UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SEDIMENT TRANSPORT BY IRRIGATION RETURN FLOWS IN FOUR SMALL DRAINS WITHIN THE DID-18 DRAINAGE OF THE SULPHUR CREEK BASIN, YAKIMA COUNTY, WASHINGTON, APRIL 1979 TO OCTOBER 1981

By Phillip R. Boucher

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 83-4167

Prepared in cooperation with the

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Tacoma, Washington
1984

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

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Multiply	By	To obtain
inches (in.)	25.4	millimeters (mm)
	2.540	centimeters (cm)
	0.0254	meters (m)
feet (ft)	0.3048	meters (m)
miles (mi)	1.609	kilometers (km)
square miles (mi^2)	2.590	square kilometers (km^2)
acres	4047.	square meters (m^2)
acre-feet (acre-ft)	1233.	cubic meters (m^3)
	0.001233	cubic hectometers (hm^3)
cubic feet per second (ft^3/s)	0.02832	cubic meters per second (m^3/s)
	28.32	liters per second (L/s)
tons, short (2,000 lb)	0.9072	megagram (Mg)
	0.264	gallons (gal)
degree Fahrenheit (°F)	°C = 5/9 (°F-32)	degree Celsius (°C)

National Geodetic Vertical Datum of 1929 (NGVD of 1929): A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called mean sea level. NGVD of 1929 is referred to as sea level in this report.

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ABSTRACT

Suspended sediment, water discharges, and water temperatures were monitored in four small drains in the DID-18 subbasin tributary to Sulphur Creek and to the Yakima River. The purpose was to provide a basis for evaluating the effectiveness of Best Management Practices in reducing sediment discharge from irrigated areas.

Sediment inflow for the 1979, 1980, and 1981 irrigation seasons was 298 tons, 119 tons, and 88 tons, respectively. The average sediment concentration of inflow water was 99 mg/L (milligrams per liter) in 1979, 32 mg/L in 1980, and 24 mg/L in 1981.

Sediment outflow minus inflow for the 1979, 1980, and 1981 irrigation seasons was 362 tons, 370 tons, 142 tons, and -19 tons in Drains 59.4, 59.6, 60.7, and 61.0, respectively; discharge-weighted mean sediment concentrations averaged 2,460 mg/L, 440 mg/L, 290 mg/L, and 12 mg/L, respectively. The sediment yield for the same drains for the 1979 to 1981 irrigation seasons averaged 1.5 tons per acre, 1.0 ton per acre, 0.6 ton per acre, and -0.16 ton per acre, respectively. The sediment yield from the four drains combined during the three irrigation seasons was 0.89 ton per acre. Drain 61.0 yields less sediment than it receives in irrigation water and acts as a diluter of sediment concentrations.

Sediment discharges could not be correlated with changes in Best Management Practices because Imhoff Cone readings taken in the interior of the basins showed no statistical differences between irrigation seasons. However, Drain 61.0, which acted as a sink for sediment, contained more sprinkler-irrigated land and had a smaller proportion of row crops than the other three drains, even though soils and slopes were similar. Sediment yield usually related best to acres of row crops.

The only major storm (February 16-21, 1980) produced 11 to 51 percent of the sediment discharged during the study.

A sediment pond in Drain 60.7 had an average trap efficiency of 70 percent for the three irrigation seasons.

The regression relations between Imhoff Cone readings and suspended-sediment concentration for the outflow sites on Drains 60.7, 59.6, and 59.4 had corresponding correlation coefficients of 0.90, 0.94, and 0.90, respectively, and standard errors of 1,070, 2,410, and 2,460 mg/L, respectively. Use of the Imhoff Cone/suspended-sediment relationship to estimate sediment discharge generally gives poor results.

A comparison of median water temperatures at the Roza Canal diversion and at the outflow sites indicated that water in Drains 61.0 and 59.6 was about 1.5°C cooler, in Drain 60.7 about 0.5°C cooler, and in Drain 59.4 about 1.5°C warmer, than water from the canal.

INTRODUCTION

Background

In 1972, Congress passed Public Law 92-500 (sec. 28), the Federal Water Pollution Control Act Amendments of 1972. The act set water-quality goals and established provisions for controlling or eliminating water pollution, wherever attainable, by 1985. The Federal Clean Water Act (Public Law 95-273) of 1977 amended the 1972 Act by declaring irrigation return flows to have a non-point source, and therefore not subject to the requirements of a discharge permit. Congress also prescribed goals and deadlines and the responsibilities of various government agencies. The U.S. Environmental Protection Agency (EPA) was designated as the Federal agency responsible for administering this law, but has reserved for the States the primary responsibility of administering the law. It is the States' responsibility to develop local solutions to local problems. Each State is required to submit a "Management Plan" as required in section 208, Public Law 95-217 to EPA for approval.

The Washington State Department of Ecology (WDOE) has prepared their "Irrigated Agriculture Water Quality Management Plan," which involves the concept of a performance standard to identify "problem farmers" or problem areas. Once a performance standard has been established, a quick and inexpensive method is needed to monitor on-farm effects of remedies for water quality, particularly changes in suspended-sediment concentration.

The standards would be based subjectively on what the 208 Water Quality County Committees set for irrigated agriculture. The committees then would decide the acceptable level of sediment concentration in irrigation return flows.

Traditional methods of rigorous sampling in the stream and of quality laboratory analysis are the most accurate measure of sediment yield. However, traditional means of sediment-data collection, analysis, and reporting involved too much time and cost to be acceptable under the proposed monitoring and enforcement (or advisory) situation. Because of these restrictions, the WDOE is using the Imhoff Cone to collect suspended-sediment data. These sediment data are required for setting the initial performance standard and for evaluating the effectiveness of Best Management Practices (BMP) in reducing suspended-sediment load.

During the same time frame, the Soil Conservation Service (SCS) and EPA selected seven "Model Implementation Plan" (MIP) projects to demonstrate the effectiveness of institutional and administrative implementation of BMP. The MIP projects were funded by the EPA. One MIP project was selected for parts of the Sulphur Creek and Granger Drain basins; it was the only irrigated area chosen out of the seven MIP projects, and the only one chosen in the western United States.

Before setting the Imhoff Cone Standard, the 208 Water Quality County Committees requested that the WDOE collect data on individual farms throughout several irrigated areas in eastern Washington. Technical advice was provided by the WDOE multi-agency Irrigated Agriculture Technical Advisory Committee for Water Quality. Beginning with the meeting on October 1, 1974, the committee has addressed itself specifically to irrigated agriculture in the Yakima River basin. WDOE decided to test the sampling procedures using Imhoff Cone samples on a more detailed basin. Four small drainages in the DID-18 drainage of the Sulphur Creek basin were chosen for monitoring the results of implemented BMP's.

Purpose and Scope

The MIP monitoring study described in this report was coordinated by the WDOE Technical Advisory Committee on Irrigated Agriculture, which had coordinated some previous studies in the area. The MIP study included monitoring of irrigation return flows from individual farms by the WDOE. The U.S. Geological Survey's Water Resources Division, in cooperation with WDOE, was responsible for collecting water samples at inflow and outflow points and collecting streamflow data in order to evaluate sediment transport in four small subbasins in the Sulphur Creek basin for the period April 1979 to October 1981. The purpose of this study was to determine (1) the sediment mass balance, or sediment yields, and error analysis; (2) the probable factors affecting the difference in sediment yields; and (3) the relation between Imhoff Cone and standard suspended-sediment concentration at the four outflow points. This report describes the results of the study.

Previous Investigations

Sulphur Creek basin, including the DID-18 Drain and part of the Roza Canal drainage, was studied by Boucher and Fretwell (1981) during the 1976 irrigation and 1976-77 nonirrigation seasons. The project was discontinued because of two major deficiencies: (1) farmer participation was only moderately successful; and (2) the necessary sampling network was too complex and expensive because of trans-basin flows.

During the 1974 irrigation season CH_2M Hill (1975), a private consulting firm, conducted a study of irrigation return flows in the Yakima River that also included the Sulphur Creek basin.

Washington State University (WSU) conducted a program to monitor the quality of irrigation return flows at specific farm sites as part of the Sulphur Creek pilot project. The WSU program, under the direction of Dr. Larry King, began with the 1976 irrigation season. The data are on file at WSU's Department of Agricultural Engineering in Pullman, Wash. (written commun., 1982). Dr. King is studying the relationship of settleable solids obtained by the Imhoff Cone to suspended-sediment concentrations collected by standard methods; he is also studying soil types and their relationship to Imhoff Cone measurements.

Nelson (1979) studied suspended-sediment transport in irrigation return flows from several drains, including the Sulphur Creek Wasteway, in the Yakima River basin during the 1975 and 1976 irrigation seasons.

The U.S. Bureau of Reclamation (USBR) has also collected water-quality data in the Yakima River basin for many years, including data from various drains such as the Sulphur Creek Wasteway. These USBR data are on file at their project office in Yakima, Wash.

The soils in the study area have been described by the Soil Conservation Service in "Soil Surveys of Yakima County" (U.S. Soil Conservation Service, 1970).

Cooperation and Acknowledgments

The project was done in cooperation with the WDOE whose personnel sampled irrigation return flows from fields and from monitoring sites with the Imhoff Cone, took standard calibration samples at the outflow monitoring sites, removed samples from automatic samplers and composited them into daily samples, and took Imhoff Cone samples at the monitoring sites. They also generally sampled water once daily at one inflow site, and provided assistance with the diel (24-hour period) studies.

Cliff Eckhart, MIP Project Manager, provided valuable assistance in obtaining various data related to BMP and in collecting data during the 1980-81 nonirrigation season.

The sediment concentration analyses were done by the U.S. Bureau of Reclamation in Euphrata, Wash., under the direction of Allan Hathrop.

Hank Vancik, manager of the Roza Irrigation District, provided space for a field laboratory and provided the inflow-water discharge data.

Thanks is given to Raymond E. Larson of Arnell Farms, Inc., and Cliff and Dale Van Belle of the Van Belle farm for permission to install automatic samplers and gaging stations on their property.

DESCRIPTION OF THE STUDY AREA

The study area is located east of Wasteway No. 5, north of Van Belle Road, and west of Bethany Road (fig. 1). The sampling frequency and locations are listed in table 1 and locations are shown in figure 1. Data were collected primarily from four small drains (61.0, 60.7, 59.6, and 59.4) located in the DID-18, which lies above the Sunnyside Canal in the Sulphur Creek drainage. A description of the Sulphur Creek basin is found in Boucher and Fretwell (1982) and CH_2M Hill (1975).

The study area is divided by the Roza Canal into the nonirrigated portion, north of the canal, and the irrigated portion, south of the canal. Two of the study drains, 60.7 and 61.0, extend north of the canal. The nonirrigated drainage areas (north) and irrigated drainage areas (south) are as follows:

Drain	North of Roza Canal (nonirrigated) (mi^2)	South of Roza Canal (irrigated) (mi^2)	South of Roza Canal and north of SLI Road (irrigated) (mi^2)
61.0	2.98	0.24	0.12
60.7	.51	.42	.14
59.6	0	.69	.45
59.4	0	.40	.20

The irrigated drainage in the study area south of Roza Canal is divided by the east-west-trending SLI Road, which crosses all four drains about midway in their north-south course and acts as a barrier. Flows north and south of SLI Road are connected by eight culverts under the road. The drainage areas for these sections are shown in the table above.

Streams in the study area south of the Roza Canal are perennial; prior to development of irrigation they were ephemeral. Even now, the extreme upper reaches of all drains in the irrigated portion and the nonirrigated upper reaches of Drains 61.0 and 60.7 are ephemeral. Seepage from the canals, laterals, and irrigation of farmed lands has augmented the irrigation return flows. The present drain courses reflect historical changes to allow for better use of the land. The drainages in some of the upper reaches have very flat banks even where they are being cultivated. Places in the lower reaches are deeply incised, but have fairly stable banks because of bushes and other plants growing along them. Aquatic growth is heavy in the main channels that remain undisturbed. Most channels are narrow, only 4-5 feet wide.

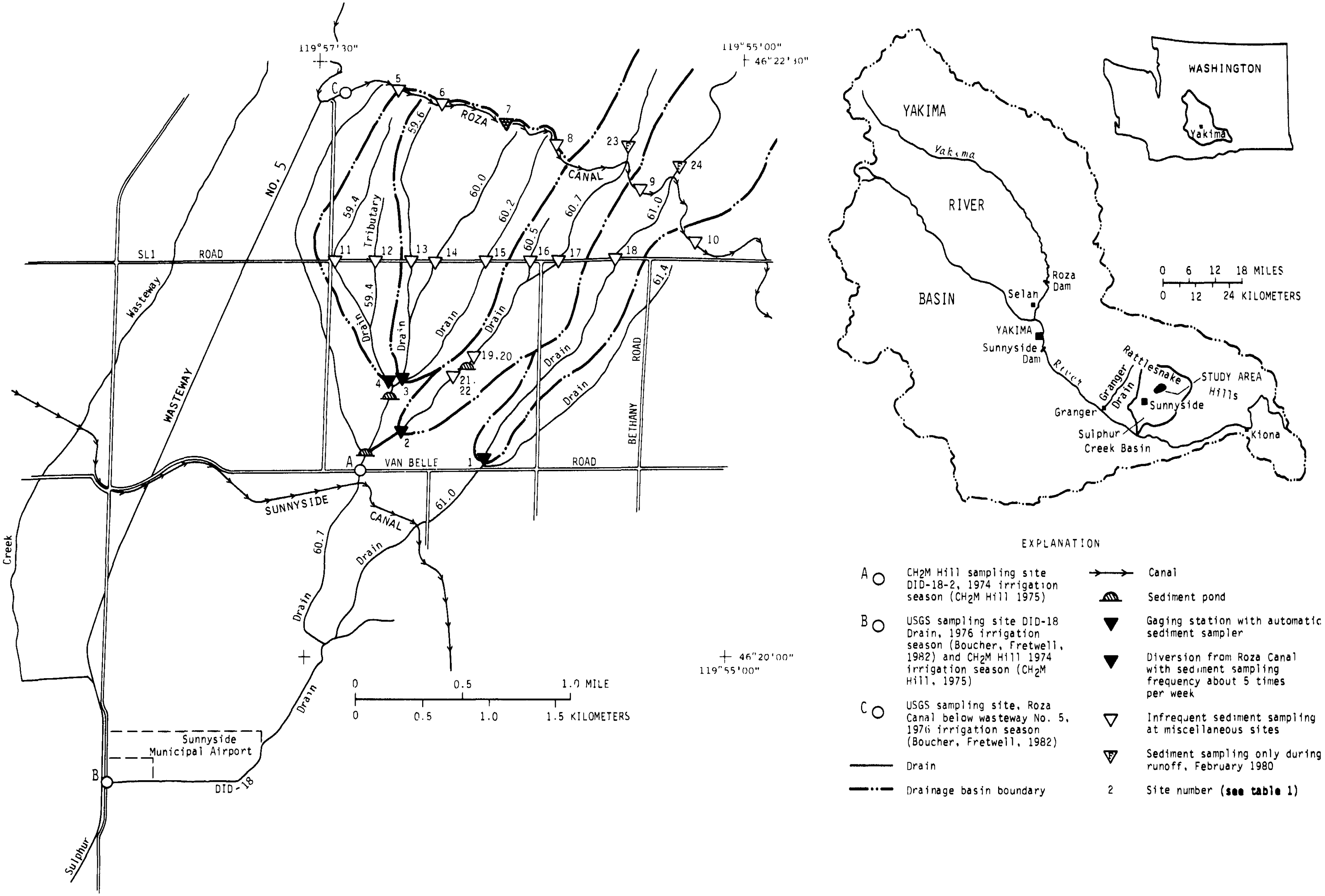

FIGURE 1.--Data-collection sites in DID-18 (Sulphur Creek basin).

TABLE 1.--Data-collection sites in DID-18

Site No. (fig.1)	USGS station No.	Location		Name	Sampling frequency
		Latitude	Longitude		
1	12508755	46°20'49"	119°56'28"	Drain 61.0 above Drain 61.4	Automatic sediment sampler every 4 hours.
2	12508769	46°20'54"	119°57'05"	Drain 60.7	Do.
3	12508775	46°21'10"	119°56'58"	Drain 59.6 below Drain 60.2	Do.
4	12508799	46°21'09"	119°57'02"	Drain 59.4	Do.
5	--	46°22'22"	119°57'04"	Diversion from Roza Canal at mile 59.3	Infrequent
6	--	46°22'21"	119°56'53"	Diversion from Roza Canal at mile 59.5	Do.
7	--	46°22'14"	119°56'27"	Diversion from Roza Canal at mile 59.9	About 5 times per week.
8	--	46°22'04"	119°56'04"	Diversion from Roza Canal at mile 60.3	Infrequent.
9	--	46°21'58"	119°55'39"	Diversion from Roza Canal at mile 60.8	Do.
10	--	46°21'43"	119°55'17"	Diversion from Roza Canal at mile 61.4	Do.
11	12508776	46°21'40"	119°57'23"	Drain 59.4 at SLI Road	Do.
12	12508778	46°21'40"	119°57'07"	Drain 59.4 tributary at SLI Road	Do.
13	12508770	46°21'40"	119°56'55"	Drain 59.6 at SLI Road	Do.
14	12508771	46°21'40"	119°56'47"	Drain 60.0 at SLI Road	Do.
15	12508773	46°21'40"	119°56'29"	Drain 60.2 at SLI Road	Do.
16	12508766	46°21'40"	119°56'14"	Drain 60.5 at SLI Road	Do.
17	12508765	46°21'40"	119°56'04"	Drain 60.7 at SLI Road	Do.
18	12508753	46°21'40"	119°55'44"	Drain 61.0 at SLI Road	Do.
19	--	46°21'15"	119°56'33"	Inflow No. 1 to sediment pond on Drain 60.7	Do.
20	--	46°21'15"	119°56'33"	Inflow No. 2 to sediment pond on Drain 60.7	Do.
21	--	46°21'14"	119°56'35"	Outflow No. 1 from sediment pond on Drain 60.7	Do.
22	--	46°21'14"	119°56'35"	Outflow No. 2 from sediment pond on Drain 60.7	Do.
23	--	46°22'05"	119°55'42"	Drain 60.7 above Roza Canal	Sampled only during runoff in Feb. 1980
24	--	46°22'02"	119°55'24"	Drain 61.0 above Roza Canal	Do.

Slopes in all four drain basins range from 2 to 4 percent with an average of 3 percent. Slopes are steeper north of Roza Canal than those below the canal for Drains 60.7 and 62.0. The topography south of Roza Canal is similar in the four basins, with slightly less slope for Drain 59.4.

The topographic relief of Drains 59.4 and 59.6 is about 240 feet, with 170 feet of relief north of SLI Road. The relief of Drains 60.7 and 61.0 below Roza Canal is about 225 and 240 feet, with 90 and 75 feet of relief between SLI Road and Roza Canal. For Drain 60.7 and 61.0 in the nonirrigated portion above Roza Canal the relief is about 470 and 1,360 feet. The upper reaches of Drain 61.0 reach an altitude of 2,460 feet above sea level. Altitudes at the lower end of the drains range from 870 to 855 feet. The altitude along the Roza Canal is about 1,110 feet.

The primary soils in the four basins are Burke loam and Sagemoor loam (very fine sandy loams) north of SLI Road and Sagemoor loam south of SLI Road (U.S. Soil Conservation Service, 1970). Minor soil types include the Esquatzel and Ritzville series. Because of the large percentage of very fine sand and silt and the moderate to steep slopes, erosion in the four drains is moderate to high. Drain 61.0 had slightly greater potential for erosion than the other three drains on the basis of soil types and slopes, and Drain 59.4 had slightly less potential. Drains 59.6 and 60.7 were about equal.

The climate is arid. Annual rainfall averages 6.8 inches at Sunnyside and ranges up to 15 inches in the Rattlesnake Hills to the northeast. Climatic data are from the U.S. National Oceanic and Atmospheric Administration (1979, 1980, and 1981). Most precipitation falls in the form of rain, but in the winter snow is common. The long-term precipitation and temperature averages and precipitation and monthly temperature averages during the study period for the weather station at Sunnyside are listed in table 2. Precipitation was about 116 percent of normal, and temperatures averaged about 1°F (0.6°C) warmer than the long-term average.

Land use in the study area is irrigated agricultural. The percentages of crops grown in each subbasin are listed in table 3. Areas used for asparagus, beans, corn, mint, and small grains are tilled each year. The area in these crops was about 19 percent for Drain 61.0, 43 percent for Drain 60.7, 61 percent for Drain 59.6, and 89 percent for Drain 59.4. About 22 percent of Drain 61.0, 13 percent for Drain 60.7, 16 percent of Drain 59.6, and 7 percent of Drain 59.4 was in fallow.

TABLE 2.--Long-term average monthly precipitation and temperature, and total precipitation and average monthly temperature at Sunnyside, Wash., during the period April 1979-October 1981

[U.S. National Oceanic and Atmospheric Administration, 1979, 1980, 1981]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
						Precipitation, in inches (T = trace)							
Long-term average	0.93	0.61	0.39	0.49	0.56	0.68	0.19	0.24	0.34	0.67	0.85	0.86	6.81
1979	--	--	--	.36	.34	T	.00	.36	.45	1.03	1.46	.82	--
1980	2.10	1.43	.33	.66	1.24	1.28	T	.16	.63	.33	.40	2.02	--
1981	.44	.39	.08	T	.33	.44	.15	T	.83	.97	--	--	--
Average monthly for total study period	1.27	.91	.20	.34	.64	.57	.05	.17	.64	.78	.93	1.42	7.92
						Temperature, in degrees Fahrenheit							
Long-term average	39.5	37.9	44.0	51.9	60.0	66.5	72.0	70.0	63.2	52.2	40.6	33.8	51.9
1979	--	--	--	52.2	62.1	68.1	73.1	71.8	65.9	55.7	35.3	35.8	--
1980	24.2	34.0	45.0	55.3	60.0	64.1	72.2	68.5	64.0	52.3	42.1	36.9	--
1981	38.1	38.9	49.3	52.6	59.4	63.9	70.1	74.4	64.1	50.8	--	--	--
Average monthly for study	31.2	36.4	47.2	53.4	60.5	65.4	71.8	71.6	64.7	52.9	38.7	36.4	52.5

TABLE 3.--Crops grown and drainage area data for Drains 61.0, 60.7, 59.6, and 59.4, in the DID 18 Drainage near Sunnyside, Wash., for the period 1979-81

Crop grown	Percentage of crops grown in given drains, 1979-81											
	Drain 59.4			Drain 59.6			Drain 60.7			Drain 61.0		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Alfalfa	4.9	4.9	ns	4.8	10.2	8.1	1.3	0.6	0.6	21.3	21.3	21.3
Asparagus	4.1	5.0	3.3	3.3	3.3	.6	6.7	6.7	6.7	ns	ns	ns
Beans	14.9	10.5	22.0	11.6	14.5	15.0	3.5	3.5	ns	ns	ns	ns
Corn	23.8	37.1	8.2	5.6	17.8	8.9	24.0	9.6	ns	17.2	1.8	ns
Fallow	6.6	6.6	6.6	15.8	15.7	15.7	13.4	12.6	12.6	22.1	22.1	22.1
Grapes	ns	ns	ns	8.9	8.9	13.2	21.3	21.3	24.1	25.0	25.0	21.6
Mint	37.1	ns	5.2	22.1	2.4	1.0	ns	ns	10.3	ns	ns	5.3
Orchard	ns	ns	3.5	ns	3.1	5.9	11.7	11.7	11.7	5.5	5.5	8.9
Pasture	ns	ns	ns	1.5	2.3	1.5	2.5	2.5	2.5	7.1	7.1	7.1
Small grain	8.6	35.9	51.2	26.4	21.8	30.1	15.6	31.5	31.5	1.8	17.2	13.7
Total	100	100	100	100	100	100	100	100	100	100	100	100
	Drainage area data (acres)											
Total acres irrigated	241.0	241.0	241.0	371.4	371.9	371.9	235.2	237.3	237.3	118.4	118.4	118.4
Noncropped	17.1	17.1	17.1	68.8	69.3	69.3	36.3	34.2	34.2	33.6	33.6	33.6
Total acres in drain	258.1			441.2			*271.5			*152.0		

*Excluding dry land above Roza Canal crossing.
ns— not significant

METHODS OF DATA COLLECTION AND ANALYSIS

Monitoring Methods

At the outflow points (sites 1, 2, 3, and 4; fig. 1, table 1) on each drain the Geological Survey established stream-gaging stations with artificial plywood controls and automatic water-level recorders to monitor the stage continuously. The procedure and methods of stream gaging and record computation are described in various Geological Survey reports and memoranda. The most common methods used in this study are outlined by Carter and Davidian (1968) and Buchanan and Somer (1969). Measurements of water flow into the project area were obtained from records provided by the Roza Irrigation District.

Automatic sediment samplers were installed at the outflow points from each drain (sites 1, 2, 3 and 4). The automatic sampler used was the Manning Model S4050 sampler, manufactured by the Manning Corp.[a] The samplers were programmed to sample on a 4-hour frequency. The six samples collected each day were then composited by equal volume. Collection of equal volumes was accomplished by adjusting the fill-sensor level in the automatic-sampler collection chamber. The orifice of the sampler was placed in a turbulent area below the gaging flume to dampen the effects of stream velocity and provide mixing. Several times throughout the irrigation season, calibration samples were taken at the artificial controls. The calibration samples were collected by using a US series DH-48 suspended-sediment sampler, and were used to correct those obtained by the automatic sampler. Because the nozzle of the DH-48 sampler reached all the way to the bottom of the artificial control, the samples represent the total sediment concentration and discharge. Manual sediment sampling technique--by EWI method--and the methods used by the U.S. Bureau of Reclamation Sediment Laboratory to determine the sediment concentration and particle size are described by Guy (1969) and Guy and Norman (1970).

To monitor sediment discharge entering the study area from the Roza Canal, a sampling station was established at the diversion located at mile 59.9 (site 7). Suspended-sediment samples were obtained about five times a week (table 13, end of report). To adjust the sediment concentrations at site 7 to reflect the concentrations at the several points of diversion from the Roza Canal, 20 periodic sediment-concentration samples were collected at sites 5, 6, 8, 9, and 10 (see fig. 1), and these data were used to adjust the values obtained at site 7 (table 14, end of report). The adjustment factor averaged 0.97 for the 20 samples collected.

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[a]The use of the brand name in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

Because water-discharge data are also necessary to obtain the inflow sediment discharge, diversion records kept by the Roza Irrigation District were analyzed (tables 8a-d). Each diversion at the canal may supply water to more than one drain; therefore, the flow data had to be broken into segments to reflect water flow into each separate drain, and to determine what water flowed from the study area. To keep the calculations to a minimum, monthly summaries of water flow were multiplied by monthly mean adjusted sediment concentration for the diversion at site 7.

During the nonirrigation periods, when WDOE observers were not available, the automatic samplers were shut down except during periods when runoff from rain or snowmelt was suspected. The samplers were susceptible to freezing because the shelters were not heated. Except for significant runoff periods, samples were taken about once monthly. Fortunately, only one significant period of runoff occurred during the nonirrigation period, and that was for the partially sampled period February 16 to 21, 1980.

Periodically, samples (table 12, end of report) were obtained at the culverts (sites 11-18) on SLI Road where the drains cross, using a DH-48 sampler. These samples were used to estimate sediment discharge north of SLI Road.

When sediment samples were obtained by hand, water temperatures were obtained. Tables 12, 13, and 14 list these data for the miscellaneous sites and diversion points on the canal. The temperatures for outflow points on the drains are listed as once-daily temperature in tables 11a to 11d (end of report).

Sediment samples were collected above and below a sediment pond located on Drain 60.7 (sites 19-22) about half a mile above the gaging station at site 20 to estimate the trap efficiency of the pond.

Runoff north of the Roza Canal only occurred during a storm during February 1980, and was sampled at two sites (23 and 24). These samples, though sparse, were used to estimate the storm contribution of sediment above Roza Canal to Drains 60.7 and 61.0.

Water-temperature data (tables 11a-d), which were obtained when the sampling sites were visited, were analyzed by harmonic analysis. The method was developed by Ward (1963) and refined by Collings (1969) and Steele (1974).

Irrigation seasons and nonirrigation seasons were determined by an analysis of the flow records for Roza Canal kept by the Roza Irrigation District. The time when water was being discharged from the canal was considered the irrigation season and the time when no water was being discharged was considered the nonirrigation season. The periods of irrigation and nonirrigation are listed as follows:

1979 irrigation season	Apr. 1 to Nov. 6
1979-80 nonirrigation season	Nov. 6, 1979, to Apr. 4, 1980
1980 irrigation season	Apr. 5 to Oct. 22
1980-81 nonirrigation season	Oct. 23, 1980, to Mar. 27, 1981
1981 irrigation season	Mar. 27, 1981, to Oct. 25, 1981

As stated on page 3, the Washington State Department of Ecology, with the aid and consultation of the Technical Advisory Committee on Irrigation, the Geological Survey, and Washington State University, has adopted the Imhoff Cone technique to monitor the sediment from irrigation fields and return flow in irrigation drains. The method has been used for years in sewage treatment plants to determine the settleable solids present, where the normal time allowed for the material to settle is 45 minutes. The time selected for monitoring irrigation water by the Imhoff Cone was 15 minutes.

The Imhoff Cone used by WDOE is plastic, cone-shaped, 40.8 cm high, 9.3 cm in diameter at the top, and holds 1 liter of liquid. The technique is to collect a depth-integrated sample of 1 liter in volume, pour it into the cone, and let the water-sediment mixture settle for 15 minutes. The cone is graduated in milliliters, and the amount of settleable material per 1-liter volume is read by holding the cone in an upright position and reading through the graduated transparent plastic. The results are reported as settleable solids in milliliters per liter per 15 minutes.

The use of Imhoff Cones to measure water quality in irrigation return flows was felt to have the following advantages:

1. The cones are inexpensive, and no laboratory analysis is required.

2. The procedure is simple and can be easily taught to farmers and laypersons. Farmers faced with meeting a performance standard can easily determine where they stand.

3. The procedure is fast. Samples can be measured within 15 minutes of collection, and no storage or transporation is required.

4. The parameter measured (for example, settleable solids) is easily understood and is assumed to be related to soil loss from the farm.

Error Analysis

During several 24-hour periods (diel studies) for each irrigation season, the outflow monitor stations on the drains (sites 1, 2, 3, and 4) and the daily-inflow station (site 7) on Roza Canal were sampled on a bi-hourly and hourly basis (tables 10a-d, end of report), and analyzed discretely. The samples were used to estimate the daily variation error at the monitor stations at sites 1, 2, 3, and 4 introduced by compositing the automatic samples by equal volume, and the daily variation error caused by sampling site 7 only once per day.

The estimated error analysis for the daily values was arrived at by calculating the daily variability in the sediment discharge and combining that with other sources of uncertainty—such as sampling error, laboratory error, and water discharge error—using principles of propagation of uncertainty (Baird, 1962) into a single estimated confidence limit for the data. Confidence limits were discussed by Boucher and Fretwell (1982).

