State of California
The Resources Agency
Department of Water Resources
Office of State Water Project Planning
Division of Planning and Local Assistance

Environmental Study of Dredged Materials Grant Line Canal

South Delta Improvements Program

January 2000

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Executive Summary

The South Delta Improvements Program is a proposed action to settle pending litigation against the U.S. Bureau of Reclamation and the Department of Water Resources. The South Delta Improvements Program is a public water management program that addresses issues concerning the Southern Sacramento-San Joaquin Delta. The South Delta Improvements Program Project Area comprises lands and channels southwest of Stockton. The purpose of South Delta Improvements Program is to improve the reliability of existing State Water Project facilities and operations within the South Delta, while ensuring that water of adequate quantity and quality is available for diversion to use within the South Delta Water Agency's service area; and to contribute to restoring the ecological health of aquatic resources in the lower San Joaquin River and South Delta. Under the South Delta Improvements Program Preferred Alternative, Clifton Court Forebay would retain its size, an intake structure would be built at its northeastern corner, two flow control structures would be built (Middle River and Old River), a fish control structure would be built at the head of Old River near the San Joaquin River, and channel dredging would occur along Old River between Clifton Court Forebay and North Victoria Canal.

Dredging may involve approximately five miles of Old River north of Clifton Court Forebay and South of Indian Slough. Additional dredging may occur on Old River east of Coney Island, on Grant Line Canal and in other South Delta Channels. As proposed, material will be removed from the center two-thirds of a channel by dredging.

This study is a continuation of sampling associated with the Old River. Past studies were first conducted in 1992 (DWR 1994), 1994 (DWR 1995a), and in 1996 (DWR 1997) . The objective of this Environmental Study is to help predict potential environmental impacts as a result of the proposed dredging activities with the South Delta Improvements Program in Grant Line Canal, including effects of physical and chemical components of dredged material on the environment and drinking water treatment plants. Study samples included channel water, sediment, and a sediment-water extract (elutriate) from the proposed project alternative area. The samples were analyzed for chemicals of environmental and drinking water treatment concerns. The results of the investigation are presented here.

There are several concerns about dredging activities. One concern is the potential for releasing contaminants from dredged material and the possible short- and long-term introduction of those contaminants into the surface water column during dredging, and/or to groundwater. Other concerns are exposure of contaminated sediments and the potentially adverse impacts to benthic organisms; and impacts to downstream drinking water treatment plants during dredging operations and the subsequent decanting of the settling pond water (decant water) into the river after contact with dredged sediments.

The Central Valley Regional Water Quality Control Board (CVRWQCB) does not have criteria for dredged material. The sediment analyses results were compared with California Department of Toxic Substances Control Title 22 Total Threshold Limit Concentrations (TTLC) and Soluble Threshold Limit Concentrations (STLC), and all constituents were less than the regulatory limits.

Oil and grease were detected at relatively low concentrations in 2 of 16 samples, while gasoline or diesel were not detected in any sediment sample. Other synthetic organic compounds in all sediment samples were below the level of detection. Synthetic organic compounds are manufactured organic compounds including surfactants, cleaning solvents, pesticides and agricultural chemicals.

All trace elements were found in sediment at concentrations below all TTLC criteria, and were below the STLC using the Waste Extraction Test (WET) with citric acid buffer and deionized water, indicating that metals/trace elements are not likely to be mobile.

Acid generation potential results support the Waste Extraction Test results, with only 2 of 16 samples having acid- forming potential not applicable ratios somewhat less (2.67 and 2.25) than the CVRWQCB guideline limit of 3, a minimum value for compliance purposes. The acid-generation potential results indicate that in all samples, the neutralizing potential is at least twice that of the acid-forming potential. Since these sediments will be mixed after deposition in the settling ponds, these two samples are not expected to result in a compliance problem since adjacent samples had acid-forming potential not applicable ratios significantly greater that 3.

Two of 15 samples had Simultaneously Extracted Metals (SEM): Acid Volatile Sulfide (AVS) ratios of less than one, which indicates that the SEMs may be bioavailable to aquatic

organisms. However, 8 of 16 samples had ratios less than 1, and 5 samples had no detectable AVS. Once these sediments are mixed in the settling ponds, it is unlikely that aquatic toxicity would occur because of SEMs, since some soluble metals would be removed in the decant water and diluted in Grant Line Canal.

The U.S. Army Corps of Engineers' Modified Elutriate Test was used to simulate the conditions which the sediments will be exposed to during dredging and transport to the settling ponds, with the elutriate simulating the water (decant water) from the settling ponds discharged into Grant Line Canal.

Only low levels of oil and grease were detected in the elutriate, which was expected since two sediment samples contained oil and grease. An organophosphate insecticide (fenchlorophos or Ronnel) was detected in the elutriate at a concentration near the detection limit of the analytical method. No other organic chemicals were detected in background Grant Line Canal water or sediment elutriate.

Dissolved metals or trace elements in the elutriate were less than the Proposed California Toxics Rule, freshwater aquatic life acute and chronic values, and were less than the drinking water maximum contaminate levels; these constituents will be less of a concern once the settling pond decant is diluted by Grant Line Canal. Testing simulated treatment conditions in drinking water treatment plants indicate that trihalomethane and haloacetic acid production in the elutriate would not be increased, and may slightly decrease.

The results indicate that the sediments do not contain substances in concentrations which would be considered hazardous waste, or that would preclude their use for levee stabilization or other upland or agricultural uses.

Introduction

Project Location

The South Delta Improvements Program Project Area comprises lands and channels southwest of Stockton (Figure 1). Included in the Project Area is the South Delta Water Agency which covers about 120,000 acres of irrigated agricultural lands. Important features of the State Water Project and the Central Valley Project are located in the Project Area, and the Project Area incorporates parts or all of Orwood Tract, Woodward Island, Upper Jones Tract, Victoria Island, Coney Island, Union Island, Middle and Upper Roberts Island, Fabian Island, Byron Tract and Stewart Tract.

The South Delta (Figure 2) is bounded by Stockton on the north, Manteca on the east, Tracy on the south, and Discovery Bay on the west. The area contains about 150,000 acres. Approximately 120,000 acres are used for irrigated agriculture while the remaining acres consist of waterways, berms, channel islands, levees, and residential and industrial properties. State Routes 4 and 120, Interstates 5 and 205, and numerous county roads pass through the southern Delta. About 450,000 acre-feet of water is diverted from south Delta channels annually irrigating agricultural land. The 75 miles of channels in the southern Delta serve as drainage and flood water canals, wildlife habitat and migratory routes for fish, and for recreational boating.

Project Description

This Project's purpose is to improve the reliability of existing State Water Project facilities and operations within the South Delta, while ensuring that water of adequate quantity and quality is available for diversion to beneficial use within the South Delta Water Agency's service area; and to contribute to restoring the ecological health of aquatic resources in the lower San Joaquin River and South Delta. The Preferred Alternative would provide for the construction of an intake structure at Clifton Court Forebay's northeastern corner, two flow control structures (Middle River and Old River), and a fish control structure at the head of Old River near the San Joaquin River.

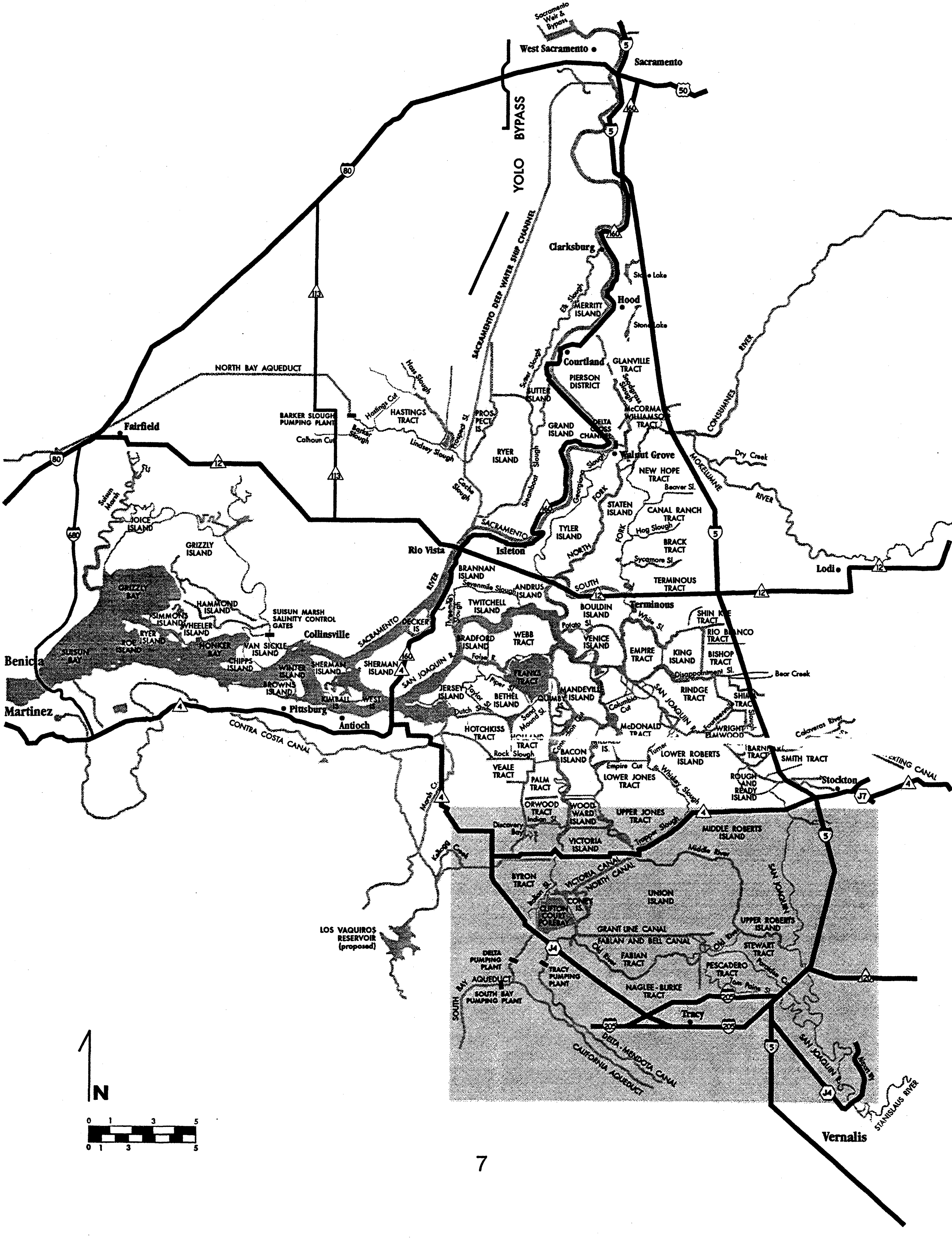
Figure 1
Location of the Sacramento - San Joaquin Delta

Clifton Court Forebay's size will not be affected by the modifications; and will retain its 2,180 acres. Channel dredging may occur along Old River between Clifton Court Forebay and North Victoria Canal (Figure 2).

Channel Dredging

Two dredging methods are being considered for this Project, hydraulic (suction) dredging and/or clamshell (mechanical) dredging. Hydraulic dredging is capable of pumping between 12 and 18 percent solids. Material dredged this way must be deposited into ponds for sediment to settle out. Once the solids have settled, the holding ponds are drained back into the channels that were dredged. Clamshell dredging allows quicker drying, placement of dredged material, and averts discharging substantial quantities of water. Transportation of dredged material is commonly done by barge.

Figure 2
SDIP Program Area



Disposal Methods of Dredged Materials

If clamshell dredging is selected, the material removed from the channel will be allowed to dewater by gravity and evaporate until the moisture content of the material is within acceptable engineering limits. The material on the backside of levees could provide additional stability. The levee reinforcement will proceed by the Project's engineering specifications.

If hydraulic dredging is used, the sediment will settle in designated ponds adjacent to the Project Area and dewater until the material is within acceptable engineering limits. Chemical and physical analyses of the soil were conducted to evaluate the baseline conditions at proposed ponding areas. Results from the studies on Victoria and Twitchell Islands, and Byron Tract are contained in *DWR Memorandum Reports Victoria Island Baseline Study of Dredge Material Reuse Sites* (November 1995), *Twitchell Island Baseline Study of Dredge Material Reuse Sites* (January 1996), and *Byron Tract Baseline Study of Dredge Material Reuse Sites* (March 1998), respectively. Decant water returned to the river will be monitored for various constituents to comply with water quality standards.

Potential Environmental Impacts

This section addresses potential short-and long-term water quality and biological impacts from the dredging activities with South Delta Improvements Program.

Water Quality Impacts from Dredging and Construction Activity

Resuspension of sediment in the water column during dredging is likely to occur during the removal of sediment, transfer of the sediment to a transporting boat, or leakage from the bucket (clamshell methods), from the transport vessel, and during removal from the transport vessel. Clamshell methods will likely result in more suspended materials released to the water column during the dredging operations compared to hydraulic methods, but less water is returned to the channel than with hydraulic methods.

Resuspension of the sediments causes increased turbidity which may adversely affect aquatic life, decrease clarity, and affect oxygen diffusion. The increased turbidity is expected to be a short-term condition and affect a limited area. These conditions may be minimized if sediment screens are used on suction dredgers, or water-tight buckets used on clamshell dredgers.

Resuspension of sediments may result in the release of constituents such as metals into the water. Water quality parameters, such as turbidity, metals, and nutrients could be affected during the dredging operations. Studies have found that there is little release of metals from reduced sediments in oxygenated water during dredging. The sediments in this study were analyzed for AVS/SEM to obtain the potential bioavailability of selected toxic metals.

Concentrations of some metals in water have been shown to decrease by four orders of magnitude within one hour of dredging, with metals released from anoxic marine sediments tending to adsorb onto freshly precipitated iron/manganese oxyhydroxides in less than an hour (Burton 1992). Any increase in the above parameters is likely to be short-term, with water quality expected to return to normal levels after dredging is completed.

Disposal of Dredged Material for Levee Reinforcement

Disposing dredged material to create shaded riverine aquatic habitat, in-water disposal and other uses of dredged material on levees not in this report will be supported by separate studies. The baseline data from this Study will allow preliminary evaluation of the dredged material.

The release of contaminants into surface water and/or groundwater from the dredged material for levee construction and/or reinforcement can present short-and long-term impacts. The major reactions are oxidation and acidification. In the aquatic environment most sediments exist in an anoxic or oxygen-free environment. The diffusion of oxygen in sediment is slow and oxygen content declines rapidly with increasing depth. A strong oxygen concentration gradient may exist over a depth of millimeters.

Upon transfer of the sediment to land, previously anoxic sediments slowly oxidize with exposure to oxygen. The time required for oxidation is variable, and may take years depending on the amount of dredged material, the redox potential of the sediment, the amount of oxidized matter, and the surface area of the sediment exposed. During the oxidation process metals, trace elements, and other constituents associated with the oxidized fractions may be released.

Oxidation of the dredged material may result in acidification of the sediment and lower sediment pH. The amount of acidification depends on the neutralization capacity of the sediment. Acidification may result in increased solubility of sediment metals which may increase their mobility and make them subject to leaching.

Rainfall can percolate through the dredged material, and depending on the nature of the material, may carry contaminants to groundwater and soil. Surface runoff from rainfall can flow over the dredged material and transport contaminants into surface waters. The potential of contaminants getting into the aquatic environment could pose problems to aquatic life and human health if concentrations are above water quality standards or exceeds other regulatory levels.

The potential for leaching contaminants from the sediments sampled for this study appears to be low based on the levels of the various constituents measured and the properties of the sediments. Acid neutralization ratios greater than the guideline value of 3.0 were obtained for nearly all samples.

Exposure of Contaminated Sediments

Long-term impacts with the removal of sediments during dredging have the potential for exposing sediments contaminated above baseline levels. Mining and other sources of pollution can result in contaminating surface sediments. In time, sediments deposited upstream can bury the contaminated sediments, effectively sealing them off from the aquatic organisms. During dredging activities, the upper layers of sediment are removed, potentially exposing previously contaminated sediments. Benthic organisms may be exposed to the contaminants through uptake from pores, body walls, respiratory surfaces, and through ingestion. There is the possibility that dredging may remove more contaminated sediments and expose less contaminated sediments, and improve benthic habitat.

Objectives of the Environmental Study

The objectives of this Environmental Study are to help predict impacts after the proposed dredging activities, including the effects of chemical components of dredged material on the environment. This study is a continuation of sampling which was conducted in 1992, 1994, and 1997. This work is authorized under the work plan approved by a December 5, 1991 memorandum from the CVRWQCB. Results of these studies were published in reports, which include *Environmental Study for the Interim South Delta Program: Water, Sediment and Soil Quality, May 1994* (DWR 1994), *Water and Sediment Quality Study for the Interim South Delta Program, May 1995* (DWR 1995a), and *Environmental Study of Dredged Materials in Old River* (DWR 1997). Executive summaries from these reports are included in Appendices A, B and C.

The decision-making framework includes compliance with State and federal water and sediment quality criteria, and sampling and analysis conducted using standard quality assurance/quality control principles. Where criteria are lacking, historical sediment data may be considered. Representative samples were collected within the Project boundaries. The objectives of this study are to:

- Determine the suitability of dredged materials for levee stabilization.

- Analyze and document existing baseline conditions before construction begins. Testing for current conditions in the Project Area for chemical and physical properties of channel water, sediment and sediment elutriate. The baseline conditions at the proposed settling pond and levee disposal sites have been evaluated by prior studies, (DWR 1995a, 1996, 1998), and will be further evaluated in future studies.

- Provide data to obtain necessary permits to begin construction/dredging operations.

- Obtain permits for this Environmental Study which include the 1601 Streambed Alteration Permit from the California Department of Fish and Game, the 401 Water Quality Certificate from the CVRWQCB, the Nationwide 6 Permit from the USACE, and a CEQA Notice of Exemption.

- Provide information to regulatory agencies which have jurisdiction over the protection of fish, wildlife and water quality. These agencies include the CVRWQCB, CDF&G, U.S. Fish and Wildlife, the EPA, and the USACE.

- Provide information that allows estimating water quality and/or biological impacts resulting from dredging and transport of sediments with the Project.

- Evaluate (to the extent possible) the potential long-term water quality impacts from the sediment deposition.

Design of the Environmental Study

General Study Description

This study was designed to expand the channel water and sediment quality information for the Preferred Alternative area. Water and sediment samples were collected throughout the South Delta Improvements Program Project Area in 1992 (DWR 1994), 1994 (DWR 1995a), and 1996 (DWR 1997). This study was designed based on the *USACE Testing Guidelines for Dredged Material Disposal at San Francisco Bay Sites* (Public Notice 93-2, February 1, 1993), and information from meetings and telephone conversations with CVRWQCB and Corps' staff. The chemical analyses were based on the Corps' guidelines, with one exception: the acid- generation potential test was substituted in place of the total and water soluble sulfides. This test includes analysis for total sulfur and provides information on the acid neutralizing capacity of the sediment.

For this study, parameters have been included for estimating potential water quality impacts to receiving waters from settling pond decant water. The Corps' Modified Elutriate Test (USACE 1985) was used to estimate the concentration of selected constituents in the decant water from the settling ponds. This test was used to estimate the impact of decant water on drinking water treatment operations. A Column Settling Test (1985) was conducted on sediment composite samples to estimate the time required to settle the suspended solids contained in the discharge from the hydraulic dredge to the settling ponds.

In the 1992 study, two water and two sediment samples were collected within the proposed dredging area. One set of samples was taken at the confluence of Old River and North Victoria Canal, and another set from north of State Route 4. In 1994, four water and six sediment samples were collected in the Old River between North Victoria Canal and Clifton Court Forebay. Sediments were collected from the top 60 inches of the channel bed. In the 1996 sampling program, six more sites were sampled for sediment and five more Sites for water, with an additional four samples collected from Old River in 1997 to estimate drinking water impacts resulting from dredging operations.

This study follows the sampling protocols used for the Old River Projects, which includes baseline environmental parameters with the Modified Elutriate and Column Settling Tests added. Sixteen composite sediment samples, four water samples, one composite elutriate sample were collected, and one Column Settling Test performed on sediments from the Project Area (Figures 3 and 4).

Water Sample Collection and Analyses

The analytical parameters, Reporting Limits, and EPA methods for the channel water analyses are shown in Appendix D.

Water samples were collected from three Sites (Figures 3 and 4) with one additional sample collected at the same time water was collected for the elutriate extraction and Column Settling Tests. Water samples were collected upstream and downstream of major waterway confluences (Figures 3 and 4) such as above and below the confluence of Grant Line Canal and Paradise Cut. The background elutriate water sample allows comparing the background river water used in the elutriate extraction test with the elutriate extract to determine the relative increase or decrease in constituent concentrations in settling pond decant water.

Water samples were collected from the Kinnetic Laboratories' boat using a stainless steel bucket and/or peristaltic pump. Samples were taken between 18 inches and 36 inches deep in the channel, or where turbulence was sufficient to keep the water body well mixed.

Water samples requiring filtration were filtered through 0.45 micron Gelman cartridge filters to determine total and dissolved fractions. Filtered and unfiltered samples tested for fluoride, chloride, hardness, electrical conductivity, and total dissolved solids, pH and suspended solids samples were put in 1-quart plastic containers. Samples for chromium VI analysis were filtered as described above, and put into an acid-washed plastic container. Samples for total and dissolved metals were put into acid-washed plastic containers and preserved with nitric acid. Unfiltered

water samples for oil and grease were placed into 1-quart glass jars, and preserved with sulfuric acid. Tributyltin water samples were collected in 2 one-quart glass jars, and were not filtered.

FIGURE 3. GRANT LINE CANAL PROPOSED DREDGING

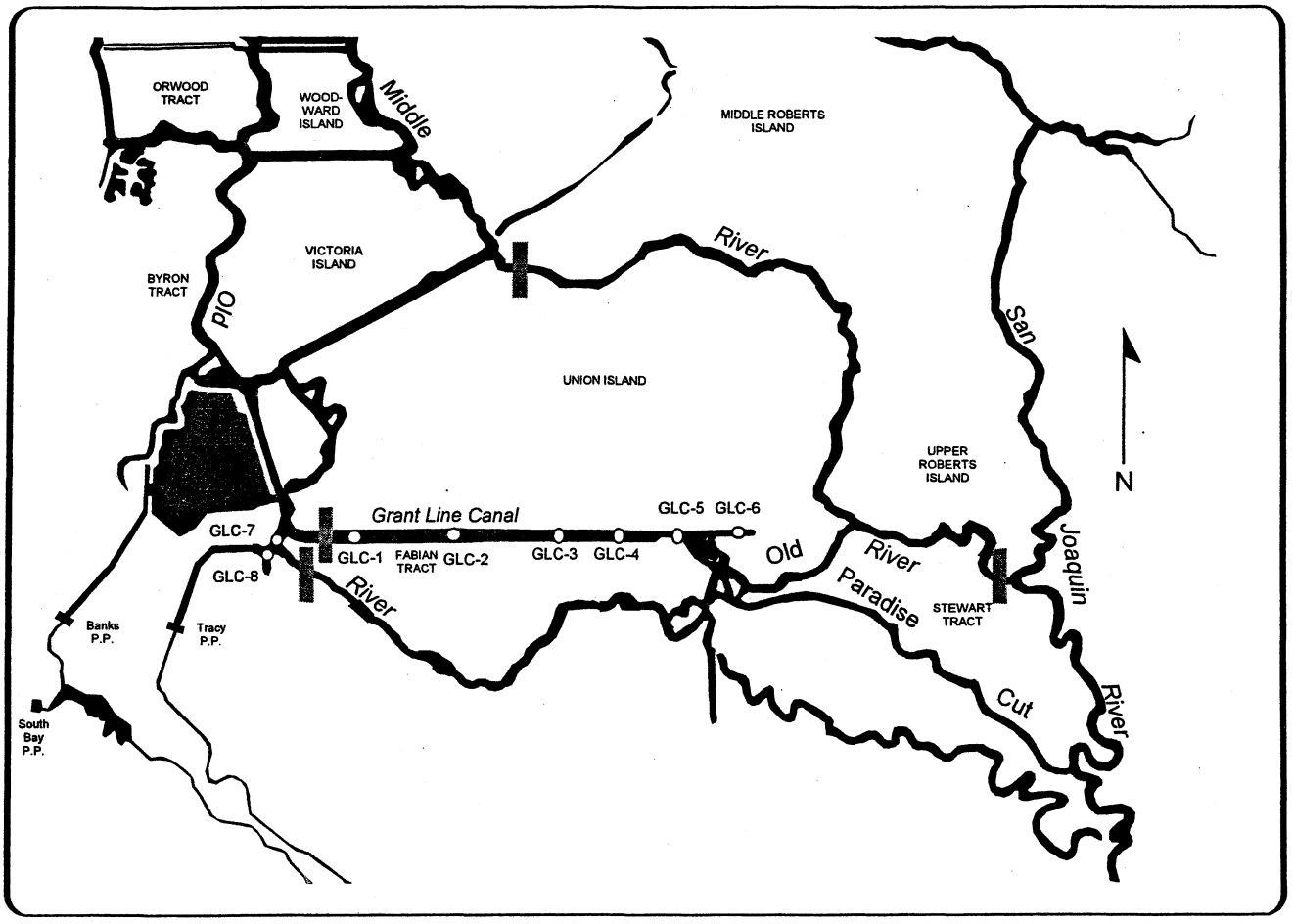


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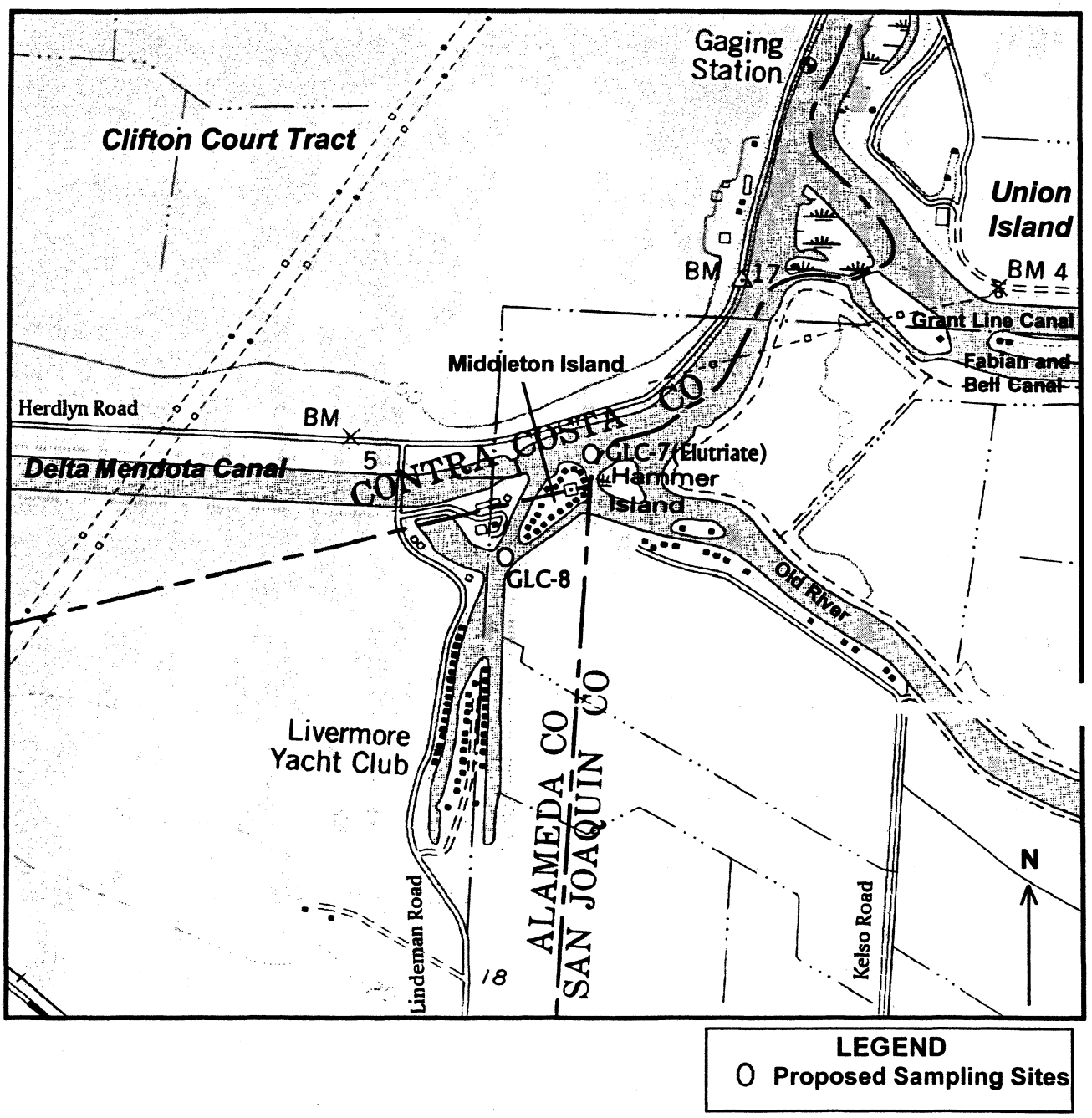
Figure 5. Hammer and Middleton Island Proposed Sampling Sites



Scanned image obtained from USGS 7.5 minute quad map.

Sediment Sample Collection and Analyses

Before the studies, sediment samples divided into two depth intervals were taken from shallow (0-to-5 foot) and deeper (5-to-15 foot) vertical levels for analyses on a recommendation from CVRWQCB staff (DWR 1995a). The more recent (shallow) deposition layer was defined as 0-to-5-foot depth, and was important based on previous studies because deposition in the 18-to 36-inch layer of this section is likely to be 10 to 20 years old, and could reflect recent anthropogenic contamination. Between the time these studies were performed and the time the dredging will begin, scouring and deposition will occur along the river. This natural alteration of the channel by river flows may result in top layers of sediment either being removed, or sufficient sediment deposited to shift upper sediment layers to deeper depths. The 0-to-5- feet layer of sediment will likely remain within the proposed dredging depth.

For this study, sediment samples were collected from eight Sites along the channel (Figures 3 and 4). One vertical profile, extending to a depth of 15 feet below the channel bottom was collected at each sediment sampling site. Samples were collected using the Vibracore sampling method in 4-inch diameter, pre-cleaned aluminum sampling tubes.

The Vibracore sampling method uses a vibrating unit to force a sampling device into the channel bed. The vibrating unit has two counter-rotating weights encased in a waterproof housing and weighs approximately 250 pounds. The vibration is created by the counter-rotating weights individually driven by electronic motors powered by a 240- volt, 3-phase generator. To collect samples, a core sample tube is fastened inside the center of the vibrating head. The core sampler typically consists of a 4-inch diameter stainless steel or aluminum tube, a stainless steel cutter head, and a stainless steel core catcher (to retain sediments within the tube). Lined butyrate tubing can be used in the core tube so that a continuous sample can be directly extracted from the core without either cutting the tube or extruding the sample.

The Vibracore sampling device requires that the core tube be put into saturated conditions to reduce friction between the sample tube and the surrounding

sediment for penetration. The depth for collection of a sample was 15 feet below the bottom of the existing channel. The amount of material removed at each Site depends on the actual depth of the sample and the size of the core. With a 4-inch core and a maximum depth of 15 feet, the maximum amount of material to be collected at a Site was approximately 1.3 cubic feet.

Sample Locations and Procedures

Site selection criteria are detailed below.

1. A Site evaluation was conducted before sampling. To avoid disturbance to nesting Swainson's hawks, the following measures were carried out in agreement with the Department of Fish and Game 1601 and other permits as required.

   a) Sampling operations were not located closer than 500 feet to an active nesting site and did not occur prior to 8 a.m., or were continued after 5 p.m.

   b) There was a Biological Monitor at the Site to watch the nests for a minimum of two hours daily. The monitor could stop work activities if necessary. If abandonment of a nest with eggs or young fledglings occurred, the DWR crew would have notified the Department of Fish and Game. DWR provided DFG a post-construction compliance report.

2. To minimize the effects of the in-channel sampling activities on California black rail, no edge water habitat was disturbed.

3. Any equipment or vehicles driven and/or operated within the channel were checked and maintained daily, to prevent leaks of materials that could be adverse to aquatic life.

4. Since the major amount of dredged material will be taken from the center of the channel and the channel cross-section will approximate a trapezoid when

completed. Sampling was performed in the middle two-thirds of the channel width where the water surface touches the levee where possible.

5. Samples were collected from areas of the channel bottom having a minimum water depth of approximately 10 feet to the bottom of the channel where possible. The Office of Statewide Water Project Planning channel cross-section data was used (Appendix L). When sampling near a bend, samples were taken on the inside of the curve where sediment is likely to have been deposited.

6. Sediment samples were obtained at the surface of the river bottom and extending to a depth of 15 feet below the surface of the channel bed.

Sediment Sample Collection and Equipment

One sediment sample was collected at each Site. The Vibracore sampling method was used to get the samples. DWR staff was assigned to the sampling operation.

A sample was considered adequate if at least 12 feet of continuous sample core was obtained, which was accomplished for all samples. Otherwise, a new hole would have been attempted to get a sample. Kinnetic Laboratories attempted to get 2-to-3 feet of sediment more than the 15 feet required to allow for possible sample loss upon removal of the Vibracore tube from the channel bottom.

After the sample was collected, the ends of sampling tubes were capped and taped before transport to the Kinnetic Laboratories. Sample tubes were covered with ice and tarps continuously during storage and transport.

Sediment samples were collected at six Sites from the channel bed, and were vertically composited within each Site by depth interval (see the example below), as measured from the surface of the channel bed.

Sample Description	Depth Interval	Sample
Composite Sample 1	0 - 5 feet	Site 1-1
Composite Sample 2	5 - 15 feet	Site 1-2

Sample Analyses

Kinnetic Laboratories extruded the sediment from the tubes where the samples were homogenized and composited. Sediment in contact with the walls of the sampling tube was not used. Care was taken to prevent loss of the semi-volatile and volatile compounds.

To ensure accuracy of the AVS/SEM analysis, care was taken to minimize the core to oxygen upon removing it from the sampling tube, or drying the sediment before testing. The AVS/SEM sample was composited by taking smaller samples from the length of the core immediately after the core was exposed from the sampling tube, and before being homogenized for other composite samples. Space was minimized in the plastic 250 ml sample container, and the sample was cooled and maintained at 4°C and sent to Toxscan Laboratories soon as possible after collection.

A duplicate sample was prepared from Site-2 for sediment and Site-7 for elutriate analysis. See Appendix D for a list of water, sediment elutriate and solid sediment parameters and analytical methods.

Laboratory Detection Limits

Toxscan was instructed to achieve detection limits 5 to 10 times lower than those in the Appendix D, Table D-4 *"Sediment Standards and Criteria, CVRWQCB General Order Waste Discharge Requirements, With decant water discharge to the river SMV (mg/L)."*

If the detection limits were not achievable, Toxscan staff attempted to achieve the lowest detection limits without performing additional research and development. If there was no standard, objective, or criteria value listed for the analyte, the Toxscan

staff attempted to achieve the lowest detection limits without performing any additional research and development.

Sample Container and Preservation Requirements

The sediment samples were kept as cool as possible during transport to the lab and during compositing, by packing or covering the sampling tubes with ice on the sampling boat and during delivery to Kinnetic Laboratories. Sediment and elutriate samples were shipped to the analyzing labs using ice chests and Blue Ice.

Equipment Calibration

Equipment was calibrated to comply with the manufacturer's or laboratory specifications before and after the sampling run. If post-run calibration indicated significant instrument drift, data collected were generally not used. For this testing, the same instruments were used. Where calibration was simple, as with the Orion 230A pH meter, calibrations were performed once before a sampling run.

Equipment Cleanliness

Cleanliness of field sampling equipment and laboratory glassware was accomplished with using hot water, strong detergent, and multiple rinses.

Quality Assurance/Quality Control

Field Quality Control

Water

Environmental Protection Agency methods for sample collection, preservation, and handling of water were followed. Field quality control samples consisted of duplicates and blanks. Duplicate samples evaluate the precision of sampling and laboratory procedures. Six field blanks were taken for metals, ammonia, and organic carbon analyzed by DWR's Bryte Chemical Laboratory. One duplicate water sample was collected at Site-4, and one background elutriate water sample was taken at Site-3. One background sediment elutriate extraction water sample was collected and one duplicate of the sediment elutriate extraction sample was generated.

Sediment

EPA methods of sample collection, preservation, and handling of sediment were followed, where applicable. Samples were composited and homogenized to ensure a representative sample for analysis. One duplicate sample was taken for sediment at
Site-2. Two sediment elutriate filter blanks, (one filtered and one unfiltered) were taken, prepared at Toxscan, and analyzed at the Bryte Chemical Laboratory for metals and ammonia.

Two equipment blanks were prepared by DWR field staff and analyzed at the Bryte Chemical Laboratory for metals. Equipment blanks were prepared by rinsing the sediment sampling equipment, which included Vibracore sampling tubes, the cutter head, and the sample retainer, with distilled water and catching the runoff in a clean stainless steel bucket. The rinse water was then transferred to the appropriate sample bottles. Equipment blanks were used to check for contamination that may carry over from one sample to another in the cleaning process. Potential sources of

contamination include metal paint and surface corrosion products, and residue from previously collected samples.

Laboratory Quality Control

EPA Methods

Environmental Protection Agency methods included detailed quality control procedures. These procedures included analyses of blank samples, matrix spikes, matrix spike duplicates, and a laboratory control sample with each batch processed.

Filter Blanks

Toxscan filtered all water and elutriate samples after coordinating with Bryte Chemical Laboratory staff to determine the total and dissolved fractions of selected analytes. Toxscan prepared a Gelman filter blank using laboratory water, and submitted the filtered blank laboratory water sample and an unfiltered blank laboratory water sample to the Bryte Chemical Laboratory for metals analysis. One filter blank was analyzed at the Bryte Chemical Laboratory from water run through a Gelman filter at Toxscan.

Data Quality Assessment

Sample Representativeness

This study's purpose was to evaluate the current water and sediment parameters in the Project Area, and was not designed to be a comprehensive evaluation of the sediment and water quality. The study was performed to define the current water and sediment conditions. When combined with sampling data from previous studies, the study's data provides additional information that can be used for project planning.

For a sampling program to provide valuable information, the samples collected must be representative of the environmental conditions. The EPA defines representativeness as "The degree to which the data accurately and precisely represent a characteristic of a population parameter, variation of a property, a process characteristic, or an operational condition" (Taylor 1987). It would be costly and difficult to collect enough samples to represent the Project Alternative Site in the south Delta.

Several factors make it difficult to thoroughly characterize the water and sediment quality in the Sacramento-San Joaquin Delta. One of the major factors is the hydrology of the area. Because the primary sources of water in the Delta are from the Sacramento and San Joaquin Rivers' systems, inflows from the rivers vary, and are dependent on precipitation as well as State Water Project releases from Lake Oroville and Central Valley Project releases from Shasta Lake. Much of the fresh water entering the Delta is exported for use elsewhere.

Exporters include the State Water Project, Central Valley Project, water districts, and more than 1,800 agricultural diversions. The remaining water flows out through San Francisco Bay to the Pacific Ocean. This freshwater outflow prevents saline water from the Bay from flowing into the Delta. The hydrology of the Delta is affected by the ocean tidal cycle and the water levels and direction of flow varies.

The industrial and agricultural activities near the Delta affects water quality. The Delta receives discharges from waste water treatment facilities and industrial sites, in addition to surface runoff from local cities. These discharges contain varying amounts of trace elements and organic chemicals. Water for agricultural irrigation is diverted to Delta Islands, and the excess is returned to Delta Channels. This agricultural drainage water often contains high levels of salts and may contain detectable levels of pesticides.

Recreational activities are another variable affecting the Delta's water quality. The impact of these activities on Delta water quality has not been defined and is likely to vary seasonally. A thorough evaluation of the water quality in the Delta would require extensive, and continuous monitoring.

Variability is common in naturally deposited materials such as sediments and soils. Sediments are heterogenous, and consist of a collection of fine-, medium-, and coarse-grain minerals and organic particles, and may act as "sinks" for a variety of chemicals. This natural variability makes it difficult to thoroughly characterize the Project Area.

Laboratory Data Validation

A data quality assessment was performed to determine whether the data collected were acceptable. Laboratory data were evaluated for precision, accuracy, and comparability. Laboratory methods, procedures, holding times, and quality control sample data were reviewed to assess data quality. The results of the data quality assessment show all the water and sediment data are of good quality. Data quality assessment is determined by evaluating the results of laboratory control samples, matrix spikes, method blanks, field blanks, equipment blanks, duplicates, and holding times. Samples were analyzed and quality control reports were produced at the Bryte Chemical Laboratory, Toxscan, BSK, and Kinnetic Laboratories.

Laboratory Control Samples

Laboratory control samples provide information about the samples' accuracy. Control samples are prepared by adding a known concentration of method analyte(s) to a clean matrix. Generally, one laboratory control sample is prepared for every ten samples, known as a batch. No samples analyzed for this Project Area were considered estimated based on control samples. No control samples from the Bryte Chemical Laboratory or contract laboratories were found to exceed sample control limits.

Matrix Spikes

Matrix spikes provide information on the accuracy of the sample results in an environmental sample. Sample result accuracy is often lower for environmental samples because of matrix interferences. Matrix spikes are prepared by adding a known concentration of method analytes to an environmental sample. Similar to laboratory control samples, one matrix spike is generally prepared for every ten samples. No matrix spike from the Bryte Chemical Laboratory or contract lab samples exceeded control limit results.

Method Blanks

Method blanks are those samples which contain all the reagents used in the sample preparation and analysis procedure. The preferred outcome from analysis of method blanks is a less-than-detectable concentration of the analyte of interest. All method blanks were performed at the Bryte Chemical Laboratory for metals in water samples. Analyte concentration levels all indicated a 'pass' status.

Duplicate Samples

Analytical results were compared by calculating the relative percent difference. As a general rule for field duplicates, a relative percent difference of up to 20 percent is acceptable for inorganics such as minerals in soils. A 30 percent relative percent difference is acceptable for organics. Metals generally should not exceed 15 percent. A total of 16 sediment constituents were analyzed between the duplicate samples. Of

these, 8 (50%) exceeded the above suggested values for relative percent difference. For surface water samples and elutriates, 44 constituents were analyzed between the duplicate samples. 13 (29.5%) surface water and elutriate duplicates exceeded the above suggested values for relative percent difference. No duplicate samples exhibited mathematically significant relative percent differences. Relative percent differences that exceeded recommended percentages were of such low concentration levels that a slight numerical difference causes a high and unrealistic relative percent difference.

Holding Times

Holding times for samples are significant for quality assurance and quality control. According to the American Society for Testing and Materials, a holding time consists of "the period of time during which a water sample can be stored after collection and preservation without significantly affecting the accuracy of analysis" (Keith 1988). No holding times were exceeded by (the Bryte Chemical Laboratory, or contract labs) for samples analyzed for this Project.

Table 1
Water Duplicates

Sampling Location	DWR Sample#	Fraction	Analyte Name	Result	Units	RPD's*	Exceeded
GLC-6	CB0698A1228	Dissolved	Ammonia	0.06	mg/L as N	18.20%	
Background Water Duplicate of GLC-6	CB0698A1230	Dissolved	Ammonia	0.05	mg/L as N		
GLC-6	CB0698A1228		Bromide	0.281	mg/L	1.80%	
Background Water Duplicate of GLC-6	CB0698A1230		Bromide	0.286	mg/L		
GLC-6	CB0698A1228		Chloride	100	mg/L	3.00%	
Background Water Duplicate of GLC-6	CB0698A1230		Chloride	103	mg/L		
GLC-6	CB0698A1228	Dissolved	Organic Carbon	2.98	mg/L as C	1.00%	
Background Water Duplicate of GLC-6	CB0698A1230	Dissolved	Organic Carbon	2.95	mg/L as C		
GLC-6	CB0698A1228		2-Bromo-1-chloropropane	10.429	µg/L	0.30%	
Background Water Duplicate of GLC-6	CB0698A1230		2-Bromo-1-chloropropane	10.399	µg/L		
GLC-6	CB0698A1228	Dissolved	Sodium	50	mg/L	2.40%	
Background Water Duplicate of GLC-6	CB0698A1230	Dissolved	Sodium	51.2	mg/L		
GLC-6	CB0698A1228	Total Dissolved	Solids	337	mg/L	0.90%	
Background Water Duplicate of GLC-6	CB0698A1230	Total Dissolved	Solids	340	mg/L		
GLC-6	CB0698A1228	Total Suspended	Solids	74	mg/L	5.30%	
Background Water Duplicate of GLC-6	CB0698A1230	Total Suspended	Solids	78	mg/L		
GLC-6	CB0698A1228	Dissolved	Sulfate	68	mg/L	8.50%	
Background Water Duplicate of GLC-6	CB0698A1230	Dissolved	Sulfate	74	mg/L		
GLC-6	CB0698A1228		2-Bromo-1-chloropropane	10.429	µg/L	0.30%	
Background Water Duplicate of GLC-6	CB0698A1230		2-Bromo-1-chloropropane	10.399	µg/L		
GLC-6	CB0698A1228		Bromodichloromethane	140	µg/L	7.40%	
Background Water Duplicate of GLC-6	CB0698A1230		Bromodichloromethane	130	µg/L		
GLC-6	CB0698A1228		Chloroform	270	µg/L	3.80%	
Background Water Duplicate of GLC-6	CB0698A1230		Chloroform	260	µg/L		
GLC-6	CB0698A1228		Dibromochloromethane	64	µg/L	6.50%	
Background Water Duplicate of GLC-6	CB0698A1230		Dibromochloromethane	60	µg/L		
GLC-6	CB0698A1228		UV Absorbance @254nm	0.083	absorb/cm	1.20%	
Background Water Duplicate of GLC-6	CB0698A1230		UV Absorbance @254nm	0.082	absorb/cm		
GLC-6	CB0698A1228	Total	Zinc	0.012	mg/L	8.70%	
Background Water Duplicate of GLC-6	CB0698A1230	Total	Zinc	0.011	mg/L		

* RPD's that exceeded recommended percentages were of such low concentration levels that a slight numerical difference causes a high and unrealistic RPD.

Table 2
Elutriate Duplicates

Sampling Location	DWR Sample#	Fraction	Analyte Name	Result	Units	RPD's*	Exceeded
Elutriate Extract Duplicate	CB0698A1255	Total	Alkalinity	70	mg/L CaCO3	18.8%	
Elutriate Extract Duplicate	CB0698A1254	Total	Alkalinity	58	mg/L CaCO3		
	CB0698A1255	Dissolved	Ammonia	0.79	mg/L as N	23.5%	Exceeded
Elutriate Extract	CB0698A1254	Dissolved	Ammonia	1	mg/L as N		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Arsenic	0.0052	mg/L	14.3%	
Elutriate Extract	CB0698A1254	Dissolved	Arsenic	0.006	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Total	Arsenic	0.015	mg/L	33.3%	Exceeded
Elutriate Extract	CB0698A1254	Total	Arsenic	0.021	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Total	Beryllium	0.002	mg/L	66.7%	Exceeded
Elutriate Extract	CB0698A1254	Total	Beryllium	0.004	mg/L		
Elutriate Extract Duplicate	CB0698A1255		Bromide	0.104	mg/L	4.7%	
Elutriate Extract	CB0698A1254		Bromide	0.109	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Calcium	10.7	mg/L	6.3%	
Elutriate Extract	CB0698A1254	Dissolved	Calcium	11.4	mg/L		
Elutriate Extract Duplicate	CB0698A1255		Chloride	18	mg/L	5.4%	
Elutriate Extract	CB0698A1254		Chloride	19	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Total	Chromium	0.064	mg/L	80.9%	Exceeded
Elutriate Extract	CB0698A1254	Total	Chromium	0.151	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Copper	0.0025	mg/L	18.2%	
Elutriate Extract	CB0698A1254	Dissolved	Copper	0.003	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Total	Copper	0.07	mg/L	61.4%	Exceeded
Elutriate Extract	CB0698A1254	Total	Copper	0.132	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Organic Carbon	5.06	mg/L as C	26.6%	
Elutriate Extract	CB0698A1254	Dissolved	Organic Carbon	6.61	mg/L as C		
Elutriate Extract Duplicate	CB0698A1255	Total	Organic Carbon	19.83	mg/L as C	50.3%	Exceeded
Elutriate Extract	CB0698A1254	Total	Organic Carbon	33.14	mg/L as C		
Elutriate Extract Duplicate	CB0698A1255	Total	Lead	0.024	mg/L	84.3%	Exceeded
Elutriate Extract	CB0698A1254	Total	Lead	0.059	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Magnesium	5.96	mg/L	6.3%	
Elutriate Extract	CB0698A1254	Dissolved	Magnesium	6.35	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Nickel	0.0018	mg/L	57.1%	Exceeded
Elutriate Extract	CB0698A1254	Dissolved	Nickel	0.001	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Total	Nickel	0.058	mg/L	86.3%	Exceeded
Elutriate Extract	CB0698A1254	Total	Nickel	0.146	mg/L		
Elutriate Extract Duplicate	CB0698A1255		Ronnel	0	µg/L	200.0%	Exceeded
Elutriate Extract	CB0698A1254		Ronnel	0.311	µg/L		

Elutriate Extract Duplicate	CB0698A1255	Total	Selenium	0	mg/L	200.0%	Exceeded
Elutriate Extract	CB0698A1254	Total	Selenium	0.0017	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Sodium	22.7	mg/L	2.6%	
Elutriate Extract	CB0698A1254	Dissolved	Sodium	23.3	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Total	Thallium	0	mg/L	200.0%	Exceeded
Elutriate Extract	CB0698A1254	Total	Thallium	0.001	mg/L		
Elutriate Extract Duplicate	CB0698A1255		2-Bromo-1-chloropropane	11.373	µg/L	10.4%	
Elutriate Extract	CB0698A1254		2-Bromo-1-chloropropane	10.252	µg/L		
Elutriate Extract Duplicate	CB0698A1255		2-Bromo-1-chloropropane	11.102	µg/L	1.7%	
Elutriate Extract	CB0698A1254		2-Bromo-1-chloropropane	11.291	µg/L		
Elutriate Extract Duplicate	CB0698A1255		Bromodichloromethane	64	µg/L	21.0%	
Elutriate Extract	CB0698A1254		Bromodichloromethane	79	µg/L		
Elutriate Extract Duplicate	CB0698A1255	Residual	Chlorine	2.1	mg/L	4.7%	
Elutriate Extract	CB0698A1254	Residual	Chlorine	2.2	mg/L		
Elutriate Extract Duplicate	CB0698A1255		Chloroform	430	µg/L	22.7%	
Elutriate Extract	CB0698A1254		Chloroform	540	µg/L		
Elutriate Extract Duplicate	CB0698A1255		UV Absorbance @254nm	0.083	absorb/cm	5.8%	
Elutriate Extract	CB0698A1254		UV Absorbance @254nm	0.088	absorb/cm		
Elutriate Extract Duplicate	CB0698A1255	Total	Zinc	0.1	mg/L	82.0%	Exceeded
Elutriate Extract	CB0698A1254	Total	Zinc	0.239	mg/L		
Elutriate Extract Duplicate	CB0698A1255	Dissolved	Zinc	0.0084	mg/L	4.9%	
Elutriate Extract	CB0698A1254	Dissolved	Zinc	0.008	mg/L		

* RPD's that exceeded recommended percentages were of such low concentration levels that a slight numerical difference causes a high and unrealistic RPD.

Table 3
Sediment Duplicates

Sampling Location	DWR Sample#	Fraction	Analyte Name	Result	Units	RPD's*	Exceeded
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Arsenic	0.028	mg/L	13.3%	
SEM GLC-9	CB0698A1957	Dissolved	Arsenic	0.032	mg/L		
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Chromium	0.21	mg/L		
SEM GLC-9	CB0698A1957	Dissolved	Chromium	0.155	mg/L	68.4%	Exceeded
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Copper	0.076	mg/L	2.7%	
SEM GLC-9	CB0698A1957	Dissolved	Copper	0.074	mg/L		
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Lead	0.076	mg/L	43.2%	Exceeded
SEM GLC-9	CB0698A1957	Dissolved	Lead	0.049	mg/L		
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Mercury	0.0002	mg/L	66.7%	Exceeded
SEM GLC-9	CB0698A1957	Dissolved	Mercury	0.0004	mg/L		
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Nickel	0.268	mg/L	9.6%	
SEM GLC-9	CB0698A1957	Dissolved	Nickel	0.295	mg/L		
SEM GLC-2 (0-5)	CB0698A1943	Dissolved	Zinc	0.555	mg/L	22.7%	Exceeded
SEM GLC-9	CB0698A1957	Dissolved	Zinc	0.442	mg/L		
GLC-2 (0-5)	CB0698A1237	WET	Arsenic	0.068	mg/L	27.8%	Exceeded
GLC-9	CB0698A1251	WET	Arsenic	0.09	mg/L		
GLC-2 (0-5)	CB0698A1237		Arsenic	1.1	mg/Kg	9.5%	
GLC-9	CB0698A1251		Arsenic	1	mg/Kg		
GLC-2 (0-5)	CB0698A1237	DIWET	Chromium	0.027	mg/L		
GLC-9	CB0698A1251	DIWET	Chromium	0	mg/L	200.0%	Exceeded
GLC-2 (0-5)	CB0698A1237	Total	Chromium	6.5	mg/Kg	8.0%	
GLC-9	CB0698A1251	Total	Chromium	6	mg/Kg		
GLC-2 (0-5)	CB0698A1237		Copper	[illegible]	[illegible]		
GLC-9	CB0698A1251		Copper	2.5	mg/Kg		
GLC-2 (0-5)	CB0698A1237		Lead	2.3	mg/Kg	35.9%	Exceeded
GLC-9	CB0698A1251		Lead	1.6	mg/Kg		
GLC-2 (0-5)	CB0698A1237		Moisture Content	16	%	11.8%	
GLC-9	CB0698A1251		Moisture Content	18	%		
GLC-2 (0-5)	CB0698A1237		Nickel	9	mg/Kg	3.4%	
GLC-9	CB0698A1251		Nickel	8.7	mg/Kg		
GLC-2 (0-5)	CB0698A1237		Zinc	13	mg/Kg	26.7%	Exceeded
GLC-9	CB0698A1251		Zinc	17	mg/Kg		

* RPD's that exceeded recommended percentages were of such low concentration levels that a slight numerical difference causes a high and unrealistic RPD.

Sample Results and Discussion

Channel Sediment

No enforceable federal or State sediment quality standards exist with the exception of the California TTLC and STLC (Appendix D-4). To evaluate the quality of the sediment data, data were compared to the California TTLC and STLC concentrations, and to non-enforceable State, federal, and international sediment criteria. The use of the non-enforceable criteria does not constitute DWR's endorsement of the criteria. They are used as a reference for South Delta Improvements Program sediment data in the absence of enforceable criteria or as objectives for sediment. Most sediment evaluation schemes recommend a site-specific approach to the application of sediment criteria because of extreme variability in toxicity or bioaccumulation among sediments of similar composition or states of contamination. A list of the criteria and a description of each is shown in Appendix D for Water Quality Control reference.

The San Francisco Regional Water Quality Control Board Interim Sediment Screening Criteria were developed to ease beneficial reuse dredged materials. The criteria are used to evaluate the potential for water quality impacts from disposing sediment near a water body, such as use of dredged material for levee maintenance. The criteria are defined as the maximum concentrations of constituents in dredged sediment acceptable for the designated use. The sediment testing results are evaluated on a case-by-case, or site-specific basis. These criteria were developed for marine waters and are generally applicable to fresh water systems, and are included for general reference. These criteria should not be used to assess pollutant concentrations in dredged sediments related to groundwater quality impacts, since they were not developed for this purpose (CVRWQCB 1997).

The Ontario Ministry of the Environment developed *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario.* Sediment Quality Guidelines were developed for the protection of aquatic biological resources. The guidelines were derived to protect those organisms that are impacted by contaminated sediment, namely the benthic species. They are based on the chronic, long-term

effects of contaminants on benthic organisms seen in a variety of studies and in a range of water and sediment conditions.

These guidelines can be used to estimate the potential for adverse biological effects because of exposure of contaminated sediment from dredging operations, since they do not establish dose-response relationships based on cause and effect between sediment concentrations of substances of concern and adverse impacts to aquatic life, such as benthic organisms. Observed effects tested by such methods are statistically correlated or associated with constituent concentrations measured in the sediments, even though the tested sediment may have other actual or potential toxicants at various levels capable of causing adverse effects; additive, antagonistic, potentiated, or synergistic relationships between toxicants are not determined by general screening tools.

Physical Analysis

The composition of sediment samples are shown in Appendix I. A grain-sized analysis was completed for all sediment samples, and indicates that most samples were composed primarily of combinations of clay, silt, and sand; gravel was not present, although several samples had a high percentage of sand (Sites 2,-5, 6 and 8). Sediment classification data are included with the Drill Hole Logs were produced for each vertical profile at each sampling Site (Appendix J).

Organic Analyses

All sediment samples were analyzed for total organic carbon, with the results displayed in Appendix E, Figure E-1. Total organic carbon showed no pattern of vertical composites of 0-to-5 feet and 5-to-15 feet. Sampling Sites 7 and 8 had higher total organic carbon concentrations when compared with other Sites, with Site-7 having the highest levels of Total organic carbon.

Sediment samples were analyzed for pesticides, PAHs, PCBs and the other organic chemicals listed in Appendix D, Table D-2, and concentrations were below the reported level of detection. The reporting limits provided by the laboratory are given based on wet weight and must be converted to dry weight for comparison with some criteria. Conversion from wet to dry weight can be accomplished using the

percent moisture for each individual sample shown in Appendix E, Table E-2, resulting in different Reporting Limits for each sample based on moisture content.

The reporting limits were too high to provide comparison with the applicable criteria or guidelines, which occurs when the reporting limit is greater than the associated criterion. When the reporting limit is 0.5 mg/kg and the criterion is 0.1 mg/kg, a not-detectable value means the concentration of that constituent is less than 0.5 mg/kg, while the concentration could range from 0 to less than 0.5 mg/kg. It is not possible to determine if the constituent exceeds criterion of 0.1 mg/kg.

In many cases it is technically impossible to achieve reporting limits equal to or less than a given criterion. In this study the most sensitive analytical methodologies commercially available were selected to provide the lowest reporting limits. Even the method detection limit, the lowest detection limit for a given method, was greater than or equal to the associated criteria. The method detection limit is rarely achieved because of factors such as matrix interferences and dilution. These effects result in a detection limit, or reporting limits, that is greater than the method detection limit, and is often too high to provide comparison with associated criteria.

The *EPA's Draft Sediment Quality Criteria* are given in units of $\mu g/g_{oc}$ and cannot be compared to the analytical results given in mg/kg without conversion. Dieldrin and endrin are the two parameters analyzed that have EPA Sediment Quality Criteria. In all the samples tested, both parameters were not-detectable.

Oil and grease (total) were present in samples from Sites-6 (21-26 mg/Kg) and 7 (28-46 mg/Kg). Neither gasoline nor diesel fuel was detected in any sample.

Metal Analyses

Metals were found in detectable concentrations in most samples and likely reflect characteristics of the upper watershed.

Arsenic was detected in all samples (Figure E-3), with the concentrations ranging from 0.6 mg/kg to 5.1 mg/kg wet weight. With the exception of Site-2, arsenic concentrations were similar in the 0-to-5 feet and 5-to-15 feet vertical composite

samples from all Sites. The TTLC criteria (500 mg/kg wet weight) was not exceeded at any Site in any bulk sediment analysis.

Chromium was found at concentrations ranging from 6.5 mg/kg at Site-2 to 27mg/kg at Site-4 (Appendix E, Figure E-4). The TTLC of 2,500 mg/kg wet weight was not exceeded by any sample. With the exception of Site-2, chromium concentrations were generally similar in the 0-5 feet and 5-15 feet vertical composite samples from all Sites.

Copper concentrations ranged from 2.6 mg/kg at Site -2 to 21 mg/kg at Site-4 (Appendix E, Figure E-5). The TTLC of 2,500 mg/kg wet weight was not exceeded by any sample. With the exception of Site-2, copper concentrations were similar in the 0-5 feet and 5-15 feet vertical composite samples from all Sites.

Nickel concentrations ranged from 8.8 mg/kg at Site-5 to 32 mg/kg at Site-4 (Appendix E, Figure E-6) . All values are below the TTLC criteria (2,000 mg/kg wet weight). With the exception of Site-2, nickel concentrations were similar in the 0 to 5 feet and 5-to-15 feet verticle composite samples from all Sites.

Lead was found in all samples with concentrations ranging from 1.1 mg/kg at Site-5 to 6.0 mg/kg at Site-6 (Appendix E, Figure E-7). Lead concentrations were similar in the 0-to-5 feet and 5-to-15 feet vertical composite samples from all Sites. All values are below the TTLC criteria value of 1,000 mg/kg wet weight.

Silver was found in 11 of the 16 samples at concentrations ranging from 0.001 mg/kg at Site-5 to 0.009 mg/kg at Site-1. The TTLC value of 500 mg/kg wet weight was not exceeded at any Site.

Cadmium was not detected in any sediment samples. The reporting limit for cadmium was 0.5 mg/kg wet weight. This reporting limit is well below the SFRWQCB criterion of 5.0 mg/kg dry weight and the TTLC of 100 mg/kg wet weight.

Mercury was not detected in any bulk sediment samples. The reporting limits for mercury was 0.1 mg/kg wet weight (0.135 mg/kg dry weight). These reporting limits are low enough to provide comparison with the TTLC value of 20 mg/kg wet weight.

Selenium was not detected in any bulk sediment samples. The reporting limits for selenium was 0.4 mg/kg wet weight. These reporting limits are low enough to provide comparison with the TTLC value of 100 mg/kg wet weight and was not exceeded.

