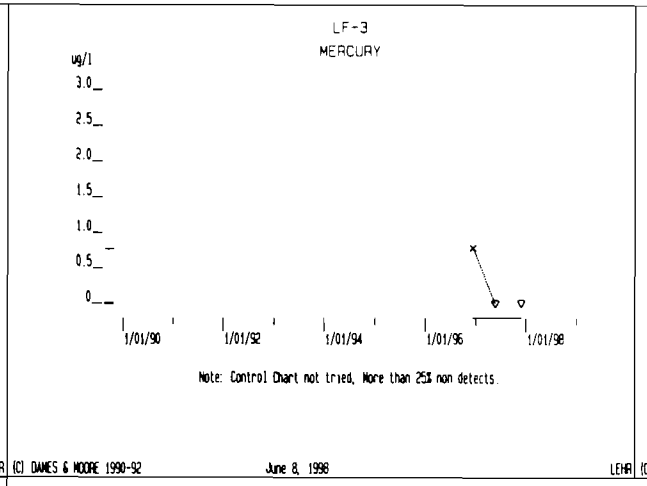

LS-1
CHROMIUM, HEXAVALENT (+6)
ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

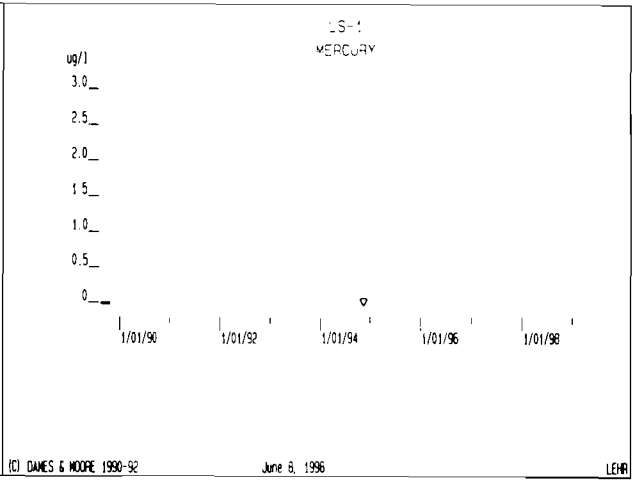

SD-1
CHROMIUM, HEXAVALENT (+6)
ug/l
450
375
300
225
150
75
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

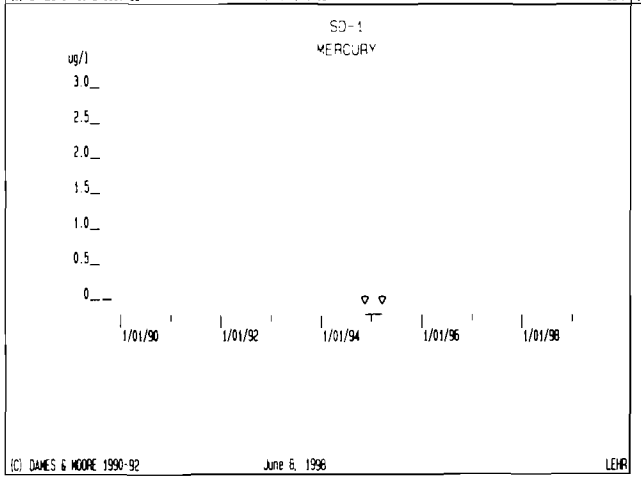

LF-1
MANGANESE
ug/l
100
80
60
40
20
0
× 486
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

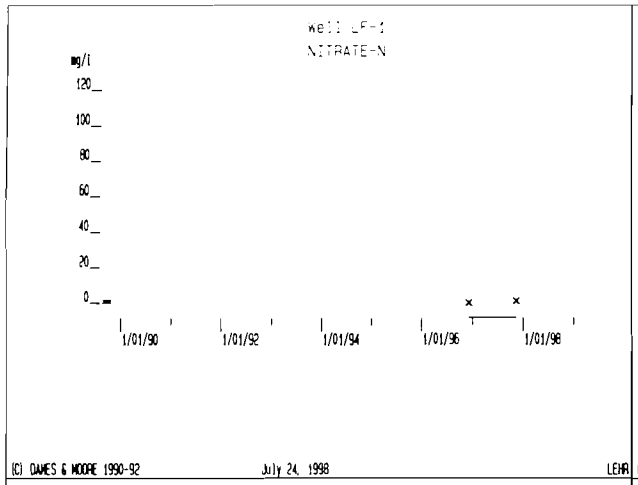

LF-3
MANGANESE
ug/l
100
80
60
40
20
0
× 570
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