The estimated confidence limits of sediment yields and net outflows from a basin were obtained using standard statistical methods for determining the uncertainty of sums and differences. The concept of "Least Significant Difference" is described by Arkin and Colton (1970).

Standard statistical methods of analysis of co-variance and regression techniques are described in various statistical textbooks. The methods used for this report are described by Riggs (1968).

SEDIMENT TRANSPORT

Inflow

During the 1979 irrigation season, water in Roza Canal was shut off from September 8 to October 17, and turned back on again October 18 to November 6. The surface-water inflow to the study area during the 1979 irrigation season was about 80 percent of the average for the 1980 and 1981 irrigation seasons (table 4). A small but unknown ground-water pumpage affects inflow to the area.

The sediment inflow for the 1979 irrigation season was 298 tons, compared with only 119 tons for the 1980 and 88 tons for the 1981 irrigation seasons (table 5). The discharge-weighted-mean sediment concentration for inflowing water for the 1979 irrigation season was 88-120 mg/L, about three times that for the 1980 irrigation season (31-33 mg/L), and about four times that for the 1981 irrigation season (23-24 mg/L). The discharge-weighted mean sediment concentration, $\overline{C}$, is calculated by using the equation

$$\overline{C} = \frac{\text{seasonal sediment discharge}}{\text{seasonal water discharge x 0.0027}} ,$$

where 0.0027 is a factor to convert to tons per day.

Data from the two sampling sites (23 and 24, fig. 1) above Roza Canal were used to calculate water-sediment inflow to Drains 60.7 and 61.0 from the nonirrigated areas above the Roza Canal. The two sites had flow only during the storm runoff, February 16-21, 1980. The inflow was estimated to be 60 tons; 57 tons was contributed to Drain 61.0 (site 24) and 3 tons to Drain 60.7 (site 23). There is no inflow from nonirrigated lands into Drains 59.6 and 59.4, because all the drainage of these two drains lies south of Roza Canal. Inflow from the nonirrigated area during the February 1980 storm into Drain 61.0 was about 3.5 times more than moved past the outlet monitoring station during the study. The inflow from the nonirrigated area to Drain 60.7 during the February 1980 storm period was estimated to be about 0.4 percent of the sediment discharged past the outlet (site 2) during the study. The sediment inflows to the four drains, including that for the February 1980 storm, are listed in the following table.

	Drain			
	61.0	60.7	59.6	59.4
Sediment inflow for the study (adapted from table 5), in tons	120	139	181	125
Discharge-weighted mean sediment concentration, in milligrams per liter	90	49	45	55
Estimated sediment inflow, in tons, for February 1980 storm	57	3	0	0

TABLE 4.--Water outflows and inflows in four subbasins of the DID-18 Drain

Site No.	Selected site or inflow to drain	Irrigation season					
		1979		1980		1981	
		ft^3/s-days	acre-feet	ft^3/s-days	acre-feet	ft^3/s-days	acre-feet
1	Drain 61.0 outflow	83.03	165	55.68	110	81.42	161
2	Drain 60.7 outflow	211.02	418	236.88	470	282.96	561
3	Drain 59.6 outflow	314.7	624	419.4	832	361.98	718
4	Drain 59.4 outflow	60.43	120	47.71	95	67.29	133
	Drain 61.0 inflow	130	270	170	330	190	380
	Drain 60.7 inflow	320	630	370	740	410	820
	Drain 59.6 inflow	450	890	590	1,170	500	1,000
	Drain 59.4 inflow	260	510	300	590	320	650

Site No.	Selected site or inflow to Drain	Nonirrigation season			
		1979-80		1980-81	
		ft^3/s-days	acre-feet	ft^3/s-days	acre-feet
1	Drain 61.0 outflow	*12.81	26	12.73	25
2	Drain 60.7 outflow	*161.84	319	107.91	214
3	Drain 59.6 outflow	*229.67	456	209.34	415
4	Drain 59.4 outflow	*17.28	34	7.83	16
	Drain 61.0 inflow	**5	**10	0	0
	Drain 60.7 inflow	**1	**2	0	0
	Drain 59.6 inflow	0	0	0	0
	Drain 59.4 inflow	0	0	0	0

*Includes nonirrigation period September 8 to October 17.
**This is estimated inflow from the dryland portion above Roza Canal. The canal did not flow during the nonirrigation periods.

TABLE 5.--Sediment data for four subbasins of the DID-18 Drain (values given are at the 90-percent confidence level)

Site No.	Selected site or inflow to drain	Irrigation season: *1979 Discharge (tons)	*1979 Discharge-weighted mean concentration (mg/L)	1980 Discharge (tons)	1980 Discharge-weighted mean concentration (mg/L)	1981 Discharge (tons)	1981 Discharge-weighted mean concentration (mg/L
1	61.0 outflow	4.4 ±0.4 (4.5)	20 ±2 (20)	1.0 ±0.5	7 ± 3	1.9 ±0.2	9 ±1
2	60.7 outflow	179 ±12 (180)	330 ±20 (320)	174 ±12	270 ±20	209 ±14	270 ±20
3	59.6 outflow	365 ±28 (376)	450 ±35 (440)	479 ±33	420 ±25	446 ±25	460 ±28
4	59.4 outflow	529 ±49 (529)	3300 ±300 (3200)	179 ±13	1390 ±100	504 ±37	2800 ±200
	61.0 inflow	36 ±2	102 ±7	15 ±0.7	33 ±5	12 ±0.7	23 ±2
	60.7 inflow	79 ±4	96 ±5	32 ±2	33 ±4	25 ±2	24 ±2
	59.6 inflow	103 ±5	88 ±5	47 ±2	31 ±3	31 ±2	24 ±2
	59.4 inflow	80 ±4	120 ±6	25 ±1	33 ±2	20 ±1	23 ±1

Site No.	Selected site or inflow to Drain	Nonirrigation season: 1979-80 Discharge (tons)	1979-80 Discharge-weighted mean concentration (mg/L)	1980-81 Discharge (tons)	1980-81 Discharge-weighted mean concentration (mg/L)
1	61.0 outflow	9 ±2	310 ±70	0.2 ±0.02	6 ±1
2	60.7 outflow	102 ±20	310 ±60	16 ±2	54 ±7
3	59.6 outflow	374 ±70	790 ±150	70 ±7	120 ±12
4	59.4 outflow	209 ±40	5400 ±1000	1 ±0.5	50 ±25

Note: All values given in table have been adjusted from totals in table 8a-d for variation or subdivision error caused by sample composite.
* Values in brackets include nonirrigation period September 8, 1979-October 17, 1979.

Boucher and Fretwell (1982) reported a discharge-weighted mean sediment concentration of 55 mg/L in the Roza Canal at DID-18 (site C) during the 1976 irrigation season. The average concentrations of suspended sediment in the inflow water from Roza Canal were 99, 32, and 24 mg/L during the 1979, 1980, and 1981 irrigation seasons.

Sediment concentrations increased in some streams in the Yakima River basin and other parts of east-central Washington due to the ash fall from the eruption of Mount St. Helens on May 18, 1980. Although samples at the diversion on Roza Canal at mile 59.9 (site 7) were not taken from May 17-21, sediment concentrations increased from 35 mg/L on May 16 to 69 and 83 mg/L on May 22 and 23, respectively. The increase may have been due to ash in the canal water.

Outflow

Water outflow during the study was greatest for Drain 59.6 (table 4), which drains more irrigated area than any of the other three sites (table 3). Water outflow was least for Drain 59.4, except during the 1979-80 nonirrigation season when Drain 59.4 discharged 34 acre-ft and Drain 61.0, 26 acre-ft. Base flows tended to be somewhat greater during the 1979-80 nonirrigation season than during the 1980-81 nonirrigation season, even though the nonirrigation season of 1979-80 was shorter than that of 1980-81. Figure 2 illustrates the monthly distribution of sediment discharge from the four drains during the study.

During the study, 16.6 tons of sediment was transported past site 1 on Drain 61.0, of which 8.5 tons was transported during the runoff of February 16-21, 1980. In other words, 51 percent of the 3-year sediment discharge of Drain 61.0 was transported during this one storm. The following table lists the sediment discharge during the study and during the February 16-21, 1980, runoff and the discharge-weighted mean sediment concentration:

	Drain			
	61.0	60.7	59.6	59.4
Outflow sediment discharge, in tons, during the study	16.6	681	1,750	1,420
February 1980 storm sediment discharge, in tons (percentage of the sediment transported during the study in parentheses)	8.5 (51)	73.2 (11)	290 (17)	205 (14)
Discharge-weighted mean sediment concentration during the study, in milligrams per liter	25	252	422	2,620
February 1980 storm discharge-weighted mean sediment concentration, in milligrams per liter	580	3,200	9,490	9,650

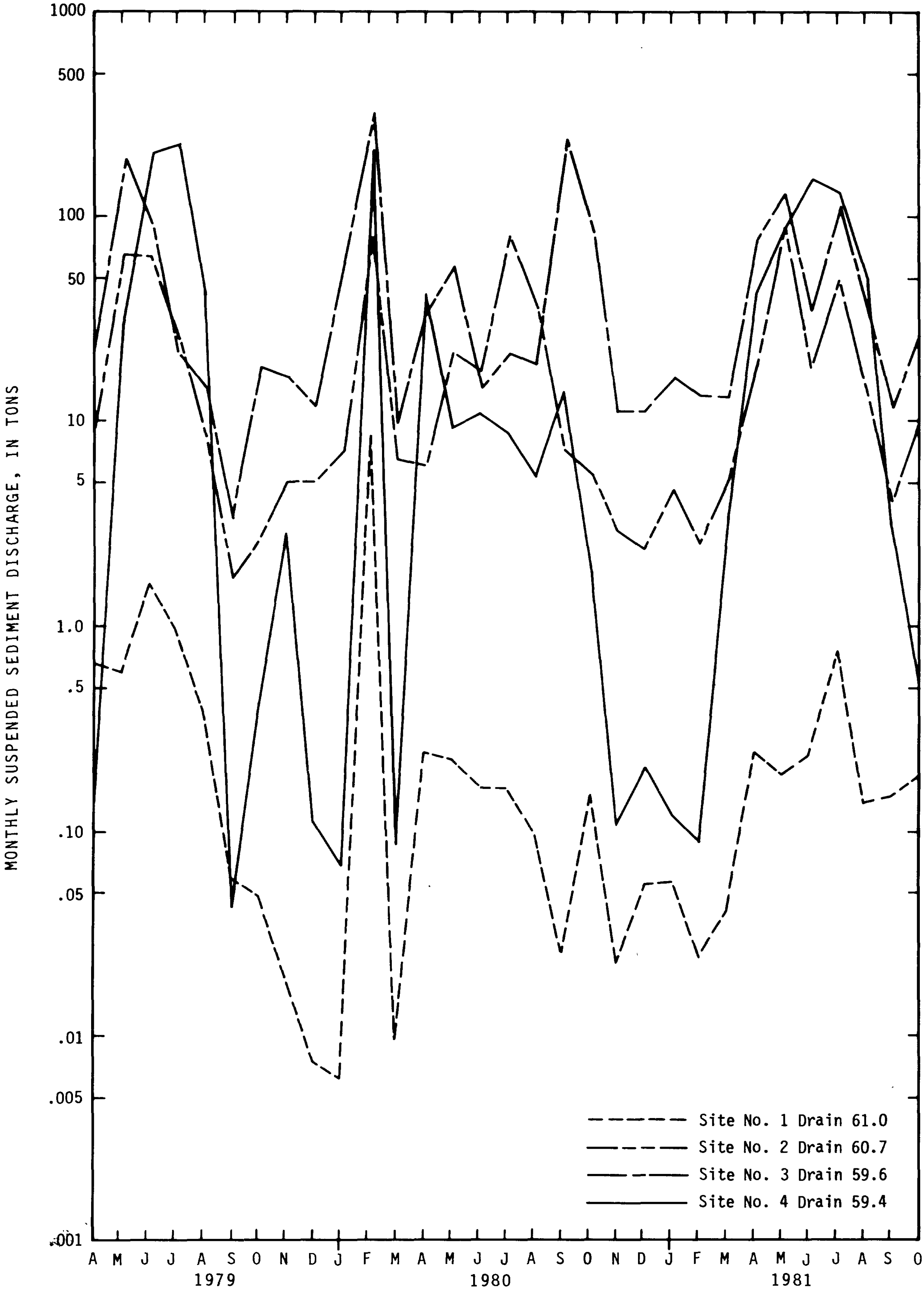

FIGURE 2.--Monthly sediment discharge for Drains 61.0, 60.7, 59.6, and 59.4, near Sunnyside, Wash., for the period April 1979 to October 1981.

The importance of sampling storms during the nonirrigation season is illustrated in the above table. A large variation in sediment transport occurs in the four drains during any one storm. A large percentage of the annual sediment discharge may be transported during a single storm, as it was for Drain 61.0 in 1980.

For Drain 59.4, discharge-weighted mean sediment concentrations for the three irrigation seasons varied by 1,910 mg/L. For the other three drains, discharge-weighted mean concentrations varied only 13 mg/L, 60 mg/L, and 40 mg/L for Drains 61.0, 60.7, and 59.6, respectively. This indicates that sediment erosion in Drain 59.4 was more variable from year to year than in the other three drains.

Discharge-weighted mean sediment concentration during the study at the sampling site on Drain 61.0 was 105 times less than in Drain 59.4, 17 times less than in Drain 59.6, and 10 times less than in Drain 60.7. During the 1979-80 nonirrigation season, the discharge-weighted mean concentration in Drain 61.0 was still equal to or less than that in the other three drains, even though much more water flowed into this drain from above Roza Canal during the nonirrigation period.

Sediment Yields

To determine the sediment yield, a mass balance of the sediment loads was first determined from the equation

$$S = L_{out} - L_{in} \ ,$$

where S is the change in sediment storage in the basin, L_{out} is the sediment flowing out of a basin, and L_{in} is the sediment flowing into a basin. Sediment yield is then defined as S divided by drainage area. In a report about water quality of the Bear Creek Basin, Jackson County, Oregon, Wittenberg and McKenzie (1980) stated, "The irrigation method and crop type generally will determine whether a farm plot acts as a concentrator or diluter of constituents in water or as a source or sink. Explanations of these terms are given below:

CONCENTRATION (weight/volume)

Outflow greater than inflow = Concentrator
Outflow less than inflow = Diluter

LOAD (weight/time)

Outflow greater than inflow = Source
Outflow less than inflow = Sink."

From the above definitions, when S is positive the basin becomes a source for sediment, and when S is negative the basin becomes a sink for sediment. Figure 3 shows the change in sediment storage, including the uncertainty, for the four drains and table 6 lists the sediment yields.

Drain 61.0 was a sink for sediment for all periods except the 1980-81 nonirrigation season. An estimated 104 tons of sediment was deposited in the 61.0 basin. The natural erosion potential for Drain 61.0 is as great as or greater than for the other drains on the basis of soil types and slopes. Therefore, factors such as cropping, water management, and depositional processes are assumed responsible for Drain 61.0 acting as a sink for sediment. Even during the runoff period of February 16-21, Drain 61.0 acted as a sink for sediment below Roza Canal, in that an estimated 57 tons was transported into the basin at Roza Canal crossing and only 9 tons was transported out of the basin. From this, about 48 tons was deposited along the drainageway, to be available for transport at a later time. During the 1980-81 nonirrigation season, Drain 61.0 acted (barely) as a source of sediment, since 0.2 ton was transported out of the basin; yet this is to be expected, because no surface inflow (other than minor precipitation) occurred during this period.

Comparing the outflow discharge-weighted mean sediment concentrations from the three irrigation seasons shows that outflow sediment concentrations in Drain 61.0 were 3 to 5 times less than the inflow sediment concentrations. Drain 61.0 acts as a diluter. In the other three drains, outflow sediment concentrations were 3 to 120 times greater than inflow concentrations; these drains act as concentrators.

Figure 3 shows the change in sediment storage as obtained by the mass balance equation. If the range in the least-significant difference overlaps, then there is not a statistically significant difference in the change in sediment storage from one year to the next. For example, the least-significant difference overlaps for Drain 59.6 for the 1980 and 1981 season; therefore, the difference there is not statistically significant.

There is a increasing trend in sediment coming out of storage in Drain 60.7, the loss has increased each irrigation season (101, 142, and 184 tons for the 1979, 1980, and 1981 irrigation seasons, respectively). For Drain 59.6, the 1980 and 1981 irrigation seasons were not significantly different, but both years had about 65 percent greater yield than the 1979 irrigation season, differing by an average of 424 versus 273 tons coming out of storage.

The change in sediment storage from Drain 59.4 was not significantly different in the 1979 and 1981 irrigation season, averaging 466 tons. However, change in storage in the 1980 irrigation season, 154 tons, was significantly less (by about 3 times).

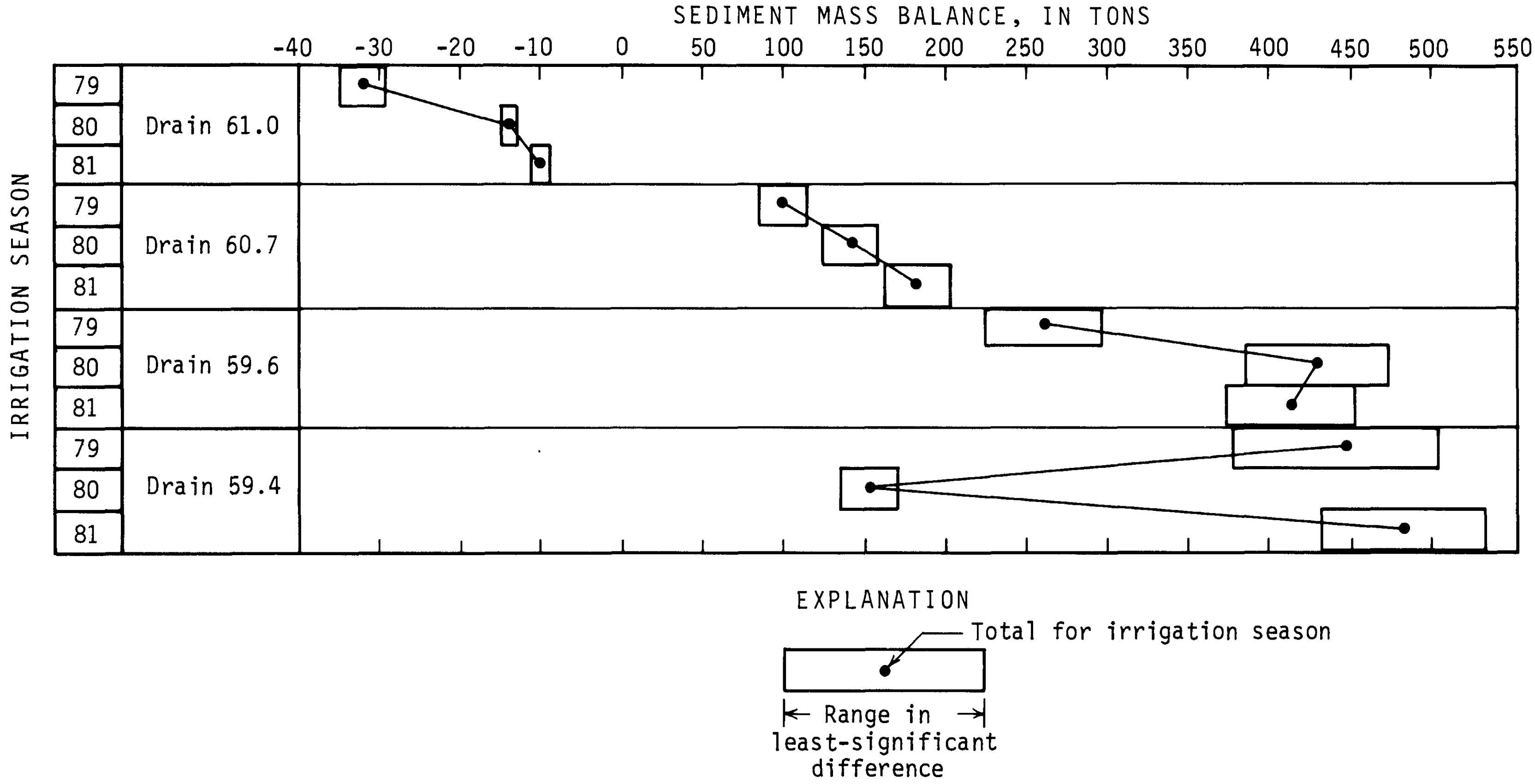

FIGURE 3.--Sediment mass balances and least significant differences of Drains 61.0, 60.7, 59.6, and 59.4 for the 1979, 1980, and 1981 irrigation seasons.

TABLE 6.--Sediment yields for four drains in the DID-18 Drain

Subbasin	1979 irrigation season tons[a] / tons/acre[b]	1979-80 nonirrigation season tons[a] / tons/acre[b]	1980 irrigation season tons[a] / tons/acre[b]	1980-81 nonirrigation season tons[a] / tons/acre[b]	1981 irrigation season tons[a] / tons/acre[b]
Drain 61.0	-32 / -0.27	[c]-48 / -0.41	-14 / -0.12	0.2 / 0.002	-10 / -0.09
Drain 60.7	101 / 0.43	[c]99 / 0.43	142 / .60	16 / 0.07	184 / 0.78
Drain 59.6	273 / 0.74	374 / 1.0	432 / 1.2	70 / 0.19	415 / 1.1
Drain 59.4	449 / 1.9	209 / 0.87	154 / 0.64	1 / 0.004	484 / 2.0
Total for four basins	791 / .82	634 / .66	714 / .74	87 / .09	1073 / 1.1

[a]Sediment outflow minus inflow.

[b]Yield is equal to outflow minus inflow divided by irrigated acres.

[c]Net for irrigated portion.

Sediment yield for the DID-18 Drain during the 1976 irrigation season (Boucher and Fretwell, 1982) was about 7.1 tons per acre. This is about 3.5 times greater than the yield for Drain 59.4, which was 2.0 tons per acre (table 6) during the 1981 irrigation season, the greatest yield determined for any of the drains during the 1979-81 period. Because DID-18 Drain was not sampled during the 1979-80 irrigation season, there were no data to determine if the yield from the total DID-18 drainage would be lower than that reported during the 1976 irrigation season. However, most of the difference in sediment discharge between the 1976 and 1981 irrigation seasons is due to the outflows of sediment from DID 18 in the Sunnyside Canal during 1976. The sediment yields in tons per acre (Boucher and Fretwell, 1982) for the 1976 irrigation season for the six drains in the Sulphur Creek basin were as follows:

DID-3 and Washout Drain	1.9
DID-18 Drain	7.1
Black Canyon Creek	2.7
DID-9 Drain	0.5
Sulphur Creek Wasteway (entire basin)	1.9

Comparison of this table with the study-drain yields (shown as denomininators in table 6) showed that sediment yields were generally greater in the Sulphur Creek basin during the 1976 irrigation season than those reported for the 1979-81 irrigation season in Drains 60.7, 59.6, and 59.4. Yields in Drain 61.0, which acts as a sink for sediment, were considerably less.

The sediment concentration in DID-18 Drain at the outflow point (site B, fig. 1) was 1,200 mg/L for the 1976 irrigation season (Boucher and Fretwell, 1982) and 589 mg/L for the 1974 irrigation season (CH_2M Hill, 1975), or a discharge of 11,000 tons for 1976 and 5,430 tons for 1974. This indicates that sediment discharge can vary greatly between irrigation seasons, depending on amount of water applied (including precipitation), type of crops grown, slope of the land, and management practices.

A study of the periodic data (table 12) collected from sites 11 to 18 (fig. 1), where the drainages are cut into by SLI Road, indicates that sediment yields in the area north of SLI Road ranged from 50 to 200 percent of sediment yields for the entire drainage basins above the outflow sites. However, there is a wide variance in the sediment discharge, and good estimates could not be made.

The eruption of Mount St. Helens on May 18, 1980, created a large ash fall in portions of eastern Washington. The effect was noticeable in samples taken at a project in the Royal Slope area in DW272A Drain near Royal City, about 43 miles to the northeast of the study area, where the ashfall was about 20 millimeters (Sarna-Wojcicki and others, 1981). Sediment concentration increased from 294 mg/L to 8,020 mg/L in Drain DW272A near Royal Camp, and from 179 to 5,980 mg/L for DW272A1, a tributary drain near Royal Camp (Boucher and O'Neil, written commun., 1982). The ashfall in the DID-18 basin study area was about 1 millimeter in depth, and the effect on sediment discharge from the ashfall was minimal. The 4-hour samples collected by the automatic samplers were analyzed separately; only Drain 61.0 indicated any discernible increase (an increase of 17 mg/L in 4 hours) in sediment concentration (see table 10a at the end of report). Most diel samples taken on Drain 61.0 do not show this large an increase in the 2-hour and 1-hour samples, so it is possible that the increase could be attributed to ashfall. Detection of sediment increases caused by ashfall were not discernible in the other drains because of the masking effects of irrigation return flow.

Factors Affecting Sediment Yields

Irrigation and Land Use

The amount of sediment transported by surface irrigation for certain types of crops is affected by many variables, such as soil types, land slopes, irrigation management practices, and types of irrigation (surface versus sprinkler). A detailed study of the methods used to irrigate the various crops was beyond the scope of this project. However, WDOE has studied in detail the irrigation methods and Best Management Practices (BMP) in the four drains. According to Joan Thomas (WDOE, written commun., 1982) there were no statistical differences between the Imhoff Cone readings (to be discussed later) for the three irrigation seasons. Therefore, by agreement with the WDOE, the Geological Survey did not make a detailed analysis of the relation of BMP to sediment transport in the four basins, the third objective of the study.

Although no conclusion was made about the impact of BMP on sediment transport, it is noted that basins with the greatest percentage of row crops (asparagus, beans, corn, mint, and small grains) have the greatest sediment yields. A study of the types of crops grown indicates that sediment discharge tends, as a rule, to increase when crops types conducive to erosion are grown. Drains 59.4, 59.6, and 60.7 have a higher proportion of row crops, which are conducive to erosion, than does Drain 61.0. Boucher and Fretwell (1982) noted that sediment yields relate best to land slopes and, to some degree, to land in orchards. However, land slopes in the drains of this study are somewhat similar and the area in orchards is fairly small (table 3).

Management practices in Drain 61.0 were implemented prior to this study and appear to be different. Over 50 percent of Drain 61.0 area is either in fallow, alfalfa, or pasture. Wittenberg and McKenzie (1980) found that pastures in the Bear Creek Basin, Oregon, tended to trap moving sediment and thus act as sinks for sediment. Irrigation of alfalfa results in much the same sediment-trapping characteristics as irrigation of pasture.

One other reason why Drain 61.0 acts as a sink for sediment may be that after sediment is transported from the farm field it is deposited along the stream channel to be transported out of the basin at a later time. Data obtained during the highest runoff period in February 1980 indicated that more sediment was transported into the irrigated portion of the basin below Roza Canal than moved out (an estimated 48 tons, see pages 19 and 20). This material was probably deposited along the stream channel. Thus, the sediment delivery ratio (sediment eroded from farm fields divided by sediment transported past a given point) in Drain 61.0 is much lower than in the other drains.

Data supplied by the Soil Conservation Service (written commun., 1982) indicates a higher proportion (at least 60 percent) of sprinkler irrigation in Drain 61.0 than in the other three drains. Sprinkler irrigation is generally regarded as least likely to cause erosion. The use of sprinklers in combination with good management practices (resulting in less direct runoff) may be one more reason for the drain to act as a sink for sediment. However, the way sprinklers are managed is very important. Above SLI Road on Drain 59.4 there is a pivot sprinkler that covers about 68 acres, or about 50 percent of the area. Much of the erosion above SLI Road in Drain 59.4 came from the sprinkler-irrigated area. If not managed properly, wastewater from sprinkler systems may cause as much or more erosion than surface irrigation.

Data supplied by Cliff Eckhardt, MIP Project Manager (written commun., 1982), indicates very little change in BMP throughout the three irrigation seasons. A small increase in the use of sprinklers was introduced in the Drain 61.0 basin (about 25 acres), but other than this, very little change was made in sprinkler systems during the 1979 and 1981 irrigation seasons. Some sprinkling, mostly in Drain 60.7, was accomplished by pumping water directly out of the drains rather than using Roza Canal water, but the total amount of irrigated acreage, both surface and sprinkling, probably remained about the same during the 3-year study.

Sediment Pond Efficiency

Sediment ponds, recognized as one of the most successful ways to reduce sediment inflow to receiving waterways, collect runoff from farmed fields and drains. If a pond is designed properly, the sands and larger silt particles tend to settle out, leaving only the finer sediment particles to be transported downstream. The ratio of the sediment outflow (discharge) from the ponds divided by the sediment inflow, times 100, is defined as the "trap efficiency," in percent.

There are several small sediment ponds in the study area, mostly above SLI Road in basins 59.6 and 60.7. Clean-out data on sediment ponds during the study period are not available. However, one large pond was sampled periodically at sites 19-22 (fig. 1) about 1/2 mile above the sampling station on Drain 60.7 and below SLI Road. The trap efficiency of this sediment pond is plotted in figure 4, and the sediment data are listed in table 12. The sediment concentrations of inflow sediment concentrations include some estimates to account for more than one source of water. Some water from site 20 tends to dilute the water entering the pond from site 19. Water flowing from site 20 came from an underground drain, which at times probably has some irrigation return flow fed directly into it. This effect is estimated for times when site 20 was not sampled.

The estimated average pond efficiency was 70 percent for the three irrigation seasons. The greatest efficiency during the irrigation season is about June to August (fig. 4). Trap efficiency tends to drop when sediment concentrations are lowest. However, the efficiency during the February 1980 storm was estimated to be 15 percent, a time when sediment concentrations were high. Most of the decrease in efficiency may be due to a decrease in retention time, caused by an increase in water discharge and silt and clay, and no storage. The pond was full of sediment by the end of the 1979 irrigation season. (The pond was cleaned prior to the 1980 irrigation season.)

The monthly hydrographs for all four drains (fig. 2) are similar; the hydrograph for Drain 60.7 does not reflect any major differences attributable to sediment pond efficiency. The trap efficiency may not be great enough to affect the overall sediment distribution, and sediment contribution coming in below the pond may also tend to mask out the impact of this sediment pond. If the pond were not there, then the sediment discharge of Drain 60.7 at site 2 would probably be greater, but by how much is not known.