Waste Extraction Test Metal Analyses

All samples were analyzed for soluble metals using the Waste Extraction Test from Title 22. The Waste Extraction Test was performed using the standard citric acid buffer and as deionized water (DIWET). The citric acid Waste Extraction Test simulates leaching of metals that would occur in acidic environments. The DIWET simulates the leaching that would occur in more neutral environments. Acidic environments cause metals to be more soluble, and possibly causing more mobility and susceptibility to leaching. Higher metal concentrations would be found in samples prepared by the citric acid Waste Extraction Test versus the DIWET. Results of analyses using the Waste Extraction Test are compared to the Title 22 STLC, listed in Appendix D.

Arsenic was detected in all samples from all eight Sites using the Waste Extraction Test (Appendix E, Figure E-8). At 5 of the 8 sampling Sites arsenic was highest in samples from the 0-to-5 feet shallow sediment depths compared to samples obtained from the 5-to-15 feet deeper sediment, although the sample obtained from the 5-to-15 foot depth at Site-2 had higher levels of arsenic compared with samples taken from the 0-to-5 feet shallower sediment depth. The arsenic Waste Extraction Test levels ranged from 0.029 mg/L (wet weight) at Site-5 to 0.22 mg/L at Site-1. Arsenic was detected in samples from all 8 Sites using the DIWET (Appendix E, Figure E-8). The positive results ranged from 0.002 mg/L (wet weight) at Site-7 to 0.032 mg/L at Site-4. The STLC for arsenic is 5 mg/L and was not exceeded by any sample.

Chromium was detected in 24 Waste Extraction Test samples from 6 of 8 Sites (Appendix E, Figure E-9). Chromium concentrations in positive samples ranged from 0.2 mg/L at Sites-1 and -3 to 0.28 mg/L at Sites-6 and-7. Using the DIWET, chromium was detected in 11 samples from half the sampling Sites, with concentrations ranging from 0.006 mg/L to 0.027 mg/L. The STLC for chromium is 5 mg/L and was not exceeded by any sample.

Copper was detected in samples from half of the sampling Sites using the Waste Extraction Test (Figure E-10) at concentrations ranging from 0.02 mg/L to 0.45 mg/L. Using the DIWET copper was detected at two Sites with concentrations ranging from 0.011 mg/L to 0.018 mg/L. Sites-3 and-4 had Waste Extraction Test and DIWET detections in both the 0 to-5 foot and 5 to-15 foot samples. The STLC for copper is 25 mg/L and was not exceeded by any sample.

Lead was not detected in any samples from any Site using either the DIWET or Waste Extraction Test procedures. The STLC for lead is 5 mg/L.

Nickel was detected in samples from all Sites using the Waste Extraction Test (Figure E-11) at concentrations ranging from 0.2 mg/L at Site-4 to 0.55 mg/L at Site-1. Using the DIWET, nickel was detected at three Sites with concentrations ranging from 0.005 mg/L at Site-4 to 0.02 mg/L at Site-3. The STLC for nickel is 20 mg/L and was not exceeded by any sample.

Using the Waste Extraction Test zinc was detected in two samples from two Sites at concentrations 0.280 mg/L at Site-6 and 0.210 mg/L at Site-1. Zinc was detected in one sample using the DIWET at a concentration of 0.015 mg/L at Site-3. The STLC for zinc is 250 mg/L and was not exceeded in any sample.

The test results on the sediment samples indicate that in an acidic environment, metals are not likely to leach in significant amounts, and in a neutral environment, no significant leaching is expected. All samples were found at concentrations below the TTLC and STLC criteria. The sediment would not be considered a hazardous waste under Title 22.

Acid-Forming Potential

Measurements of acid-forming potential and acid- neutralizing potential were conducted on samples from all Sites. These results can be used to predict the capability of a sediment to neutralize acids. The acid- forming potential is a measurement of the acid-producing forms of sulfur. These forms of sulfur are available to be converted to sulfuric acid (H_2SO_4). The neutralizing potential is a measure of the neutralizing bases, such as carbonates.

The acid- generation potential is determined by dividing the measured acid neutralization potential by the acid- forming potential (also called the "not applicable ratio.") A quotient of one indicates that the two potentials are equal, and the soil can neutralize all the acid produced. CVRWQCB has set a not applicable quotient of 3 for determining if a soil will become acidic. If the ratio is greater than 3, the likelihood that the sediment will become acidic is low. The criterion of 3 was selected to account for the greater chance of leaching neutralizing minerals as compared to the acid-forming minerals, and to account for the uneven distribution of these minerals in the sediments.

Only Sites-2 and 6 had one sample each with ratios below 3, with values of 2.67 and 2.25, respectively. The not applicable ratio of the samples above or below the two samples were greater than the guideline ratio of 3. All remaining samples had not applicable ratios ranging from 3 to 23. The not applicable ratios for all samples from each sampling location are shown in Figure Appendix E, E-12. The pH values of a paste made from each sediment sample are shown in Figure E-13.

Sediment Trends

The sediment results from the vertically composited samples were compared by depth to determine if there were differences in parameter concentrations along the sediment column.

Total organic carbon was similar in the shallow sediments compared to deeper sediments as were arsenic, copper, chromium, lead, and nickel concentrations.

Arsenic, chromium, copper, lead, and nickel were detected in all sediment samples from all sites. Selenium was not detected in any bulk sediment samples.

Using the Waste Extraction Test and DIWET on the sediments, there were no samples which exceeded the TTLC or STLC values for all constituents. None of the samples would be classified as hazardous waste based on these results.

No samples exceeded the Central Valley Regional Water Quality Control Board maximum soluble pH guideline of 8.5, with no samples having a pH less than the minimum guideline value of 6.5.

Acid Volatile Sulfides and Simultaneously Extracted Metals

The concentration of AVS can help determine the mobility, bioavailablility, and toxicity of certain metals in aquatic sediments. Sulfides are present in aquatic sediments through the breakdown of organic matter. The pool of reactive sulfide is often found in the form of soluble monosulfides. The AVS fraction of sulfides can bind and reduce the bioavailability and/or toxicity of certain metals (Di Toro et al, 1990), which include cadmium, copper, lead, nickel, and zinc (EPA 1995; EPA 1991).

The procedure involves the isolation and quantification of AVS by the analytical method (EPA 1991) and the determination of the concentrations of the metals Cd, Cu, Pb, Ni, and Zn which are extracted from the sample along with the AVS. A ratio is calculated as SEM:AVS where SEM=$\sum$[metals µmol/g] and AVS= [µmol/g].

When the molar ratio of SEM:AVS is < 1, the metals are not likely to be bioavailable since equilibrium will cause the metals to precipitate in the presence of excess AVS as insoluble sulfide compounds, which are usually not toxic to aquatic organisms. When the ratio of SEM:AVS $\geq$ 1, all metals are not bound by AVS and may be bioavailable. This has been found to be a reasonable approximation by the EPA (1995) of the potential for toxicity by these metals in sediments since the AVS binding is theoretically strong and should be the dominant process. The need for more work was identified since these metals may be bound or precipitated by other substances such as organic carbon, hydroxide, and carbonate which would reduce the bioavailability and toxicity of the metals.

Only two samples at Sites 1-1 and 5-2 had SEM:AVS ratios greater than one (both were about 2.1), which is not a high value (Appendix E, Figure E-36). One sample (Site 1-2) was destroyed and not analyzed. The ratios of 0.0 shown on Figure E-36 indicate that AVS were not detected in those samples and a ratio could not be calculated. In suction dredging, all sediments will be mixed in the settling ponds, and these two samples with ratios above 1 are not expected to remain above 1 when all the sediments are mixed and settled in the ponds. While these ratios have little implication for sediments used for upland purposes, more toxicity testing may be needed if sediment from these Sites were used for waterside purposes.

Surface Water and Sediment Elutriate

The channel water sample analyses were compared to standards for the protection of aquatic life and human health. These include the *California Inland Surface Water Plan* (SWRCB 1993) Water Quality Objectives for the protection of aquatic life (4-day average), and the EPA and California Department of Health Services Maximum Contaminant Levels for the protection of drinking water. The *California Inland Surface Water Plan* has been invalidated in court, and it is not known if it will be revised. The values have been included for comparative purposes in Appendix D, Table D-3.

The EPA has published proposed numeric water quality criteria for priority toxic pollutants to fulfill the requirements of section 303(c)(2)(B) of the Clean Water Act in the California (EPA 1997). These criteria replace the above mentioned SWRCB *California Inland Surface Water Plan* (SWRCB, 1993) until State standards are developed. The proposed California Toxics Rule is likely to be the basis for the Waste Discharge Requirements that will be developed for this Project by the Central Valley Regional Water Quality Control Board.

The Water Quality Objective may be lower than the laboratory reporting level, and a constituent cannot be detected at low enough concentrations to determine compliance with the Water Quality Objectives. CVRWQCB has established a list of acceptable laboratory methods for analyses. If the appropriate method of analysis is used and the laboratory makes a diligent effort to achieve the lowest possible reporting limit, an undetectable concentration will be considered compliance, even if the reporting limit is above the Water Quality Objectives. A list of the Water Quality Objectives, the CVRWQCB approved laboratory methods, and the Maximum Contaminant Levels are shown in Appendix D.

Modified Elutriate Test

To approximate the conditions which the Grant Line Canal sediments will be exposed to during the dredging operations, transport to the dewatering ponds adjacent to the dredging area, settling of solids in the ponds, and discharge of decant water from the ponds into Grant Line Canal, the MET (USACE 1985) was used. This test procedure exposes the sediment to the following conditions:

1. Vigorous mixing of sediment with background river water at the expected dilution (15 percent solids in this case) for 5 minutes using a laboratory mixer simulating mixing sediment with river water during the dredging process.

2. Bubble aeration using compressed air through the mixed slurry for one hour simulating the exposure of anoxic sediments to the oxidizing conditions produced upon exposure to air during the dredging process.

3. Quiescent settling of sediment for 24 hours simulates the conditions of the settling ponds.

4. Extracting supernatant phase water after settling is complete without resuspension of sediment simulating the decant water drained from the settling ponds after settling of the solids (sediment).

5. Analyzing supernatant for total concentrations of constituents of interest.

6. Centrifugation (10,000 g) and/or filtration (0.45 micron) for dissolved fraction of constituents of interest.

The channel water used for the elutriate extraction procedure was collected with a background elutriate water sample. This allows comparing the background river water parameters with the same water after it has been used to extract the sediments to simulate the dredging, ponding, and decanting of the water with the dredged materials into Grant Line Canal. Reasonable approximations of concentrations of parameters of interest are obtained through the use of MET.

Standard Minerals and Miscellaneous Water Quality Parameters

The channel water samples were analyzed for standard minerals, including calcium, magnesium, sodium, potassium, sulfate, chloride, nitrate, fluoride, and boron. Other water quality parameters were analyzed for suspended solids, hardness, total alkalinity, pH, dissolved solids, and electrical conductivity.

There are no Water Quality Objectives for these parameters, although the EPA primary and/or secondary drinking water Maximum Contaminant Levels exist for some of the constituents. The Maximum Contaminant Levels for turbidity of 0.5-1.0 NTU was exceeded for all five river water samples, and ranged from 36 NTU at Site-7 to 97 NTU at Site-6. The pH of the elutriate extract water was 7.7 compared with the average of the channel water background samples of 7.5.

The specific conductance of the background channel water and the background water used to extract the sediments (also channel water) in the MET (Background Elutriate in Appendix E, Figure E-15) compared to the elutriate extract itself shows that the mean specific conductance of the background water samples is higher than that of the elutriate extract. Site-6 had the highest specific conductance of all samples at 634.

Chloride concentration (19 mg/L) in the elutriate was slightly elevated in the elutriate compared to the background channel water (12 mg/L), but was less than the average concentration of all background channel water samples (37.5 mg/L) (Figure E-16). Site-6, located at the closed end of Grant Line Canal, had significantly higher levels of chloride than the other sampling locations. The drinking water Maximum Contaminant Levels for chloride is 250 mg/L, which was not approached by the elutriate.

Sulfate concentrations were lower in the elutriate (5 mg/L) compared to the background elutriate water (17 mg/L) (Figure E-17). Site-6 had the highest sulfate concentration of any water sampling Site at 68 mg/L.

Pesticides and Other Organics

All water samples were analyzed for chlorinated pesticides and PCBs (EPA method 608), oil and grease, and tributyltin (are listed in Appendix D. There are no Water Quality Objectives or Maximum Contaminant Levels for oil and grease, and no Maximum Contaminant Levels for tributlylins.

Oil and grease were detected in the elutriate extract at 4.92 mg/L, and was not detected in any background channel water or background elutriate water samples. Sites-6 and-7 sediment samples contained detectable concentrations of oil and grease.

Ronnel (fenchlorophos, CAS 299-84-3), an organophosphate insecticide was detected at a concentration of 0.311 ug/L in the elutriate extract, but not in the background elutriate water sample. The detection limit of the analytical method for Ronnel is 0.3 ug/L.

No other organic chemicals or pesticides listed in Appendix D were detected in any of the channel water or background elutriate samples collected. The complete analytical results are included in Appendices F, G and H.

Trace Metals

Arsenic was detected in all background water samples at an average dissolved and total level of 0.002 mg/L , with a slightly elevated dissolved concentration found in the elutriate extract of 0.006 mg/L (0.021 mg/L total) (Appendix E, Figures E-18 and E-19). All concentrations were below the arsenic drinking water Maximum Contaminant Levels of 0.05 mg/L.

Lead was detected in 3 of 4 background channel water samples at an average concentration of 0.001 mg/L (total), with a concentration of 0.059 mg/L determined in the elutriate extract (Appendix E, Figure E-20) . Dissolved lead was not detected in the background Grant Line Canal water samples or in the elutriate extract. The drinking water Maximum Contaminant Levels for lead is 1.4 to 2.4 mg/L and was not exceeded.

The total nickel concentration was increased in the elutriate extract (0.146 mg/L) compared with the average background channel water concentration of 0.005 mg/L (Appendix E, Figure E-21). Dissolved nickel concentration was decreased in the elutriate (0.0010 mg/L) compared with the average channel water background concentration of 0.0013 mg/L (Figure E-22). The drinking water Maximum Contaminant Levels for nickel is 0.1 mg/L.

Total copper concentration was increased (0.132 mg/L) in the elutriate compared with the average of the background water samples (0.005 mg/L) (Appendix E, Figure E-23). Dissolved copper concentration were similar for the background channel water samples (0.002 mg/L) and the elutriate extract (0.003 mg/L) (Figure E-24).

Total zinc concentration was higher in the elutriate extract (0.239 mg/L) than in the background Grant Line Canal channel water (0.009 mg/L) (Appendix E, Figure 37). Dissolved zinc was not detected in the background channel water samples, and was detected at a concentration of 0.008 mg/L in the elutriate extract.

Drinking Water Treatment Parameters

The sediment elutriate extract was analyzed for parameters that could affect drinking water treatment operation. These data will estimate the potential of short-term impacts to drinking water treatment plants during actual dredging. Data will allow an estimation to be made regarding the EPA's proposed Disinfectant/Disinfection Byproducts Rule. The rule's precursor removal requirements contain three ranges of total organic carbon concentrations in source waters, ≥2 to 4 mg/l total organic carbon, >4 to 8 mg/l total organic carbon, and >8 mg/l total organic carbon, with each progressively higher range requiring a greater percent removal of total organic carbon based on the percent of total organic carbon and the alkalinity (in mg/l) in the source water.

Total and Dissolved Organic Carbon

Dissolved organic carbon for the background channel water samples is shown in Appendix E Table E-28, with the average dissolved organic carbon concentration being 46.5 mg/L. The dissolved organic carbon concentration of the elutriate extract was somewhat higher at 58 mg/L.

Total organic carbon of the elutriate extract (33 mg/L) was significantly greater than the average of the background channel water samples (3.49 mg/L) as shown in Appendix E, Table E-29. The sediments composited for the MET were obtained from Sites 3, 6, and 7.

The components of total organic carbon are dissolved organic carbon and particulate organic carbon. Since the total organic carbon was significantly elevated in the elutriate sample compared with the channel background water while the dissolved organic carbon was only slightly increased, particulate organic carbon was the component that experienced the greatest increase, and is the component least likely to affect trihalomethane or haloacetic acid formation in drinking water treatment plants.

Site-6 is at the eastern blind end of Grant Line Canal where flows are very low under nearly all conditions. When this Site was sampled it was noted that the Vibracore sampler advanced nearly 10 feet into the sediment under it's own weight without any vibration being necessary, indicating the nearly totally unconsolidated nature of the material. The grain-size analyses in Appendix I show that the sediments from this Site in the 0-to-5 foot sample were composed of greater than 50 percent clay and more than 40 percent silt. It is likely that much of the particulate organic carbon in the composite sample was derived from this sample, whose composition is unlike nearly all other samples obtained.

Alkalinity

The alkalinity (Appendix E, Figure E-30) of the sediment elutriate (58 mg/L) was increased compared with the average background channel water concentration (46.5 mg/L). The proposed Disinfection Byproduct Rule precursor removal requirements requires that less total organic carbon be removed as the alkalinity of the source waters increases. Based on the sediment elutriate alkalinity results, the Grant Line Canal source water would still be expected to remain in the range of ≥ 2 to 4 mg/l for total organic carbon removal after receiving the decant water from the dewatering ponds, even without considering the dilution of the discharge by Grant Line Canal. Dilution of the settling pond discharge by Grant Line Canal receiving water would further reduce any impacts to water quality.

Ammonia

Ammonia (as N or nitrogen) was increased in the elutriate (1.00 mg/L) compared with Grant Line Canal channel background water (0.06 mg/L). While not immediately increasing dissolved oxygen demand, any increase in aquatic plant growth to increased nitrogen, such as phytoplankton, may eventually cause a decrease in DO upon die off and decomposition by other microorganisms. This increase in elutriate ammonia does not consider the dilution of the settling pond discharge by Grant Line Canal receiving water, and should decrease the final receiving water concentration of ammonia.

Bromide

Bromide in the elutriate was 0.109 mg/L, was slightly increased compared to the average Grant Line Canal background water concentration 0.106 mg/L (Appendix E, Figure E-31). Actual concentrations of bromide in the discharge from the dewatering ponds would be substantially reduced by dilution in Grant Line Canal. The release rate of decant water from the settling ponds can be adjusted to minimize any impacts to Old River receiving water quality.

UVA Absorption at 254 nm

Ultraviolet light absorption at the 254 nanometer wave length (UVA@254 nm) was determined on background channel water and sediment elutriate (Appendix E Figure E-32). Humic substances in natural waters disinfection byproduct precursors absorb ultraviolet light at the 254 nm wavelength. UVA@254 nm was slightly increased in the sediment elutriate compared to background Grant Line Canal channel water.

This small increase in UVA@254 nm indicates that disinfection byproduct precursor concentration in the elutriate was slightly increased compared with the channel background water. The dilution of the discharge by Grant Line Canal channel water will decrease dissolved organic carbon concentrations in these receiving waters, and will reduce the possibility that this discharge would impact DPB concentrations at downstream water treatment plants.

Trihalomethane Formation Potential

Trihalomethane formation potential in the background Grant Line Canal surface water and sediment elutriate extract was determined two ways. One method (EPA Method 510.1, DWR Modified, or Trihalomethane -DWR) is an aggressive approach designed to estimate the maximum trihalomethane formation potential of a sample, and is useful for determining changes in precursor concentrations in water from a particular source. This method exposes the sample at an adjusted pH of 8.3 to a residual chlorine concentration of approximately 120 mg/l for 7 days. Trihalomethanes are then analyzed according to the EPA Method 502.2 or 524.2. These extreme conditions are not found under normal circumstances in nature or in drinking water treatment plants; and are designed to maximize the conversion of precursor constituents to trihalomethanes.

Another approach is represented by methods which simulate treatment conditions in the water treatment plant and the finished water distribution system (Simulated Distribution System Test: Formation of Disinfection Byproducts-Draft, 1994, Metropolitan Water District of Southern California; Simulated Distribution System Trihalomethanes, *Standard Methods for the Examination of Water and Wastewater-Method 5710C, 1995, 19th Edition).*

The MWDSC SDS (trihalomethane formation potential-SDS) method was used for analysis of the samples collected for this study. This method uses a chlorine dose between 0.5-1.5 mg/l based on the amount of ammonia and total organic carbon in the sample. The sample pH is adjusted to 8-8.2, and it is then incubated at 25°C for 24 hours before analysis for trihalomethanes by EPA Method 502.2 or 524.2. Results obtained with trihalomethane formation potential-SDS methods are generally lower than results obtained using trihalomethane formation potential methods since fewer precursors are converted to trihalomethanes under the less extreme and more realistic conditions of the trihalomethane formation potential-SDS methods.

Trihalomethane formation potential-DWR (Appendix E, Figure E-34) was determined for background Grant Line Canal water and for sediment elutriate. The results show that bromodichloromethane production was decreased in the elutriate (79 ug/L) compared to the background Grant Line Canal water (101.5 ug/L). Bromochloropropane was slightly increased in the elutriate, and chloroform was increased from 272 ug/L in the background Grant Line Canal water to 540 ug/L in sediment elutriate. The concentration of dibromochloromethane in Grant Line Canal water was 40.7 ug/L, but was not detected in the elutriate. These changes in trihalomethane formation potential were expected considering the changes in sediment elutriate dissolved organic carbon concentration, UVA @254 nm, and the increases in alkalinity and ammonia compared with background Grant Line Canal water.

The results using the trihalomethane formation potential-SDS method, which more realistically predicts the formation of trihalomethanes under simulated water treatment plant and finished drinking water distribution system conditions are shown in Appendix E, Figure E-35. The production of trihalomethanes and haloacetic acids showed a much different pattern using the trihalomethane formation potential-SDS method.

Using the trihalomethane formation potential-SDS method, the majority of trihalomethanes and haloacetic acids, including 2-bromo-1-chloropropane,

bromodichloromethane, chloroform, dibromochloromethane, dibromoacetic acid, an trichloroacetic acid were decreased in the sediment elutriate relative to background channel water. Only 2,3-dibromoproprionic acid and dibromoacetic acid showed slight increases in the elutriate compared with the background Grant Line Canal channel water.

Column Settling Test

A Column Settling Test was conducted (USACE 1985) to estimate the time taken to settle suspended solids in the ponds. Plotting the suspended solids concentration yields a settling curve useful for predicting the time to settle material. A 15 percent solution of solids (approximately 1:6 solid/liquid ratio), was used for testing, with the material tested being made of three vertically composited samples. Using multiple vertically composited samples for the Column Settling Test allows for better estimating the conditions in the settling ponds where all sediments become mixed.

Suspended solids concentrations were determined at depths of 1 foot, 2 feet, 3 feet, 4 feet, and 5 feet below the surface using a column of water at least 6-foot deep and a settling cylinder at least 8 inches in diameter (Appendix M). These five depths were sampled at 2-hour time intervals during the first 24 hours, and thereafter at 30, 36, 42, 48, 72, and 96 hours. A duplicate QA/QC sample was collected for 20 samples selected randomly.

During the Column Settling Test, the ambient room temperature was controlled to avoid extreme temperatures, particularly high temperatures. Controlling ambient temperature may minimize scattering of suspended solids data because of thermal or density related flow. Ambient room temperature was recorded at each sampling interval and reported with the settling data (Appendix M).

Holding times in the ponds and the discharge rate of decant water from the settling ponds may be adjusted to meet receiving water limits. These settling data will be reviewed to determine the holding time to comply with the Waste Discharge Requirements for suspended solids and/or turbidity, and any other constituents which the Regional Water Quality Control Board will establish for this Project.

Summary and Conclusions

The concerns about the dredging activities under consideration by the South Delta Improvements Program include short-term impacts to in-channel water quality and aquatic life caused by the resuspension of sediments during dredging operations and the discharge of decant water from the settling ponds.

Sediment Results

Concentrations of organochlorine pesticides, polychlorinated biphenyls, and polycyclic aromatic hydrocarbons in sediments were below the reported level of detection in all samples analyzed. Oil and grease were detected in samples from two Sites at relatively low concentrations. Neither gasoline or diesel fuel was detected in any sample.

Arsenic, zinc, lead, nickel, chromium, and copper were found in all samples in concentrations below their respective criteria. Cadmium, mercury, and selenium were not detected in any sediment sample.

The Waste Extraction Test was conducted using deionized water and citric acid buffer. While many samples had detectable levels of various metals, none exceeded the TTLC or STLC values. There were no samples with DIWET metal results exceeding Maximum contaminant levels.

Two of 15 samples had SEM:AVS ratios greater than one, 8 samples had ratios less than one, and 5 samples had no detectable AVS. Since these sediments will be mixed in the settling ponds during dredging, it is not anticipated that bioaccumulation or toxicity to aquatic life will be a major concern since most of the samples had SEM:AVS ratios less than 1. Toxicity testing after sediments have been dewatered and before they are used on the waterside of the levee may be performed.

Two samples had AVS: SEM ratios of approximately 2, but these ratios become less of a factor when these sediments are mixed with other sediments with lower ratios. These samples are not expected to have significant toxicity associated with metals. A Toxicity Identification

Evaluation of the dewatered sediments may be necessary to identify the source of any toxicity. Other binding and precipitation processes may reduce the bioavailability of the SEMs or other constituents in the dredged materials and preclude toxicity.

Only 2 of 16 sediment samples had acid-forming potentials (not applicable ratios) lower than the CVRWQCB guideline of 3. This indicates that the sediments are not likely to become acidic and leach metals to lower soil layers or to groundwater. A Column Settling Test was conducted to evaluate the settling characteristics of the sediments in the settling ponds.

Water and Elutriate Results

The MET was used to simulate the conditions which the Grant Line Canal sediments will be exposed to during dredging, transportation to the settling ponds, in the settling ponds, and discharge of decant water from the settling ponds into Grant Line Canal. The elutriate simulates the decant water from the ponds to Grant Line Canal, and was compared to background Grant Line Canal channel water.

Oil and grease were detected in the elutriate at low levels, and were not detected in background water samples. This was expected since two sediment samples contained oil and grease.

An organophosphate insecticide (fenchlorophos or Ronnel) was detected in the elutriate near the detection limit of the analytical method, and was not detected in the background water samples. No other organic chemicals or pesticides were detected in other background Grant Line Canal channel water or elutriate samples.

Although trace metals were detected in the background Grant Line Canal channel water and elutriate samples, most drinking water maximum contaminant levelss were not exceeded for any constituent. Dissolved metal concentrations in the elutriate extract were less than the Proposed California Toxics Rule Criteria Maximum Concentration and Criteria Continuous Concentration freshwater aquatic life values, before dilution by Grant Line Canal channel water.

While dissolved organic carbon and total organic carbon were increased in the sediment elutritate, the trihalomethane formation potential-SDS test indicated that trihalomethane and haloacitic acids formation in a drinking water treatment plant and drinking water distribution

system would not be significantly increased, and may be decreased. This finding is consistent with the slight increase in UVA absorbance at 254nm in the sediment elutriate compared with background channel water; UVA@254nm is an indicator of the abundance of trihalomethane and haloacitic acids precursor materials present in a sample.

Conclusions

The results of the physical measurements, chemical analyses, and other tests indicate that dredged materials are suitable for most uses which may include levee stabilization, upland, or agricultural applications. Gross sediment contamination was not present and only low concentrations were found at levels below applicable regulatory limits.

Through use of the MET, decant water from the settling ponds was estimated to contain no substances of concern above aquatic life criteria or drinking water Maximum Contaminant Levels. Dilution after discharge to Grant Line Canal will reduce the concentrations of any substances in the decant water from the settling ponds. The settling ponds will be managed to minimize any potential adverse impacts.

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Appendix A

Executive Summary from *Environmental Study of Dredged Materials in Old River, May 1997*

The Interim South Delta Program is a proposed action to settle pending litigation against the U.S. Bureau of Reclamation and the California Department of Water Resources and to enhance the existing water delivery capability of the State Water Project. It is a public water management program that addresses issues concerning the southern Sacramento-San Joaquin Delta. The SDIP project area generally comprises lands and channels southwest of Stockton, California. The purpose of SDIP, as identified by DWR, USBR and the U.S. Army Corps of Engineers, is to: (1) improve water levels and circulation in south Delta channels for local agricultural diversions, and (2) improve south Delta hydraulic conditions to increase diversion into Clifton Court Forebay (CCF) and consequently maximize the frequency of full pumping capacity at Banks Pumping Plant. Under the SDIP Preferred Alternative, CCF would retain its present size, a new intake structure would be constructed at its northeastern corner, three flow control structures would be constructed (in Middle River, Old River, and Grant Line Canal), a fish control structure would be built at the head of Old River near the San Joaquin River, and channel dredging would occur along Old River between CCF and North Victoria Canal. This report focuses on the water quality parameters of interest related to that dredging.

This baseline study of sediments subject to dredging is a continuation of sampling which was first conducted in 1992 (DWR 1994), and again in 1994 (DWR 1995a). The primary objective of this environmental study is to help predict potential environmental impacts occurring as a result of the proposed dredging activities associated with SDIP, including effects of physical and chemical components of dredged material on the environment. Samples for the study included channel water and sediment from the proposed project alternative area. The samples were analyzed for chemicals of environmental concern. Results of the investigation are presented here.

There are two primary concerns with dredging activities associated with the implementation of SDIP. One is the potential release of contaminants from dredged material and their possible short- and long-term introduction into surface water and/or ground water. Another concern is exposure of contaminated sediments and their potentially adverse impacts to benthic organisms.

Since the Central Valley Regional Water Quality Control Board does not have criteria for dredged material, study results were compared to San Francisco Regional Water Quality Control Board criteria, and indicated that disposal of sediment on levees will not have a significant impact on water quality. Di-N-butylphthalate and diethylphthalate were each detected in one sediment sample, with all other concentrations of other synthetic organic compounds in all samples analyzed below the level of detection. Synthetic organic compounds are manufactured organic compounds including surfactants, cleaning solvents, pesticides and agricultural chemicals.

Sediment soluble metal concentrations were obtained using the standard hazardous waste extraction test with both deionized water and citrate buffer solution. This test is used to estimate the potential for leaching of metals from sediments in both neutral and acidic environments. All deionized water results were below the Maximum Contaminant Levels for drinking water. With the exception of selenium, all trace elements were found in sediment at concentrations below all respective SFRWQCB criteria. Analysis of samples for soluble metals using the hazardous waste extraction test found either undetectable concentrations, or concentrations below the Total Threshold Limit Concentration and the Soluble Threshold Limit Concentration values, which are used by the Department of Toxic Substance Control in combination to determine if materials are considered hazardous waste.

Results from the acid generation potential test, which provide a measure of the capacity of the soils and sediments to be either acidic or alkaline in nature, indicate that in all but one sample, the neutralizing potential of the sediments is at least twice that of the acid forming potential. These results indicate that the sediments are not acidic in nature, and are not likely to mobilize any metals they contain in significant amounts, a conclusion which is also supported by the waste extraction test results. The geometric mean for acid generation potential test results of all samples taken at each sampling location was calculated, and all site geometric means were above the CVRWQCB minimum guideline level.

In the absence of any State or federal enforceable sediment quality criteria, the Ontario Ministry of the Environment *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario* were used as a general estimate of potential effects on aquatic biological resources. These guidelines were derived to protect those organisms that are *directly* impacted by contaminated sediment, namely the benthic species. While these guidelines can generally be used to evaluate the potential for adverse biological effects due to exposure of contaminated sediment from dredging operations, they do not establish dose-response based cause and effect relationships between sediment concentrations of substances of concern and adverse impacts to aquatic life such as benthic organisms. Several samples exceeded the lowest effect level values for several metals analytes. The lowest effect level is the lowest concentration of a substance expected to produce observable or measurable effects in an organism.

The data indicate that for substances sometimes found in higher concentrations in shallow sediments, such as oil and grease, silver, lead, and zinc, removal of sediment through dredging would actually expose cleaner sediments and improve habitat for benthos depending on the depth of dredging, in many, but not in all cases.

Appendix B

Executive Summary from *Water and Sediment Quality Study for the Interim South Delta Program, May 1995*

The SDIP proposed by the California Department of Water Resources is a public water management program to address issues surrounding the southern Sacramento-San Joaquin Delta. The SDIP project area generally comprises the lands and channels southwest of Stockton. The purpose of the SDIP is to: (1) improve water levels and circulation in south Delta channels for local agricultural diversions, and (2) improve south Delta hydraulic conditions to increase diversion into Clifton Court Forebay (CCF) to maximize the frequency of full pumping capacity at Banks Pumping Plant. Under this program, CCF would retain its present size (2,180 acres), a new intake structure would be constructed at its northeastern corner, three flow control structures would be constructed (in Middle River, Old River, and Grant Line Canal), a fish control structure would be built at the head of Old River near the San Joaquin River, and channel dredging would occur along Old River between CCF and North Victoria Canal.

The primary objective of this environmental study was to help predict any potential environmental impacts that could occur as a result of the proposed dredging activities associated with the SDIP, including the effects of the physical and chemical components of the dredged material on the environment. The work completed in this study is a continuation of sampling which was conducted in 1992. Samples for the study included channel water and sediment from the proposed project alternative area. After collection, the samples were sent to a laboratory and analyzed for chemicals of environmental concern. The results of the investigation are presented here.

There are two primary concerns with the dredging activities associated with the implementation of the SDIP. One is the potential release of contaminants from the dredge material and their possible short- and long-term introduction into surface water and/or groundwater. The major reactions involved in the release of contaminants are oxidation and acidification. When anoxic sediments are transferred to the land and exposed to oxygen oxidation occurs, releasing contaminants associated with the oxidizable fractions. Oxidation in turn, may result in acidification of the sediment,

resulting in further release of trace metals. Another concern is exposure of contaminated sediments, and their potentially adverse impacts to benthic organisms.

Results of the comparison of the sediment concentrations with the SFRWQCB criteria indicate that disposal of the sediment on the levees will not have a significant impact on water quality. Concentrations of synthetic organic compounds in all samples analyzed were below the level of detection. With the exception of silver, all trace elements were found in concentrations below all respective SFRWQCB criteria. In addition, the acid generation potential results and the Waste Extraction Test (WET) results support the conclusion. The acid generation potential results indicated that in all cases the neutralizing potential is at least twice that of the acid forming potential. Analysis of samples for soluble metals using the WET found either not-detectable or extremely low concentrations.

Comparison of the sediment concentrations with the Ontario Sediment Quality Guidelines found that several of the Lowest Effect Level (LEL) values were exceeded, and one Severe Effect Level (SEL) was exceeded. However, the values were almost always exceeded in the top sediment layers. The LEL and SEL guidelines are for the protection of the benthic organisms. Therefore, removal of the sediment through dredging would actually expose cleaner sediment and improve the habitat for the benthos.

Appendix C

Executive Summary from *Environmental Study for the Interim South Delta Program: Water, Sediment and Soil Quality, May 1994*

The Interim South Delta Program proposed by the California Department of Water Resources is a public water management program to address issues surrounding the southern Sacramento-San Joaquin Delta. The purpose of the SDIP is to: (1) improve water levels and circulation in South Delta channels for local agricultural diversions and; (2) to improve South Delta hydraulic conditions to increase diversion into Clifton Court Forebay to maximize the capability for utilizing the full pumping capacity of Banks Pumping Plant. The preferred alternative includes channel dredging. Channels would be dredged and a disposal option would include placement of dredged material on the backside of levees to provide additional stability. The SDIP study area generally comprises lands and channels southwest of Stockton and north of Tracy.

This environmental study was conducted to help determine the impact that could result from proposed dredging activities associated with the SDIP, including the effects of the physical and chemical components of the dredged material on the environment. In this study, the primary objective was to implement and establish methodology and a tiered investigation to determine the potential presence of toxics for a selected investigation area. Samples for the study included: channel water, dredged sediment, and levee soil. After collection, the samples were sent to a laboratory and analyzed for chemicals of environmental concern. The results of this investigation are presented here.

The primary environmental concern with using dredge material for levee construction and/or reinforcement is the release of contaminants from the dredge material and their possible introduction into the aquatic system. The major reactions involved in the release of contaminants are oxidation and acidification. Results of the environmental study indicate that pesticides and polychlorinated

biphenyls are either not-detected or are present in very low concentrations which are unlikely to pose a threat to aquatic life. Analysis of the samples for metals indicated there is a possibility of metal contamination; however, any release of metals would likely occur slowly and in small concentrations.

This reports represents conclusion of testing for the Environmental Study. As in most environmental investigations, it is impossible to adequately extrapolate the results from a relatively small investigation to the actual project. However, from the results of the investigation, it appears likely that significant impacts due to contamination in the dredged material will not occur.

Table D-1. Parameters for Chemical Analysis of Water Samples for River Background and Elutriate[A]

Constituent	Units	EPA Method	Sample Size	Laboratory
Field Parameters				
Flow Direction[1]		--	Not Required	FIELD
Temperature	°C	--	Not Required	FIELD
Turbidity	NTU	--	Not Required	FIELD
Dissolved Oxygen	mg/L	--	Not Required	FIELD
Specific Conductance	µmhos/cm	--	Not Required	FIELD
pH	units	--	Not Required	FIELD
Conventionals				
Total Organic Carbon	mg/L	415.1	40 ml Clear VOA	BRYTE
Dissolved Organic Carbon	mg/L	415.1	40 ml Clear VOA	BRYTE
UV Absorbance	abs/cm	Std. Mth. 5910 B	Filtered ½ pint[E]	BRYTE
Alkalinity	mg/L	Std. Mth. 2320 B	Filtered quart[B]	BRYTE
Trihalomethane Formation Potential	µg/L	510.1 modified	3-40ml Amber VOA	BRYTE
SDS-Trihalomethane Formation Potential	µg/L	--	6-40ml Amber VOA	BRYTE
Ammonia	mg/L	350.1	Filtered ½ pint	BRYTE
Total Suspended Solids	mg/L	160.2	Unfiltered Pint	BRYTE
Total Dissolved Solids	mg/L	160.1	[B]	BRYTE
Oil and Grease	mg/L	413.1	1L glass widemouth Fix w/H_2SO_4	BRYTE
Specific Conductance	µmhos/cm	Std. Mth. 2510 B	[B]	BRYTE
General Minerals				

Table D-1. Parameters for Chemical Analysis of Water Samples for River Background and Elutriate[A] ***(continued)***

Constituent	Units	EPA Method	Sample Size	Laboratory
Chloride	mg/L	325.2	[B]	BRYTE
Bromide	mg/L	300.0	[E]	BRYTE
Total Sulfide	mg/L	376.1	1L Fix with NaOH/ZnAC	BSK
Soluble Sulfide	mg/L	376.1	1L Fix with NaOH/ZnAC	BSK
Sulfate	mg/L	375.2	[B]	BRYTE
Fluoride	mg/L	340.2	½ pint filtered & fixed w/HNO_3[C]	BRYTE
Hardness	mg/L	130.2	[C]	BRYTE
Sodium	mg/L	273.1	[C]	BRYTE
Magnesium	mg/L	242.1	[C]	BRYTE
Potassium	mg/L	258.1	[C]	BRYTE
Calcium	mg/L	215.1	[C]	BRYTE
Boron	mg/L	USGS I-2115-85	[B]	BRYTE
Dissolved and Total Metals				
Arsenic	mg/L	206.3	Pint fixed w/HNO_3 (1 filtered & 1 unfiltered)[D]	BRYTE
Beryllium	mg/L	200.8	[D]	BRYTE
Cadmium	mg/L	200.8	[D]	BRYTE
Chromium	mg/L	200.8	[D]	BRYTE
Copper	mg/L	200.8	[D]	BRYTE

Table D-1. Parameters for Chemical Analysis of Water Samples for River Background and Elutriate[A] *(continued)*

Constituent	Units	EPA Method	Sample Size	Laboratory
Lead	mg/L	200.8	[D]	BRYTE
Mercury	mg/L	245.1	[D]	BRYTE
Nickel	mg/L	200.8	[D]	BRYTE
Selenium	mg/L	270.3	[D]	BRYTE
Silver	mg/L	200.8	[D]	BRYTE
Thallium	mg/L	200.8	[D]	BRYTE
Zinc	mg/L	200.8	[D]	BRYTE
Organics				
Pesticides	µg/L	608	1L Amber glass -Teflon lined cap	BRYTE
Butyltins	µg/L	GC FPD	2 Liters	Toxscan

[1] Flow direction should be noted when collecting receiving water samples. In addition, field staff should note if agricultural drain pump is operating when receiving water samples are obtained.

[A] "Environmental Effects of Dredging - Technical Notes", EEDP-04-4, June 1985 (WES, 1985).

[B,C,D,E] Subsequent parameters can be obtained from the same sample bottle.

Note: Toxscan will filter all elutriate samples requiring filtration. Filtering requirements will be coordinated with Bryte Laboratory by Toxscan.

Table D-2. Parameters for Analysis of Sediment Samples

Parameter	EPA Method	Sample Size	Laboratory
Conventionals (mg/kg)			
Specific Conductance*	120.1	10 grams	BSK
Total Dissolved Solids*	160.1	100 grams[4]	BSK
Total Organic Carbon	ASTM 10-3	300 grams	BSK
Oil and Grease	1664	75 grams	BSK
Bromide	300	50 grams	BSK or subcontract
Total Volatile Solids	160.4	[4]	BSK
pH*	9045	50 grams	BSK
Acid Generation Potential	Subcontracted	300 grams	BSK or subcontract
Column Settling Test	WES 1985	~ 150 grams (1:6 ratio)	Kinnetic
Acid Volatile Sulfides w/SEM[1]	EPA 1991 (Draft)[2]	10 grams	Toxscan (AVS) Bryte (SEM)
TRPH gasoline/diesel	8015 modified	200 grams	BSK
Grain Size Analysis	ASTM Method D-422	5000 grams	BSK
Percent Solids	for Column Settling Test	per Kinnetic	Kinnetic
Percent Moisture	AOAC	10 grams	BSK
Total Metals (mg/kg) and (WET and DIWET) Metals (mg/L)			
Arsenic	200.8	100 grams[3]	BSK
Beryllium	200.8	[3]	BSK
Cadmium	200.8	[3]	BSK
Chromium	200.8	[3]	BSK
Copper	200.8	[3]	BSK
Lead	200.8	[3]	BSK
Mercury	7471	[3]	BSK
Nickel	200.8	[3]	BSK

Table D-2. Parameters for Analysis of Sediment Samples **(Continued)**

Parameter	EPA Method	Sample Size	Laboratory
Selenium	200.8	[3]	BSK
Silver	200.8	[3]	BSK
Thallium	200.8	[3]	BSK
Zinc	200.8	[3]	BSK
Organic Compounds			
Butyltins	GC FPD	300 grams	Toxscan
Phthalate Esters	8270	150 grams	BSK
Polycyclic Aromatic Hydrocarbons	8270	150 grams	BSK
Polychlorinated Biphenyl and Pesticides	8080	150 grams	BSK

* Using DIWET extraction

[1] Simultaneously Extracted Metals

[2] Allen, H. E., G. Fu, W. Boothman, D. DiToro, J. Mahony. 1991. *Determination of acid volatile sulfide and selected simultaneously extractable metals in sediment.* EPA Draft, AVS and SEM Procedure, Dec. 2, 1991.

[3] 100 grams required for all metals.

[4] 100 grams required for Total Dissolved Solids and Total Volatile Solids.

Note: Sediment sample weights are in dry weight. If wet sediment is used, triple the amount of sediment provided for analysis. Total weight of sediment (wet weight) needed for analysis 7,005 grams minimum.

Table D-3. Water Quality Standards

Constituent	Water Quality[e] Objective (μg/L)	Proposed[d] California Toxics Rule (μg/L)		RWQCB Approved EPA Method	Drinking Water Primary MCL (mg/L)
		CMC	CCC		
Trace Metals and Inorganics					
Aluminum					1
Antimony					0.006
Arsenic	190	340	150	206.3	0.05
Barium					2
Beryllium					0.004
Cadmium	0.55	4.3	2.2	213.2	0.005
Chloride					250[a]
Chromium	11	550	180	218.2	0.05
Copper	5.4	13	9.0	220.2	1.0
Cyanide	5.2	22	5.2	335.2 or 335.3	0.2
Fluoride					1.3
Iron					0.3[a]
Lead	0.99	65	2.5	239.2	1.4-2.4[b]
Manganese					0.05[a]
Mercury		1.4	0.77		0.002
Nickel	73	470	52	200.7	0.1
pH					6.5-8.5[a]
Selenite		185.9	5.0		
Selenate		12.83	5.0		
Selenium	5.0			270.3	0.05
Silver		3.4	N/A		0.05

Table D-3. Water Quality Standards (Continued)

Constituent	Water Quality[e] Objective (μg/L)	Proposed[d] California Toxics Rule (μg/L)		RWQCB Approved EPA Method	Drinking Water Primary MCL (mg/L)
		CMC	CCC		
Sulfate					250[a]
TBT	0.02			**	
Thallium					0.002
Total Dissolved Solids (TDS)					500[a]
Turbidity					1-5 NTU[c]
Zinc	49	120	120	200.7	5.0[a]
Organics					
Alachlor					0.002
Aldrin		3	N/A		
Atrazine					0.003
BHC - alpha					
BHC - beta					
BHC - delta					
BHC - gamma	0.08*	0.95	N/A		0.0002
Captan					
Chlordane	0.0043*	2.4	0.0043		0.002
Chlorothalonil					
Chlorpropham					
Chlorpyrifos					
DCPA					
4,4 DDD	0.001*				

Table D-3. Water Quality Standards (Continued)

Constituent	Water Quality[e] Objective (μg/L)	Proposed[d] California Toxics Rule (μg/L)		RWQCB Approved EPA Method	Drinking Water Primary MCL (mg/L)
		CMC	CCC		
4,4 DDE	0.001*				
4,4 DDT	0.001*	1.1	0.001	608	
Dichloran					
Dicofol					
Dieldrin	0.0019	0.24	0.056	608	
Diuron					
Endosulfan I	0.056	0.22	0.056	608	
Endosulfan II	0.056	0.22	0.056	608	
Endosulfan Sulfate	0.056			608	
Endrin	0.0023	0.086	0.036	608	0.002
Endrin Aldehyde					
Heptachlor	0.0038	0.52	0.0038	608	0.0004
Heptachlor Epoxide		0.52	0.0038		0.0002
Methoxychlor					0.04
PCB's (total)	0.014*	N/A	0.014	608	0.0005
PCNB					
Simazine					0.004
Thiobencarb					0.07
Toxaphene	0.0002	0.73	0.0002	608	0.003

Table D-4. Sediment Standards and Criteria *(Continued)*

Methoxychlor	100						
PCB (total)	50		0.01	0.07	530		53
PCB - 1016				0.007	53		
PCB - 1248				0.03	150		
PCB - 1254				0.06	34		
PCB - 1260				0.005	24		
Toxaphene	5.0						
Polycyclic Aromatic Hydrocarbons							
Anthracene				0.220	370		
Benzo[a]anthracene				0.320	1,480		
Benzo[k]fluoranthene				0.240	1,340		
Benzo[a]pyrene				0.370	1,440		
Benzo[g,h,i]perylene				0.170	320		
Chrysene				0.340	460		
Dibenzo[a,h]anthracene				0.060	130		
Fluoranthene				0.750	1,020		
Fluorene				0.190	160		
Indeno[1,2,3-cd]pyrene				0.200	320		
Phenanthrene				0.560	950		
Pyrene				0.490	850		

TTLC: California Department of Toxic Substances and Control - Total Threshold Limit Concentrations. The TTLCs are standards set by the California Code of Regulations, Chapter 11. The TTLC represents the total concentration of a constituent that may be present before a waste is classified as a hazardous waste.

STLC: California Department of Toxic Substances and Control - Soluble Threshold Limit Concentrations. As with the TTLC's, the STLC's are a set of standards set by the California Code of Regulations, Title 22, Chapter 11. The STLC represents the amount of a constituent that may be present in the waste extract, as determined using the Waste Extraction Test (CCR, Title 22, Division 4.5, Chapter 11, Appendix II) before a waste is classified as a hazardous waste.

Ontario's Provincial Sediment Quality Guidelines: Ontario's Ministry of the Environment. These guidelines were developed for the protection of aquatic biological resources. They are designed to protect organisms that are directly impacted by contaminated sediment. It should be noted that the criteria were developed based on biological organisms indigenous to the Ontario area, and may not be applicable to other areas. In addition, they do not take into consideration analytical methodology limitations. Three levels of protection are established:

No Effect Level (NEL) - Concentration at which no toxic effects have been observed in aquatic organisms.
Lowest Effect Level (LEL) - Level of sediment contamination at which the majority of benthic organisms are unaffected.
Severe Effect Level (SEL) - Level at which pronounced disturbance of the sediment dwelling community can be expected.

SFRWQCB Criteria: San Francisco Regional Water Quality Control Board - Disposal Option Sediment Screening Criteria for Levee Restoration. These criteria provide sediment screening criteria for the beneficial reuse of dredged material such as levee restoration. The criteria are set for the protection of biological organisms. They were developed for a marine environment, and may not be applicable to a freshwater environment.

U.S. EPA SQC: U.S. Environmental Protection Agency - Proposed Sediment Quality Criteria. The SQC are proposed to provide protection of benthic organisms from biological impacts from chemicals associated with sediment. They are the EPA's best recommendation of the concentrations of a substance in sediment that will not unacceptably affect benthic organisms. The SQC are intended to apply to sediments permanently inundated with water, intertidal sediments, and to sediments inundated periodically for durations sufficient to permit development of benthic assemblages.

Figure E-1. Total Organic Carbon in Sediments (Wakely-Black)