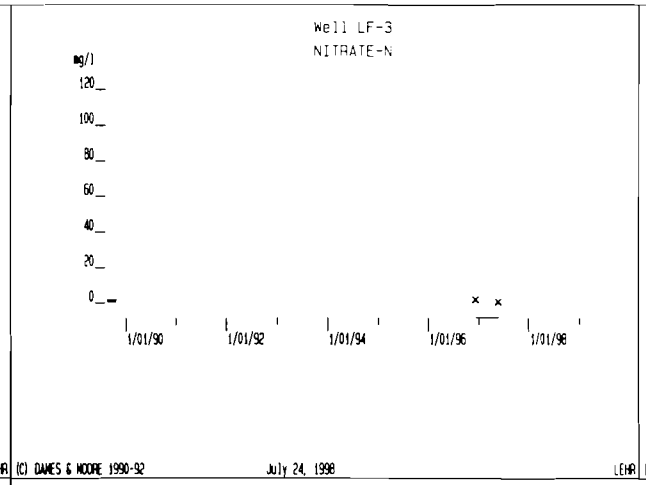

LF-1
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

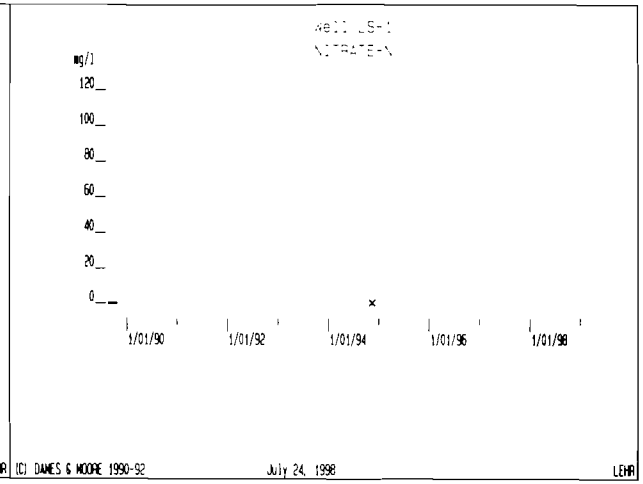

LF-3
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

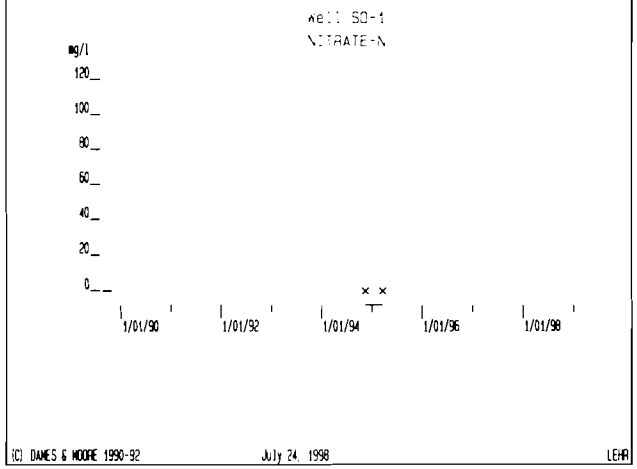

LS-1
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

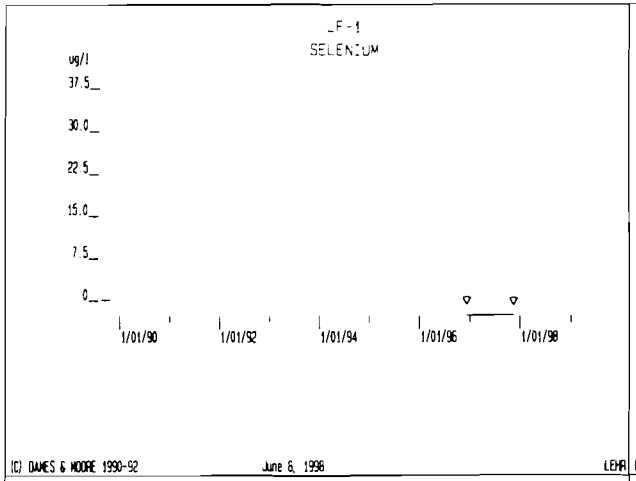

SD-1
MERCURY
ug/l
3.0
2.5
2.0
1.5
1.0
0.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