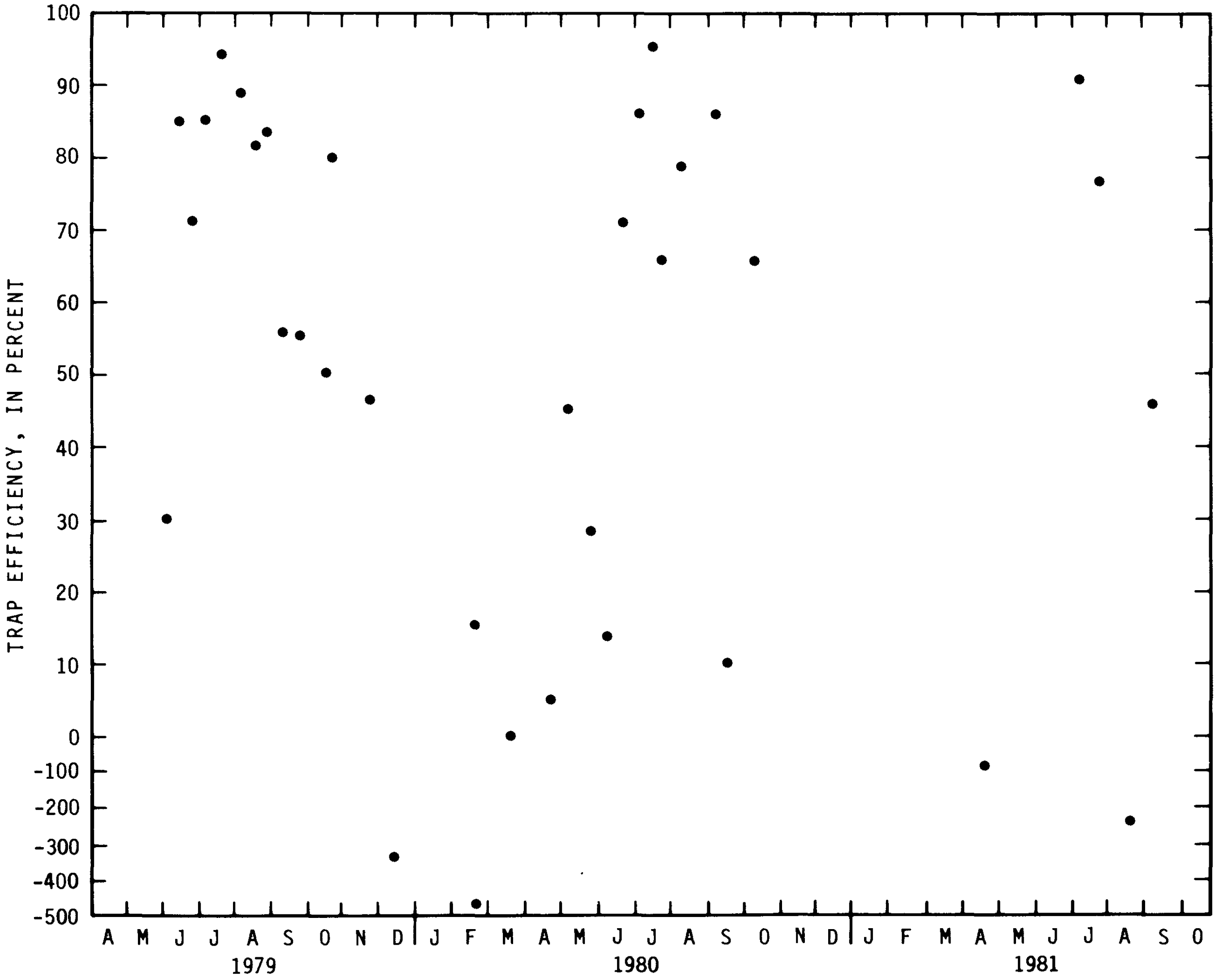

FIGURE 4.--Trap efficiency of sediment pond on Drain 60.7, on the basis of data obtained at sites 19-22.

Size Analysis

Twenty-eight sediment samples were collected in the four study drains for analysis of particle size — one from Drain 61.0, on February 20, 1980; four for Drain 60.7, from February 1980 to June 1981; eight for Drain 59.6, from June 1979 to July 1981; and 15 for Drain 59.4, from June 1979 to July 1981 (tables 9a-d; end of report). Samples from Drains 59.6 and 59.4 were about 75 percent silt, 20 percent clay, and 5 percent sand. Four samples from Drain 60.7 and one from Drain 61.0 were 50 percent clay, 45 percent silt, and 5 percent sand. Generally, Drains 59.6 and 59.4 had a preponderance of silt.

The sample from Drain 61.0, collected on February 20, 1980, had a sediment concentration of 1,000 mg/L, an instantaneous sediment discharge of 6.2 tons/day. It was taken during the period of heaviest sediment transport in the drain. Because the sediment discharge from Drain 61.0 during the study was only 16.6 tons, the one sample is fairly representative of the particle size during the study. This sample, 50 percent clay, contrasts with samples taken in the other three drains for the same runoff period: 25, 16, and 41 percent clay in Drains 59.4, 59.6, and 60.7, respectively.

The particle size of the fluvial sediments reflects the loam and very fine sandy loam soils. Sand does not appear in large amounts in the soils, and therefore is not available in large amounts for transport by water.

ANALYSIS OF IMHOFF CONE DATA

One purpose of this report is to discuss the relation between Imhoff Cone measurements and suspended sediment at the four daily-sampling sites (sites 1-4). Washington State University, Department of Agricultural Engineering, under the direction of Dr. Larry King, has taken the lead in relating Imhoff Cone measurements to suspended sediment, and those results to soil type. Preliminary data analyzed by Dr. King (written commun., 1982) indicate that the finer the soil particles, the poorer the correlation between Imhoff Cone (settleable solids) and suspended sediment (total solids). For example, Dr. King found that the correlation coefficient ranged from 0.97 for a sandy loam soil to 0.3 for a clay loam soil. Perhaps a longer settling time would result in a better correlation coefficient for clay-type soils.

There are problems in obtaining Imhoff Cone readings because of the subjective method used to determine the top level of settleable solids. Experience has shown that the solids settle out in the cone so the top layer is not always level, or normal with the cone axis. The sloping surface causes subjective interpretation that becomes increasingly significant with smaller total amounts of settleable solids. More accurate readings are obtained with larger amounts of settleable material.

Imhoff Cone analyses of samples from the four drains are listed in table 10 at the end of this report. Few samples were collected from Drain 61.0 because of the low sediment concentrations at this site. Also many Imhoff Cone samples were collected at all sites when no visible amount of settleable solids was observed, and these data are listed in table 10 as less than 0.1 ml/L. When the amount of settleable solids was below 0.2 or 0.01 ml/L, the readings were removed from data analysis because of the reason stated above.

Figures 5-8 show the plots of suspended sediment versus Imhoff Cone readings for each of the drain sites. No regression analysis was obtained for Drain 61.0 for the reasons stated above, but the data exceeding 0.01 ml/L are plotted in figure 5.

The coefficient of determination, r^2 (correlation coefficient squared), is a relative measure of the accuracy of fit of the equation to the data, and is also a measure of the relative amount that the independent variable explains the regression population. The r^2 value for Drains 60.7 and 59.4 was 0.81, and for Drain 59.6 was 0.88.

The standard error of the dependent variable (sediment concentration), another measure of the fit of the equation to the data, was quite high; for example, 1,070 mg/L for Drain 60.7, 2,410 mg/L for Drain 59.6, and 2,460 mg/L for Drain 59.4. The closest dashed line on figures 5-8 is the 95-percent confidence band about the mean of the regression on the dependent variable, suspended-sediment concentration. The outer dashed lines are the 95-percent confidence bands of the individual value predictions.

The Imhoff Cone method of determining sediment transport and sediment yield for the sites studied could result in a large error. If the method were used for comparison of sediment transport between drainages, mean sediment concentrations would have to differ by several fold before a statistical difference could be established.

An analysis of covariance for the regressions for Drain 60.7, 59.6, and 59.4 indicated no statistical difference between regressions at the 95-percent confidence level for Drains 59.6 and 60.7 and Drains 59.4 and 60.7, but showed a difference between the regressions for Drains 59.6 and 59.4.

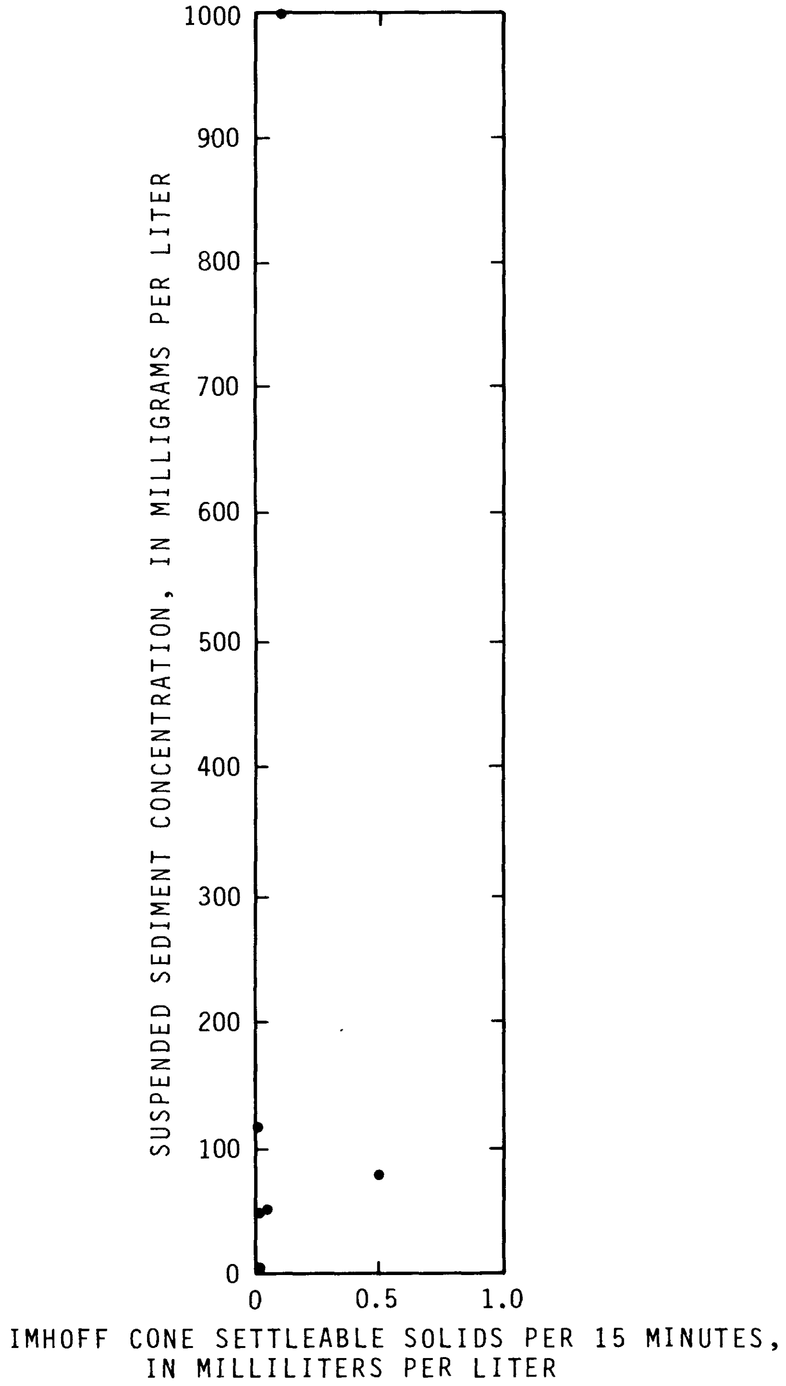

FIGURE 5.--Relation of sediment concentration to Imhoff Cone settleable solids during the period April 1979 to October 1981 at site 1 (Drain 61.0, near Sunnyside).

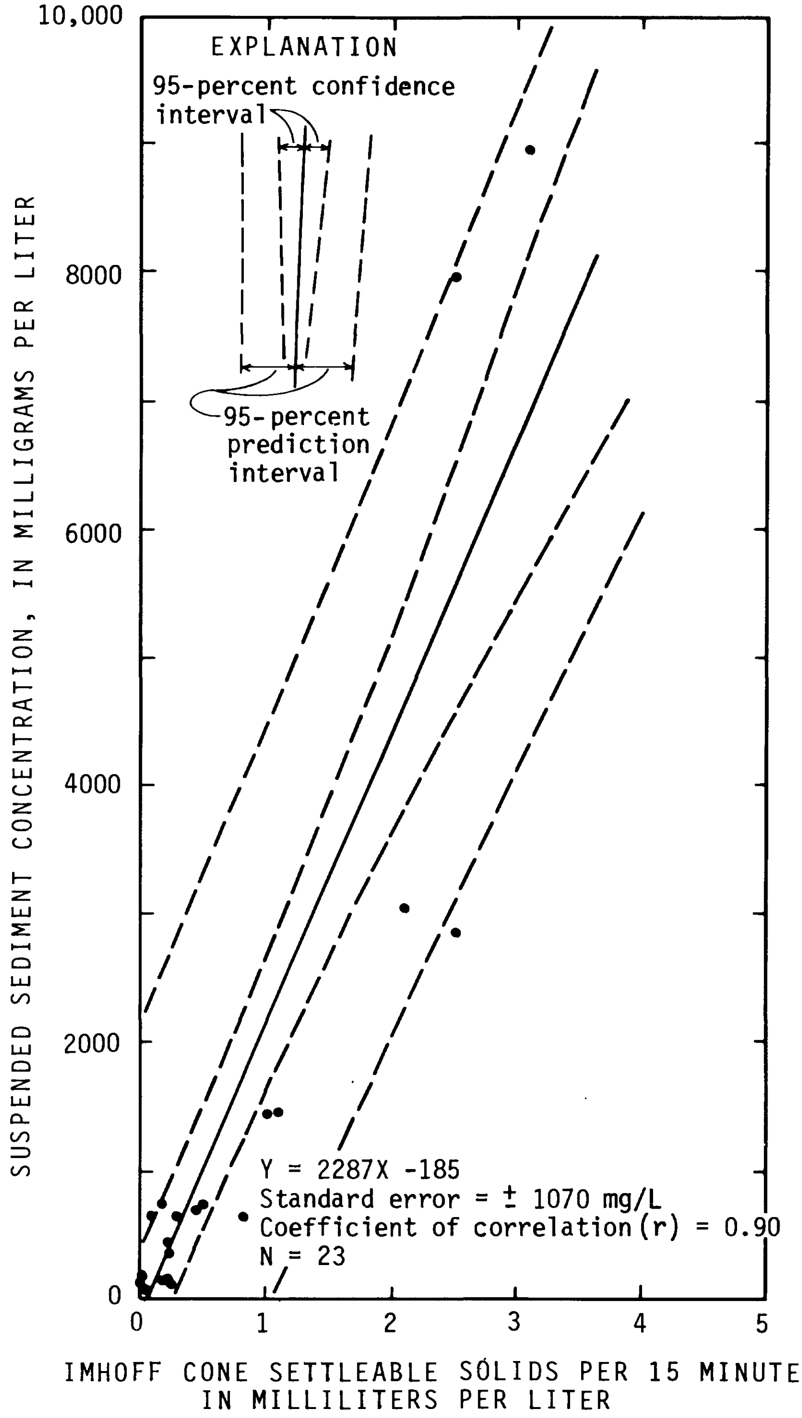

FIGURE 6.--Relation of sediment concentration to Imhoff Cone settleable solids during the period April 1979 to October 1981 at site 2 (Drain 60.7, near Sunnyside).

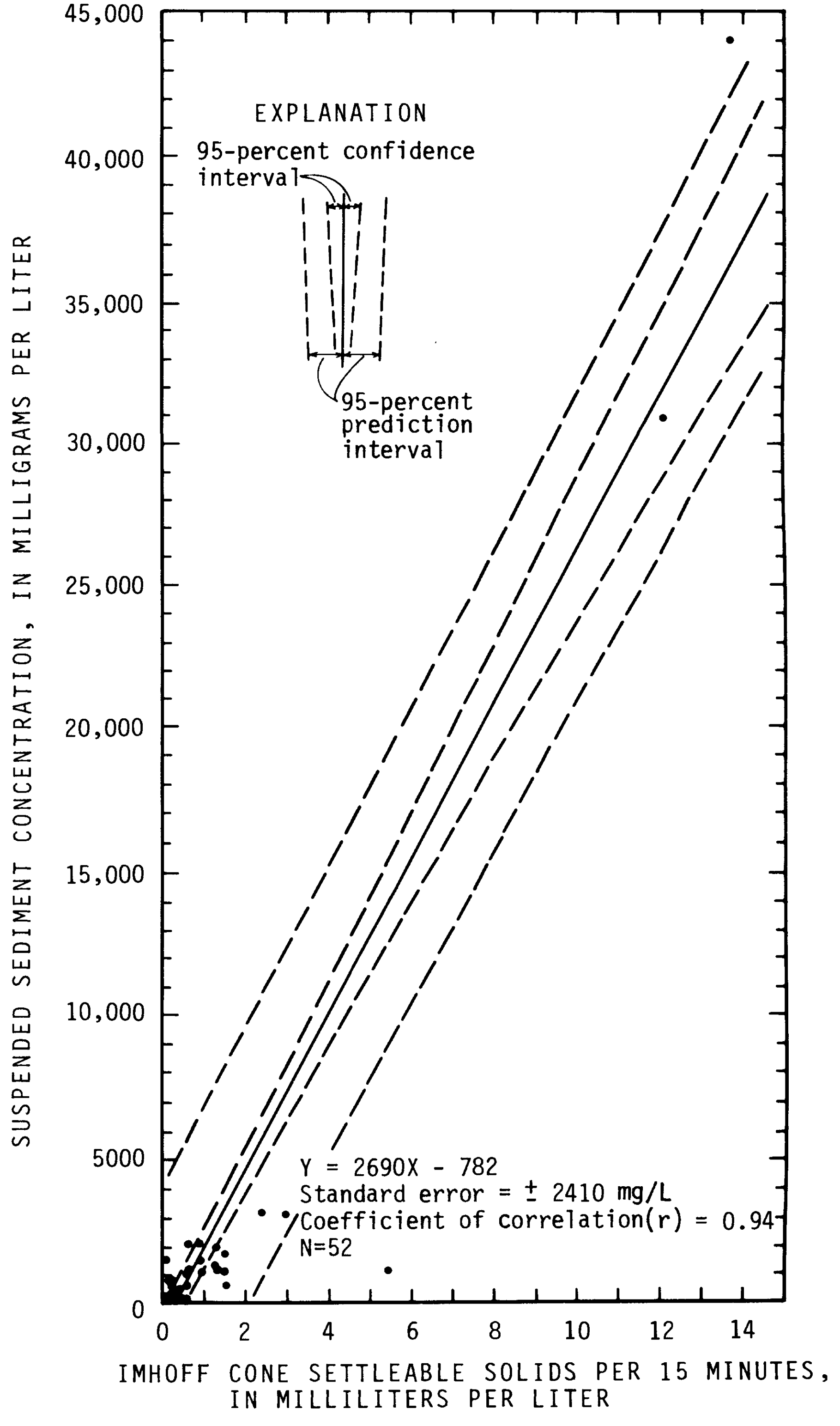

FIGURE 7.--Relation of sediment concentration to Imhoff Cone settleable solids during the period April 1979 to October 1981 at site 3 (Drain 59.6 below Drain 60.2, near Sunnyside).

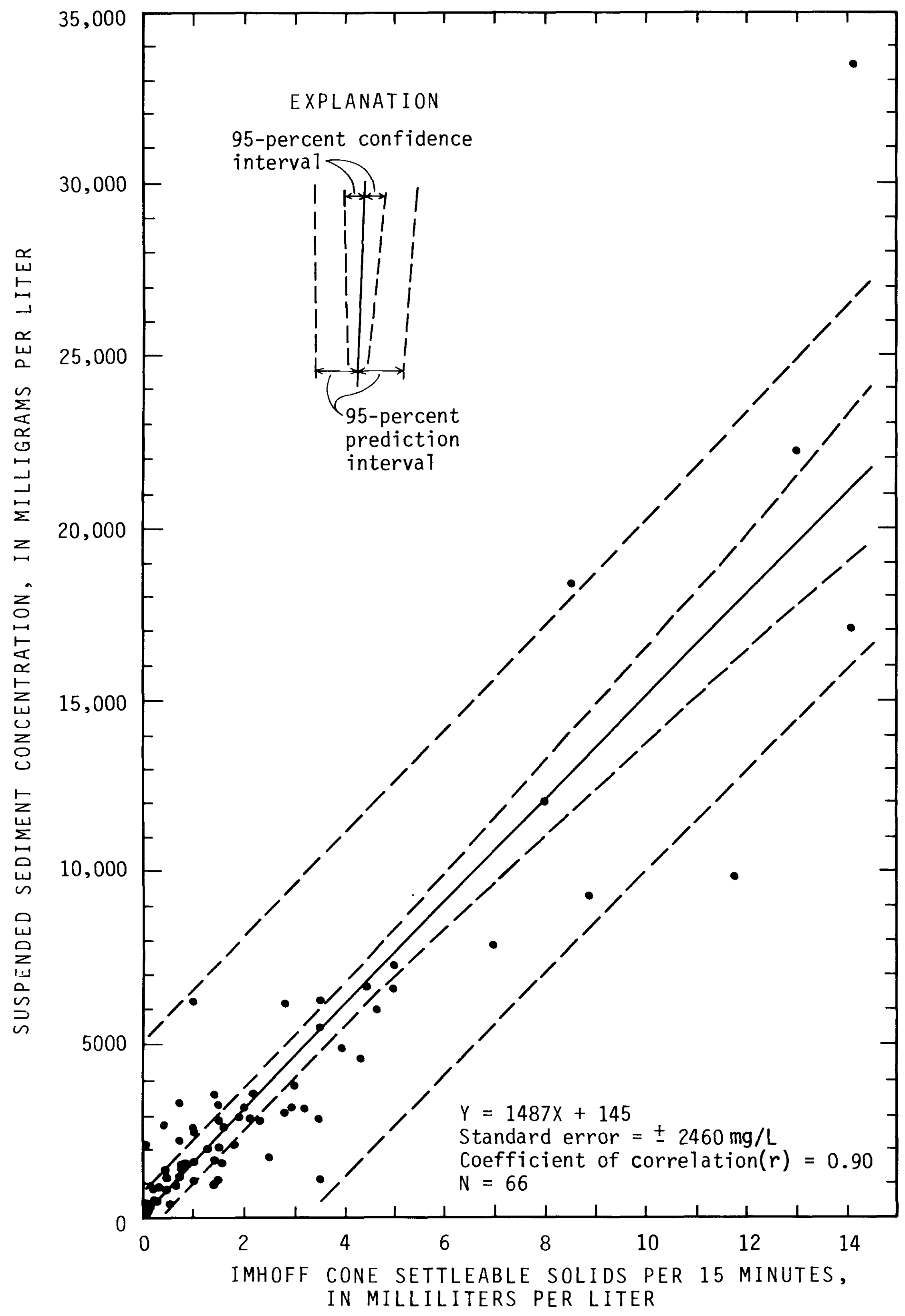

FIGURE 8.--Relation of sediment concentration to Imhoff Cone settleable solids during the period April 1979 to October 1981 at site 4 (Drain 59.4, near Sunnyside).

WATER TEMPERATURES

Water temperatures were measured periodically in the drains and at the inflow daily station (site 7) to determine general temporal distributions and to provide an indication of the temperature differences between delivered water and the irrigation flows in the drains. Water temperatures were taken much less frequently during the nonirrigation periods than during the irrigation periods. Therefore, although the nonirrigation periodic data were used to help analyze the irrigation period by harmonic analysis, no median temperatures were computed for the nonirrigation season. Water temperatures were generally taken between 10:00 a.m. and 2:00 p.m. at all sites.

Water temperatures taken at the diversion on Roza Canal at mile 59.9 (site 7) were used to define temperatures for inflowing water. The 1979 irrigation season was divided into two periods, April 1 to September 7 and October 18 to November 6, because there was no flow in the canal from September 8 to October 17. No water temperatures were taken from October 18 to November 6, hence, seasonal temperatures for the 1979 irrigation season at site 7 can only be compared for April through August.

According to table 7, which summarizes the monthly mean temperatures generated by harmonic analysis, water temperatures at the diversion point on Roza Canal were warmer than those at the drain sites, with the exception of Drain 59.4, where the canal delivery water was cooler. In comparison with the canal diversion water, temperatures in Drain 61.0 and 59.6 averaged about 1.5°C cooler, Drain 60.7 about 0.5°C cooler, and Drain 59.4 about 1.5°C warmer.

Drain 61.0 had less flow than Drain 60.7 and Drain 59.6, yet water was about 1°C cooler than in Drain 60.7 and about 0.1°C cooler than in Drain 59.6. Drain 61.0 contains less sediment than the other drains, indicating that it probably receives less runoff from fields in comparison with "input" from ground water. Since one would expect ground-water seepage to be cooler than runoff from fields, this may account for the cooler temperature in Drain 61.0. Drain 59.4 is much warmer than the other drains because it receives runoff from fields in greater proportion to flows from ground water.

Water temperatures in the drains are generally warmer in June and July than the other months. Water temperatures at the 59.9 Roza Canal diversion are warmest during July and August.

TABLE 7.--Median of mean water temperatures at five sites in the DID-18 basin of the Sulphur Creek basin for the 1979, 1980, and 1981 irrigation seasons, by harmonic analysis (confidence interval is at the 90-percent level)

Site	Location	Irrigation season	Median monthly temperature (°C)							Mean irrigation season temperature (°C)
			Apr.	May	June	July	Aug.	Sept.	Oct.	
1	Drain 61.0 below drain 61.4	1979	12.6	15.2	16.8	17.0	15.7	13.3	10.5	14.3±0.5
		1980	13.6	14.9	15.5	15.2	14.2	12.7	11.1	14.0± .3
		1981	12.2	14.5	16.1	16.7	16.0	14.2	11.9	14.6± .5
2	Drain 60.7	1979	14.3	15.7	16.7	17.0	16.6	15.5	14.0	15.6± .3
		1980	14.3	15.6	16.3	16.3	15.6	14.4	13.0	15.2± .2
		1981	13.4	15.3	16.7	17.1	16.5	15.1	13.1	15.4± .4
3	Drain 59.6 below Drain 60.0	1979	13.2	15.5	16.9	17.0	15.8	13.6	11.0	14.6± .4
		1980	13.6	14.9	15.6	15.3	14.3	12.8	11.1	14.1± .3
		1981	13.2	15.0	16.1	16.2	15.2	13.5	11.4	14.5± .3
4	Drain 59.4 above Drain 59.6	1979	16.1	18.8	20.1	19.6	17.5	14.4	11.1	16.6± .6
		1980	15.8	17.5	18.1	17.4	15.6	13.1	10.7	15.8± .5
		1981	15.2	18.5	20.5	20.7	18.9	15.7	11.9	17.6± .5
7	Roza Canal at mile 59.9	1979	12.4	14.7	17.4	19.8	21.2	*	*	**17.2± .3
		1980	11.1	14.3	17.0	18.3	17.9	15.8	13.2	15.6± .2
		1981	10.1	14.2	17.4	18.9	18.2	15.6	12.6	15.4± .3

* No flow September 8 to October 17.
** Mean for the period April 1 to August 31.

A site sampled by Boucher and Fretwell (1982) during the 1976 irrigation season (site C, Roza Canal below Wasteway No. 5, fig. 1) had water temperatures much cooler than those observed during the present study at the diversion at 59.9 (1/2 mile downstream of the 1976 site). The median water temperature at the site for the 1976 irrigation season was 14.4°C; the median temperatures for the 1980 and 1981 irrigation seasons, at the diversion at mile 59.9, were 15.6°C and 15.4°C, respectively. One explanation for this is that in 1976 temperatures were measured at midstream, while in 1980 and 1981 at diversion 59.9 they were taken next to the canal bank, where slower velocities and shallower depths result in warmer water.

The median water temperatures at Roza Canal below Wasteway No. 5 (site C), for the 1976 irrigation season were as follows:

	1976 irrigation season							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Mean
Temp °C	9.0	12.7	15.5	17.4	17.5	15.8	12.8	14.4

SUMMARY

Sediment discharges from the four study basins could not be correlated with changes in Best Management Practices for two reasons: (1) the Washington State Department of Ecology found no statistical difference in the Imhoff Cone readings and comparison of irrigation methods and Best Management Practices for the three irrigation seasons, and (2) changes in Best Management Practices were not implemented on a large enough scale to be detected at the main drain sampling stations.

The potential for erosion in the four basins is similar, but Drain 59.4 (site 4) had the highest average sediment yield for the three irrigation seasons--1.5 tons/acre, as compared to 1.0 ton/acre for Drain 59.6, 0.6 ton/acre for Drain 60.7, and -0.16 ton/acre for Drain 61.0. As the percentage of row crops increased, the sediment yields tended to become greater, but a cause-effect relationship has not been established. Discharge-weighted mean suspended-sediment concentration during the three irrigation seasons was also much higher in Drain 59.4, averaging 2,460 mg/L, as compared with 440 mg/L for Drain 59.6, 290 mg/L for Drain 60.7, and 12 mg/L for Drain 61.0.

Sediment yield increased significantly for Drain 60.7 from the 1979 irrigation season to the 1981 irrigation season. For Drain 59.6, the 1980 and 1981 sediment yields were significantly greater than the 1979 sediment yield. For Drain 59.4, the 1979 and 1981 sediment yields were not significantly different, but yields for both years were significantly greater than for 1980, averaging 2.0 tons/acre compared with 0.64 ton/acre for 1980.

Drain 61.0 acts as a sink for sediment, even though slopes there are similar to or even slightly greater (2-3 percent) than in the other drains. A difference in management practices in Drain 61.0 is assumed to be the cause. Drain 61.0 also had a high proportion of sprinklers. Even during the February 1980 storm, Drain 61.0 acted as a sink for sediment: 48 tons, or 3.5 times more sediment, flowed in from the portion of the drainage north of Roza Canal than was transported out of the basin at the monitoring point. This indicates deposition along the drainage way that could be available for transport at a later time.

The one storm, February 16-20, 1980, contributed 51 percent of the sediment discharge from Drain 61.0, 11 percent from Drain 60.7, 17 percent from Drain 59.6, and 14 percent from Drain 59.4. This illustrates the importance of sampling during storms and during the nonirrigation season to obtain the annual sediment discharge. A sediment pond half a mile above the sampling site for Drain 60.7 probably had some effect in reducing the sediment transport from this basin, since the pond trapped some sediment. The trap efficiency averaged about 70 percent in runoff periods during the three irrigation seasons. The pond was only about 15 percent efficient during the one storm runoff period in February 1980. The effect of other sediment ponds in the project area was not studied.

There was little or no impact from ashfall from the eruption of Mount St. Helens on May 18, 1980. Only assumed minor increases in sediment concentrations occurred at the inflow monitoring point and the outflow point on Drain 61.0.

Size analysis of sediments shows a preponderance of silts and clays indicative of the silt-loam soils in the basin.

Comparison of Imhoff Cone data with suspended-sediment data resulted in correlation coefficients for Drains 60.7, 59.6, and 59.4 (sites 2, 3, and 4) of 0.90, 0.94, and 0.90, respectively. However, the standard error in sediment concentration for these drains was 1,070, 2,410, and 2,460 mg/L, respectively. An analysis of covariance indicates that at the 95-percent confidence level there was no statistical difference in the regressions between Drains 59.6 and 60.7 and between Drains 59.4 and 60.7, but there was a difference between Drains 59.6 and 59.4.

The use of Imhoff Cone suspended-sediment concentration relation to determine sediment yields and discharges that are then compared between years would result in large error, since the prediction limits are very large. Imhoff Cone suspended-sediment concentration relation becomes less accurate for sediments having a high clay content. No Imhoff Cone relation was developed for Drain 61.0 because of low sediment concentrations; only a few readings were large enough to be reported.