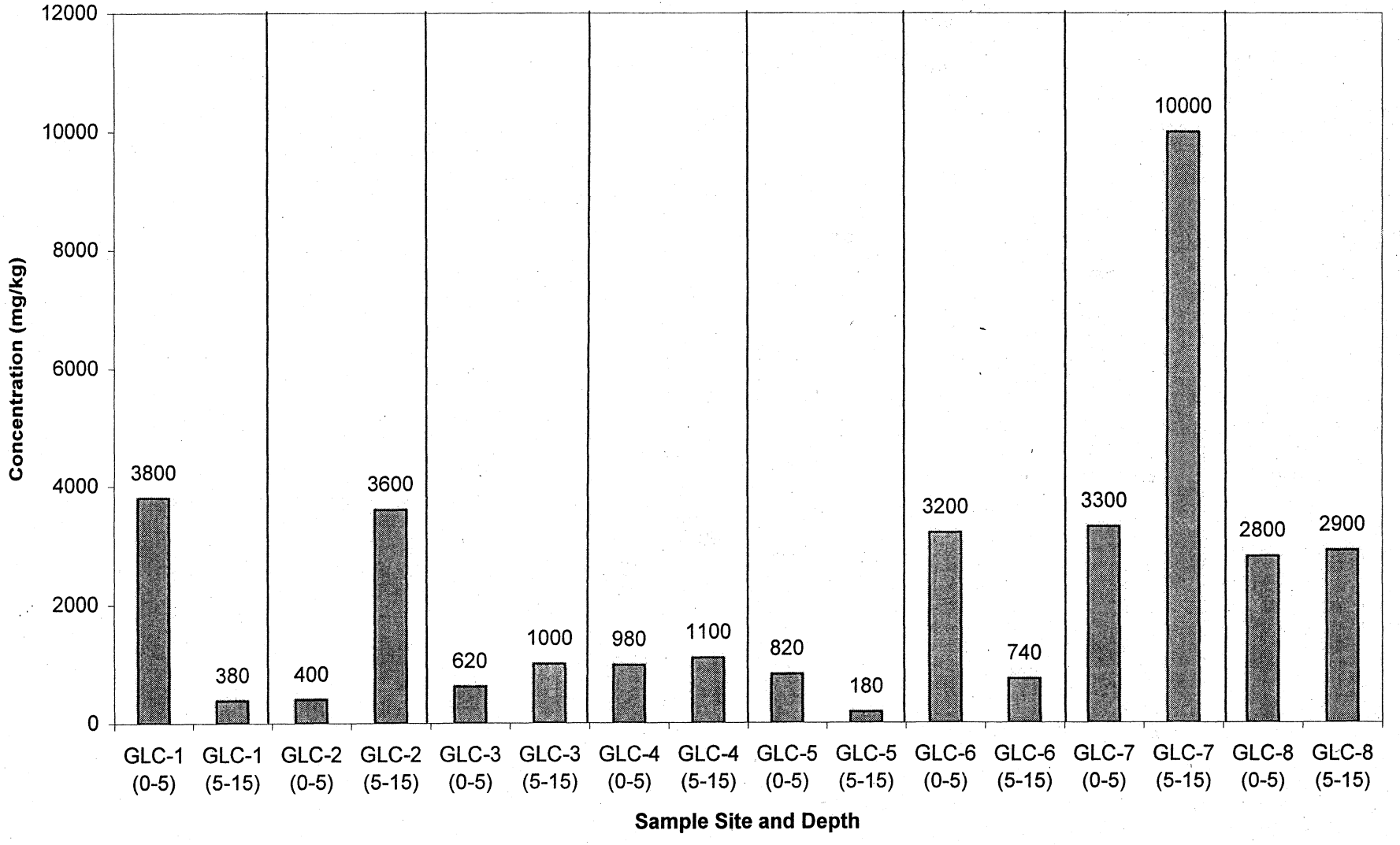


Figure E-2. Moisture Concentrations in Sediment Samples

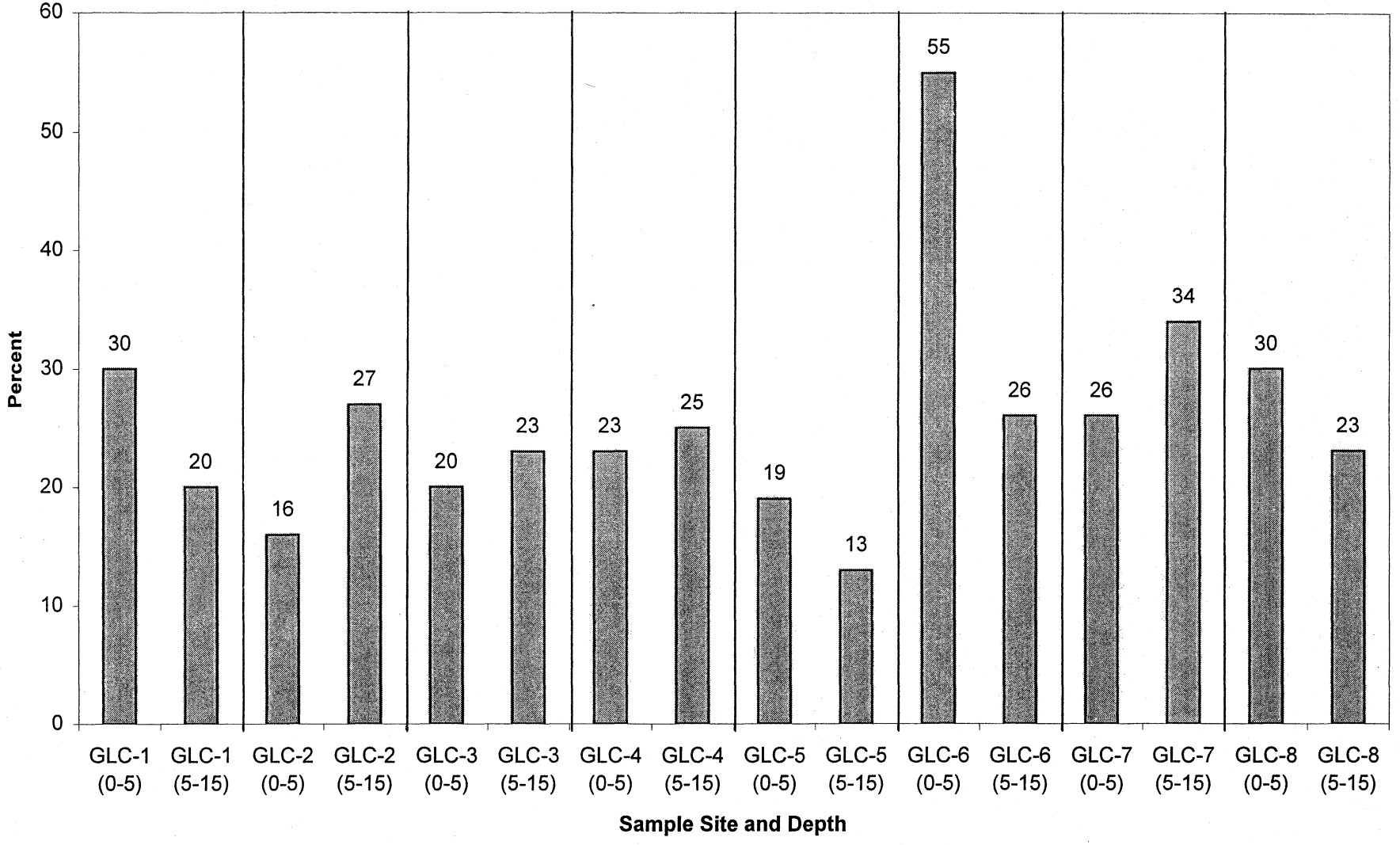


Figure E-3. Arsenic Concentrations in Sediment

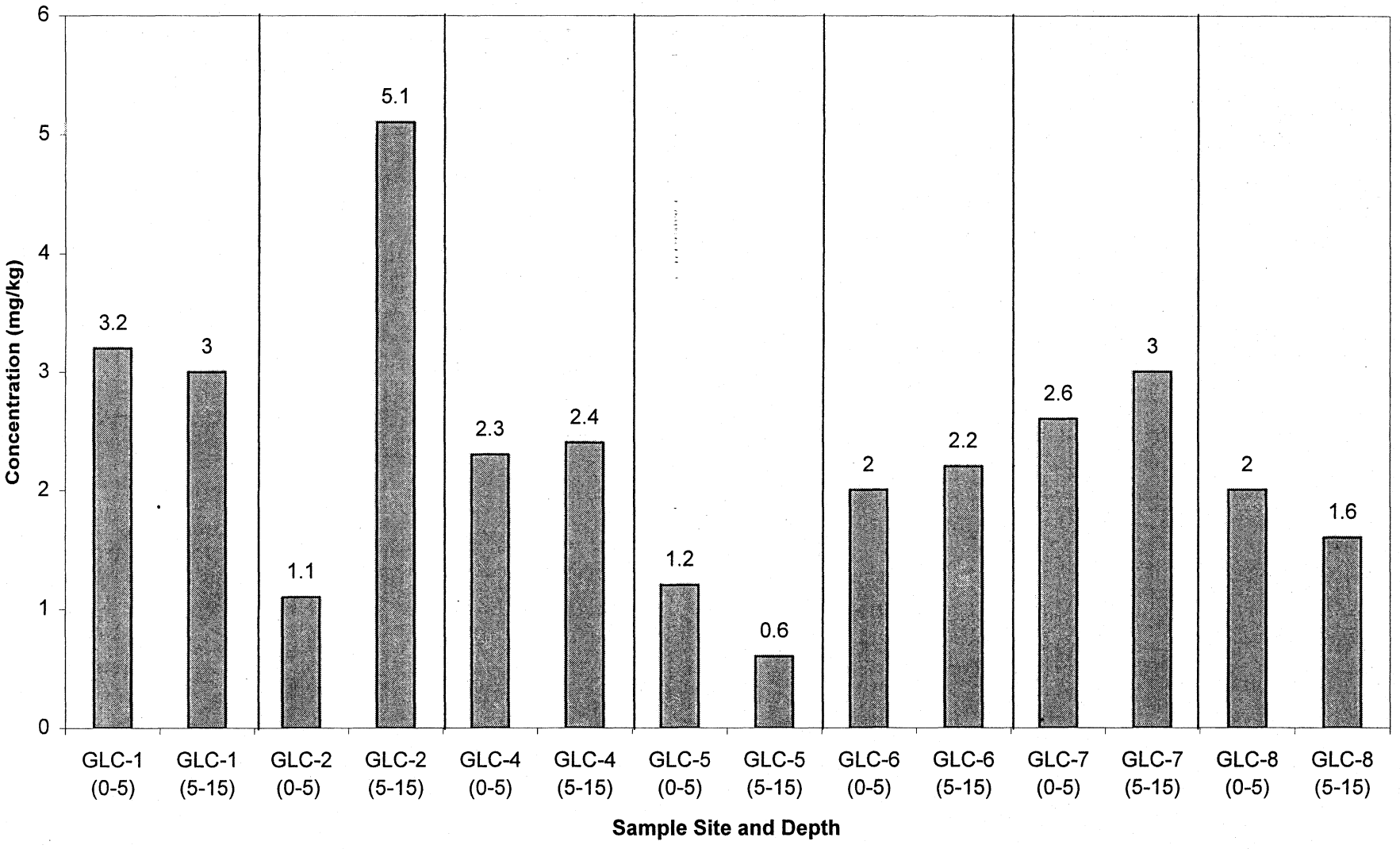


Figure E-4. Chromium Concentrations in Sediments

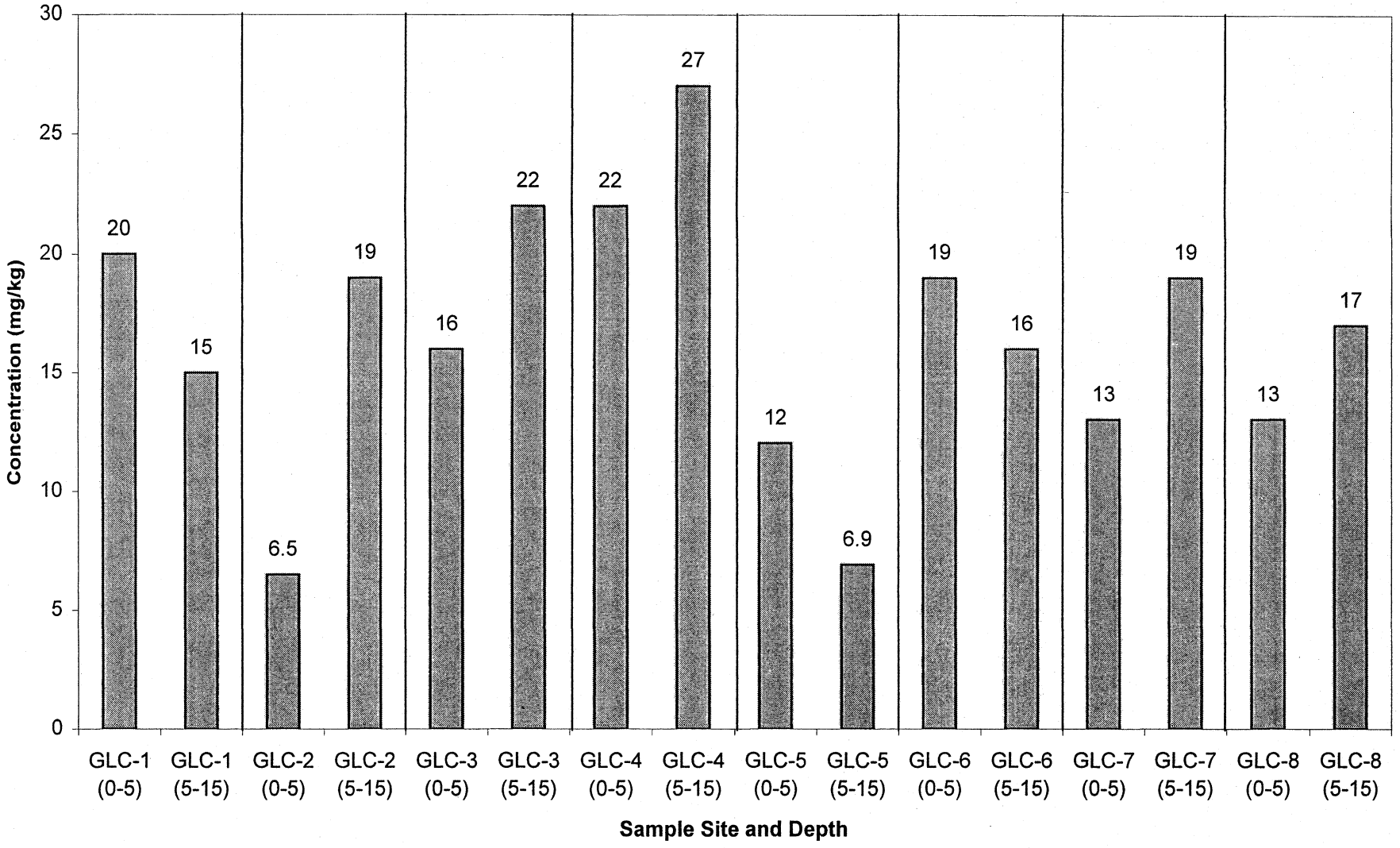


Figure E-5. Copper Concentrations in Sediments

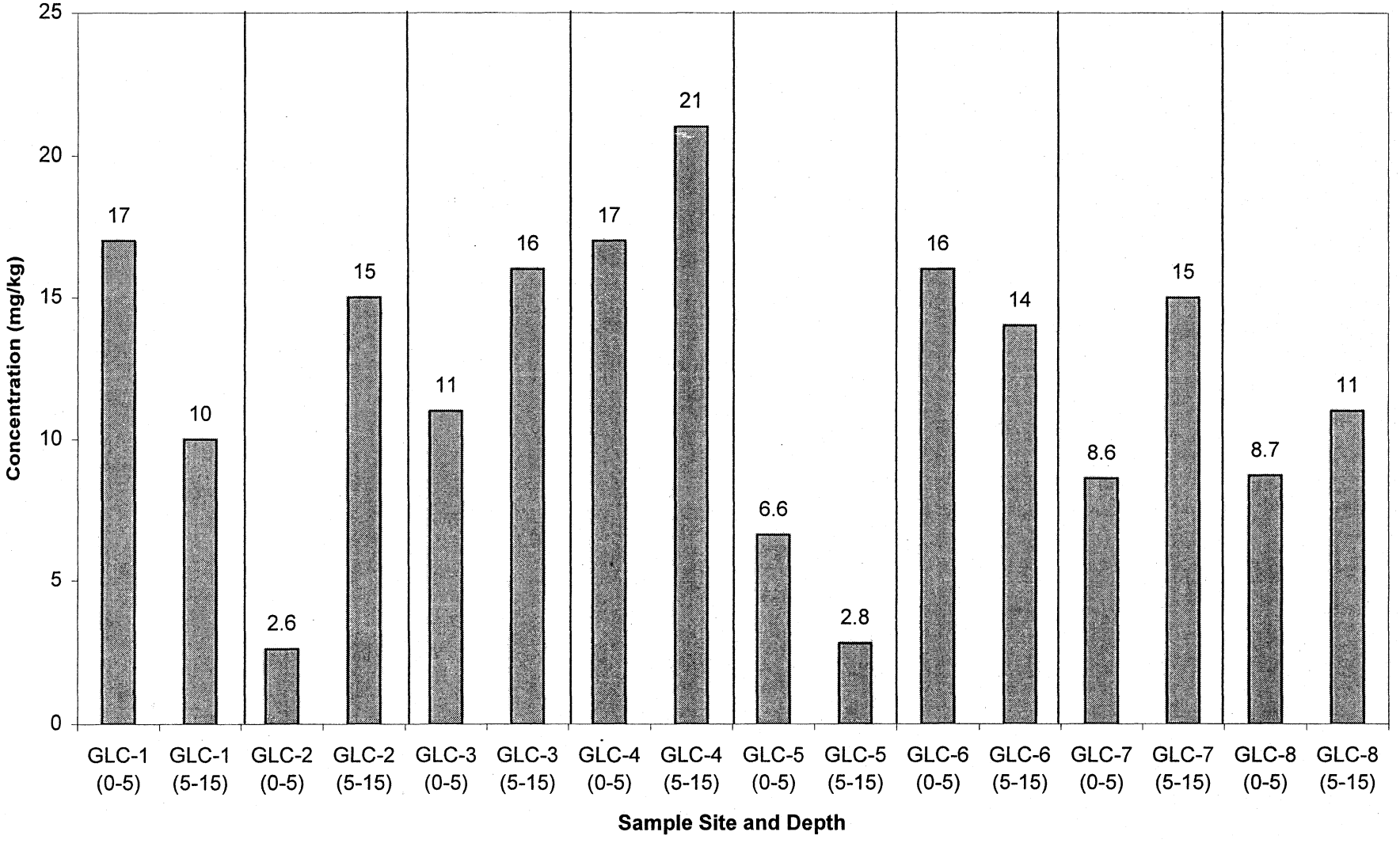


Figure E-6. Nickel Concentrations in Sediments

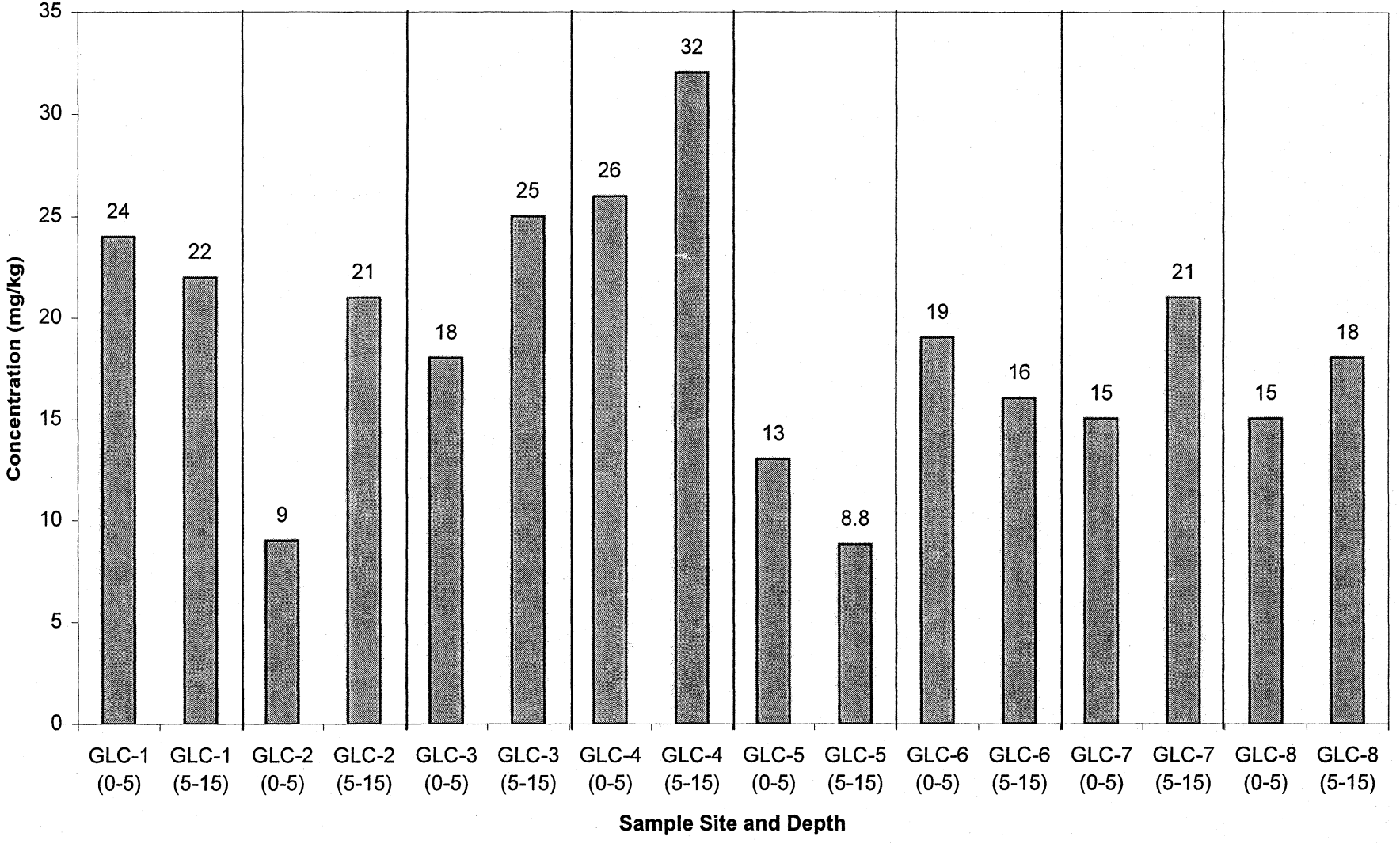


Figure E-7. Lead Concentrations in Sediments

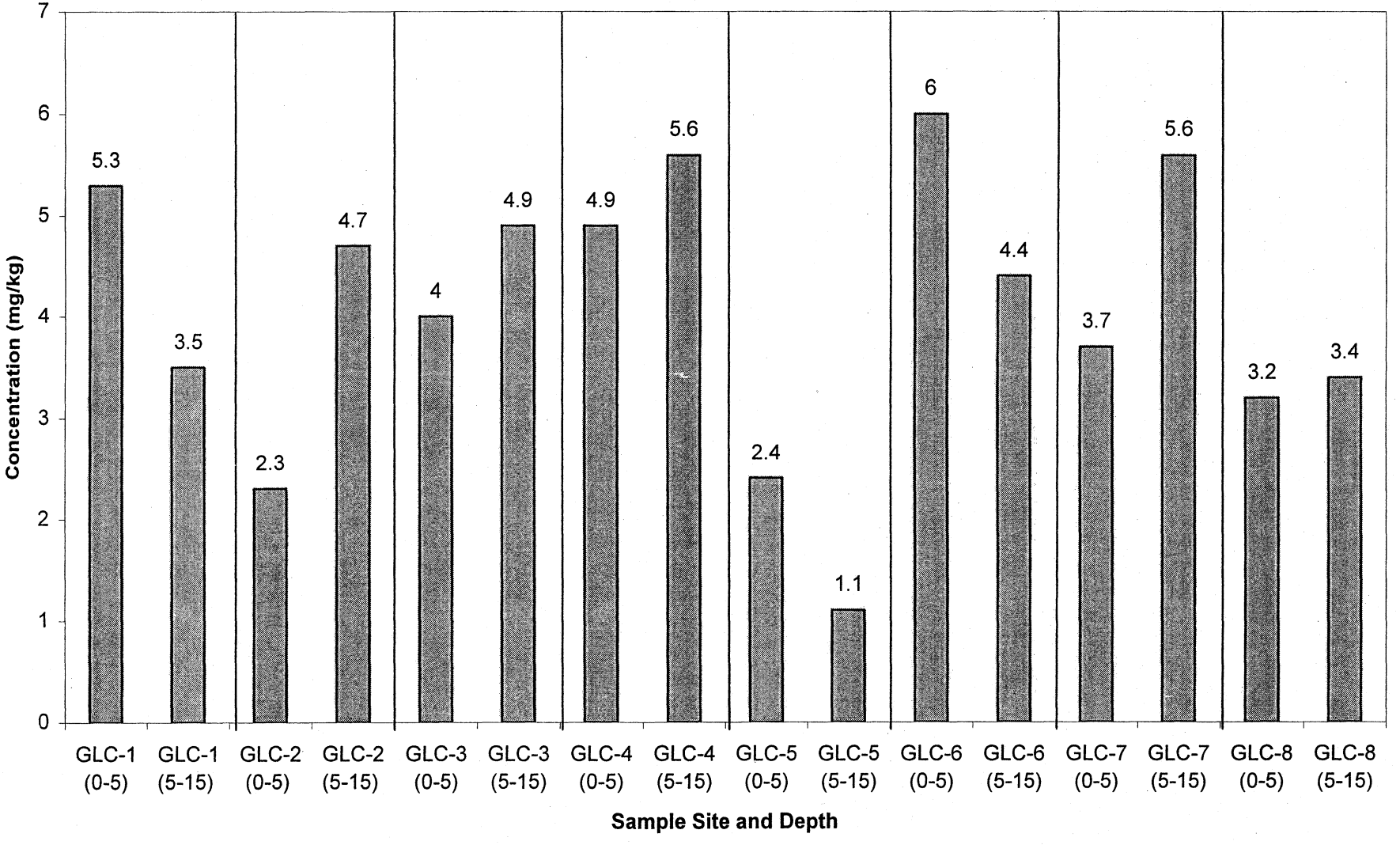


Figure E-8. Arsenic Concentrations in Sediments
Wet vs DIWET

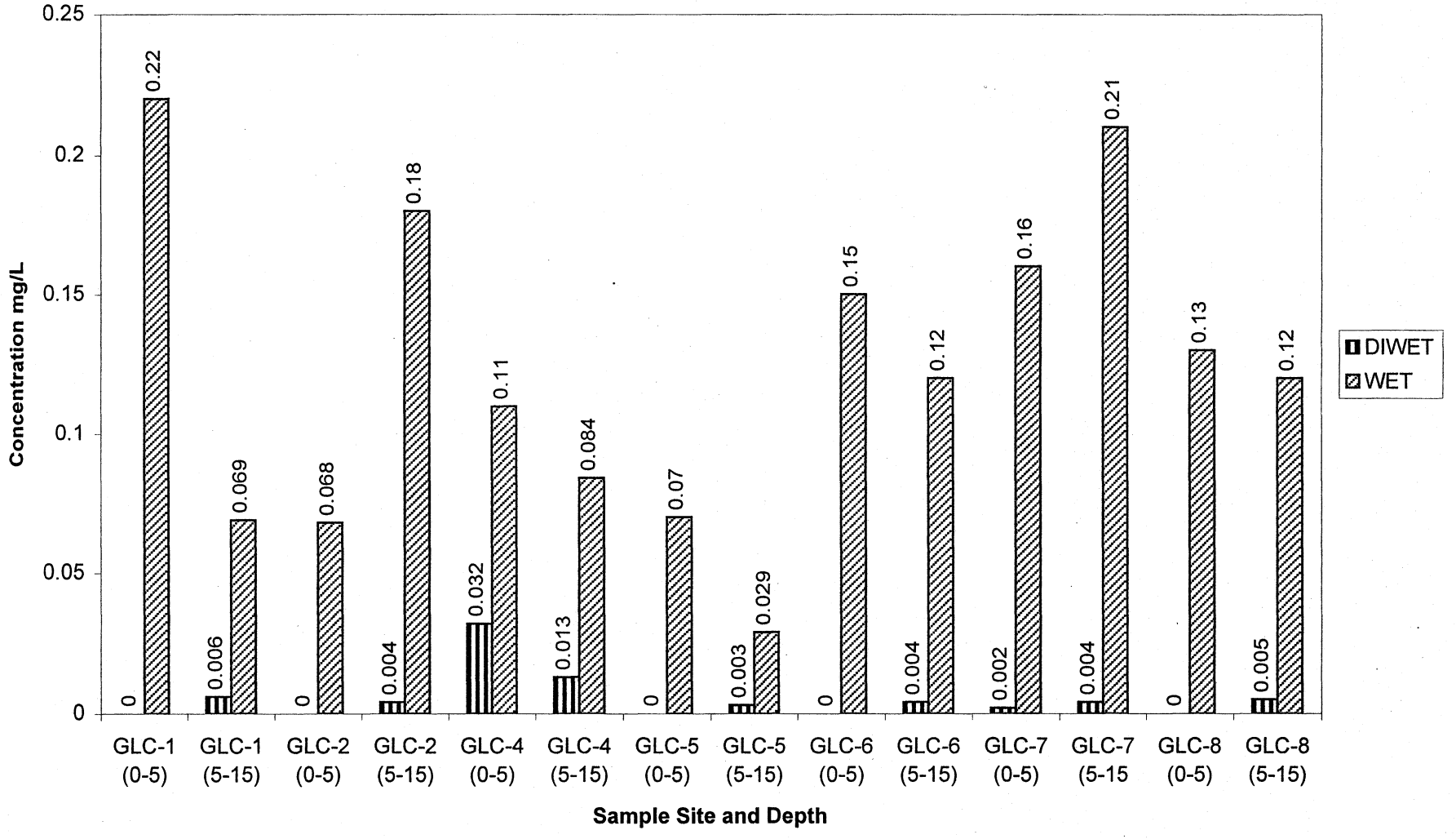


Figure E-9. Chromium Concentratons in Sediments
WET vs DIWET

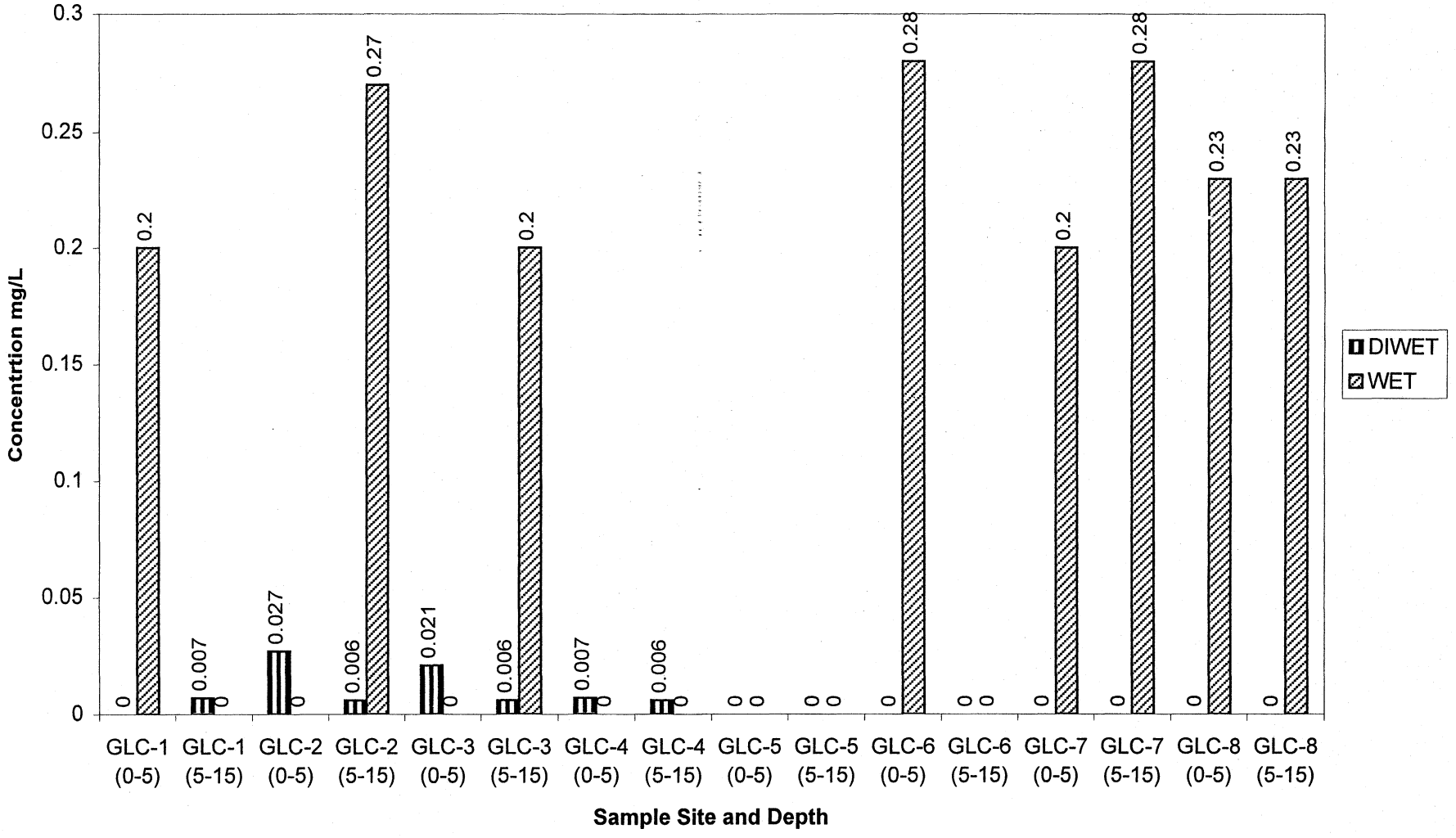


Figure E-10. Copper Concentrations in Sediments
WET vs DIWET

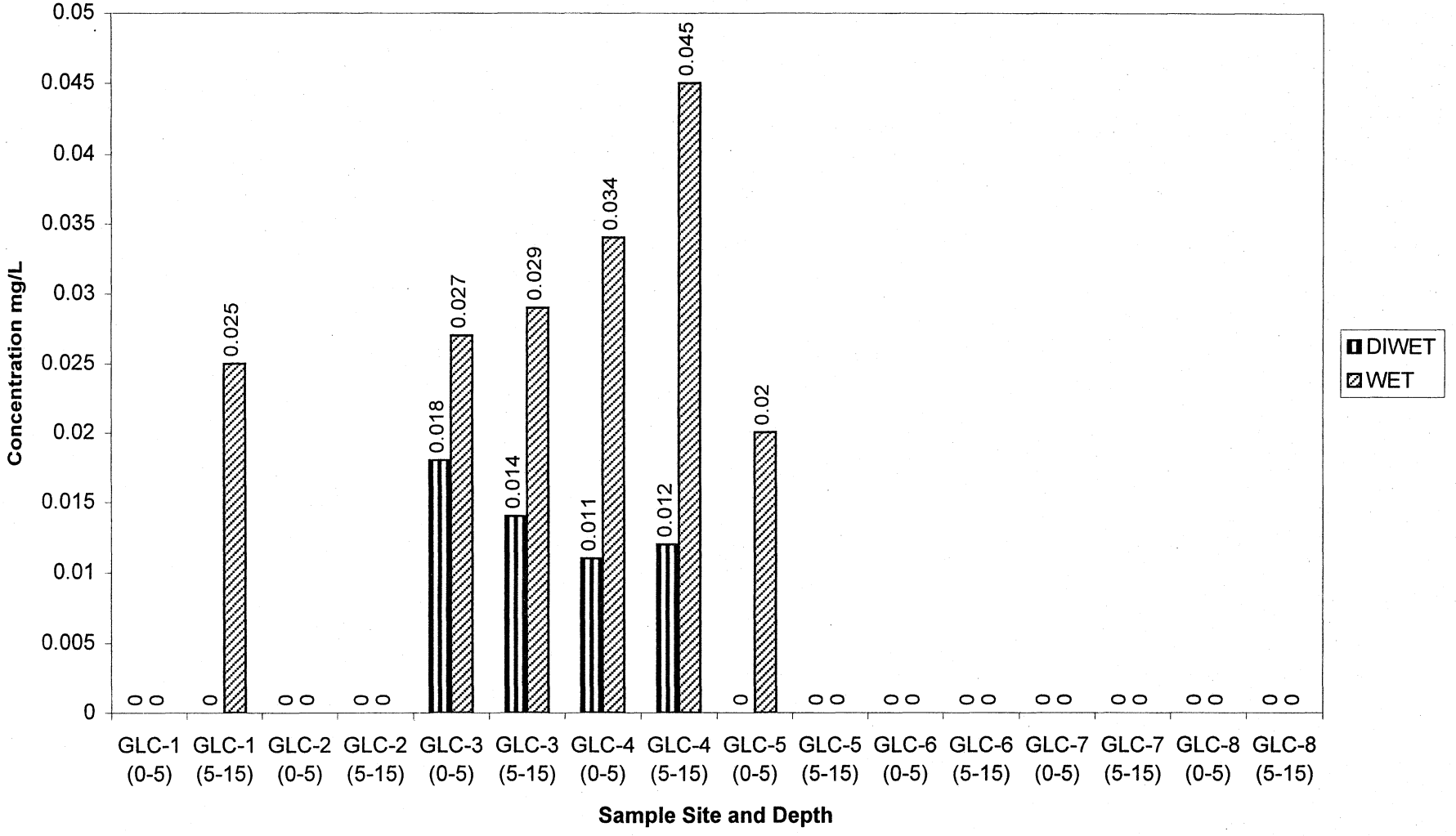


Figure E-11. Nickel Concentrations in Sediments
WET vs DIWET

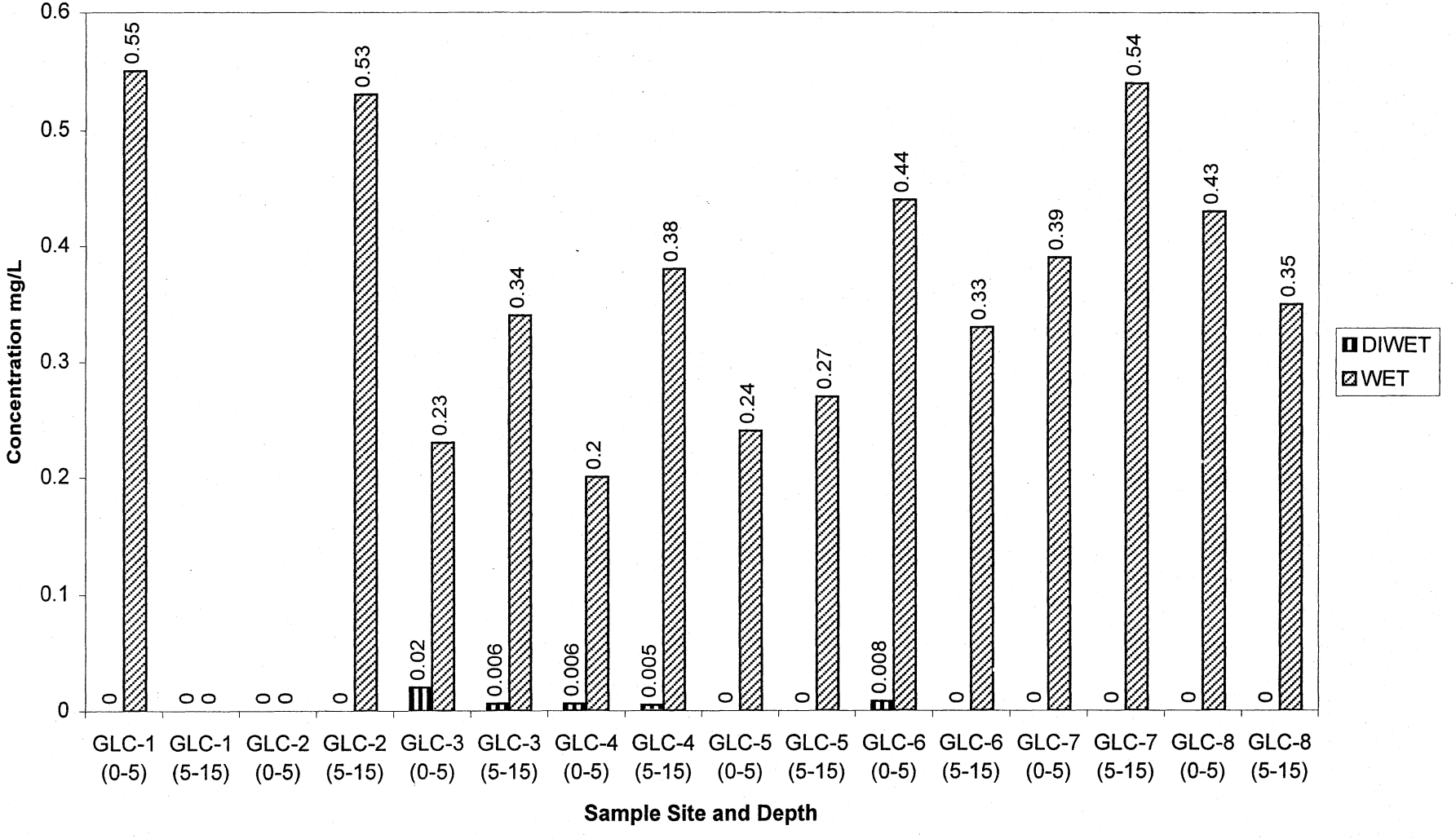


Figure E-12. Acid Neutralization Ratio for Grant Line Canal Sediment Samples (N/A Ratio)

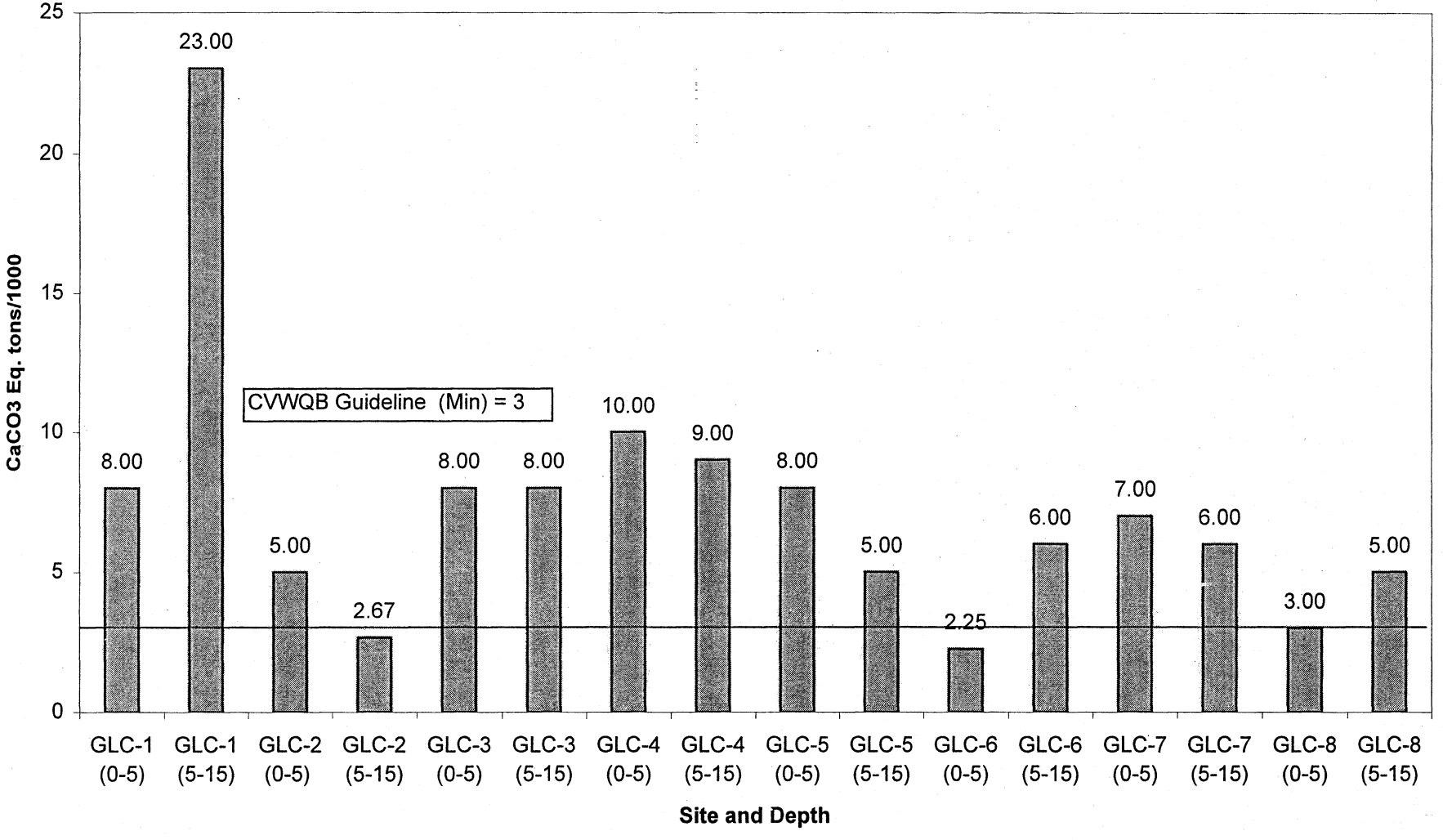


Figure E-13. pH Values in Sediments (Paste)

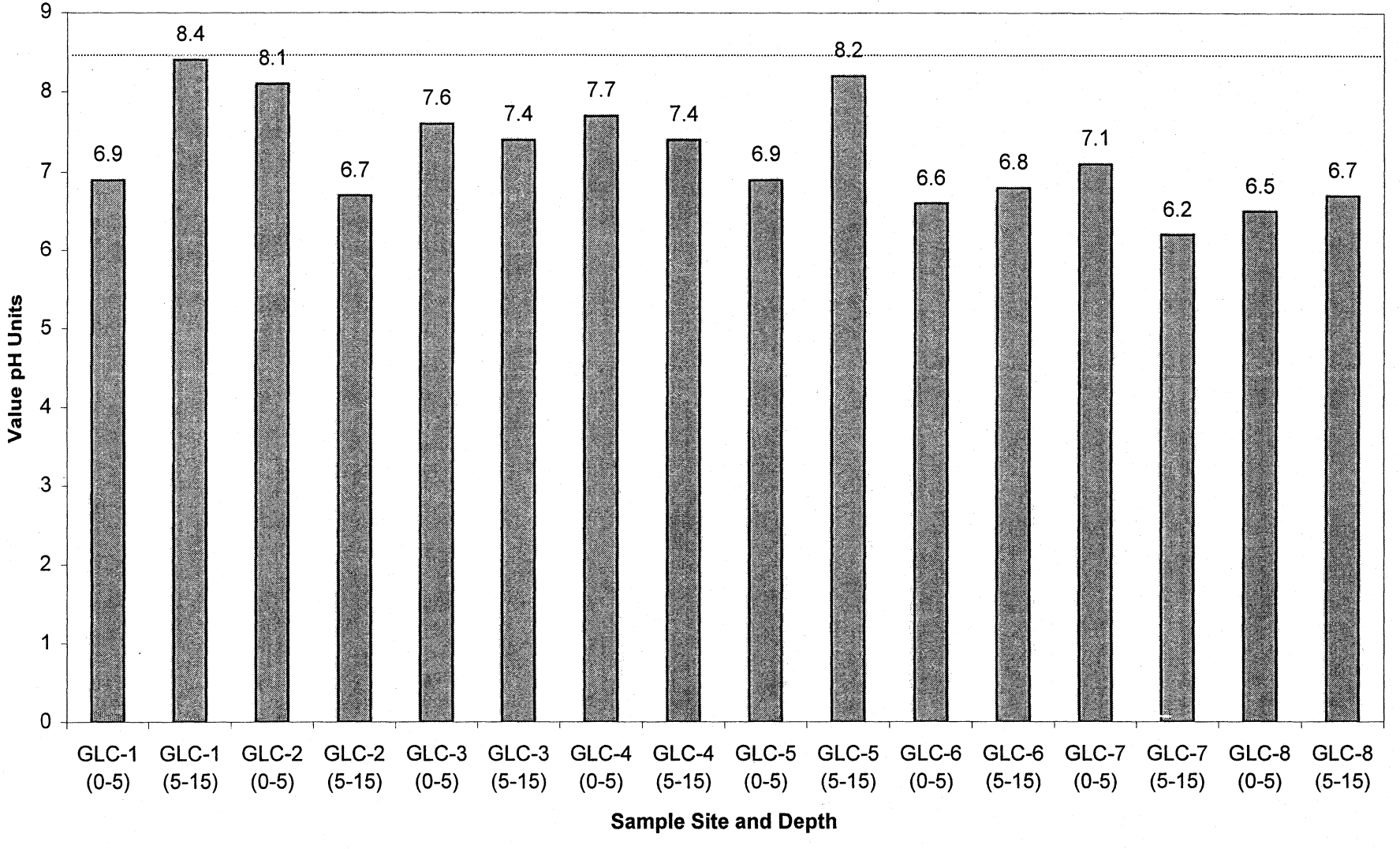


Figure E-14. Total Volatile Solids Concentrations in Sediments

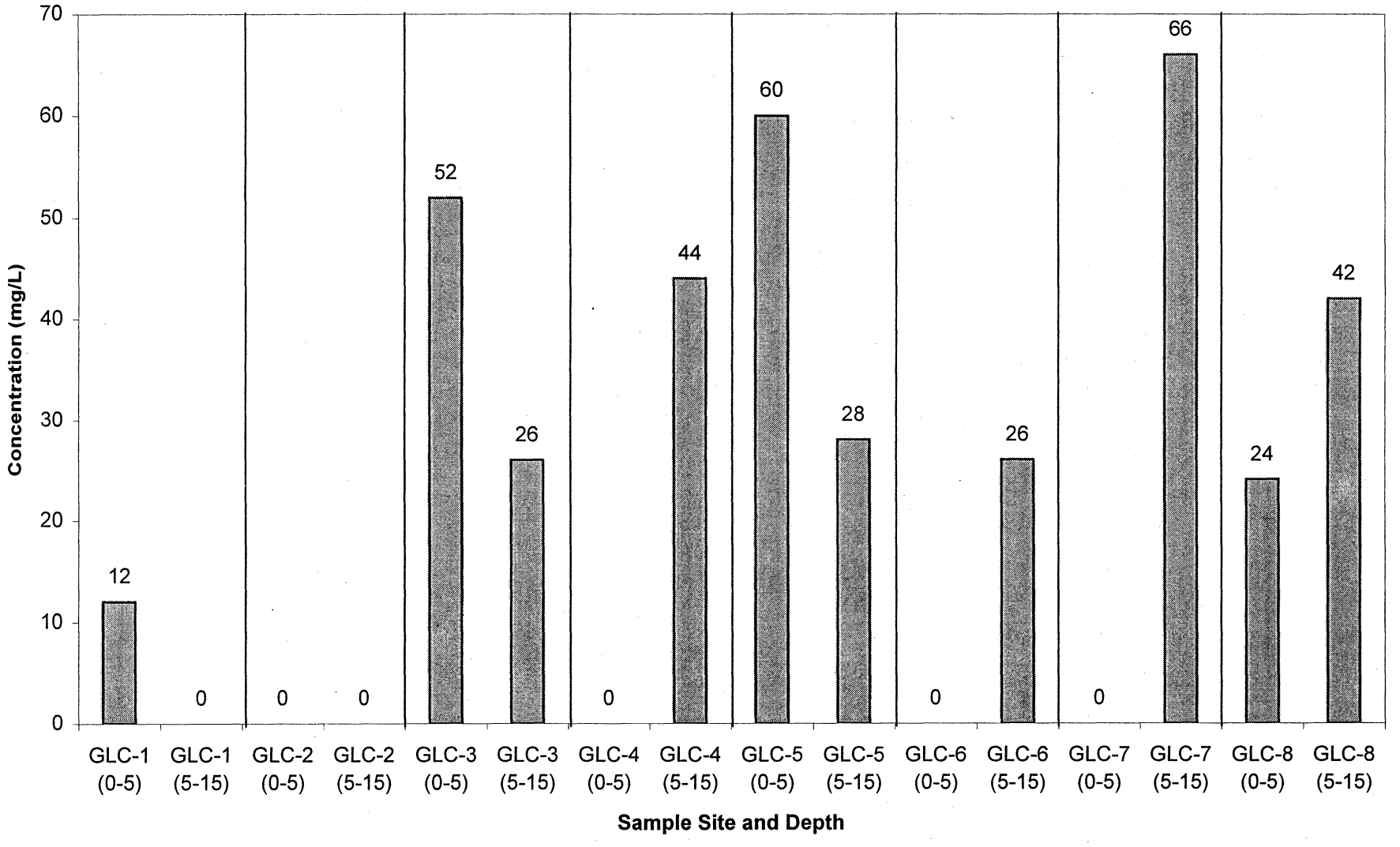


Figure E-15. Specific Conductance in Water Samples

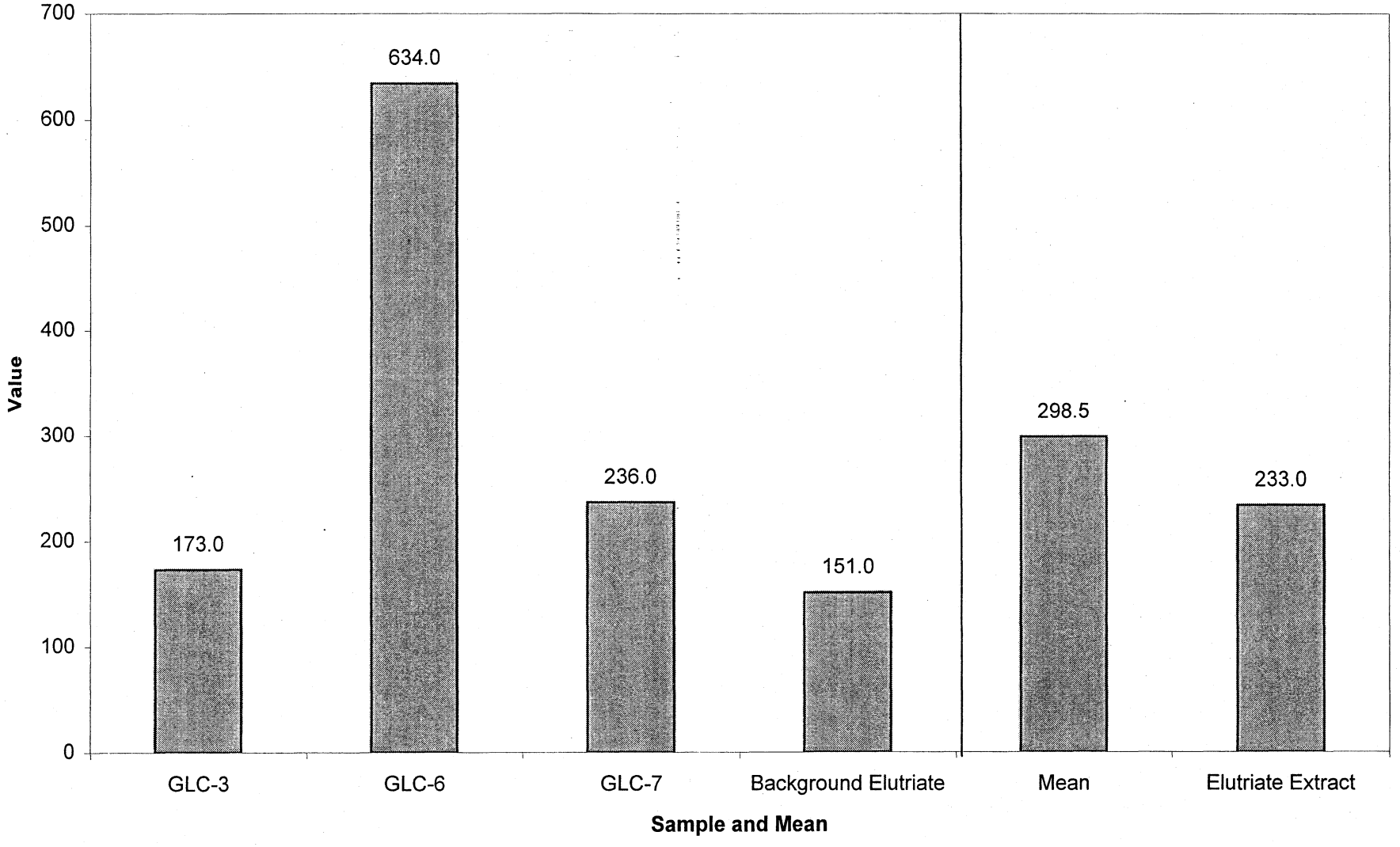


Figure E-16. Chloride Concentrations in Surface Water and Elutriate Samples Comparison

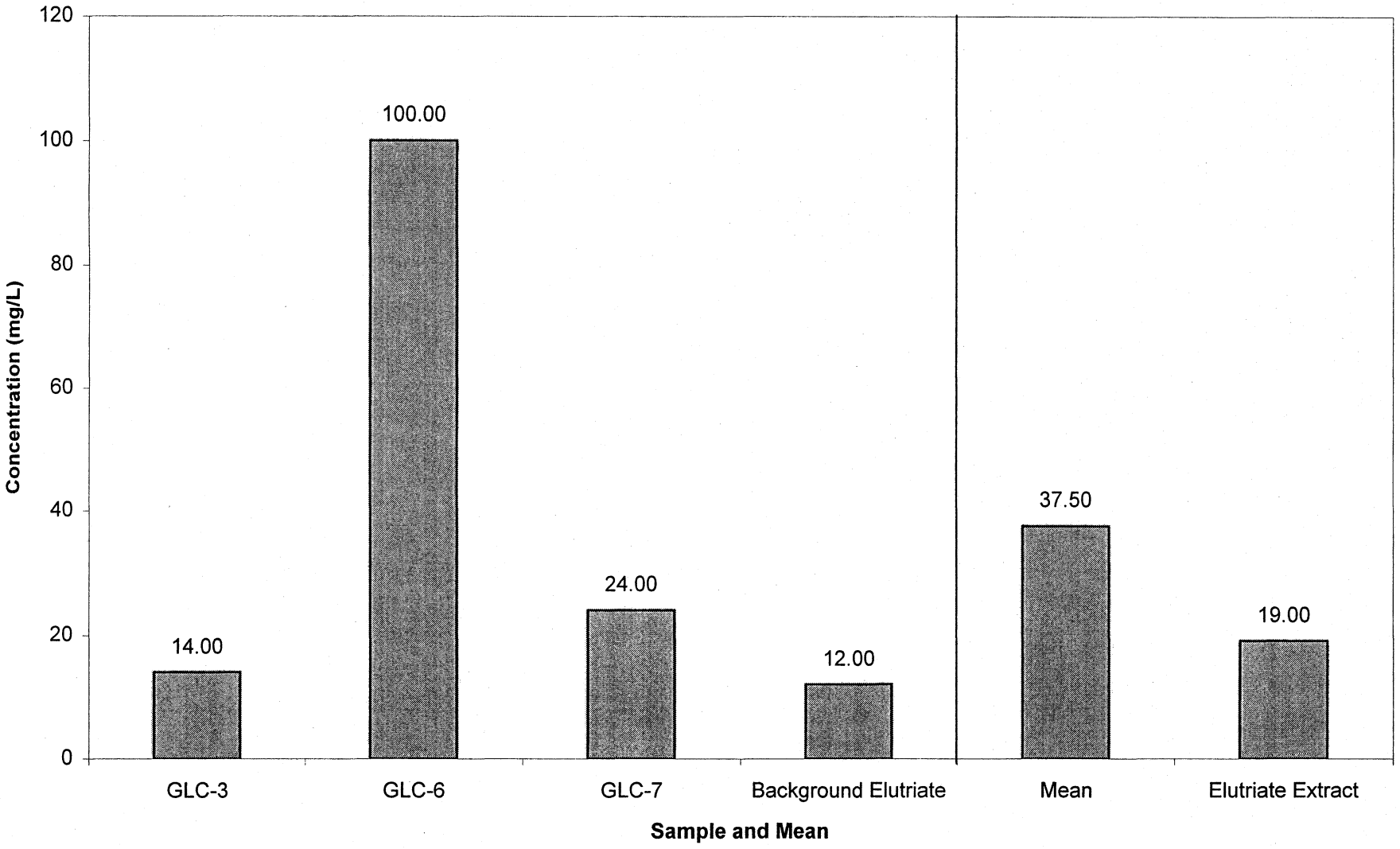


Figure E-17. Sulfate Concentrations in Surface and Elutriate Samples Comparison

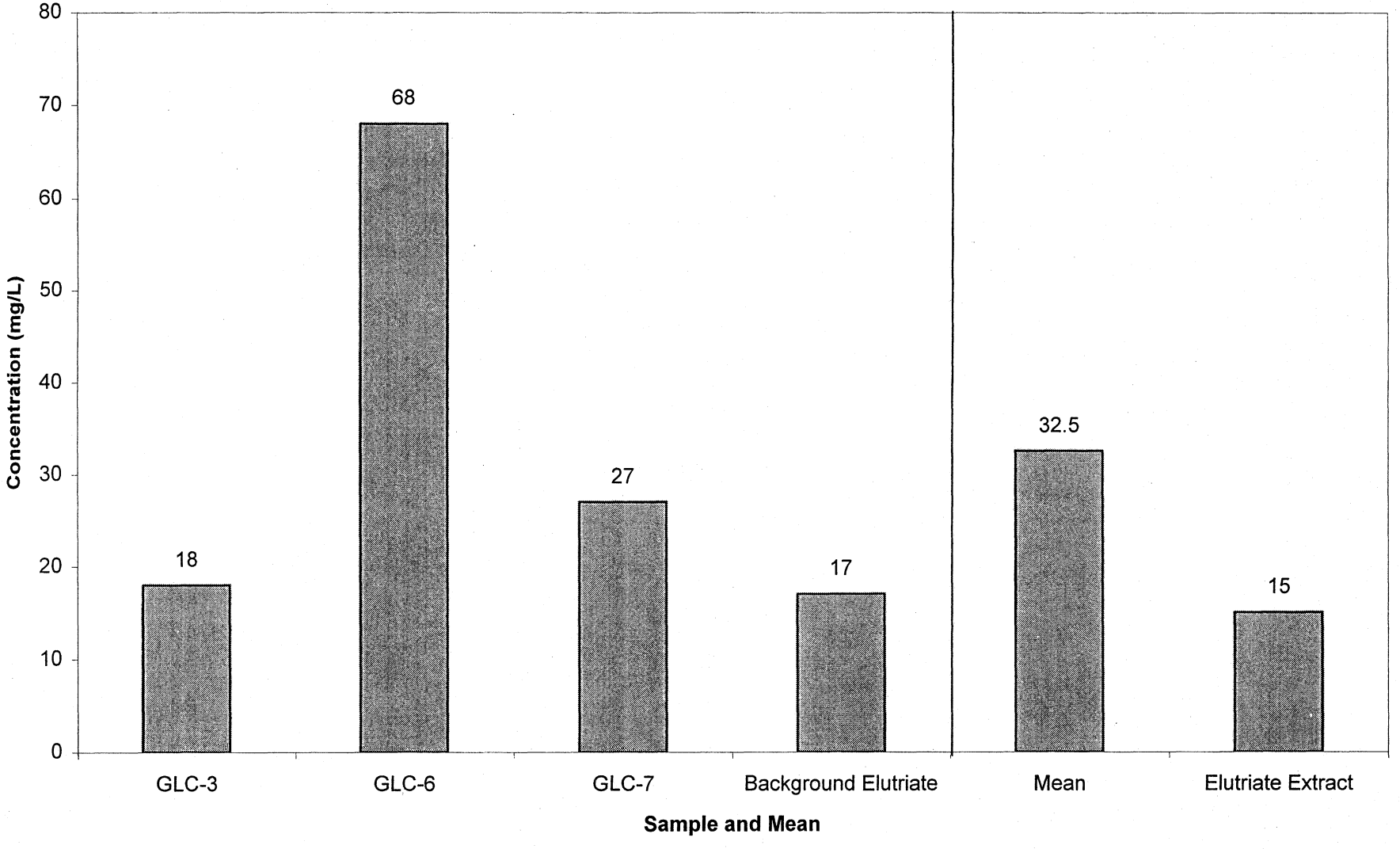


Figure E-18. Dissolved Arsenic Concentrations in Surface Water and Elutriate Samples Comparison

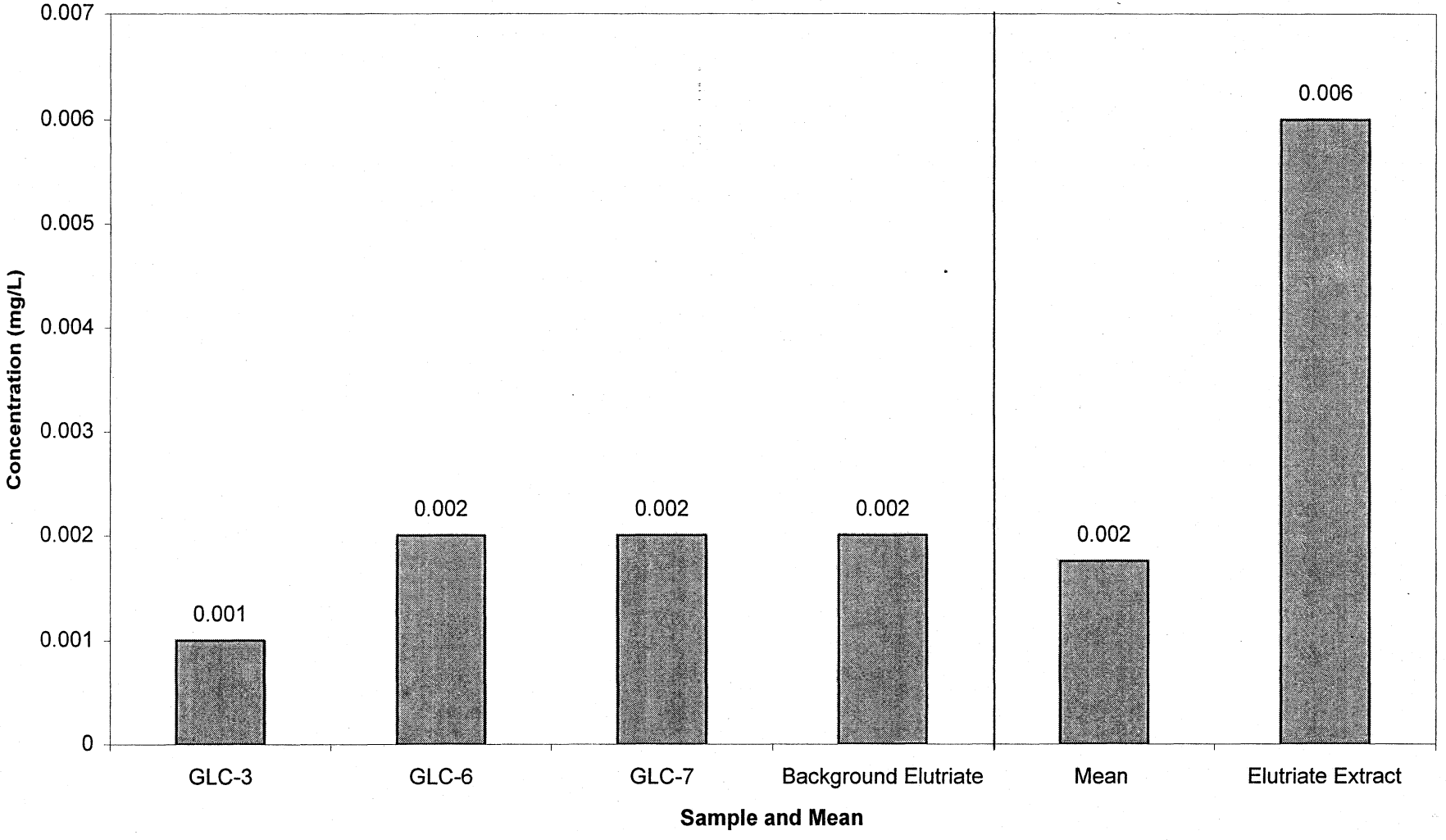


Figure E-19. Total Arsenic Concentrations in Surface Water and Elutriate Samples Comparison

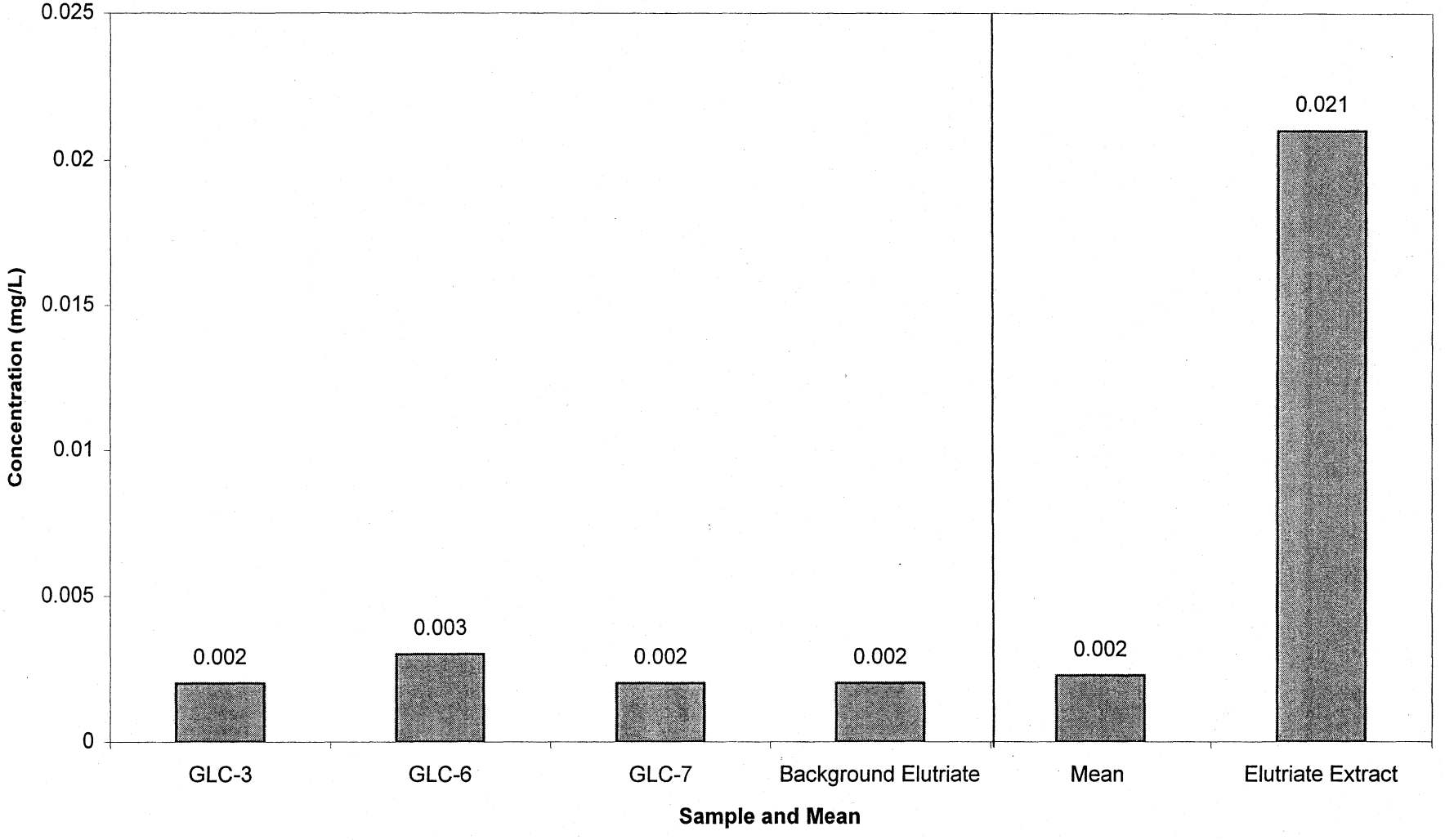


Figure E-20. Total Lead Concentrations in Surface Water and Elutriate Samples Comparison