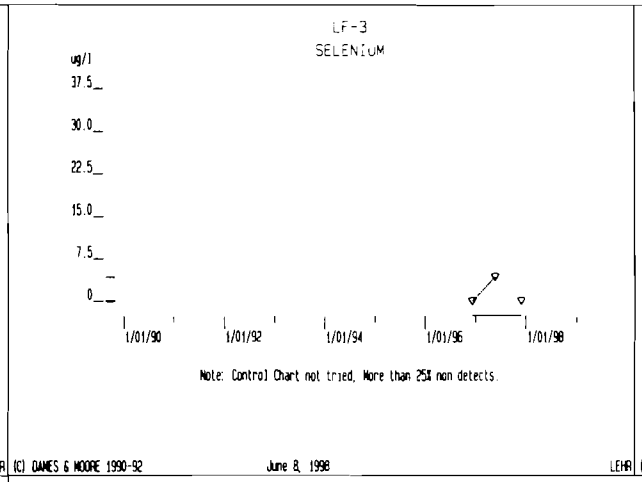

Well LF-1
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

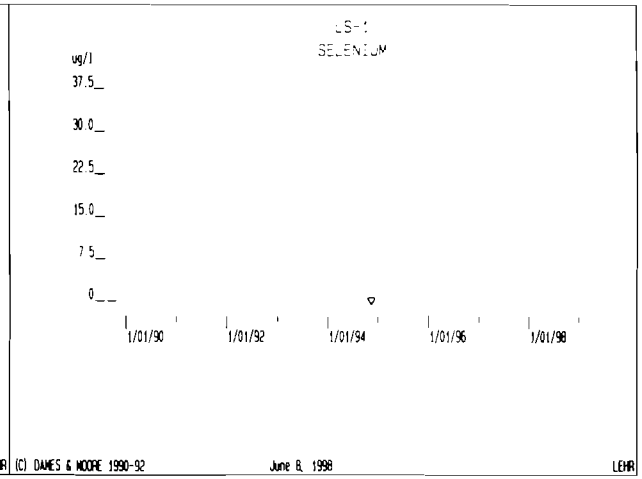

Well LF-3
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

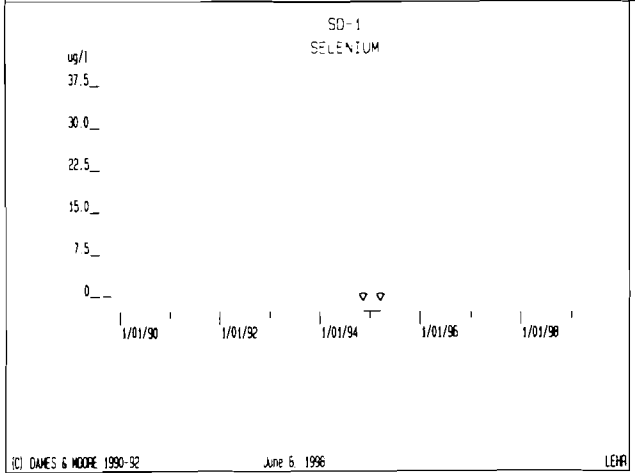

Well LS-1
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

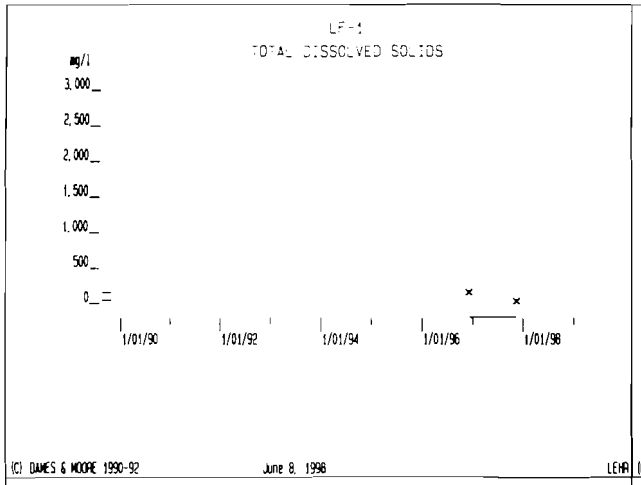

Well SD-1
NITRATE-N
mg/l
120
100
80
60
40
20
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
July 24, 1998
LEHR

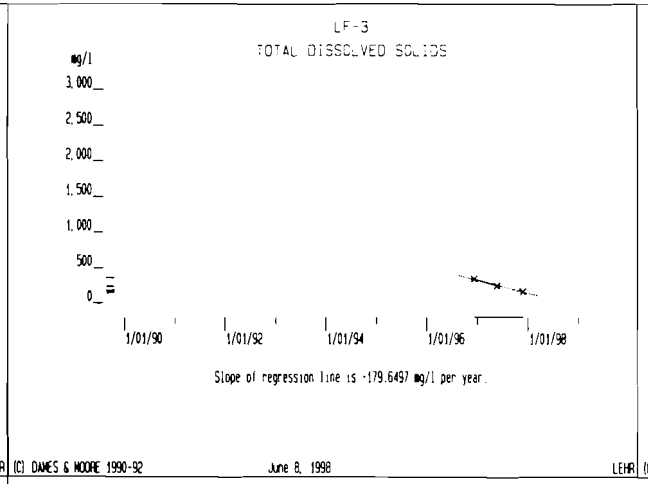

LF-1
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

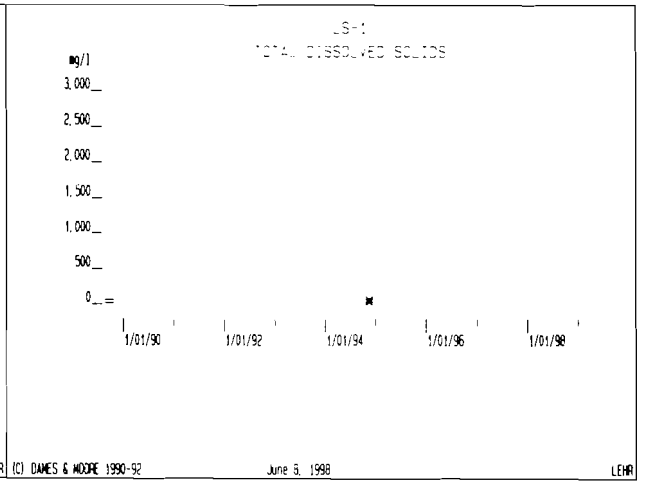

LF-3
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note: Control Chart not tried, More than 25% non detects.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

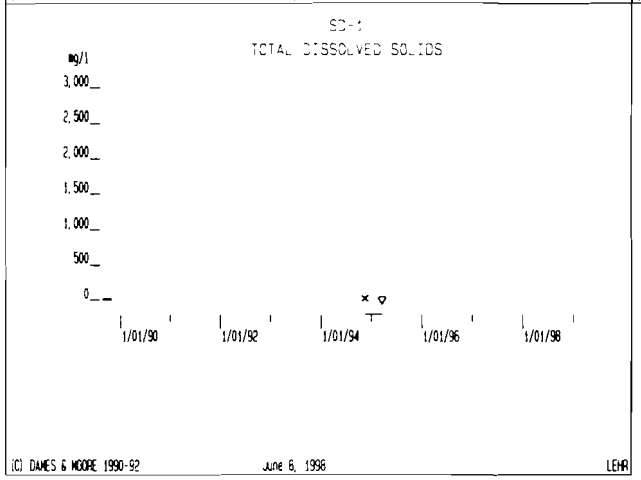

LS-1
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

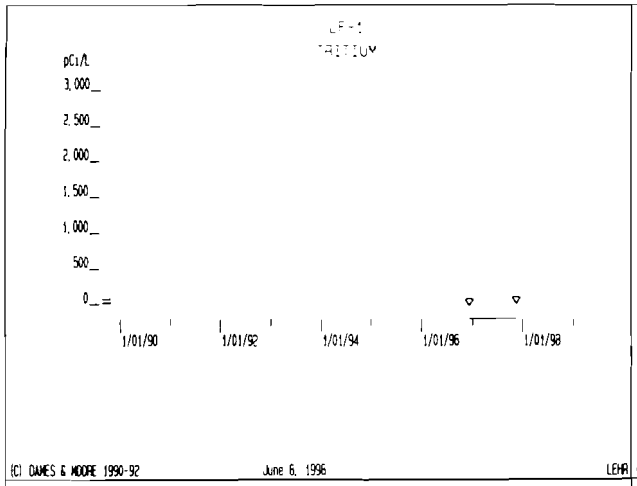

SD-1
SELENIUM
ug/l
37.5
30.0
22.5
15.0
7.5
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