Median irrigation season water temperatures determined by harmonic analysis in Drains 61.0 (site 1) and 59.6 (site 3) were about 1.5°C cooler than in the diversion water from Roza Canal at mile 59.9 (site 7). Drain 60.7 (site 2) median water temperatures were about 0.5°C cooler, but in Drain 59.4 (site 4) they were about 1.5°C warmer. The warmer water in Drain 59.4 was attributed to the lower base flows and higher irrigation runoff. The average median water temperatures in the drains for the 1979, 1980, and 1981 irrigation seasons for the drains were 14.3°C for Drain 61.0, 15.4°C for Drain 60.7, 14.4°C for Drain 59.6, and 16.6°C for Drain 59.4.

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TABLE 8a.--Daily water discharge, suspended-sediment concentration, and suspended-sediment discharge, 12508755 Drain 61.0 (site 1) above Drain 61.4 near Sunnyside, Wash. (To obtain mean concentration and sediment discharge, divide the values shown in the table by 100.)

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1979			MAY 1979			JUNE 1979	
1	.30	8500	6.9	.30	2000	1.6	.59	2500	4.0
2	.30	8500	6.9	.30	2000	1.6	.59	3900	6.2
3	.25	8500	5.7	.25	2000	1.4	.46	4000	5.0
4	.20	5000	2.7	.25	2000	1.4	.35	1100	1.0
5	.15	5000	2.0	.25	2000	1.4	.42	1800	2.0
6	.20	5000	2.7	.20	2000	1.1	.50	1800	2.4
7	.20	5000	2.7	.20	2000	1.1	.67	1000	1.8
8	.30	2500	2.0	.20	2000	1.1	.64	1200	2.1
9	.35	2500	2.4	.20	2000	1.1	.59	2100	3.3
10	.35	2500	2.4	.16	1500	.65	.83	3300	7.4
11	.35	2500	2.4	.28	900	.68	1.0	3500	9.5
12	.35	2500	2.4	.33	1000	.89	1.0	2000	5.4
13	.35	2500	2.4	.20	800	.43	1.2	10200	33
14	.40	1000	1.1	.24	800	.52	1.3	8900	31
15	.40	1000	1.1	.28	800	.60	1.0	3900	11
16	.40	1000	1.1	.26	2000	1.4	.98	1600	4.2
17	.40	1000	1.1	.35	2400	2.3	.98	900	2.4
18	.40	1000	1.1	.78	4400	9.3	.89	1100	2.6
19	.40	1000	1.1	.59	2900	4.6	.92	2200	5.5
20	.45	1000	1.2	.53	1300	1.9	.98	900	2.4
21	.50	500	.68	.48	1600	2.1	.95	800	2.1
22	.55	500	.74	.46	1400	1.7	.89	800	1.9
23	.55	500	.74	.56	1400	2.1	.86	700	1.6
24	.60	500	.81	.48	1500	1.9	.83	900	2.0
25	.55	500	.74	.50	3000	4.1	.78	900	1.9
26	.50	500	.68	.56	2200	3.3	.82	900	2.0
27	.45	2000	2.4	.59	1100	1.8	.75	700	1.4
28	.40	2000	2.2	.64	1200	2.1	.76	900	1.8
29	.35	3000	2.8	.64	1200	2.1	.81	700	1.5
30	.30	3000	2.4	.59	700	1.1	.99	1500	4.0
31	---	---	---	.56	1100	1.7	---	---	---
TOTAL	11.25	---	65.59	12.21	---	59.07	24.33	---	162.4

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1979			AUGUST 1979			SEPTEMBER 1979	
1	1.2	1400	4.5	.87	1900	4.5	.27	1700	1.2
2	1.1	2000	5.9	.70	1200	2.3	.19	1400	.72
3	1.0	2600	7.0	.42	1000	1.1	.16	1100	.48
4	1.0	1600	4.3	.18	800	.39	.20	1400	.76
5	.93	2400	6.0	.23	900	.56	.28	1100	.83
6	.77	4000	8.3	.46	1100	1.4	.23	1300	.81
7	.69	1700	3.2	.18	800	.39	.16	700	.30
8	.72	1900	3.7	.24	1500	.97	.05	300	.04
9	.62	1000	1.7	.34	2100	1.9	.05	300	.04
10	.51	800	1.1	.34	2000	1.8	.06	200	.03
11	.60	600	.97	.41	2500	2.8	.05	200	.03
12	.58	800	1.3	.55	3900	5.8	.05	100	.01
13	.52	600	.84	.42	2400	2.7	.05	300	.04
14	.46	700	.87	.36	1600	1.6	.05	300	.04
15	.77	2200	4.6	.33	900	.80	.05	200	.03
16	1.1	1600	4.8	.25	1000	.68	.05	100	.01
17	1.0	2300	6.2	.12	800	.26	.05	200	.03
18	1.1	1900	5.6	.08	300	.06	.05	100	.01
19	1.1	1000	3.0	.12	800	.26	.05	100	.01
20	1.0	900	2.4	.31	1900	1.6	.05	100	.01
21	.93	800	2.0	.28	1100	.83	.04	100	.01
22	.71	900	1.7	.09	700	.17	.04	1600	.17
23	.45	1100	1.3	.15	800	.32	.04	100	.01
24	.44	800	.95	.18	700	.34	.04	100	.01
25	.30	900	.73	.20	800	.43	.04	100	.01
26	.32	2400	2.1	.21	700	.40	.04	100	.01
27	.56	2800	4.2	.23	900	.56	.04	200	.02
28	.53	1400	2.0	.29	2200	1.7	.04	100	.01
29	.48	1200	1.6	.15	1100	.45	.04	100	.01
30	.56	1700	2.6	.16	1900	.82	.10	600	.16
31	.66	1600	2.9	.21	2500	1.4	---	---	---
TOTAL	22.71	---	98.36	9.06	---	39.29	2.61	---	5.85

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1979			NOVEMBER 1979			DECEMBER 1979	
1	.15	1000	.41	.24	500	.32	.03	300	.02
2	.08	1400	.30	.18	400	.19	.03	400	.03
3	.04	1600	.17	.18	400	.19	.03	400	.03
4	.04	1000	.11	.20	400	.22	.03	400	.03
5	.04	1000	.11	.24	400	.26	.03	400	.03
6	.04	1000	.11	.15	400	.16	.03	300	.02
7	.04	1000	.11	.04	400	.04	.03	300	.02
8	.03	1000	.08	.03	400	.03	.03	300	.02
9	.03	1000	.08	.03	400	.03	.03	300	.02
10	.04	1000	.11	.03	400	.03	.03	200	.02
11	.12	1000	.32	.03	400	.03	.03	400	.03
12	.10	1000	.27	.03	400	.03	.03	400	.03
13	.03	1000	.08	.03	300	.02	.03	400	.03
14	.03	1000	.08	.03	300	.02	.03	400	.03
15	.03	1000	.08	.03	300	.02	.03	400	.03
16	.03	1000	.08	.03	300	.02	.03	400	.03
17	.04	1000	.11	.03	300	.02	.03	400	.03
18	.07	900	.17	.03	300	.02	.03	400	.03
19	.05	900	.12	.03	300	.02	.03	300	.02
20	.05	900	.12	.03	300	.02	.03	300	.02
21	.08	900	.19	.03	300	.02	.03	300	.02
22	.05	900	.12	.03	300	.02	.03	300	.02
23	.03	900	.07	.03	300	.02	.03	300	.02
24	.05	900	.12	.03	300	.02	.03	300	.02
25	.03	600	.05	.03	300	.02	.03	300	.02
26	.03	600	.05	.03	300	.02	.03	300	.02
27	.03	600	.05	.03	300	.02	.03	300	.02
28	.03	600	.05	.03	300	.02	.03	300	.02
29	.13	600	.21	.03	400	.03	.03	300	.02
30	.30	500	.41	.03	400	.03	.03	300	.02
31	.33	500	.45	---	---	---	.03	300	.02
TOTAL	2.17	---	4.79	1.92	---	1.91	0.93	---	0.74

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1980			FEBRUARY 1980			MARCH 1980	
1	.03	300	.02	.03	300	.02	.03	200	.02
2	.03	300	.02	.02	400	.02	.03	200	.02
3	.03	300	.02	.02	500	.03	.03	200	.02
4	.03	300	.02	.02	600	.03	.03	200	.02
5	.03	300	.02	.02	600	.03	.03	200	.02
6	.03	200	.02	.05	1100	.15	.03	200	.02
7	.03	200	.02	.03	200	.02	.03	200	.02
8	.03	200	.02	.02	800	.04	.03	200	.02
9	.03	200	.02	.03	400	.03	.03	200	.02
10	.03	200	.02	.03	200	.02	.03	500	.04
11	.03	200	.02	.03	600	.05	.04	500	.05
12	.03	400	.03	.02	1200	.06	.04	500	.05
13	.03	200	.02	.02	1000	.05	.04	200	.02
14	.03	200	.02	.03	600	.05	.04	200	.02
15	.03	200	.02	.02	200	.01	.04	200	.02
16	.03	100	.00	.02	100	.00	.04	200	.02
17	.03	0	.00	.19	7600	3.9	.04	200	.02
18	.03	200	.02	.41	4600	5.1	.04	200	.02
19	.03	300	.02	1.4	41000	155	.04	300	.03
20	.03	400	.03	3.0	81700	662	.04	300	.03
21	.03	400	.03	.41	22600	25	.04	300	.03
22	.03	400	.03	.04	800	.09	.04	500	.05
23	.03	300	.02	.04	700	.08	.04	500	.05
24	.03	300	.02	.03	600	.05	.04	500	.05
25	.03	200	.02	.03	400	.03	.04	200	.02
26	.03	300	.02	.03	700	.06	.04	200	.02
27	.03	300	.02	.15	6700	2.7	.04	200	.02
28	.03	200	.02	.04	400	.04	.04	300	.03
29	.03	200	.02	.03	300	.02	.04	300	.03
30	.03	200	.02	---	---	---	.04	300	.03
31	.03	300	.02	---	---	---	.04	1100	.12
TOTAL	0.93	---	0.62	6.21	---	854.68	1.14	---	0.95

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1980			MAY 1980			JUNE 1980	
1	.04	100	.01	.27	700	.51	.14	300	.11
2	.07	1100	.21	.21	200	.11	.16	200	.09
3	.13	2500	.88	.37	700	.90	.14	200	.08
4	.18	3500	1.7	.44	700	.83	.13	300	.11
5	.12	1500	.49	.39	900	.95	.22	400	.24
6	.16	1400	.60	.27	400	.29	.33	500	.45
7	.19	400	.21	.27	400	.29	.35	400	.38
8	.27	4000	2.9	.29	400	.31	.35	300	.28
9	.46	2900	3.6	.22	400	.24	.46	500	.62
10	.39	500	.53	.15	400	.16	.59	400	.64
11	.27	1200	.87	.15	1400	.57	.56	400	.60
12	.21	600	.34	.18	1700	.83	.54	500	.73
13	.29	700	.55	.27	1000	.73	.59	700	1.1
14	.41	1100	1.2	.29	4000	3.1	.65	400	.70
15	.35	700	.66	.35	1400	1.3	.87	500	1.2
16	.33	1200	1.1	.24	800	.52	.77	1800	3.7
17	.33	700	.62	.14	600	.23	.46	700	.87
18	.37	700	.70	.18	800	.39	.33	400	.36
19	.31	400	.33	.21	900	.51	.15	400	.16
20	.31	400	.33	.26	800	.56	.22	600	.36
21	.35	1100	1.0	.16	800	.35	.18	300	.15
22	.56	1200	1.8	.21	700	.40	.18	400	.19
23	.46	800	.99	.18	400	.19	.18	300	.15
24	.33	500	.45	.37	1100	1.1	.27	900	.66
25	.37	700	.70	.39	1200	1.3	.49	800	1.1
26	.54	700	1.0	.59	2900	4.6	.44	400	.48
27	.41	400	.44	.35	500	.47	.28	300	.23
28	.31	400	.33	.27	500	.36	.32	400	.35
29	.18	300	.15	.33	400	.36	.30	400	.32
30	.21	400	.23	.21	300	.17	.28	400	.30
31	---	---	---	.19	300	.15	---	---	---
TOTAL	8.91	---	24.92	8.40	---	22.78	10.93	---	16.71

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1980			AUGUST 1980			SEPTEMBER 1980	
1	.30	500	.41	.37	900	.90	.23	200	.12
2	.26	600	.42	.30	2200	1.8	.18	200	.10
3	.27	400	.29	.20	300	.16	.16	200	.09
4	.29	400	.31	.24	400	.26	.16	200	.09
5	.26	400	.28	.26	300	.21	.15	300	.12
6	.26	300	.21	.27	300	.22	.14	200	.08
7	.26	400	.28	.26	300	.21	.15	300	.12
8	.31	800	.67	.24	600	.39	.19	100	.05
9	.42	1400	1.6	.25	500	.34	.16	300	.13
10	.42	600	.68	.21	400	.23	.17	200	.09
11	.43	500	.58	.17	300	.14	.18	300	.15
12	.45	400	.49	.12	200	.06	.14	100	.04
13	.48	400	.52	.15	200	.08	.24	400	.26
14	.46	500	.62	.21	200	.11	.16	200	.09
15	.36	600	.58	.23	500	.31	.17	200	.09
16	.34	500	.46	.25	300	.20	.13	100	.04
17	.32	600	.52	.29	400	.31	.13	200	.07
18	.35	400	.38	.23	600	.37	.13	100	.04
19	.27	300	.22	.23	1400	.87	.12	100	.03
20	.26	300	.21	.22	700	.42	.13	100	.04
21	.36	400	.39	.18	800	.39	.12	100	.03
22	.43	1200	1.4	.10	200	.05	.13	100	.04
23	.45	600	.73	.09	100	.02	.14	100	.04
24	.47	500	.63	.09	300	.07	.15	100	.04
25	.33	300	.27	.10	200	.05	.15	200	.08
26	.24	400	.26	.20	200	.11	.15	100	.04
27	.22	300	.18	.20	200	.11	.16	300	.13
28	.27	500	.36	.22	100	.06	.16	200	.09
29	.31	1400	1.2	.24	200	.13	.16	300	.13
30	.31	700	.59	.24	700	.45	.14	200	.08
31	.31	800	.67	.24	200	.13	---	---	---
TOTAL	10.47	---	16.41	6.60	---	9.16	4.68	---	2.54

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1980			NOVEMBER 1980			DECEMBER 1980	
1	.15	200	.08	.10	200	.05	.09	200	.05
2	.17	200	.09	.09	200	.05	.10	200	.05
3	.18	100	.05	.09	200	.05	.10	200	.05
4	.18	100	.05	.10	200	.05	.09	400	.10
5	.16	100	.04	.10	200	.05	.09	400	.10
6	.18	100	.05	.11	200	.06	.09	400	.10
7	.26	200	.14	.11	100	.03	.09	500	.12
8	.24	1300	.84	.10	100	.03	.09	500	.12
9	.34	2800	2.6	.10	100	.03	.09	500	.12
10	.32	700	.60	.10	200	.05	.09	500	.12
11	.34	200	.18	.10	200	.05	.09	500	.12
12	.39	900	.95	.10	200	.05	.09	500	.12
13	.56	500	.76	.10	200	.05	.09	500	.12
14	.43	300	.35	.10	100	.03	.09	500	.12
15	.41	400	.44	.10	100	.03	.09	500	.12
16	.35	800	.76	.10	100	.03	.09	500	.12
17	.35	700	.66	.10	200	.05	.09	500	.12
18	.22	400	.24	.10	400	.11	.09	500	.12
19	.22	400	.24	.10	400	.11	.09	500	.12
20	.24	400	.26	.10	400	.11	.09	500	.12
21	.24	300	.19	.10	400	.11	.09	500	.12
22	.18	300	.15	.09	800	.19	.09	500	.12
23	.12	400	.13	.09	800	.19	.08	500	.11
24	.11	300	.09	.09	800	.19	.09	500	.12
25	.12	300	.10	.09	800	.19	.10	5000	1.4
26	.11	300	.09	.09	300	.07	.09	3000	.73
27	.10	400	.11	.10	300	.08	.08	1000	.22
28	.10	400	.11	.09	300	.07	.08	500	.11
29	.10	500	.14	.09	300	.07	.08	500	.11
30	.10	200	.05	.09	200	.05	.08	500	.11
31	.10	200	.05	---	---	---	.08	500	.11
TOTAL	7.07	---	10.59	2.92	---	2.28	2.76	---	5.39

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1981			FEBRUARY 1981			MARCH 1981	
1	.08	500	.11	.07	400	.08	.07	500	.09
2	.08	1000	.22	.07	400	.08	.07	600	.11
3	.08	1000	.22	.07	400	.08	.06	600	.10
4	.08	2000	.43	.07	400	.08	.06	600	.10
5	.08	2500	.54	.07	400	.08	.06	600	.10
6	.08	2500	.54	.07	400	.08	.06	600	.10
7	.08	2800	.60	.07	400	.08	.06	600	.10
8	.08	2000	.43	.07	400	.08	.06	600	.10
9	.08	1500	.32	.07	400	.08	.06	600	.10
10	.08	1000	.22	.07	400	.08	.06	600	.10
11	.08	500	.11	.07	400	.08	.06	600	.10
12	.08	500	.11	.07	400	.08	.06	600	.10
13	.08	500	.11	.08	400	.09	.06	600	.10
14	.08	500	.11	.08	400	.09	.06	600	.10
15	.08	500	.11	.07	400	.08	.06	600	.10
16	.08	400	.09	.08	400	.09	.06	400	.06
17	.08	400	.09	.07	400	.08	.06	400	.06
18	.08	400	.09	.07	400	.08	.06	400	.06
19	.08	400	.09	.07	1000	.19	.06	400	.06
20	.09	400	.10	.06	500	.08	.07	400	.08
21	.07	400	.08	.06	400	.06	.06	400	.06
22	.07	400	.08	.07	400	.08	.06	400	.06
23	.07	400	.08	.07	400	.08	.06	400	.06
24	.07	400	.08	.07	400	.08	.06	400	.06
25	.07	400	.08	.07	400	.08	.07	400	.08
26	.07	400	.08	.07	500	.09	.08	400	.09
27	.07	400	.08	.07	1000	.19	.11	1000	.30
28	.08	400	.09	.07	500	.09	.18	1000	.49
29	.07	400	.08	---	---	---	.13	1000	.35
30	.07	400	.08	---	---	---	.14	800	.30
31	.07	400	.08	---	---	---	.21	600	.34
TOTAL	2.39	---	5.53	1.97	---	2.49	2.39	---	4.01

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1981			MAY 1981			JUNE 1981	
1	.19	1000	.51	.28	500	.38	.29	300	.23
2	.25	600	.41	.33	500	.45	.40	300	.32
3	.41	1300	1.4	.15	300	.12	.38	200	.21
4	.31	600	.50	.17	600	.28	.31	600	.50
5	.31	900	.75	.36	600	.58	.35	200	.19
6	.29	2400	1.9	.52	600	.84	.27	200	.15
7	.41	1300	1.4	.52	800	1.1	.30	200	.16
8	.42	1800	2.0	.49	1300	1.7	.54	1100	1.6
9	.33	1000	.89	.35	800	.76	.46	1700	2.1
10	.27	3400	2.5	.40	1300	1.4	.50	2500	3.4
11	.31	600	.50	.50	900	1.2	.60	1600	2.6
12	.27	900	.66	.51	600	.83	.64	1000	1.7
13	.29	800	.63	.49	500	.66	.78	700	1.5
14	.38	1000	1.0	.58	500	.78	.86	300	.70
15	.48	1200	1.6	.47	300	.38	.58	400	.63
16	.42	1900	2.2	.39	300	.32	.33	300	.27
17	.18	1300	.63	.59	100	.16	.26	200	.14
18	.18	600	.29	.43	600	.70	.25	300	.20
19	.17	400	.18	.20	200	.11	.24	400	.26
20	.17	600	.28	.24	400	.26	.23	200	.12
21	.19	800	.41	.29	700	.55	.22	400	.24
22	.20	600	.32	.33	500	.45	.29	500	.39
23	.24	500	.32	.26	400	.28	.38	400	.41
24	.25	300	.20	.20	200	.11	.38	400	.41
25	.23	300	.19	.24	400	.26	.45	1200	1.5
26	.28	300	.23	.44	1300	1.5	.41	1400	1.5
27	.25	500	.34	.40	1700	1.8	.40	800	.86
28	.30	800	.65	.31	600	.50	.51	300	.41
29	.27	800	.58	.16	200	.09	.52	700	.98
30	.24	1000	.65	.19	300	.15	.41	600	.66
31	---	---	---	.32	500	.43	---	---	---
TOTAL	8.49	---	24.12	11.11	---	19.13	12.54	---	24.34

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY 1981			AUGUST 1981			SEPTEMBER 1981		
1	.33	900	.80	.26	300	.21	.44	200	.24
2	.33	900	.80	.31	300	.25	.63	200	.34
3	.25	200	.14	.28	400	.30	.69	700	1.3
4	.24	3400	2.2	.27	200	.15	.56	600	.91
5	.35	3400	3.2	.27	300	.22	.57	900	1.4
6	.37	2000	2.0	.35	700	.66	.67	200	.36
7	.37	10100	10	.33	600	.53	.69	100	.19
8	.31	1300	1.1	.32	200	.17	.47	300	.38
9	.28	2000	1.5	.33	600	.53	.46	300	.37
10	.27	1300	.95	.31	300	.25	.52	200	.28
11	.38	900	.92	.35	300	.28	.54	200	.29
12	.29	600	.47	.33	300	.27	.68	300	.55
13	.19	4500	2.3	.35	200	.19	.71	400	.77
14	.23	13100	8.1	.39	300	.32	.76	500	1.0
15	.29	9400	7.4	.39	300	.32	.71	300	.58
16	.26	3900	2.7	.35	200	.19	.66	200	.36
17	.31	5500	4.6	.38	2500	2.6	.47	200	.25
18	.38	3700	3.8	.37	200	.20	.25	100	.07
19	.40	6200	6.7	.45	200	.24	.34	100	.09
20	.46	3100	3.9	.39	200	.21	.48	100	.13
21	.40	2100	2.3	.57	500	.77	.51	200	.28
22	.41	2300	2.5	.57	1000	1.5	.67	200	.36
23	.42	600	.68	.60	400	.65	.68	200	.37
24	.45	2000	2.4	.68	200	.37	.63	200	.34
25	.63	900	1.5	.42	500	.57	.52	200	.28
26	.57	700	1.1	.33	400	.36	.42	200	.23
27	.47	400	.51	.32	200	.17	1.3	700	2.5
28	.46	200	.25	.33	400	.36	.73	200	.39
29	.41	400	.44	.30	200	.16	.57	100	.15
30	.34	200	.18	.29	400	.31	.31	100	.08
31	.29	600	.47	.30	500	.41	---	---	---
TOTAL	11.14	---	75.91	11.49	---	13.72	17.64	---	14.84

TABLE 8a.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1981	
1	.28	200	.15
2	.17	100	.05
3	.17	500	.23
4	.18	500	.24
5	.20	500	.27
6	.51	500	.69
7	.47	1000	1.3
8	.46	2800	3.5
9	.42	200	.23
10	.51	200	.28
11	.53	300	.43
12	.83	200	.45
13	.72	400	.78
14	.68	600	1.1
15	.55	500	.74
16	.35	1100	1.0
17	.31	600	.50
18	.30	700	.57
19	.32	900	.78
20	.39	800	.84
21	.21	2000	1.1
22	.15	1700	.69
23	.15	1700	.69
24	.15	1400	.57
25	.15	1200	.49
26	.15	1000	.41
27	.15	500	.20
28	.16	500	.22
29	.15	500	.20
30	.14	500	.19
31	.14	500	.19
TOTAL	10.05	---	19.08

TABLE 8b.--Daily water discharge, suspended-sediment concentrations, and suspended-sediment discharge
12508769 Drain 60.7 (site 2) near Sunnyside, Wash.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1979			MAY 1979			JUNE 1979	
1	.80	140	.30	1.0	400	1.1	1.2	659	2.1
2	.80	140	.30	.90	600	1.5	1.4	745	2.8
3	.70	140	.26	.80	750	1.6	1.5	717	2.9
4	.65	140	.25	.70	700	1.3	1.4	831	3.1
5	.60	140	.23	.70	700	1.3	1.1	1360	4.0
6	.60	140	.23	.70	700	1.3	1.7	1030	4.7
7	.60	140	.23	.70	700	1.3	1.5	693	2.8
8	.60	140	.23	.72	700	1.4	1.9	700	3.6
9	.60	140	.23	.77	700	1.5	1.8	650	3.2
10	.60	140	.23	.77	694	1.4	1.6	620	2.7
11	.60	140	.23	.75	1060	2.1	1.8	609	3.0
12	.70	140	.26	.43	1560	1.8	1.4	506	1.9
13	.70	140	.26	.39	1990	2.1	1.4	422	1.6
14	.70	140	.26	.56	2030	3.1	1.8	470	2.3
15	.70	140	.26	1.1	1840	5.5	1.9	399	2.0
16	.80	170	.37	.69	1270	2.4	1.9	467	2.4
17	.80	170	.37	.37	740	.74	2.0	376	2.0
18	.80	170	.37	.47	959	1.2	1.9	329	1.7
19	.80	170	.37	.55	873	1.3	1.8	210	1.0
20	.80	170	.37	.57	841	1.3	1.7	216	.99
21	.80	140	.30	1.2	1840	6.0	1.5	158	.64
22	.80	140	.30	.84	2180	4.9	1.5	155	.63
23	.80	140	.30	.90	1280	3.1	1.4	145	.55
24	.80	140	.30	1.5	756	3.1	1.3	174	.61
25	.80	140	.30	1.2	478	1.5	1.5	242	.98
26	.80	140	.30	1.1	668	2.0	1.6	356	1.5
27	.80	140	.30	1.3	807	2.8	1.7	415	1.9
28	.90	140	.34	1.2	643	2.1	1.8	504	2.4
29	1.0	200	.54	1.2	622	2.0	1.8	264	1.3
30	1.1	250	.74	1.3	547	1.9	1.8	367	1.8
31	---	---	---	1.2	549	1.8	---	---	---
TOTAL	22.55	---	9.33	26.58	---	66.44	48.6	---	63.10

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1979			AUGUST 1979			SEPTEMBER 1979	
1	2.0	297	1.6	1.4	78	.29	.92	32	.08
2	1.8	176	.86	1.5	60	.24	1.1	37	.11
3	1.4	193	.73	1.5	86	.35	1.1	17	.05
4	1.4	121	.46	1.6	207	.89	1.0	19	.05
5	1.4	112	.42	1.6	117	.51	.92	18	.04
6	1.6	215	.93	1.5	80	.32	.90	16	.04
7	1.7	175	.80	1.5	96	.39	.92	25	.06
8	1.7	177	.81	1.5	93	.38	1.0	17	.05
9	1.8	206	1.0	1.4	94	.36	1.0	14	.04
10	1.9	277	1.4	1.3	72	.25	.90	10	.02
11	1.9	126	.65	1.4	96	.36	.85	24	.06
12	1.9	152	.78	1.3	68	.24	.85	33	.08
13	2.0	134	.72	1.2	47	.15	.85	23	.05
14	1.7	124	.57	1.1	48	.14	.84	24	.05
15	1.5	84	.34	1.5	88	.36	.84	26	.06
16	1.4	91	.34	1.5	79	.32	.84	20	.05
17	1.5	146	.59	1.6	114	.49	.83	32	.07
18	1.5	159	.64	1.5	82	.33	.83	25	.06
19	1.8	209	1.0	1.5	59	.24	.81	27	.06
20	1.9	193	.99	1.4	61	.23	.81	43	.09
21	1.9	220	1.1	1.2	23	.07	.80	29	.06
22	2.0	250	1.4	.94	13	.03	.80	25	.05
23	2.1	283	1.6	.92	14	.03	.80	40	.09
24	2.0	240	1.3	.91	11	.03	.82	29	.06
25	1.8	159	.77	.90	14	.03	.86	22	.05
26	1.7	125	.57	.87	11	.03	.89	18	.04
27	1.6	117	.51	.87	11	.03	.86	14	.03
28	1.7	74	.34	1.3	87	.31	.87	39	.09
29	1.8	123	.60	1.9	103	.53	.93	23	.06
30	1.7	126	.58	1.8	61	.30	.85	23	.05
31	1.6	88	.38	1.4	41	.15	---	---	---
TOTAL	53.7	---	24.78	41.81	---	8.38	26.59	---	1.75

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1979			NOVEMBER 1979			DECEMBER 1979	
1	.74	30	.06	1.1	70	.21	.71	60	.12
2	.74	30	.06	1.1	70	.21	.71	80	.15
3	.74	32	.06	1.2	70	.23	.71	90	.17
4	.74	22	.04	1.4	70	.26	.74	80	.16
5	.74	20	.04	1.4	70	.26	.74	70	.14
6	.74	38	.08	1.3	70	.25	.74	60	.12
7	.74	36	.07	.87	70	.16	.74	50	.10
8	.71	25	.05	.77	70	.15	.74	50	.10
9	.71	30	.06	.77	70	.15	.74	50	.10
10	.74	29	.06	.77	70	.15	.74	50	.10
11	.77	33	.07	.77	70	.15	.74	50	.10
12	.77	40	.08	.77	70	.15	.74	50	.10
13	.77	55	.11	.75	82	.17	.75	51	.10
14	.74	30	.06	.74	82	.16	.77	50	.10
15	.86	30	.07	.74	82	.16	.77	50	.10
16	.86	35	.08	.76	82	.17	.77	50	.10
17	.86	35	.08	.78	82	.17	.77	70	.15
18	.81	39	.09	.75	82	.17	.77	160	.33
19	.81	40	.09	.73	82	.16	.77	150	.31
20	.76	37	.08	.71	82	.16	.77	134	.28
21	.74	37	.07	.71	82	.16	.75	125	.25
22	.77	42	.09	.72	82	.16	.74	110	.22
23	.74	50	.10	.74	82	.16	.77	100	.21
24	.76	60	.12	.74	82	.16	.77	90	.19
25	.77	55	.11	.72	82	.16	.77	90	.19
26	.74	50	.10	.71	82	.16	.74	80	.16
27	.75	48	.10	.70	82	.15	.74	80	.16
28	.74	60	.12	.68	50	.09	.74	80	.16
29	.82	68	.15	.68	50	.09	.74	80	.16
30	.86	70	.16	.69	50	.09	.74	80	.16
31	1.0	65	.18	---	---	---	.75	95	.19
TOTAL	24.04	---	2.69	25.27	---	5.03	23.18	---	4.98