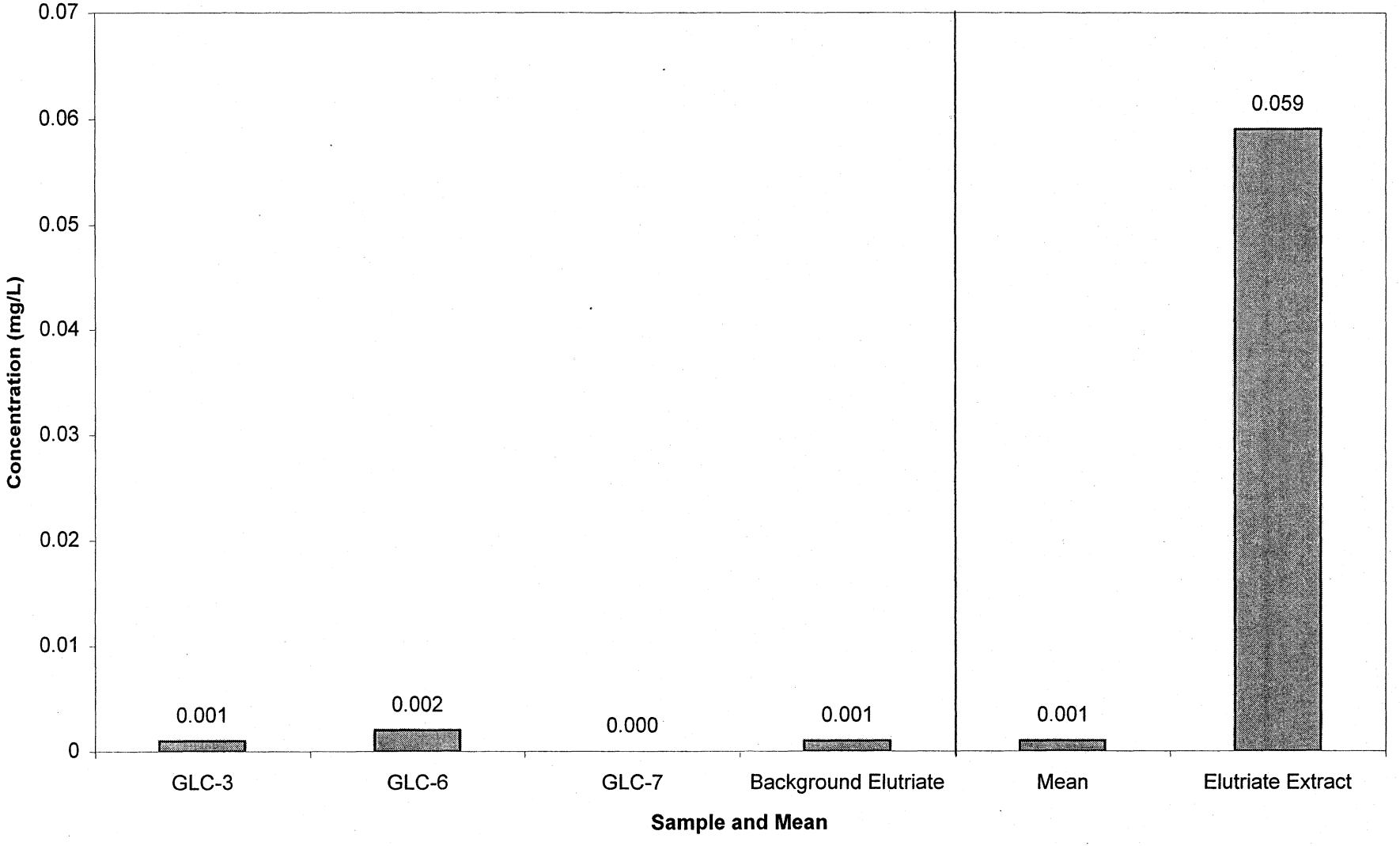


Figure E-21. Total Nickel Concentrations in Surface Water and Elutriate Samples Comparison

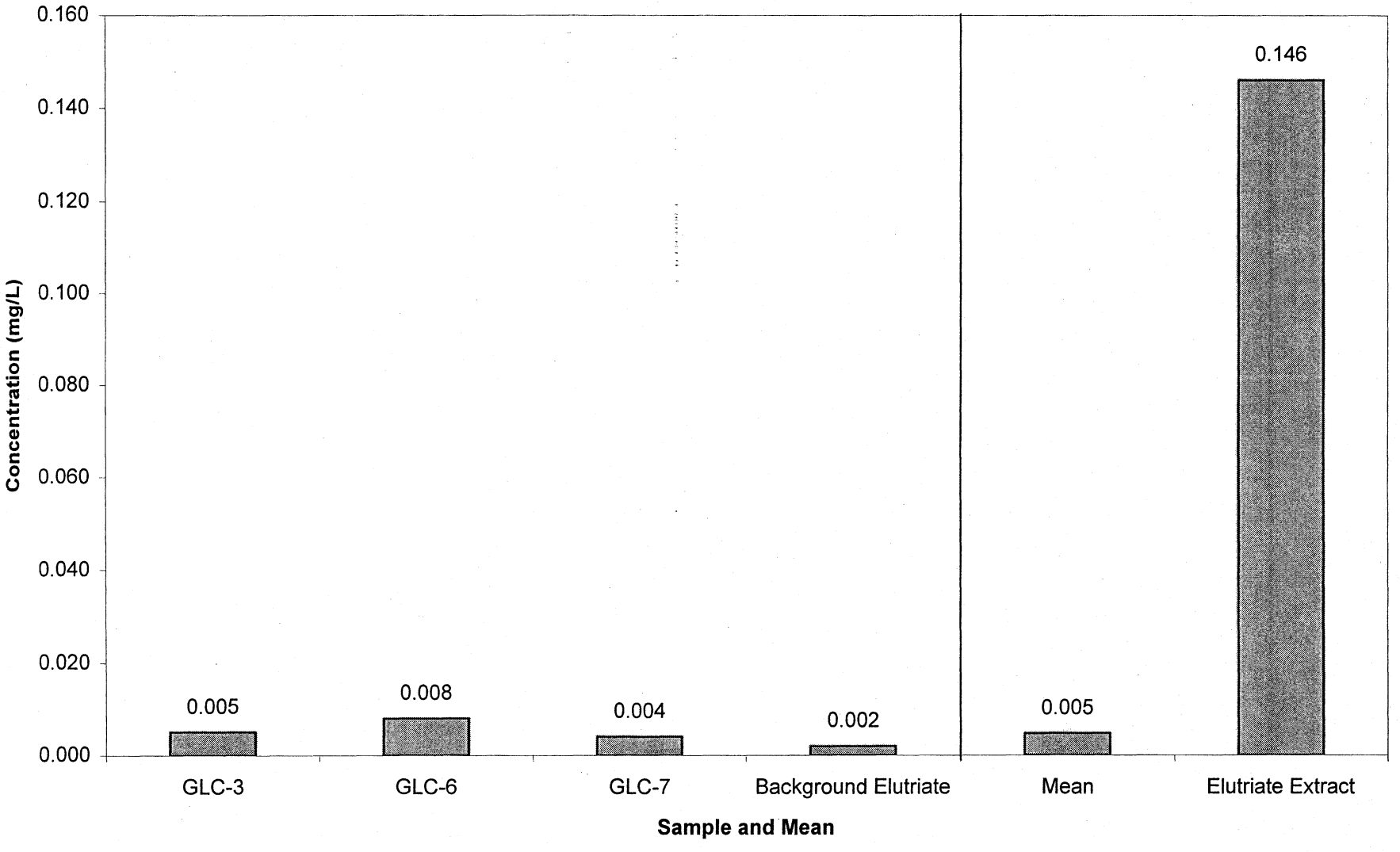


Figure E-22. Dissolved Nickel Concentrations in Surface Water and Elutriate Samples Comparison

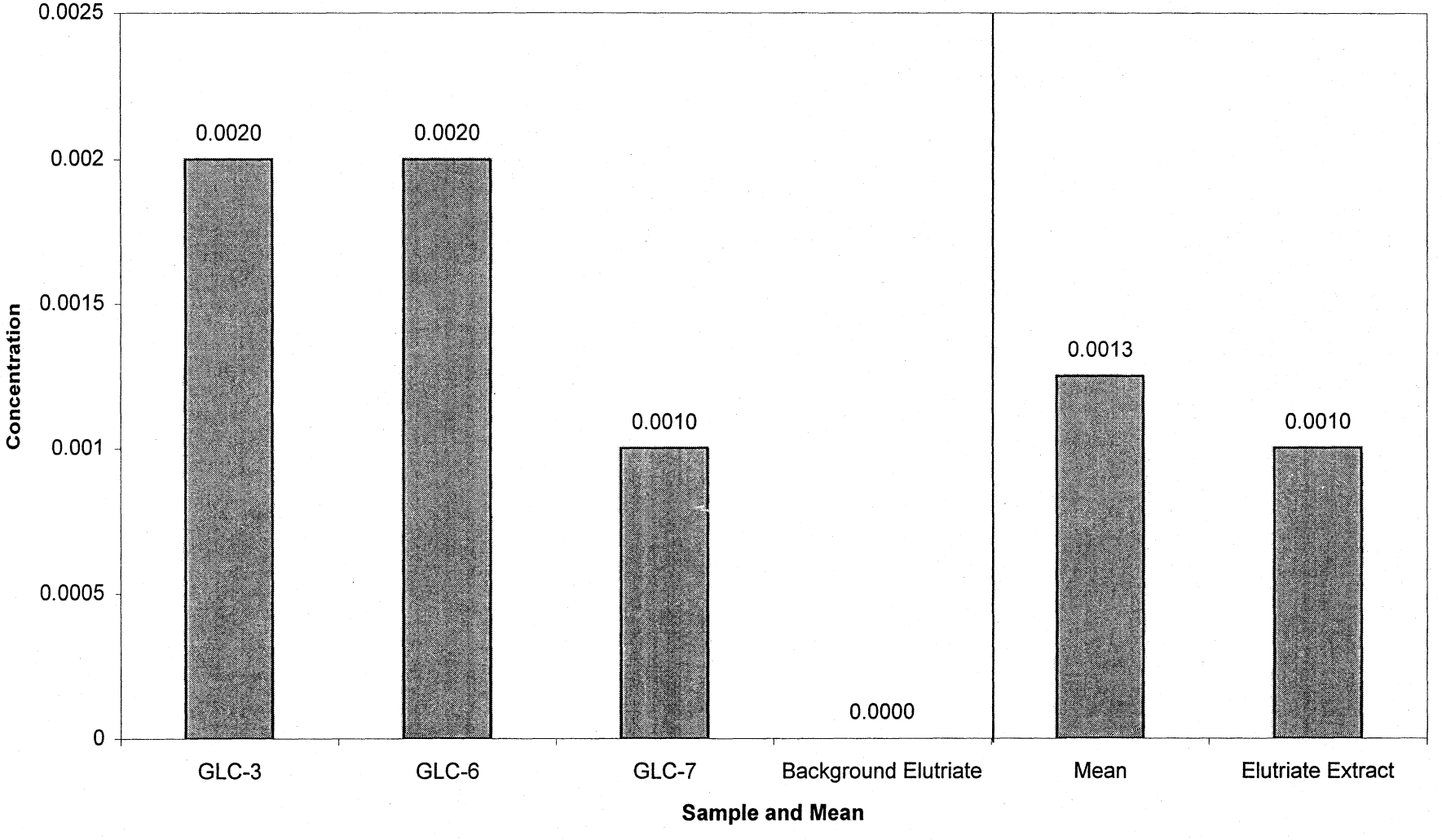


Figure E-23. Total Copper Concentrations in Surface Water and Elutriate Samples Comparison

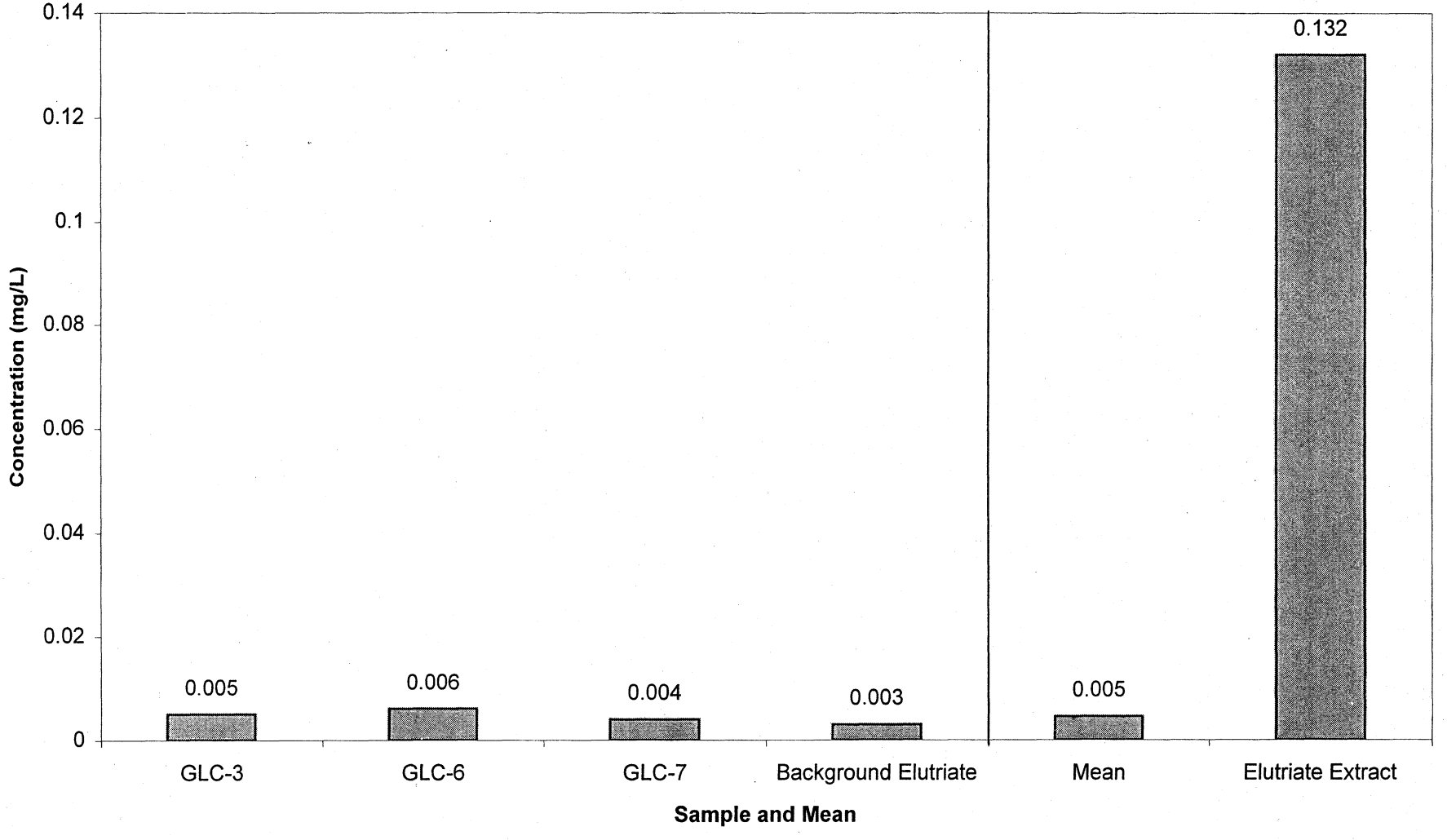


Figure E-24. Dissolved Copper Concentrations in Surface Water and Elutriate Samples Comparison

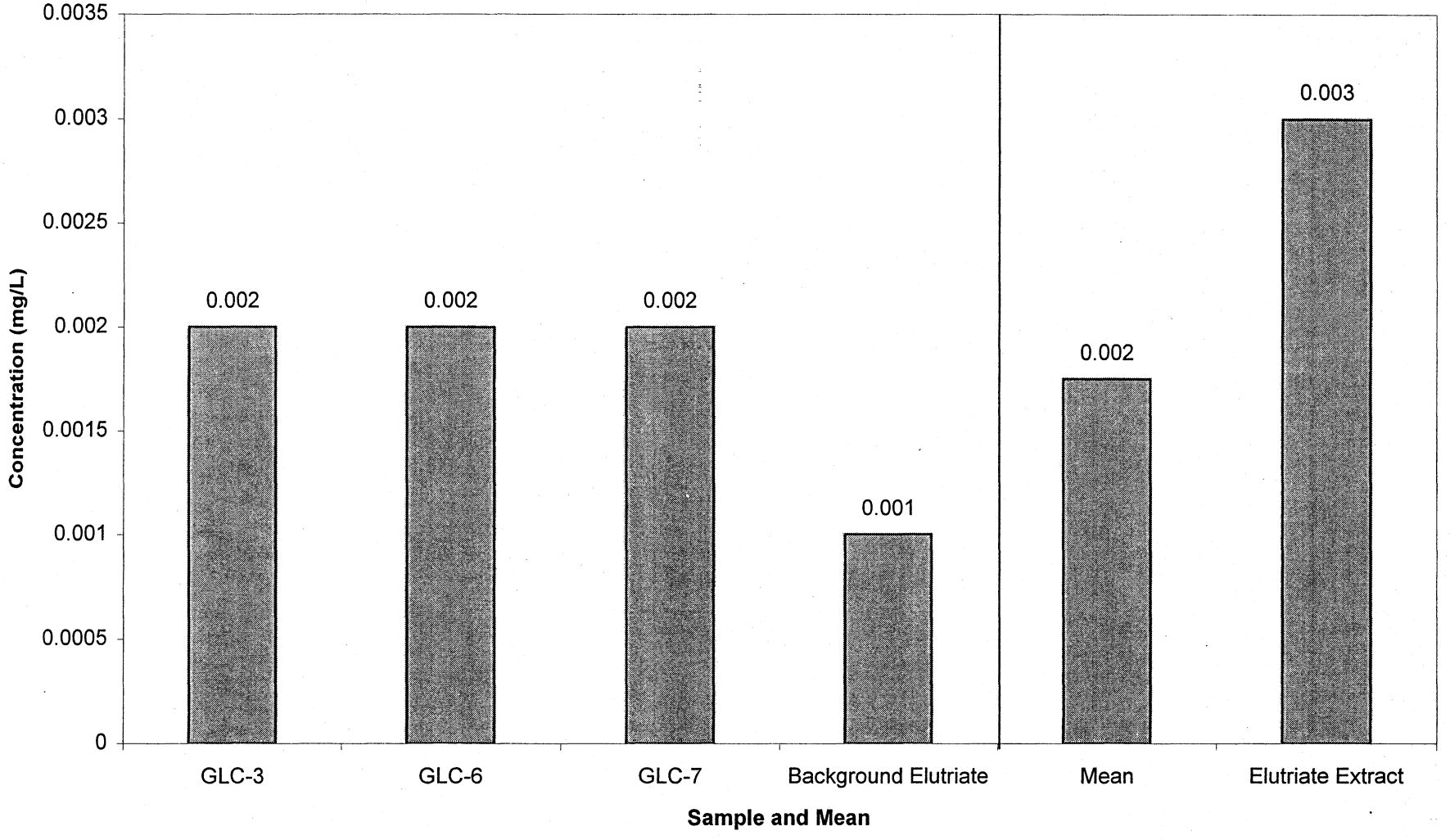


Figure E-25. pH Values for Surface Water Samples

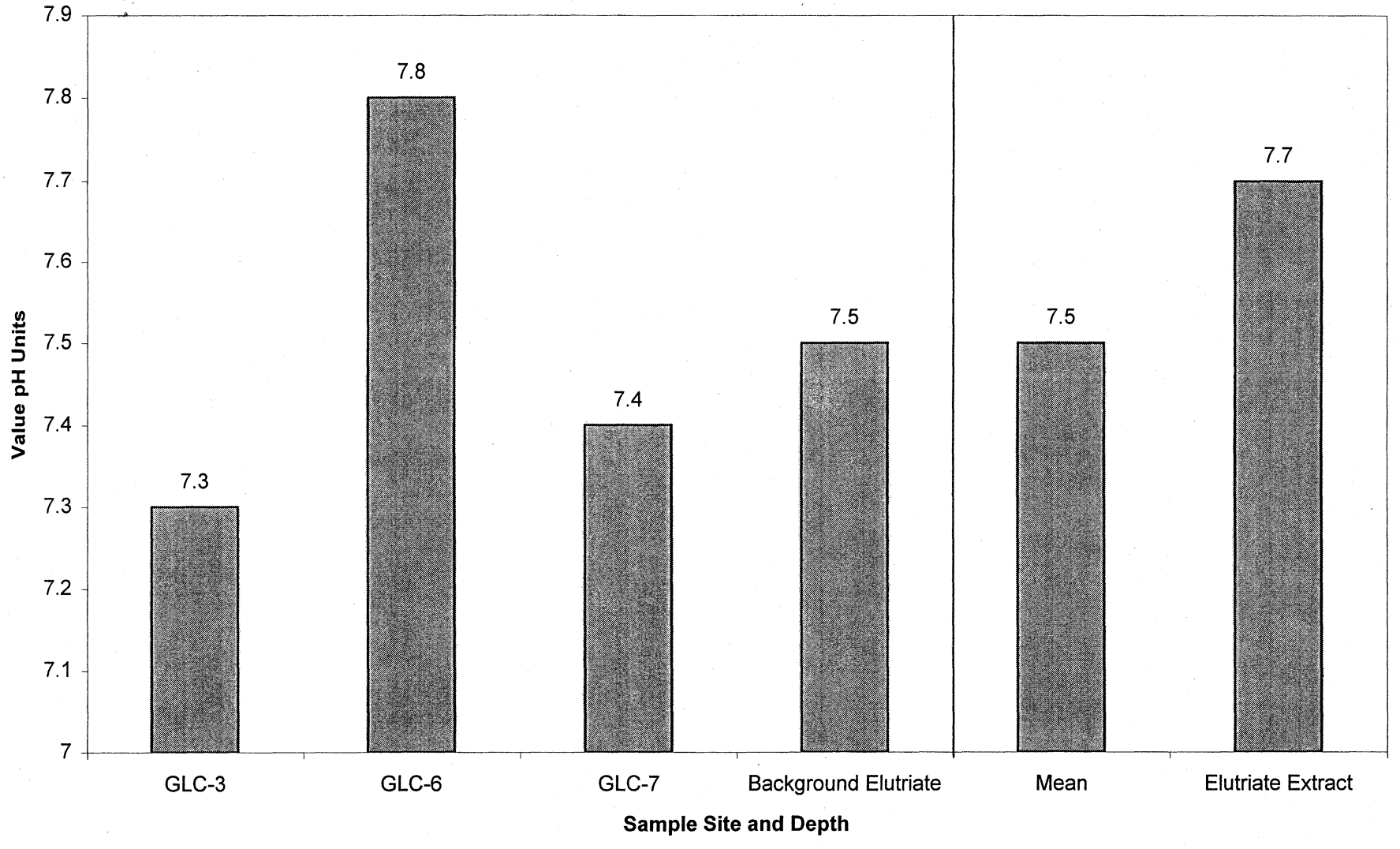


Figure E-26. Boron Concentrations in Surface Water and Elutriate Samples

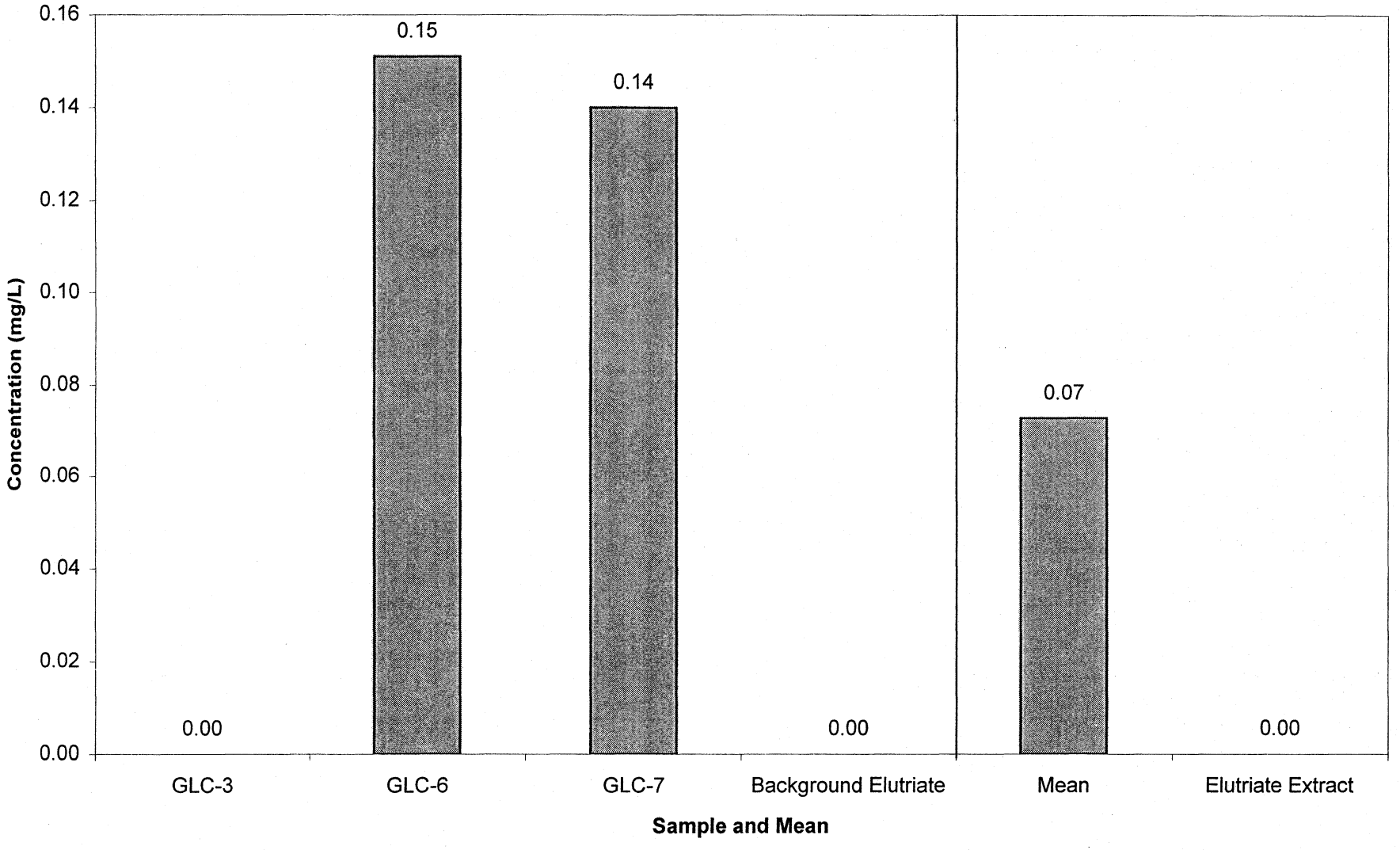


Figure E-27. Dissolved Magnesium Concentrations in Surface Water and Elutriate Samples Comparison

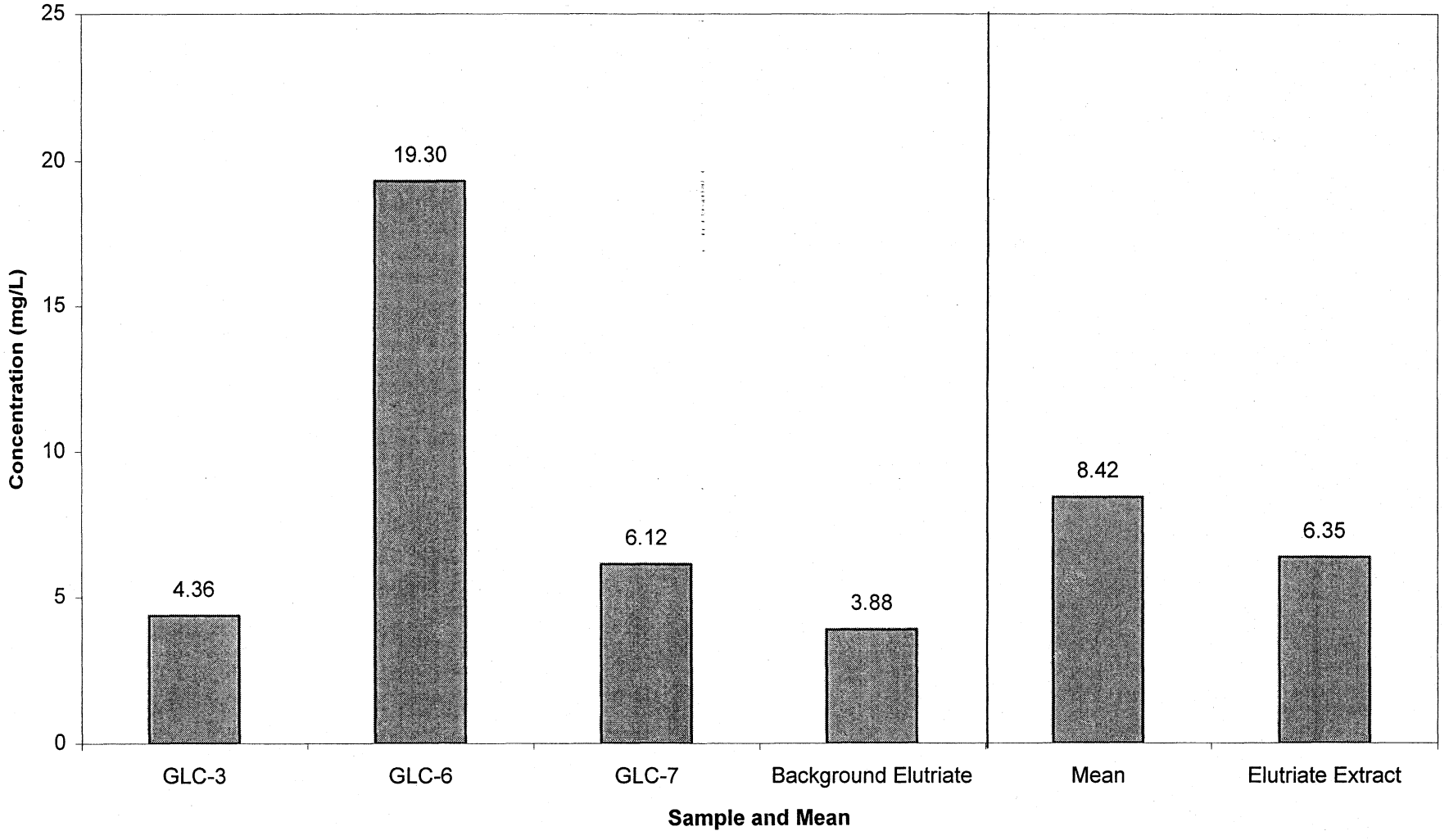


Figure E-28. Dissolved Organic Carbon Concentrations in Surface Water and Elutriate Samples

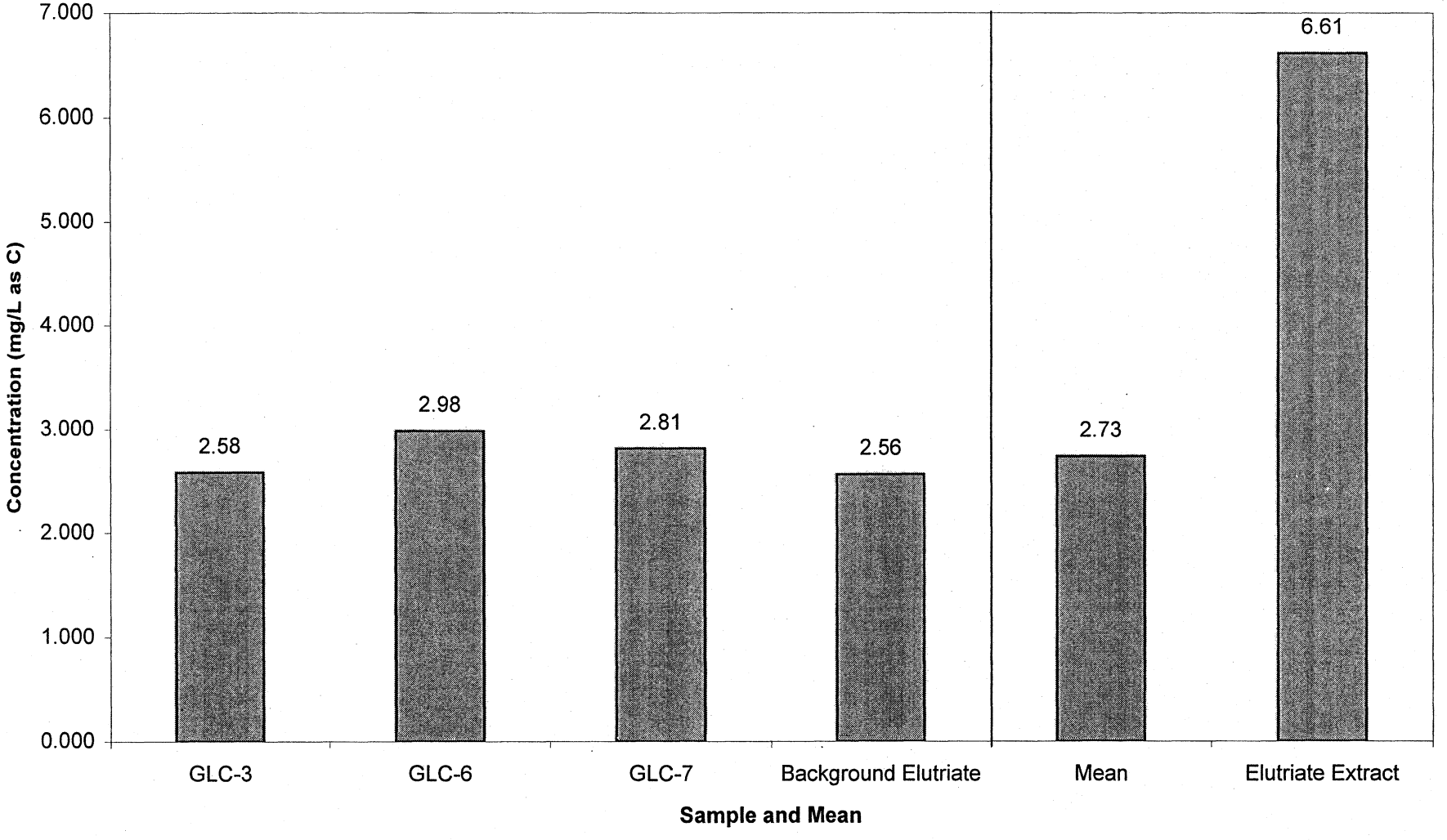


Figure E-29. Total Organic Carbon Concentrations in Surface Water and Elutriate Samples

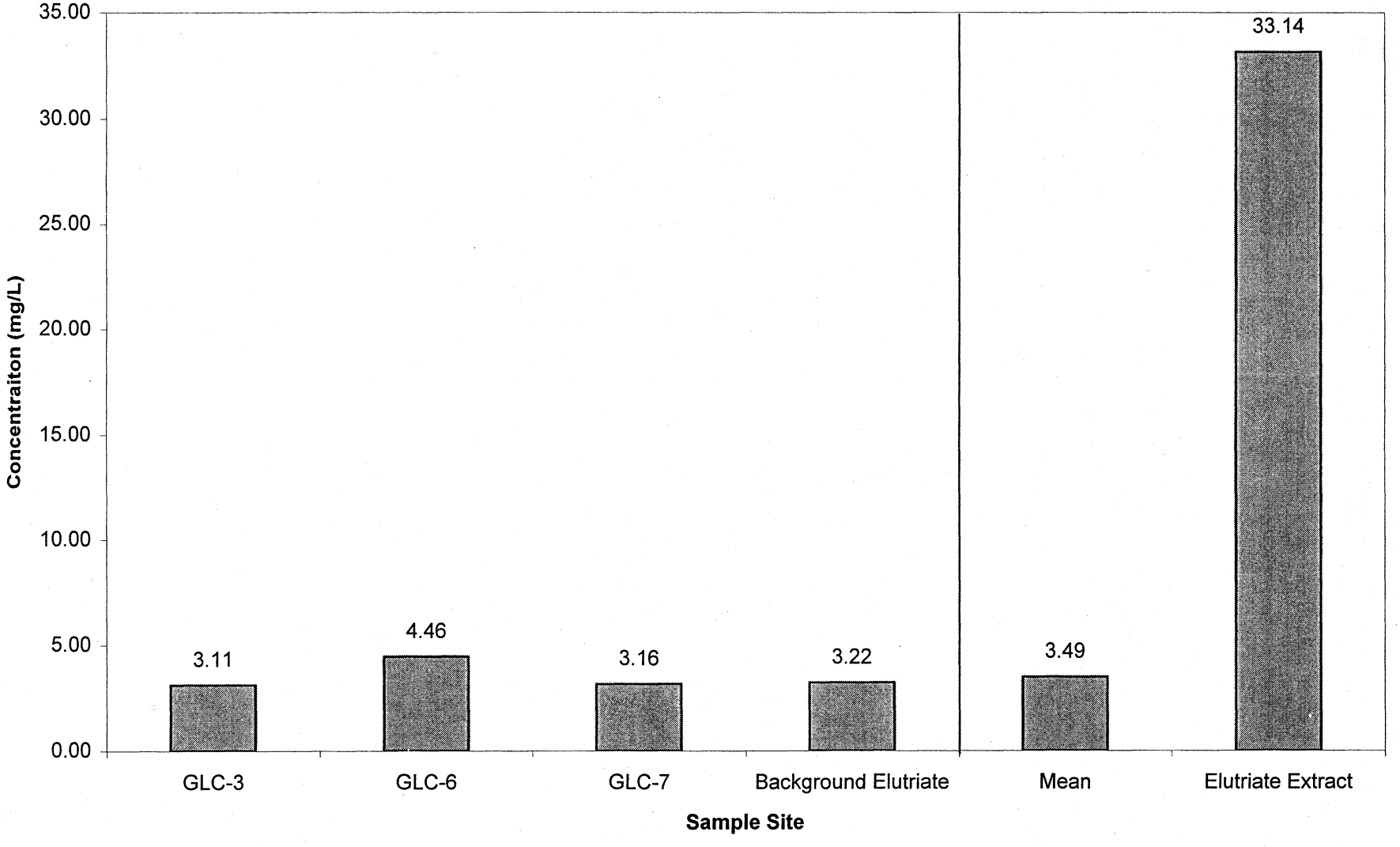


Figure E-30. Alkalinity Concentrations in Surface Water and Elutriate Samples Comparison

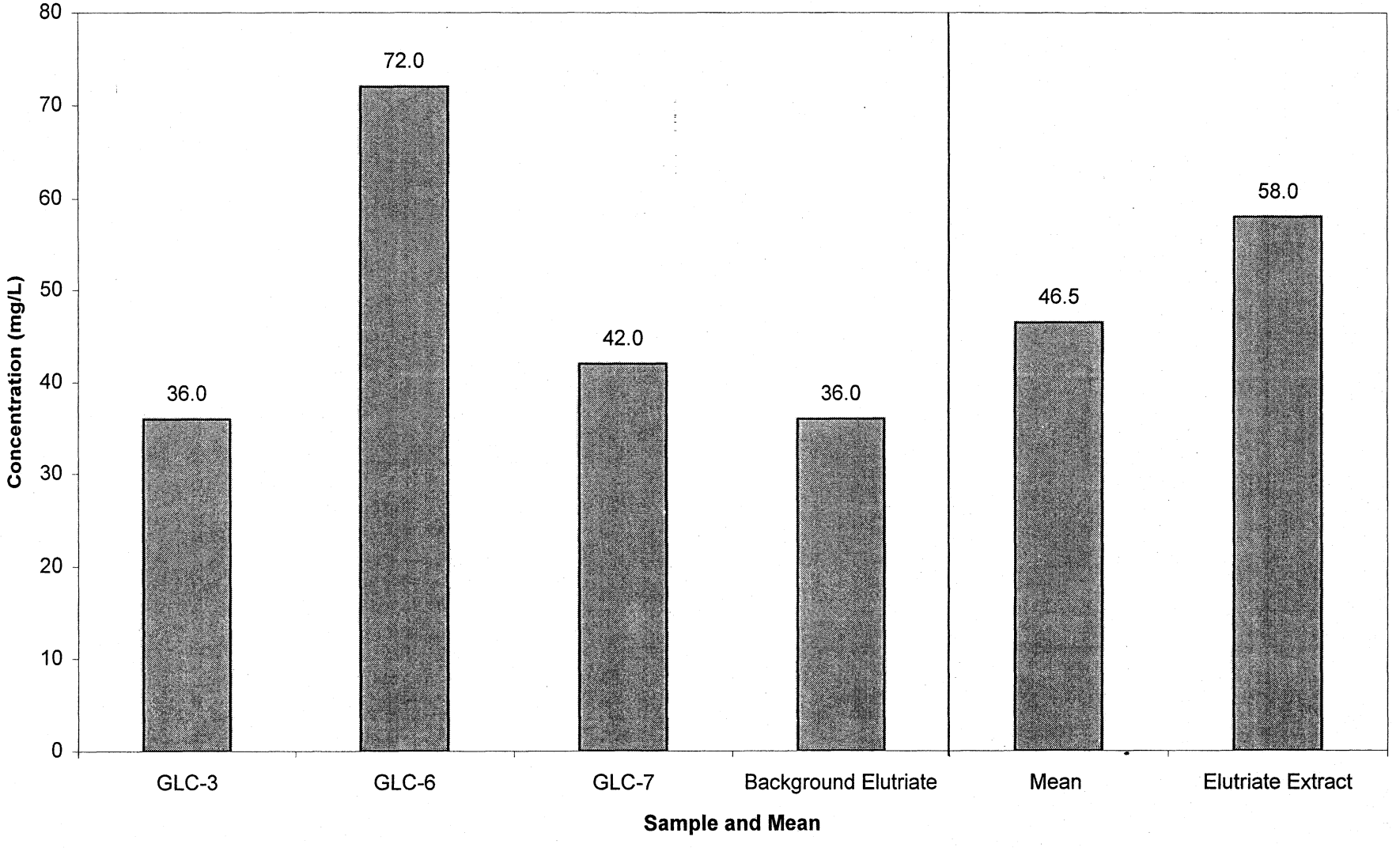


Figure E-31. Bromide Concentrations in Surface Water and Elutriate Samples Comparison

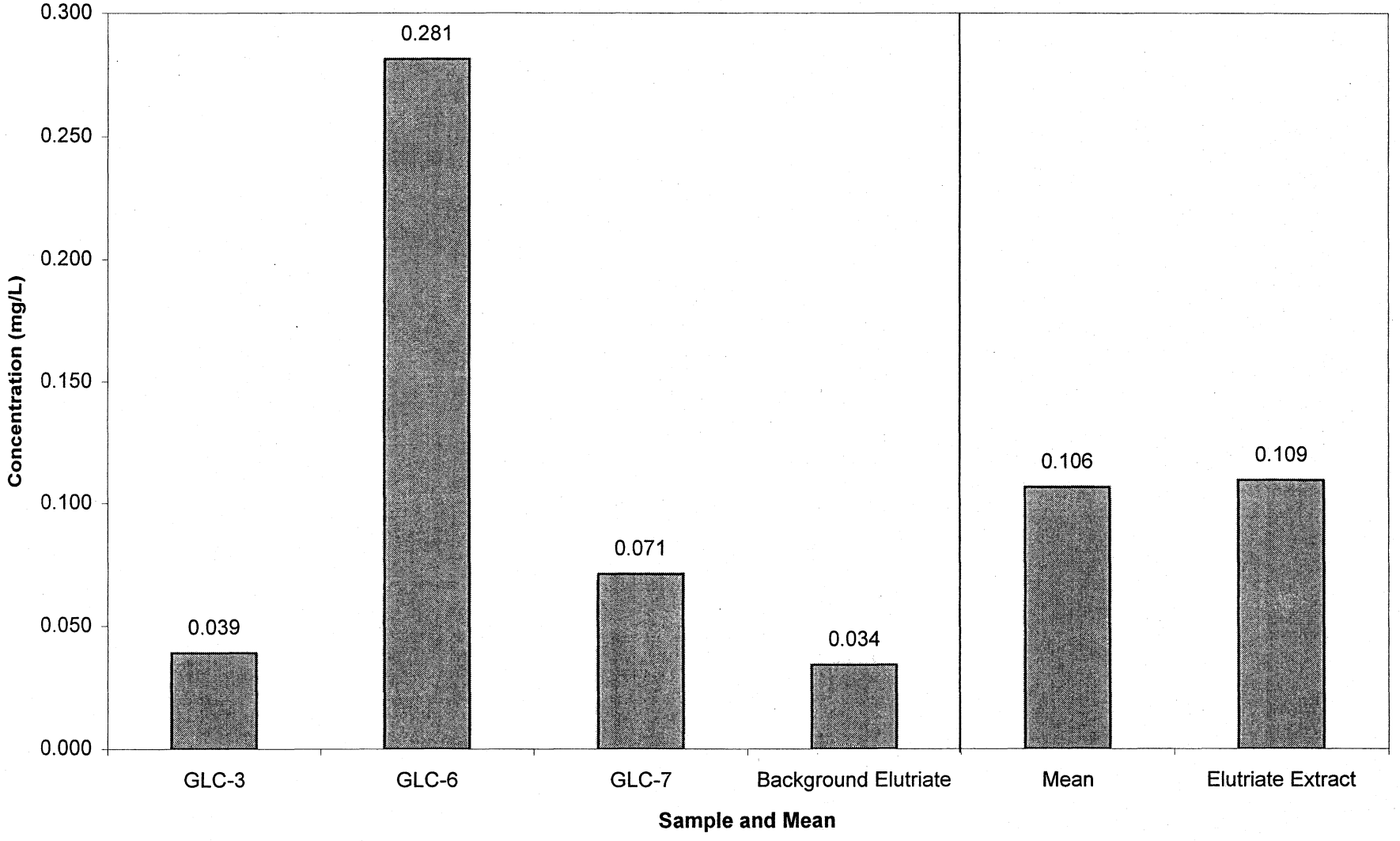


Figure E-35. Trihalomethane Speciation in Grant Line Canal Background Water and Sediment Elutriate Using Simulated Distribution System Method

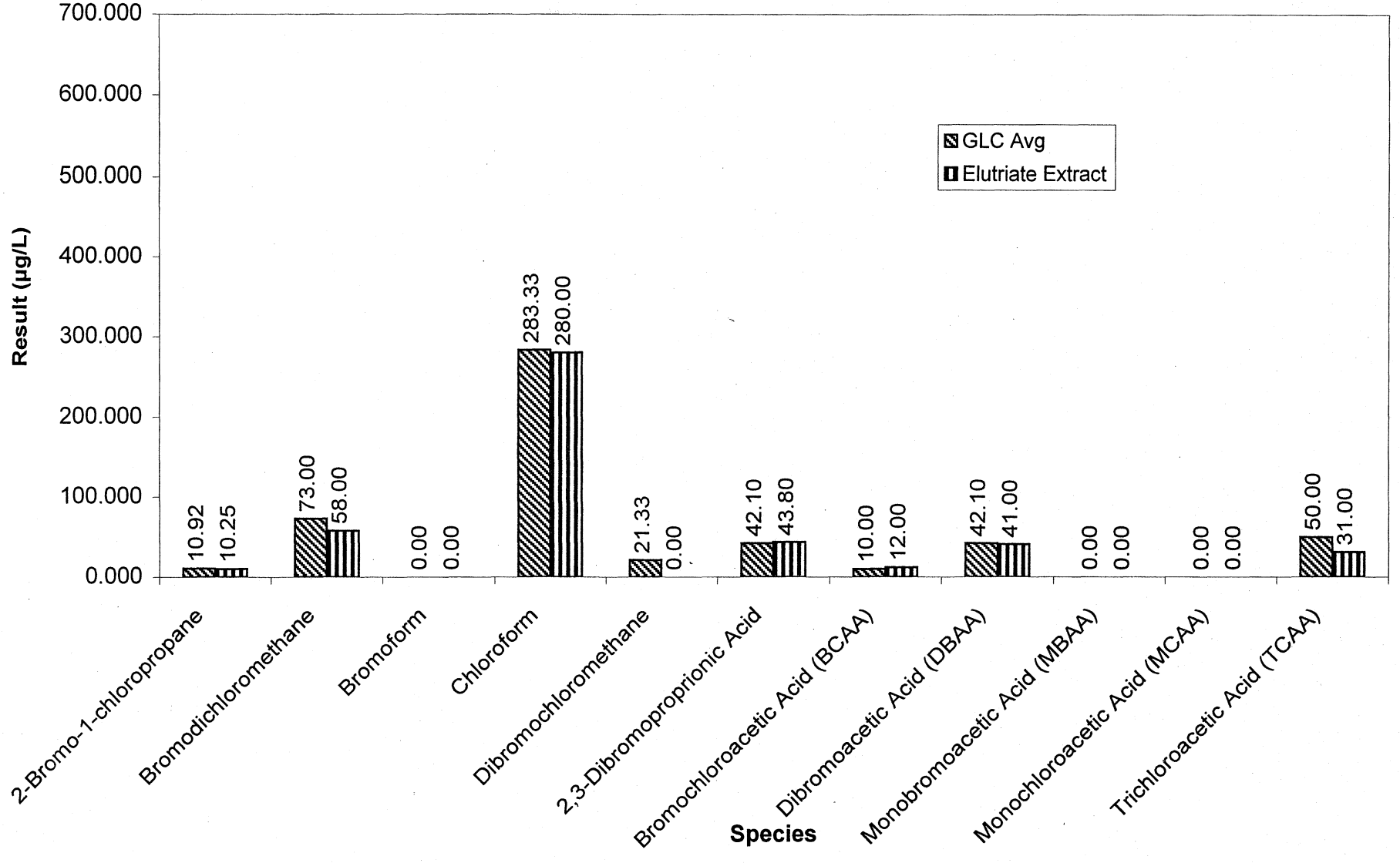
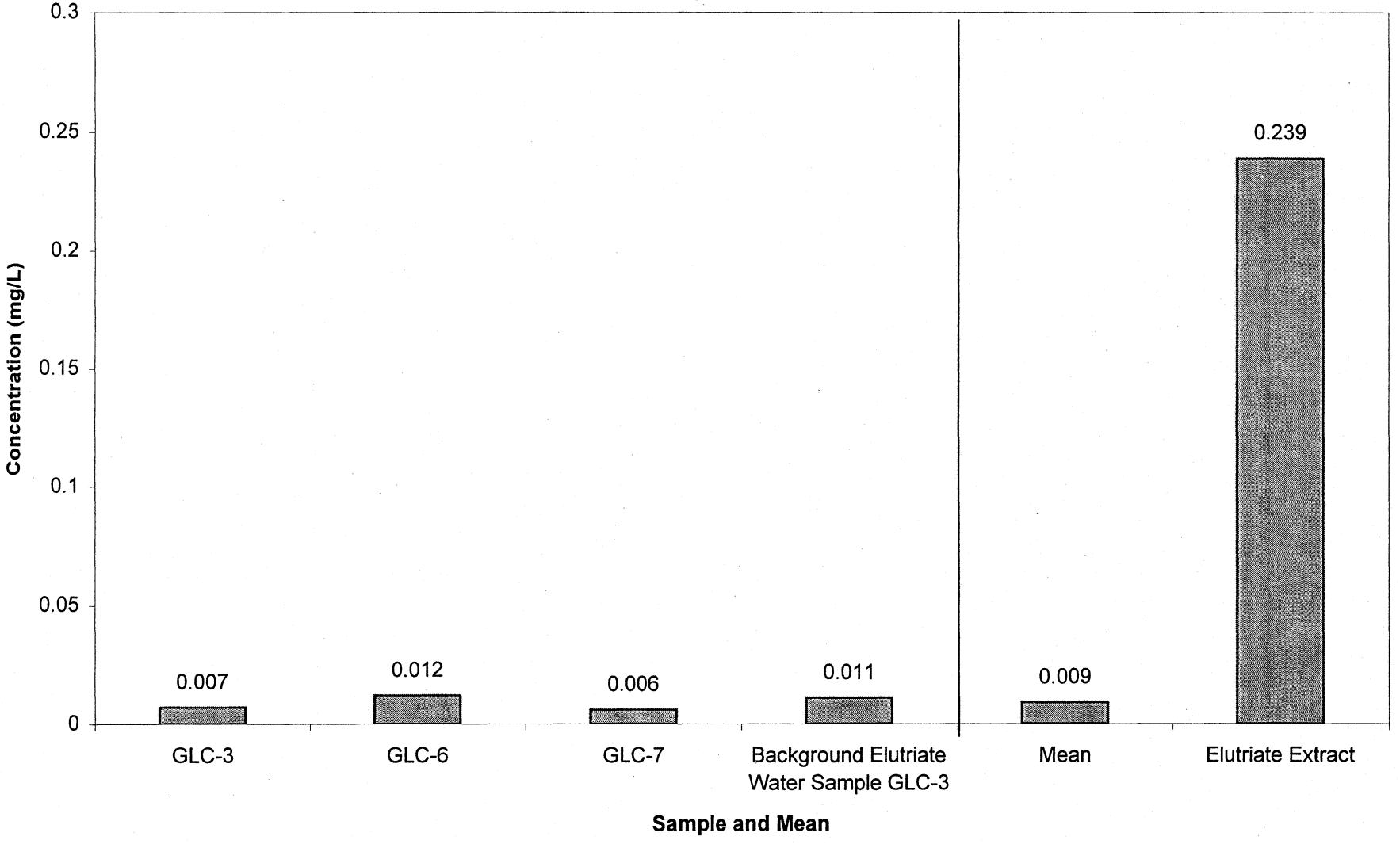


Figure E-37. Total Zinc Concentrations in Surface and Elutriate Water Samples



Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-1	CB0698A1227	6/11/98	Alachlor	0	µg/L	0.05
GLCW-1	CB0698A1227	6/11/98	PCB-1260	0	µg/L	0.1
GLCW-1	CB0698A1227	6/11/98	Ronnel	0	µg/L	0.3
GLCW-1	CB0698A1227	6/11/98	Oxyfluorfen	0	µg/L	0.2
GLCW-1	CB0698A1227	6/11/98	Metolachlor	0	µg/L	0.2
GLCW-1	CB0698A1227	6/11/98	Dicofol	0	µg/L	0.05
GLCW-1	CB0698A1227	6/11/98	Methoxychlor	0	µg/L	0.05
GLCW-1	CB0698A1227	6/11/98	Captan	0	µg/L	0.02
GLCW-1	CB0698A1227	6/11/98	Sodium	15	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Chlorpyrifos	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	PCB-1254	0	µg/L	0.1
GLCW-1	CB0698A1227	6/11/98	(PCNB)	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Atrazine	0	µg/L	0.02
GLCW-1	CB0698A1227	6/11/98	Simazine	0	µg/L	0.02
GLCW-1	CB0698A1227	6/11/98	Dichloran	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Chlorpropham	0	µg/L	0.02
GLCW-1	CB0698A1227	6/11/98	PCB-1016	0	µg/L	0.1
GLCW-1	CB0698A1227	6/11/98	Diuron	0	µg/L	0.25
GLCW-1	CB0698A1227	6/11/98	Dacthal (DCPA)	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Endosulfan-I	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	p,p'-DDE	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Endrin	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Endosulfan-II	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Endosulfan sulfate	0	µg/L	0.02
GLCW-1	CB0698A1227	6/11/98	Dieldrin	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	PCB-1242	0	µg/L	0.1
GLCW-1	CB0698A1227	6/11/98	BHC-delta	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Chlorothalonil	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	PCB-1221	0	µg/L	0.1
GLCW-1	CB0698A1227	6/11/98	Aldrin	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Chlordane	0	µg/L	0.05
GLCW-1	CB0698A1227	6/11/98	Heptachlor epoxide	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Heptachlor	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	BHC-beta	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	BHC-alpha	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	PCB-1232	0	µg/L	0.1
GLCW-1	CB0698A1227	6/11/98	p,p'-DDD	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	PCB-1248	0	µg/L	0.1

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-1	CB0698A1227	6/11/98	Mercury	0	mg/L	0.0002
GLCW-1	CB0698A1227	6/11/98	Cyanazine	0	µg/L	0.3
GLCW-1	CB0698A1227	6/11/98	Zinc	0.007	mg/L	0.005
GLCW-1	CB0698A1227	6/11/98	Thallium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Silver	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Beryllium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Arsenic	0.002	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Copper	0.005	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Chromium	0	mg/L	0.005
GLCW-1	CB0698A1227	6/11/98	Nickel	0.005	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Nickel	0.002	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Mercury	0	mg/L	0.0002
GLCW-1	CB0698A1227	6/11/98	Selenium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	2-Bromo-1-chloropropane	10.995	µg/L	1
GLCW-1	CB0698A1227	6/11/98	Chloroform	300	µg/L	10
GLCW-1	CB0698A1227	6/11/98	Bromodichloromethane	31	µg/L	10
GLCW-1	CB0698A1227	6/11/98	Bromoform	0	µg/L	10
GLCW-1	CB0698A1227	6/11/98	Dibromochloromethane	0	µg/L	10
GLCW-1	CB0698A1227	6/11/98	Nitrate	1.6	mg/L	0.1
GLCW-1	CB0698A1227	6/11/98	Total Lead	0.001	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Silver	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Endrin aldehyde	0	µg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Thiobencarb	0	µg/L	0.02
GLCW-1	CB0698A1227	6/11/98	Selenium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Boron	0	mg/L	0.1
GLCW-1	CB0698A1227	6/11/98	Hardness	45	mg/L as CaCO3	1
GLCW-1	CB0698A1227	6/11/98	Alkalinity	36	mg/L as CaCO3	1
GLCW-1	CB0698A1227	6/11/98	pH	7.3	pH Units	0.1
GLCW-1	CB0698A1227	6/11/98	Cadmium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Conductance (EC)	173	µS/cm	1
GLCW-1	CB0698A1227	6/11/98	p,p'-DDT	0	µg/L	0.05
GLCW-1	CB0698A1227	6/11/98	Lead	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Zinc	0	mg/L	0.005
GLCW-1	CB0698A1227	6/11/98	Chromium	0	mg/L	0.005
GLCW-1	CB0698A1227	6/11/98	Cadmium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Beryllium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Arsenic	0.001	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Thallium	0	mg/L	0.001
GLCW-1	CB0698A1227	6/11/98	Copper	0.002	mg/L	0.001

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-1	CB0698A1227	6/11/98	Solids	89	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Solids	57.99	mg/L	1.666667
GLCW-1	CB0698A1227	6/11/98	Magnesium	4.36	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Chloride	14	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Sulfate	18	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Fluoride	0	mg/L	0.1
GLCW-1	CB0698A1227	6/11/98	Oil and Grease	0	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Ammonia	0.05	mg/L as N	0.01
GLCW-1	CB0698A1227	6/11/98	Organic Carbon	2.58	mg/L as C	0.1
GLCW-1	CB0698A1227	6/11/98	Total Organic Carbon	3.11	mg/L as C	0.1
GLCW-1	CB0698A1227	6/11/98	Dibutyltin	0	ng/L	2
GLCW-1	CB0698A1227	6/11/98	Monobutyltin	0	ng/L	2
GLCW-1	CB0698A1227	6/11/98	Toxaphene	0	µg/L	1
GLCW-1	CB0698A1227	6/11/98	Tributyltin	3	ng/L	2
GLCW-1	CB0698A1227	6/11/98	UV Absorbance @660 nm	0	absorbance/cm	0.001
GLCW-1	CB0698A1227	6/11/98	UV Absorbance @460 nm	0	absorbance/cm	0.001
GLCW-1	CB0698A1227	6/11/98	pH	0	pH Units	
GLCW-1	CB0698A1227	6/11/98	UV Absorbance @254nm	0.073	absorbance/cm	0.001
GLCW-1	CB0698A1227	6/11/98	Calcium	10.7	mg/L	1
GLCW-1	CB0698A1227	6/11/98	Bromide	0.039	mg/L	0.01
GLCW-1	CB0698A1227	6/11/98	Sulfide	0	mg/L	0.2
GLCW-1	CB0698A1227	6/11/98	Sulfide	0	mg/L	0.2
GLCW-1	CB0698A1227	6/11/98	UV Absorbance @285 nm	0	absorbance/cm	0.001
GLCW-1	CB0698A1227	6/11/98	Tetrabutyltin	0	ng/L	2
GLCW-2	CB0698A1228	6/11/98	Thallium	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Silver	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Lead	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Copper	0.002	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Chromium	0	mg/L	0.005
GLCW-2	CB0698A1228	6/11/98	Cadmium	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Beryllium	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Chromium	0.006	mg/L	0.005
GLCW-2	CB0698A1228	6/11/98	Copper	0.006	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Lead	0.002	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Nickel	0.008	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Silver	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Arsenic	0.003	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Zinc	0.012	mg/L	0.005
GLCW-2	CB0698A1228	6/11/98	Solids	337	mg/L	1

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-2	CB0698A1228	6/11/98	PCB-1260	0	µg/L	0.1
GLCW-2	CB0698A1228	6/11/98	PCB-1254	0	µg/L	0.1
GLCW-2	CB0698A1228	6/11/98	BHC-alpha	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	BHC-beta	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Heptachlor	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Dibromochloromethane	64	µg/L	10
GLCW-2	CB0698A1228	6/11/98	Chlordane	0	µg/L	0.05
GLCW-2	CB0698A1228	6/11/98	Methoxychlor	0	µg/L	0.05
GLCW-2	CB0698A1228	6/11/98	Dieldrin	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	PCB-1232	0	µg/L	0.1
GLCW-2	CB0698A1228	6/11/98	BHC-delta	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	PCB-1242	0	µg/L	0.1
GLCW-2	CB0698A1228	6/11/98	p,p'-DDE	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	PCB-1221	0	µg/L	0.1
GLCW-2	CB0698A1228	6/11/98	PCB-1016	0	µg/L	0.1
GLCW-2	CB0698A1228	6/11/98	Toxaphene	0	µg/L	1
GLCW-2	CB0698A1228	6/11/98	Endosulfan sulfate	0	µg/L	0.02
GLCW-2	CB0698A1228	6/11/98	Endrin aldehyde	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Endosulfan-II	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Endrin	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Heptachlor epoxide	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Diuron	0	µg/L	0.25
GLCW-2	CB0698A1228	6/11/98	Mercury	0	mg/L	0.0002
GLCW-2	CB0698A1228	6/11/98	Mercury	0	mg/L	0.0002
GLCW-2	CB0698A1228	6/11/98	Selenium	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Bromoform	0	µg/L	10
GLCW-2	CB0698A1228	6/11/98	Bromodichloromethane	140	µg/L	10
GLCW-2	CB0698A1228	6/11/98	UV Absorbance @460 nm	0	absorbance/cm	0.001
GLCW-2	CB0698A1228	6/11/98	Chloroform	270	µg/L	10
GLCW-2	CB0698A1228	6/11/98	Nitrate	2.9	mg/L	0.1
GLCW-2	CB0698A1228	6/11/98	Solids	74	mg/L	5
GLCW-2	CB0698A1228	6/11/98	Selenium	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Metolachlor	0	µg/L	0.2
GLCW-2	CB0698A1228	6/11/98	p,p'-DDT	0	µg/L	0.05
GLCW-2	CB0698A1228	6/11/98	p,p'-DDD	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Cadmium	0	mg/L	0.001
GLCW-2	CB0698A1228	6/11/98	Captan	0	µg/L	0.02
GLCW-2	CB0698A1228	6/11/98	Dacthal (DCPA)	0	µg/L	0.01