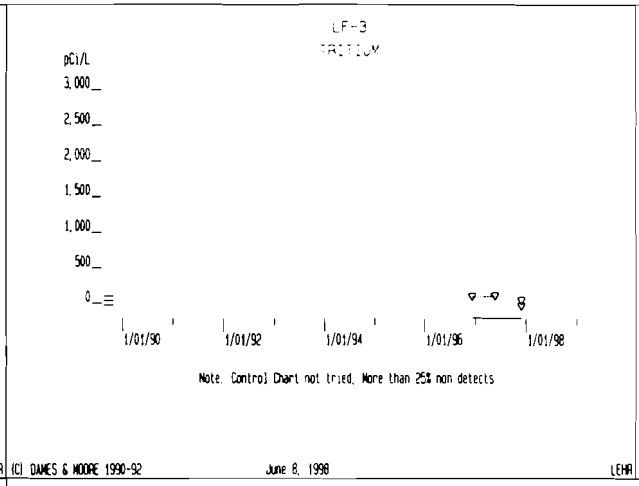

LF-1
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

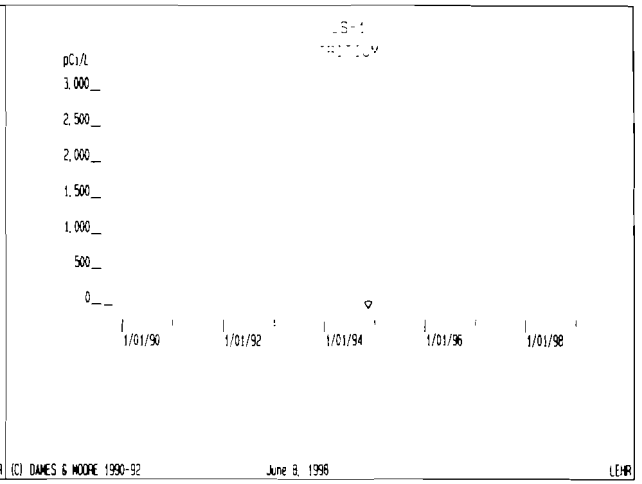

LF-3
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Slope of regression line is -179.6497 mg/l per year.
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR

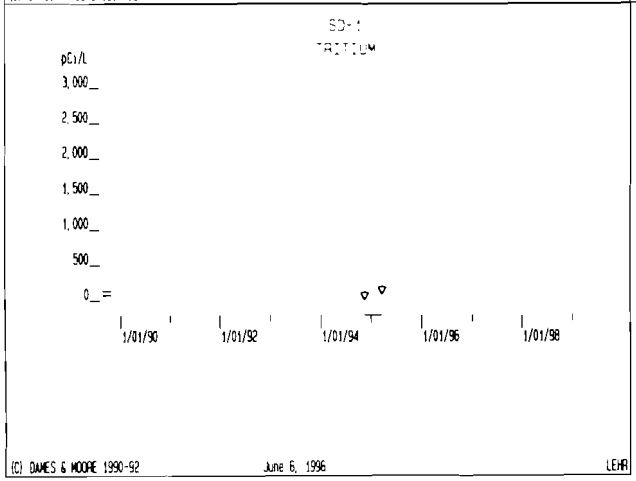

LS-1
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR


SD-1
TOTAL DISSOLVED SOLIDS
mg/l
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR


LF-1
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR


LF-3
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
Note. Control Chart not tried, More than 25% non detects
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


LS-1
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 8, 1998
LEHR


SD-1
TRITIUM
pCi/L
3,000
2,500
2,000
1,500
1,000
500
0
1/01/90
1/01/92
1/01/94
1/01/96
1/01/98
(C) DAMES & MOORE 1990-92
June 6, 1998
LEHR

Appendix C

Statistical Methods

APPENDIX C
STATISTICAL METHODS

C-1.0 INTRODUCTION

This appendix outlines the methods used to evaluate upgradient concentration limits for constituents of interest in groundwater. The data used to evaluate upgradient concentrations were derived from well UCD1-18 for HSU-1 and from well UCD2-17 for HSU-2. The data from upgradient and downgradient wells were collected from summer 1993 to fall 1997 (Tables C.1 and C.2).

The selection of a statistical approach to estimate background concentrations is based on the percentage of data that is below the analytical detection limit (DL) (USEPA, 1989). In statistical terminology, these data are referred to as "truncated or censored" data. If less than 15 percent of the data are below the detection limit, the value of these data points can be assumed to be one-half the detection limit and the background level, and concentration limits can be calculated using a prediction interval (USEPA, 1989). If 15 percent to 50 percent of the data are below the analytical detection limit, Cohen's Method can be applied to adjust the mean and standard deviation to account for the values below the detection limit (USEPA, 1989). The adjusted mean and standard deviation are then used to calculate the prediction interval. Cohen's Method can also be used when the number of data points below the detection limit is greater than 50 percent, but the reliability of the results is diminished. Example calculations for each of these methods are presented in the following sections.

If greater than 50 percent of the data are below the detection limit, the Test of Proportions, comparing the proportion of detections in the upgradient and downgradient data must be used (USEPA, 1989). An actual upgradient or background concentration cannot be calculated in this case. This method was not used in the statistical analysis of 1997 groundwater data because only one constituent considered in this statistical analysis reported greater than 50 percent of the data as below the detection limit. Hexavalent chromium in HSU-2 reported 54 percent of the data below the detection limit and was analyzed using Cohen's Method so that an actual background concentration could be calculated.

C-2.0 COHEN'S METHOD

Cohen's Method is used to calculate an adjusted mean and standard deviation. Cohen's Method is applicable when greater than 50 percent, but less than 85 percent, of the data are above the detection limit in the background well. In addition, the detection limits must be the same for each sample.

Cohen's Method adjusts the mean and standard deviation of the data above the detection limits to account for the data below the detection limits. The first step is to calculate the mean of the detections. For the upgradient hexavalent chromium data collected from UCD1-18, 23 percent (3 of 13) of the data is below the detection limit. The mean of the detections is:

$$\overline{X}_d = 19.20$$

The second step is to calculate the variance, or square of the sample standard deviation, S_d^2, for the detections. The variance of a sample, S_d^2, is defined as:

$$S_d^{\ 2} = \frac{\sum (X_i - \overline{X}_d)^2}{n-1}$$

Where:

n	=	total number of samples; and
X_i	=	the sample concentration for each example, *i*.