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1980			FEBRUARY 1980			MARCH 1980	
1	.77	110	.23	.66	84	.15	.90	95	.23
2	.78	96	.20	.65	80	.14	.90	78	.19
3	.77	80	.17	.65	80	.14	.91	82	.20
4	.78	80	.17	.66	80	.14	.91	113	.28
5	.78	80	.17	.65	76	.13	.91	113	.28
6	.75	80	.16	.73	180	.35	.93	113	.28
7	.74	80	.16	.73	156	.31	.91	67	.16
8	.74	80	.16	.68	112	.21	.86	67	.16
9	.80	80	.17	.69	139	.26	.86	67	.16
10	.78	80	.17	.71	100	.19	.87	67	.16
11	.78	110	.23	.71	92	.18	.87	67	.16
12	.87	126	.30	.74	125	.25	.86	67	.16
13	.87	160	.38	.74	169	.34	.86	87	.20
14	.84	163	.37	.71	202	.39	.87	87	.20
15	.80	255	.55	.71	263	.50	.83	87	.19
16	.81	161	.35	.71	798	1.5	.83	87	.19
17	.83	217	.49	.96	1080	2.8	.83	87	.19
18	.81	122	.27	1.6	3700	16	.83	87	.19
19	.80	120	.26	2.0	5180	28	.83	108	.24
20	.80	120	.26	2.1	4230	24	.83	108	.24
21	.78	117	.25	1.1	300	.89	.81	108	.24
22	.74	110	.22	.98	139	.37	.77	128	.27
23	.74	100	.20	.96	181	.47	.77	128	.27
24	.74	90	.18	.94	139	.35	.77	128	.27
25	.74	80	.16	.93	107	.27	.77	104	.22
26	.71	70	.13	.95	126	.32	.77	104	.22
27	.75	70	.14	.99	96	.26	.77	104	.22
28	.72	70	.14	.96	110	.29	.77	75	.16
29	.69	70	.13	.93	100	.25	.74	75	.15
30	.68	70	.13	---	---	---	.74	75	.15
31	.68	80	.15	---	---	---	.74	87	.17
TOTAL	23.87	---	7.05	26.53	---	79.45	25.82	---	6.40

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1980			MAY 1980			JUNE 1980	
1	.74	54	.11	.65	58	.10	1.6	341	1.5
2	.77	111	.23	.66	57	.10	1.7	237	1.1
3	.91	95	.23	.63	64	.11	1.7	214	.98
4	.90	71	.17	.58	75	.12	1.4	97	.37
5	.92	122	.30	.65	91	.16	1.3	76	.27
6	.96	174	.45	.76	163	.33	1.4	83	.31
7	.96	126	.33	.86	189	.44	1.4	63	.24
8	.87	88	.21	.92	199	.49	1.4	43	.16
9	.74	50	.10	1.2	269	.87	1.3	40	.14
10	.71	43	.08	1.0	202	.55	1.4	56	.21
11	.68	54	.10	.77	86	.18	1.4	59	.22
12	.68	54	.10	.79	76	.16	1.5	46	.19
13	.65	52	.09	.90	582	1.4	1.6	43	.19
14	.65	38	.07	1.2	416	1.3	1.5	27	.11
15	.65	43	.08	1.3	366	1.3	1.3	17	.06
16	.65	39	.07	1.2	274	.89	1.5	59	.24
17	.74	374	.75	1.2	212	.69	1.3	66	.23
18	.89	423	1.0	1.4	236	.89	1.1	25	.07
19	.80	92	.20	1.2	198	.64	.90	9	.02
20	.80	101	.22	.97	200	.52	.93	17	.04
21	.74	65	.13	1.0	220	.59	.93	11	.03
22	.72	62	.12	1.3	236	.83	1.0	9	.02
23	.71	69	.13	.98	371	.98	1.0	9	.02
24	.74	99	.20	1.1	292	.87	1.1	6	.02
25	.76	62	.13	1.3	377	1.3	1.8	28	.14
26	.71	55	.11	1.6	593	2.6	1.7	30	.14
27	.68	49	.09	1.1	164	.49	2.0	182	.98
28	.64	51	.09	1.0	132	.36	2.4	376	2.4
29	.61	47	.08	1.1	171	.51	2.3	542	3.4
30	.61	41	.07	1.2	272	.88	2.4	606	3.9
31	---	---	---	1.3	374	1.3	---	---	---
TOTAL	22.59	---	6.04	31.82	---	21.95	44.26	---	17.70

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1980			AUGUST 1980			SEPTEMBER 1980	
1	2.2	427	2.5	1.5	1230	5.0	.82	51	.11
2	2.3	351	2.2	1.5	550	2.2	.85	60	.14
3	1.9	255	1.3	1.8	679	3.3	.98	71	.19
4	1.3	154	.54	1.9	322	1.7	.93	58	.15
5	1.2	96	.31	1.7	254	1.2	.97	52	.14
6	1.0	89	.24	1.5	221	.90	1.1	70	.21
7	.97	142	.37	1.2	176	.57	1.2	100	.32
8	1.1	108	.32	1.3	99	.35	1.1	131	.39
9	1.6	118	.51	1.3	159	.56	1.1	151	.45
10	1.7	298	1.4	1.4	383	1.4	1.0	143	.39
11	1.9	470	2.4	1.4	860	3.3	.88	62	.15
12	2.0	503	2.7	1.5	824	3.3	.80	52	.11
13	2.0	635	3.4	1.6	684	3.0	.85	26	.06
14	1.7	968	4.4	1.5	664	2.7	.75	23	.05
15	1.6	1060	4.6	1.4	703	2.7	.70	71	.13
16	1.5	1350	5.5	1.1	285	.85	1.0	54	.15
17	1.5	1590	6.4	1.2	247	.80	1.1	73	.22
18	1.4	1290	4.9	1.1	166	.49	1.1	102	.30
19	1.4	535	2.0	.87	108	.25	1.1	76	.23
20	1.4	431	1.6	.86	84	.20	1.1	65	.19
21	1.6	363	1.6	.82	72	.16	1.1	54	.16
22	1.4	322	1.2	.82	59	.13	1.1	47	.14
23	1.4	182	.69	.80	51	.11	1.1	71	.21
24	1.3	278	.98	.77	46	.10	1.1	90	.27
25	1.3	418	1.5	.76	34	.07	1.2	108	.35
26	1.3	761	2.7	.77	43	.09	1.2	126	.41
27	1.4	1130	4.3	.76	46	.09	1.2	161	.52
28	1.3	1100	3.9	.77	95	.20	1.2	120	.39
29	1.4	1120	4.2	.82	74	.16	1.2	89	.29
30	1.4	1170	4.4	.86	69	.16	1.3	121	.42
31	1.6	1440	6.2	.84	74	.17	---	---	---
TOTAL	47.07	---	79.26	36.42	---	36.21	31.13	---	7.24

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1980			NOVEMBER 1980			DECEMBER 1980	
1	1.3	143	.50	.88	20	.05	.68	26	.05
2	1.0	77	.21	.84	30	.07	.74	26	.05
3	.92	70	.17	.83	58	.13	.77	21	.04
4	1.2	58	.19	.83	58	.13	.72	21	.04
5	1.2	54	.17	.80	58	.13	.71	21	.04
6	1.2	68	.22	.85	52	.12	.74	21	.04
7	1.3	60	.21	.86	52	.12	.71	21	.04
8	1.1	35	.10	.81	52	.11	.71	21	.04
9	1.0	24	.06	.80	60	.13	.71	26	.05
10	.99	31	.08	.80	60	.13	.71	30	.06
11	1.0	28	.08	.83	60	.13	.71	30	.06
12	1.1	30	.09	.83	57	.13	.71	30	.06
13	1.1	40	.12	.83	57	.13	.71	30	.06
14	1.2	42	.14	.81	57	.12	.70	30	.06
15	1.3	47	.16	.78	57	.12	.68	30	.06
16	1.2	52	.17	.77	55	.11	.69	30	.06
17	1.1	43	.13	.80	55	.12	.71	30	.06
18	1.2	56	.18	.71	50	.10	.69	30	.06
19	1.5	86	.35	.67	50	.09	.68	30	.06
20	1.8	120	.58	.65	50	.09	.69	30	.06
21	2.0	156	.84	.66	50	.09	.71	30	.06
22	1.2	91	.29	.61	50	.08	.70	30	.06
23	.91	40	.10	.65	43	.08	.68	30	.06
24	.80	27	.06	.64	43	.07	.68	30	.06
25	.82	18	.04	.68	43	.08	.89	100	.24
26	.78	10	.02	.68	43	.08	.71	80	.15
27	.74	13	.03	.68	43	.08	.69	80	.15
28	.73	15	.03	.69	22	.04	.68	80	.15
29	.87	15	.04	.70	22	.04	.68	80	.15
30	.90	22	.05	.68	22	.04	.66	80	.14
31	.90	17	.04	---	---	---	.65	80	.14
TOTAL	34.36	---	5.45	22.65	---	2.94	21.90	---	2.41

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1981			FEBRUARY 1981			MARCH 1981	
1	.65	80	.14	.65	50	.09	.71	60	.12
2	.65	80	.14	.65	50	.09	.68	62	.11
3	.65	80	.14	.68	50	.09	.68	60	.11
4	.65	80	.14	.68	50	.09	.68	60	.11
5	.65	80	.14	.66	50	.09	.68	60	.11
6	.65	80	.14	.65	50	.09	.68	60	.11
7	.64	76	.13	.65	50	.09	.65	60	.11
8	.62	80	.13	.65	50	.09	.65	60	.11
9	.62	80	.13	.65	50	.09	.65	60	.11
10	.62	80	.13	.62	50	.08	.65	60	.11
11	.62	80	.13	.62	50	.08	.65	60	.11
12	.65	80	.14	.62	50	.08	.65	60	.11
13	.65	80	.14	.68	50	.09	.65	60	.11
14	.65	80	.14	.71	50	.10	.65	60	.11
15	.65	90	.16	.71	50	.10	.65	60	.11
16	.65	90	.16	.69	50	.09	.63	60	.10
17	.65	90	.16	.68	50	.09	.59	60	.10
18	.65	90	.16	.68	50	.09	.59	60	.10
19	.65	90	.16	.68	50	.09	.59	60	.10
20	.65	90	.16	.68	50	.09	.59	60	.10
21	.65	97	.17	.68	50	.09	.59	60	.10
22	.65	100	.18	.68	50	.09	.59	60	.10
23	.67	90	.16	.68	50	.09	.59	60	.10
24	.65	90	.16	.68	50	.09	.59	60	.10
25	.65	90	.16	.71	50	.10	.56	60	.09
26	.65	90	.16	.71	50	.10	.55	60	.09
27	.65	90	.16	.71	50	.10	.59	100	.16
28	.66	90	.16	.71	50	.10	.65	200	.35
29	.65	90	.16	---	---	---	.67	280	.51
30	.65	90	.16	---	---	---	.81	322	.70
31	.65	90	.16	---	---	---	1.1	275	.82
TOTAL	20.05	---	4.66	18.85	---	2.55	20.24	---	5.28

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1981			MAY 1981			JUNE 1981	
1	.96	149	.39	.74	223	.45	.83	97	.22
2	.87	152	.36	.81	337	.74	.84	126	.29
3	1.0	115	.31	.83	287	.64	1.0	256	.69
4	1.0	179	.48	.81	338	.74	1.1	227	.67
5	1.2	198	.64	.99	804	2.1	1.1	341	1.0
6	.99	144	.38	1.1	652	1.9	1.1	225	.67
7	1.1	217	.64	1.2	614	2.0	1.2	245	.79
8	1.3	362	1.3	1.3	658	2.3	1.2	383	1.2
9	1.3	348	1.2	1.3	1070	3.8	.98	174	.46
10	1.5	355	1.4	1.1	564	1.7	.85	113	.26
11	1.6	304	1.3	1.2	731	2.4	.95	154	.40
12	1.5	318	1.3	1.1	652	1.9	.95	113	.29
13	1.5	289	1.2	1.3	1180	4.1	.95	88	.23
14	1.6	323	1.4	1.1	1140	3.4	.95	77	.20
15	1.6	191	.83	1.0	1400	3.8	.95	89	.23
16	1.4	166	.63	1.1	2560	7.6	.90	45	.11
17	1.2	114	.37	1.4	3630	14	.90	61	.15
18	1.2	102	.33	1.6	3380	15	1.1	104	.31
19	1.1	106	.31	1.6	2240	9.7	1.5	203	.82
20	1.0	67	.18	1.3	821	2.9	1.7	449	2.1
21	1.1	161	.48	1.1	619	1.8	1.8	280	1.4
22	1.1	66	.20	.98	575	1.5	2.0	244	1.3
23	1.1	69	.20	.85	354	.81	1.8	276	1.3
24	.95	55	.14	.98	507	1.3	1.8	274	1.3
25	1.2	129	.42	.95	449	1.2	1.8	156	.76
26	1.2	94	.30	.75	62	.13	1.8	126	.61
27	1.3	122	.43	.74	43	.09	1.8	70	.34
28	1.3	192	.67	.78	73	.15	1.8	41	.20
29	1.1	160	.48	.90	170	.41	1.7	31	.14
30	.97	250	.65	1.0	204	.55	1.7	40	.18
31	---	---	---	.92	122	.30	---	---	---
TOTAL	36.24	---	18.92	32.83	---	89.41	39.05	---	18.62

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1981			AUGUST 1981			SEPTEMBER 1981	
1	1.4	113	.43	2.2	181	1.1	.90	59	.14
2	1.4	118	.45	2.0	186	1.0	.93	44	.11
3	1.4	100	.38	2.1	174	.99	.90	58	.14
4	1.1	129	.38	2.0	139	.75	.87	48	.11
5	1.3	110	.39	2.0	133	.72	.83	60	.13
6	1.2	42	.14	2.0	138	.75	.93	88	.22
7	1.3	178	.62	1.9	110	.56	1.0	53	.14
8	1.6	207	.89	1.8	105	.51	1.1	51	.15
9	1.5	152	.62	1.5	126	.51	1.1	61	.18
10	1.2	49	.16	1.5	132	.53	1.0	38	.10
11	1.3	193	.68	1.4	134	.51	.96	24	.06
12	1.5	303	1.2	1.5	155	.63	.90	35	.09
13	1.7	980	4.5	1.6	115	.50	.93	33	.08
14	1.8	206	1.0	1.8	186	.90	.93	27	.07
15	1.8	254	1.2	1.8	94	.46	.83	31	.07
16	1.8	156	.76	1.7	85	.39	.87	39	.09
17	1.9	402	2.1	1.8	36	.17	.87	25	.06
18	2.0	882	4.8	1.4	49	.19	.87	22	.05
19	2.1	916	5.2	1.5	51	.21	1.1	59	.18
20	2.0	926	5.0	1.4	61	.23	1.2	50	.16
21	2.0	626	3.4	1.4	56	.21	1.4	75	.28
22	2.0	767	4.1	1.5	59	.24	1.3	63	.22
23	2.1	340	1.9	1.5	57	.23	1.4	68	.26
24	2.2	396	2.4	1.3	42	.15	1.3	55	.19
25	2.2	247	1.5	1.3	46	.16	1.1	28	.08
26	2.3	205	1.3	1.5	54	.22	1.1	31	.09
27	2.3	291	1.8	1.3	37	.13	1.3	68	.24
28	2.1	184	1.0	1.0	32	.09	1.1	29	.09
29	2.2	126	.75	.90	33	.08	1.0	42	.11
30	2.5	133	.90	.93	73	.18	1.1	17	.05
31	2.4	134	.87	.96	67	.17	---	---	---
TOTAL	55.6	---	50.82	48.49	---	13.47	31.12	---	3.94

TABLE 8b.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1981	
1	1.2	49	.16
2	1.2	57	.18
3	1.3	52	.18
4	1.2	35	.11
5	1.4	78	.29
6	1.5	38	.15
7	1.4	31	.12
8	1.5	15	.06
9	1.6	96	.41
10	1.9	87	.45
11	2.1	58	.33
12	2.2	120	.71
13	2.1	174	.99
14	2.4	184	1.2
15	2.2	158	.94
16	2.2	124	.74
17	2.2	99	.59
18	2.2	115	.68
19	2.4	89	.58
20	2.2	68	.40
21	1.2	178	.58
22	1.1	54	.16
23	1.1	45	.13
24	1.1	41	.12
25	1.1	48	.14
26	1.0	46	.12
27	1.0	38	.10
28	1.1	35	.10
29	1.0	30	.08
30	.97	30	.08
31	.96	30	.08
TOTAL	48.03	---	10.96

TABLE 8c.--Daily water discharge, suspended-sediment concentration, and suspended-sediment discharge, 12508775 Drain 59.6 (site 3) below Drain 60.2 near Sunnyside, Wash.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1979			MAY 1979			JUNE 1979	
1	1.2	90	.29	1.8	1000	4.9	2.0	505	2.7
2	1.2	90	.29	1.6	800	3.5	2.1	363	2.1
3	1.2	90	.29	1.6	800	3.5	2.2	482	2.9
4	1.2	150	.49	1.6	800	3.5	2.1	1250	7.1
5	1.3	220	.77	1.5	800	3.2	2.2	1650	9.8
6	1.3	140	.49	1.5	800	3.2	2.4	1300	8.4
7	1.2	140	.45	1.5	800	3.2	2.5	1440	9.7
8	1.2	140	.45	1.4	800	3.0	2.7	993	7.2
9	1.2	140	.45	1.4	800	3.0	2.6	380	2.7
10	1.2	140	.45	1.6	836	3.6	2.4	292	1.9
11	1.2	140	.45	1.8	1160	5.6	2.4	334	2.2
12	1.2	140	.45	1.7	1070	4.9	2.2	226	1.3
13	1.2	140	.45	1.7	918	4.2	2.2	150	.89
14	1.2	140	.45	1.7	1270	5.8	2.2	221	1.3
15	1.2	140	.45	1.8	1680	8.2	2.1	412	2.3
16	1.2	100	.32	2.0	1430	7.7	2.2	683	4.1
17	1.2	100	.32	2.4	1600	10	2.3	544	3.4
18	1.2	100	.32	2.1	943	5.3	2.1	286	1.6
19	1.2	100	.32	2.0	1000	5.4	2.0	126	.68
20	1.2	100	.32	2.2	1200	7.1	2.0	52	.28
21	1.2	100	.32	2.0	1050	5.7	2.0	67	.36
22	1.2	100	.32	1.8	508	2.5	2.2	584	3.5
23	1.2	100	.32	1.7	497	2.3	2.6	658	4.6
24	1.2	100	.32	1.6	1240	5.4	2.5	411	2.8
25	1.2	100	.32	2.0	1280	6.9	2.6	499	3.5
26	1.2	100	.32	2.0	1260	6.8	2.6	403	2.8
27	1.4	200	.76	2.1	1320	7.5	2.3	264	1.6
28	1.6	400	1.7	2.2	1200	7.1	2.1	286	1.6
29	1.8	800	3.9	2.4	3360	22	1.9	152	.78
30	1.8	1600	7.8	2.1	3410	19	2.0	56	.30
31	---	---	---	2.1	1070	6.1	---	---	---
TOTAL	38.0	---	24.35	56.9	---	190.1	67.7	---	94.39

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1979			AUGUST 1979			SEPTEMBER 1979	
1	2.3	49	.30	1.9	36	.18	1.4	20	.08
2	2.2	44	.26	2.0	83	.45	1.4	31	.12
3	2.3	143	.89	1.9	30	.15	1.4	25	.09
4	2.3	73	.45	2.0	81	.44	1.3	17	.06
5	2.4	48	.31	2.2	70	.42	1.3	41	.14
6	2.3	84	.52	2.2	69	.41	1.3	22	.08
7	2.0	16	.09	2.2	57	.34	1.3	22	.08
8	2.4	18	.12	2.0	32	.17	1.2	40	.13
9	2.5	21	.14	1.9	16	.08	1.2	27	.09
10	2.6	89	.62	1.7	13	.06	1.2	24	.08
11	2.8	409	3.1	1.7	34	.16	1.2	27	.09
12	2.7	161	1.2	1.9	44	.23	1.2	25	.08
13	2.5	145	.98	1.9	24	.12	1.2	28	.09
14	2.0	108	.58	1.7	11	.05	1.2	30	.10
15	2.0	47	.25	1.7	13	.06	1.2	30	.10
16	2.0	31	.17	1.7	11	.05	1.2	27	.09
17	2.0	49	.26	1.7	11	.05	1.2	38	.12
18	1.9	61	.31	1.6	12	.05	1.2	32	.10
19	1.9	92	.47	2.0	18	.10	1.2	32	.10
20	2.3	187	1.2	2.0	16	.09	1.2	71	.23
21	2.4	251	1.6	1.6	15	.06	1.1	59	.18
22	2.5	534	3.6	1.5	15	.06	1.1	42	.12
23	2.6	104	.73	1.8	1490	7.2	1.1	59	.18
24	2.8	156	1.2	1.6	110	.48	1.1	45	.13
25	2.8	69	.52	1.5	250	1.0	1.1	48	.14
26	2.9	73	.57	1.5	450	1.8	1.1	33	.10
27	2.6	61	.43	1.4	57	.22	1.1	37	.11
28	1.9	32	.16	1.4	40	.15	1.1	55	.16
29	1.9	42	.22	1.5	35	.14	1.1	33	.10
30	2.0	78	.42	1.5	27	.11	1.1	39	.12
31	2.2	34	.20	1.4	18	.07	---	---	---
TOTAL	72.0	---	21.87	54.6	---	14.95	36.0	---	3.39

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1979			NOVEMBER 1979			DECEMBER 1979	
1	1.1	40	.12	1.6	240	1.0	1.2	80	.26
2	1.1	35	.10	1.6	220	.95	1.2	100	.32
3	1.0	30	.08	1.7	160	.73	1.2	180	.58
4	1.1	39	.12	1.9	200	1.0	1.2	160	.52
5	1.0	76	.21	1.9	180	.92	1.2	160	.52
6	1.0	43	.12	1.7	160	.73	1.2	150	.49
7	1.0	39	.11	1.2	160	.52	1.2	140	.45
8	1.0	34	.09	1.2	160	.52	1.2	120	.39
9	1.0	47	.13	1.2	160	.52	1.2	120	.39
10	1.0	39	.11	1.2	160	.52	1.1	120	.36
11	1.0	62	.17	1.2	140	.45	1.1	115	.34
12	1.0	61	.16	1.2	130	.42	1.1	115	.34
13	1.0	84	.23	1.2	130	.42	1.2	113	.37
14	1.0	61	.16	1.2	130	.42	1.2	113	.37
15	1.0	50	.14	1.2	150	.49	1.2	113	.37
16	1.0	40	.11	1.3	200	.70	1.2	120	.39
17	1.0	50	.14	1.2	170	.55	1.2	120	.39
18	1.1	86	.26	1.2	140	.45	1.2	160	.52
19	1.2	68	.22	1.2	120	.39	1.2	140	.45
20	1.1	76	.23	1.2	100	.32	1.2	115	.37
21	1.1	82	.24	1.2	100	.32	1.2	115	.37
22	1.1	100	.30	1.2	100	.32	1.1	115	.34
23	1.1	130	.39	1.2	140	.45	1.1	115	.34
24	1.2	210	.68	1.2	300	.97	1.1	115	.34
25	1.2	310	1.0	1.2	210	.68	1.1	115	.34
26	1.2	400	1.3	1.2	150	.49	1.1	115	.34
27	1.2	590	1.9	1.2	120	.39	1.1	115	.34
28	1.4	1400	5.3	1.2	96	.31	1.1	115	.34
29	1.2	560	1.8	1.1	85	.25	1.1	115	.34
30	1.4	300	1.1	1.2	80	.26	1.1	115	.34
31	1.7	260	1.2	---	---	---	1.1	115	.34
TOTAL	34.5	---	18.22	39.2	---	16.46	35.9	---	11.96

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1980			FEBRUARY 1980			MARCH 1980	
1	1.2	115	.37	.95	335	.86	1.2	180	.58
2	1.2	116	.38	.98	300	.79	1.2	190	.62
3	1.2	115	.37	1.0	200	.54	1.1	170	.50
4	1.2	115	.37	1.0	250	.68	1.1	150	.45
5	1.2	115	.37	1.0	275	.74	1.2	170	.55
6	1.1	115	.34	1.2	1100	3.6	1.2	121	.39
7	1.1	100	.30	1.1	900	2.7	1.1	82	.24
8	1.1	100	.30	1.1	390	1.2	1.1	82	.24
9	1.1	100	.30	1.1	380	1.1	1.1	82	.24
10	1.1	100	.30	1.1	380	1.1	1.1	71	.21
11	1.1	100	.30	1.1	312	.93	1.1	71	.21
12	1.2	432	1.4	1.0	295	.80	1.1	71	.21
13	1.4	630	2.4	1.0	212	.57	1.1	68	.20
14	1.3	580	2.0	1.0	208	.56	1.1	100	.30
15	1.2	310	1.0	1.0	210	.57	1.1	70	.21
16	1.2	280	.91	1.0	248	.67	1.1	70	.21
17	1.2	260	.84	1.1	943	2.8	1.1	70	.21
18	1.1	240	.71	1.9	2140	11	1.1	76	.23
19	1.1	230	.68	3.4	15200	140	1.1	76	.23
20	1.1	240	.71	2.6	18700	131	1.1	80	.24
21	1.1	266	.79	1.3	1210	4.2	1.1	100	.30
22	1.1	250	.74	1.2	597	1.9	1.1	112	.33
23	1.1	240	.71	1.2	577	1.9	1.1	110	.33
24	1.1	220	.65	1.2	360	1.2	1.1	130	.39
25	1.1	200	.59	1.2	300	.97	1.0	151	.41
26	1.0	160	.43	1.4	731	2.8	1.0	140	.38
27	1.0	130	.35	1.4	783	3.0	1.0	130	.35
28	1.0	100	.27	1.3	400	1.4	1.0	118	.32
29	.98	100	.26	1.2	210	.68	1.0	120	.32
30	.93	100	.25	---	---	---	1.0	100	.27
31	.93	100	.25	---	---	---	1.0	90	.24
TOTAL	34.74	---	19.64	37.03	---	320.26	33.8	---	9.91

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1980			MAY 1980			JUNE 1980	
1	1.0	88	.24	2.2	468	2.8	1.7	83	.38
2	1.0	72	.19	2.0	572	3.1	1.8	87	.42
3	1.0	55	.15	1.7	354	1.6	1.8	121	.59
4	1.0	65	.18	1.5	410	1.7	1.9	130	.67
5	1.0	49	.13	1.5	377	1.5	1.8	80	.39
6	1.0	62	.17	1.7	384	1.8	1.9	72	.37
7	1.0	60	.16	1.5	356	1.4	2.0	69	.37
8	1.1	98	.29	1.8	649	3.2	1.9	72	.37
9	1.1	187	.56	2.1	604	3.4	2.0	149	.80
10	1.0	46	.12	2.0	398	2.1	1.8	139	.68
11	1.0	117	.32	2.0	337	1.8	1.9	174	.89
12	1.2	264	.86	2.1	463	2.6	2.0	109	.59
13	1.2	357	1.2	1.8	333	1.6	2.2	165	.98
14	1.2	204	.66	1.9	496	2.5	1.8	44	.21
15	1.3	409	1.4	1.8	368	1.8	1.7	45	.21
16	1.4	362	1.4	1.9	359	1.8	2.0	56	.30
17	1.6	539	2.3	1.9	314	1.6	2.0	32	.17
18	1.7	574	2.6	2.0	341	1.8	1.9	28	.14
19	1.6	514	2.2	1.9	406	2.1	1.8	29	.14
20	1.9	671	3.4	1.9	400	2.1	2.2	244	1.4
21	1.8	254	1.2	2.2	420	2.5	2.1	200	1.1
22	1.5	1030	4.2	2.4	469	3.0	2.2	150	.89
23	1.5	966	3.9	2.1	278	1.6	2.1	130	.74
24	1.5	415	1.7	1.9	195	1.0	2.2	105	.62
25	1.6	222	.96	1.9	192	.98	2.1	82	.46
26	1.7	190	.87	2.5	502	3.4	2.1	30	.17
27	1.5	123	.50	2.0	233	1.3	2.0	25	.14
28	1.5	132	.53	1.8	133	.65	2.0	28	.15
29	1.3	136	.48	1.8	120	.58	1.9	32	.16
30	1.6	224	.97	1.8	104	.51	2.0	36	.19
31	---	---	---	1.7	107	.49	---	---	---
TOTAL	39.8	---	33.84	59.3	---	58.31	58.8	---	14.69

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1980			AUGUST 1980			SEPTEMBER 1980	
1	2.2	60	.36	2.7	51	.37	2.2	1220	7.2
2	2.3	49	.30	2.7	39	.28	2.1	176	1.0
3	2.3	95	.59	2.6	39	.27	2.2	1010	6.0
4	2.5	136	.92	2.4	92	.60	2.0	130	.70
5	2.4	53	.34	2.1	60	.34	2.0	81	.44
6	2.3	39	.24	1.9	42	.22	2.0	73	.39
7	2.1	34	.19	1.9	39	.20	2.2	82	.49
8	2.3	34	.21	2.2	81	.48	2.1	58	.33
9	2.4	31	.20	2.4	63	.41	2.1	56	.32
10	2.2	22	.13	2.4	44	.29	2.0	72	.39
11	2.2	15	.09	2.2	142	.84	2.1	1740	9.9
12	2.2	124	.74	2.4	263	1.7	2.2	1320	7.8
13	2.2	302	1.8	2.3	93	.58	3.0	3510	28
14	2.2	77	.46	2.0	46	.25	2.1	830	4.7
15	2.3	53	.33	2.1	62	.35	2.1	894	5.1
16	2.5	43	.29	2.5	74	.50	2.1	876	5.0
17	2.6	33	.23	2.9	186	1.5	1.9	604	3.1
18	2.6	44	.31	2.8	72	.54	2.1	4000	23
19	2.8	320	2.4	2.0	43	.23	2.0	1610	8.7
20	2.8	158	1.2	1.9	45	.23	2.1	2910	16
21	2.7	304	2.2	2.1	84	.48	1.9	769	3.9
22	2.7	190	1.4	2.0	51	.28	1.9	512	2.6
23	2.9	89	.70	1.9	56	.29	1.9	412	2.1
24	2.7	65	.47	2.3	179	1.1	1.9	369	1.9
25	2.6	50	.35	2.1	545	3.1	2.3	7720	48
26	2.7	73	.53	1.7	236	1.1	2.2	2880	17
27	2.8	48	.36	1.7	269	1.2	2.4	4710	31
28	2.7	112	.82	1.6	64	.28	2.1	1110	6.3
29	2.7	252	1.8	1.7	77	.35	2.1	753	4.3
30	2.7	110	.80	2.0	79	.43	2.1	501	2.8
31	2.6	69	.48	2.1	55	.31	---	---	---
TOTAL	77.2	---	21.24	67.6	---	19.10	63.4	---	248.46