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-2	CB0698A1228	6/11/98	Chlorpyrifos	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Thiobencarb	0	µg/L	0.02
GLCW-2	CB0698A1228	6/11/98	Chlorothalonil	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Alachlor	0	µg/L	0.05
GLCW-2	CB0698A1228	6/11/98	Dicofol	0	µg/L	0.05
GLCW-2	CB0698A1228	6/11/98	Pentachloronitrobenzene	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Atrazine	0	µg/L	0.02
GLCW-2	CB0698A1228	6/11/98	Simazine	0	µg/L	0.02
GLCW-2	CB0698A1228	6/11/98	Dichloran	0	µg/L	0.01
GLCW-2	CB0698A1228	6/11/98	Chlorpropham	0	µg/L	0.02
GLCW-3	CB0698A1229	6/9/98	UV Absorbance @254nm	0.077	absorbance/cm	0.001
GLCW-3	CB0698A1229	6/9/98	Copper	0.002	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Mercury	0	mg/L	0.0002
GLCW-3	CB0698A1229	6/9/98	Zinc	0	mg/L	0.005
GLCW-3	CB0698A1229	6/9/98	Nickel	0.001	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Arsenic	0.002	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Beryllium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Cadmium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Chromium	0	mg/L	0.005
GLCW-3	CB0698A1229	6/9/98	Copper	0.004	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Zinc	0.006	mg/L	0.005
GLCW-3	CB0698A1229	6/9/98	Lead	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Nickel	0.004	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Beryllium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Thallium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Silver	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Mercury	0	mg/L	0.0002
GLCW-3	CB0698A1229	6/9/98	Selenium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Chloroform	280	µg/L	10
GLCW-3	CB0698A1229	6/9/98	Dibromochloromethane	0	µg/L	10
GLCW-3	CB0698A1229	6/9/98	Bromodichloromethane	48	µg/L	10
GLCW-3	CB0698A1229	6/9/98	Bromoform	0	µg/L	10
GLCW-3	CB0698A1229	6/9/98	2-Bromo-1-chloropropane	11.339	µg/L	1
GLCW-3	CB0698A1229	6/9/98	Nitrate	2.3	mg/L	0.1
GLCW-3	CB0698A1229	6/9/98	Solids	35	mg/L	2.5
GLCW-3	CB0698A1229	6/9/98	p,p'-DDT	0	µg/L	0.05
GLCW-3	CB0698A1229	6/9/98	Silver	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Magnesium	6.12	mg/L	1
GLCW-3	CB0698A1229	6/9/98	UV Absorbance @285 nm	0	absorbance/cm	0.001

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-3	CB0698A1229	6/9/98	UV Absorbance @460 nm	0	absorbance/cm	0.001
GLCW-3	CB0698A1229	6/9/98	UV Absorbance @660 nm	0	absorbance/cm	0.001
GLCW-3	CB0698A1229	6/9/98	Solids	38	mg/L	1.25
GLCW-3	CB0698A1229	6/9/98	Organic Carbon	3.16	mg/L as C	0.1
GLCW-3	CB0698A1229	6/9/98	Organic Carbon	2.81	mg/L as C	0.1
GLCW-3	CB0698A1229	6/9/98	Ammonia	0.09	mg/L as N	0.01
GLCW-3	CB0698A1229	6/9/98	Oil and Grease	0	mg/L	1
GLCW-3	CB0698A1229	6/9/98	Fluoride	0	mg/L	0.1
GLCW-3	CB0698A1229	6/9/98	Sulfate	27	mg/L	1
GLCW-3	CB0698A1229	6/9/98	Thallium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Sodium	22.3	mg/L	1
GLCW-3	CB0698A1229	6/9/98	Arsenic	0.002	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Calcium	13.5	mg/L	1
GLCW-3	CB0698A1229	6/9/98	Boron	0.14	mg/L	0.1
GLCW-3	CB0698A1229	6/9/98	Hardness	59	mg/L as CaCO3	1
GLCW-3	CB0698A1229	6/9/98	Alkalinity	42	mg/L as CaCO3	1
GLCW-3	CB0698A1229	6/9/98	pH	7.4	pH Units	0.1
GLCW-3	CB0698A1229	6/9/98	Solids	123	mg/L	1
GLCW-3	CB0698A1229	6/9/98	Conductance (EC)	236	µS/cm	1
GLCW-3	CB0698A1229	6/9/98	Chromium	0	mg/L	0.005
GLCW-3	CB0698A1229	6/9/98	Lead	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Cadmium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	pH	0	pH Units	
GLCW-3	CB0698A1229	6/9/98	Chloride	24	mg/L	1
GLCW-3	CB0698A1229	6/9/98	Chlorothalonil	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Endosulfan-I	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Methoxychlor	0	µg/L	0.05
GLCW-3	CB0698A1229	6/9/98	PCB-1254	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	Ronnel	0	µg/L	0.3
GLCW-3	CB0698A1229	6/9/98	Oxyfluorfen	0	µg/L	0.2
GLCW-3	CB0698A1229	6/9/98	Dicofol	0	µg/L	0.05
GLCW-3	CB0698A1229	6/9/98	Captan	0	µg/L	0.02
GLCW-3	CB0698A1229	6/9/98	Dacthal (DCPA)	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Alachlor	0	µg/L	0.05
GLCW-3	CB0698A1229	6/9/98	Selenium	0	mg/L	0.001
GLCW-3	CB0698A1229	6/9/98	Cyanazine	0	µg/L	0.3
GLCW-3	CB0698A1229	6/9/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Atrazine	0	µg/L	0.02
GLCW-3	CB0698A1229	6/9/98	Simazine	0	µg/L	0.02

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-3	CB0698A1229	6/9/98	Dichloran	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Chlorpropham	0	µg/L	0.02
GLCW-3	CB0698A1229	6/9/98	PCB-1260	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	Diuron	0	µg/L	0.25
GLCW-3	CB0698A1229	6/9/98	Metolachlor	0	µg/L	0.2
GLCW-3	CB0698A1229	6/9/98	Sulfide	0	mg/L	0.2
GLCW-3	CB0698A1229	6/9/98	p,p'-DDD	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Bromide	0.071	mg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Thiobencarb	0	µg/L	0.02
GLCW-3	CB0698A1229	6/9/98	Endrin aldehyde	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Sulfide	0	mg/L	0.2
GLCW-3	CB0698A1229	6/9/98	Tributyltin	0	ng/L	2
GLCW-3	CB0698A1229	6/9/98	Tetrabutyltin	0	ng/L	2
GLCW-3	CB0698A1229	6/9/98	Monobutyltin	0	ng/L	2
GLCW-3	CB0698A1229	6/9/98	Dibutyltin	0	ng/L	2
GLCW-3	CB0698A1229	6/9/98	Heptachlor epoxide	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	PCB-1242	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	PCB-1232	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	PCB-1221	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	PCB-1016	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	PCB-1248	0	µg/L	0.1
GLCW-3	CB0698A1229	6/9/98	Endosulfan sulfate	0	µg/L	0.02
GLCW-3	CB0698A1229	6/9/98	BHC-alpha	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Endosulfan-II	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Endrin	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Pentachloronitrobenzene	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Dieldrin	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Chlordane	0	µg/L	0.05
GLCW-3	CB0698A1229	6/9/98	Aldrin	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Heptachlor	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	BHC-delta	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	BHC-beta	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Chlorpyrifos	0	µg/L	0.01
GLCW-3	CB0698A1229	6/9/98	Toxaphene	0	µg/L	1
GLCW-3	CB0698A1229	6/9/98	p,p'-DDE	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Heptachlor	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Toxaphene	0	µg/L	1
GLCW-5	CB0698A1505	6/18/98	PCB-1016	0	µg/L	0.1
GLCW-5	CB0698A1505	6/18/98	PCB-1221	0	µg/L	0.1

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-5	CB0698A1505	6/18/98	Endrin	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	PCB-1242	0	µg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Heptachlor epoxide	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	PCB-1232	0	µg/L	0.1
GLCW-5	CB0698A1505	6/18/98	p,p'-DDE	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Dieldrin	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	PCB-1254	0	µg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Endrin aldehyde	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Aldrin	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Endosulfan-II	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	BHC-beta	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	BHC-alpha	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Endosulfan-I	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Thiobencarb	0	µg/L	0.02
GLCW-5	CB0698A1505	6/18/98	PCB-1260	0	µg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Cyanazine	0	µg/L	0.3
GLCW-5	CB0698A1505	6/18/98	Ronnel	0	µg/L	0.3
GLCW-5	CB0698A1505	6/18/98	Oxyfluorfen	0	µg/L	0.2
GLCW-5	CB0698A1505	6/18/98	Metolachlor	0	µg/L	0.2
GLCW-5	CB0698A1505	6/18/98	Dicofol	0	µg/L	0.05
GLCW-5	CB0698A1505	6/18/98	BHC-delta	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Chlordane	0	µg/L	0.05
GLCW-5	CB0698A1505	6/18/98	Bromochloroacetic Acid	10	µg/L	1
GLCW-5	CB0698A1505	6/18/98	UV Absorbance @660 nm	0	absorbance/cm	0.001
GLCW-5	CB0698A1505	6/18/98	Sulfide	0	mg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Sulfide	0	mg/L	0.1
GLCW-5	CB0698A1505	6/18/98	UV Absorbance @460 nm	0	absorbance/cm	0.001
GLCW-5	CB0698A1505	6/18/98	Bromide	0.034	mg/L	0.01
GLCW-5	CB0698A1505	6/18/98	UV Absorbance @254nm	0.074	absorbance/cm	0.001
GLCW-5	CB0698A1505	6/18/98	pH	0	pH Units	
GLCW-5	CB0698A1505	6/18/98	Tributyltin	0	ng/L	2
GLCW-5	CB0698A1505	6/18/98	Tetrabutyltin	0	ng/L	2
GLCW-5	CB0698A1505	6/18/98	Monobutyltin	0	ng/L	2
GLCW-5	CB0698A1505	6/18/98	Dibutyltin	0	ng/L	2
GLCW-5	CB0698A1505	6/18/98	Endosulfan sulfate	0	µg/L	0.02
GLCW-5	CB0698A1505	6/18/98	2,3-Dibromoproprionic Acid	42.1	µg/L	1
GLCW-5	CB0698A1505	6/18/98	Chlorpyrifos	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Dibromoacetic Acid (DBAA)	0	µg/L	1

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-5	CB0698A1505	6/18/98	Monobromoacetic Acid (MBAA)	0	µg/L	1
GLCW-5	CB0698A1505	6/18/98	Trichloroacetic Acid (TCAA)	50	µg/L	1
GLCW-5	CB0698A1505	6/18/98	Monochloroacetic Acid (MCAA)	0	µg/L	1
GLCW-5	CB0698A1505	6/18/98	Chlorine	1.5	mg/L	0.1
GLCW-5	CB0698A1505	6/18/98	2-Bromo-1-chloropropane	10.589	µg/L	1
GLCW-5	CB0698A1505	6/18/98	Bromoform	0	µg/L	10
GLCW-5	CB0698A1505	6/18/98	Dibromochloromethane	0	µg/L	10
GLCW-5	CB0698A1505	6/18/98	pH	0	pH Units	
GLCW-5	CB0698A1505	6/18/98	Chloroform	220	µg/L	10
GLCW-5	CB0698A1505	6/18/98	Bromodichloromethane	31	µg/L	10
GLCW-5	CB0698A1505	6/18/98	PCB-1248	0	µg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Dichloroacetic Acid (DCAA)	52	µg/L	1
GLCW-5	CB0698A1505	6/18/98	Nickel	0.002	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Conductance (EC)	151	µS/cm	1
GLCW-5	CB0698A1505	6/18/98	Zinc	0	mg/L	0.005
GLCW-5	CB0698A1505	6/18/98	Thallium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Silver	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Nickel	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Lead	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Copper	0.001	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Chromium	0	mg/L	0.005
GLCW-5	CB0698A1505	6/18/98	Cadmium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Beryllium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Arsenic	0.002	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Methoxychlor	0	µg/L	0.05
GLCW-5	CB0698A1505	6/18/98	Silver	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Alkalinity	36	mg/L as CaCO3	1
GLCW-5	CB0698A1505	6/18/98	Lead	0.001	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Copper	0.003	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Chromium	0	mg/L	0.005
GLCW-5	CB0698A1505	6/18/98	Cadmium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Beryllium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Arsenic	0.002	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Zinc	0.011	mg/L	0.005
GLCW-5	CB0698A1505	6/18/98	Mercury	0	mg/L	0.0002
GLCW-5	CB0698A1505	6/18/98	Mercury	0.0002	mg/L	0.0002
GLCW-5	CB0698A1505	6/18/98	Selenium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Selenium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Nitrate	1	mg/L	0.1

Appendix F. Grant Line Canal Water Quality Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLCW-5	CB0698A1505	6/18/98	Thallium	0	mg/L	0.001
GLCW-5	CB0698A1505	6/18/98	Organic Carbon	2.56	mg/L as C	0.1
GLCW-5	CB0698A1505	6/18/98	Solids	41.33	mg/L	1.666667
GLCW-5	CB0698A1505	6/18/98	Alachlor	0	µg/L	0.05
GLCW-5	CB0698A1505	6/18/98	Chlorothalonil	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Pentachloronitrobenzene	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Atrazine	0	µg/L	0.02
GLCW-5	CB0698A1505	6/18/98	Simazine	0	µg/L	0.02
GLCW-5	CB0698A1505	6/18/98	Dichloran	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Chlorpropham	0	µg/L	0.02
GLCW-5	CB0698A1505	6/18/98	Diuron	0	µg/L	0.25
GLCW-5	CB0698A1505	6/18/98	p,p'-DDT	0	µg/L	0.05
GLCW-5	CB0698A1505	6/18/98	p,p'-DDD	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Dacthal (DCPA)	0	µg/L	0.01
GLCW-5	CB0698A1505	6/18/98	Solids	87	mg/L	1
GLCW-5	CB0698A1505	6/18/98	Organic Carbon	3.22	mg/L as C	0.1
GLCW-5	CB0698A1505	6/18/98	pH	7.5	pH Units	0.1
GLCW-5	CB0698A1505	6/18/98	Ammonia	0.03	mg/L as N	0.01
GLCW-5	CB0698A1505	6/18/98	Oil and Grease	0	mg/L	1
GLCW-5	CB0698A1505	6/18/98	Fluoride	0	mg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Sulfate	17	mg/L	1
GLCW-5	CB0698A1505	6/18/98	Chloride	12	mg/L	1
GLCW-5	CB0698A1505	6/18/98	Sodium	13.4	mg/L	1
GLCW-5	CB0698A1505	6/18/98	Boron	0	mg/L	0.1
GLCW-5	CB0698A1505	6/18/98	Magnesium	3.88	mg/L	1
GLCW-5	CB0698A1505	6/18/98	Calcium	9.32	mg/L	1
GLCW-5	CB0698A1505	6/18/98	UV Absorbance @285 nm	0	absorbance/cm	0.001
GLCW-5	CB0698A1505	6/18/98	Hardness	39	mg/L as CaCO3	1
GLCW-5	CB0698A1505	6/18/98	Captan	0	µg/L	0.02
GLCW-5	CB0698A1505	6/18/98	Solids	41.99	mg/L	1.666667

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-1-1	CB0698A1235		Cadmium (Cd)	0	µg/L	200
GLC-1-1	CB0698A1235		Moisture Content	30	%	0.1
GLC-1-1	CB0698A1235		Mercury (Hg)	0	mg/L	0.02
GLC-1-1	CB0698A1235		Mercury (Hg)	0	mg/L	0.0002
GLC-1-1	CB0698A1235		Mercury (Hg)	0	mg/Kg	0.1
GLC-1-1	CB0698A1235		Lead (Pb)	0	µg/L	200
GLC-1-1	CB0698A1235		Lead (Pb)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Lead (Pb)	5.3	mg/Kg	0.1
GLC-1-1	CB0698A1235		Copper (Cu)	0	µg/L	200
GLC-1-1	CB0698A1235		Copper (Cu)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Copper (Cu)	17	mg/Kg	0.4
GLC-1-1	CB0698A1235		Chromium (Cr)	20	mg/Kg	1
GLC-1-1	CB0698A1235		Percent Clay	29	%	
GLC-1-1	CB0698A1235		Chromium (Cr)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Nickel (Ni)	0.55	mg/L	0.2
GLC-1-1	CB0698A1235		Cadmium (Cd)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Cadmium (Cd)	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		Bromide (Br)	0	mg/L	1
GLC-1-1	CB0698A1235		Tributyltin	0	µg/Kg	1
GLC-1-1	CB0698A1235		Tetrabutyltin	0	µg/Kg	1
GLC-1-1	CB0698A1235		Monobutyltin	0	µg/Kg	1
GLC-1-1	CB0698A1235		Dibutyltin	0	µg/Kg	1
GLC-1-1	CB0698A1941	6/15/98	Selenium	0	mg/L	0.001
GLC-1-1	CB0698A1941	6/15/98	Mercury	0.0009	mg/L	0.0002
GLC-1-1	CB0698A1941	6/15/98	Thallium	0.004	mg/L	0.001
GLC-1-1	CB0698A1941	6/15/98	Chromium	0.537	mg/L	0.005
GLC-1-1	CB0698A1941	6/15/98	Silver	0.009	mg/L	0.001
GLC-1-1	CB0698A1235		Chromium (Cr)	0.2	mg/L	0.2
GLC-1-1	CB0698A1235		Thallium (Tl)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Percent Silt	44	%	
GLC-1-1	CB0698A1235		Percent Sand	27	%	
GLC-1-1	CB0698A1235		Percent Gravel	0	%	
GLC-1-1	CB0698A1235		Beryllium (Be)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Beryllium (Be)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Beryllium (Be)	0	mg/Kg	1
GLC-1-1	CB0698A1235		Arsenic (As)	220	µg/L	20
GLC-1-1	CB0698A1235		Arsenic (As)	0	mg/L	0.002
GLC-1-1	CB0698A1235		Arsenic (As)	3.2	mg/Kg	0.4
GLC-1-1	CB0698A1235		Zinc (Zn)	210	µg/L	200

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-1-1	CB0698A1235		Zinc (Zn)	0	mg/L	0.01
GLC-1-1	CB0698A1235		Zinc (Zn)	36	mg/Kg	1
GLC-1-1	CB0698A1235		Nickel (Ni)	24	mg/Kg	0.5
GLC-1-1	CB0698A1235		Thallium (Tl)	0	mg/L	0.5
GLC-1-1	CB0698A1235		Nickel (Ni)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Thallium (Tl)	0	mg/Kg	1
GLC-1-1	CB0698A1235		Specific Conductivity (EC)	220	µmho/cm	1
GLC-1-1	CB0698A1235		Solids (TVDS)	12	mg/L	10
GLC-1-1	CB0698A1235		Silver (Ag)	0	µg/L	50
GLC-1-1	CB0698A1235		Silver (Ag)	0	mg/L	0.005
GLC-1-1	CB0698A1235		Silver (Ag)	0	mg/Kg	0.1
GLC-1-1	CB0698A1235		Selenium (Se)	0	mg/Kg	0.4
GLC-1-1	CB0698A1235		Selenium (Se)	0	µg/L	20
GLC-1-1	CB0698A1235		Selenium (Se)	0	mg/L	0.002
GLC-1-1	CB0698A1235		pH	7.9	STD	
GLC-1-1	CB0698A1235		Organic Matter	3800	mg/Kg	5
GLC-1-1	CB0698A1941	6/15/98	Arsenic	0.052	mg/L	0.001
GLC-1-1	CB0698A1235		Total Dissolved Solids (TDS)	94	mg/L	10
GLC-1-1	CB0698A1235		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-1-1	CB0698A1941	6/15/98	Nickel	0.824	mg/L	0.001
GLC-1-1	CB0698A1235		BHC-delta	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		BHC-beta	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		BHC-alpha	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Aldrin	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Diethyl Phthalate	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Pyrene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Chlordane	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		Napthalene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Dieldrin	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Flourene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Flouranthene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Chrysene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Benzo(ghi)perylene	0	mg/Kg	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-1-1	CB0698A1235		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Gasoline	0	mg/Kg	1
GLC-1-1	CB0698A1235		Diesel	0	mg/Kg	2
GLC-1-1	CB0698A1235		Oil & Grease	0	mg/Kg	20
GLC-1-1	CB0698A1235		Oil & Grease	0	mg/Kg	20
GLC-1-1	CB0698A1235		Phenanthrene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Arochlor 1016	0	mg/Kg	0.5
GLC-1-1	CB0698A1941	6/15/98	Beryllium	0.01	mg/L	0.001
GLC-1-1	CB0698A1941	6/15/98	Cadmium	0.003	mg/L	0.001
GLC-1-1	CB0698A1941	6/15/98	Zinc	1.29	mg/L	0.005
GLC-1-1	CB0698A1941	6/15/98	Lead	0.141	mg/L	0.001
GLC-1-1	CB0698A1235		Benz(a)anthracene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Anthracene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Acenapthyhlene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Acenapthene	0	mg/Kg	0.02
GLC-1-1	CB0698A1235		Arochlor 1260	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		Arochlor 1254	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		Arochlor 1248	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		Arochlor 1242	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Arochlor 1221	0	mg/Kg	0.5
GLC-1-1	CB0698A1941	6/15/98	Copper	0.671	mg/L	0.001
GLC-1-1	CB0698A1235		Toxaphene	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		p,p'-DDT	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		p,p'-DDE	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		p,p'-DDD	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Methoxychlor	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Heptachlor epoxide	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Heptachlor	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Endrin aldehyde	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Endrin	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Endosulfan-II	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Endosulfan-I	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Endosulfan sulfate	0	mg/Kg	0.05
GLC-1-1	CB0698A1235		Arochlor 1232	0	mg/Kg	0.5
GLC-1-1	CB0698A1235		Neutralization potential	8	Kg/MT	-1000
GLC-1-1	CB0698A1235		pH	6.9		0

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-1-2	CB0698A1236		Beryllium (Be)	0	mg/L	0.005
GLC-1-2	CB0698A1942	6/15/98	Beryllium	0.011	mg/L	0.001
GLC-1-2	CB0698A1942	6/15/98	Copper	0.584	mg/L	0.001
GLC-1-2	CB0698A1942	6/15/98	Zinc	1.34	mg/L	0.005
GLC-1-2	CB0698A1942	6/15/98	Cadmium	0.002	mg/L	0.001
GLC-1-2	CB0698A1942	6/15/98	Arsenic	0.047	mg/L	0.001
GLC-1-2	CB0698A1942	6/15/98	Chromium	0.527	mg/L	0.005
GLC-1-2	CB0698A1236		p,p'-DDE	0	mg/Kg	0.05
GLC-1-2	CB0698A1942	6/15/98	Selenium	0	mg/L	0.001
GLC-1-2	CB0698A1942	6/15/98	Silver	0.002	mg/L	0.001
GLC-1-2	CB0698A1236		Neutralization potential acidity ratio	23		-10
GLC-1-2	CB0698A1236		Dibutyltin	0	µg/Kg	1
GLC-1-2	CB0698A1236		Acid volatile sulfide	0.73	mg/Kg	0.1
GLC-1-2	CB0698A1236		Monobutyltin	0	µg/Kg	1
GLC-1-2	CB0698A1236		Tetrabutyltin	0	µg/Kg	1
GLC-1-2	CB0698A1236		Tributyltin	0	µg/Kg	1
GLC-1-2	CB0698A1942	6/15/98	Mercury	0.0009	mg/L	0.0002
GLC-1-2	CB0698A1236		Arochlor 1254	0	mg/Kg	0.5
GLC-1-2	CB0698A1236		Oil & Grease	0	mg/Kg	20
GLC-1-2	CB0698A1236		p,p'-DDT	0	mg/Kg	0.05
GLC-1-2	CB0698A1236		Dieldrin	0	mg/Kg	0.05
GLC-1-2	CB0698A1236		Arochlor 1016	0	mg/Kg	0.5
GLC-1-2	CB0698A1236		Arochlor 1221	0	mg/Kg	0.5
GLC-1-2	CB0698A1236		Arochlor 1232	0	mg/Kg	0.5
GLC-1-2	CB0698A1942	6/15/98	Lead	0.148	mg/L	0.001
GLC-1-2	CB0698A1236		Arochlor 1248	0	mg/Kg	0.5
GLC-1-2	CB0698A1942	6/15/98	Nickel	1	mg/L	0.001
GLC-1-2	CB0698A1236		Arochlor 1260	0	mg/Kg	0.5
GLC-1-2	CB0698A1236		Acenapthene	0	mg/Kg	0.02
GLC-1-2	CB0698A1236		Acenapthyhlene	0	mg/Kg	0.02
GLC-1-2	CB0698A1236		Anthracene	0	mg/Kg	0.02
GLC-1-2	CB0698A1236		Benz(a)anthracene	0	mg/Kg	0.02
GLC-1-2	CB0698A1942	6/15/98	Thallium	0.003	mg/L	0.001
GLC-1-2	CB0698A1236		p,p'-DDD	0	mg/Kg	0.05
GLC-1-2	CB0698A1236		Arochlor 1242	0	mg/Kg	0.5
GLC-1-2	CB0698A1236		Percent Sand	37	%	
GLC-1-2	CB0698A1236		Zinc (Zn)	0	µg/L	200
GLC-1-2	CB0698A1236		Maximum potential acidity	1	Kg/MT	1
GLC-1-2	CB0698A1236		Neutralization potential	23	Kg/MT	-1000

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-1-2	CB0698A1236		Net neutralization potential	22	Kg/MT	-2000
GLC-1-2	CB0698A1236		Selenium (Se)	0	mg/L	0.002
GLC-1-2	CB0698A1236		Selenium (Se)	0	µg/L	20
GLC-1-2	CB0698A1236		Selenium (Se)	0	mg/Kg	0.4
GLC-1-2	CB0698A1236		Silver (Ag)	0	mg/Kg	0.1
GLC-1-2	CB0698A1236		pH	8.4		0
GLC-1-2	CB0698A1236		Percent Silt	42	%	
GLC-1-2	CB0698A1236		Arsenic (As)	3	mg/Kg	0.4
GLC-1-2	CB0698A1236		Percent Gravel	0	%	
GLC-1-2	CB0698A1236		Silver (Ag)	0	µg/L	50
GLC-1-2	CB0698A1236		Specific Conductivity (EC)	170	µmho/cm	1
GLC-1-2	CB0698A1236		Thallium (Tl)	0	mg/Kg	1
GLC-1-2	CB0698A1236		Thallium (Tl)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Thallium (Tl)	0	mg/L	0.5
GLC-1-2	CB0698A1236		Total Dissolved Solids (TDS)	54	mg/L	10
GLC-1-2	CB0698A1236		Zinc (Zn)	28	mg/Kg	1
GLC-1-2	CB0698A1236		Zinc (Zn)	0	mg/L	0.01
GLC-1-2	CB0698A1236		Percent Clay	21	%	
GLC-1-2	CB0698A1236		Moisture Content	20	%	0.1
GLC-1-2	CB0698A1236		Endosulfan-I	0	mg/Kg	0.05
GLC-1-2	CB0698A1236		Copper (Cu)	10	mg/Kg	0.4
GLC-1-2	CB0698A1236		Copper (Cu)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Copper (Cu)	250	µg/L	200
GLC-1-2	CB0698A1236		Lead (Pb)	3.5	mg/Kg	0.1
GLC-1-2	CB0698A1236		Lead (Pb)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Lead (Pb)	0	µg/L	200
GLC-1-2	CB0698A1236		Mercury (Hg)	0	mg/Kg	0.1
GLC-1-2	CB0698A1236		Percent Sulfide	0		0.01
GLC-1-2	CB0698A1236		Mercury (Hg)	0	mg/L	0.02
GLC-1-2	CB0698A1236		Solids (TVDS)	0	mg/L	10
GLC-1-2	CB0698A1236		Nickel (Ni)	22	mg/Kg	0.5
GLC-1-2	CB0698A1236		Nickel (Ni)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Nickel (Ni)	0	mg/L	0.2
GLC-1-2	CB0698A1236		Organic Matter	380	mg/Kg	5
GLC-1-2	CB0698A1236		pH	8.2	STD	
GLC-1-2	CB0698A1236		Beryllium (Be)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Beryllium (Be)	0	mg/Kg	1
GLC-1-2	CB0698A1236		Arsenic (As)	69	µg/L	20
GLC-1-2	CB0698A1236		Arsenic (As)	0.006	mg/L	0.002

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-1-2	CB0698A1236		Mercury (Hg)	0	mg/L	0.0002
GLC-1-2	CB0698A1236		Chromium (Cr)	15	mg/Kg	1
GLC-1-2	CB0698A1236		Bromide (Br)	0	mg/L	1
GLC-1-2	CB0698A1236		Cadmium (Cd)	0	mg/Kg	0.5
GLC-1-2	CB0698A1236		Cadmium (Cd)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Cadmium (Cd)	0	µg/L	200
GLC-1-2	CB0698A1236		Chromium (Cr)	0.007	mg/L	0.005
GLC-1-2	CB0698A1236		Silver (Ag)	0	mg/L	0.005
GLC-1-2	CB0698A1236		Chromium (Cr)	0	mg/L	0.2
GLC-2-1	CB0698A1237		Acenapthene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		pH	8.1		0
GLC-2-1	CB0698A1237		Neutralization potential acidity ratio	5		-10
GLC-2-1	CB0698A1237		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Endosulfan-II	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Acid volatile sulfide	0	mg/Kg	0.1
GLC-2-1	CB0698A1237		Endosulfan-I	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Endosulfan sulfate	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Dieldrin	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Benz(a)anthracene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Tributyltin	0	µg/Kg	1
GLC-2-1	CB0698A1237		Tetrabutyltin	0	µg/Kg	1
GLC-2-1	CB0698A1237		Neutralization potential	5	Kg/MT	-1000
GLC-2-1	CB0698A1237		Dibutyltin	0	µg/Kg	1
GLC-2-1	CB0698A1237		Maximum potential acidity	1	Kg/MT	1
GLC-2-1	CB0698A1237		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Diethyl Phthalate	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Acenapthyhlene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Pyrene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Phenanthrene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Napthalene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Flourene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Flouranthene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Chrysene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Monobutyltin	0	µg/Kg	1
GLC-2-1	CB0698A1237		Arochlor 1016	0	mg/Kg	0.5

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-2-1	CB0698A1237		Heptachlor epoxide	0	mg/Kg	0.05
GLC-2-1	CB0698A1943	6/15/98	Arsenic	0.028	mg/L	0.001
GLC-2-1	CB0698A1237		Methoxychlor	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		p,p'-DDD	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		p,p'-DDE	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		p,p'-DDT	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		BHC-delta	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Toxaphene	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		BHC-beta	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		BHC-alpha	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Aldrin	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Net neutralization potential	4	Kg/MT	-2000
GLC-2-1	CB0698A1237		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Heptachlor	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Arochlor 1221	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		Arochlor 1232	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		Arochlor 1242	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		Arochlor 1248	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		Arochlor 1254	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		Arochlor 1260	0	mg/Kg	0.5
GLC-2-1	CB0698A1943	6/15/98	Mercury	0.0002	mg/L	0.0002
GLC-2-1	CB0698A1943	6/15/98	Selenium	0	mg/L	0.001
GLC-2-1	CB0698A1237		Chlordane	0	mg/Kg	0.5
GLC-2-1	CB0698A1237		Endrin aldehyde	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Endrin	0	mg/Kg	0.05
GLC-2-1	CB0698A1237		Percent Sulfide	0		0.01
GLC-2-1	CB0698A1237		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		pH	7.4	STD	
GLC-2-1	CB0698A1237		Oil & Grease	0	mg/Kg	20
GLC-2-1	CB0698A1943	6/15/98	Copper	0.076	mg/L	0.001
GLC-2-1	CB0698A1237		Lead (Pb)	2.3	mg/Kg	0.1
GLC-2-1	CB0698A1237		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Thallium (Tl)	0	mg/Kg	1
GLC-2-1	CB0698A1237		Lead (Pb)	0	µg/L	200
GLC-2-1	CB0698A1237		Thallium (Tl)	0	mg/L	0.5
GLC-2-1	CB0698A1237		Mercury (Hg)	0	mg/Kg	0.1
GLC-2-1	CB0698A1237		Zinc (Zn)	13	mg/Kg	1
GLC-2-1	CB0698A1237		Specific Conductivity (EC)	110	µmho/cm	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-2-1	CB0698A1237		Chromium (Cr)	6.5	mg/Kg	1
GLC-2-1	CB0698A1237		Chromium (Cr)	0	mg/L	0.2
GLC-2-1	CB0698A1237		Chromium (Cr)	0.027	mg/L	0.005
GLC-2-1	CB0698A1237		Oil & Grease	0	mg/Kg	20
GLC-2-1	CB0698A1237		Thallium (Tl)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Organic Matter	400	mg/Kg	5
GLC-2-1	CB0698A1237		Selenium (Se)	0	mg/L	0.002
GLC-2-1	CB0698A1237		Selenium (Se)	0	µg/L	20
GLC-2-1	CB0698A1237		Selenium (Se)	0	mg/Kg	0.4
GLC-2-1	CB0698A1237		Silver (Ag)	0	mg/Kg	0.1
GLC-2-1	CB0698A1237		Silver (Ag)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Lead (Pb)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Solids (TVDS)	0	mg/L	10
GLC-2-1	CB0698A1237		Copper (Cu)	2.6	mg/Kg	0.4
GLC-2-1	CB0698A1237		Nickel (Ni)	0	mg/L	0.2
GLC-2-1	CB0698A1237		Nickel (Ni)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Nickel (Ni)	9	mg/Kg	0.5
GLC-2-1	CB0698A1237		Moisture Content	16	%	0.1
GLC-2-1	CB0698A1237		Mercury (Hg)	0	mg/L	0.02
GLC-2-1	CB0698A1237		Mercury (Hg)	0	mg/L	0.0002
GLC-2-1	CB0698A1237		Silver (Ag)	0	µg/L	50
GLC-2-1	CB0698A1943	6/15/98	Nickel	0.268	mg/L	0.001
GLC-2-1	CB0698A1237		Percent Silt	1	%	
GLC-2-1	CB0698A1237		Percent Clay	2	%	
GLC-2-1	CB0698A1237		Zinc (Zn)	0	µg/L	200
GLC-2-1	CB0698A1943	6/15/98	Chromium	0.21	mg/L	0.005
GLC-2-1	CB0698A1237		Diesel	0	mg/Kg	2
GLC-2-1	CB0698A1237		Percent Sand	97	%	
GLC-2-1	CB0698A1237		Total Dissolved Solids (TDS)	34	mg/L	10
GLC-2-1	CB0698A1237		Copper (Cu)	0	mg/L	0.005
GLC-2-1	CB0698A1943	6/15/98	Silver	0	mg/L	0.001
GLC-2-1	CB0698A1943	6/15/98	Thallium	0	mg/L	0.001
GLC-2-1	CB0698A1943	6/15/98	Zinc	0.555	mg/L	0.005
GLC-2-1	CB0698A1943	6/15/98	Beryllium	0.004	mg/L	0.001
GLC-2-1	CB0698A1237		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-2-1	CB0698A1943	6/15/98	Cadmium	0	mg/L	0.001
GLC-2-1	CB0698A1237		Beryllium (Be)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Gasoline	0	mg/Kg	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-2-1	CB0698A1237		Zinc (Zn)	0	mg/L	0.01
GLC-2-1	CB0698A1237		Cadmium (Cd)	0	µg/L	200
GLC-2-1	CB0698A1237		Cadmium (Cd)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Cadmium (Cd)	0	mg/Kg	0.5
GLC-2-1	CB0698A1943	6/15/98	Lead	0.076	mg/L	0.001
GLC-2-1	CB0698A1237		Bromide (Br)	0	mg/L	1
GLC-2-1	CB0698A1237		Percent Gravel	0	%	
GLC-2-1	CB0698A1237		Arsenic (As)	0	mg/L	0.002
GLC-2-1	CB0698A1237		Anthracene	0	mg/Kg	0.02
GLC-2-1	CB0698A1237		Arsenic (As)	1.1	mg/Kg	0.4
GLC-2-1	CB0698A1237		Arsenic (As)	68	µg/L	20
GLC-2-1	CB0698A1237		Beryllium (Be)	0	mg/Kg	1
GLC-2-1	CB0698A1237		Beryllium (Be)	0	mg/L	0.005
GLC-2-1	CB0698A1237		Copper (Cu)	0	µg/L	200
2-1 (DUP)	CB0698A1957		Nickel	0.295	mg/L	0.001
2-1 (DUP)	CB0698A1957		Copper	0.074	mg/L	0.001
2-1 (DUP)	CB0698A1957		Zinc	0.442	mg/L	0.005
2-1 (DUP)	CB0698A1957		Lead	0.049	mg/L	0.001
2-1 (DUP)	CB0698A1957		Chromium	0.155	mg/L	0.005
2-1 (DUP)	CB0698A1957		Silver	0	mg/L	0.001
2-1 (DUP)	CB0698A1957		Beryllium	0.004	mg/L	0.001
2-1 (DUP)	CB0698A1957		Arsenic	0.032	mg/L	0.001
2-1 (DUP)	CB0698A1957		Cadmium	0	mg/L	0.001
2-1 (DUP)	CB0698A1957		Thallium	0	mg/L	0.001
2-1 (DUP)	CB0698A1957		Mercury	0.0004	mg/L	0.0002
2-1 (DUP)	CB0698A1957		Selenium	0	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Selenium	0	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Mercury	0.0008	mg/L	0.0002
GLC-2-2	CB0698A1944	6/15/98	Zinc	1.39	mg/L	0.005
GLC-2-2	CB0698A1944	6/15/98	Arsenic	0.054	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Silver	0.003	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Thallium	0.004	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Nickel	0.825	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Lead	0.148	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Copper	0.616	mg/L	0.001
GLC-2-2	CB0698A1944	6/15/98	Chromium	0.583	mg/L	0.005
GLC-2-2	CB0698A1944	6/15/98	Cadmium	0.003	mg/L	0.001
GLC-2-2	CB0698A1238		Arsenic (As)	180	µg/L	20
GLC-2-2	CB0698A1944	6/15/98	Beryllium	0.01	mg/L	0.001

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-2-2	CB0698A1238		Chromium (Cr)	19	mg/Kg	1
GLC-2-2	CB0698A1238		Beryllium (Be)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Nickel (Ni)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Nickel (Ni)	21	mg/Kg	0.5
GLC-2-2	CB0698A1238		Moisture Content	27	%	0.1
GLC-2-2	CB0698A1238		Mercury (Hg)	0	mg/L	0.02
GLC-2-2	CB0698A1238		Mercury (Hg)	0	mg/L	0.0002
GLC-2-2	CB0698A1238		Mercury (Hg)	0	mg/Kg	0.1
GLC-2-2	CB0698A1238		Lead (Pb)	0	µg/L	200
GLC-2-2	CB0698A1238		Lead (Pb)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Lead (Pb)	4.7	mg/Kg	0.1
GLC-2-2	CB0698A1238		Copper (Cu)	0	µg/L	200
GLC-2-2	CB0698A1238		Organic Matter	3600	mg/Kg	5
GLC-2-2	CB0698A1238		Copper (Cu)	15	mg/Kg	0.4
GLC-2-2	CB0698A1238		pH	7.1	STD	
GLC-2-2	CB0698A1238		Chromium (Cr)	0.27	mg/L	0.2
GLC-2-2	CB0698A1238		Chromium (Cr)	0.006	mg/L	0.005
GLC-2-2	CB0698A1238		Cadmium (Cd)	0	µg/L	200
GLC-2-2	CB0698A1238		Cadmium (Cd)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Cadmium (Cd)	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Bromide (Br)	0	mg/L	1
GLC-2-2	CB0698A1238		Beryllium (Be)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Beryllium (Be)	0	mg/Kg	1
GLC-2-2	CB0698A1238		Dieldrin	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Arsenic (As)	0.004	mg/L	0.002
GLC-2-2	CB0698A1238		Arsenic (As)	5.1	mg/Kg	0.4
GLC-2-2	CB0698A1238		Copper (Cu)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Total Dissolved Solids (TDS)	100	mg/L	10
GLC-2-2	CB0698A1238		Monobutyltin	0	µg/Kg	1
GLC-2-2	CB0698A1238		Tetrabutyltin	0	µg/Kg	1
GLC-2-2	CB0698A1238		Tributyltin	0	µg/Kg	1
GLC-2-2	CB0698A1238		Acid volatile sulfide	2.2	mg/Kg	0.1
GLC-2-2	CB0698A1238		Neutralization potential acidity ratio	2.67		-10
GLC-2-2	CB0698A1238		Net neutralization potential	5	Kg/MT	-2000
GLC-2-2	CB0698A1238		Neutralization potential	8	Kg/MT	-1000
GLC-2-2	CB0698A1238		Maximum potential acidity	3	Kg/MT	1
GLC-2-2	CB0698A1238		Percent Sulfide	0.09		0.01
GLC-2-2	CB0698A1238		pH	6.7		0
GLC-2-2	CB0698A1238		Zinc (Zn)	0	µg/L	200

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-2-2	CB0698A1238		Nickel (Ni)	0.53	mg/L	0.2
GLC-2-2	CB0698A1238		Zinc (Zn)	34	mg/Kg	1
GLC-2-2	CB0698A1238		Dibutyltin	0	µg/Kg	1
GLC-2-2	CB0698A1238		Thallium (Tl)	0	mg/L	0.5
GLC-2-2	CB0698A1238		Thallium (Tl)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Thallium (Tl)	0	mg/Kg	1
GLC-2-2	CB0698A1238		Specific Conductivity (EC)	190	µmho/cm	1
GLC-2-2	CB0698A1238		Solids (TVDS)	0	mg/L	10
GLC-2-2	CB0698A1238		Silver (Ag)	0	µg/L	50
GLC-2-2	CB0698A1238		Silver (Ag)	0	mg/L	0.005
GLC-2-2	CB0698A1238		Silver (Ag)	0	mg/Kg	0.1
GLC-2-2	CB0698A1238		Selenium (Se)	0	mg/Kg	0.4
GLC-2-2	CB0698A1238		Selenium (Se)	0	µg/L	20
GLC-2-2	CB0698A1238		Selenium (Se)	0	mg/L	0.002
GLC-2-2	CB0698A1238		Zinc (Zn)	0	mg/L	0.01
GLC-2-2	CB0698A1238		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		p,p'-DDD	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Diesel	0	mg/Kg	2
GLC-2-2	CB0698A1238		Gasoline	0	mg/Kg	1
GLC-2-2	CB0698A1238		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Aldrin	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		BHC-alpha	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		BHC-delta	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Chlordane	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Endosulfan sulfate	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Endosulfan-II	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Endrin	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Endrin aldehyde	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Heptachlor	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Heptachlor epoxide	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		BHC-beta	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Flouranthene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Oil & Grease	0	mg/Kg	20
GLC-2-2	CB0698A1238		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Diethyl Phthalate	0	mg/Kg	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-2-2	CB0698A1238		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Pyrene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Phenanthrene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Napthalene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Oil & Grease	0	mg/Kg	20
GLC-2-2	CB0698A1238		Flourene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		p,p'-DDE	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Percent Gravel	0	%	
GLC-2-2	CB0698A1238		Percent Sand	45	%	
GLC-2-2	CB0698A1238		Percent Silt	40	%	
GLC-2-2	CB0698A1238		Percent Clay	15	%	
GLC-2-2	CB0698A1238		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Chrysene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Anthracene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Methoxychlor	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		p,p'-DDT	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Benz(a)anthracene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Acenapthyhlene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Acenapthene	0	mg/Kg	0.02
GLC-2-2	CB0698A1238		Arochlor 1260	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Arochlor 1254	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Arochlor 1242	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Arochlor 1232	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Arochlor 1221	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Arochlor 1016	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Arochlor 1248	0	mg/Kg	0.5
GLC-2-2	CB0698A1238		Endosulfan-I	0	mg/Kg	0.05
GLC-2-2	CB0698A1238		Toxaphene	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		p,p'-DDD	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Arochlor 1248	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Arochlor 1242	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Arochlor 1232	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Arochlor 1221	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Endrin	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Arochlor 1016	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Toxaphene	0	mg/Kg	0.5

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-1	CB0698A1239		p,p'-DDE	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Methoxychlor	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Arochlor 1254	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Maximum potential acidity	1	Kg/MT	1
GLC-3-1	CB0698A1239		Heptachlor	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		p,p'-DDT	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Arochlor 1260	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Acenapthene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Acenapthyhlene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Anthracene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Benz(a)anthracene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Percent Sulfide	0		0.01
GLC-3-1	CB0698A1239		Neutralization potential	8	Kg/MT	-1000
GLC-3-1	CB0698A1239		Oil & Grease	0	mg/Kg	20
GLC-3-1	CB0698A1239		Net neutralization potential	7	Kg/MT	-2000
GLC-3-1	CB0698A1239		Neutralization potential acidity ratio	8		-10
GLC-3-1	CB0698A1239		Gasoline	0	mg/Kg	1
GLC-3-1	CB0698A1239		Diesel	0	mg/Kg	2
GLC-3-1	CB0698A1239		Oil & Grease	0	mg/Kg	20
GLC-3-1	CB0698A1239		Percent Clay	14	%	
GLC-3-1	CB0698A1239		pH	7.6		0
GLC-3-1	CB0698A1239		Chromium (Cr)	0.021	mg/L	0.005
GLC-3-1	CB0698A1239		Percent Sand	56	%	
GLC-3-1	CB0698A1239		Mercury (Hg)	0	mg/L	0.0002
GLC-3-1	CB0698A1239		Mercury (Hg)	0	mg/Kg	0.1
GLC-3-1	CB0698A1239		Lead (Pb)	0	µg/L	200
GLC-3-1	CB0698A1239		Lead (Pb)	0	mg/L	0.005
GLC-3-1	CB0698A1239		Lead (Pb)	4	mg/Kg	0.1
GLC-3-1	CB0698A1239		Copper (Cu)	270	µg/L	200
GLC-3-1	CB0698A1239		Copper (Cu)	0.018	mg/L	0.005
GLC-3-1	CB0698A1239		Copper (Cu)	11	mg/Kg	0.4
GLC-3-1	CB0698A1239		Moisture Content	20	%	0.1
GLC-3-1	CB0698A1239		Chromium (Cr)	0	mg/L	0.2
GLC-3-1	CB0698A1239		Nickel (Ni)	18	mg/Kg	0.5
GLC-3-1	CB0698A1239		Cadmium (Cd)	0	µg/L	200
GLC-3-1	CB0698A1239		Cadmium (Cd)	0	mg/L	0.005
GLC-3-1	CB0698A1239		Cadmium (Cd)	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Bromide (Br)	0	mg/L	1
GLC-3-1	CB0698A1239		Beryllium (Be)	0	mg/L	0.005

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-1	CB0698A1239		Beryllium (Be)	0	mg/L	0.005
GLC-3-1	CB0698A1239		Beryllium (Be)	0	mg/Kg	1
GLC-3-1	CB0698A1239		Arsenic (As)	160	µg/L	20
GLC-3-1	CB0698A1239		Arsenic (As)	0.017	mg/L	0.002
GLC-3-1	CB0698A1239		Arsenic (As)	2.8	mg/Kg	0.4
GLC-3-1	CB0698A1239		Chromium (Cr)	16	mg/Kg	1
GLC-3-1	CB0698A1239		Endrin aldehyde	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Zinc (Zn)	0.015	mg/L	0.01
GLC-3-1	CB0698A1239		Zinc (Zn)	30	mg/Kg	1
GLC-3-1	CB0698A1239		Total Dissolved Solids (TDS)	890	mg/L	10
GLC-3-1	CB0698A1239		Thallium (Tl)	0	mg/L	0.5
GLC-3-1	CB0698A1239		Thallium (Tl)	0	mg/L	0.005
GLC-3-1	CB0698A1239		Thallium (Tl)	0	mg/Kg	1
GLC-3-1	CB0698A1239		Specific Conductivity (EC)	200	µmho/cm	1
GLC-3-1	CB0698A1239		Solids (TVDS)	52	mg/L	10
GLC-3-1	CB0698A1239		Percent Gravel	0	%	
GLC-3-1	CB0698A1239		Mercury (Hg)	0	mg/L	0.02
GLC-3-1	CB0698A1239		Percent Silt	30	%	
GLC-3-1	CB0698A1239		Zinc (Zn)	0	µg/L	200
GLC-3-1	CB0698A1239		Silver (Ag)	0	µg/L	50
GLC-3-1	CB0698A1239		Silver (Ag)	0	mg/L	0.005
GLC-3-1	CB0698A1239		Silver (Ag)	0	mg/Kg	0.1
GLC-3-1	CB0698A1239		Selenium (Se)	0	mg/Kg	0.4
GLC-3-1	CB0698A1239		Selenium (Se)	0	µg/L	20
GLC-3-1	CB0698A1239		Selenium (Se)	0	mg/L	0.002
GLC-3-1	CB0698A1239		pH	7.5	STD	
GLC-3-1	CB0698A1239		Organic Matter	620	mg/Kg	5
GLC-3-1	CB0698A1239		Nickel (Ni)	0.23	mg/L	0.2
GLC-3-1	CB0698A1239		Nickel (Ni)	0.02	mg/L	0.005
GLC-3-1	CB0698A1239		Endosulfan-II	0	mg/Kg	0.05
GLC-3-1	CB0698A1945	6/15/98	Silver	0	mg/L	0.001
GLC-3-1	CB0698A1239		Phenanthrene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Napthalene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Flourene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Benzo(b)flouranthene	0	mg/Kg	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-1	CB0698A1239		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-3-1	CB0698A1945	6/15/98	Copper	0.063	mg/L	0.001
GLC-3-1	CB0698A1239		Dibutyltin	0	µg/Kg	1
GLC-3-1	CB0698A1945	6/15/98	Thallium	0	mg/L	0.001
GLC-3-1	CB0698A1239		Flouranthene	0	mg/Kg	0.02
GLC-3-1	CB0698A1945	6/15/98	Lead	0.036	mg/L	0.001
GLC-3-1	CB0698A1945	6/15/98	Chromium	0.164	mg/L	0.005
GLC-3-1	CB0698A1945	6/15/98	Cadmium	0	mg/L	0.001
GLC-3-1	CB0698A1945	6/15/98	Beryllium	0.003	mg/L	0.001
GLC-3-1	CB0698A1945	6/15/98	Arsenic	0.027	mg/L	0.001
GLC-3-1	CB0698A1945	6/15/98	Nickel	0.197	mg/L	0.001
GLC-3-1	CB0698A1945	6/15/98	Mercury	0	mg/L	0.0002
GLC-3-1	CB0698A1945	6/15/98	Selenium	0	mg/L	0.001
GLC-3-1	CB0698A1239		Endosulfan-I	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Heptachlor epoxide	0	mg/Kg	0.05
GLC-3-1	CB0698A1945	6/15/98	Zinc	0.288	mg/L	0.005
GLC-3-1	CB0698A1239		Aldrin	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Monobutyltin	0	µg/Kg	1
GLC-3-1	CB0698A1239		Acid volatile sulfide	0	mg/Kg	0.1
GLC-3-1	CB0698A1239		Chrysene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Pyrene	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Diethyl Phthalate	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		BHC-alpha	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		BHC-beta	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		BHC-delta	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Chlordane	0	mg/Kg	0.5
GLC-3-1	CB0698A1239		Dieldrin	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Endosulfan sulfate	0	mg/Kg	0.05
GLC-3-1	CB0698A1239		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-3-1	CB0698A1239		Tributyltin	0	µg/Kg	1
GLC-3-1	CB0698A1239		Tetrabutyltin	0	µg/Kg	1
GLC-3-2	CB0698A1946	6/15/98	Nickel	1.3	mg/L	0.001
GLC-3-2	CB0698A1240		Methoxychlor	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		p,p'-DDD	0	mg/Kg	0.05

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-2	CB0698A1240		Heptachlor epoxide	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Dieldrin	0	mg/Kg	0.05
GLC-3-2	CB0698A1946	6/15/98	Arsenic	0.009	mg/L	0.001
GLC-3-2	CB0698A1946	6/15/98	Zinc	2	mg/L	0.005
GLC-3-2	CB0698A1240		p,p'-DDT	0	mg/Kg	0.05
GLC-3-2	CB0698A1946	6/15/98	Silver	0.003	mg/L	0.001
GLC-3-2	CB0698A1240		Toxaphene	0	mg/Kg	0.5
GLC-3-2	CB0698A1946	6/15/98	Lead	0.222	mg/L	0.001
GLC-3-2	CB0698A1946	6/15/98	Copper	0.963	mg/L	0.001
GLC-3-2	CB0698A1946	6/15/98	Chromium	0.774	mg/L	0.005
GLC-3-2	CB0698A1946	6/15/98	Beryllium	0.014	mg/L	0.001
GLC-3-2	CB0698A1946	6/15/98	Cadmium	0.006	mg/L	0.001
GLC-3-2	CB0698A1946	6/15/98	Mercury	0.0003	mg/L	0.0002
GLC-3-2	CB0698A1240		Arsenic (As)	1	mg/Kg	0.4
GLC-3-2	CB0698A1240		Arsenic (As)	0.006	mg/L	0.002
GLC-3-2	CB0698A1946	6/15/98	Thallium	0.003	mg/L	0.001
GLC-3-2	CB0698A1240		Endosulfan-II	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Endosulfan-I	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Arochlor 1254	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Arochlor 1260	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Acenapthene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Acenapthyhlene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Anthracene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Benz(a)anthracene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		p,p'-DDE	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Mercury (Hg)	0	mg/Kg	0.1
GLC-3-2	CB0698A1240		Arsenic (As)	59	µg/L	20
GLC-3-2	CB0698A1240		Endrin	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Endrin aldehyde	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Endosulfan sulfate	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Arochlor 1248	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Arochlor 1242	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Arochlor 1232	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Arochlor 1221	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Arochlor 1016	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		BHC-delta	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Gasoline	0	mg/Kg	1
GLC-3-2	CB0698A1240		Lead (Pb)	0	mg/L	0.005

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-2	CB0698A1240		Specific Conductivity (EC)	160	µmho/cm	1
GLC-3-2	CB0698A1240		Thallium (Tl)	0	mg/Kg	1
GLC-3-2	CB0698A1240		Thallium (Tl)	0	mg/L	0.005
GLC-3-2	CB0698A1240		Thallium (Tl)	0	mg/L	0.5
GLC-3-2	CB0698A1240		Total Dissolved Solids (TDS)	360	mg/L	10
GLC-3-2	CB0698A1240		Zinc (Zn)	38	mg/Kg	1
GLC-3-2	CB0698A1240		Zinc (Zn)	0	mg/L	0.01
GLC-3-2	CB0698A1240		Zinc (Zn)	0	µg/L	200
GLC-3-2	CB0698A1946	6/15/98	Selenium	0	mg/L	0.001
GLC-3-2	CB0698A1240		Oil & Grease	0	mg/Kg	20
GLC-3-2	CB0698A1240		Silver (Ag)	0	µg/L	50
GLC-3-2	CB0698A1240		Diesel	0	mg/Kg	2
GLC-3-2	CB0698A1240		Silver (Ag)	0	mg/L	0.005
GLC-3-2	CB0698A1240		Neutralization potential acidity ratio	8		-10
GLC-3-2	CB0698A1240		Net neutralization potential	7	Kg/MT	-2000
GLC-3-2	CB0698A1240		Neutralization potential	8	Kg/MT	-1000
GLC-3-2	CB0698A1240		Maximum potential acidity	1	Kg/MT	1
GLC-3-2	CB0698A1240		Percent Sulfide	0		0.01
GLC-3-2	CB0698A1240		pH	7.4		0
GLC-3-2	CB0698A1240		Dibutyltin	0	µg/Kg	1
GLC-3-2	CB0698A1240		Monobutyltin	0	µg/Kg	1
GLC-3-2	CB0698A1240		Tetrabutyltin	0	µg/Kg	1
GLC-3-2	CB0698A1240		Tributyltin	0	µg/Kg	1
GLC-3-2	CB0698A1240		Acid volatile sulfide	0	mg/Kg	0.1
GLC-3-2	CB0698A1240		Chlordane	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Oil & Grease	0	mg/Kg	20
GLC-3-2	CB0698A1240		Lead (Pb)	0	µg/L	200
GLC-3-2	CB0698A1240		Beryllium (Be)	0	mg/L	0.005
GLC-3-2	CB0698A1240		Beryllium (Be)	0	mg/L	0.005
GLC-3-2	CB0698A1240		Bromide (Br)	0	mg/L	1
GLC-3-2	CB0698A1240		Cadmium (Cd)	0	mg/Kg	0.5
GLC-3-2	CB0698A1240		Cadmium (Cd)	0	mg/L	0.005
GLC-3-2	CB0698A1240		Cadmium (Cd)	0	µg/L	200
GLC-3-2	CB0698A1240		Chromium (Cr)	0.006	mg/L	0.005
GLC-3-2	CB0698A1240		Chromium (Cr)	0.2	mg/L	0.2
GLC-3-2	CB0698A1240		Chromium (Cr)	22	mg/Kg	1
GLC-3-2	CB0698A1240		Copper (Cu)	16	mg/Kg	0.4
GLC-3-2	CB0698A1240		Copper (Cu)	0.014	mg/L	0.005
GLC-3-2	CB0698A1240		Solids (TVDS)	26	mg/L	10

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-2	CB0698A1240		Lead (Pb)	4.9	mg/Kg	0.1
GLC-3-2	CB0698A1240		Beryllium (Be)	0	mg/Kg	1
GLC-3-2	CB0698A1240		Mercury (Hg)	0	mg/L	0.0002
GLC-3-2	CB0698A1240		Mercury (Hg)	0	mg/L	0.02
GLC-3-2	CB0698A1240		Moisture Content	23	%	0.1
GLC-3-2	CB0698A1240		Nickel (Ni)	25	mg/Kg	0.5
GLC-3-2	CB0698A1240		Nickel (Ni)	0.006	mg/L	0.005
GLC-3-2	CB0698A1240		Nickel (Ni)	0.34	mg/L	0.2
GLC-3-2	CB0698A1240		Organic Matter	1000	mg/Kg	5
GLC-3-2	CB0698A1240		pH	8.1	STD	
GLC-3-2	CB0698A1240		Selenium (Se)	0	mg/L	0.002
GLC-3-2	CB0698A1240		Selenium (Se)	0	µg/L	20
GLC-3-2	CB0698A1240		Selenium (Se)	0	mg/Kg	0.4
GLC-3-2	CB0698A1240		Silver (Ag)	0	mg/Kg	0.1
GLC-3-2	CB0698A1240		Copper (Cu)	290	µg/L	200
GLC-3-2	CB0698A1240		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		BHC-alpha	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Aldrin	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Diethyl Phthalate	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		BHC-beta	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Phenanthrene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Napthalene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Flouranthene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Chrysene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Heptachlor	0	mg/Kg	0.05
GLC-3-2	CB0698A1240		Pyrene	0	mg/Kg	0.02
GLC-3-2	CB0698A1240		Percent Clay	31	%	
GLC-3-2	CB0698A1240		Percent Gravel	0	%	
GLC-3-2	CB0698A1240		Percent Sand	29	%	

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3-2	CB0698A1240		Percent Silt	40	%	
GLC-3-2	CB0698A1240		Flourene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Dieldrin	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Toxaphene	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1016	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1221	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1232	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1242	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1248	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1254	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arochlor 1260	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Acenapthene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Anthracene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Neutralization potential acidity ratio	10		-10
GLC-4-1	CB0698A1241		Benz(a)anthracene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Zinc (Zn)	0	µg/L	200
GLC-4-1	CB0698A1241		Zinc (Zn)	0	mg/L	0.01
GLC-4-1	CB0698A1241		Zinc (Zn)	44	mg/Kg	1
GLC-4-1	CB0698A1241		Total Dissolved Solids (TDS)	260	mg/L	10
GLC-4-1	CB0698A1241		Thallium (Tl)	0	mg/L	0.5
GLC-4-1	CB0698A1241		Thallium (Tl)	0	mg/L	0.005
GLC-4-1	CB0698A1241		Acenapthyhlene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Endrin	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Arsenic (As)	110	µg/L	20
GLC-4-1	CB0698A1241		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Arsenic (As)	2.3	mg/Kg	0.4
GLC-4-1	CB0698A1241		p,p'-DDD	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Methoxychlor	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Heptachlor epoxide	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Heptachlor	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Moisture Content	23	%	0.1
GLC-4-1	CB0698A1241		Endosulfan-I	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Endrin aldehyde	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Endosulfan sulfate	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Endosulfan-II	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Beryllium (Be)	0	mg/L	0.005
GLC-4-1	CB0698A1241		Beryllium (Be)	0	mg/L	0.005
GLC-4-1	CB0698A1241		Bromide (Br)	0	mg/L	1
GLC-4-1	CB0698A1241		p,p'-DDE	0	mg/Kg	0.05