Note that S_d is the standard deviation of a *sample*, not a population. Some calculators and spreadsheets, such as Excel or Lotus 1-2-3, calculate the standard deviation of a population. Care must be taken to be sure the proper value is calculated.

For the upgradient chromium data,

$$S_d^{\ 2} = 50.55$$

Then, the two parameters h and γ are calculated as:

$$h = \frac{(n-m)}{n}$$

$$\gamma = \frac{S_d^{\ 2}}{(\overline{X}_d - DL)^2}$$

Where:

n	=	Total number of samples;
m	=	Number of samples above the detection limit; and
DL	=	The detection limit.

For the upgradient chromium data,

$$h = 0.23$$

$$\gamma = 0.60$$

The parameter λ is interpolated from Cohen's Maximum Likelihood Table (USEPA, 1989). Using a linear interpolation method, based on h and γ, this value is:

$$\lambda = 0.03$$

The adjusted mean, $\bar{X}$, and standard deviation, S, are then calculated as follows:

$$\overline{X} = \overline{X}_d - \lambda(\overline{X}_d - DL)$$

$$S = (S_d^{\,2} + \lambda(\overline{X}_d - DL)^2)^{\frac{1}{2}}$$

For the upgradient chromium data in HSU-1, the adjusted parameters are:

$$\overline{X} = 18.95\ \mu g / L$$

$$S = 7.13\ \mu g / L$$

These parameters can then be used to find the UTL of the prediction interval shown in Table C.1.

C-3.0 UPPER TOLERANCE LIMIT OF THE PREDICTION INTERVAL

The upgradient UTL concentration at the 95% confidence level is calculated from:

$$UTL = \overline{X} + K \times S$$

Where:

$\overline{X}$	=	The sample mean;
K	=	Tolerance factor, 95% confidence level; and
S	=	Sample standard deviation, as defined in Section C-2.0.

The tolerance factor, K, is interpolated in Table C.2. When *n* equals 10 for total chromium and 13 for nitrate for data collected from UCD1-18, *K* equals 2.911 and 2.736, respectively (from the table). The calculation of $\overline{X}$, and *S* requires a method for dealing with data below the analytical detection limit, as described in Section C-2.0.

Values of $\overline{X}$, *S*, and *K* for upgradient total chromium and nitrate data in HSU-1 (see Table C.2) are tabulated below:

	Total Chromium	**Nitrate-N**
$\overline{X}$	18.36 µg/L	16.81 mg/L
S	5.66 µg/L	5.85 mg/L
K	2.911	2.736

The UTL at the prediction interval for total chromium and nitrate are similarly calculated as follows:

$$UTL = \overline{X} + K \times S$$

$$UTL\ for\ Nitrate - N = 16.81 + 2.736 \times 5.85$$
$$= 33.57\ mg/L$$

$$UTL\ for\ Chromium(total) = 18.36 + 2.911 \times 5.66$$
$$= 34.84\ \mu g/L$$

The calculations of UTL for constituents detected in background wells UCD1-18 and UCD2-17 are listed in Table C.2.

TABLE C.1
COHEN'S METHOD AND UTL CALCULATIONS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

Location	Date	HSU-1 CHROMIUM, HEXAVALENT (+6) ug/L
	X_{cf}	19.20
	S_{cf}	7.11
	h	0.23
	gamma	0.60
	n	13
	m	10
	DL	10
	lambda	0.03
	X	18.95
	S	7.13
	K	2.670
	UTL	38.00
UCD1-018	08/26/93	<20
	11/23/93	<20
	02/24/94	11
	05/26/94	18
	08/25/94	14
	11/28/94	14
	02/22/95	<10
	05/23/95	16
	08/30/95	22
	02/14/96	32
	09/17/96	31
	02/20/97	18
	08/27/97	16

Location	Date	HSU-2 CHROMIUM, HEXAVALENT (+6) ug/L
	X_{cf}	16.08
	S_{cf}	6.23
	h	0.54
	gamma	1.05
	n	13
	m	6
	DL	10
	lambda	1.23
	X	8.60
	S	6.81
	K	2.670
	UTL	26.77
UCD2-017	08/30/93	<20
	11/29/93	<20
	02/28/94	<10
	05/23/94	<10
	08/25/94	27
	12/01/94	19
	02/22/95	<20
	05/23/95	13
	08/28/95	<20
	02/14/96	16
	09/17/96	<20
	02/19/97	13
	08/27/97	9

TABLE C.2
UTL CALCULATIONS
1997 ANNUAL WATER MONITORING REPORT
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

		HSU-1									
		METALS	GENERAL CHEMICALS		RADIONUCLIDES						
Location	Date	TOTAL CHROMIUM µg/L	NITRATE-N mg/L	TDS mg/L	CARBON-14 pCi/L	CESIUM-137 pCi/L	GROSS ALPHA pCi/L	GROSS BETA pCi/L	RADIUM-226 pCi/L	STRONTIUM-90 pCi/L	TRITIUM pCi/L
	X	18.4	16.8	615	10.9	0.4	1.7	1.3	0.17	0.15	-1
	S	5.7	5.9	73	29.2	3.4	1.3	0.7	0.15	0.49	90
	K	2.911	2.736	2.911	2.911	3.188	2.911	2.911	3.399	3.188	2.911
	UTL	34.8	33.6	826	95.9	11.4	5.5	3.5	0.70	1.72	262
UCD1-018	08/26/93	18.6	13.0	590	1.5		2.2	1.1	–	-0.08	30
	11/23/93	13.2	9.3	520	6		2.4	0.5	0.32	-0.34	-50
	02/24/94	15.5	12.0	590	-20	0.4	0	1.6	0.05	-0.28	-20
	05/26/94	16.7	20.0	650	-44	7.5	2.3	0.9	0.11	0.62	-90
	08/25/94	16.8	15.0	620	25	2.7	0.1	2.2	0.16	0.55	10
	11/28/94	13.1	9.5	540	50	-0.4	2.2	0	-0.06	0.69	100
	02/22/95	14.6	14.0	615	20.5	0.1	-0.45	1.95	0.37	-0.5	-90
	05/23/95	21.3	19.0	660	-1	-1.6	2.1	1.3	0.27	0.52	-130
	08/30/95		23.0					–	–	–	–
	02/14/96	32.0	27.0	780	21	-3.7	2.7	1.6	–	–	110
	09/17/96		26.0					–	–	–	–
	02/20/97	21.8	17.2	584	50	-2	3.3	2.3	–	–	120
	08/27/97		13.5					–	–	–	–