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1980			NOVEMBER 1980			DECEMBER 1980	
1	2.1	476	2.7	1.8	120	.58	1.5	79	.32
2	2.2	546	3.2	1.7	120	.55	1.7	79	.36
3	2.6	1150	8.1	1.7	120	.55	1.8	79	.38
4	2.7	954	7.0	1.7	122	.56	1.7	64	.29
5	2.4	918	5.9	1.7	122	.56	1.6	64	.28
6	2.5	862	5.8	1.8	122	.59	1.5	64	.26
7	2.4	764	5.0	1.8	91	.44	1.5	64	.26
8	2.4	660	4.3	1.7	91	.42	1.5	65	.26
9	2.6	549	3.9	1.6	91	.39	1.5	70	.28
10	2.9	691	5.4	1.6	76	.33	1.5	70	.28
11	3.0	481	3.9	1.6	76	.33	1.5	60	.24
12	3.1	411	3.4	1.6	76	.33	1.5	60	.24
13	2.9	315	2.5	1.6	73	.32	1.5	60	.24
14	3.0	355	2.9	1.6	73	.32	1.5	60	.24
15	2.7	300	2.2	1.6	73	.32	1.5	60	.24
16	2.3	215	1.3	1.6	73	.32	1.5	50	.20
17	2.2	204	1.2	1.6	75	.32	1.5	50	.20
18	2.4	200	1.3	1.6	80	.35	1.5	50	.20
19	3.0	250	2.0	1.6	75	.32	1.5	50	.20
20	3.0	300	2.4	1.6	75	.32	1.5	60	.24
21	2.9	392	3.1	1.6	75	.32	1.6	60	.26
22	2.0	331	1.8	1.6	71	.31	1.5	50	.20
23	1.9	251	1.3	1.6	71	.31	1.5	50	.20
24	1.9	176	.90	1.6	71	.31	1.5	50	.20
25	2.0	256	1.4	1.6	71	.31	2.4	400	2.6
26	1.9	89	.46	1.6	67	.29	1.8	100	.49
27	1.8	132	.64	1.6	67	.29	1.7	100	.46
28	1.8	112	.54	1.6	67	.29	1.5	100	.41
29	1.8	100	.49	1.6	67	.29	1.5	100	.41
30	1.8	158	.77	1.5	79	.32	1.4	100	.38
31	1.8	113	.55	---	---	---	1.4	100	.38
TOTAL	74.0	---	86.35	49.0	---	11.26	48.6	---	11.20

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1981			FEBRUARY 1981			MARCH 1981	
1	1.4	100	.38	1.2	160	.52	.94	180	.46
2	1.4	120	.45	1.2	160	.52	.95	178	.46
3	1.4	130	.49	1.1	160	.48	.96	180	.47
4	1.4	130	.49	1.1	160	.48	.96	180	.47
5	1.4	140	.53	1.1	160	.48	.93	180	.45
6	1.4	140	.53	1.1	160	.48	.93	170	.43
7	1.4	138	.52	1.1	160	.48	.93	170	.43
8	1.4	140	.53	1.1	160	.48	.93	170	.43
9	1.4	140	.53	1.1	160	.48	.93	170	.43
10	1.4	140	.53	1.0	160	.43	.93	170	.43
11	1.3	150	.53	1.0	160	.43	.93	170	.43
12	1.3	150	.53	1.0	160	.43	.94	170	.43
13	1.3	150	.53	1.1	160	.48	.95	170	.44
14	1.3	150	.53	1.1	160	.48	.93	170	.43
15	1.3	150	.53	1.1	160	.48	.93	170	.43
16	1.3	150	.53	1.1	170	.50	.91	150	.37
17	1.3	160	.56	1.0	170	.46	.90	150	.36
18	1.3	160	.56	1.1	170	.50	.90	150	.36
19	1.3	160	.56	1.1	170	.50	.90	150	.36
20	1.3	160	.56	1.0	170	.46	.93	150	.38
21	1.3	165	.58	.99	170	.45	.93	150	.38
22	1.2	160	.52	.99	170	.45	.93	150	.38
23	1.2	160	.52	.99	170	.45	.93	150	.38
24	1.2	160	.52	.99	170	.45	.93	150	.38
25	1.2	160	.52	.99	170	.45	.93	150	.38
26	1.2	160	.52	.99	180	.48	.95	150	.38
27	1.2	160	.52	.96	180	.47	.97	190	.50
28	1.2	160	.52	.96	180	.47	.99	180	.48
29	1.2	160	.52	---	---	---	.98	180	.48
30	1.2	160	.52	---	---	---	.75	207	.53
31	1.2	160	.52	---	---	---	.96	234	.61
TOTAL	40.3	---	16.18	29.56	---	13.22	29.06	---	13.33

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1981			MAY 1981			JUNE 1981	
1	1.0	552	1.5	1.3	205	.72	1.4	195	.74
2	1.1	788	2.3	1.5	191	.77	1.3	106	.37
3	1.1	530	1.6	1.3	281	.99	1.5	170	.69
4	1.0	574	1.5	1.3	1720	6.0	1.5	539	2.2
5	1.1	918	2.7	1.6	2890	12	1.6	882	3.8
6	1.2	661	2.1	1.9	3390	17	1.9	441	2.3
7	1.2	1540	5.0	1.8	2540	12	2.0	376	2.0
8	1.2	1650	5.3	1.7	2040	9.4	2.2	324	1.9
9	1.1	1190	3.5	1.8	1330	6.5	1.8	143	.69
10	1.2	914	3.0	1.9	1270	6.5	1.6	90	.39
11	1.2	725	2.3	2.2	1580	9.4	1.6	79	.34
12	1.2	972	3.1	2.0	1280	6.9	1.5	47	.19
13	1.3	1540	5.4	2.0	930	5.0	1.5	97	.39
14	1.3	1570	5.5	2.3	1130	7.0	1.5	57	.23
15	1.3	1960	6.9	2.1	706	4.0	1.6	151	.65
16	1.3	1830	6.4	1.8	402	2.0	1.6	322	1.4
17	1.2	1620	5.2	1.9	529	2.7	1.7	273	1.3
18	1.1	537	1.6	1.9	738	3.8	1.9	254	1.3
19	1.1	450	1.3	1.9	315	1.6	1.8	150	.73
20	1.1	497	1.5	1.8	511	2.5	1.6	160	.69
21	1.2	362	1.2	1.9	399	2.0	1.6	458	2.0
22	1.2	453	1.5	2.1	455	2.6	1.8	368	1.8
23	1.2	335	1.1	2.1	479	2.7	1.8	314	1.5
24	1.2	451	1.5	1.7	366	1.7	1.7	459	2.1
25	1.3	341	1.2	1.6	348	1.5	1.8	480	2.3
26	1.3	224	.79	1.6	452	2.0	1.6	147	.64
27	1.4	359	1.4	1.6	277	1.2	1.6	36	.16
28	1.3	250	.88	1.4	136	.51	1.5	21	.09
29	1.2	281	.91	1.4	641	2.4	1.7	354	1.6
30	1.2	207	.67	1.5	460	1.9	1.8	518	2.5
31	---	---	---	1.4	365	1.4	---	---	---
TOTAL	35.8	---	78.85	54.3	---	136.69	50.0	---	36.99

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1981			AUGUST 1981			SEPTEMBER 1981	
1	2.0	226	1.2	1.6	124	.54	1.5	53	.21
2	2.1	1010	5.7	1.8	213	1.0	1.4	26	.10
3	2.1	1470	8.3	1.8	230	1.1	1.4	28	.11
4	2.0	1310	7.1	1.8	1770	8.6	1.4	15	.06
5	2.2	889	5.3	1.7	2010	9.2	1.4	20	.08
6	1.9	447	2.3	1.8	1490	7.2	1.4	7	.03
7	1.7	220	1.0	1.9	236	1.2	1.4	12	.05
8	1.7	174	.80	2.0	218	1.2	1.4	11	.04
9	1.7	269	1.2	1.9	121	.62	1.4	17	.06
10	1.8	738	3.6	1.9	142	.73	1.6	20	.09
11	1.8	575	2.8	2.2	152	.90	1.6	16	.07
12	1.8	508	2.5	2.1	117	.66	1.6	16	.07
13	1.8	335	1.6	2.1	97	.55	1.7	23	.11
14	1.9	915	4.7	1.8	69	.34	1.7	540	2.5
15	2.2	1290	7.7	1.8	59	.29	1.7	200	.92
16	2.4	855	5.5	1.8	59	.29	1.7	50	.23
17	2.3	574	3.6	1.9	73	.37	1.9	29	.15
18	2.1	656	3.7	2.1	86	.49	2.1	38	.22
19	2.0	404	2.2	2.2	73	.43	2.3	48	.30
20	2.0	316	1.7	1.8	53	.26	2.0	49	.26
21	2.1	921	5.2	1.7	53	.24	2.0	29	.16
22	2.3	1080	6.7	1.9	58	.30	2.0	142	.77
23	2.4	1010	6.5	2.1	59	.33	2.0	145	.78
24	2.4	670	4.3	2.2	55	.33	2.0	75	.41
25	2.1	330	1.9	2.2	64	.38	2.0	90	.49
26	2.2	745	4.4	2.2	74	.44	2.2	190	1.1
27	2.1	563	3.2	1.9	57	.29	2.3	115	.71
28	2.0	626	3.4	1.6	41	.18	1.9	124	.64
29	2.0	477	2.6	1.6	29	.13	1.7	115	.53
30	1.6	115	.50	1.6	36	.16	1.7	77	.35
31	1.6	239	1.0	1.5	44	.18	---	---	---
TOTAL	62.3	---	112.20	58.5	---	38.93	52.4	---	11.60

TABLE 8c.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1981	
1	1.8	207	1.0
2	1.9	34	.17
3	2.0	114	.62
4	2.0	149	.80
5	2.2	209	1.2
6	2.3	376	2.3
7	2.2	211	1.3
8	2.2	74	.44
9	2.1	124	.70
10	2.0	47	.25
11	2.0	47	.25
12	2.0	21	.11
13	2.2	222	1.3
14	2.3	166	1.0
15	2.3	148	.92
16	2.4	314	2.0
17	2.7	586	4.3
18	2.8	262	2.0
19	2.9	328	2.6
20	2.5	172	1.2
21	1.7	152	.70
22	1.7	106	.49
23	1.7	90	.41
24	1.7	83	.38
25	1.7	94	.43
26	1.7	88	.40
27	1.7	85	.39
28	1.8	85	.41
29	1.7	85	.39
30	1.7	85	.39
31	1.7	85	.39
TOTAL	63.6	---	29.24

TABLE 8d.--Daily water discharge, suspended-sediment concentration, and suspended-sediment discharge, 12508779 Drain 59.4 (site 4) near Sunnyside, Wash. (To obtain mean concentration and sediment discharge, divide the values shown in this table by 100.)

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1979			MAY 1979			JUNE 1979	
1	.05	1000	.14	.07	6000	1.1	.41	142000	157
2	.05	1000	.14	.07	4000	.76	.47	88000	112
3	.05	1000	.14	.07	2000	.38	.35	67800	64
4	.05	1000	.14	.07	1000	.19	.31	58600	49
5	.05	1000	.14	.07	1000	.19	.33	118000	105
6	.05	1000	.14	.07	1000	.19	.53	266000	381
7	.05	1000	.14	.07	1000	.19	.22	113000	67
8	.05	1000	.14	.07	1000	.19	.15	59700	24
9	.05	1000	.14	.07	1000	.19	.16	202000	87
10	.05	1000	.14	.07	600	.11	.11	63100	19
11	.05	1000	.14	.40	34800	38	.26	377000	265
12	.05	1000	.14	.54	24400	36	.84	950000	2150
13	.05	1000	.14	.09	900	.22	.98	882000	2330
14	.05	1000	.14	.15	4200	1.7	.60	886000	1440
15	.05	1000	.14	.12	3000	.97	.63	916000	1560
16	.05	1000	.14	.12	6400	2.1	1.1	678000	2000
17	.05	1000	.14	.24	19400	13	1.1	685000	1940
18	.05	1000	.14	.80	219000	473	.76	324000	665
19	.05	1000	.14	1.1	222000	653	.22	430000	255
20	.05	1000	.14	.44	210000	249	.16	153000	66
21	.07	1000	.19	.38	158000	162	.24	520000	337
22	.07	1000	.19	.47	218000	277	.44	413000	491
23	.07	1000	.19	.53	160000	229	.38	737000	756
24	.07	1000	.19	.19	164000	84	.47	652000	827
25	.07	1000	.19	.25	300000	202	.44	656000	779
26	.07	1000	.19	.34	219000	201	.47	448000	569
27	.07	1000	.19	.38	121000	124	.42	588000	667
28	.10	3000	.81	.21	17600	10	.45	473000	575
29	.20	5000	2.7	.13	20400	7.2	.40	784000	847
30	.30	7000	5.7	.18	49600	24	.43	660000	766
31	---	---	---	.22	37800	22	---	---	---
TOTAL	2.09	---	13.34	7.98	---	2812.68	13.83	---	20350

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1979			AUGUST 1979			SEPTEMBER 1979	
1	.58	411000	644	1.0	246000	664	.07	1500	.28
2	.69	327000	609	1.2	164000	531	.07	1000	.19
3	.75	316000	640	1.4	169000	639	.07	1100	.21
4	.84	347000	787	1.1	43600	129	.07	900	.17
5	.81	703000	1540	.65	19000	33	.07	700	.13
6	.58	1080000	1690	.65	14500	25	.07	700	.13
7	.58	1150000	1800	.51	42100	58	.07	800	.15
8	.67	663000	1200	.51	47200	65	.07	700	.13
9	.60	420000	680	.34	41400	38	.07	700	.13
10	.62	310000	519	.39	72200	76	.07	700	.13
11	.70	821000	1550	.26	22400	16	.07	600	.11
12	1.1	485000	1440	.11	8900	2.6	.07	800	.15
13	.45	164000	199	.10	2500	.68	.07	800	.15
14	.26	155000	109	.09	2900	.70	.07	2100	.40
15	.24	105000	68	.29	157000	123	.07	1600	.30
16	.40	269000	291	.53	179000	256	.07	600	.11
17	.26	329000	231	.64	166000	287	.07	600	.11
18	.52	536000	753	.57	127000	195	.07	700	.13
19	.74	551000	1100	.76	109000	224	.07	400	.08
20	.73	660000	1300	.35	29800	28	.07	500	.09
21	.75	494000	1000	.10	2800	.76	.07	600	.11
22	1.0	278000	751	.08	1200	.26	.07	1000	.19
23	1.3	152000	534	.14	166000	63	.07	300	.06
24	1.2	170000	551	.39	459000	483	.07	400	.08
25	.77	175000	364	.10	146000	39	.07	400	.08
26	.66	475000	846	.10	20900	5.6	.07	500	.09
27	1.1	248000	737	.09	126000	31	.07	600	.11
28	.73	119000	235	.08	14000	3.0	.07	700	.13
29	.56	108000	163	.07	4700	.89	.07	400	.08
30	.65	53300	94	.07	5000	.95	.07	300	.06
31	.73	217000	428	.07	1200	.23	---	---	---
TOTAL	21.57	---	22853	12.74	---	4018.67	2.10	---	4.27

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1979			NOVEMBER 1979			DECEMBER 1979	
1	.05	400	.05	.17	2000	.92	.05	2000	.27
2	.05	1900	.26	.42	100000	113	.05	3000	.41
3	.05	4900	.66	.44	90000	107	.05	5000	.68
4	.05	9200	1.2	.44	50000	59	.05	4000	.54
5	.05	7500	1.0	.06	10000	1.6	.05	4000	.54
6	.05	8000	1.1	.06	10000	1.6	.05	4000	.54
7	.05	5700	.77	.05	5000	.68	.05	4000	.54
8	.05	3500	.47	.05	4000	.54	.05	4000	.54
9	.05	3100	.42	.05	4000	.54	.05	3500	.47
10	.05	3500	.47	.05	3000	.41	.05	3500	.47
11	.05	2200	.30	.05	2500	.34	.05	3500	.47
12	.05	1200	.16	.05	2500	.34	.05	3000	.41
13	.05	1400	.19	.05	2400	.32	.05	3000	.41
14	.05	1400	.19	.05	2000	.27	.05	3000	.41
15	.05	1500	.20	.05	2000	.27	.05	2500	.34
16	.05	1500	.20	.05	5000	.68	.05	2500	.34
17	.05	2000	.27	.05	4000	.54	.05	2000	.27
18	.05	4000	.54	.05	4000	.54	.05	2500	.34
19	.05	26000	3.5	.05	3000	.41	.05	1500	.20
20	.05	3000	.41	.05	2000	.27	.05	1200	.16
21	.05	16500	2.2	.05	2000	.27	.05	1200	.16
22	.05	28000	3.8	.05	5000	.68	.05	1000	.14
23	.05	31500	4.3	.05	5000	.68	.05	1000	.14
24	.05	54000	7.3	.05	10000	1.4	.05	3000	.41
25	.05	10000	1.4	.05	20000	2.7	.05	2000	.27
26	.05	4000	.54	.05	5000	.68	.05	2000	.27
27	.05	2000	.27	.05	4000	.54	.05	2000	.27
28	.05	2000	.27	.05	2200	.30	.05	2000	.27
29	.05	2000	.27	.05	2000	.27	.05	2000	.27
30	.05	50000	6.8	.05	2000	.27	.05	2000	.27
31	.06	5000	.81	---	---	---	.05	2000	.27
TOTAL	1.56	---	40.32	2.79	---	297.06	1.55	---	11.09

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1980			FEBRUARY 1980			MARCH 1980	
1	.05	2000	.27	.03	13400	1.1	.04	2000	.22
2	.05	1800	.24	.04	10000	1.1	.04	2000	.22
3	.05	1800	.24	.04	10000	1.1	.04	1500	.16
4	.05	1800	.24	.03	128000	10	.04	1500	.16
5	.05	1800	.24	.03	134000	11	.04	2000	.22
6	.05	1800	.24	.03	161000	13	.04	2000	.22
7	.05	1800	.24	.03	146000	12	.04	2000	.22
8	.05	1700	.23	.03	63000	5.1	.04	3600	.39
9	.05	1700	.23	.03	42800	3.5	.04	3600	.39
10	.05	1700	.23	.06	41000	6.6	.04	3600	.39
11	.04	1700	.18	.04	8000	.86	.04	3500	.38
12	.05	1700	.23	.03	7500	.61	.04	4000	.43
13	.06	1200	.19	.03	2000	.16	.03	3000	.24
14	.05	1200	.16	.03	1800	.15	.03	5000	.41
15	.05	1900	.26	.03	2000	.16	.03	4000	.32
16	.05	2900	.39	.03	2000	.16	.03	3000	.24
17	.05	1500	.20	.37	200000	200	.03	3000	.24
18	.05	1700	.23	1.7	142000	652	.02	4600	.25
19	.04	2000	.22	3.1	1060000	8870	.02	34700	1.9
20	.04	2500	.27	2.3	1660000	10300	.02	10000	.54
21	.05	3500	.47	.38	497000	510	.02	5000	.27
22	.04	3000	.32	.39	133000	140	.02	4000	.22
23	.04	2500	.27	.24	110000	71	.02	3000	.16
24	.04	2000	.22	.07	90000	17	.02	2000	.11
25	.04	1500	.16	.03	5900	.48	.02	2000	.11
26	.04	1500	.16	.05	8500	1.1	.02	2100	.11
27	.03	1500	.12	.04	7700	.83	.01	2000	.05
28	.03	1000	.08	.04	5000	.54	.01	2000	.05
29	.03	1000	.08	.04	5000	. 2200	.06		
30	.03	1000	.08	---	---	---	.01	1000	.03
31	.03	1000	.08	---	---	---	.01	1000	.03
TOTAL	1.38	---	6.77	9.29	---	20830.09	0.86	---	8.74

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1980			MAY 1980			JUNE 1980	
1	.01	500	.01	.16	979000	423	.48	20500	27
2	.01	400	.01	.06	4300000	697	.09	3700	.90
3	.01	10900	.29	.07	4000000	756	.11	7600	2.3
4	.01	5300	.14	.08	349000	75	.07	6200	1.2
5	.05	67400	9.1	.21	544000	308	.04	3300	.36
6	.07	50600	9.6	.58	719000	1130	.04	7000	.76
7	.07	65600	12	.63	660000	1120	.24	24000	16
8	.09	99900	24	.41	236000	261	.25	17100	12
9	.05	74600	10	.53	820000	1170	.29	14000	11
10	.04	80600	8.7	.90	436000	1060	.18	11400	5.5
11	.04	23400	2.5	.93	189000	475	.11	8900	2.6
12	.07	24200	4.6	.80	115000	248	.11	5200	1.5
13	.06	28200	4.6	.51	117000	161	.24	31900	21
14	.06	9200	1.5	.58	93800	147	.37	33500	33
15	.04	5600	.60	.53	70500	101	.39	26800	28
16	.01	1800	.05	.37	43600	44	.44	38700	46
17	.02	22200	1.2	.26	52000	37	.37	145000	145
18	.18	812000	395	.24	62500	41	.27	275000	200
19	.16	1160000	502	.26	53000	37	.18	91300	44
20	.09	2010000	488	.33	50000	45	.29	143000	112
21	.21	753000	427	.44	43000	51	.31	91600	77
22	.16	231000	100	.37	36200	36	.12	105000	34
23	.07	194000	37	.29	28500	22	.06	99100	16
24	.19	165000	85	.31	34300	29	.07	80200	15
25	.24	304000	197	.35	38700	37	.12	121000	39
26	.22	239000	142	.37	77100	77	.33	42100	38
27	.20	2090000	1130	.16	29800	13	.22	20000	12
28	.15	692000	280	.39	68600	72	.02	4200	.23
29	.12	410000	133	.69	93900	175	.02	2700	.15
30	.19	576000	295	.66	56500	101	.26	232000	163
31	---	---	---	.63	52400	89	---	---	---
TOTAL	2.89	---	4299.90	13.10	---	9038	6.09	---	1104.50

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1980			AUGUST 1980			SEPTEMBER 1980	
1	.74	138000	276	.69	91300	170	.04	200	.02
2	.53	108000	155	.90	75800	184	.03	200	.02
3	.12	9500	3.1	.93	35900	90	.03	1600	.13
4	.06	4400	.71	.90	17900	43	.09	20700	5.0
5	.06	4000	.65	.87	8200	19	.16	41000	18
6	.10	53900	15	.46	5300	6.6	.14	59600	23
7	.06	4000	.65	.09	1800	.44	.11	27300	8.1
8	.31	7500	6.3	.08	1700	.37	.07	4900	.93
9	.58	7700	12	.08	1900	.41	.08	122000	26
10	.48	27700	36	.04	1400	.15	.05	72100	9.7
11	.27	7500	5.5	.09	2300	.56	.03	7700	.62
12	.22	13800	8.2	.10	1000	.27	.03	1900	.15
13	.33	42400	38	.06	800	.13	.11	49500	15
14	.22	51300	30	.05	800	.11	.21	61200	35
15	.33	41000	37	.09	1100	.27	.15	48900	20
16	.22	35900	21	.09	1000	.24	.12	124000	40
17	.09	8400	2.0	.06	1100	.18	.21	230000	130
18	.30	19100	15	.11	1300	.39	.07	94200	18
19	.25	15800	11	.16	1100	.48	.04	7200	.78
20	.31	11500	9.6	.16	800	.35	.10	58500	16
21	.25	14800	10	.18	3800	1.8	.22	99100	59
22	.16	11400	4.9	.15	900	.36	.15	70100	28
23	.25	7800	5.3	.24	1500	.97	.15	212000	86
24	.15	4100	1.7	.27	1100	.80	.26	391000	274
25	.02	1000	.05	.18	600	.29	.08	87600	19
26	.10	4700	1.3	.07	400	.08	.06	24600	4.0
27	.22	7600	4.5	.11	400	.12	.21	103000	58
28	.63	17200	29	.09	300	.07	.31	97000	81
29	.80	15500	33	.09	300	.07	.22	91500	54
30	.51	20300	28	.08	300	.06	.10	70000	19
31	.51	64900	89	.04	400	.04	---	---	---
TOTAL	9.18	---	889.46	7.51	---	521.61	3.63	---	1048.45

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1980			NOVEMBER 1980			DECEMBER 1980	
1	.04	20000	2.2	.06	2000	.32	.06	1500	.24
2	.10	8800	2.4	.05	2000	.27	.06	1500	.24
3	.16	17300	7.5	.07	2000	.38	.07	2800	.53
4	.19	12300	6.3	.05	2000	.27	.06	2800	.45
5	.19	8500	4.4	.05	2000	.27	.06	2800	.45
6	.15	5600	2.3	.05	2000	.27	.06	2600	.42
7	.07	2800	.53	.05	2000	.27	.05	2600	.35
8	.07	2600	.49	.05	2000	.27	.05	2600	.35
9	.08	4400	.95	.05	2000	.27	.05	7000	.94
10	.19	9800	5.0	.05	2000	.27	.05	5000	.68
11	.35	29000	27	.05	2000	.27	.05	3000	.41
12	.41	44900	50	.05	2000	.27	.05	3000	.41
13	.39	6700	7.1	.05	2000	.27	.05	3000	.41
14	.35	5400	5.1	.05	2000	.27	.05	3000	.41
15	.37	5300	5.3	.05	2000	.27	.05	3000	.41
16	.39	4800	5.1	.05	2000	.27	.05	3000	.41
17	.39	4500	4.7	.05	2000	.27	.05	3000	.41
18	.35	11500	11	.05	3500	.47	.05	3000	.41
19	.33	15900	14	.05	3500	.47	.05	3000	.41
20	.35	13900	13	.05	3500	.47	.06	3000	.49
21	.33	9200	8.2	.06	2500	.41	.05	3000	.41
22	.10	6100	1.6	.06	2500	.41	.10	3000	.81
23	.07	3300	.62	.06	2500	.41	.06	5000	.81
24	.07	1800	.34	.06	3200	.52	.05	5000	.68
25	.08	1900	.41	.06	3200	.52	.05	30000	4.1
26	.07	1500	.28	.06	3200	.52	.05	10000	1.4
27	.06	2500	.41	.06	3100	.50	.05	8000	1.1
28	.06	1800	.29	.06	3100	.50	.05	6000	.81
29	.06	1300	.21	.06	3100	.50	.05	5000	.68
30	.06	2500	.41	.06	1500	.24	.05	5000	.68
31	.06	1800	.29	---	---	---	.05	5000	.68
TOTAL	5.94	---	187.43	1.63	---	10.69	1.69	---	20.99

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY 1981			FEBRUARY 1981			MARCH 1981	
1	.05	5000	.68	.05	2000	.27	.04	5000	.54
2	.05	5000	.68	.05	2000	.27	.04	6000	.65
3	.05	5000	.68	.05	2000	.27	.04	6400	.69
4	.05	6000	.81	.05	2000	.27	.04	6000	.65
5	.05	6000	.81	.05	2000	.27	.04	6000	.65
6	.05	6000	.81	.05	2000	.27	.04	6000	.65
7	.05	7000	.94	.05	2000	.27	.04	6000	.65
8	.05	6000	.81	.05	2000	.27	.04	6000	.65
9	.05	5000	.68	.05	2000	.27	.04	6000	.65
10	.05	4000	.54	.05	2000	.27	.04	6000	.65
11	.05	3000	.41	.05	2000	.27	.04	5000	.54
12	.05	2000	.27	.05	2000	.27	.04	5000	.54
13	.05	2000	.27	.05	2000	.27	.04	5000	.54
14	.05	2000	.27	.05	2000	.27	.04	5000	.54
15	.05	2000	.27	.05	2000	.27	.04	5000	.54
16	.05	1500	.20	.05	3000	.41	.04	5000	.54
17	.05	1500	.20	.04	3000	.32	.04	5000	.54
18	.05	1500	.20	.04	3000	.32	.04	5000	.54
19	.05	1500	.20	.04	3000	.32	.04	5000	.54
20	.05	1500	.20	.04	3000	.32	.04	5000	.54
21	.05	1300	.18	.04	3000	.32	.04	5000	.54
22	.05	1000	.14	.04	3000	.32	.04	50000	5.4
23	.05	1000	.14	.04	3000	.32	.04	50000	5.4
24	.05	1000	.14	.04	4000	.43	.04	50000	5.4
25	.05	1000	.14	.04	4000	.43	.04	50000	5.4
26	.05	1000	.14	.04	4000	.43	.04	50000	5.4
27	.05	1000	.14	.04	4000	.43	.05	50000	6.8
28	.05	3000	.41	.04	5000	.54	.12	100000	32
29	.05	2000	.27	---	---	---	.04	200000	22
30	.05	2000	.27	---	---	---	.04	378000	41
31	.05	2000	.27	---	---	---	.07	967000	183
TOTAL	1.55	---	12.17	1.28	---	8.96	1.36	---	324.17

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL 1981			MAY 1981			JUNE 1981	
1	.04	148000	16	.27	482000	351	.16	443000	191
2	.04	16600	1.8	.41	201000	223	.32	1140000	985
3	.06	131000	21	.38	106000	109	.38	1320000	1350
4	.05	65900	8.9	.46	204000	253	.28	782000	591
5	.12	13600	4.4	.58	133000	208	.30	2360000	1910
6	.06	34700	5.6	.80	339000	732	.58	1000000	1570
7	.12	65400	21	.35	94200	89	.33	550000	490
8	.12	70200	23	.24	174000	113	.64	98700	171
9	.12	226000	73	.31	175000	146	.49	69400	92
10	.10	205000	55	.67	270000	488	.22	18700	11
11	.13	935000	328	.64	186000	321	.25	17100	12
12	.08	308000	67	.53	208000	298	.40	18900	20
13	.14	1020000	386	.35	1060000	1000	.37	13700	14
14	.13	46200	16	.28	1870000	1410	.31	11000	9.2
15	.12	1180000	382	.22	1240000	737	.35	12300	12
16	.10	1160000	313	.16	454000	196	.38	5800	6.0
17	.10	1320000	356	.10	474000	128	.40	470000	508
18	.09	1300000	316	.21	626000	355	.55	1860000	2760
19	.09	1080000	262	.23	277000	172	.43	968000	1120
20	.10	853000	230	.22	352000	209	.44	924000	1100
21	.07	634000	120	.32	211000	182	.51	320000	441
22	.06	1390000	225	.34	107000	98	.47	98000	124
23	.06	589000	95	.29	164000	128	.38	41300	42
24	.06	574000	93	.36	168000	163	.38	41300	42
25	.07	562000	106	.35	127000	120	.42	127000	144
26	.07	686000	130	.23	148000	92	.36	288000	280
27	.12	485000	157	.11	8400	2.5	.44	525000	624
28	.10	291000	79	.08	2300	.50	.38	219000	225
29	.17	569000	261	.11	23100	6.9	.32	247000	213
30	.18	509000	247	.25	45700	31	.34	699000	642
31	---	---	---	.14	17100	6.5	---	---	---
TOTAL	2.87	---	4398.7	9.99	---	8368.40	11.58	---	15699.2

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY 1981			AUGUST 1981			SEPTEMBER 1981	
1	.38	969000	994	.37	178000	178	.21	38600	22
2	.42	283000	321	.40	116000	125	.28	7800	5.9
3	.31	518000	434	.48	176000	228	.24	5200	3.4
4	.36	544000	529	.68	12200	22	.22	7600	4.5
5	.63	718000	1220	.58	13400	21	.31	15900	13
6	.86	656000	1520	.60	199000	322	.59	23800	38
7	.83	338000	757	.56	198000	299	.56	20200	31
8	.55	419000	622	.36	179000	174	.55	31300	46
9	.40	218000	235	.24	114000	74	.55	17700	26
10	.48	252000	327	.26	153000	107	.48	13100	17
11	.57	722000	1110	.29	132000	103	.48	11400	15
12	.49	714000	945	.16	78000	34	.47	8200	10
13	.52	439000	616	.26	218000	153	.43	5600	6.5
14	.47	312000	396	.33	241000	215	.43	5800	6.7
15	.35	304000	287	.38	191000	196	.36	5300	5.2
16	.36	273000	265	.52	114000	160	.30	7300	5.9
17	.34	206000	189	.62	177000	296	.28	10400	7.9
18	.25	181000	122	.77	232000	482	.30	22900	19
19	.35	169000	160	.78	260000	548	.32	16200	14
20	.44	168000	200	.69	196000	365	.39	10000	11
21	.57	141000	217	.59	102000	162	.24	5300	3.4
22	.58	122000	191	.57	125000	192	.21	7600	4.3
23	.73	181000	357	.67	132000	239	.37	6800	6.8
24	.75	133000	269	.57	149000	229	.38	5000	5.1
25	.66	72600	129	.43	32900	38	.22	2700	1.6
26	.55	71100	106	.57	28500	44	.10	1400	.38
27	.44	85800	102	.57	28500	44	.15	2400	.97
28	.49	290000	384	.56	48400	73	.07	800	.15
29	.55	235000	349	.49	38100	50	.06	1000	.16
30	.40	137000	148	.26	27400	19	.05	1000	.14
31	.40	140000	151	.10	19100	5.2	---	---	---
TOTAL	15.48	---	13652	14.71	---	5197.2	9.60	---	331.00

TABLE 8d.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER 1981	
1	.05	1900	.26
2	.04	1000	.11
3	.04	1400	.15
4	.04	1400	.15
5	.04	700	.08
6	.05	400	.05
7	.04	1100	.12
8	.06	9800	1.6
9	.19	11600	6.0
10	.23	16500	10
11	.22	14200	8.4
12	.22	12200	7.2
13	.31	7700	6.4
14	.26	3600	2.5
15	.19	3800	1.9
16	.17	2600	1.2
17	.16	2600	1.1
18	.17	3100	1.4
19	.17	2800	1.3
20	.14	1700	.64
21	.03	1600	.13
22	.03	2300	.19
23	.02	1600	.09
24	.02	1000	.05
25	.02	1000	.05
26	.02	900	.05
27	.02	900	.05
28	.03	1000	.08
29	.03	1000	.08
30	.02	1000	.05
31	.02	1000	.05
TOTAL	3.05	---	51.43

TABLE 9a.--Particle-size analysis of sediment for 12508775 Drain 61.0 (site 1) above Drain 61.4 near Sunnyside, Wash.