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-4-1	CB0698A1241		p,p'-DDT	0	mg/Kg	0.05
GLC-4-1	CB0698A1947	6/15/98	Beryllium	0.013	mg/L	0.001
GLC-4-1	CB0698A1241		Net neutralization potential	9	Kg/MT	-2000
GLC-4-1	CB0698A1241		Thallium (Tl)	0	mg/Kg	1
GLC-4-1	CB0698A1947	6/15/98	Mercury	0.0003	mg/L	0.0002
GLC-4-1	CB0698A1241		Copper (Cu)	17	mg/Kg	0.4
GLC-4-1	CB0698A1241		Chromium (Cr)	22	mg/Kg	1
GLC-4-1	CB0698A1241		Chromium (Cr)	0	mg/L	0.2
GLC-4-1	CB0698A1241		Chromium (Cr)	0.007	mg/L	0.005
GLC-4-1	CB0698A1241		Cadmium (Cd)	0	µg/L	200
GLC-4-1	CB0698A1241		Cadmium (Cd)	0	mg/L	0.005
GLC-4-1	CB0698A1241		Cadmium (Cd)	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Nickel (Ni)	0.006	mg/L	0.005
GLC-4-1	CB0698A1947	6/15/98	Selenium	0	mg/L	0.001
GLC-4-1	CB0698A1241		Lead (Pb)	4.9	mg/Kg	0.1
GLC-4-1	CB0698A1947	6/15/98	Thallium	0.003	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Arsenic	0.108	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Silver	0.002	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Nickel	0.764	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Lead	0.292	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Copper	0.544	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Chromium	0.511	mg/L	0.005
GLC-4-1	CB0698A1947	6/15/98	Cadmium	0.002	mg/L	0.001
GLC-4-1	CB0698A1947	6/15/98	Zinc	1.33	mg/L	0.005
GLC-4-1	CB0698A1241		Chlordane	0	mg/Kg	0.5
GLC-4-1	CB0698A1241		Solids (TVDS)	0	mg/L	10
GLC-4-1	CB0698A1241		Silver (Ag)	0	µg/L	50
GLC-4-1	CB0698A1241		Silver (Ag)	0	mg/L	0.005
GLC-4-1	CB0698A1241		Silver (Ag)	0	mg/Kg	0.1
GLC-4-1	CB0698A1241		Selenium (Se)	0	mg/Kg	0.4
GLC-4-1	CB0698A1241		Selenium (Se)	0	µg/L	20
GLC-4-1	CB0698A1241		Selenium (Se)	0	mg/L	0.002
GLC-4-1	CB0698A1241		pH	8.4	STD	
GLC-4-1	CB0698A1241		Copper (Cu)	0.011	mg/L	0.005
GLC-4-1	CB0698A1241		Nickel (Ni)	0.2	mg/L	0.2
GLC-4-1	CB0698A1241		Copper (Cu)	340	µg/L	200
GLC-4-1	CB0698A1241		Nickel (Ni)	26	mg/Kg	0.5
GLC-4-1	CB0698A1241		Arsenic (As)	0.032	mg/L	0.002
GLC-4-1	CB0698A1241		Mercury (Hg)	0	mg/L	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-4-1	CB0698A1241		Mercury (Hg)	0	mg/L	0.0002
GLC-4-1	CB0698A1241		Mercury (Hg)	0	mg/Kg	0.1
GLC-4-1	CB0698A1241		Lead (Pb)	0	µg/L	200
GLC-4-1	CB0698A1241		Lead (Pb)	0	mg/L	0.005
GLC-4-1	CB0698A1241		Specific Conductivity (EC)	170	µmho/cm	1
GLC-4-1	CB0698A1241		Organic Matter	980	mg/Kg	5
GLC-4-1	CB0698A1241		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Acid volatile sulfide	0	mg/Kg	0.1
GLC-4-1	CB0698A1241		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Chrysene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Flouranthene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Flourene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Neutralization potential	10	Kg/MT	-1000
GLC-4-1	CB0698A1241		Pyrene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Diethyl Phthalate	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Aldrin	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		BHC-alpha	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		BHC-beta	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		BHC-delta	0	mg/Kg	0.05
GLC-4-1	CB0698A1241		Beryllium (Be)	0	mg/Kg	1
GLC-4-1	CB0698A1241		Napthalene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Diesel	0	mg/Kg	2
GLC-4-1	CB0698A1241		Phenanthrene	0	mg/Kg	0.02
GLC-4-1	CB0698A1241		Maximum potential acidity	1	Kg/MT	1
GLC-4-1	CB0698A1241		Percent Clay	24	%	
GLC-4-1	CB0698A1241		Percent Silt	43	%	
GLC-4-1	CB0698A1241		Percent Sand	33	%	
GLC-4-1	CB0698A1241		Percent Gravel	0	%	
GLC-4-1	CB0698A1241		Oil & Grease	0	mg/Kg	20
GLC-4-1	CB0698A1241		Gasoline	0	mg/Kg	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-4-1	CB0698A1241		Tributyltin	0	µg/Kg	1
GLC-4-1	CB0698A1241		Percent Sulfide	0.01		0.01
GLC-4-1	CB0698A1241		Oil & Grease	0	mg/Kg	20
GLC-4-1	CB0698A1241		pH	7.7		0
GLC-4-1	CB0698A1241		Tetrabutyltin	0	µg/Kg	1
GLC-4-1	CB0698A1241		Monobutyltin	0	µg/Kg	1
GLC-4-1	CB0698A1241		Dibutyltin	0	µg/Kg	1
GLC-4-2	CB0698A1242		Chromium (Cr)	0	mg/L	0.2
GLC-4-2	CB0698A1242		Beryllium (Be)	0	mg/L	0.005
GLC-4-2	CB0698A1242		Bromide (Br)	0	mg/L	1
GLC-4-2	CB0698A1242		Cadmium (Cd)	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Cadmium (Cd)	0	mg/L	0.005
GLC-4-2	CB0698A1242		Cadmium (Cd)	0	µg/L	200
GLC-4-2	CB0698A1242		Copper (Cu)	450	µg/L	200
GLC-4-2	CB0698A1242		Lead (Pb)	0	mg/L	0.005
GLC-4-2	CB0698A1242		Percent Clay	35	%	
GLC-4-2	CB0698A1242		Percent Sand	16	%	
GLC-4-2	CB0698A1242		Copper (Cu)	0.012	mg/L	0.005
GLC-4-2	CB0698A1242		Copper (Cu)	21	mg/Kg	0.4
GLC-4-2	CB0698A1242		Lead (Pb)	5.6	mg/Kg	0.1
GLC-4-2	CB0698A1242		Chromium (Cr)	27	mg/Kg	1
GLC-4-2	CB0698A1242		Beryllium (Be)	0	mg/L	0.005
GLC-4-2	CB0698A1242		Chromium (Cr)	0.006	mg/L	0.005
GLC-4-2	CB0698A1242		Percent Gravel	0	%	
GLC-4-2	CB0698A1242		Acid volatile sulfide	0	mg/Kg	0.1
GLC-4-2	CB0698A1242		Gasoline	0	mg/Kg	1
GLC-4-2	CB0698A1242		Diesel	0	mg/Kg	2
GLC-4-2	CB0698A1242		Oil & Grease	0	mg/Kg	20
GLC-4-2	CB0698A1242		Moisture Content	25	%	0.1
GLC-4-2	CB0698A1242		Phenanthrene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Lead (Pb)	0	µg/L	200
GLC-4-2	CB0698A1242		Beryllium (Be)	0	mg/Kg	1
GLC-4-2	CB0698A1242		Percent Silt	49	%	
GLC-4-2	CB0698A1242		Pyrene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Arsenic (As)	2.4	mg/Kg	0.4
GLC-4-2	CB0698A1242		Arsenic (As)	0.013	mg/L	0.002
GLC-4-2	CB0698A1242		Arsenic (As)	84	µg/L	20
GLC-4-2	CB0698A1242		Oil & Grease	0	mg/Kg	20

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-4-2	CB0698A1242		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Dieldrin	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Chlordane	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		BHC-delta	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		BHC-beta	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Mercury (Hg)	0	mg/L	0.0002
GLC-4-2	CB0698A1242		Aldrin	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Endosulfan-II	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Diethyl Phthalate	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		BHC-alpha	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		p,p'-DDD	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Arochlor 1248	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Arochlor 1242	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Arochlor 1232	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Arochlor 1221	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Arochlor 1016	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Toxaphene	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Endosulfan sulfate	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		p,p'-DDE	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Endosulfan-I	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Methoxychlor	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Heptachlor epoxide	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Heptachlor	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Endrin aldehyde	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Endrin	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Chrysene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		p,p'-DDT	0	mg/Kg	0.05
GLC-4-2	CB0698A1242		Neutralization potential acidity ratio	9		-10
GLC-4-2	CB0698A1242		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Selenium (Se)	0	µg/L	20
GLC-4-2	CB0698A1242		Selenium (Se)	0	mg/L	0.002
GLC-4-2	CB0698A1242		pH	8.5	STD	
GLC-4-2	CB0698A1242		Organic Matter	1100	mg/Kg	5

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-4-2	CB0698A1242		Nickel (Ni)	0.38	mg/L	0.2
GLC-4-2	CB0698A1242		Silver (Ag)	0	mg/Kg	0.1
GLC-4-2	CB0698A1242		Thallium (Tl)	0	mg/L	0.5
GLC-4-2	CB0698A1242		Silver (Ag)	0	mg/L	0.005
GLC-4-2	CB0698A1242		Net neutralization potential	8	Kg/MT	-2000
GLC-4-2	CB0698A1242		Neutralization potential	9	Kg/MT	-1000
GLC-4-2	CB0698A1242		Maximum potential acidity	1	Kg/MT	1
GLC-4-2	CB0698A1242		Nickel (Ni)	32	mg/Kg	0.5
GLC-4-2	CB0698A1242		Arochlor 1254	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Mercury (Hg)	0	mg/L	0.02
GLC-4-2	CB0698A1242		Nickel (Ni)	0.005	mg/L	0.005
GLC-4-2	CB0698A1242		Anthracene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Mercury (Hg)	0	mg/Kg	0.1
GLC-4-2	CB0698A1242		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Flouranthene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Flourene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Arochlor 1260	0	mg/Kg	0.5
GLC-4-2	CB0698A1242		Selenium (Se)	0	mg/Kg	0.4
GLC-4-2	CB0698A1242		Acenapthyhlene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Benz(a)anthracene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Thallium (Tl)	0	mg/L	0.005
GLC-4-2	CB0698A1242		Thallium (Tl)	0	mg/Kg	1
GLC-4-2	CB0698A1242		Specific Conductivity (EC)	210	µmho/cm	1
GLC-4-2	CB0698A1242		Solids (TVDS)	44	mg/L	10
GLC-4-2	CB0698A1242		Silver (Ag)	0	µg/L	50
GLC-4-2	CB0698A1242		Acenapthene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Monobutyltin	0	µg/Kg	1
GLC-4-2	CB0698A1242		Total Dissolved Solids (TDS)	170	mg/L	10
GLC-4-2	CB0698A1242		Dibutyltin	0	µg/Kg	1
GLC-4-2	CB0698A1948	6/15/98	Beryllium	0.017	mg/L	0.001
GLC-4-2	CB0698A1242		Napthalene	0	mg/Kg	0.02
GLC-4-2	CB0698A1242		Percent Sulfide	0.01		0.01
GLC-4-2	CB0698A1242		pH	7.4		0
GLC-4-2	CB0698A1242		Zinc (Zn)	0	mg/L	0.01
GLC-4-2	CB0698A1242		Zinc (Zn)	0	µg/L	200
GLC-4-2	CB0698A1242		Tetrabutyltin	0	µg/Kg	1
GLC-4-2	CB0698A1242		Zinc (Zn)	48	mg/Kg	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-4-2	CB0698A1948	6/15/98	Selenium	0	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Mercury	0.0004	mg/L	0.0002
GLC-4-2	CB0698A1948	6/15/98	Arsenic	0.036	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Zinc	1.8	mg/L	0.005
GLC-4-2	CB0698A1948	6/15/98	Thallium	0.004	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Silver	0.003	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Nickel	1.43	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Lead	0.214	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Copper	0.974	mg/L	0.001
GLC-4-2	CB0698A1948	6/15/98	Chromium	0.873	mg/L	0.005
GLC-4-2	CB0698A1948	6/15/98	Cadmium	0.002	mg/L	0.001
GLC-4-2	CB0698A1242		Tributyltin	0	µg/Kg	1
GLC-5-1	CB0698A1243		Beryllium (Be)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Beryllium (Be)	0	mg/Kg	1
GLC-5-1	CB0698A1243		Beryllium (Be)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Bromide (Br)	0	mg/L	1
GLC-5-1	CB0698A1243		Cadmium (Cd)	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Cadmium (Cd)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Cadmium (Cd)	0	µg/L	200
GLC-5-1	CB0698A1243		Chromium (Cr)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Chromium (Cr)	0	mg/L	0.2
GLC-5-1	CB0698A1243		Arochlor 1248	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Copper (Cu)	6.6	mg/Kg	0.4
GLC-5-1	CB0698A1243		Methoxychlor	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Chromium (Cr)	12	mg/Kg	1
GLC-5-1	CB0698A1243		Arochlor 1254	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Anthracene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Acenapthyhlene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Acenapthene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Arsenic (As)	1.2	mg/Kg	0.4
GLC-5-1	CB0698A1243		Arsenic (As)	0	mg/L	0.002
GLC-5-1	CB0698A1243		Arsenic (As)	70	µg/L	20
GLC-5-1	CB0698A1243		Oil & Grease	0	mg/Kg	20
GLC-5-1	CB0698A1243		Oil & Grease	0	mg/Kg	20
GLC-5-1	CB0698A1243		Diesel	0	mg/Kg	2
GLC-5-1	CB0698A1243		Nickel (Ni)	0.24	mg/L	0.2
GLC-5-1	CB0698A1243		Arochlor 1260	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Arochlor 1242	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Endrin	0	mg/Kg	0.05

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-5-1	CB0698A1243		Endrin aldehyde	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Heptachlor	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Heptachlor epoxide	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		p,p'-DDE	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Toxaphene	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Arochlor 1016	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Arochlor 1221	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Arochlor 1232	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		Gasoline	0	mg/Kg	1
GLC-5-1	CB0698A1243		Flourene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Diethyl Phthalate	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Pyrene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Phenanthrene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Copper (Cu)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		BHC-alpha	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Flouranthene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Chrysene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Nickel (Ni)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Napthalene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Endosulfan-II	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Copper (Cu)	200	µg/L	200
GLC-5-1	CB0698A1243		p,p'-DDD	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Lead (Pb)	2.4	mg/Kg	0.1
GLC-5-1	CB0698A1243		Lead (Pb)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Lead (Pb)	0	µg/L	200
GLC-5-1	CB0698A1243		Mercury (Hg)	0	mg/Kg	0.1
GLC-5-1	CB0698A1243		Mercury (Hg)	0	mg/L	0.0002
GLC-5-1	CB0698A1243		Mercury (Hg)	0	mg/L	0.02
GLC-5-1	CB0698A1243		Di-n-octyl phthalate	0	mg/Kg	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-5-1	CB0698A1243		Nickel (Ni)	13	mg/Kg	0.5
GLC-5-1	CB0698A1243		Aldrin	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Endosulfan-I	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Endosulfan sulfate	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Dieldrin	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Chlordane	0	mg/Kg	0.5
GLC-5-1	CB0698A1243		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		BHC-delta	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		BHC-beta	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Benz(a)anthracene	0	mg/Kg	0.02
GLC-5-1	CB0698A1243		Moisture Content	19	%	0.1
GLC-5-1	CB0698A1243		Maximum potential acidity	1	Kg/MT	1
GLC-5-1	CB0698A1243		Zinc (Zn)	23	mg/Kg	1
GLC-5-1	CB0698A1243		Selenium (Se)	0	µg/L	20
GLC-5-1	CB0698A1243		Selenium (Se)	0	mg/Kg	0.4
GLC-5-1	CB0698A1243		Silver (Ag)	0	mg/Kg	0.1
GLC-5-1	CB0698A1243		Silver (Ag)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Silver (Ag)	0	µg/L	50
GLC-5-1	CB0698A1243		Solids (TVDS)	60	mg/L	10
GLC-5-1	CB0698A1243		Acid volatile sulfide	2	mg/Kg	0.1
GLC-5-1	CB0698A1243		Percent Sulfide	0.04		0.01
GLC-5-1	CB0698A1243		Percent Gravel	0	%	
GLC-5-1	CB0698A1243		p,p'-DDT	0	mg/Kg	0.05
GLC-5-1	CB0698A1243		Neutralization potential	8	Kg/MT	-1000
GLC-5-1	CB0698A1243		Neutralization potential acidity ratio	8		-10
GLC-5-1	CB0698A1243		Specific Conductivity (EC)	110	µmho/cm	1
GLC-5-1	CB0698A1243		Thallium (Tl)	0	mg/Kg	1
GLC-5-1	CB0698A1243		Thallium (Tl)	0	mg/L	0.005
GLC-5-1	CB0698A1243		Thallium (Tl)	0	mg/L	0.5
GLC-5-1	CB0698A1243		Total Dissolved Solids (TDS)	60	mg/L	10
GLC-5-1	CB0698A1243		pH	6.9		0
GLC-5-1	CB0698A1949	6/15/98	Lead	0.082	mg/L	0.001
GLC-5-1	CB0698A1949	6/15/98	Chromium	0.363	mg/L	0.005
GLC-5-1	CB0698A1949	6/15/98	Arsenic	0.018	mg/L	0.001
GLC-5-1	CB0698A1949	6/15/98	Copper	0.303	mg/L	0.001
GLC-5-1	CB0698A1949	6/15/98	Cadmium	0	mg/L	0.001
GLC-5-1	CB0698A1949	6/15/98	Silver	0.001	mg/L	0.001
GLC-5-1	CB0698A1949	6/15/98	Beryllium	0.007	mg/L	0.001
GLC-5-1	CB0698A1949	6/15/98	Thallium	0.002	mg/L	0.001

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-5-1	CB0698A1243		Dibutyltin	0	µg/Kg	1
GLC-5-1	CB0698A1949	6/15/98	Nickel	0.47	mg/L	0.001
GLC-5-1	CB0698A1243		Net neutralization potential	7	Kg/MT	-2000
GLC-5-1	CB0698A1949	6/15/98	Mercury	0.0003	mg/L	0.0002
GLC-5-1	CB0698A1949	6/15/98	Selenium	0	mg/L	0.001
GLC-5-1	CB0698A1243		Tributyltin	0	µg/Kg	1
GLC-5-1	CB0698A1243		Tetrabutyltin	0	µg/Kg	1
GLC-5-1	CB0698A1243		Monobutyltin	0	µg/Kg	1
GLC-5-1	CB0698A1243		Percent Clay	8	%	
GLC-5-1	CB0698A1243		Percent Silt	16	%	
GLC-5-1	CB0698A1243		Percent Sand	76	%	
GLC-5-1	CB0698A1949	6/15/98	Zinc	0.796	mg/L	0.005
GLC-5-1	CB0698A1243		Organic Matter	820	mg/Kg	5
GLC-5-1	CB0698A1243		Zinc (Zn)	0	µg/L	200
GLC-5-1	CB0698A1243		Zinc (Zn)	0	mg/L	0.01
GLC-5-1	CB0698A1243		pH	7.2	STD	
GLC-5-1	CB0698A1243		Selenium (Se)	0	mg/L	0.002
GLC-5-2	CB0698A1244		Endrin aldehyde	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Endrin	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Endosulfan-II	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Endosulfan-I	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Endosulfan sulfate	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Dieldrin	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Heptachlor	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		p,p'-DDE	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		BHC-delta	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		BHC-beta	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		BHC-alpha	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Aldrin	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Chlordane	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Arochlor 1221	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Acenapthyhlene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Acenapthene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Arochlor 1260	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Arochlor 1254	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Arochlor 1248	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Methoxychlor	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Arochlor 1232	0	mg/Kg	0.5

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-5-2	CB0698A1244		Heptachlor epoxide	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Arochlor 1016	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Toxaphene	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		p,p'-DDT	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		p,p'-DDD	0	mg/Kg	0.05
GLC-5-2	CB0698A1244		Anthracene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Arochlor 1242	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Flourene	0	mg/Kg	0.02
GLC-5-2	CB0698A1950	6/15/98	Beryllium	0.004	mg/L	0.001
GLC-5-2	CB0698A1950	6/15/98	Arsenic	0.013	mg/L	0.001
GLC-5-2	CB0698A1244		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Pyrene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Phenanthrene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-5-2	CB0698A1950	6/15/98	Copper	0.096	mg/L	0.001
GLC-5-2	CB0698A1244		Flouranthene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Chrysene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Napthalene	0	mg/Kg	0.02
GLC-5-2	CB0698A1950	6/15/98	Mercury	0.0002	mg/L	0.0002
GLC-5-2	CB0698A1244		Percent Sand	97	%	
GLC-5-2	CB0698A1244		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Diethyl Phthalate	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Percent Clay	3	%	
GLC-5-2	CB0698A1244		Copper (Cu)	0	µg/L	200
GLC-5-2	CB0698A1244		Lead (Pb)	1.1	mg/Kg	0.1
GLC-5-2	CB0698A1950	6/15/98	Cadmium	0	mg/L	0.001
GLC-5-2	CB0698A1950	6/15/98	Selenium	0	mg/L	0.001
GLC-5-2	CB0698A1950	6/15/98	Chromium	0.185	mg/L	0.005
GLC-5-2	CB0698A1950	6/15/98	Silver	0	mg/L	0.001
GLC-5-2	CB0698A1950	6/15/98	Lead	0.035	mg/L	0.001
GLC-5-2	CB0698A1950	6/15/98	Zinc	0.442	mg/L	0.005
GLC-5-2	CB0698A1950	6/15/98	Thallium	0.001	mg/L	0.001
GLC-5-2	CB0698A1950	6/15/98	Nickel	0.304	mg/L	0.001

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-5-2	CB0698A1244		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Dibutyltin	0	µg/Kg	1
GLC-5-2	CB0698A1244		Mercury (Hg)	0	mg/L	0.02
GLC-5-2	CB0698A1244		Benz(a)anthracene	0	mg/Kg	0.02
GLC-5-2	CB0698A1244		Selenium (Se)	0	mg/Kg	0.4
GLC-5-2	CB0698A1244		Selenium (Se)	0	µg/L	20
GLC-5-2	CB0698A1244		Selenium (Se)	0	mg/L	0.002
GLC-5-2	CB0698A1244		pH	5.6	STD	
GLC-5-2	CB0698A1244		Organic Matter	180	mg/Kg	5
GLC-5-2	CB0698A1244		Nickel (Ni)	0.27	mg/L	0.2
GLC-5-2	CB0698A1244		Nickel (Ni)	0	mg/L	0.005
GLC-5-2	CB0698A1244		Nickel (Ni)	8.8	mg/Kg	0.5
GLC-5-2	CB0698A1244		Percent Sulfide	0.01		0.01
GLC-5-2	CB0698A1244		Maximum potential acidity	1	Kg/MT	1
GLC-5-2	CB0698A1244		Neutralization potential	5	Kg/MT	-1000
GLC-5-2	CB0698A1244		Net neutralization potential	4	Kg/MT	-2000
GLC-5-2	CB0698A1244		Silver (Ag)	0	mg/Kg	0.1
GLC-5-2	CB0698A1244		Cadmium (Cd)	0	µg/L	200
GLC-5-2	CB0698A1244		Arsenic (As)	0.6	mg/Kg	0.4
GLC-5-2	CB0698A1244		Arsenic (As)	0.003	mg/L	0.002
GLC-5-2	CB0698A1244		Beryllium (Be)	0	mg/L	0.005
GLC-5-2	CB0698A1244		pH	8.2		0
GLC-5-2	CB0698A1244		Bromide (Br)	0	mg/L	1
GLC-5-2	CB0698A1244		Neutralization potential acidity ratio	5		-10
GLC-5-2	CB0698A1244		Cadmium (Cd)	0	mg/L	0.005
GLC-5-2	CB0698A1244		Moisture Content	13	%	0.1
GLC-5-2	CB0698A1244		Chromium (Cr)	0	mg/L	0.005
GLC-5-2	CB0698A1244		Lead (Pb)	0	mg/L	0.005
GLC-5-2	CB0698A1244		Lead (Pb)	0	µg/L	200
GLC-5-2	CB0698A1244		Mercury (Hg)	0	mg/Kg	0.1
GLC-5-2	CB0698A1244		Mercury (Hg)	0	mg/L	0.0002
GLC-5-2	CB0698A1244		Tributyltin	0	µg/Kg	1
GLC-5-2	CB0698A1244		Cadmium (Cd)	0	mg/Kg	0.5
GLC-5-2	CB0698A1244		Percent Silt	0	%	
GLC-5-2	CB0698A1244		Diesel	0	mg/Kg	2
GLC-5-2	CB0698A1244		Gasoline	0	mg/Kg	1
GLC-5-2	CB0698A1244		Acid volatile sulfide	0.21	mg/Kg	0.1
GLC-5-2	CB0698A1244		Oil & Grease	0	mg/Kg	20
GLC-5-2	CB0698A1244		Copper (Cu)	0	mg/L	0.005

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-6-1	CB0698A1245		Heptachlor	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Endrin aldehyde	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Endrin	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Endosulfan-II	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Endosulfan-I	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Endosulfan sulfate	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Dieldrin	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Zinc (Zn)	0	mg/L	0.01
GLC-6-1	CB0698A1245		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		p,p'-DDT	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Aldrin	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Diethyl Phthalate	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Pyrene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Phenanthrene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		BHC-alpha	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Chlordane	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		Oil & Grease	0	mg/Kg	20
GLC-6-1	CB0698A1245		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Net neutralization potential	5	Kg/MT	-2000
GLC-6-1	CB0698A1245		Neutralization potential	9	Kg/MT	-1000
GLC-6-1	CB0698A1245		Maximum potential acidity	4	Kg/MT	1
GLC-6-1	CB0698A1245		Percent Sulfide	0.14		0.01
GLC-6-1	CB0698A1245		Benz(a)anthracene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Anthracene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Acenapthyhlene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Acenapthene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Arochlor 1260	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		p,p'-DDD	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Oil & Grease	21	mg/Kg	20
GLC-6-1	CB0698A1245		p,p'-DDE	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Diesel	0	mg/Kg	2
GLC-6-1	CB0698A1245		Gasoline	0	mg/Kg	1
GLC-6-1	CB0698A1245		pH	6.6		0
GLC-6-1	CB0698A1245		Arochlor 1248	0	mg/Kg	0.5

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-6-1	CB0698A1245		Arochlor 1242	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		Arochlor 1232	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		Arochlor 1221	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		Arochlor 1016	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		Toxaphene	0	mg/Kg	0.5
GLC-6-1	CB0698A1245		Zinc (Zn)	280	µg/L	200
GLC-6-1	CB0698A1245		Arochlor 1254	0	mg/Kg	0.5
GLC-6-1	CB0698A1951	6/15/98	Zinc	1.49	mg/L	0.005
GLC-6-1	CB0698A1245		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-6-1	CB0698A1951	6/15/98	Selenium	0	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Mercury	0.0003	mg/L	0.0002
GLC-6-1	CB0698A1951	6/15/98	Nickel	0.73	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Arsenic	0.036	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Beryllium	0.011	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Cadmium	0.004	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Chromium	0.58	mg/L	0.005
GLC-6-1	CB0698A1951	6/15/98	Lead	0.203	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Thallium	0.003	mg/L	0.001
GLC-6-1	CB0698A1951	6/15/98	Copper	0.635	mg/L	0.001
GLC-6-1	CB0698A1245		BHC-delta	0	mg/Kg	0.05
GLC-6-1	CB0698A1245		Chrysene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-6-1	CB0698A1245		Flouranthene	0	mg/Kg	0.02
GLC-6-1	CB0698A1951	6/15/98	Silver	0.003	mg/L	0.001
GLC-6-2	CB0698A1246		Nickel (Ni)	0	mg/L	0.005
GLC-6-2	CB0698A1246		Chromium (Cr)	0	mg/L	0.2
GLC-6-2	CB0698A1246		Chromium (Cr)	16	mg/Kg	1
GLC-6-2	CB0698A1246		Copper (Cu)	14	mg/Kg	0.4
GLC-6-2	CB0698A1246		Copper (Cu)	0	mg/L	0.005
GLC-6-2	CB0698A1246		Copper (Cu)	0	µg/L	200
GLC-6-2	CB0698A1246		Lead (Pb)	4.4	mg/Kg	0.1
GLC-6-2	CB0698A1246		Selenium (Se)	0	mg/Kg	0.4
GLC-6-2	CB0698A1246		Selenium (Se)	0	µg/L	20
GLC-6-2	CB0698A1246		Selenium (Se)	0	mg/L	0.002
GLC-6-2	CB0698A1246		pH	6.9	STD	
GLC-6-2	CB0698A1246		Nickel (Ni)	0.33	mg/L	0.2

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-6-2	CB0698A1246		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Aldrin	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		BHC-alpha	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		BHC-beta	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		Pyrene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		Phenanthrene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Dieldrin	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		Endosulfan sulfate	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		Endosulfan-I	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		Endosulfan-II	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		pH	6.8		0
GLC-6-2	CB0698A1246		Percent Sulfide	0.02		0.01
GLC-6-2	CB0698A1246		Maximum potential acidity	1	Kg/MT	1
GLC-6-2	CB0698A1246		Neutralization potential	6	Kg/MT	-1000
GLC-6-2	CB0698A1246		Net neutralization potential	5	Kg/MT	-2000
GLC-6-2	CB0698A1246		Neutralization potential acidity ratio	6		-10
GLC-6-2	CB0698A1246		BHC-delta	0	mg/Kg	0.05
GLC-6-2	CB0698A1246		Zinc (Zn)	0	µg/L	200
GLC-6-2	CB0698A1246		Specific Conductivity (EC)	290	µmho/cm	1
GLC-6-2	CB0698A1246		Thallium (Tl)	0	mg/Kg	1
GLC-6-2	CB0698A1246		Thallium (Tl)	0	mg/L	0.005
GLC-6-2	CB0698A1246		Thallium (Tl)	0	mg/L	0.5
GLC-6-2	CB0698A1246		Total Dissolved Solids (TDS)	86	mg/L	10
GLC-6-2	CB0698A1246		Zinc (Zn)	31	mg/Kg	1
GLC-6-2	CB0698A1246		Zinc (Zn)	0	mg/L	0.01
GLC-6-2	CB0698A1246		Arochlor 1260	0	mg/Kg	0.5
GLC-6-2	CB0698A1246		Diesel	0	mg/Kg	2
GLC-6-2	CB0698A1246		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Oil & Grease	26	mg/Kg	20
GLC-6-2	CB0698A1246		Silver (Ag)	0	µg/L	50
GLC-6-2	CB0698A1246		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Chrysene	0	mg/Kg	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-6-2	CB0698A1246		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Flouranthene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Flourene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Napthalene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Silver (Ag)	0	mg/L	0.005
GLC-6-2	CB0698A1246		Percent Sand	56	%	
GLC-6-2	CB0698A1246		Solids (TVDS)	26	mg/L	10
GLC-6-2	CB0698A1952	6/15/98	Nickel	0.19	mg/L	0.001
GLC-6-2	CB0698A1952	6/15/98	Beryllium	0.003	mg/L	0.001
GLC-6-2	CB0698A1952	6/15/98	Cadmium	0	mg/L	0.001
GLC-6-2	CB0698A1952	6/15/98	Mercury	0.0002	mg/L	0.0002
GLC-6-2	CB0698A1952	6/15/98	Selenium	0	mg/L	0.001
GLC-6-2	CB0698A1952	6/15/98	Copper	0.104	mg/L	0.001
GLC-6-2	CB0698A1246		Acenapthene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Percent Silt	24	%	
GLC-6-2	CB0698A1952	6/15/98	Chromium	0.115	mg/L	0.005
GLC-6-2	CB0698A1246		Percent Gravel	0	%	
GLC-6-2	CB0698A1952	6/15/98	Arsenic	0.025	mg/L	0.001
GLC-6-2	CB0698A1246		Monobutyltin	0	µg/Kg	1
GLC-6-2	CB0698A1246		Acenapthyhlene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Anthracene	0	mg/Kg	0.02
GLC-6-2	CB0698A1246		Benz(a)anthracene	0	mg/Kg	0.02
GLC-6-2	CB0698A1952	6/15/98	Lead	0.036	mg/L	0.001
GLC-6-2	CB0698A1246		Percent Clay	20	%	
GLC-6-2	CB0698A1952	6/15/98	Zinc	0.338	mg/L	0.005
GLC-6-2	CB0698A1246		Tetrabutyltin	0	µg/Kg	1
GLC-6-2	CB0698A1246		Tributyltin	0	µg/Kg	1
GLC-6-2	CB0698A1952	6/15/98	Silver	0	mg/L	0.001
GLC-6-2	CB0698A1246		Acid volatile sulfide	1.1	mg/Kg	0.1
GLC-6-2	CB0698A1952	6/15/98	Thallium	0	mg/L	0.001
GLC-6-2	CB0698A1246		Dibutyltin	0	µg/Kg	1
GLC-7-1	CB0698A1247		Percent Silt	21	%	
GLC-7-1	CB0698A1247		Percent Sand	66	%	
GLC-7-1	CB0698A1247		Acid volatile sulfide	0.97	mg/Kg	0.1
GLC-7-1	CB0698A1247		Percent Clay	13	%	
GLC-7-1	CB0698A1247		pH	7.1		0
GLC-7-1	CB0698A1247		Percent Sulfide	0.03		0.01
GLC-7-1	CB0698A1247		Maximum potential acidity	1	Kg/MT	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7-1	CB0698A1247		Lead (Pb)	0	mg/L	0.005
GLC-7-1	CB0698A1247		Lead (Pb)	3.7	mg/Kg	0.1
GLC-7-1	CB0698A1953	6/15/98	Selenium	0	mg/L	0.001
GLC-7-1	CB0698A1953	6/15/98	Mercury	0.0002	mg/L	0.0002
GLC-7-1	CB0698A1953	6/15/98	Zinc	0.528	mg/L	0.005
GLC-7-1	CB0698A1953	6/15/98	Thallium	0.001	mg/L	0.001
GLC-7-1	CB0698A1953	6/15/98	Silver	0	mg/L	0.001
GLC-7-1	CB0698A1953	6/15/98	Nickel	0.359	mg/L	0.001
GLC-7-1	CB0698A1247		Organic Matter	3300	mg/Kg	5
GLC-7-1	CB0698A1247		Mercury (Hg)	0	mg/L	0.02
GLC-7-1	CB0698A1247		Net neutralization potential	6	Kg/MT	-2000
GLC-7-1	CB0698A1247		Nickel (Ni)	0.39	mg/L	0.2
GLC-7-1	CB0698A1247		Lead (Pb)	0	µg/L	200
GLC-7-1	CB0698A1247		Mercury (Hg)	0	mg/Kg	0.1
GLC-7-1	CB0698A1247		Monobutyltin	0	µg/Kg	1
GLC-7-1	CB0698A1247		Mercury (Hg)	0	mg/L	0.0002
GLC-7-1	CB0698A1247		Neutralization potential	7	Kg/MT	-1000
GLC-7-1	CB0698A1247		Moisture Content	26	%	0.1
GLC-7-1	CB0698A1247		Nickel (Ni)	15	mg/Kg	0.5
GLC-7-1	CB0698A1247		Nickel (Ni)	0	mg/L	0.005
GLC-7-1	CB0698A1247		Neutralization potential acidity ratio	7		-10
GLC-7-1	CB0698A1247		p,p'-DDD	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Tributyltin	0	µg/Kg	1
GLC-7-1	CB0698A1247		Endosulfan-II	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Endrin	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Endrin aldehyde	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Heptachlor	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Endosulfan sulfate	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Methoxychlor	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Dieldrin	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		p,p'-DDE	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		p,p'-DDT	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Toxaphene	0	mg/Kg	0.5
GLC-7-1	CB0698A1247		Arochlor 1016	0	mg/Kg	0.5
GLC-7-1	CB0698A1247		Arochlor 1221	0	mg/Kg	0.5
GLC-7-1	CB0698A1247		Dibutyltin	0	µg/Kg	1
GLC-7-1	CB0698A1247		Heptachlor epoxide	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Tetrabutyltin	0	µg/Kg	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7-1	CB0698A1247		Chromium (Cr)	0	mg/L	0.005
GLC-7-1	CB0698A1247		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Diethyl Phthalate	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Endosulfan-I	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Copper (Cu)	0	µg/L	200
GLC-7-1	CB0698A1247		Aldrin	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		BHC-alpha	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		BHC-beta	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		BHC-delta	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-7-1	CB0698A1247		Chlordane	0	mg/Kg	0.5
GLC-7-1	CB0698A1247		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Thallium (Tl)	0	mg/Kg	1
GLC-7-1	CB0698A1247		Selenium (Se)	0	µg/L	20
GLC-7-1	CB0698A1247		Zinc (Zn)	0	µg/L	200
GLC-7-1	CB0698A1247		Zinc (Zn)	0	mg/L	0.01
GLC-7-1	CB0698A1247		Zinc (Zn)	27	mg/Kg	1
GLC-7-1	CB0698A1247		Total Dissolved Solids (TDS)	74	mg/L	10
GLC-7-1	CB0698A1953	6/15/98	Beryllium	0.004	mg/L	0.001
GLC-7-1	CB0698A1247		Chromium (Cr)	13	mg/Kg	1
GLC-7-1	CB0698A1953	6/15/98	Cadmium	0	mg/L	0.001
GLC-7-1	CB0698A1247		Copper (Cu)	0	mg/L	0.005
GLC-7-1	CB0698A1247		Solids (TVDS)	0	mg/L	10
GLC-7-1	CB0698A1247		Silver (Ag)	0	µg/L	50
GLC-7-1	CB0698A1247		Silver (Ag)	0	mg/L	0.005
GLC-7-1	CB0698A1247		Silver (Ag)	0	mg/Kg	0.1
GLC-7-1	CB0698A1247		Selenium (Se)	0	mg/Kg	0.4
GLC-7-1	CB0698A1247		Thallium (Tl)	0	mg/L	0.5
GLC-7-1	CB0698A1247		Flourene	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Chrysene	0	mg/Kg	0.02
GLC-7-1	CB0698A1953	6/15/98	Lead	0.329	mg/L	0.001
GLC-7-1	CB0698A1247		Flouranthene	0	mg/Kg	0.02
GLC-7-1	CB0698A1247		Specific Conductivity (EC)	350	µmho/cm	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7-2	CB0698A1248		Copper (Cu)	15	mg/Kg	0.4
GLC-7-2	CB0698A1248		Chromium (Cr)	19	mg/Kg	1
GLC-7-2	CB0698A1248		Chromium (Cr)	0.28	mg/L	0.2
GLC-7-2	CB0698A1248		Chromium (Cr)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Cadmium (Cd)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Bromide (Br)	0	mg/L	1
GLC-7-2	CB0698A1248		Beryllium (Be)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Beryllium (Be)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Beryllium (Be)	0	mg/Kg	1
GLC-7-2	CB0698A1248		Arsenic (As)	210	µg/L	20
GLC-7-2	CB0698A1248		Arsenic (As)	0.004	mg/L	0.002
GLC-7-2	CB0698A1248		Arsenic (As)	3	mg/Kg	0.4
GLC-7-2	CB0698A1248		Percent Sand	25	%	
GLC-7-2	CB0698A1248		Percent Gravel	0	%	
GLC-7-2	CB0698A1248		Cadmium (Cd)	0	µg/L	200
GLC-7-2	CB0698A1248		Phenanthrene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Arochlor 1260	0	mg/Kg	0.5
GLC-7-2	CB0698A1248		BHC-delta	0	mg/Kg	0.05
GLC-7-2	CB0698A1248		BHC-beta	0	mg/Kg	0.05
GLC-7-2	CB0698A1248		BHC-alpha	0	mg/Kg	0.05
GLC-7-2	CB0698A1248		Aldrin	0	mg/Kg	0.05
GLC-7-2	CB0698A1248		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Diethyl Phthalate	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-7-2	CB0698A1248		Pyrene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Copper (Cu)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Napthalene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Flourene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Flouranthene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Chrysene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-7-2	CB0698A1248		Benzo(a)pyrene	0	mg/Kg	0.02

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7-2	CB0698A1954	6/15/98	Silver	0.003	mg/L	0.001
GLC-7-2	CB0698A1248		Net neutralization potential	5	Kg/MT	-2000
GLC-7-2	CB0698A1954	6/15/98	Thallium	0.004	mg/L	0.001
GLC-7-2	CB0698A1248		Oil & Grease	46	mg/Kg	20
GLC-7-2	CB0698A1954	6/15/98	Nickel	0.874	mg/L	0.001
GLC-7-2	CB0698A1954	6/15/98	Beryllium	0.011	mg/L	0.001
GLC-7-2	CB0698A1248		Percent Silt	54	%	
GLC-7-2	CB0698A1248		Oil & Grease	31	mg/Kg	20
GLC-7-2	CB0698A1248		Gasoline	0	mg/Kg	1
GLC-7-2	CB0698A1954	6/15/98	Selenium	0	mg/L	0.001
GLC-7-2	CB0698A1954	6/15/98	Mercury	0.0004	mg/L	0.0002
GLC-7-2	CB0698A1954	6/15/98	Chromium	0.592	mg/L	0.005
GLC-7-2	CB0698A1954	6/15/98	Copper	0.677	mg/L	0.001
GLC-7-2	CB0698A1248		Silver (Ag)	0	mg/Kg	0.1
GLC-7-2	CB0698A1248		Copper (Cu)	0	µg/L	200
GLC-7-2	CB0698A1954	6/15/98	Arsenic	0.063	mg/L	0.001
GLC-7-2	CB0698A1248		Moisture Content	34	%	0.1
GLC-7-2	CB0698A1248		Selenium (Se)	0	mg/Kg	0.4
GLC-7-2	CB0698A1248		Selenium (Se)	0	µg/L	20
GLC-7-2	CB0698A1248		Selenium (Se)	0	mg/L	0.002
GLC-7-2	CB0698A1248		pH	6.9	STD	
GLC-7-2	CB0698A1248		Nickel (Ni)	0.54	mg/L	0.2
GLC-7-2	CB0698A1248		Lead (Pb)	0	µg/L	200
GLC-7-2	CB0698A1248		Silver (Ag)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Lead (Pb)	5.6	mg/Kg	0.1
GLC-7-2	CB0698A1248		Organic Matter	10000	mg/Kg	5
GLC-7-2	CB0698A1248		Lead (Pb)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Zinc (Zn)	0	µg/L	200
GLC-7-2	CB0698A1248		Diesel	0	mg/Kg	2
GLC-7-2	CB0698A1248		Mercury (Hg)	0	mg/L	0.02
GLC-7-2	CB0698A1248		Mercury (Hg)	0	mg/L	0.0002
GLC-7-2	CB0698A1248		Mercury (Hg)	0	mg/Kg	0.1
GLC-7-2	CB0698A1248		Nickel (Ni)	21	mg/Kg	0.5
GLC-7-2	CB0698A1248		Thallium (Tl)	0	mg/L	0.5
GLC-7-2	CB0698A1248		Nickel (Ni)	0	mg/L	0.005
GLC-7-2	CB0698A1248		Zinc (Zn)	0	mg/L	0.01
GLC-7-2	CB0698A1248		Zinc (Zn)	39	mg/Kg	1
GLC-7-2	CB0698A1248		Total Dissolved Solids (TDS)	66	mg/L	10
GLC-7-2	CB0698A1248		Thallium (Tl)	0	mg/L	0.005

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7-2	CB0698A1248		Thallium (Tl)	0	mg/Kg	1
GLC-7-2	CB0698A1248		Specific Conductivity (EC)	350	µmho/cm	1
GLC-7-2	CB0698A1248		Solids (TVDS)	66	mg/L	10
GLC-8-1	CB0698A1249		Arochlor 1260	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Copper (Cu)	8.7	mg/Kg	0.4
GLC-8-1	CB0698A1249		Chromium (Cr)	13	mg/Kg	1
GLC-8-1	CB0698A1249		Chromium (Cr)	0.23	mg/L	0.2
GLC-8-1	CB0698A1249		Acenapthene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Chromium (Cr)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Cadmium (Cd)	0	µg/L	200
GLC-8-1	CB0698A1249		Cadmium (Cd)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Cadmium (Cd)	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Bromide (Br)	0	mg/L	1
GLC-8-1	CB0698A1249		Beryllium (Be)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Beryllium (Be)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Pyrene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Flouranthene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Chrysene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Benzo(k)flouranthene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Anthracene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Phenanthrene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Acenapthyhlene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-8-1	CB0698A1955		Copper	0.439	mg/L	0.001
GLC-8-1	CB0698A1249		Diethyl Phthalate	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Benzo(b)flouranthene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Flourene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Benz(a)anthracene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Napthalene	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		p,p'-DDD	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Acid volatile sulfide	15	mg/Kg	0.1
GLC-8-1	CB0698A1249		Arochlor 1248	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Arochlor 1242	0	mg/Kg	0.5

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-8-1	CB0698A1249		Arochlor 1232	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Arochlor 1221	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Arochlor 1016	0	mg/Kg	0.5
GLC-8-1	CB0698A1955		Nickel	0.662	mg/L	0.001
GLC-8-1	CB0698A1249		Methoxychlor	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Percent Gravel	0	%	
GLC-8-1	CB0698A1249		Monobutyltin	0	µg/Kg	1
GLC-8-1	CB0698A1249		p,p'-DDE	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		p,p'-DDT	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Toxaphene	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Tributyltin	0	µg/Kg	1
GLC-8-1	CB0698A1249		Tetrabutyltin	0	µg/Kg	1
GLC-8-1	CB0698A1249		Lead (Pb)	0	µg/L	200
GLC-8-1	CB0698A1955		Cadmium	0.002	mg/L	0.001
GLC-8-1	CB0698A1249		Arsenic (As)	130	µg/L	20
GLC-8-1	CB0698A1249		Arsenic (As)	0	mg/L	0.002
GLC-8-1	CB0698A1249		Arsenic (As)	2	mg/Kg	0.4
GLC-8-1	CB0698A1955		Zinc	1.22	mg/L	0.005
GLC-8-1	CB0698A1955		Thallium	0.002	mg/L	0.001
GLC-8-1	CB0698A1955		Silver	0.002	mg/L	0.001
GLC-8-1	CB0698A1249		Endrin	0	mg/Kg	0.05
GLC-8-1	CB0698A1955		Chromium	0.425	mg/L	0.005
GLC-8-1	CB0698A1249		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-8-1	CB0698A1955		Arsenic	0.051	mg/L	0.001
GLC-8-1	CB0698A1955		Beryllium	0.009	mg/L	0.001
GLC-8-1	CB0698A1955		Mercury	0	mg/L	0.0002
GLC-8-1	CB0698A1955		Selenium	0	mg/L	0.001
GLC-8-1	CB0698A1249		Percent Silt	15	%	
GLC-8-1	CB0698A1249		Percent Sand	75	%	
GLC-8-1	CB0698A1249		Beryllium (Be)	0	mg/Kg	1
GLC-8-1	CB0698A1955		Lead	0.113	mg/L	0.001
GLC-8-1	CB0698A1249		Total Dissolved Solids (TDS)	90	mg/L	10
GLC-8-1	CB0698A1249		Selenium (Se)	0	mg/Kg	0.4
GLC-8-1	CB0698A1249		Silver (Ag)	0	mg/Kg	0.1
GLC-8-1	CB0698A1249		Silver (Ag)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Silver (Ag)	0	µg/L	50
GLC-8-1	CB0698A1249		Solids (TVDS)	24	mg/L	10
GLC-8-1	CB0698A1249		Specific Conductivity (EC)	190	µmho/cm	1
GLC-8-1	CB0698A1249		Thallium (Tl)	0	mg/Kg	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-8-1	CB0698A1249		pH	6.5		0
GLC-8-1	CB0698A1249		Thallium (Tl)	0	mg/L	0.5
GLC-8-1	CB0698A1249		pH	6.7	STD	
GLC-8-1	CB0698A1249		Zinc (Zn)	28	mg/Kg	1
GLC-8-1	CB0698A1249		Zinc (Zn)	0	mg/L	0.01
GLC-8-1	CB0698A1249		Zinc (Zn)	0	µg/L	200
GLC-8-1	CB0698A1249		Neutralization potential acidity ratio	3		-10
GLC-8-1	CB0698A1249		Net neutralization potential	4	Kg/MT	-2000
GLC-8-1	CB0698A1249		Endosulfan-I	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Maximum potential acidity	2	Kg/MT	1
GLC-8-1	CB0698A1249		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-8-1	CB0698A1249		Thallium (Tl)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Oil & Grease	0	mg/Kg	20
GLC-8-1	CB0698A1249		Arochlor 1254	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		Lead (Pb)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Lead (Pb)	3.2	mg/Kg	0.1
GLC-8-1	CB0698A1249		Copper (Cu)	0	µg/L	200
GLC-8-1	CB0698A1249		Copper (Cu)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Mercury (Hg)	0	mg/Kg	0.1
GLC-8-1	CB0698A1249		Mercury (Hg)	0	mg/L	0.0002
GLC-8-1	CB0698A1249		Mercury (Hg)	0	mg/L	0.02
GLC-8-1	CB0698A1249		Selenium (Se)	0	µg/L	20
GLC-8-1	CB0698A1249		Percent Clay	10	%	
GLC-8-1	CB0698A1249		Selenium (Se)	0	mg/L	0.002
GLC-8-1	CB0698A1249		Oil & Grease	0	mg/Kg	20
GLC-8-1	CB0698A1249		Diesel	0	mg/Kg	2
GLC-8-1	CB0698A1249		Gasoline	0	mg/Kg	1
GLC-8-1	CB0698A1249		Nickel (Ni)	15	mg/Kg	0.5
GLC-8-1	CB0698A1249		Nickel (Ni)	0	mg/L	0.005
GLC-8-1	CB0698A1249		Nickel (Ni)	0.43	mg/L	0.2
GLC-8-1	CB0698A1249		Organic Matter	2800	mg/Kg	5
GLC-8-1	CB0698A1249		Percent Sulfide	0.05		0.01
GLC-8-1	CB0698A1249		Moisture Content	30	%	0.1
GLC-8-1	CB0698A1249		Heptachlor	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Neutralization potential	6	Kg/MT	-1000
GLC-8-1	CB0698A1249		Heptachlor epoxide	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Endrin aldehyde	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Endosulfan-II	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Dibutyltin	0	µg/Kg	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-8-1	CB0698A1249		Endosulfan sulfate	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Chlordane	0	mg/Kg	0.5
GLC-8-1	CB0698A1249		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		BHC-delta	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Aldrin	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		BHC-beta	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		BHC-alpha	0	mg/Kg	0.05
GLC-8-1	CB0698A1249		Dieldrin	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Mercury (Hg)	0	mg/L	0.02
GLC-8-2	CB0698A1250		Organic Matter	2900	mg/Kg	5
GLC-8-2	CB0698A1250		Nickel (Ni)	0.35	mg/L	0.2
GLC-8-2	CB0698A1250		Nickel (Ni)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Total Dissolved Solids (TDS)	120	mg/L	10
GLC-8-2	CB0698A1250		Zinc (Zn)	29	mg/Kg	1
GLC-8-2	CB0698A1250		Zinc (Zn)	0	mg/L	0.01
GLC-8-2	CB0698A1250		Nickel (Ni)	18	mg/Kg	0.5
GLC-8-2	CB0698A1250		Mercury (Hg)	0	mg/L	0.0002
GLC-8-2	CB0698A1250		Moisture Content	23	%	0.1
GLC-8-2	CB0698A1250		Mercury (Hg)	0	mg/Kg	0.1
GLC-8-2	CB0698A1250		Thallium (Tl)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Thallium (Tl)	0	mg/Kg	1
GLC-8-2	CB0698A1250		Dibenz(a,h)anthracene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Zinc (Zn)	0	µg/L	200
GLC-8-2	CB0698A1250		Arsenic (As)	1.6	mg/Kg	0.4
GLC-8-2	CB0698A1250		Cadmium (Cd)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Cadmium (Cd)	0	mg/Kg	0.5
GLC-8-2	CB0698A1250		Bromide (Br)	0	mg/L	1
GLC-8-2	CB0698A1250		Beryllium (Be)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Beryllium (Be)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Chromium (Cr)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Chromium (Cr)	0.23	mg/L	0.2
GLC-8-2	CB0698A1250		Chromium (Cr)	17	mg/Kg	1
GLC-8-2	CB0698A1250		Copper (Cu)	11	mg/Kg	0.4
GLC-8-2	CB0698A1250		Copper (Cu)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Copper (Cu)	0	µg/L	200
GLC-8-2	CB0698A1250		Beryllium (Be)	0	mg/Kg	1
GLC-8-2	CB0698A1250		Thallium (Tl)	0	mg/L	0.5
GLC-8-2	CB0698A1250		Arsenic (As)	0.005	mg/L	0.002
GLC-8-2	CB0698A1250		Cadmium (Cd)	0	µg/L	200

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-8-2	CB0698A1250		Lead (Pb)	3.4	mg/Kg	0.1
GLC-8-2	CB0698A1250		Specific Conductivity (EC)	140	µmho/cm	1
GLC-8-2	CB0698A1250		Solids (TVDS)	42	mg/L	10
GLC-8-2	CB0698A1250		Silver (Ag)	0	µg/L	50
GLC-8-2	CB0698A1250		Lead (Pb)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Silver (Ag)	0	mg/L	0.005
GLC-8-2	CB0698A1250		Lead (Pb)	0	µg/L	200
GLC-8-2	CB0698A1250		Silver (Ag)	0	mg/Kg	0.1
GLC-8-2	CB0698A1250		Selenium (Se)	0	mg/Kg	0.4
GLC-8-2	CB0698A1250		Selenium (Se)	0	µg/L	20
GLC-8-2	CB0698A1250		Selenium (Se)	0	mg/L	0.002
GLC-8-2	CB0698A1250		pH	6.2	STD	
GLC-8-2	CB0698A1250		Arsenic (As)	120	µg/L	20
GLC-8-2	CB0698A1250		Methoxychlor	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		p,p'-DDT	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		p,p'-DDE	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Neutralization potential acidity ratio	5		-10
GLC-8-2	CB0698A1250		Net neutralization potential	4	Kg/MT	-2000
GLC-8-2	CB0698A1250		Neutralization potential	5	Kg/MT	-1000
GLC-8-2	CB0698A1250		Maximum potential acidity	1	Kg/MT	1
GLC-8-2	CB0698A1250		Percent Sulfide	0.02		0.01
GLC-8-2	CB0698A1250		Benzo(ghi)perylene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		p,p'-DDD	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Arochlor 1221	0	mg/Kg	0.5
GLC-8-2	CB0698A1250		Heptachlor epoxide	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Heptachlor	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Endrin aldehyde	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Endrin	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Endosulfan-II	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Endosulfan-I	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		Endosulfan sulfate	0	mg/Kg	0.05
GLC-8-2	CB0698A1250		pH	6.7		0
GLC-8-2	CB0698A1250		Anthracene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Percent Clay	18	%	
GLC-8-2	CB0698A1250		Percent Silt	20	%	
GLC-8-2	CB0698A1250		Percent Sand	62	%	
GLC-8-2	CB0698A1250		Percent Gravel	0	%	
GLC-8-2	CB0698A1250		Oil & Grease	0	mg/Kg	20
GLC-8-2	CB0698A1250		Oil & Grease	0	mg/Kg	20

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-8-2	CB0698A1250		Bis(2-ethylhexyl)phthalate	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Benzo(a)pyrene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Di-n-butyl Phthalate	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Chlordane	0	mg/Kg	0.5
GLC-8-2	CB0698A1250		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Pyrene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Phenanthrene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Napthalene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Indo(1,2,3-cd)pyrene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Flourene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Flouranthene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Chrysene	0	mg/Kg	0.02
GLC-8-2	CB0698A1250		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-9-1	CB0698A1251		Di-n-octyl phthalate	0	mg/Kg	0.02
GLC-9-1	CB0698A1251		Nickel (Ni)	0	mg/L	0.2
GLC-9-1	CB0698A1251		Benzyl Butyl Phthalate	0	mg/Kg	0.02
GLC-9-1	CB0698A1251		Lead (Pb)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Tributyltin	0	µg/Kg	1
GLC-9-1	CB0698A1251		Tetrabutyltin	0	µg/Kg	1
GLC-9-1	CB0698A1251		Monobutyltin	0	µg/Kg	1
GLC-9-1	CB0698A1251		Dibutyltin	1.4	µg/Kg	1
GLC-9-1	CB0698A1251		Lead (Pb)	0	µg/L	200
GLC-9-1	CB0698A1251		Mercury (Hg)	0	mg/Kg	0.1
GLC-9-1	CB0698A1251		Mercury (Hg)	0	mg/L	0.0002
GLC-9-1	CB0698A1251		Mercury (Hg)	0	mg/L	0.02
GLC-9-1	CB0698A1251		Moisture Content	18	%	0.1
GLC-9-1	CB0698A1251		Copper (Cu)	0	µg/L	200
GLC-9-1	CB0698A1251		Nickel (Ni)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Copper (Cu)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Organic Matter	340	mg/Kg	5
GLC-9-1	CB0698A1251		pH	7	STD	
GLC-9-1	CB0698A1251		Selenium (Se)	0	mg/L	0.002
GLC-9-1	CB0698A1251		Selenium (Se)	0	µg/L	20
GLC-9-1	CB0698A1251		Selenium (Se)	0	mg/Kg	0.4
GLC-9-1	CB0698A1251		Silver (Ag)	0	mg/Kg	0.1
GLC-9-1	CB0698A1251		Silver (Ag)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Silver (Ag)	0	µg/L	50
GLC-9-1	CB0698A1251		Solids (TVDS)	0	mg/L	10
GLC-9-1	CB0698A1251		Specific Conductivity (EC)	110	µmho/cm	1

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-9-1	CB0698A1251		Thallium (Tl)	0	mg/Kg	1
GLC-9-1	CB0698A1251		Nickel (Ni)	8.7	mg/Kg	0.5
GLC-9-1	CB0698A1251		Cadmium (Cd)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Percent Sand	96	%	
GLC-9-1	CB0698A1251		Percent Silt	1	%	
GLC-9-1	CB0698A1251		Percent Clay	3	%	
GLC-9-1	CB0698A1251		Acid volatile sulfide	0	mg/Kg	0.1
GLC-9-1	CB0698A1251		Percent Gravel	0	%	
GLC-9-1	CB0698A1251		Arsenic (As)	1	mg/Kg	0.4
GLC-9-1	CB0698A1251		Arsenic (As)	0	mg/L	0.002
GLC-9-1	CB0698A1251		Arsenic (As)	90	µg/L	20
GLC-9-1	CB0698A1251		Beryllium (Be)	0	mg/Kg	1
GLC-9-1	CB0698A1251		Beryllium (Be)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Beryllium (Be)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Lead (Pb)	1.6	mg/Kg	0.1
GLC-9-1	CB0698A1251		Cadmium (Cd)	0	mg/Kg	0.5
GLC-9-1	CB0698A1251		Total Dissolved Solids (TDS)	30	mg/L	10
GLC-9-1	CB0698A1251		Cadmium (Cd)	0	µg/L	200
GLC-9-1	CB0698A1251		Chromium (Cr)	0	mg/L	0.005
GLC-9-1	CB0698A1251		Chromium (Cr)	0	mg/L	0.2
GLC-9-1	CB0698A1251		Chromium (Cr)	6	mg/Kg	1
GLC-9-1	CB0698A1251		pH	8.2		0
GLC-9-1	CB0698A1251		Percent Sulfide	0.01		0.01
GLC-9-1	CB0698A1251		Maximum potential acidity	1	Kg/MT	1
GLC-9-1	CB0698A1251		Neutralization potential	6	Kg/MT	-1000
GLC-9-1	CB0698A1251		Net neutralization potential	5	Kg/MT	-2000
GLC-9-1	CB0698A1251		Neutralization potential acidity ratio	6		-10
GLC-9-1	CB0698A1251		Copper (Cu)	2.5	mg/Kg	0.4
GLC-9-1	CB0698A1251		Bromide (Br)	0	mg/L	1
GLC-9-1	CB0698A1251		Dimethyl Phthalate	0	mg/Kg	0.02
GLC-9-1	CB0698A1251		Endosulfan-II	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Endosulfan-I	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Endosulfan sulfate	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Dieldrin	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Chlordane	0	mg/Kg	0.5
GLC-9-1	CB0698A1251		BHC-gamma (Lindane)	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		BHC-delta	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		BHC-beta	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		BHC-alpha	0	mg/Kg	0.05

Appendix G. Grant Line Canal Sediment Data

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-9-1	CB0698A1251		p,p'-DDE	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		p,p'-DDD	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Methoxychlor	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Heptachlor epoxide	0	mg/Kg	0.05
GLC-9-1	CB0698A1251		Thallium (Tl)	0	mg/L	0.5
GLC-9-1	CB0698A1251		Acenapthene	0	mg/Kg	0.02

Appendix H. Grant Line Canal Sediment Elutriate Data						
DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7	CB0698A1254	6/9/98	Mercury	0.0005	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Selenium	0.0017	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Sulfate	15	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chloride	19	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Bromide	0.109	mg/L	0.01
GLC-7	CB0698A1254	6/9/98	UV Absorbance @460 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @285 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @660 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @254nm	0.088	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	
GLC-7	CB0698A1254	6/9/98	Ammonia	1	mg/L as N	0.01
GLC-7	CB0698A1254	6/9/98	Solids	3760	mg/L	25.00
GLC-7	CB0698A1254	6/9/98	Oil and Grease	4.92	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Organic Carbon	33.14	mg/L as C	0.10
GLC-7	CB0698A1254	6/9/98	Calcium	11.4	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Magnesium	6.35	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Sodium	23.3	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Boron	0	mg/L	0.10
GLC-7	CB0698A1254	6/9/98	Arsenic	0.021	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Nickel	0.146	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Lead	0.059	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Copper	0.132	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Chromium	0.151	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Thallium	0.001	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Beryllium	0.004	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Zinc	0.239	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Cadmium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Silver	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Organic Carbon	6.61	mg/L as C	0.10
GLC-7	CB0698A1254	6/9/98	Arsenic	0.006	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Beryllium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Cadmium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Chromium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Thallium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Silver	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Nickel	0.001	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Lead	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Copper	0.003	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Zinc	0.008	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Hardness	55	mg/L as CaCO3	1.00
GLC-7	CB0698A1254	6/9/98	Mercury	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Selenium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Alkalinity	58	mg/L as CaCO3	1.00
GLC-7	CB0698A1254	6/9/98	pH	7.7	pH Units	0.10
GLC-7	CB0698A1254	6/9/98	Solids	140	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Conductance (EC)	233	µS/cm	1.00
GLC-7	CB0698A1254	6/9/98	Fluoride	0.2	mg/L	0.10
GLC-7	CB0698A1254	6/9/98	Conductance (EC)	0	µS/cm	1.00
GLC-7	CB0698A1254	6/9/98	Nitrate	10.4	mg/L	0.50
GLC-7	CB0698A1254	6/9/98	UV Absorbance @254nm	0.088	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	
GLC-7	CB0698A1254	6/9/98	UV Absorbance @460 nm	0	absorbance/cm	0.00