		HSU-2									
		METALS	GENERAL CHEMICALS		RADIONUCLIDES						
Location	Date	TOTAL CHROMIUM µg/L	NITRATE-N mg/L	TDS mg/L	CARBON-14 pCi/L	CESIUM-137 pCi/L	GROSS ALPHA pCi/L	GROSS BETA pCi/L	RADIUM-226 pCi/L	STRONTIUM-90 pCi/L	TRITIUM pCi/L
	X	13.9	1.8	394	30.3	-1.4	5.5	2.3	0.15	0.19	-10
	S	3.2	0.5	15	52.7	2.5	14.5	5.0	0.12	0.36	75
	K	2.911	2.736	2.911	2.911	3.188	2.911	2.911	3.399	3.188	2.911
	UTL	23.2	3.1	436	183.6	6.4	47.8	16.9	0.54	1.36	209
UCD2-017	08/30/93	17.5	1.5	380	38.5	–	1.8	0.9	–	0.625	45
	11/29/93	9.9	1.5	380	145	–	0.3	2.2	0.05	-0.32	-90
	02/28/94	9.9	1.5	390	2	0.6	1.2	0.3	0.066	0.25	-50
	05/23/94	10.4	1.5	380	-5	0.6	2.2	-0.2	0.05	0.72	-150
	08/25/94	14.6	2.4	410	55	-4	1.2	0.4	0.12	0.025	0
	12/01/94	17.1	3	385	90	0.95	0.85	0.5	0.37	0.31	-55
	02/22/95	15.0	2.1	420	-19	-6	46.8	16.2	0.22	-0.2	40
	05/23/95	13.5	1.6	410	3	-0.9	1.2	2.7	0.16	0.14	40
	08/28/95		1.4		–	–	–	–	–	–	–
	02/14/96	12.7	1.8	390	3	-0.7	-0.1	1	–	–	20
	09/17/96		2		–	–	–	–	–	–	–
	02/19/97	18.5	1.47	391	-10	-1.6	-0.4	-1.1	–	–	100
	08/27/97		1.51		–	–	–	–	–	–	–