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	TEMPERATURE (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
FEB , 1980							
20...	1730	2.3	.5	1000	6.2	37	56

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
FEB , 1980							
20...	74	85	90	97	99	100	--

TABLE 9b.--Particle-size analysis of sediment for 12508769 Drain 60.7 (site 2) near Sunnyside, Wash.

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	TEMPERATURE (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
FEB , 1980							
19...	1410	4.9	11.2	8940	118	27	53
20...	1610	5.3	11.0	7960	114	30	41
MAY , 1981							
21...	1350	1.0	18.2	1470	4.0	17	24
JUN							
23...	1155	1.8	16.5	294	1.4	27	40

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
FEB , 1980							
19...	60	69	79	93	98	100	--
20...	59	71	81	94	98	100	--
MAY , 1981							
21...	32	42	57	85	93	100	--
JUN							
23...	49	59	76	95	99	100	--

TABLE 9c.--Particle-size analysis of sediment for 12508775 Drain 59.6 (site 3) below Drain 60.2 near Sunnyside, Wash.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
JUN , 1979							
01...	1145	2.1	17.8	638	3.6	6	11
25...	1150	2.6	18.4	330	2.3	16	24
FEB , 1980							
19...	1325	10	1.2	30800	832	13	23
20...	1310	11	4.0	44000	1310	3	10
SEP							
04...	1415	1.9	15.0	135	.69	20	21
17...	1055	2.1	15.0	666	3.8	9	12
JUN , 1981							
23...	1420	1.7	16.7	322	1.5	26	32
JUL							
10...	1110	1.8	20.1	844	4.1	24	36

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
JUN , 1979							
01...	16	25	45	75	97	100	--
25...	38	50	62	82	96	99	100
FEB , 1980							
19...	30	47	69	90	99	100	--
20...	24	46	61	94	99	100	--
SEP							
04...	24	30	35	--	--	--	--
17...	20	47	56	95	98	100	--
JUN , 1981							
23...	46	61	75	95	100	--	--
JUL							
10...	59	76	93	99	100	--	--

TABLE 9d.--Particle-size analysis of sediment for 12508779 Drain 59.4 (site 4) near Sunnyside, Wash.

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	TEMPERATURE (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
JUN , 1979							
01...	1220	.31	22.4	536	.45	31	37
25...	1230	.38	24.5	3410	3.5	12	20
JUL							
18...	1140	.60	24.2	4540	7.4	12	19
AUG							
01...	1130	.94	21.3	2020	5.1	20	30
16...	1745	.60	22.2	2250	3.6	16	22
FEB , 1980							
19...	1335	11	--	18300	544	12	29
20...	1420	11	2.3	33500	995	13	22
MAY							
29...	1430	.61	22.5	996	1.6	7	13
JUL							
02...	1125	1.0	19.0	1760	4.8	14	21
SEP							
17...	1545	.19	19.4	2810	1.4	63	80
APR , 1981							
22...	1410	.08	17.6	17000	3.7	11	14
MAY							
21...	1035	.29	18.0	1770	1.4	1	12
JUN							
23...	1440	.24	23.0	210	.14	37	43
JUL							
10...	1250	.44	21.0	2470	2.9	21	33
28...	1240	.44	25.3	2940	3.5	18	28

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
JUN , 1979							
01...	44	54	67	97	100	--	--
25...	29	42	58	92	99	100	--
JUL							
18...	30	48	66	94	99	100	--
AUG							
01...	37	46	57	86	99	100	--
16...	26	27	32	61	93	99	100
FEB , 1980							
19...	47	60	84	97	99	100	--
20...	37	58	77	--	--	--	--
MAY							
29...	21	34	49	74	91	100	--
JUL							
02...	34	52	76	94	99	100	--
SEP							
17...	93	98	98	--	--	--	--
APR , 1981							
22...	20	32	56	92	98	99	100
MAY							
21...	14	21	38	91	97	100	--
JUN							
23...	52	66	79	98	100	--	--
JUL							
10...	46	66	83	97	100	--	--
28...	43	62	79	98	100	--	--

TABLE 10a.--Data from sediment diel studies, including Imhoff Cone reading for 12508755, Drain 61.0 (site 1) above Drain 61.4, near Sunnyside, Wash.

[E = Estimated; A = Less than 0.005 tons]

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
05...	1015	--	.14	54	.10	.02
MAY						
31...	1035	--	.59	10	--	.02
31...	1235	--	.59	13	--	.02
31...	1435	--	.56	10	--	.02
31...	1635	--	.50	16	--	.02
31...	1835	--	.50	28	--	.04
31...	2035	--	.53	11	--	.02
31...	2235	--	.53	9	--	.01
JUN						
01...	0035	--	.56	12	--	.02
01...	0235	--	.56	8	--	.01
01...	0435	--	.56	11	--	.02
01...	0635	--	.56	8	--	.01
01...	0835	--	.59	8	--	.01
02...	1330	--	.73	50	.02	.10
14...	1448	--	1.1	118	.01	.35
25...	1035	--	.81	11	--	.02
25...	1235	--	.73	17	--	.03
25...	1435	--	.73	8	--	.02
25...	1635	--	.73	14	--	.03
25...	1835	--	.76	10	--	.02
25...	2035	--	.76	10	--	.02
25...	2235	--	.78	9	--	.02
26...	0035	--	.81	9	--	.02
26...	0235	--	.89	9	--	.02
26...	0435	--	.89	9	--	.02
26...	0635	--	.89	13	--	.03
26...	0835	--	.86	8	--	.02
JUL						
18...	0815	--	1.1	18	--	.05
18...	0930	--	1.1	26	.01	.08
18...	1015	--	1.1	20	--	.06
18...	1215	--	1.1	16	--	.05
18...	1415	--	1.1	18	--	.05
18...	1615	--	1.1	17	--	.05
18...	1815	--	.98	15	--	.04
18...	2015	--	1.0	15	--	.04
18...	2215	--	1.1	15	--	.05
19...	0015	--	1.2	9	--	.03
19...	0215	--	1.2	11	--	.04
19...	0415	--	1.2	11	--	.04

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1979						
19...	0615	--	1.2	10	--	.03
31...	0905	--	.73	19	--	.04
31...	1105	--	.76	15	--	.03
31...	1305	--	.73	14	--	.03
31...	1705	--	.56	15	--	.02
31...	1905	--	.48	23	--	.03
31...	2105	--	.62	25	--	.04
31...	2305	--	.70	24	--	.05
AUG						
01...	0105	--	.73	25	--	.05
01...	0305	--	.73	22	--	.04
01...	0505	--	.76	24	--	.05
01...	0705	--	.76	20	--	.04
16...	0915	--	.35	14	--	.01
16...	1115	--	.33	16	--	.01
16...	1315	--	.22	12	--	.00 A
16...	1515	--	.18	10	--	.00 A
16...	1715	--	.14	11	--	.00 A
16...	1915	--	.13	8	--	.00 A
16...	2115	--	.13	8	--	.00 A
16...	2315	--	.12	8	--	.00 A
17...	0115	--	.13	11	--	.00 A
17...	0315	--	.14	33	--	.01
17...	0515	--	.14	8	--	.00 A
17...	0715	--	.15	9	--	.00 A
SEP						
27...	1000	--	.04	2	--	.00 A
27...	1200	--	.05	6	--	.00 A
27...	1400	--	.04	1	--	.00 A
27...	1600	--	.04	1	--	.00 A
27...	1800	--	.04	3	--	.00 A
27...	2000	--	.04	2	--	.00 A
27...	2200	--	.04	2	--	.00 A
27...	2400	--	.04	1	--	.00 A
28...	0200	--	.04	1	--	.00 A
28...	0400	--	.04	2	--	.00 A
28...	0600	--	.04	2	--	.00 A
28...	0800	--	.04	2	--	.00 A
FEB , 1980						
20...	1730	.5	2.3	1000	.20	6.2
APR						
23...	1115	--	.56	10	--	.02
23...	1315	--	.48	11	--	.01

TABLE 10a.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1980						
23...	1515	--	.41	6	--	.00 A
23...	1715	--	.37	5	--	.00 A
23...	1915	--	.35	7	--	.00 A
23...	2115	--	.37	6	--	.00 A
23...	2315	--	.39	5	--	.00 A
24...	0115	--	.39	5	--	.00 A
24...	0315	--	.41	4	--	.00 A
24...	0515	--	.41	5	--	.00 A
24...	0715	--	.44	4	--	.00 A
24...	0915	--	.46	5	--	.00 A
MAY						
07...	1545	--	.29	10	.02	.00 A
18...	1015	--	.16	4	--	.00 A
18...	1415	--	.16	21	--	.00 A
18...	1815	--	.19	15	--	.00 A
18...	2215	--	.22	8	--	.00 A
19...	0215	--	.22	7	--	.00 A
19...	0615	--	.24	8	--	.00 A
28...	1040	--	.27	4	--	.00 A
28...	1240	--	.22	3	--	.00 A
28...	1440	--	.21	4	--	.00 A
28...	1640	--	.21	4	--	.00 A
28...	1840	--	.21	4	--	.00 A
28...	2040	--	.35	13	--	.01
28...	2240	--	.46	9	--	.01
29...	0040	--	.46	7	--	.00 A
29...	0240	--	.48	6	--	.00 A
29...	0440	--	.48	5	--	.00 A
29...	0640	--	.48	6	--	.00 A
29...	0840	--	.48	8	--	.01
JUN						
24...	1440	--	.35	17	--	.02
24...	1640	--	.39	16	--	.02
24...	1840	--	.35	11	--	.01
24...	2040	--	.37	15	--	.01
24...	2240	--	.39	10	--	.01
25...	0040	--	.39	17	--	.02
25...	0240	--	.41	13	--	.01
25...	0410	--	.44	8	--	.00 A
25...	0640	--	.44	5	--	.00 A
25...	0840	--	.44	9	--	.01
JUN , 1980						
25...	1040	--	.48	6	--	.00 A
25...	1240	--	.56	13	--	.02
JUL						
23...	1315	--	.46	4	--	.00 A
23...	1515	--	.41	4	--	.00 A
23...	1715	--	.39	4	--	.00 A
23...	1915	--	.39	4	--	.00 A
23...	2115	--	.39	5	--	.00 A
23...	2315	--	.46	10	--	.01
24...	0115	--	.48	6	--	.00 A
24...	0315	--	.51	4	--	.00 A
24...	0515	--	.51	6	--	.00 A
24...	0715	--	.54	5	--	.00 A
24...	0915	--	.59	7	--	.01
24...	1115	--	.54	6	--	.00 A
AUG						
21...	1100	--	.13	8	--	.00 A
21...	1300	--	.12	4	--	.00 A
21...	1500	--	.10	1	--	.00 A
21...	1700	--	.10	0	--	.00 A
21...	1900	--	.10	0	--	.00 A
21...	2100	--	.11	0	--	.00 A
21...	2300	--	.11	2	--	.00 A
22...	0100	--	.11	0	--	.00 A
22...	0300	--	.11	0	--	.00 A
22...	0500	--	.11	1	--	.00 A
22...	0700	--	.11	0	--	.00 A
22...	0900	--	.12	3	--	.00 A
SEP						
18...	1215	--	.13	2	--	.00 A
18...	1415	--	.13	1	--	.00 A
18...	1615	--	.13	1	--	.00 A
18...	1815	--	.13	1	--	.00 A
18...	2015	--	.13	1	--	.00 A
18...	2215	--	.12	1	--	.00 A
19...	0015	--	.12	1	--	.00 A
19...	0215	--	.12	1	--	.00 A
19...	0415	--	.12	1	--	.00 A
19...	0615	--	.12	1	--	.00 A
19...	0815	--	.12	1	--	.00 A
19...	1015	--	.12	1	--	.00 A
OCT						
09...	1105	--	.41	32	--	.04

TABLE 10a.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT , 1980						
09...	1305	--	.39	16	--	.02
09...	1505	--	.26	8	.01	.00 A
09...	1705	--	.26	7	--	.00 A
09...	1905	--	.27	9	--	.00 A
09...	2105	--	.29	14	--	.01
09...	2305	--	.31	9	--	.00 A
10...	0105	--	.33	8	--	.00 A
10...	0305	--	.35	11	--	.01
10...	0505	--	.37	10	--	.00 A
10...	0705	--	.39	13	--	.01
10...	0905	--	.41	9	--	.00 A
10...	1105	--	.31	13	--	.01
10...	1305	--	.27	4	--	.00 A
10...	1505	--	.27	5	--	.00 A
MAR , 1981						
30...	1220	--	.13	1	<.10	.00 A
APR						
02...	1220	--	.22	2	<.10	.00 A
06...	1340	--	.31	81	.50	.07
09...	1106	--	.39	4	<.10	.00 A
13...	1127	--	.21	4	<.10	.00 A
16...	1000	--	.56	28	<.10	.04
20...	1000	--	.18	10	<.10	.00 A
22...	1135	--	.16	6	<.10	.00 A
23...	1005	--	.22	7	<.10	.00 A
27...	1030	--	.27	6	<.10	.00 A
MAY						
04...	1100	--	.15	22	<.10	.00 A
07...	1246	--	.54	8	<.10	.01
11...	1041	--	.44	16	<.10	.02
11...	1100	--	.37	6	--	.00 A
11...	1200	--	.59	8	--	.01
11...	1300	--	.62	6	--	.01
11...	1400	--	.51	7	--	.00 A
11...	1500	--	.51	6	--	.00 A
11...	1600	--	.51	4	--	.00 A
11...	1700	--	.51	5	--	.00 A
11...	1800	--	.51	9	--	.01
11...	1900	--	.62	5	--	.00 A
11...	2000	--	.48	6	--	.00 A
11...	2100	--	.44	2	--	.00 A
11...	2200	--	.46	3	--	.00 A

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1981						
11...	2300	--	.48	6	--	.00 A
11...	2400	--	.48	3	--	.00 A
12...	0100	--	.51	6	--	.00 A
12...	0200	--	.51	2	--	.00 A
12...	0300	--	.51	7	--	.00 A
12...	0400	--	.51	2	--	.00 A
12...	0500	--	.54	2	--	.00 A
12...	0600	--	.51	5	--	.00 A
12...	0700	--	.54	2	--	.00 A
12...	0800	--	.59	14	--	.02
12...	0900	--	.46	7	--	.00 A
12...	1045	--	.48	10	<.10	.01
14...	1052	--	.48	2	<.10	.00 A
18...	1119	--	.59	5	<.10	.00 A
19...	1113	--	.24	4	<.10	.00 A
22...	1004	--	.39	12	<.10	.01
26...	0957	--	.62	7	<.10	.01
28...	1110	--	.41	3	<.10	.00 A
JUN						
01...	1100	--	.33	3	<.10	.00 A
04...	1147	--	.29	13	<.10	.01
08...	1107	--	.74	10	<.10	.02
11...	1100	--	.74	10	<.10	.02
15...	1100	--	.31	5	<.10	.00 A
18...	1125	--	.27	4	<.10	.00 A
22...	1100	--	.27	4	--	.00 A
22...	1104	--	.27	11	<.10	.00 A
22...	1200	--	.27	5	--	.00 A
22...	1300	--	.27	3	--	.00 A
22...	1400	--	.27	6	--	.00 A
22...	1500	--	.26	8	--	.00 A
22...	1600	--	.26	4	--	.00 A
22...	1700	--	.35	6	--	.00 A
22...	1800	--	.44	7	--	.00 A
22...	1900	--	.37	6	--	.00 A
22...	2000	--	.35	5	--	.00 A
22...	2100	--	.35	6	--	.00 A
22...	2200	--	.33	2	--	.00 A
22...	2300	--	.37	3	--	.00 A
22...	2400	--	.39	4	--	.00 A

TABLE 10a.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1981						
23...	0100	--	.41	6	--	.00 A
23...	0200	--	.46	3	--	.00 A
23...	0300	--	.46	6	--	.00 A
23...	0400	--	.44	6	--	.00 A
23...	0500	--	.44	6	--	.00 A
23...	0600	--	.41	4	--	.00 A
23...	0700	--	.41	3	--	.00 A
23...	0800	--	.41	1	--	.00 A
23...	0900	--	.39	6	--	.00 A
23...	1052	--	.37	4	<.10	.00 A
25...	1215	--	.51	18	<.10	.02
29...	1055	--	.74	18	<.10	.04
JUL						
02...	1055	--	.35	5	<.10	.00 A
06...	1140	--	.41	24	<.10	.03
06...	1240	--	.41	21	--	.02
06...	1340	--	.39	14	--	.01
06...	1440	--	.37	14	--	.01
06...	1540	--	.37	16	--	.02
06...	1640	--	.35	15	--	.01
06...	1740	--	.35	12	--	.01
06...	1840	--	.35	15	--	.01
06...	1940	--	.33	9	--	.00 A
06...	2040	--	.29	11	--	.00 A
06...	2140	--	.27	9	--	.00 A
06...	2240	--	.29	21	--	.02
06...	2340	--	.31	17	--	.01
07...	0040	--	.31	52	--	.04
07...	0140	--	.33	89	--	.08
07...	0240	--	.33	117	--	.10
07...	0340	--	.35	142	--	.13
07...	0440	--	.37	179	--	.18
07...	0540	--	.39	198	--	.21
07...	0640	--	.41	180	--	.20
07...	0740	--	.41	165	--	.18
07...	0840	--	.41	152	--	.17
07...	0940	--	.39	138	--	.15
07...	1040	--	.41	130	--	.14
09...	1210	--	.29	34	<.10	.03
13...	1134	--	.18	42	<.10	.02
JUL , 1981						
16...	1140	--	.24	32	<.10	.02
20...	1210	--	.54	47	<.10	.07
23...	1100	--	.48	18	<.10	.02
27...	1115	--	.56	12	<.10	.02
30...	1155	--	.41	18	<.10	.02
AUG						
03...	1220	--	.37	6	<.10	.00 A
06...	1345	--	.39	15	--	.02
06...	1347	--	.39	12	<.10	.01
06...	1445	--	.37	6	--	.00 A
06...	1545	--	.35	9	--	.00 A
06...	1645	--	.33	19	--	.02
06...	1745	--	.31	0	--	.00 A
06...	1845	--	.29	15	--	.01
06...	1945	--	.29	1	--	.00 A
06...	2045	--	.29	11	--	.00 A
06...	2145	--	.29	11	--	.00 A
06...	2245	--	.31	5	--	.00 A
06...	2345	--	.31	5	--	.00 A
07...	0045	--	.33	6	--	.00 A
07...	0145	--	.35	9	--	.00 A
07...	0245	--	.35	10	--	.00 A
07...	0345	--	.35	15	--	.01
07...	0445	--	.37	6	--	.00 A
07...	0545	--	.37	3	--	.00 A
07...	0645	--	.37	3	--	.00 A
07...	0745	--	.39	6	--	.00 A
07...	0845	--	.41	7	--	.00 A
07...	0945	--	.37	13	--	.01
07...	1045	--	.35	7	--	.00 A
07...	1145	--	.35	5	--	.00 A
07...	1245	--	.35	9	<.10	.00 A
10...	1355	--	.31	16	<.10	.01
13...	1305	--	.37	4	<.10	.00 A
17...	1335	--	.44	6	<.10	.00 A
20...	1310	--	.41	4	<.10	.00 A
24...	1255	--	.56	5	<.10	.00 A
27...	1250	--	.39	2	<.10	.00 A
31...	1245	--	.35	3	<.10	.00 A
SEP						
03...	1205	--	.77	9	<.10	.02

TABLE 10a.--Continued

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1981						
03...	1305	--	.77	12	--	.02
03...	1405	--	.77	3	--	.00 A
03...	1505	--	.77	2	--	.00 A
03...	1605	--	.74	10	--	.02
03...	1705	--	.71	15	--	.03
03...	1805	--	.71	23	--	.04
03...	1905	--	.68	29	--	.05
03...	2005	--	.65	7	--	.01
03...	2105	--	.56	6	--	.00 A
03...	2205	--	.54	1	--	.00 A
03...	2305	--	.56	6	--	.00 A
04...	0005	--	.56	3	--	.00 A
04...	0105	--	.59	7	--	.01
04...	0205	--	.59	5	--	.00 A
04...	0305	--	.62	52	--	.09
04...	0405	--	.62	6	--	.01
04...	0505	--	.62	5	--	.00 A
04...	0605	--	.62	6	--	.01
04...	0705	--	.62	6	--	.01
04...	0805	--	.65	6	--	.01
04...	0905	--	.65	2	--	.00 A
04...	1005	--	.65	6	--	.01
04...	1105	--	.65	11	--	.02
04...	1120	--	.65	2	<.10	.00 A
08...	1125	--	.59	3	<.10	.00 A
10...	1156	--	.51	2	<.10	.00 A
14...	1200	--	.74	2	<.10	.00 A
17...	1200	--	.77	2	<.10	.00 A
21...	1220	--	.51	2	<.10	.00 A
24...	1035	--	.65	1	<.10	.00 A
28...	1120	--	.77	1	<.10	.00 A

TABLE 10b.--Data from sediment diel studies, including Imhoff Cone reading, for 12508769, Drain 60.7 (site 2) near Sunnyside, Wash.

[E = Estimated; A = Less than 0.005 tons]

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	RESIDUE SETTLEABLE, 15 MIN. (ML/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
APR , 1979						
02...	1015	--	E.80	85	.05	E.18
05...	1150	--	E.60	142	.20	E.23
18...	1105	--	.76	168	.23	.34
MAY						
08...	1515	--	.77	650	.83	1.4
21...	1528	--	1.3	3060	2.1	11
31...	1100	--	1.3	567	--	1.9
31...	1300	--	1.2	463	--	1.5
31...	1500	--	1.2	671	--	2.2
31...	1700	--	1.2	792	--	2.6
31...	1900	--	1.2	667	--	2.2
31...	2100	--	1.3	637	--	2.2
31...	2300	--	1.3	690	--	2.4
JUN						
01...	0100	--	1.2	644	--	2.1
01...	0300	--	1.3	635	--	2.1
01...	0500	--	1.3	678	--	2.4
01...	0700	--	1.3	710	--	2.4
01...	0900	--	1.3	635	--	2.2
02...	1230	--	1.3	696	.46	2.4
14...	1325	--	1.7	424	.22	1.9
25...	1103	--	1.5	263	--	1.1
25...	1303	--	1.5	225	--	.91
25...	1440	--	1.5	202	.02	.82
25...	1503	--	1.5	224	--	.91
25...	1703	--	1.4	244	--	.94
25...	1903	--	1.5	269	--	1.1
25...	2103	--	1.6	289	--	1.2
25...	2303	--	1.6	291	--	1.3
26...	0103	--	1.6	312	--	1.4
26...	0303	--	1.7	282	--	1.3
26...	0503	--	1.7	259	--	1.2
26...	0703	--	1.8	300	--	1.5
26...	0903	--	1.8	236	--	1.1
JUL						
05...	1202	--	1.3	94	.01	.33
18...	0845	--	1.5	108	--	.44
18...	1045	--	1.5	109	.27	.44
18...	1245	--	1.6	172	--	.74
18...	1445	--	1.6	218	--	.94
18...	1645	--	1.5	198	--	.80
18...	1845	--	1.5	199	--	.82

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	RESIDUE SETTLEABLE, 15 MIN. (ML/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
JUL , 1979						
18...	2045	--	1.6	203	--	.88
18...	2245	--	1.6	230	--	1.0
19...	0045	--	1.8	240	--	1.2
19...	0245	--	1.8	196	--	.95
19...	0445	--	1.8	184	--	.91
19...	0645	--	1.9	174	--	.89
31...	0840	--	1.8	84	--	.41
31...	1040	--	1.7	78	--	.36
31...	1240	--	1.7	74	--	.34
31...	1440	--	1.5	90	--	.36
31...	1640	--	1.3	99	--	.36
31...	1840	--	1.4	90	--	.34
31...	2040	--	1.4	88	--	.34
31...	2240	--	1.4	107	--	.41
AUG						
01...	0040	--	1.5	114	--	.46
01...	0240	--	1.5	107	--	.43
01...	0440	--	1.5	98	--	.40
01...	0640	--	1.5	89	--	.36
01...	0930	--	1.5	80	.01	.32
16...	1140	--	1.6	66	--	.29
16...	1340	--	1.5	57	--	.23
16...	1525	--	1.5	73	.01	.30
16...	1540	--	1.4	61	--	.24
16...	1740	--	1.4	63	--	.24
16...	1940	--	1.4	65	--	.25
16...	2140	--	1.4	76	--	.29
16...	2340	--	1.5	117	--	.48
17...	0140	--	1.6	144	--	.62
17...	0340	--	1.6	146	--	.64
17...	0540	--	1.7	152	--	.70
17...	0740	--	1.7	139	--	.64
17...	0940	--	1.6	112	--	.49
SEP						
27...	1025	--	.88	11	--	.03
27...	1225	--	.85	12	--	.03
27...	1425	--	.82	13	--	.03
27...	1625	--	.82	6	--	.01
27...	1825	--	.82	14	--	.03
27...	2025	--	.82	22	--	.05
27...	2225	--	.82	10	--	.02

TABLE 10b.--Continued

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1979						
28...	0025	--	.82	--	--	--
28...	0225	--	.82	--	--	--
28...	0425	--	.82	--	--	--
28...	0625	--	.82	--	--	--
28...	0825	--	.82	--	--	--
FEB , 1980						
19...	1410	11.2	4.9	8940	3.1	118
20...	1610	11.0	5.3	7960	2.5	114
APR						
23...	1145	--	.71	68	--	.13
23...	1345	--	.71	49	--	.09
23...	1545	--	.71	53	--	.10
23...	1745	--	.71	76	--	.15
23...	1945	--	.71	64	--	.12
23...	2345	--	.71	79	--	.15
24...	0145	--	.71	67	--	.13
24...	0345	--	.71	71	--	.14
24...	0545	--	.71	63	--	.12
24...	0745	--	.71	54	--	.10
24...	0945	--	.71	53	--	.10
MAY						
18...	0335	--	1.3	146	--	.51
18...	0735	--	1.3	215	--	.75
18...	1135	--	1.5	273	--	1.1
18...	1535	--	1.5	261	--	1.1
18...	1935	--	1.5	254	--	1.0
18...	2335	--	1.4	243	--	.92
19...	0335	--	1.4	190	--	.72
28...	1310	--	1.1	143	--	.42
28...	1510	--	1.0	128	--	.35
28...	1710	--	1.0	145	--	.39
28...	1910	--	1.0	132	--	.36
28...	2110	--	1.0	153	--	.41
28...	2310	--	1.0	160	--	.43
29...	0110	--	1.1	158	--	.47
29...	0310	--	1.1	170	--	.50
29...	0510	--	1.1	163	--	.48
29...	0710	--	1.1	178	--	.53
29...	0910	--	1.2	181	--	.59
29...	1110	--	1.1	167	--	.50
JUN						
23...	1625	--	1.3	176	--	.62
25...	1510	--	1.8	23	--	.11

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN , 1980						
25...	1710	--	1.8	27	--	.13
25...	1910	--	1.8	34	--	.17
25...	2110	--	1.8	34	--	.17
25...	2310	--	1.6	52	--	.22
26...	0110	--	1.7	34	--	.16
26...	0310	--	1.7	31	--	.14
26...	0510	--	1.7	33	--	.15
26...	0710	--	1.7	27	--	.12
26...	0910	--	1.8	30	--	.15
26...	1110	--	1.8	33	--	.16
26...	1310	--	1.8	48	--	.23
26...	1510	--	1.8	66	--	.32
JUL						
02...	1425	--	2.2	376	.25	2.2
23...	1425	--	1.4	159	--	.60
23...	1825	--	1.3	192	--	.67
23...	2025	--	1.4	178	--	.67
23...	2225	--	1.4	186	--	.70
24...	0025	--	1.5	188	--	.76
24...	0225	--	1.5	204	--	.83
24...	0425	--	1.5	200	--	.81
24...	0625	--	1.5	201	--	.81
24...	0825	--	1.5	194	--	.79
24...	1025	--	1.3	176	--	.62
24...	1225	--	.87	158	--	.37
AUG						
21...	1000	--	.87	69	--	.16
21...	1200	--	.77	76	--	.16
21...	1350	--	.80	83	.01	.18
21...	1400	--	.80	79	--	.17
21...	1600	--	.80	68	--	.15
21...	1800	--	.80	74	--	.16
21...	2000	--	.83	73	--	.16
21...	2200	--	.83	72	--	.16
21...	2400	--	.87	71	--	.17
22...	0200	--	.87	77	--	.18
22...	0400	--	.87	73	--	.17
22...	0600	--	.87	68	--	.16
22...	0800	--	.87	70	--	.16
SEP						
03...	1435	--	.80	58	.05	.13
17...	1145	--	1.1	208	.03	.62