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7	CB0698A1254	6/9/98	UV Absorbance @660 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @285 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	Solids	140	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Oxyfluorfen	0	µg/L	0.20
GLC-7	CB0698A1254	6/9/98	Alachlor	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	p,p'-DDT	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	Diuron	0	µg/L	0.25
GLC-7	CB0698A1254	6/9/98	Chlorpropham	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Dichloran	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	p,p'-DDD	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Simazine	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Atrazine	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Pentachloronitrobenzene (PCNB)	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Chlorothalonil	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Thiobencarb	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Chlorpyrifos	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Dacthal (DCPA)	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Captan	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Methoxychlor	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	Metolachlor	0	µg/L	0.20
GLC-7	CB0698A1254	6/9/98	BHC-alpha	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Ronnel	0.311	µg/L	0.30
GLC-7	CB0698A1254	6/9/98	Cyanazine	0	µg/L	0.30
GLC-7	CB0698A1254	6/9/98	PCB-1260	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	Dicofol	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	p,p'-DDE	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	BHC-delta	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Heptachlor	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Aldrin	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Heptachlor epoxide	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Chlordane	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	BHC-beta	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Dieldrin	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	PCB-1254	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	Endrin	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Endosulfan-II	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Endrin aldehyde	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Endosulfan sulfate	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Toxaphene	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	PCB-1016	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1221	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1232	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1242	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1248	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	Endosulfan-I	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	1-Chloro-2-Fluorobenzene	10	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chlorine	2.2	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	2-Bromo-1-chloropropane	10.252	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	
GLC-7	CB0698A1254	6/9/98	Bromodichloromethane	58	µg/L	20.00
GLC-7	CB0698A1254	6/9/98	Chloroform	280	µg/L	20.00
GLC-7	CB0698A1254	6/9/98	Bromoform	0	µg/L	20.00

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7	CB0698A1254	6/9/98	Dibromochloromethane	0	µg/L	20.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	0.10
GLC-7	CB0698A1254	6/9/98	Monochloroacetic Acid (MCAA)	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Monobromoacetic Acid (MBAA)	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Dichloroacetic Acid (DCAA)	41	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Trichloroacetic Acid (TCAA)	31	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Bromochloroacetic Acid (BCAA)	12	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Dibromoacetic Acid (DBAA)	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	2,3-Dibromoproprionic Acid	43.8	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chlorine	0	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	2-Bromo-1-chloropropane	11.291	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chloroform	540	µg/L	10.00
GLC-7	CB0698A1254	6/9/98	Dibromochloromethane	0	µg/L	10.00
GLC-7	CB0698A1254	6/9/98	Bromoform	0	µg/L	10.00
GLC-7	CB0698A1254	6/9/98	Bromodichloromethane	79	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	Bromide	0.034	mg/L	0.01
GLC-3	CB0698A1505	6/18/98	UV Absorbance @460 nm	0	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	UV Absorbance @660 nm	0	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	UV Absorbance @285 nm	0	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	UV Absorbance @254nm	0.074	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	pH	0	pH Units	
GLC-3	CB0698A1505	6/18/98	Solids	41.99	mg/L	1.67
GLC-3	CB0698A1505	6/18/98	Organic Carbon	3.22	mg/L as C	0.10
GLC-3	CB0698A1505	6/18/98	Organic Carbon	2.56	mg/L as C	0.10
GLC-3	CB0698A1505	6/18/98	Ammonia	0.03	mg/L as N	0.01
GLC-3	CB0698A1505	6/18/98	Oil and Grease	0	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Fluoride	0	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Sulfate	17	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Chloride	12	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Sodium	13.4	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Boron	0	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Magnesium	3.88	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Calcium	9.32	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Hardness	39	mg/L as CaCO3	1.00
GLC-3	CB0698A1505	6/18/98	Alkalinity	36	mg/L as CaCO3	1.00
GLC-3	CB0698A1505	6/18/98	pH	7.5	pH Units	0.10
GLC-3	CB0698A1505	6/18/98	Solids	87	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Conductance (EC)	151	µS/cm	1.00
GLC-3	CB0698A1505	6/18/98	Zinc	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Thallium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Silver	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Nickel	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Lead	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Copper	0.001	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Chromium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Cadmium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Beryllium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Arsenic	0.002	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Thallium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Silver	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Nickel	0.002	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Lead	0.001	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Copper	0.003	mg/L	0.00

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3	CB0698A1505	6/18/98	Chromium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Cadmium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Beryllium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Arsenic	0.002	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Zinc	0.011	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Mercury	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Mercury	0.0002	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Selenium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Selenium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Nitrate	1	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Solids	41.33	mg/L	1.67
GLC-3	CB0698A1505	6/18/98	Dacthal (DCPA)	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	p,p'-DDD	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	p,p'-DDT	0	µg/L	0.05
GLC-3	CB0698A1505	6/18/98	Diuron	0	µg/L	0.25
GLC-3	CB0698A1505	6/18/98	Chlorpropham	0	µg/L	0.02
GLC-3	CB0698A1505	6/18/98	Dichloran	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Simazine	0	µg/L	0.02
GLC-3	CB0698A1505	6/18/98	Atrazine	0	µg/L	0.02
GLC-3	CB0698A1505	6/18/98	Pentachloronitrobenzene (PCNB)	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Chlorothalonil	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Alachlor	0	µg/L	0.05
GLC-3	CB0698A1505	6/18/98	Chlorpyrifos	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Captan	0	µg/L	0.02
GLC-3	CB0698A1505	6/18/98	Methoxychlor	0	µg/L	0.05
GLC-3	CB0698A1505	6/18/98	BHC-delta	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Dicofol	0	µg/L	0.05
GLC-3	CB0698A1505	6/18/98	Metolachlor	0	µg/L	0.20
GLC-3	CB0698A1505	6/18/98	Oxyfluorfen	0	µg/L	0.20
GLC-3	CB0698A1505	6/18/98	Ronnel	0	µg/L	0.30
GLC-3	CB0698A1505	6/18/98	Cyanazine	0	µg/L	0.30
GLC-3	CB0698A1505	6/18/98	PCB-1260	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Thiobencarb	0	µg/L	0.02
GLC-3	CB0698A1505	6/18/98	Endosulfan-I	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	BHC-alpha	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	BHC-beta	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Heptachlor	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Aldrin	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Chlordane	0	µg/L	0.05
GLC-3	CB0698A1505	6/18/98	PCB-1254	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Dieldrin	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	p,p'-DDE	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	PCB-1232	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Heptachlor epoxide	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	PCB-1242	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Endrin	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	PCB-1221	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	PCB-1016	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Toxaphene	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Endosulfan sulfate	0	µg/L	0.02
GLC-3	CB0698A1505	6/18/98	Endrin aldehyde	0	µg/L	0.01
GLC-3	CB0698A1505	6/18/98	Endosulfan-II	0	µg/L	0.01

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3	CB0698A1505	6/18/98	PCB-1248	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Bromodichloromethane	31	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	Chloroform	220	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	pH	0	pH Units	
GLC-3	CB0698A1505	6/18/98	Dibromochloromethane	0	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	Bromoform	0	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	2-Bromo-1-chloropropane	10.589	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Chlorine	1.5	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Monochloroacetic Acid (MCAA)	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Trichloroacetic Acid (TCAA)	50	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Monobromoacetic Acid (MBAA)	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Dibromoacetic Acid (DBAA)	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Bromochloroacetic Acid (BCAA)	10	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	2,3-Dibromoproprionic Acid	42.1	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Dichloroacetic Acid (DCAA)	52	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Dibutyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Monobutyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Tetrabutyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Tributyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Sulfide	0	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Sulfide	0	mg/L	0.10

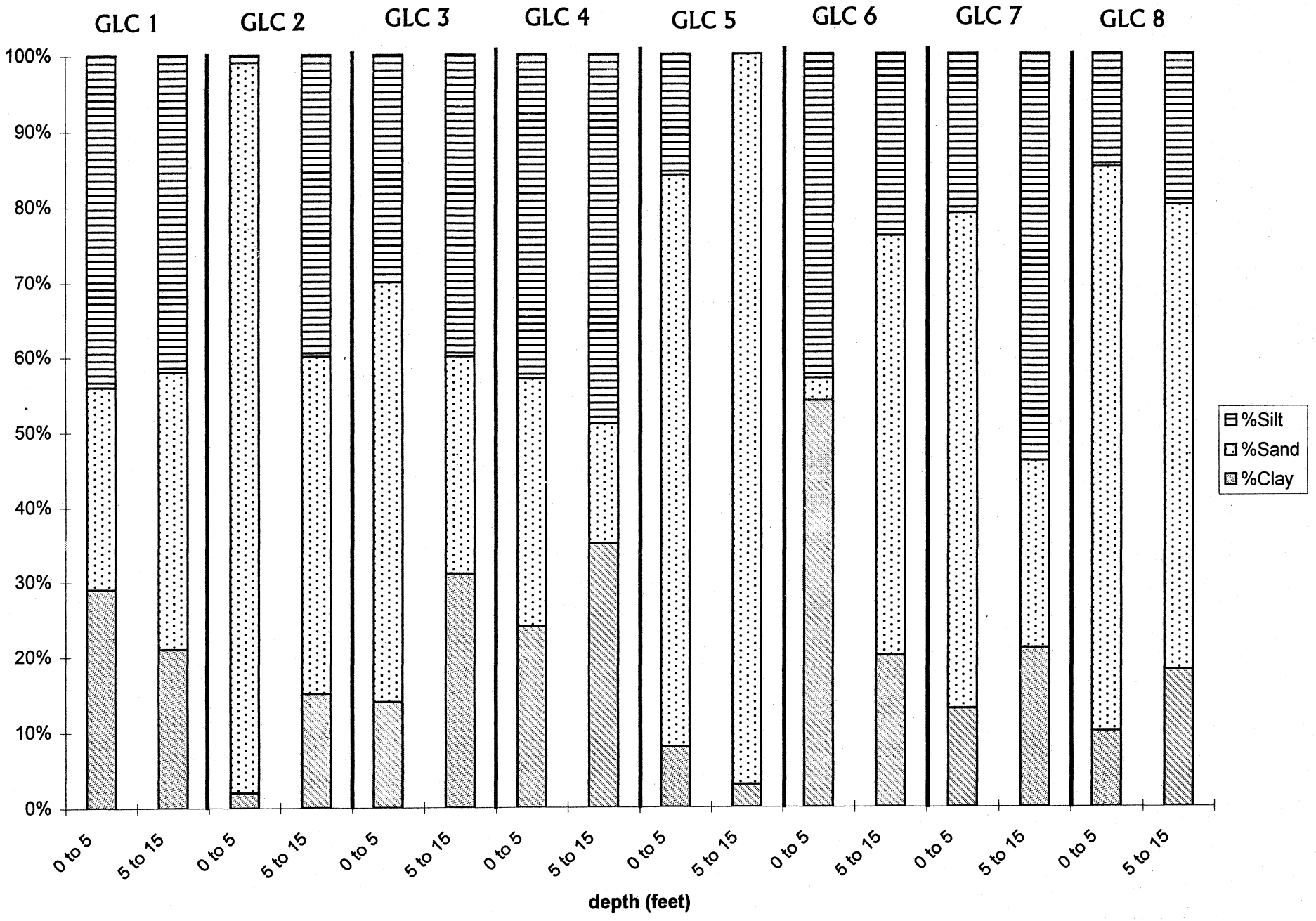
Appendix H. Grant Line Canal Sediment Elutriate Data						
DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7	CB0698A1254	6/9/98	Mercury	0.0005	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Selenium	0.0017	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Sulfate	15	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chloride	19	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Bromide	0.109	mg/L	0.01
GLC-7	CB0698A1254	6/9/98	UV Absorbance @460 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @285 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @660 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @254nm	0.088	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	
GLC-7	CB0698A1254	6/9/98	Ammonia	1	mg/L as N	0.01
GLC-7	CB0698A1254	6/9/98	Solids	3760	mg/L	25.00
GLC-7	CB0698A1254	6/9/98	Oil and Grease	4.92	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Organic Carbon	33.14	mg/L as C	0.10
GLC-7	CB0698A1254	6/9/98	Calcium	11.4	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Magnesium	6.35	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Sodium	23.3	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Boron	0	mg/L	0.10
GLC-7	CB0698A1254	6/9/98	Arsenic	0.021	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Nickel	0.146	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Lead	0.059	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Copper	0.132	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Chromium	0.151	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Thallium	0.001	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Beryllium	0.004	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Zinc	0.239	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Cadmium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Silver	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Organic Carbon	6.61	mg/L as C	0.10
GLC-7	CB0698A1254	6/9/98	Arsenic	0.006	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Beryllium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Cadmium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Chromium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Thallium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Silver	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Nickel	0.001	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Lead	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Copper	0.003	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Zinc	0.008	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Hardness	55	mg/L as CaCO3	1.00
GLC-7	CB0698A1254	6/9/98	Mercury	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Selenium	0	mg/L	0.00
GLC-7	CB0698A1254	6/9/98	Alkalinity	58	mg/L as CaCO3	1.00
GLC-7	CB0698A1254	6/9/98	pH	7.7	pH Units	0.10
GLC-7	CB0698A1254	6/9/98	Solids	140	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Conductance (EC)	233	µS/cm	1.00
GLC-7	CB0698A1254	6/9/98	Fluoride	0.2	mg/L	0.10
GLC-7	CB0698A1254	6/9/98	Conductance (EC)	0	µS/cm	1.00
GLC-7	CB0698A1254	6/9/98	Nitrate	10.4	mg/L	0.50
GLC-7	CB0698A1254	6/9/98	UV Absorbance @254nm	0.088	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	
GLC-7	CB0698A1254	6/9/98	UV Absorbance @460 nm	0	absorbance/cm	0.00

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7	CB0698A1254	6/9/98	UV Absorbance @660 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	UV Absorbance @285 nm	0	absorbance/cm	0.00
GLC-7	CB0698A1254	6/9/98	Solids	140	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	Oxyfluorfen	0	µg/L	0.20
GLC-7	CB0698A1254	6/9/98	Alachlor	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	p,p'-DDT	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	Diuron	0	µg/L	0.25
GLC-7	CB0698A1254	6/9/98	Chlorpropham	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Dichloran	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	p,p'-DDD	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Simazine	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Atrazine	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Pentachloronitrobenzene (PCNB)	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Chlorothalonil	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Thiobencarb	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Chlorpyrifos	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Dacthal (DCPA)	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Captan	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Methoxychlor	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	Metolachlor	0	µg/L	0.20
GLC-7	CB0698A1254	6/9/98	BHC-alpha	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Ronnel	0.311	µg/L	0.30
GLC-7	CB0698A1254	6/9/98	Cyanazine	0	µg/L	0.30
GLC-7	CB0698A1254	6/9/98	PCB-1260	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	Dicofol	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	p,p'-DDE	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	BHC-gamma (Lindane)	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	BHC-delta	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Heptachlor	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Aldrin	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Heptachlor epoxide	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Chlordane	0	µg/L	0.05
GLC-7	CB0698A1254	6/9/98	BHC-beta	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Dieldrin	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	PCB-1254	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	Endrin	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Endosulfan-II	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Endrin aldehyde	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	Endosulfan sulfate	0	µg/L	0.02
GLC-7	CB0698A1254	6/9/98	Toxaphene	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	PCB-1016	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1221	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1232	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1242	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	PCB-1248	0	µg/L	0.10
GLC-7	CB0698A1254	6/9/98	Endosulfan-I	0	µg/L	0.01
GLC-7	CB0698A1254	6/9/98	1-Chloro-2-Fluorobenzene	10	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chlorine	2.2	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	2-Bromo-1-chloropropane	10.252	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	
GLC-7	CB0698A1254	6/9/98	Bromodichloromethane	58	µg/L	20.00
GLC-7	CB0698A1254	6/9/98	Chloroform	280	µg/L	20.00
GLC-7	CB0698A1254	6/9/98	Bromoform	0	µg/L	20.00

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-7	CB0698A1254	6/9/98	Dibromochloromethane	0	µg/L	20.00
GLC-7	CB0698A1254	6/9/98	pH	0	pH Units	0.10
GLC-7	CB0698A1254	6/9/98	Monochloroacetic Acid (MCAA)	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Monobromoacetic Acid (MBAA)	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Dichloroacetic Acid (DCAA)	41	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Trichloroacetic Acid (TCAA)	31	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Bromochloroacetic Acid (BCAA)	12	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Dibromoacetic Acid (DBAA)	0	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	2,3-Dibromoproprionic Acid	43.8	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chlorine	0	mg/L	1.00
GLC-7	CB0698A1254	6/9/98	2-Bromo-1-chloropropane	11.291	µg/L	1.00
GLC-7	CB0698A1254	6/9/98	Chloroform	540	µg/L	10.00
GLC-7	CB0698A1254	6/9/98	Dibromochloromethane	0	µg/L	10.00
GLC-7	CB0698A1254	6/9/98	Bromoform	0	µg/L	10.00
GLC-7	CB0698A1254	6/9/98	Bromodichloromethane	79	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	Bromide	0.034	mg/L	0.01
GLC-3	CB0698A1505	6/18/98	UV Absorbance @460 nm	0	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	UV Absorbance @660 nm	0	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	UV Absorbance @285 nm	0	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	UV Absorbance @254nm	0.074	absorbance/cm	0.00
GLC-3	CB0698A1505	6/18/98	pH	0	pH Units	
GLC-3	CB0698A1505	6/18/98	Solids	41.99	mg/L	1.67
GLC-3	CB0698A1505	6/18/98	Organic Carbon	3.22	mg/L as C	0.10
GLC-3	CB0698A1505	6/18/98	Organic Carbon	2.56	mg/L as C	0.10
GLC-3	CB0698A1505	6/18/98	Ammonia	0.03	mg/L as N	0.01
GLC-3	CB0698A1505	6/18/98	Oil and Grease	0	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Fluoride	0	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Sulfate	17	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Chloride	12	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Sodium	13.4	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Boron	0	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Magnesium	3.88	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Calcium	9.32	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Hardness	39	mg/L as CaCO3	1.00
GLC-3	CB0698A1505	6/18/98	Alkalinity	36	mg/L as CaCO3	1.00
GLC-3	CB0698A1505	6/18/98	pH	7.5	pH Units	0.10
GLC-3	CB0698A1505	6/18/98	Solids	87	mg/L	1.00
GLC-3	CB0698A1505	6/18/98	Conductance (EC)	151	µS/cm	1.00
GLC-3	CB0698A1505	6/18/98	Zinc	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Thallium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Silver	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Nickel	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Lead	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Copper	0.001	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Chromium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Cadmium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Beryllium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Arsenic	0.002	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Thallium	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Silver	0	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Nickel	0.002	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Lead	0.001	mg/L	0.00
GLC-3	CB0698A1505	6/18/98	Copper	0.003	mg/L	0.00

DWR Site	DWR Sample ID	Date	Analyte	Result	Units	Detection Limit
GLC-3	CB0698A1505	6/18/98	PCB-1248	0	µg/L	0.10
GLC-3	CB0698A1505	6/18/98	Bromodichloromethane	31	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	Chloroform	220	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	pH	0	pH Units	
GLC-3	CB0698A1505	6/18/98	Dibromochloromethane	0	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	Bromoform	0	µg/L	10.00
GLC-3	CB0698A1505	6/18/98	2-Bromo-1-chloropropane	10.589	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Chlorine	1.5	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Monochloroacetic Acid (MCAA)	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Trichloroacetic Acid (TCAA)	50	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Monobromoacetic Acid (MBAA)	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Dibromoacetic Acid (DBAA)	0	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Bromochloroacetic Acid (BCAA)	10	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	2,3-Dibromoproprionic Acid	42.1	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Dichloroacetic Acid (DCAA)	52	µg/L	1.00
GLC-3	CB0698A1505	6/18/98	Dibutyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Monobutyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Tetrabutyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Tributyltin	0	ng/L	2.00
GLC-3	CB0698A1505	6/18/98	Sulfide	0	mg/L	0.10
GLC-3	CB0698A1505	6/18/98	Sulfide	0	mg/L	0.10

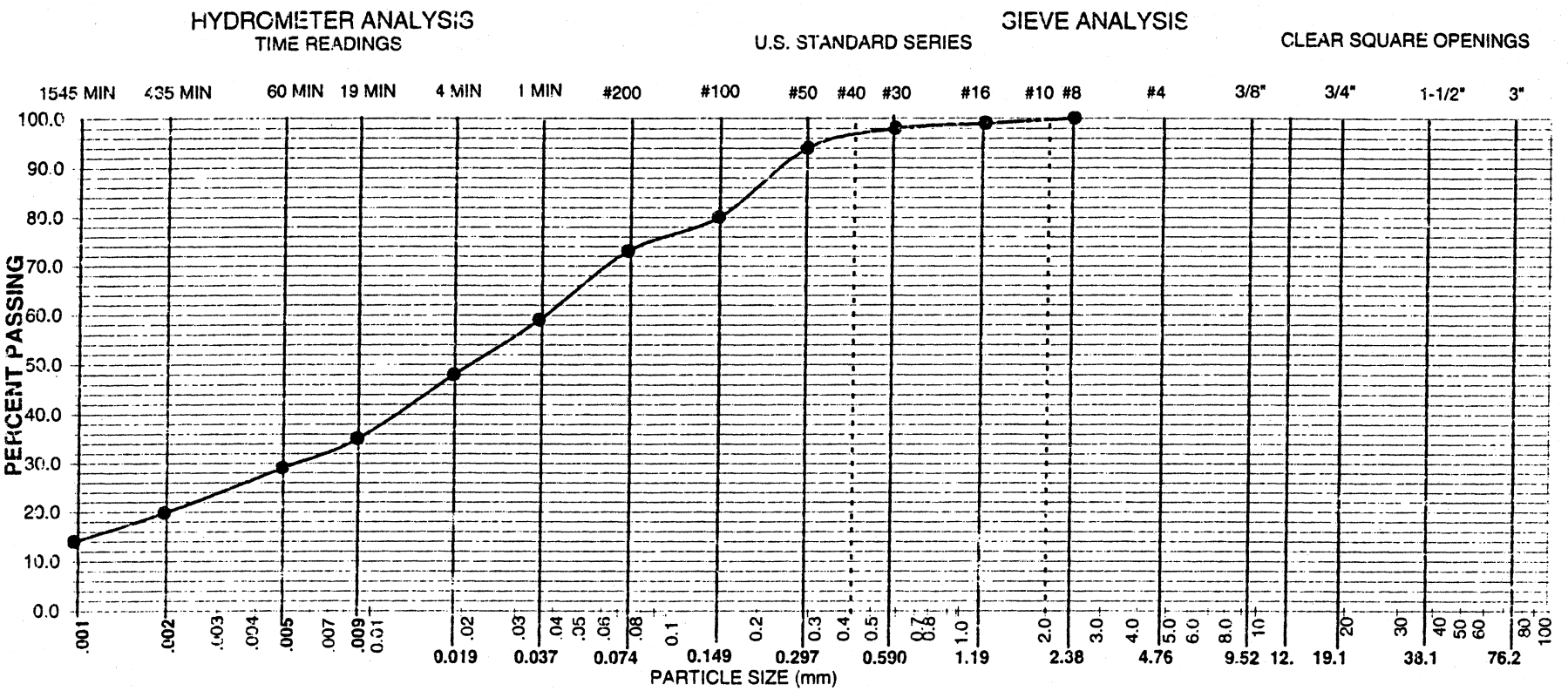
Appendix I. Grant Line Canal Sediment Grain Size Analysis



No samples contained gravel.

BSK JOB 05740021
JUNE 1998

GLC-1-1 @ 0-5 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

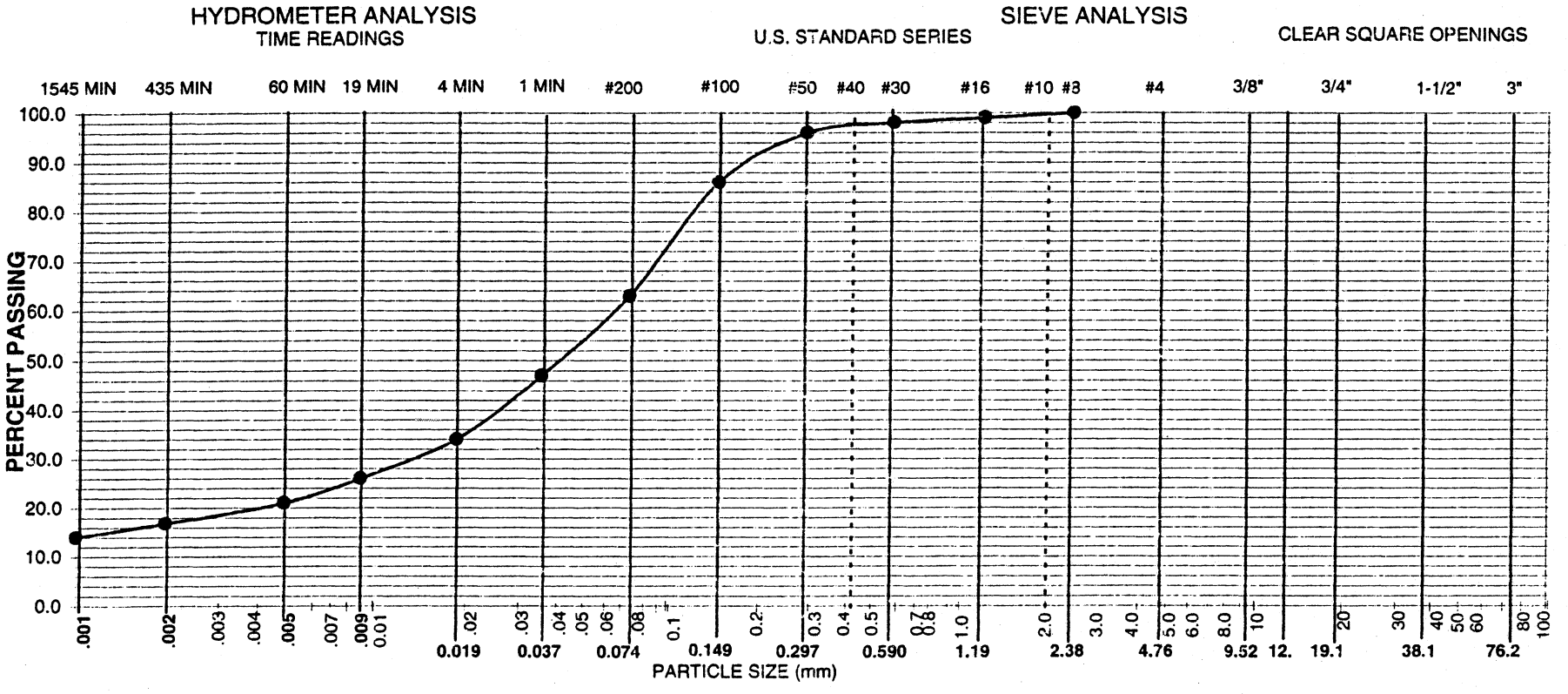
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	27%	44%	29%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-1-2 @ 5-15 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

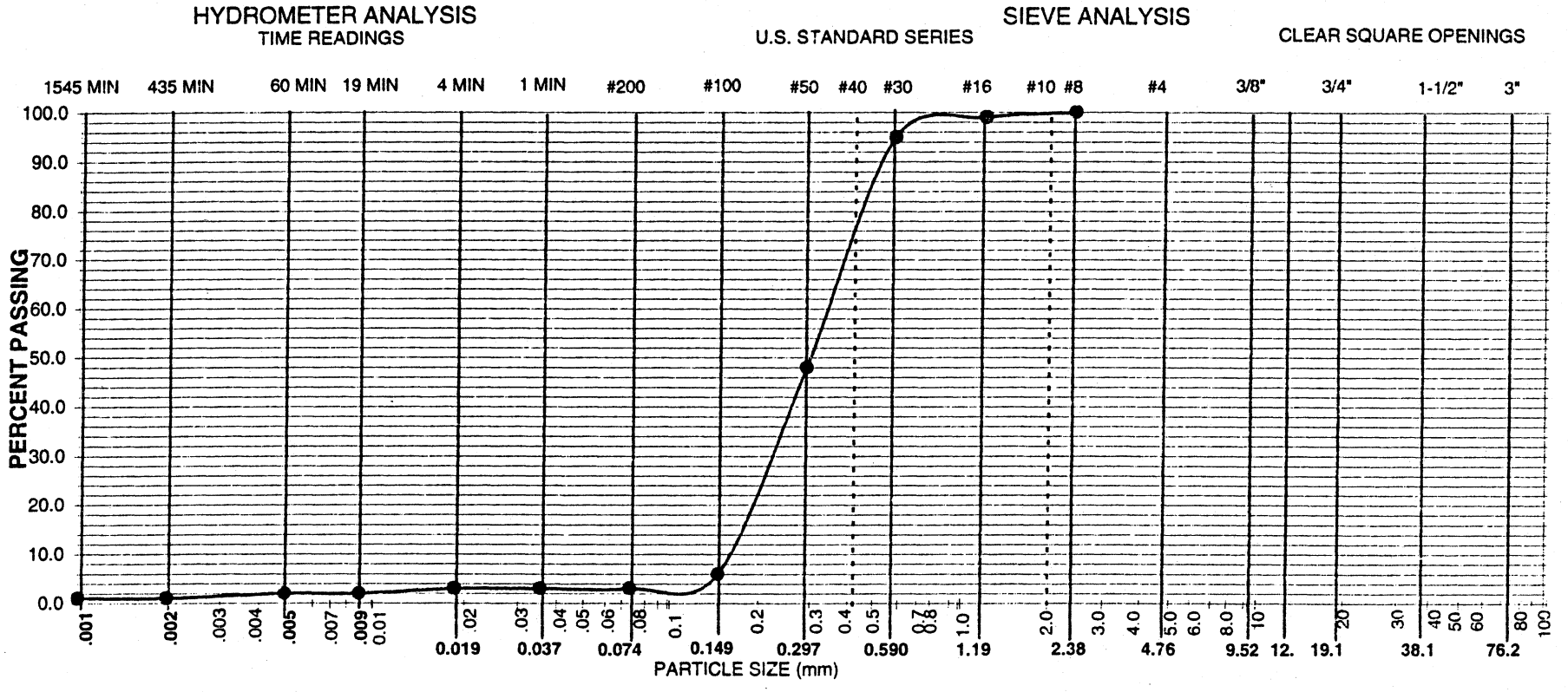
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	37%	42%	21%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-2-1 @ 0-5 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

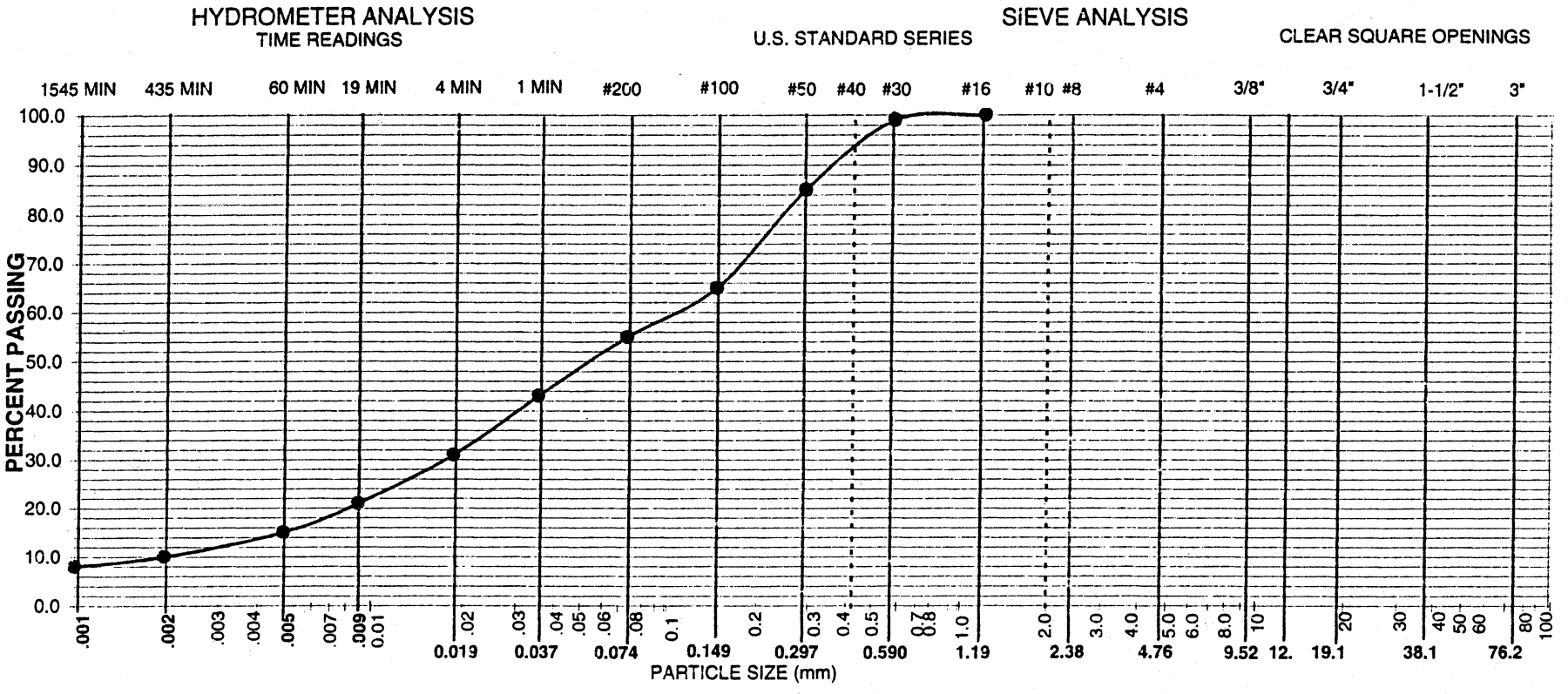
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	97%	1%	2%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-2-2 @ 5-15 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

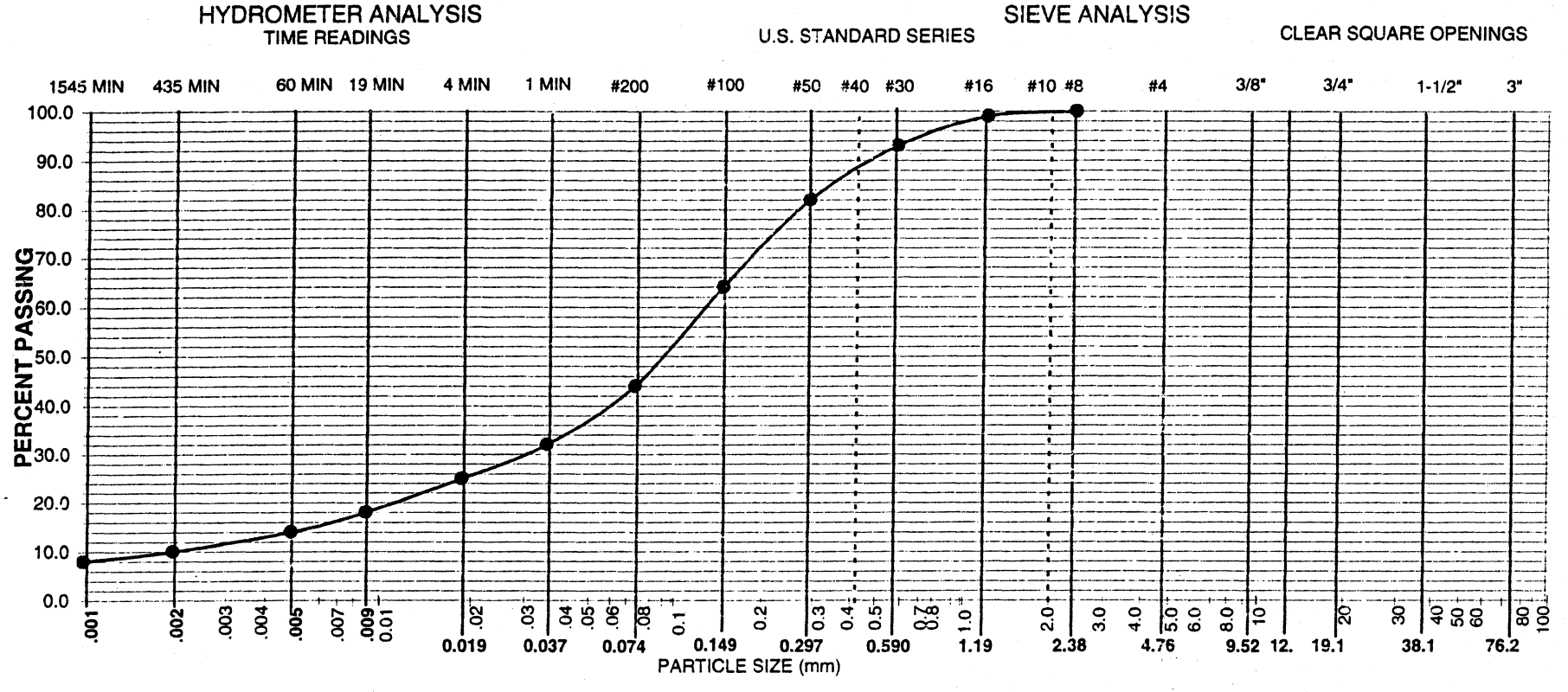
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	45%	40%	15%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-3-1 @ 0-5 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

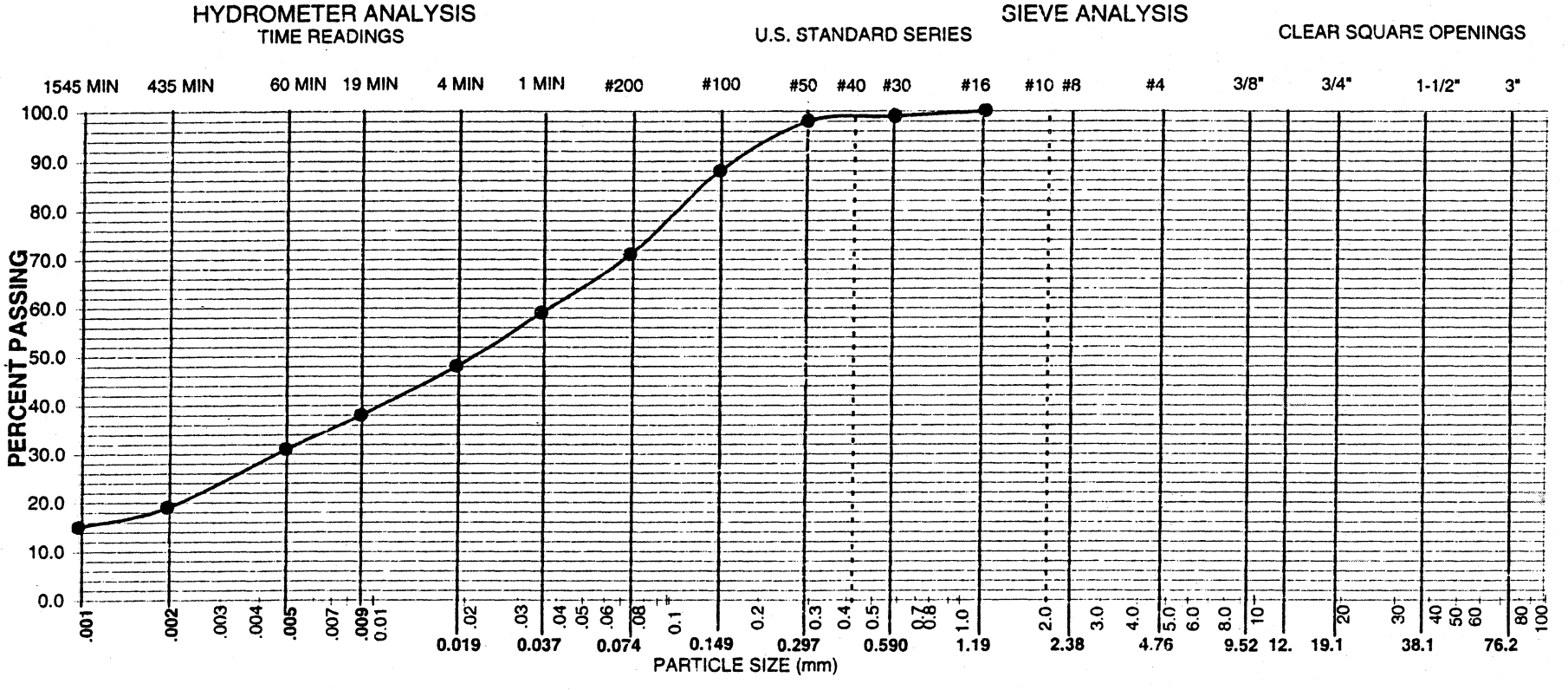
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	56%	30%	14%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-3-2 @ 5-15 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

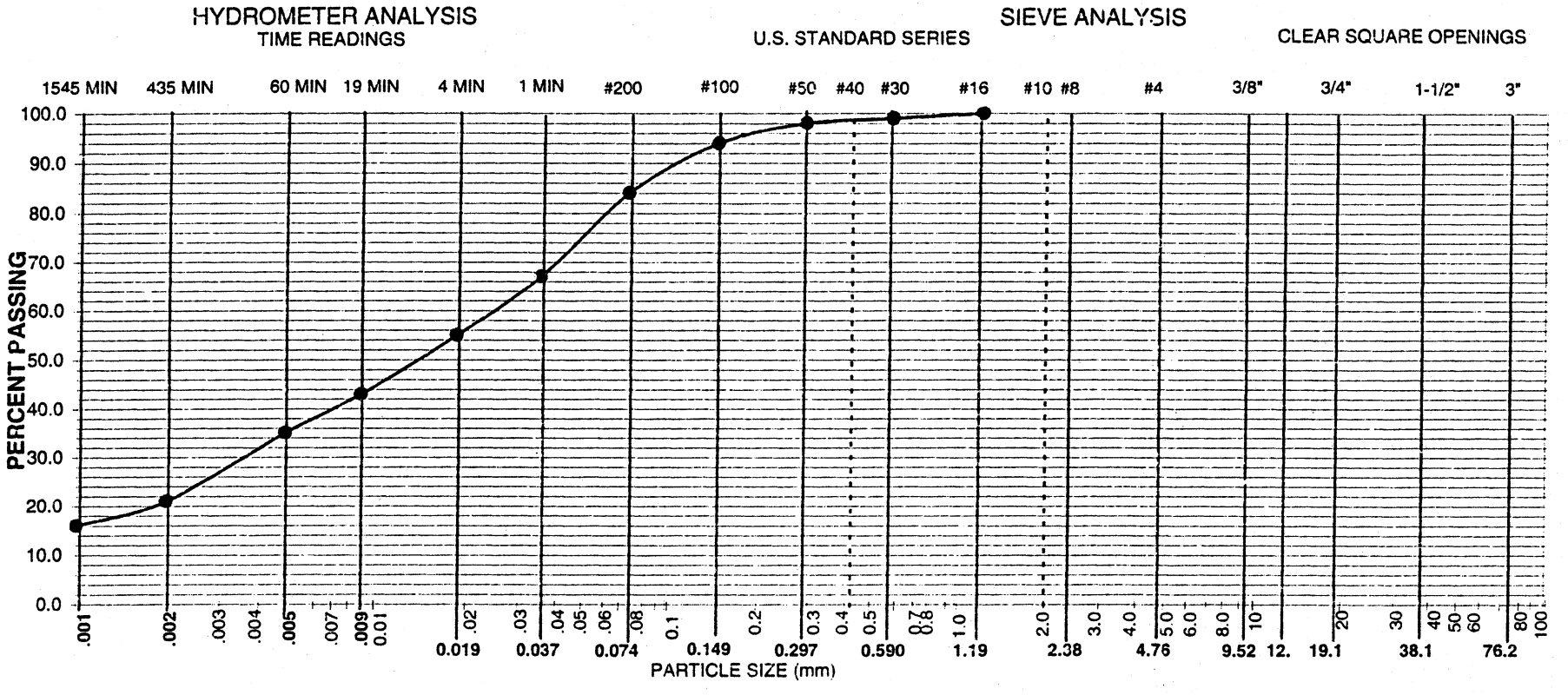
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	29%	40%	31%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-4-2 @ 5-15 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

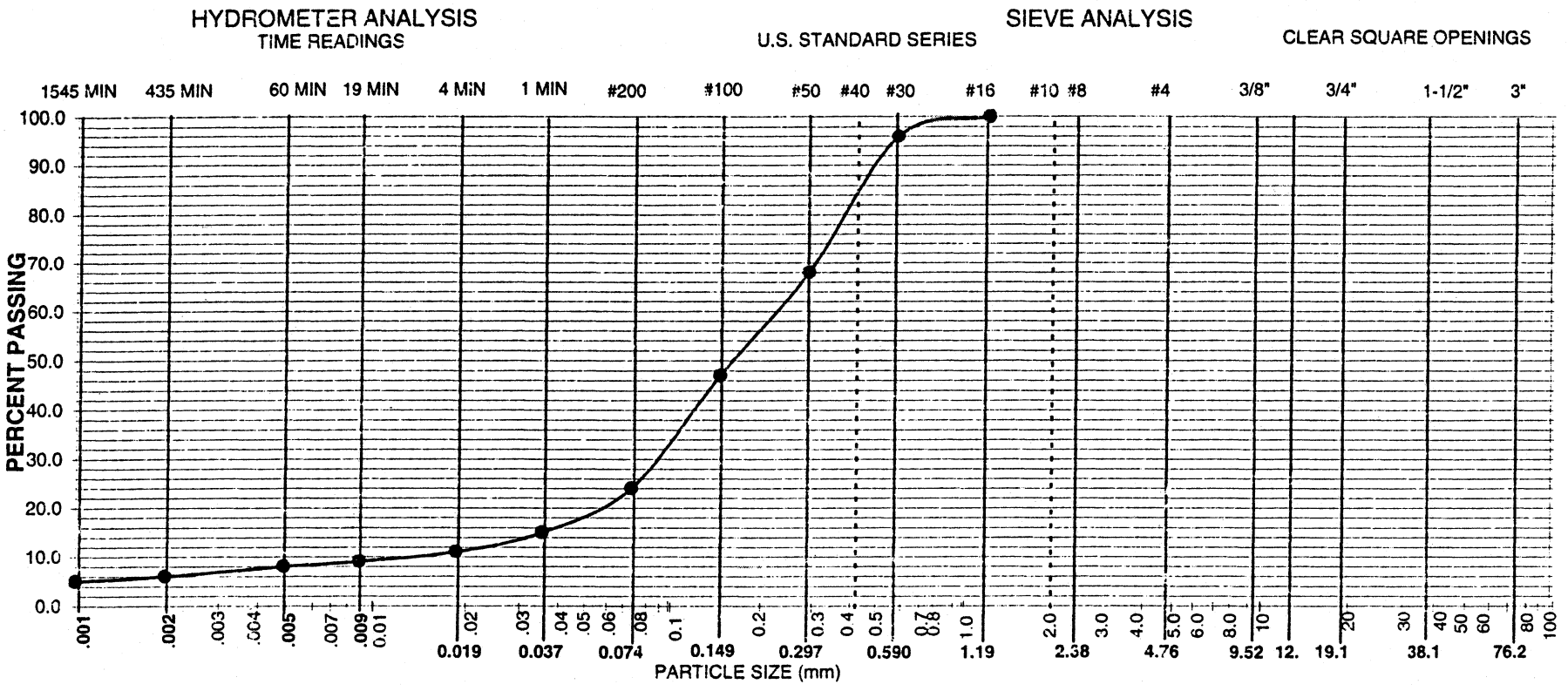
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	16%	49%	35%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-5-1 @ 0-5 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

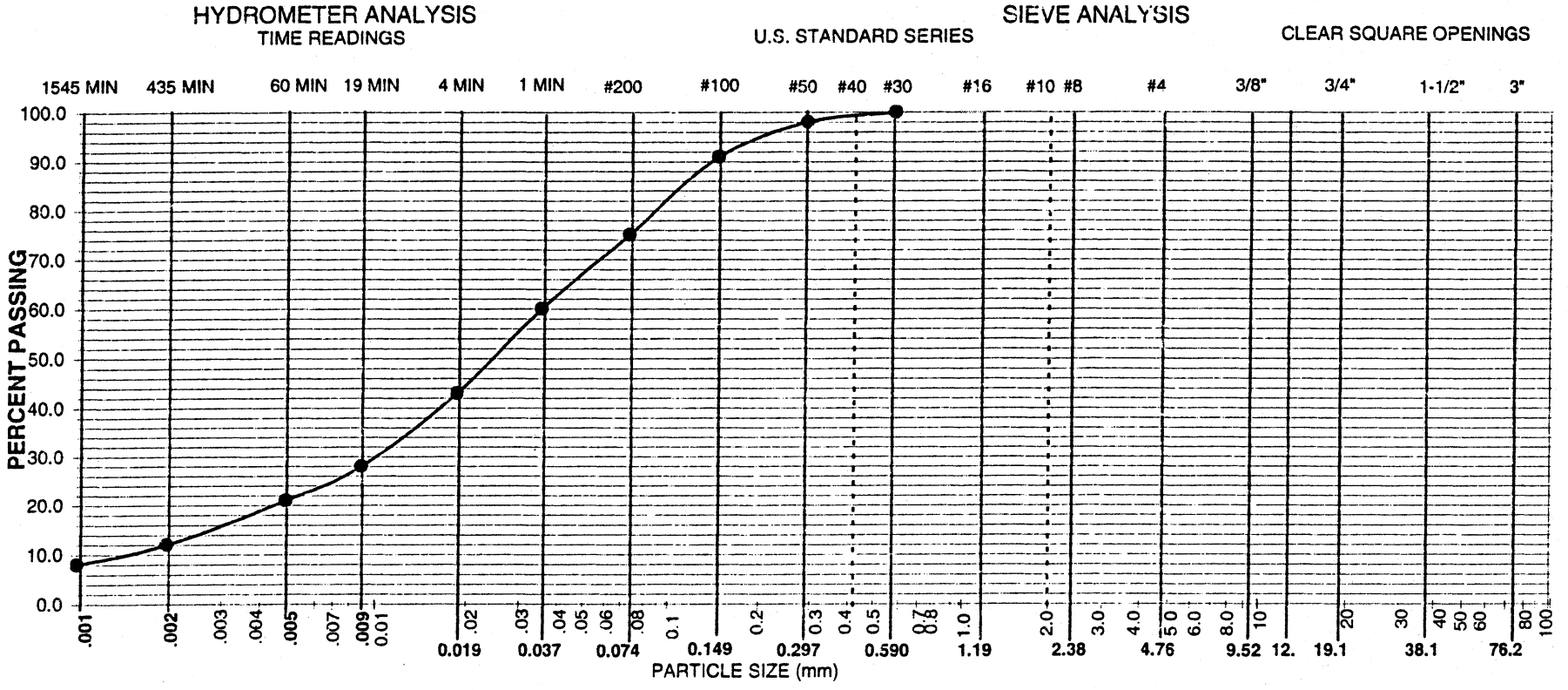
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	76%	16%	8%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-7-2 @ 5-15 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

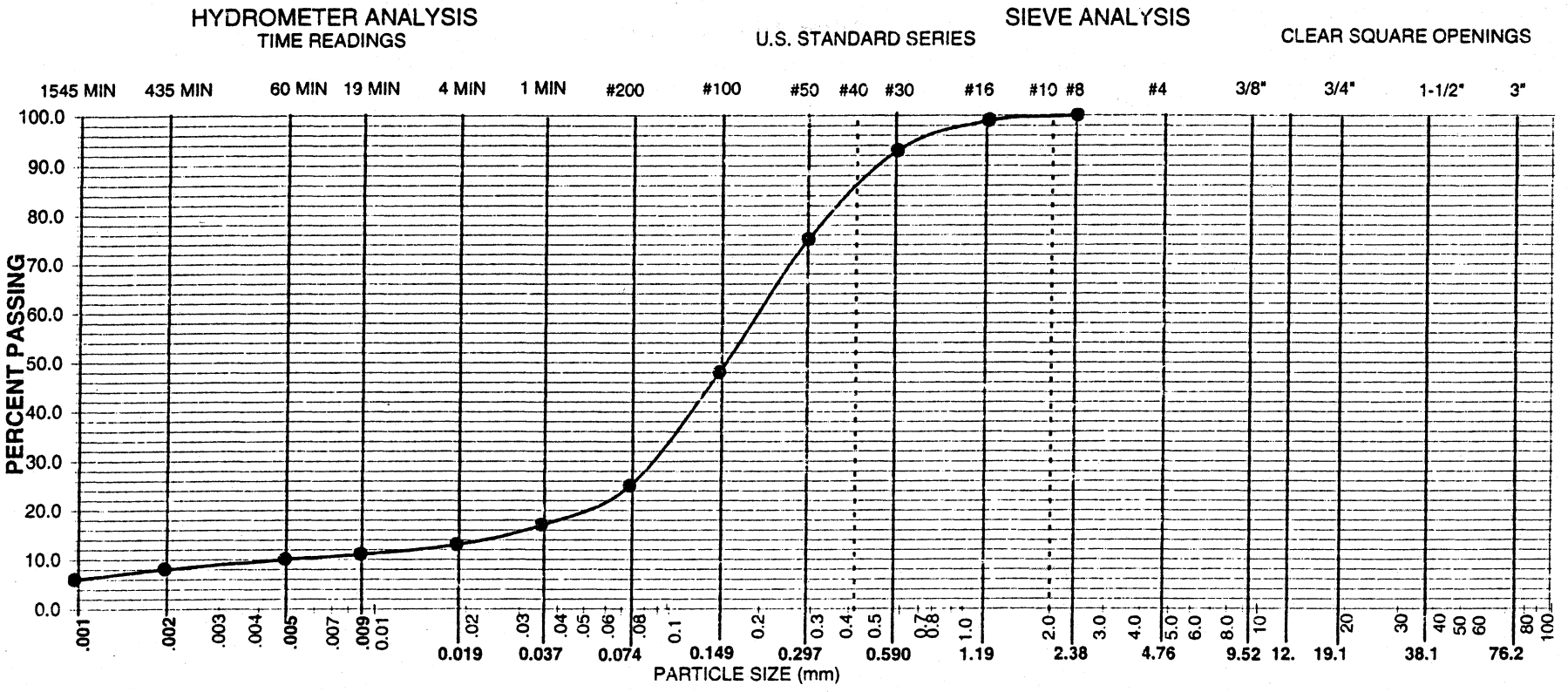
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	25%	54%	21%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-8-1 @ 0-5 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

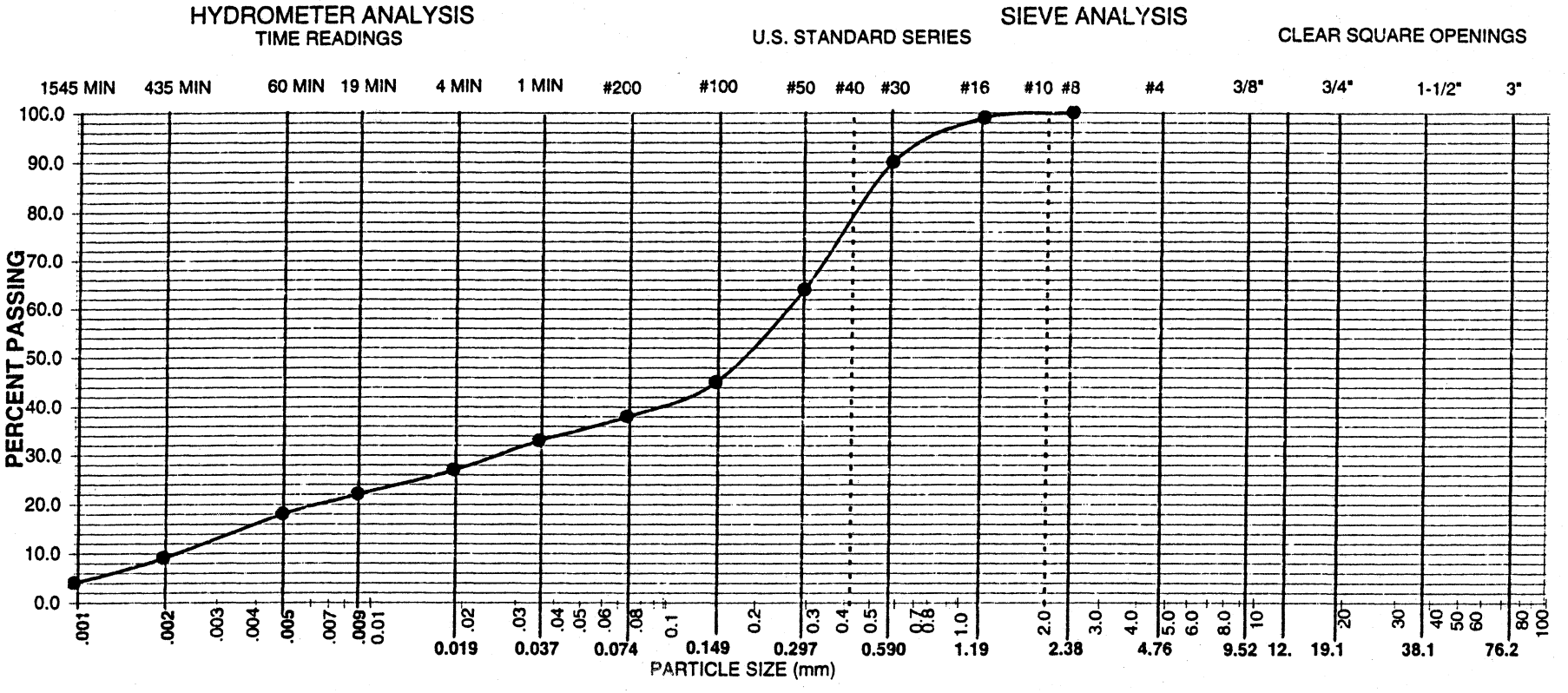
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	75%	15%	10%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-8-2 @ 5-15 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

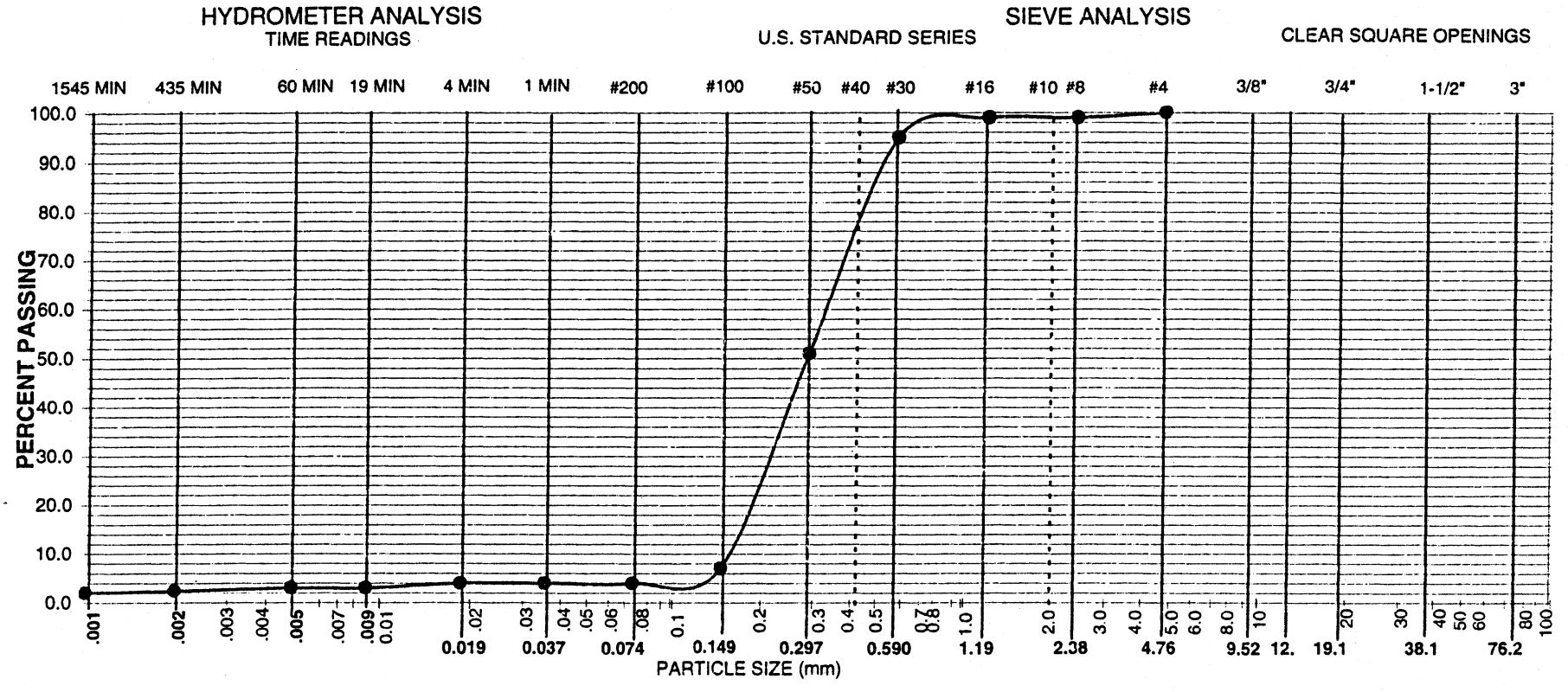
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	62%	20%	18%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

GLC-9-1 @ 0-5 FT.