			HSU-1											
			METALS			GENERAL CHEMICALS		RADIONUCLIDES						
			TOTAL CHROMIUM	HEXAVALENT CHROMIUM		NITRATE-N	TDS	C-14	Cs-137	Gross α	Gross β	Ra-226	Sr-90	TRITIUM
Location	Date	95, 95 UTL	µg/L 34.8		µg/L 38	mg/L 33.57	mg/L 826	pCi/L 95.9	pCi/L 11.4	pCi/L 5.5	pCi/L 3.5	pCi/L 0.70	pCi/L 1.72	pCi/L 262
UCD1-018	08/26/93		18.6	<	20	13.00	590	1.5 ± 6.6	–	2.2 ± 3.8	1.1 ± 3.6	–	-0.08 ± 0.67	30 ± 120
	11/23/93		13.2	<	20	9.30	520	6 ± 22	–	2.4 ± 3.3	0.5 ± 3.3	0.32 ± 0.27	-0.34 ± 0.37	-50 ± 120
	02/24/94		15.5		11	12.00	590	-20 ± 60	0.4 ± 1.9	0 ± 3.2	1.6 ± 4.2	0.05 ± 0.072	-0.28 ± 0.63	-20 ± 130
	05/26/94		16.7		18	20.00	650	-44 ± 46	7.5 ± 5.7	2.3 ± 3.8	0.9 ± 3.8	0.11 ± 0.18	0.62 ± 0.52	-90 ± 120
	08/25/94		16.8		14	15.00	620	25 ± 51	2.7 ± 5.4	0.1 ± 3.2	2.2 ± 3.2	0.16 ± 0.16	0.55 ± 0.61	10 ± 130
	11/28/94		13.1		14	9.50	540	50 ± 100	-0.4 ± 3.9	2.2 ± 3.3	0.0 ± 3.3	-0.06 ± 0.29	0.69 ± 0.46	100 ± 190
	02/22/95		14.6	<	10	14.00	610	42. ± 87.	2.5 ± 5.2	0.1 ± 3.3	3.0 ± 3.5	0.33 ± 0.23	-0.6 ± 2.7	90 ± 190
	02/22/95		14.7	<	10	14.00	620	-1.0 ± 83.	-2.3 ± 4.4	-1.0 ± 2.7	0.9 ± 3.5	0.40 ± 0.25	-0.4 ± 2.1	-270 ± 140
	05/23/95		21.3		16	19.00	660	-1 ± 84	-1.6 ± 4.9	2.1 ± 3.1	1.3 ± 3.3	0.27 ± 0.15	0.52 ± 0.52	-130 ± 160
	08/30/95				22	23.00		–	–	–	–	–	–	–
	02/14/96		32.0		32	27.00	780	21 ± 84	-3.7 ± 3.4	2.7 ± 4.7	1.6 ± 4.6	–	–	110 ± 210
	09/17/96				31	26.00		–	–	–	–	–	–	–
	02/20/97		21.8		18	17.20	584	50. ± 58.	-2.0 ± 3.1	3.3 ± 4.9	2.3 ± 3.8	–	–	120 ± 140
	08/27/97				16	13.50		–	–	–	–	–	–	–
UCD1-001	02/24/97				27	12.80	66							
UCD1-004	02/13/97		23.3		17	2.02	447		-1.9	3.0	1.1		0.35	70
	05/19/97				19	3.89	489		0.6	4.5	0.9		-0.04	110
	09/02/97				19	3.50	453		-1.1	-1.0	-0.6	0.29	0.05	110
	11/17/97				18	3.19	440		-1.7	1.3	-0.5	0.47	-0.04	50
UCD1-010	02/18/97		77.8		71	42.20	1360		-1.8	7.0	4.4			120
	05/14/97			<	3	44.80	1360							
	08/25/97				72	47.30	1490							
	11/18/97				65	47.30	1550		-0.2	3.7	3.8			
UCD1-011	02/18/97		229.0		252	28.80	77		-1.1	1.5	1.9			70
	08/25/97				253	24.60								
UCD1-012	02/18/97		176.0		175	50.70	1320	176	2.2	10.6	3.4		0.28	110
	05/15/97				148	56.30	1420	716	-0.2	13.0	0.2	0.59	0.02	80
	08/21/97				182	59.10	1370	572	-2.8	1.2	7.0	0.36	0.05	-30
	08/21/97	D			184	58.70	1390	562	2.3	4.4	3.9	0.73	0.07	-74
	11/17/97				165	59.00	1370	406	-4.5	0.3	6.0	0.53	0.04	270
UCD1-013	02/18/97		80.6		76	17.20	1040	1628	-2.7	3.6	2.3		0.21	18600
	05/15/97				76		1030	3600	3.6	4.8	6.1	0.15	0.10	18300
	08/21/97				85	17.40	1020	3048	0.6	9.8	3.0	0.24	-0.08	19000
	11/18/97				79		1040	2856	0.5	5.9	4.5	0.42	0.21	19400
UCD1-019	02/19/97		173.0		184	19.70	944		0.2	5.4	8.6			130
	05/14/97				7									
UCD1-020	02/24/97		30.1		30	6.53	359	234	-0.9	0.8	-0.3		-0.07	70
	08/26/97				29			28	5.3	1.1	0.2	0.17	0.24	-37
UCD1-021	02/24/97		57.6		58	58.10	1020	354	-3.7	1.0	-0.6		0.08	80
	02/24/97	D	63.3		60	58.00	987	210	1.4	5.4	-0.7		2.35	100
	11/19/97							-48				0.07	-0.01	
UCD1-022	02/25/97						460		1.3	0.7	-0.3		0.54	430
	08/20/97						726	12		2.0	2.9	0.24	0.02	10
UCD1-023	02/13/97		27.3		21		556	572	-0.8	-0.3	1.4		0.20	40
	08/20/97									-0.2	1.1		0.04	100
UCD1-024	02/25/97		34.8		32	92.10	1060	184	4.3	0.1	2.8		-0.04	160
	11/19/97					85.90			0.9	0.5	-4.7			
UCD1-025	02/13/97		355.0		17	11.60	813	142	5.3	5.3	3.4		0.18	80
	05/19/97		347.0		338	12.90	740	460	-2.4	2.0	4.5	0.14	0.06	110
	08/26/97				314	12.00								-23
	11/18/97				331	12.70		-8						60
UCD1-028	11/24/97		577.0		529	44.50	1010	-116	-0.4	5.4	6.6	0.07	0.11	
UCD1-034	02/12/97		7.3	<	3	0.491	412	148	0.2	2.1	2.9		0.35	170
	05/13/97							-2	-0.8	0.9	2.6	0.28	0.09	20
	05/19/97		< 8.3		60	0.953	406							
	08/25/97			<	3	0.081								-16
UCD1-027Z3	02/28/97		5.1		3	1.90	535							
	02/28/97							-22	0.9	6.4	2.4		0.43	320
	05/20/97		1.1		14	4.00	619	192	-2.9	1.9	5.1	0.33	0.22	40

D = duplicate
Shaded areas denote values that exceeded the UTL for that analyte.