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

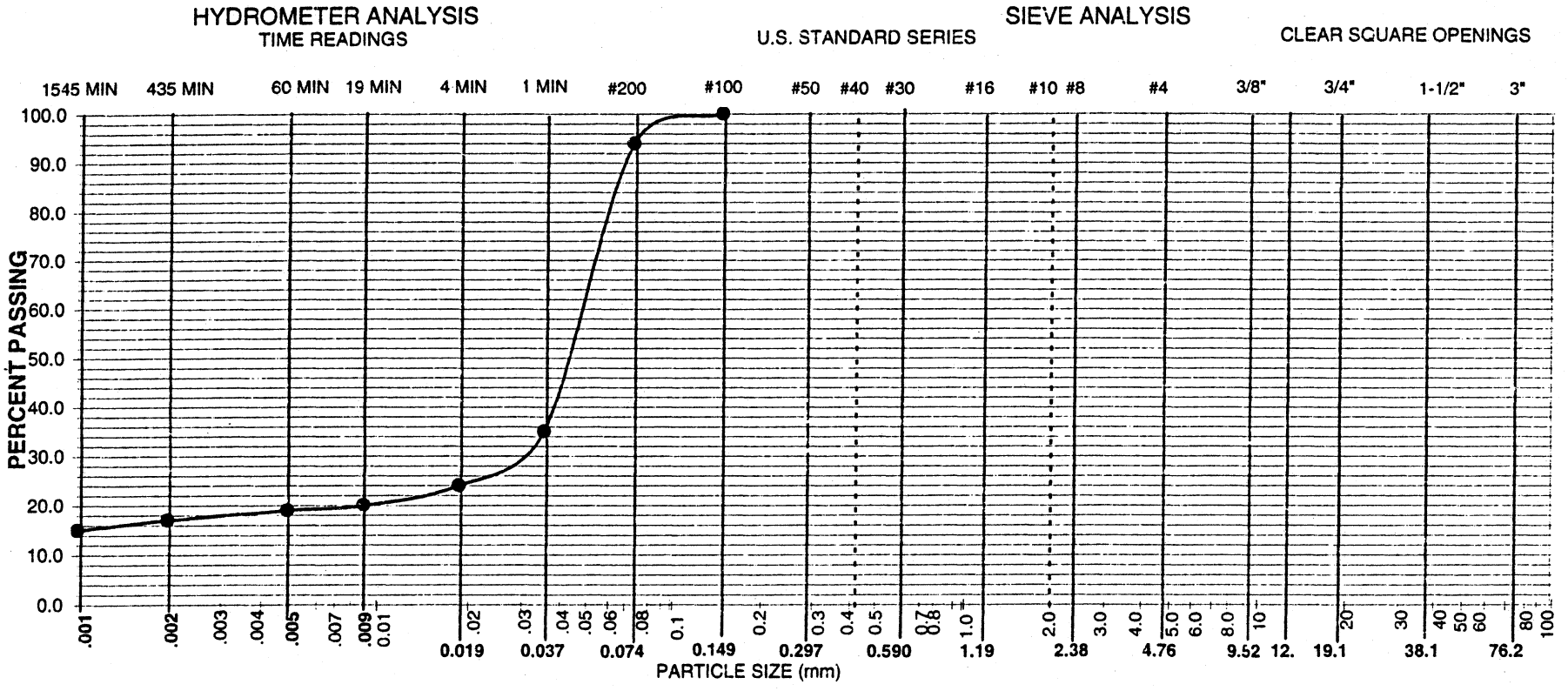
PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	96%	1%	3%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

BSK JOB 05740021
JUNE 1998

ITALIAN FINES



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

GRADATION TEST

PARTICLE SIZE DISTRIBUTION DIAGRAM

0%	6%	75%	19%
% GRAVEL	% SAND	% SILT	% CLAY

BSK ANALYTICAL LABORATORIES

Project Name: GLC - 1-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 455.1

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
3/8"	0	100
#4	0.2	100
#8	0.4	100
#16	2.7	99
#30	8.7	98
#50	28.1	94
#100	91.7	80
#200	124.6	73

Project Name: GLC - 8-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 541.4

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	0.4	100
#16	8.0	99
#30	39.8	93
#50	132.7	75
#100	281.7	48
#200	405.2	25

BSK

Project Name: GLC - 1-2 **BSK Project #** 0570021
Sample Source: @ 5 - 15'
Sample Date: 6/27/98
Sample Weight: 493.9

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	1.2	100
#16	3.6	99
#30	8.1	98
#50	21.2	96
#100	68.0	86
#200	183.3	63

Project Name: GLC - 4-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 592.3

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
3/8"	0	100
#4	0.1	100
#8	4.4	99
#16	17.6	97
#30	38.7	93
#50	55.4	91
#100	76.8	87
#200	195.8	67

BSK

Project Name: GLC - 2-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 521.0

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	1.2	100
#16	4.5	99
#30	28.5	95
#50	269.8	48
#100	487.9	6
#200	503.7	3

Project Name: GLC - 9-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 544.6

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
3/8"	0	100
#4	0.4	100
#8	2.8	99
#16	4.8	99
#30	28.2	95
#50	264.7	51
#100	505.4	7
#200	522.8	4

Project Name: GLC - 4-2 **BSK Project #** 0570021
Sample Source: @ 5 - 15'
Sample Date: 6/27/98
Sample Weight: 523.6

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	0.3	100
#16	1.2	100
#30	2.8	99
#50	8.2	98
#100	31.1	94
#200	84.1	84

Project Name: GLC - 3-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 353.7

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	0.1	100
#16	2.8	99
#30	26.2	93
#50	62.9	82
#100	128.3	64
#200	199.0	44

Project Name: GLC - 7-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 473.1

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
3/8"	0	100
#4	0.1	100
#8	0.4	100
#16	1.0	100
#30	10.2	98
#50	116.2	75
#100	260.4	45
#200	311.9	34

BSK

Project Name: GLC - 6-2 **BSK Project #** 0570021
Sample Source: @ 5 - 15'
Sample Date: 6/27/98
Sample Weight: 480.7

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	8.5	98
#16	37.8	92
#30	114.6	76
#50	207.8	57
#100	256.3	47
#200	269.9	44

Project Name: GLC - 3-2 **BSK Project #** 0570021
Sample Source: @ 5 - 15'
Sample Date: 6/27/98
Sample Weight: 504.8

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	0.5	100
#16	1.3	100
#30	3.0	99
#50	8.8	98
#100	61.4	88
#200	147.2	71

Project Name: GLC - 8-2 **BSK Project #** 0570021
Sample Source: @ 5 - 15'
Sample Date: 6/27/98
Sample Weight: 446.6

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	0.6	100
#16	6.2	99
#30	43.6	90
#50	161.6	64
#100	247.7	45
#200	275.7	38

Project Name: GLC - 6-1 **BSK Project #** 0570021
Sample Source: @ 0 - 5'
Sample Date: 6/27/98
Sample Weight: 325.4

Sieve Analysis

Sieve Size	Wt. Retained	% Passing
#4	0	100
#8	0.5	00
#16	0.6	100
#30	1.0	100
#50	1.2	100
#100	2.2	99
#200	9.8	97

BSK

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

SHEET: 1 OF 1
HOLE NO: GLC-1
ELEVATION:
DEPTH : 13ft.
DATE DRILLED: 6/9/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

DRILL HOLE LOG

PROJECT: ISDP
FEATURE: GLC-1
LOCATION: Grant Line Canal, 4.54 miles west of Tracy Blvd
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES: 2-4" aluminum tubes 0-6' and 6-13'

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
1-	SP	olive gray to med sand grading w/depth to dark gray fine to med sand. Clam shells and wood/veg frags- occasionally.	
2-	ML	dark gray, clayey silt very soft to soft	
3-			
4-		stiff, dark gray, silty clay occasional black chunks of o.m.	
5-			
6-	CL	color grades to olive gray	
7-	SM	to lt brown mixed w/gray fine sandy silt to silty fine sand	
8-	SM	stiff, yellowish brown mottled lt gray/yellow brown	
9-		yellow-brown, dense, fine sand	
10-	SP	color grading to orange-brown fine sand dark orange mottling	
11-			clayey silt is smeared down side of tube TO 12', 1/2" thick.
12-			
13-		bottom of core @ 13'	

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

DRILL HOLE LOG

SHEET: 1 OF 1
HOLE NO: GLC-2
ELEVATION:
DEPTH : 14ft.
DATE DRILLED: 6/9/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

PROJECT: ISDP
FEATURE: GLC-2
LOCATION: Grant Line Canal, 2.2 miles west of Tracy Blvd
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES: 13.6' total core

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
		void	
1-		lt gray-brown fine to med sand	
		color grades to brown	much thicker sand
		color grades to gray	at top of section than at GLC-1
2-			
	SP		
3-			
4-			
5-		dk gray, fine to med well-sorted,	color change
		med dense sand w/few mud clasts	
6-		(dark gray clayey silt)	
7-	ML	dark gray, fine sand	
	SP	dark gray, fine sandy, soft silt	
8-		dark gray, micoceons, med dense	
		fine sand	very consistent 9-14'
9-		dark gray, very soft silt	
	ML	w/few plant fragments	
10-			
11-			
12-			
13-			
		med sand-wet at end of core	
14-		bottom of core	

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

SHEET: 1 OF 1
HOLE NO: GLC-3
ELEVATION:
DEPTH : 14ft.
DATE DRILLED: 6/9/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

DRILL HOLE LOG

PROJECT: ISDP
FEATURE: GLC-3
LOCATION: Grant Line Canal, 0.7 miles west of Tracy Blvd
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES:

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
		orangish brown med to coarse sand	
1-	SP	few clam shells, little wood	GLC bed material coarse
	SP	lt gray, med sand	sorted sand as found in bed
	SP	dk gray, med dense, fine sand	material sampling
	ML	dk gray stiff fine sandy silt	
2-	ML	olive gray, med stiff fine sandy silt	
3-			
4-		olive gray, dense, silty, fine sand	
	SM		
5-			
6-			
7-		olive gray, stiff, fine sandy silt	
	ML		
8-	ML	olive gray, dense silty fine sand	
9-	SM		
10-			
11-	SC	olive gray, very stiff fine sand, clayey silt	
12-			
13-			
14-		bottom of core @ 14'	

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

SHEET: 1 OF 1
HOLE NO: GLC-4
ELEVATION:
DEPTH :
DATE DRILLED: 6/9/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

DRILL HOLE LOG

PROJECT: ISDP
FEATURE: GLC-4
LOCATION: Grant Line Canal, 400' west of Tracy Blvd
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES:

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
		void	
1-	SP	med to coarse, well-sorted, yellow-orange sand w/clam shells	volatile samples by S.S. spoon into 250 ml jar w/plastic lids
		abrupt contact	
	ML	very stiff, olive gray, fine sandy silt	
2-			
3-		med dense, silty, fine sand olive gray	
4-			
		sand content increasing	
5-		↓	
6-			
7-		↓	
	ML	stiff, olive gray silt grading to fine	
8-		sandy silt occasional plant fragments	
		very stiff	
9-			
10-		orangish/olive mottling	
		olive to olive gray/orangish mottled	
11-	SP	fine sandy silt	
		stiff	
12-	ML		
13-		13.3' bottom of core	
14-			

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SHEET: 1 OF 1
HOLE NO: GLC-5
ELEVATION:
DEPTH : 9.3 ft.
DATE DRILLED: 6/10/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

DRILL HOLE LOG

PROJECT: ISDP
FEATURE: GLC-5
LOCATION: Grant Line Canal, downstream of Paradise Cut
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES:

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
1-	SP	brown to gray, dense, fine to med sand (wet)	
2-		dark orange mud clast dark gray, med dense silty fine sand	
3-	SP	lt gray, med sand	
	ML	very stiff, dark gray, fine sandy silt	
4-	SP	light gray fine to med sand	
	ML	dark gray, stiff sandy silt	
5-			
6-	SP	light gray, fine to med sand few mud clasts	
7-			core washed out from 7.1'
8-	SP	light gray fine to med sand on tube walls	to bottom at 9.3'
9-		bottom of core @ 9.3'	
10-			

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DRILL HOLE LOG

SHEET: 1 OF 1
HOLE NO: GLC-6
ELEVATION:
DEPTH : 13.9 ft.
DATE DRILLED: 6/10/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

PROJECT: ISDP
FEATURE: GLC-6
LOCATION: Grant Line Canal, near east dead end
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES: 2.4" aluminum tubes 0-7',7-13.9'

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
	ML	very soft brown silt, wet	
1-		very soft gray silt, wet	
		very soft, dark gray silt, moist	
2-			black soft mud
		color grades to olive gray	
3-			
4-		very soft silt, moist 0' to 8.7'	
		(color varies)	
5-			
6-			
7-			
8-			
9-	SP	olive gray, med, well-sorted sand	
	ML	dark to olive gray fine sandy silt-soft	
10-	SP	light gray, med to coarse, well-sorted	
		sand, dense	
11-			
	SP	light gray, fine to med, sorted sand	
12-	SP	yellowish-brown, med to coarse sand	
			sand lost @ bottom of core
13-	SP	light gray, fine to med, well-sorted	washed out to 12.8'
		sand	
14-		bottom of core @ 13.9'	

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DRILL HOLE LOG

SHEET: 1 OF 1
HOLE NO: GLC-7
ELEVATION:
DEPTH : 17.3 ft.
DATE DRILLED: 6/10/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

PROJECT: ISDP
FEATURE: GLC-7
LOCATION: Grant Line Canal, east of DMC intake
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES: 3-4" aluminum tubes 0-5.2', 5.2-11.3', 11.3-17.3'

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
		brown to olive gray	
1-		color change	
	SP	olive gray, med dense, well-sorted,	alternating dense sand and soft silt
2-		fine to med sand	
3-		dark gray, soft silt	
4-	SM	med dense dark gray silty, fine sand	
	ML	very soft, dark gray silt	
5-	SM	dark gray dense, silty fine sand	
6-		dark gray, fine sand w/black wood	
	SP	fragments	
7-	ML	dark gray, very soft silt	
8-			
	ML		
9-			
10-	SP	dark gray, dense, silty fine sand	
11-			
12-	ML	dark gray, soft fine sandy silt	
13-			
14-	SP	dark gray, silty fine sand	
15-	ML	dark gray, soft fine sandy silt	
16-	SP	light gray, fine to med sand	
17-		0.2' washed out	bottom 0.2' was washed out.
		bottom of core @ 17.3'	

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DRILL HOLE LOG

SHEET: 1 OF 1
HOLE NO: GLC-8A
ELEVATION:
DEPTH : 14 ft.
DATE DRILLED: 6/10/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

PROJECT: ISDP
FEATURE: GLC-8A
LOCATION: Channel to Delta Harbor, just south of USBR facility
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES: 2-4" aluminum tubes 0-7', 7-14'

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
		yellowish-orange soup	
1-		med stiff, greenish gray, silty clay	
2-			
	CL	color change	
		mottled yellowish orange/light brown/	
3-		greenish gray med stiff sandy silty	
		clay	
4-		angular concretions/coarse sand	
5-	ML	soft, yellowish orange, sandy, silty	
	CL	clay (mush)	
6-	SP	yellowish orange, dense, fine to med	
		sand	
7-		mottled, yellowish orange to greenish	
	CL	gray coarse sandy, stiff clay	
8-			
9-			
10-		soft, wet, yellow orange, silty med	
	SP	sand	
11-			
12-		very stiff, yellowish orange coarse	
	CL	sandy clay	
13-			
14-		bottom of core @ 14'	

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SHEET: 1 OF 1
HOLE NO: GLC-8
ELEVATION:
DEPTH : 16 ft.
DATE DRILLED: 6/11/98
ATTITUDE: Vert.
LOGGED BY: Niblack 6/11/98
DEPTH TO WATER: N/A

DRILL HOLE LOG

PROJECT: ISDP
FEATURE: GLC-8
LOCATION: Channel between Hammer & Middleton Islands
CONTR: Kinnetic Laboratories
DRILL RIG: Vibracore

NOTES: 2-4" aluminum tubes 0-8', 8-16'

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	REMARKS
		sample sloughed in tube	
1-	SP	loose, dark gray, wet, fine to med sand	sample sloughed in tube
		loose, dark gray, silty, fine sand wet	sand slurry in top 1.0'
2-		light gray, dense, silty, fine to med	
	SP	sand	
3-			
	ML	dark gray, med stiff, fine sandy silt	
4-			
5-	SP	light gray, dense, fine to med sand	
6-	ML	dark gray, soft, fine sandy silt	
7-	ML	dark gray, soft to med, stiff, fine sandy silt	
8-			
9-		grades to very soft dark gray, fine	
	ML	sandy silt	
10-			
	SM	inter bedded dark gray, silt and	
11-		light gray fine to med sand	
12-	SP	light gray, fine to med well-sorted sand	
13-			
14-			
			core washed out of tube to 14'
15-			
16-			
		bottom of core @ 16'	

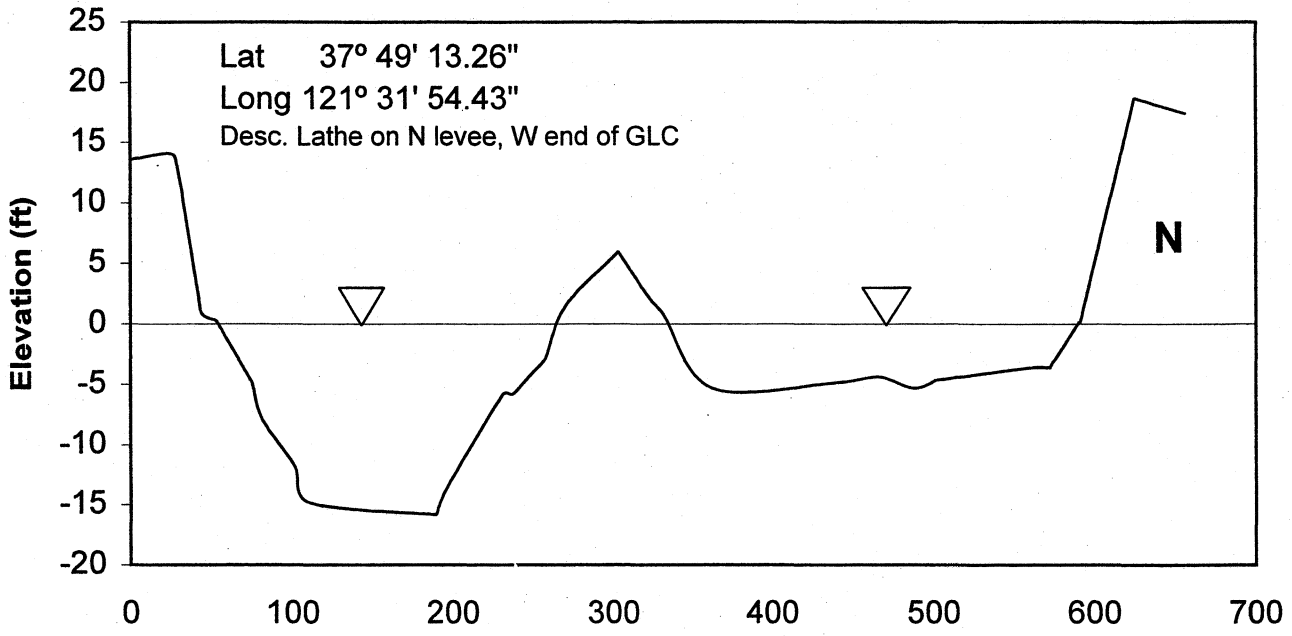
Appendix K.

Grant Line Canal Sampling Site Coordinates

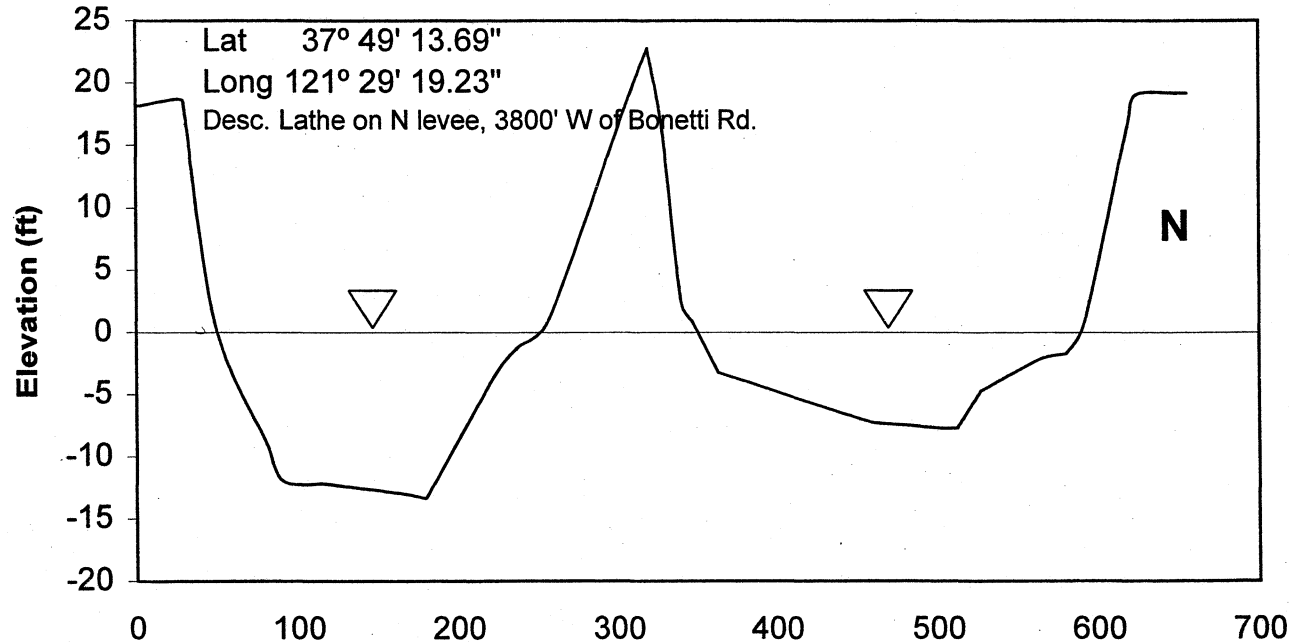
The methods and equipment used ensure that the true coordinates of each surveyed location falls within a radius of 16.4 feet of the calculated coordinates given below. These coordinates are latitude and longitude in the NGS 1983 datum.

Location	Latitude	Longitude	Feature
GLC-1	37° 49' 13.26"	121° 31' 54.43"	lathe on N levee, W end of GLC
GLC-2	37° 49' 13.69"	121° 29' 19.23"	lathe on N levee, 3800' W of Bonetti Rd.
GLC-3	37° 49' 08.39"	121° 27' 46.80"	lathe on N. shoulder Grimes Road
GLC-4	37° 49' 13.84"	121° 27' 01.15"	lathe on N levee, 400' W of Tracy Blvd.
GLC-5	37 ° 49' 13.66"	121° 25' 50.97"	lathe on N levee, W of Doughty Cut
GLC-6	37 ° 49' 13.12"	121° 24' 33.63"	electrical box at pump, N side of GLC
GLC-7	37 ° 49' 02.78"	121° 33' 21.77"	pump near north end of DMC intake
GLC-8	37 ° 48' 55.24"	121° 33' 28.21"	lathe on island S of DMC intake

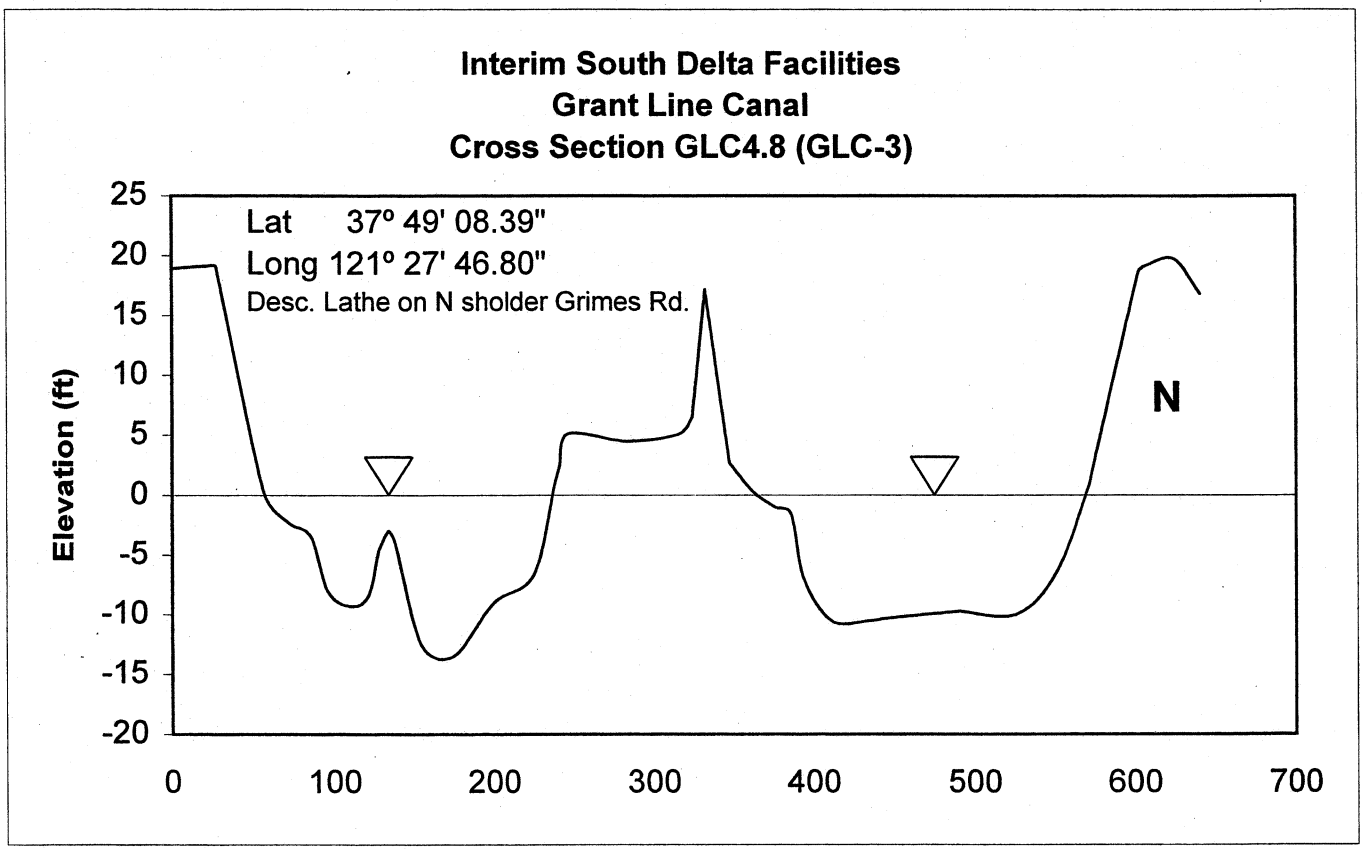
Interim South Delta Facilities
Grant Line Canal
Cross Section GLC-0.8 (GLC-1)

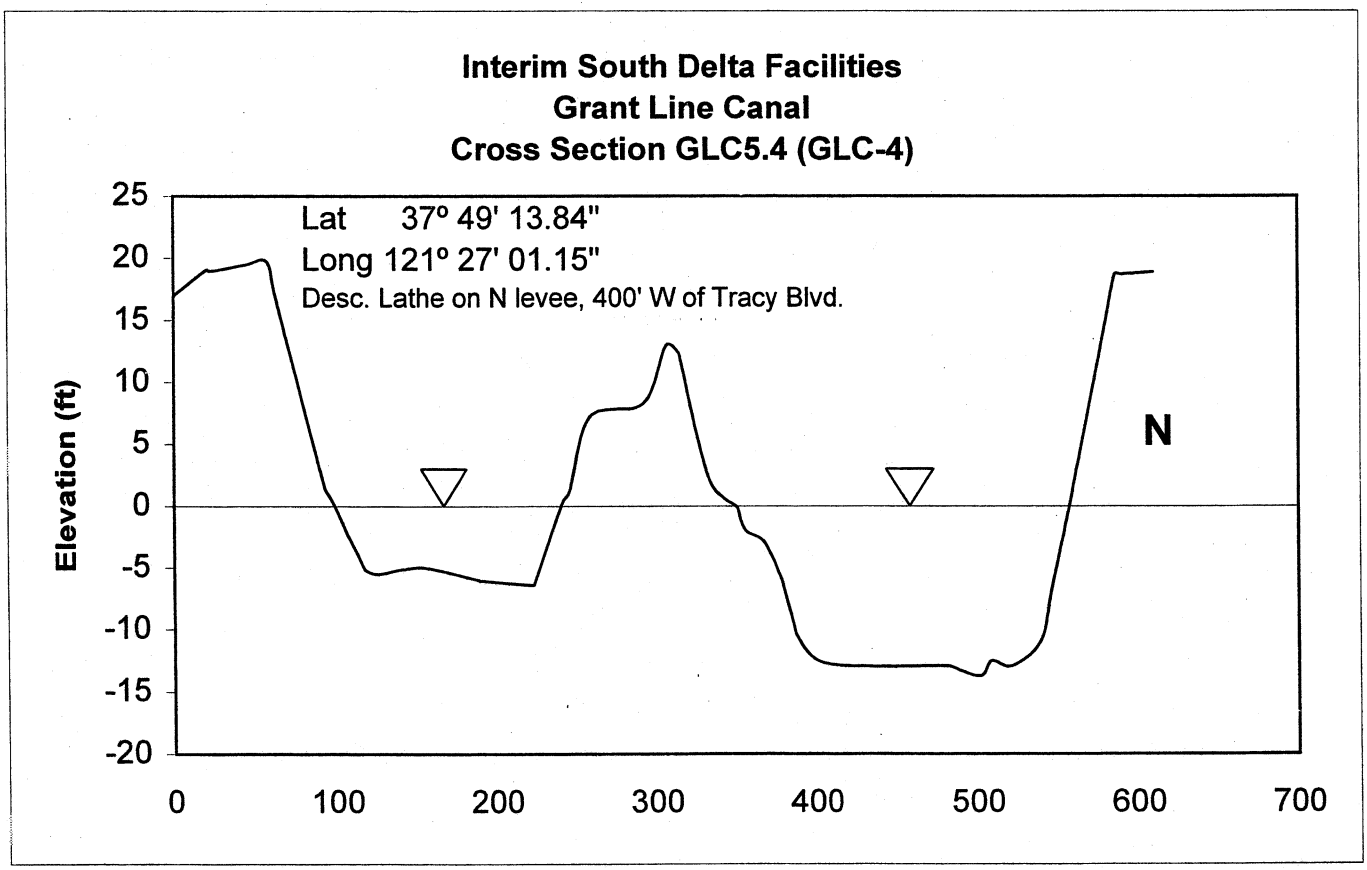


Interim South Delta Facilities
Grant Line Canal
Cross Section GLC3.2 (GLC-2)



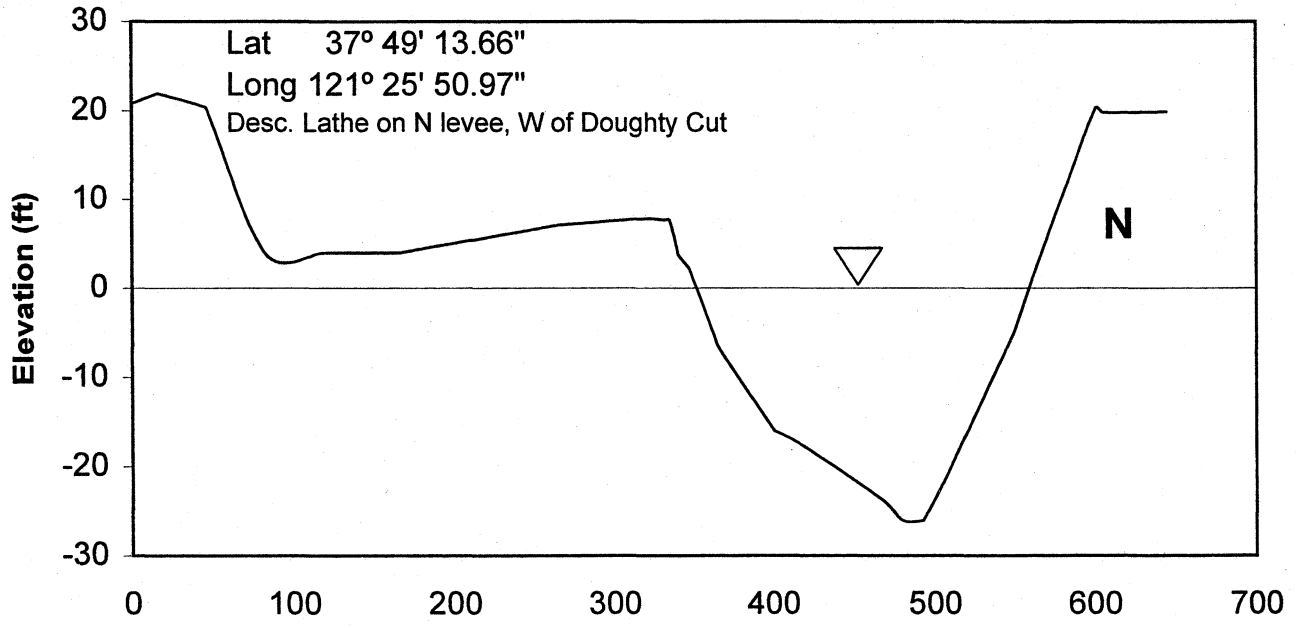
Latitude and Longitude datum converted to NAD 1927. Soundings are approximate to site, lat and long obtained from levee.



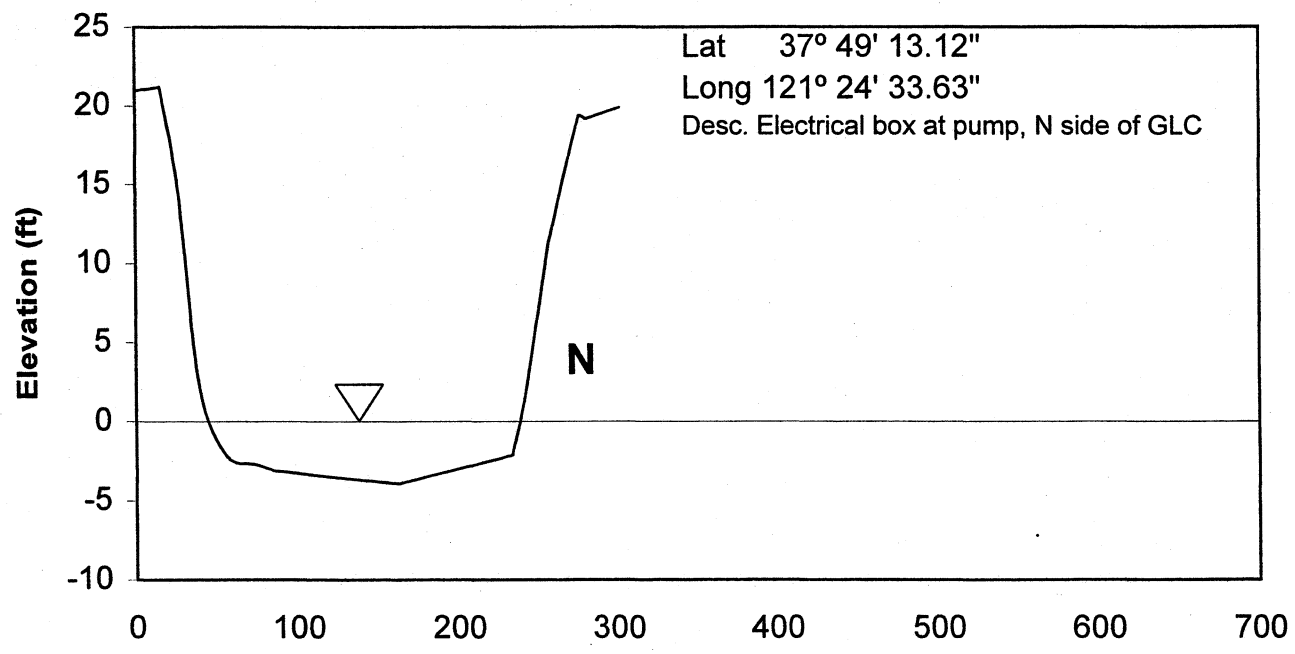


Latitude and Longitude datum converted to NAD 1927. Soundings are approximate to site, lat and long obtained from levee.

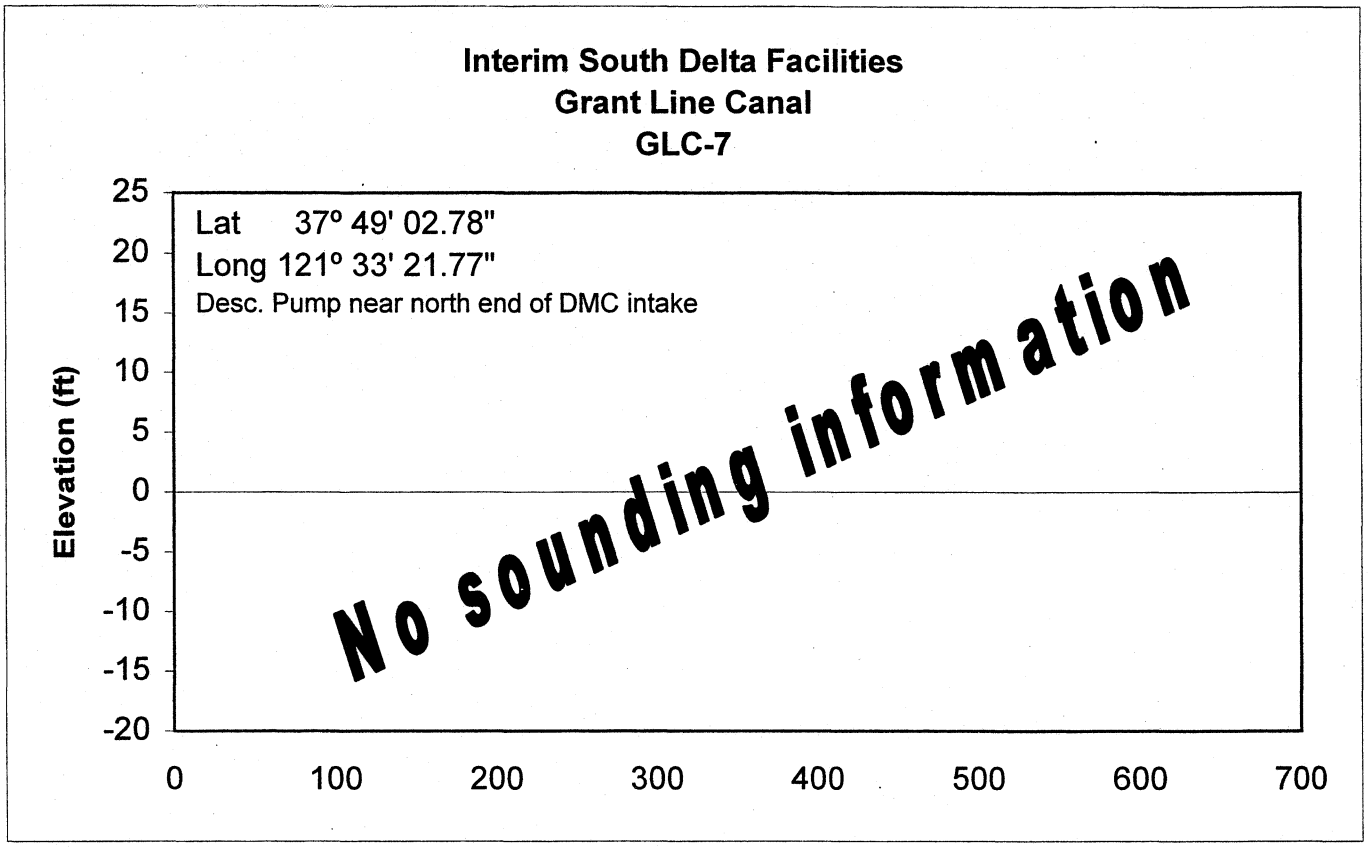
Interim South Delta Facilities
Grant Line Canal
Cross Section GLC6.5 (GLC-5)

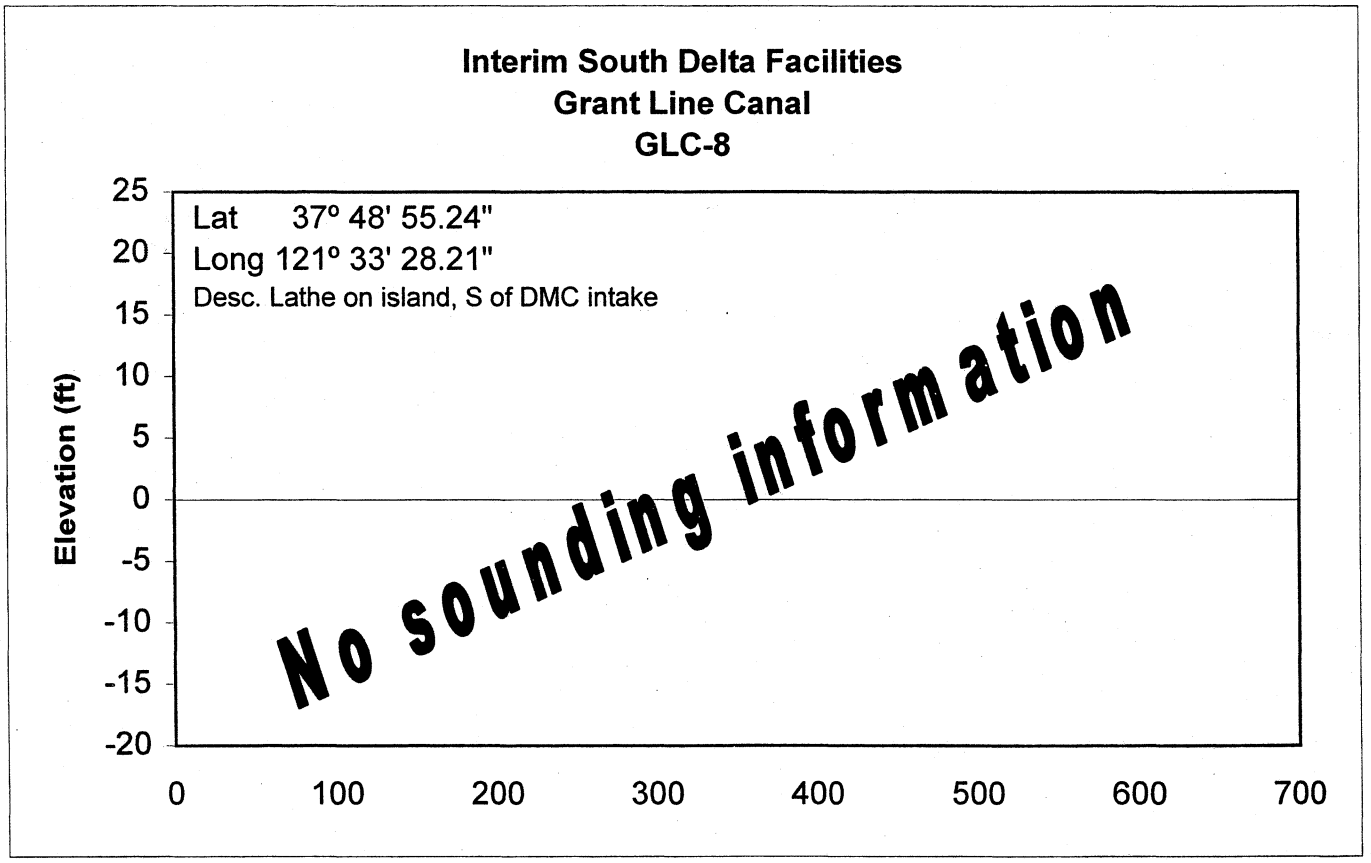


Interim South Delta Facilities
Grant Line Canal
Cross Section GLC7.8 (GLC-6)



Latitude and Longitude datum converted to NAD 1927. Soundings are approximate to site, lat and long obtained from levee.





Latitude and Longitude datum converted to NAD 1927. Soundings are approximate to site, lat and long obtained from levee.

Appendix M. Column Settling Test Data

Date	Time	Port Number	Total Suspended Solids (mg/L)	Slurry Height (inches)	Top of Zone of Flocculation (inches)	Top of Sand (inches)	Purged Water Volume (mL)	Air Temp. (deg C)	Comments
15-Jun-98	1200	P1	120000	84.0	Not	1.5	250	22.5	None
		P3	160000		Determined				
(0 hrs.)		P5	160000						
		P7	120000						
		P9	130000						
15-Jun-98	1400	P1	53000	82.5	73.0	Not	175	22.0	None
		P3	62000			Deter-			
(2 hrs.)		P5	60000			mined			
		P7	63000						
		P9	94000						
15-Jun-98	1600	P1	13000	81.5	65.0	Not	250	21.5	None
		P3	54000			Deter-			
(4 hrs.)		P5	50000			mined			
		P7	67000						
		P9	75000						
15-Jun-98	1800	P1	10000	80.75	56.75	Not	240	21.5	Field Dup: P10 = P1
		P3	8200			Deter-			
(6 hrs.)		P5	48000			mined			
		P7	65000						
		P9	100000						
		P10	12000						
15-Jun-98	2000	P1	11000	79.75	49.25	Not	200	21.5	None
		P3	7200			Deter-			
(8 hrs.)		P5	42000			mined			
		P7	50000						
		P9	59000						
15-Jun-98	2200	P1	5800	79.0	43.0	Not	200	21.5	None
		P3	3900			Deter-			
(10 hrs.)		P5	3300			mined			
		P7	49000						
		P9	54000						
16-Jun-98	0000	P1	1600	78.0	37.0	Not	200	22.0	None
		P3	1900			Deter-			
(12 hrs.)		P5	2200			mined			
		P7	43000						
		P9	57000						
16-Jun-98	0200	P1	2500	77.0	30.5	Not	300	21.8	Field Dup: P10 = P5
		P3	2200			Deter-			
(14 hrs.)		P5	2400			mined			
		P7	740						
		P9	110000						
		P10	2600						
16-Jun-98	0400	P1	580	76.0	27.0	Not	200	21.5	None
		P3	630			Deter-			

Appendix M. Column Settling Test Data

Date	Time	Port Number	Total Suspended Solids (mg/L)	Slurry Height (inches)	Top of Zone of Flocculation (inches)	Top of Sand (inches)	Purged Water Volume (mL)	Air Temp. (deg C)	Comments
(16 hrs.)		P5	820			mined			
		P7	820						
		P9	120000						
16-Jun-98	0600	P1	300	75.25	26.5	Not	225	21.5	75 mL leaked out of P3
		P3	410			Deter-			since last sampling.
(18 hrs.)		P5	530			mined			
		P7	660						
		P9	120000						
16-Jun-98	0800	P1	260	74.0	26.0	Not	175	21.5	75 mL leaked out of P3
		P3	350			Deter-			since last sampling.
(20 hrs.)		P5	540			mined			
		P7	900						
		P9	110000						
16-Jun-98	1000	P1	100	73.25	25.5	Not	150	21.5	90 mL leaked out of P3
		P3	350			Deter-			since last sampling.
(22 hrs.)		P5	420			mined			
		P7	460						Field Dup: P10 = P3
		P9	100000						
		P10	360						
16-Jun-98	1200	P2	7200	72.0	24.5	Not	375	21.5	No leaking but slurry
		P3	310			Deter-			level dropped below P1.
(24 hrs.)		P5	430			mined			Sampling was therefore
		P7	360						performed at P2.
		P9	37000						
16-Jun-98	1800	P2	590	70.25	23.5	Not	200	21.5	None
		P3	250			Deter-			
(30 hrs)		P5	300			mined			
		P7	420						
		P9	260						
17-Jun-98	0000	P2	1500	68.0	22.75	Not	125	21.5	None
		P3	180			Deter-			
(36 hrs)		P5	220			mined			
		P7	310						
		P9	320						
17-Jun-98	0600	P2	110	67.0	22.25	Not	100	21.5	Field Dup: P10 = P7
		P3	120			Deter-			
(42 hrs)		P5	210			mined			
		P7	290						
		P9	290						
		P10	220						
17-Jun-98	1200	PS	32	66.0	21.75	Not	0	21.0	Slurry level dropped
		P3	100			Deter-			below P2. Sampling
(48 hrs)		P5	140			mined			was therefore
		P7	140						performed at PS.

Appendix M. Column Settling Test Data

Date	Time	Port Number	Total Suspended Solids (mg/L)	Slurry Height (inches)	Top of Zone of Flocculation (inches)	Top of Sand (inches)	Purged Water Volume (mL)	Air Temp. (deg C)	Comments
		P9	160						
18-Jun-98	1200	PS	48	64.5	20.5	Not	0	21.0	150 mL leaked out of
		P3	64			Deter-			P9 since last sampling.
(72 hrs)		P5	150			mined			
		P7	180						
		P9	410						
19-Jun-98	1200	PS	32	63.25	18.5	Not	100	21.0	200 mL leaked out of
		P3	34			Deter-			P9 since last sampling.
(96 hrs)		P5	130			mined			
		P7	180						Field Dup: P10 = P5
		P9	230						
		P10	100						

1: Located 1 foot below slurry's surface (initial height).

2: Located 1.5 feet below slurry's surface (initial height).

Sampling from this port was performed when slurry height dropped below P1.

P3: Located 2 feet below slurry's surface (initial height).

P5: Located 3 feet below slurry's surface (initial height).

P7: Located 4 feet below slurry's surface (initial height).

P9: Located 5 feet below slurry's surface (initial height).

PS: Located *at* slurry's surface.

Grab sampling was performed at PS when slurry height dropped below P2.

Figure M-1. Column Settling Test - Port 1

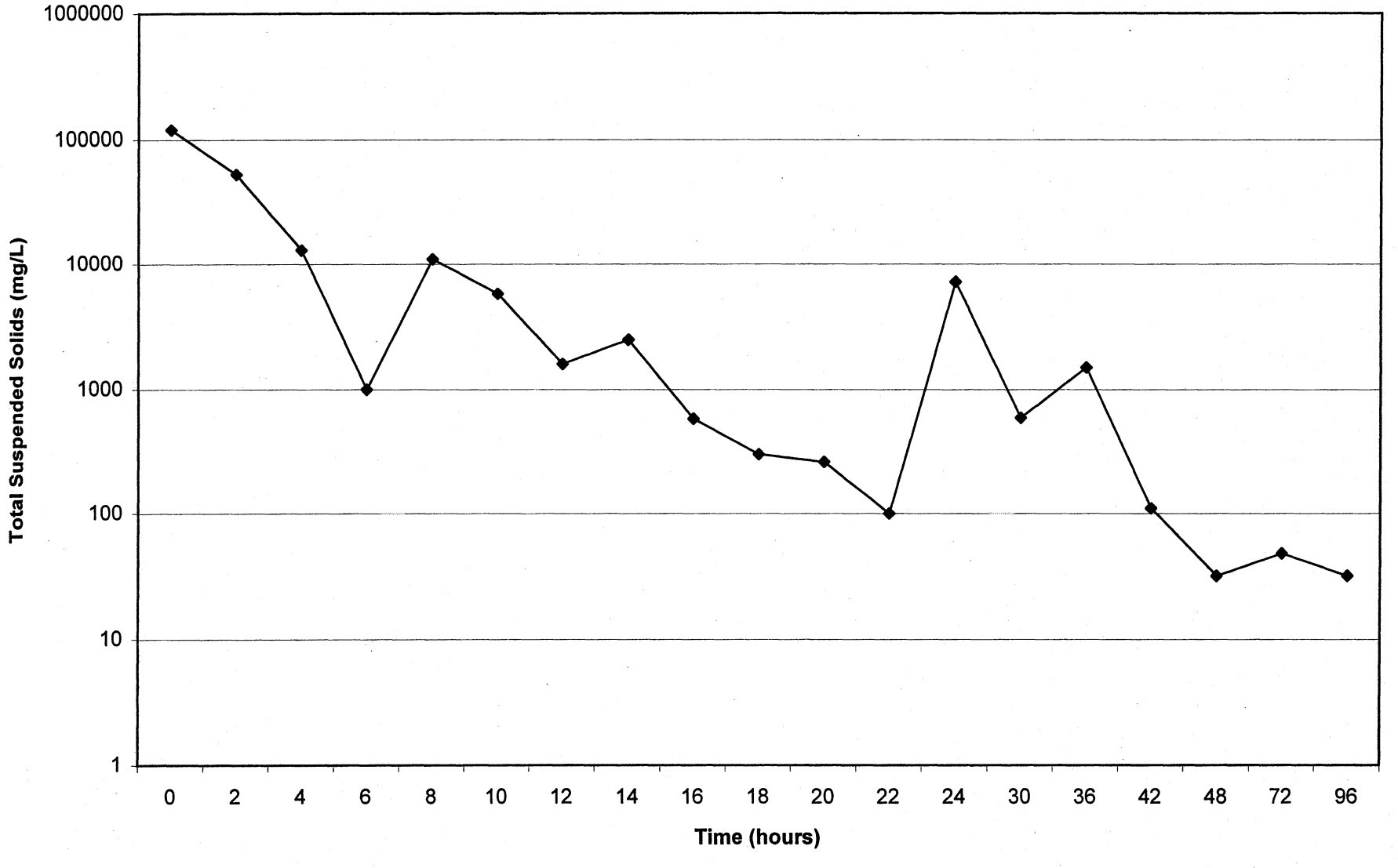


Figure M-2. Column Settling Test - Port 3

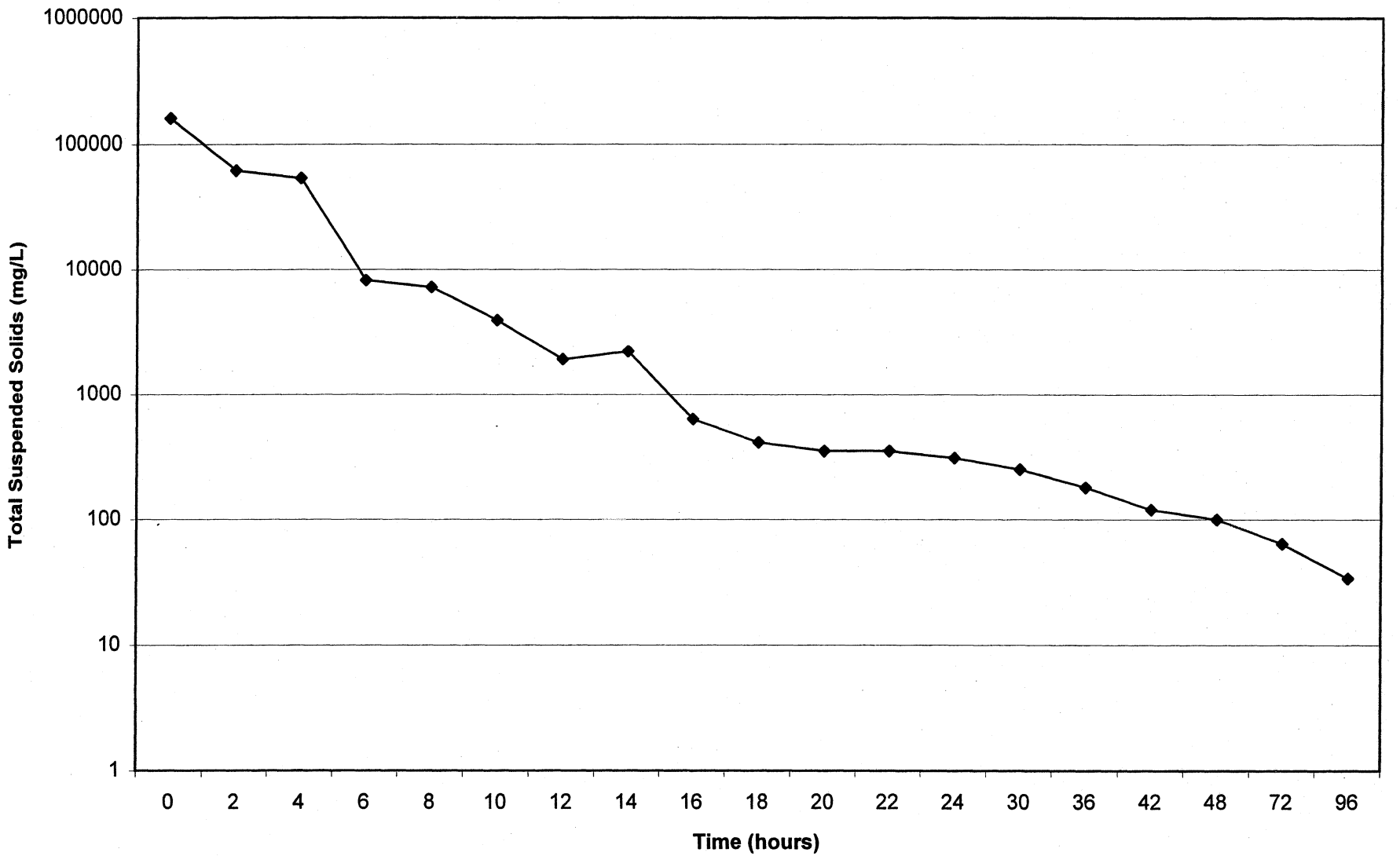


Figure M-4. Column Settling Test - Port 7

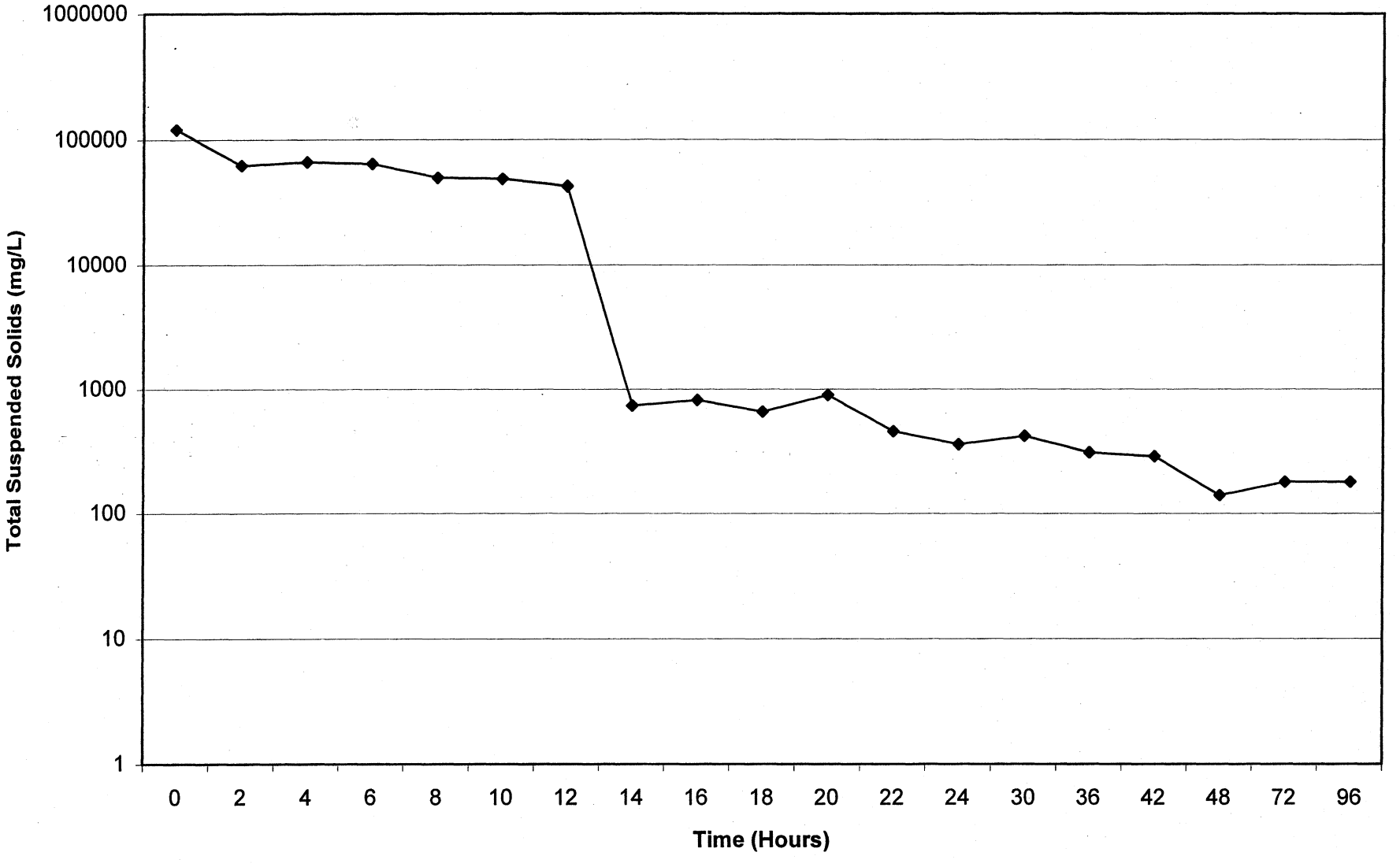


Figure M-6. Column Settling Test - Flocculation Zone