TABLE C.3 (CONTINUED)
STATISTICAL ANALYSIS
LEHR/SCDS ENVIRONMENTAL RESTORATION
DAVIS, CALIFORNIA

			HSU-2											
			METALS			GENERAL CHEMICALS		RADIONUCLIDES						
Location	Date	95, 95 UTL	TOTAL CHROMIUM µg/L 23.2	HEXAVALENT CHROMIUM µg/L 27		NITRATE-N mg/L 3.14	TDS mg/L 436	C-14 pCi/L 183.6	Cs-137 pCi/L 6.4	Gross α pCi/L 47.8	Gross β pCi/L 16.9	Ra-226 pCi/L 0.54	Sr-90 pCi/L 1.36	TRITIUM pCi/L 209
UCD2-017	08/30/93		21.0	<	20	1.50	380	61 ± 34	–	2.4 ± 2.8	1.4 ± 2.7	–	0.6 ± 0.64	10 ± 120
	08/30/93		14.0	<	20	1.50	380	16 ± 28	–	1.2 ± 2.3	0.4 ± 2.6	–	0.65 ± 0.55	80 ± 130
	11/29/93		9.9	<	20	1.50	380	145 ± 33	–	0.3 ± 2	2.2 ± 2.6	0.05 ± 0.098	-0.32 ± 0.36	-90 ± 110
	02/28/94		9.9	<	10	1.50	390	2 ± 63	0.6 ± 5	1.2 ± 2.2	0.3 ± 2.1	0.066 ± 0.065	0.25 ± 0.45	-50 ± 120
	05/23/94		10.4	<	10	1.50	380	-5 ± 59	0.6 ± 1.9	2.2 ± 3	-0.2 ± 3.1	0.05 ± 0.14	0.72 ± 0.48	-150 ± 99
	08/25/94		14.6		27	2.40	410	40 ± 52	-4 ± 22	1.2 ± 2.6	1.7 ± 2.3	0.12 ± 0.17	0.02 ± 0.59	0 ± 130
	12/01/94		17.1		17	3.00	390	70 ± 100	1.9 ± 2.2	1.3 ± 2.4	-0.9 ± 2.6	0.12 ± 0.30	0.03 ± 0.51	200 ± 220
	12/01/94		16.6		20	3.00	400	90 ± 100	0.0 ± 2.2	0.4 ± 2.3	0.5 ± 3.1	0.37 ± 0.34	0.31 ± 0.53	-90 ± 180
	02/22/95		15.0	<	20	2.10	420	-19. ± 81.	-6. ± 27.	46.8 ± 9.1	16.2 ± 3.4	0.22 ± 0.20	-0.2 ± 1.5	40 ± 180
	05/23/95		13.5		13	1.60	410	3 ± 84	-0.9 ± 1.9	1.2 ± 2.2	2.7 ± 2	0.16 ± 0.13	0.14 ± 0.55	40 ± 170
	08/28/95			<	20	1.40		–	–	–	–	–	–	–
	02/14/96		12.7		16	1.80	390	3 ± 82	-0.7 ± 1.2	-0.1 ± 2.3	1 ± 1.7	–	–	20 ± 180
	09/17/96			<	20	2.00		–	–	–	–	–	–	–
	02/19/97		18.5		13	1.47	391	-10 ± 52.	-1.6 ± 2.2	-0.4 ± 2.4	-1.1 ± 2.5	–	–	100 ± 140
	08/27/97				9	1.51		–	–	–	–	–	–	–
UCD2-007	02/24/97		37.3		42	8.28	469	204	0.5	0.7	-0.8		-0.01	80
	08/26/97				21	6.76		-12	-0.4	0.2	2.4		0.10	130
UCD2-014	02/18/97		51.2		46	7.09	767	750	3.1	6.8	-0.9		-0.07	5490
	02/18/97	D	53.8		47	7.05	792	844	2.1	4.0	3.8		0.07	5910
	05/15/97		62.6		42	9.31	868	2180	0.1	2.9	2.1	0.15	-0.06	9540
	08/21/97		46.2		35	20.30	565	1422	-4.2	2.3	-0.5	0.13	0.12	4990
	11/19/97		46.6		47	6.09	728	928	1.3	6.2	-0.4	0.15	0.11	4390
UCD2-015	02/13/97		14.7		8	2.03	378		-4.8	1.0	1.1		0.09	110
	05/19/97				6	1.34	358		-5.6	1.6	-2.0	0.23	0.04	-80
	09/02/97		< 3.4		7	1.44	381		-1.2	1.8	-0.1	0.13		10
	11/17/97				9	1.52	384		-0.5	-0.1	0.4	0.03		70
	11/17/97	D			12	1.51	379		-0.1	1.0	1.8	0.03	0.09	
UCD2-016	02/19/97		34.8		30	4.52	355		3.3	1.3	1.8		-0.02	
	05/14/97		45.2		34		493							
	08/26/97		32.7		35	5.67	479			1.3	2.3	0.13	-0.01	30
	11/17/97		31.4		37		461							
UCD2-026	02/13/97		18.3		14	1.51	421	138	-0.2	2.5	1.5		0.40	70
	05/19/97		41.6		31	5.91	442	112	0.8	1.4	-0.4	0.11	0.20	
	05/19/97	D	40.3		30	5.96	456	36	0.9	1.7	2.2	0.39	0.01	50
	08/26/97				21	4.31		6						-37
	11/18/97				24	3.87		-20						10
UCD2-027Z4	02/27/97		6.9		3	3.95	445	-12	0.3	4.8	3.7		0.09	70
	05/20/97					4.95	465							
	05/21/97		25.4		16			82	2.4	4.3	2.9	0.49	0.07	60
UCD2-027Z5	02/27/97		14.2		12	3.04	389	-28	-1.0	7.9	7.1		0.05	1070
	05/21/97		16.5		14	4.64	424	32	0.4	-0.4	10.6	0.04	-0.03	40
UCD2-027Z6	02/26/97		15.6		14	2.77	398	-6	-2.0	3.4	1.9		0.06	10
	05/21/97		10.8		9	2.56	398	142	-3.5	3.8	1.5	0.12	0.04	80
UCD2-027Z7	02/26/97		11.9		8	2.22	379	-12	-0.8	5.4	4.9		0.11	50
	05/22/97		9.3		8	2.42	421	32	-1.1	3.0	-0.4	0.04	-0.09	80
UCD2-029	11/24/97		16.1		10	8.26	470	-14	-3.0	4.1	1.6		-0.03	90
	11/24/97	D	18.2		9	8.17	466	-88	0.6	0.3	0.4	0.07	-0.06	350
UCD2-030	11/25/97		11.4			4.80	401	4	-4.4	1.7	1.7	0.36	0.14	50
UCD2-031	11/25/97		15.5			3.26	385	-88	-0.7	2.3	-0.3	0.03	0.01	310
UCD2-032	08/27/97		54.4		61	11.50	603	80	0.5	-0.1	2.0	0.08	0.31	-37
	11/21/97		20.2			7.41	474	-116	-1.7	-0.3	0.7	0.10	-0.06	100
UCD2-035	02/12/97		11.4		3	0.758	395	108	0.2	4.1	1.7		0.04	360
	05/13/97		< 5.2	<	3	0.858	387	132	0.1	2.0	1.5	0.14	0.03	100
	08/25/97			<	3	0.823								-10
UCD2-036	12/01/97		< 25.8		20	4.20	450	34	2.3	0.8	2.2		0.08	
UCD2-037	12/01/97		< 6.3		5	1.96	400	-30	2.8	1.5	0.5	0.18	0.22	30
UCD2-038	11/25/97		< 3.2			1.94	374	-30	-0.6	2.5	0.9	0.09	-0.01	30
UCD2-039	12/01/97		< 7.3		5	2.99	433	66	0.1	2.3	-0.6	0.03	0.04	80
UCD2-040	11/25/97		22.6			8.28	448	-72	0.9	-1.3	1.7	0.23	-0.04	250

D = duplicate
Shaded areas denote values that exceeded the UTL for that analyte.