TABLE 10b.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SEP , 1980						
17...	1345	--	.96	77	--	.20
17...	1545	--	.96	76	--	.20
17...	1745	--	1.0	71	--	.19
17...	1945	--	1.1	69	--	.20
17...	2145	--	1.1	110	--	.33
17...	2345	--	1.1	101	--	.30
18...	0145	--	1.1	106	--	.31
18...	0345	--	1.1	181	--	.54
18...	0545	--	1.2	114	--	.37
18...	0745	--	1.2	117	--	.38
18...	0945	--	1.2	105	--	.34
OCT						
09...	1045	--	1.2	40	--	.13
09...	1245	--	1.1	24	--	.07
09...	1445	--	1.0	22	--	.06
09...	1645	--	1.0	23	--	.06
09...	1845	--	1.0	23	--	.06
09...	2045	--	1.0	22	--	.06
09...	2245	--	1.0	27	--	.07
10...	0045	--	1.0	53	--	.14
10...	0245	--	1.1	32	--	.10
10...	0445	--	1.1	27	--	.08
10...	0645	--	1.1	32	--	.10
10...	0845	--	1.1	33	--	.10
10...	1045	--	1.1	28	--	.08
10...	1245	--	.96	26	--	.07
10...	1415	--	.96	24	.01	.06
MAR , 1981						
30...	1200	--	.71	84	<.10	.16
APR						
02...	1203	--	.93	192	<.10	.48
06...	1415	--	1.1	108	<.10	.32
09...	1149	--	1.2	272	<.10	.88
13...	1205	--	1.6	308	<.10	1.3
16...	1015	--	1.7	232	<.10	1.1
20...	1032	--	1.0	60	<.10	.16
22...	1245	--	1.2	168	.03	.54
23...	1033	--	1.2	64	<.10	.21
MAY						
07...	1311	--	.90	660	.10	1.6
11...	1100	--	1.3	638	--	2.2
11...	1108	--	1.3	724	.20	2.5
11...	1200	--	1.4	1330	--	5.0

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1981						
11...	1300	--	1.1	990	--	2.9
11...	1400	--	1.1	701	--	2.1
11...	1500	--	1.1	597	--	1.8
11...	1600	--	1.1	554	--	1.6
11...	1700	--	1.0	530	--	1.4
11...	1800	--	1.0	514	--	1.4
11...	1900	--	1.0	441	--	1.2
11...	2000	--	1.1	427	--	1.3
11...	2100	--	1.1	502	--	1.5
11...	2200	--	1.1	516	--	1.5
11...	2300	--	1.2	516	--	1.7
11...	2400	--	1.2	532	--	1.7
12...	0100	--	1.2	563	--	1.8
12...	0200	--	1.2	549	--	1.8
12...	0300	--	1.2	561	--	1.8
12...	0400	--	1.2	469	--	1.5
12...	0500	--	1.2	534	--	1.7
12...	0600	--	1.2	472	--	1.5
12...	0700	--	1.2	525	--	1.7
12...	0800	--	1.3	655	--	2.3
12...	0900	--	1.4	628	--	2.4
12...	1000	--	1.3	745	--	2.6
12...	1110	--	1.2	642	.30	2.1
14...	1124	--	1.2	1410	1.0	4.6
18...	1200	--	1.5	2830	2.5	11
21...	1350	18.2	1.0	1470	1.1	4.0
22...	1032	--	1.2	742	.50	2.4
26...	1023	--	.77	67	<.10	.14
28...	1143	--	.74	40	<.10	.08
JUN						
01...	1133	--	.80	106	<.10	.23
04...	1103	--	.90	278	<.10	.68
08...	1130	--	1.8	1400	.30	6.8
11...	1122	--	1.0	185	<.10	.50
15...	1120	--	1.1	118	<.10	.35
18...	1155	--	.80	97	<.10	.21
22...	1137	--	E2.0	306	<.10	E1.7
22...	1140	--	E2.2	286	--	E1.7
22...	1240	--	E2.0	312	--	E1.7
22...	1340	--	E1.9	326	--	E1.7

TABLE 10b.--Continued

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN , 1981						
22...	1440	--	E1.9	295	--	E1.5
22...	1540	--	E1.8	312	--	E1.5
22...	1640	--	E1.8	291	--	E1.4
22...	1740	--	E1.8	279	--	E1.4
22...	1840	--	E1.8	260	--	E1.3
22...	1940	--	E1.8	244	--	E1.2
22...	2040	--	E1.8	235	--	E1.1
22...	2140	--	E1.8	228	--	E1.1
22...	2240	--	E1.9	242	--	E1.2
22...	2340	--	E1.9	249	--	E1.3
23...	0040	--	E2.0	244	--	E1.3
23...	0140	--	E2.1	241	--	E1.4
23...	0240	--	E2.2	240	--	E1.4
23...	0340	--	E2.2	228	--	E1.4
23...	0440	--	E2.2	221	--	E1.3
23...	0540	--	E2.2	224	--	E1.3
23...	0640	--	E2.2	218	--	E1.3
23...	0740	--	E2.2	207	--	E1.2
23...	0840	--	E2.1	198	--	E1.1
23...	0940	--	E2.0	265	--	E1.4
23...	1040	--	E1.9	209	--	E1.1
23...	1155	16.5	1.8	294	--	1.4
25...	1245	--	1.8	226	<.10	1.1
29...	1130	--	1.8	62	<.10	.30
JUL						
02...	1130	--	1.5	160	<.10	.65
06...	1208	--	.93	71	<.10	.18
06...	1210	--	.93	42	--	.11
06...	1310	--	.80	34	--	.07
06...	1410	--	.80	27	--	.06
06...	1510	--	.87	27	--	.06
06...	1610	--	.90	27	--	.07
06...	1710	--	.90	20	--	.05
06...	1810	--	.93	22	--	.06
06...	1910	--	1.0	30	--	.08
06...	2010	--	.96	25	--	.06
06...	2110	--	1.0	18	--	.05
06...	2210	--	1.0	21	--	.06
06...	2310	--	1.1	34	--	.10
07...	0010	--	1.1	79	--	.23

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUL , 1981						
07...	0110	--	1.1	132	--	.39
07...	0210	--	1.2	50	--	.16
07...	0310	--	1.2	106	--	.34
07...	0410	--	1.2	147	--	.48
07...	0510	--	1.3	154	--	.54
07...	0610	--	1.3	152	--	.53
07...	0710	--	1.3	151	--	.53
07...	0810	--	1.4	142	--	.54
07...	0910	--	1.4	139	--	.53
07...	1010	--	1.4	142	--	.54
07...	1110	--	1.3	132	--	.46
07...	1235	--	1.3	133	<.10	.47
16...	1220	--	1.8	170	<.10	.83
20...	1254	--	1.8	990	<.10	4.8
23...	1150	--	2.2	422	<.10	2.5
29...	1050	--	2.3	120	<.10	.75
30...	1125	--	2.5	119	<.10	.80
AUG						
03...	1140	--	2.3	132	<.10	.82
06...	1320	--	2.0	131	--	.71
06...	1420	--	2.0	151	--	.82
06...	1520	--	2.0	120	--	.65
06...	1620	--	1.9	162	--	.83
06...	1720	--	1.8	133	--	.65
06...	1820	--	1.8	164	--	.80
06...	1920	--	1.9	149	--	.76
06...	2020	--	2.0	151	--	.82
06...	2120	--	2.0	146	--	.79
06...	2220	--	2.0	143	--	.77
06...	2320	--	2.1	135	--	.77
07...	0020	--	2.2	137	--	.81
07...	0120	--	2.2	105	--	.62
07...	0220	--	2.2	128	--	.76
07...	0320	--	2.2	107	--	.64
07...	0420	--	2.2	118	--	.70
07...	0520	--	2.2	91	--	.54
07...	0620	--	2.2	98	--	.58
07...	0720	--	2.2	95	--	.56
07...	0820	--	2.2	72	--	.43
07...	0920	--	2.2	92	--	.55

TABLE 10b.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG , 1981						
07...	1020	--	2.1	74	--	.42
07...	1120	--	2.1	93	--	.53
07...	1207	--	2.0	90	<.10	.49
07...	1220	--	2.1	84	--	.48
10...	1325	--	1.5	148	<.10	.60
13...	1210	--	1.5	124	<.10	.50
17...	1255	--	2.1	86	<.10	.49
20...	1245	--	1.5	74	<.10	.30
24...	1230	--	1.4	64	<.10	.24
27...	1110	--	1.6	68	<.10	.29
31...	1045	--	.96	84	<.10	.22
SEP						
03...	1145	--	1.1	90	<.10	.27
03...	1245	--	1.0	87	--	.23
03...	1345	--	1.1	74	--	.22
03...	1445	--	.96	70	--	.18
03...	1545	--	.90	69	--	.17
03...	1645	--	.68	83	--	.15
03...	1745	--	.68	64	--	.12
03...	1845	--	.71	63	--	.12
03...	1945	--	.74	57	--	.11
03...	2045	--	.77	63	--	.13
03...	2145	--	.83	94	--	.21
03...	2245	--	.83	68	--	.15
03...	2345	--	.90	58	--	.14
04...	0045	--	.90	49	--	.12
04...	0145	--	.90	55	--	.13
04...	0245	--	.96	61	--	.16
04...	0345	--	.96	58	--	.15
04...	0445	--	1.0	68	--	.18
04...	0545	--	1.0	58	--	.16
04...	0645	--	1.0	62	--	.17
04...	0745	--	1.0	81	--	.22
04...	0845	--	1.0	59	--	.16
04...	0945	--	1.0	54	--	.15
04...	1045	--	.96	57	--	.15
04...	1100	--	.96	55	<.10	.14
08...	1105	--	1.1	56	<.10	.17
10...	1210	--	1.3	78	<.10	.27
14...	1135	--	1.1	44	<.10	.13

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SEP , 1981						
17...	1143	--	.87	32	<.10	.08
21...	1200	--	1.7	153	<.10	.70
24...	1020	--	1.6	57	<.10	.25
28...	1046	--	1.2	16	<.10	.05

TABLE 10c.--Data from sediment diel studies, including Imhoff Cone reading, for 12508775, Drain 59.6 (site 3) below Drain 60.2, near Sunnyside, Wash.

[E = Estimated; A = Less than 0.005 tons]

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
02...	1215	--	.61	86	.08	.14
05...	1245	--	.75	222	.62	.45
09...	1320	--	1.2	140	.13	.45
18...	1205	--	.70	100	.19	.19
24...	1145	--	1.2	150	.50	.49
MAY						
08...	1535	--	1.4	1180	1.5	4.5
21...	1355	--	2.0	1210	1.3	6.5
24...	1450	--	1.6	1170	5.4	5.1
31...	1120	--	2.3	1120	.97	7.0
JUN						
01...	1100	--	2.1	602	.54	3.4
01...	1130	--	2.0	589	--	3.2
01...	1145	17.8	2.1	638	--	3.6
01...	1330	--	1.9	524	--	2.7
01...	1530	--	1.9	505	--	2.5
01...	1730	--	1.9	440	--	2.2
01...	1930	--	1.9	475	--	2.4
01...	2130	--	2.0	493	--	2.7
01...	2330	--	2.0	505	--	2.8
02...	0130	--	2.1	494	--	2.9
02...	0330	--	2.2	508	--	3.0
02...	0530	--	2.3	487	--	3.0
02...	0730	--	2.4	449	--	2.9
02...	0930	--	2.3	355	--	2.2
02...	1120	--	2.1	360	.38	2.0
14...	1055	--	2.3	164	.11	1.0
25...	1145	--	2.6	640	--	4.5
25...	1147	--	2.6	347	.22	2.4
25...	1150	18.4	2.6	330	--	2.3
25...	1345	--	2.7	422	--	3.1
25...	1545	--	2.4	486	--	3.2
25...	1745	--	2.5	1070	--	7.2
25...	1945	--	2.5	834	--	5.6
25...	2145	--	2.5	601	--	4.1
25...	2345	--	2.6	500	--	3.5
26...	0145	--	2.6	548	--	3.9
26...	0345	--	2.7	478	--	3.5
26...	0545	--	2.7	444	--	3.3
26...	0745	--	2.8	386	--	2.9
26...	0945	--	2.7	361	--	2.7

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1979						
12...	1020	--	3.0	160	.05	1.3
18...	0900	--	2.2	15	--	.09
18...	1100	--	2.0	13	--	.07
18...	1130	--	1.9	19	.01	.10
18...	1300	--	1.8	11	--	.05
18...	1500	--	1.9	295	--	1.5
18...	1700	--	1.8	78	--	.38
18...	1900	--	1.7	100	--	.47
18...	2100	--	1.7	86	--	.40
18...	2300	--	1.8	85	--	.41
19...	0100	--	1.8	84	--	.41
19...	0300	--	1.9	77	--	.40
19...	0500	--	1.9	77	--	.40
19...	0700	--	2.1	299	--	1.7
31...	0925	--	2.5	39	--	.26
31...	1125	--	2.3	40	--	.24
31...	1325	--	2.0	37	--	.20
31...	1525	--	1.9	31	--	.16
31...	1725	--	1.9	28	--	.15
31...	1925	--	2.0	24	--	.13
31...	2125	--	2.1	26	--	.15
31...	2325	--	2.1	34	--	.20
AUG						
01...	0125	--	2.2	31	--	.18
01...	0325	--	2.3	26	--	.16
01...	0525	--	2.3	27	--	.16
01...	0725	--	2.3	22	--	.13
16...	1225	--	1.7	9	--	.04
16...	1424	--	1.6	10	--	.04
16...	1625	--	1.6	8	--	.03
16...	1825	--	1.6	9	--	.04
16...	2025	--	1.7	8	--	.04
16...	2225	--	1.7	9	--	.04
17...	0025	--	1.7	18	--	.08
17...	0225	--	1.8	13	--	.06
17...	0425	--	1.8	12	--	.06
17...	0625	--	1.8	17	--	.08
17...	0825	--	1.8	10	--	.05
17...	1025	--	1.8	16	--	.08
SEP						
27...	1125	--	1.2	25	--	.08

TABLE 10c.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SEP , 1979						
27...	1325	--	1.1	25	--	.08
27...	1525	--	1.1	34	--	.10
27...	1725	--	1.1	32	--	.10
27...	1925	--	1.1	39	--	.12
27...	2125	--	1.1	69	--	.21
27...	2325	--	1.1	40	--	.12
28...	0125	--	1.1	55	--	.17
28...	0325	--	1.1	55	--	.17
28...	0525	--	1.1	73	--	.22
28...	0725	--	1.1	40	--	.12
28...	0925	--	1.1	30	--	.09
FEB , 1980						
19...	1325	1.2	10	30800	12.2	832
20...	1310	4.0	11	44000	13.6	1310
21...	1410	--	1.4	2160	.89	8.2
APR						
23...	1245	--	1.5	3200	2.4	13
23...	1445	--	1.5	2610	--	11
23...	1645	--	1.5	1190	--	4.8
23...	1845	--	1.4	703	--	2.7
23...	2045	--	1.3	640	--	2.2
23...	2245	--	1.3	600	--	2.1
24...	0045	--	1.3	700	--	2.5
24...	0245	--	1.3	606	--	2.1
24...	0445	--	1.3	658	--	2.3
24...	0645	--	1.6	736	--	3.2
24...	0845	--	1.6	504	--	2.2
24...	1045	--	1.6	388	--	1.7
24...	1245	--	1.5	302	--	1.2
MAY						
18...	0915	--	2.0	389	--	2.1
18...	1315	--	1.8	325	--	1.6
18...	1715	--	1.9	370	--	1.9
18...	2115	--	2.0	405	--	2.2
19...	0115	--	2.1	442	--	2.5
19...	0515	--	2.2	428	--	2.5
19...	0915	--	2.2	376	--	2.2
28...	1650	--	1.7	130	--	.60
28...	1850	--	1.7	136	--	.62
28...	2050	--	1.7	126	--	.58
28...	2250	--	1.8	136	--	.66
29...	0050	--	1.8	132	--	.64

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1980						
29...	0250	--	1.8	140	--	.68
29...	0450	--	1.8	119	--	.58
29...	0850	--	1.8	114	--	.55
29...	1250	--	1.7	126	--	.58
29...	1450	--	1.7	125	--	.57
JUN						
24...	1610	--	2.0	54	--	.29
24...	1810	--	2.0	58	--	.31
24...	2210	--	2.2	258	--	1.5
25...	0010	--	2.2	91	--	.54
25...	0210	--	2.2	99	--	.59
25...	0410	--	2.2	66	--	.39
25...	0610	--	2.2	49	--	.29
25...	0810	--	2.2	89	--	.53
25...	1010	--	2.2	46	--	.27
25...	1210	--	2.6	252	--	1.8
25...	1410	--	2.4	130	--	.84
JUL						
02...	1100	--	2.4	130	.09	.84
23...	1630	--	2.6	76	--	.53
23...	1830	--	2.6	77	--	.54
23...	2030	--	2.7	79	--	.58
23...	2230	--	2.8	82	--	.62
24...	0030	--	2.8	84	--	.64
24...	0230	--	2.8	104	--	.79
24...	0430	--	3.0	96	--	.78
24...	0630	--	3.0	89	--	.72
24...	0830	--	3.1	79	--	.66
24...	1030	--	2.9	70	--	.55
24...	1230	--	2.6	64	--	.45
24...	1430	--	2.5	60	--	.41
AUG						
21...	1020	--	2.0	47	--	.25
21...	1220	--	2.0	58	--	.31
21...	1420	--	2.2	104	--	.62
21...	1530	--	2.2	110	.01	.65
21...	1620	--	2.2	100	--	.59
21...	1820	--	2.2	101	--	.60
21...	2020	--	2.1	67	--	.38
21...	2220	--	2.2	74	--	.44
22...	0020	--	2.2	67	--	.40
22...	0220	--	2.2	53	--	.31

TABLE 10c.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG , 1980						
22...	0420	--	2.2	65	--	.39
22...	0620	--	2.3	69	--	.43
22...	0820	--	2.3	60	--	.37
SEP						
04...	1415	15.0	1.9	135	.03	.69
17...	1055	15.0	2.1	666	--	3.8
17...	1105	--	2.1	653	.61	3.7
17...	1305	--	1.8	639	--	3.1
17...	1505	--	1.8	527	--	2.6
17...	1705	--	1.8	520	--	2.5
17...	1905	--	1.8	502	--	2.4
17...	2105	--	1.8	473	--	2.3
17...	2305	--	1.8	435	--	2.1
18...	0105	--	1.9	424	--	2.2
18...	0305	--	2.0	797	--	4.3
18...	0505	--	2.1	1230	--	7.0
18...	0705	--	2.1	1120	--	6.4
18...	0905	--	2.1	3270	--	19
OCT						
09...	1000	--	2.7	642	--	4.7
09...	1200	--	2.7	678	--	4.9
09...	1400	--	2.7	618	--	4.5
09...	1430	--	2.7	640	1.5	4.7
09...	1600	--	1.6	594	--	2.6
09...	1800	--	2.6	579	--	4.1
09...	2000	--	2.6	536	--	3.8
09...	2200	--	2.6	602	--	4.2
09...	2400	--	2.7	609	--	4.4
10...	0200	--	2.7	654	--	4.8
10...	0400	--	2.8	728	--	5.5
10...	0600	--	2.9	732	--	5.7
10...	0800	--	3.0	830	--	6.7
10...	1000	--	3.0	785	--	6.4
MAR , 1981						
30...	1045	--	.96	194	.10	.50
APR						
02...	1028	--	1.1	848	.30	2.5
06...	1428	--	1.1	790	.30	2.3
09...	1120	--	1.2	1370	1.3	4.4
13...	1145	--	1.4	2140	.60	8.1
16...	1000	--	1.3	1790	1.5	6.3
20...	1015	--	1.1	382	.20	1.1
22...	1540	--	1.2	358	.20	1.2
APR , 1981						
23...	1145	--	1.2	358	.10	1.2
27...	1030	--	1.3	676	.20	2.4
MAY						
04...	1115	--	1.2	1260	.60	4.1
07...	1135	--	1.7	2020	1.3	9.3
11...	1200	--	2.2	3120	3.0	19
11...	1300	--	2.1	1730	--	9.8
11...	1400	--	2.0	1430	--	7.7
11...	1500	--	2.0	1400	--	7.6
11...	1600	--	2.2	2020	--	12
11...	1700	--	2.2	1770	--	11
11...	1800	--	2.2	1770	--	11
11...	1900	--	2.2	1790	--	11
11...	2000	--	2.2	1550	--	9.2
11...	2100	--	2.2	1480	--	8.8
11...	2200	--	2.2	1540	--	9.1
11...	2300	--	2.2	1600	--	9.5
11...	2400	--	2.2	1550	--	9.2
12...	0100	--	2.2	1530	--	9.1
12...	0200	--	2.2	1520	--	9.0
12...	0300	--	2.2	1590	--	9.4
12...	0400	--	2.3	1540	--	9.6
12...	0500	--	2.3	1560	--	9.7
12...	0600	--	2.4	1550	--	10
12...	0700	--	2.4	1490	--	9.7
12...	0800	--	2.4	1510	--	9.8
12...	0900	--	2.4	1420	--	9.2
12...	1000	--	2.3	3280	--	20
12...	1100	--	2.0	1790	--	9.7
12...	1150	--	1.8	1570	.90	7.6
14...	1130	--	2.2	1090	.60	6.5
18...	1130	--	2.0	854	.20	4.6
19...	1130	--	2.0	519	.20	2.8
21...	1015	--	1.9	392	.20	2.0
21...	1130	--	1.9	362	.30	1.9
26...	1000	--	1.6	362	.10	1.6
JUN						
01...	1105	--	1.5	317	.20	1.3
04...	1045	--	1.5	790	.40	3.2
08...	1120	--	2.6	599	.30	4.2
11...	1210	--	1.6	106	<.10	.46

TABLE 10c.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1981						
15...	1140	--	2.0	564	<.10	3.0
22...	1245	--	2.2	705	.30	4.2
22...	1345	--	2.0	536	--	2.9
22...	1445	--	1.8	380	--	1.8
22...	1545	--	1.7	314	--	1.4
22...	1645	--	1.7	287	--	1.3
22...	1745	--	1.7	256	--	1.2
22...	1845	--	1.7	255	--	1.2
22...	1945	--	1.7	251	--	1.2
22...	2045	--	1.7	277	--	1.3
22...	2145	--	1.8	337	--	1.6
22...	2245	--	1.8	351	--	1.7
22...	2345	--	1.8	340	--	1.7
23...	0045	--	1.8	330	--	1.6
23...	0145	--	1.8	329	--	1.6
23...	0245	--	1.9	336	--	1.7
23...	0345	--	1.9	336	--	1.7
23...	0445	--	1.9	327	--	1.7
23...	0545	--	2.0	301	--	1.6
23...	0645	--	2.0	316	--	1.7
23...	0745	--	2.0	310	--	1.7
23...	0845	--	2.0	301	--	1.6
23...	0945	--	2.0	258	--	1.4
23...	1045	--	1.9	256	--	1.3
23...	1145	--	1.8	316	--	1.5
23...	1420	16.7	1.7	322	--	1.5
25...	1207	--	1.8	1580	.10	7.7
29...	1252	--	1.7	112	<.10	.51
JUL						
02...	1250	--	2.0	710	.10	3.8
06...	1156	--	1.8	521	.40	2.5
06...	1256	--	1.7	476	--	2.2
06...	1356	--	1.6	422	--	1.8
06...	1456	--	1.6	361	--	1.6
06...	1556	--	1.6	317	--	1.4
06...	1656	--	1.6	311	--	1.3
06...	1756	--	1.6	282	--	1.2
06...	1856	--	1.6	289	--	1.2
06...	1956	--	1.6	308	--	1.3
06...	2056	--	1.6	285	--	1.2

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1981						
06...	2156	--	1.6	264	--	1.1
06...	2256	--	1.6	286	--	1.2
06...	2356	--	1.6	276	--	1.2
07...	0056	--	1.7	291	--	1.3
07...	0156	--	1.7	293	--	1.3
07...	0256	--	1.7	244	--	1.1
07...	0356	--	1.7	220	--	1.0
07...	0456	--	1.7	203	--	.93
07...	0556	--	1.7	207	--	.95
07...	0656	--	1.7	193	--	.89
07...	0756	--	1.7	187	--	.86
07...	0856	--	1.7	188	--	.86
07...	0956	--	1.7	172	--	.79
07...	1056	--	1.7	197	--	.90
07...	1304	--	1.7	302	<.10	1.4
09...	1250	--	1.6	186	<.10	.80
10...	1110	20.1	1.8	844	--	4.1
13...	1240	--	1.7	330	<.10	1.5
16...	1115	--	2.4	1010	.60	6.5
20...	1336	--	1.9	351	.10	1.8
28...	1215	--	1.8	560	.35	2.7
30...	1240	--	1.6	101	<.10	.44
AUG						
03...	1225	--	1.7	195	<.10	.90
06...	1220	--	1.7	211	<.10	.97
06...	1320	--	1.7	217	--	1.0
06...	1420	--	1.8	385	--	1.9
06...	1520	--	1.8	447	--	2.2
06...	1620	--	1.7	430	--	2.0
06...	1720	--	1.6	262	--	1.1
06...	1820	--	1.6	233	--	1.0
06...	1920	--	1.7	257	--	1.2
06...	2020	--	1.7	278	--	1.3
06...	2120	--	1.8	317	--	1.5
06...	2220	--	1.8	307	--	1.5
06...	2320	--	1.8	335	--	1.6
07...	0020	--	1.8	297	--	1.4
07...	0120	--	1.8	299	--	1.5
07...	0220	--	1.9	296	--	1.5
07...	0320	--	2.0	266	--	1.4

TABLE 10c.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG , 1981						
07...	0420	--	2.0	262	--	1.4
07...	0520	--	2.0	232	--	1.3
07...	0620	--	2.0	235	--	1.3
07...	0720	--	2.0	218	--	1.2
07...	0820	--	2.0	203	--	1.1
07...	0920	--	2.0	198	--	1.1
07...	1020	--	2.0	205	--	1.1
07...	1120	--	1.9	173	--	.89
07...	1130	--	1.8	170	<.10	.83
10...	1225	--	1.9	96	<.10	.49
13...	1120	--	2.0	89	<.10	.48
20...	1135	--	1.7	64	<.10	.29
24...	1140	--	2.2	76	<.10	.45
27...	1205	--	2.1	92	<.10	.52
31...	1145	--	1.6	42	<.10	.18
SEP						
03...	1100	--	1.5	30	<.10	.12
03...	1110	--	1.5	34	--	.14
03...	1210	--	1.5	32	--	.13
03...	1310	--	1.4	33	--	.12
03...	1410	--	1.4	30	--	.11
03...	1510	--	1.4	27	--	.10
03...	1610	--	1.4	30	--	.11
03...	1710	--	1.4	39	--	.15
03...	1810	--	1.4	52	--	.20
03...	1910	--	1.4	37	--	.14
03...	2010	--	1.4	26	--	.10
03...	2110	--	1.4	29	--	.11
03...	2210	--	1.4	28	--	.11
03...	2310	--	1.4	33	--	.12
04...	0010	--	1.4	26	--	.10
04...	0110	--	1.4	28	--	.11
04...	0210	--	1.4	21	--	.08
04...	0310	--	1.4	22	--	.08
04...	0410	--	1.5	64	--	.26
04...	0510	--	1.5	32	--	.13
04...	0610	--	1.5	26	--	.11
04...	0710	--	1.5	27	--	.11
04...	0810	--	1.5	28	--	.11
04...	0910	--	1.5	25	--	.10
SEP , 1981						
04...	1007	--	1.5	25	<.10	.10
04...	1010	--	1.5	28	--	.11
08...	1040	--	1.5	20	<.10	.08
10...	1050	--	1.7	30	<.10	.14
14...	1105	--	1.8	586	<.10	2.8
17...	1123	--	2.0	46	<.10	.25
21...	1122	--	2.0	50	<.10	.27
24...	1000	--	2.0	91	<.10	.49
28...	1005	--	2.0	52	<.10	.28

TABLE 10d.--Data from sediment diel studies, including Imhoff Cone reading, for 12508779 Drain 59.4 (site 4) near Sunnyside, Wash.

[E = Estimated; A = less than 0.005 tons]

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	RESIDUE SETTLEABLE, 15 MIN. (ML/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAY , 1979						
08...	1550	--	E.07	470	.57	E.09
21...	1250	--	.28	992	.64	.75
24...	1430	--	.17	1380	.71	.63
31...	1145	--	.17	252	.09	.12
31...	1345	--	.17	249	--	.11
31...	1545	--	.13	125	--	.04
31...	1745	--	.11	173	--	.05
31...	1945	--	.13	739	--	.26
31...	2145	--	.21	207	--	.12
31...	2345	--	.28	961	--	.73
JUN						
01...	0145	--	.33	1170	--	1.0
01...	0345	--	.35	1310	--	1.2
01...	0545	--	.47	1090	--	1.4
01...	0745	--	.53	2080	--	3.0
01...	0945	--	.57	1570	--	2.4
01...	1148	--	.35	749	.46	.71
01...	1220	22.4	.31	536	--	.45
02...	1145	--	.33	459	.28	.41
14...	1106	--	.53	4860	3.9	7.0
25...	1215	--	.44	3150	3.2	3.7
25...	1230	24.5	.38	3410	--	3.5
25...	1415	--	.33	5220	--	4.7
25...	1615	--	.28	5630	--	4.3
25...	1815	--	.35	7110	--	6.7
25...	2015	--	.41	6670	--	7.4
25...	2215	--	.44	6710	--	8.0
26...	0015	--	.53	7660	--	11
26...	0215	--	.53	6140	--	8.8
26...	0415	--	.53	6450	--	9.2
26...	0615	--	.53	7150	--	10
26...	0815	--	.57	5960	--	9.2
26...	1015	--	.57	5020	--	7.7
26...	1215	--	.41	4600	--	5.1
JUL						
05...	1350	--	.53	5980	4.6	8.6
12...	1147	--	1.5	9780	11.8	40
18...	0915	--	.41	3150	--	3.5
18...	1115	--	.41	4280	--	4.7
18...	1140	24.2	.60	4540	--	7.4
18...	1145	--	.60	4540	4.3	7.4

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	RESIDUE SETTLEABLE, 15 MIN. (ML/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
JUL , 1979						
18...	1315	--	.60	5300	--	8.6
18...	1515	--	.57	5620	--	8.6
18...	1715	--	.50	6350	--	8.6
18...	1915	--	.63	7800	--	13
18...	2115	--	.67	12100	--	22
18...	2315	--	.70	6870	--	13
19...	0115	--	.70	6730	--	13
19...	0315	--	.70	6520	--	12
19...	0515	--	.73	5890	--	12
19...	0715	--	.73	5660	--	11
31...	0940	--	.94	1230	--	3.1
31...	1140	--	.60	1350	--	2.2
31...	1340	--	.53	1560	--	2.2
31...	1540	--	.50	1510	--	2.0
31...	1740	--	.53	1710	--	2.4
31...	1940	--	.57	1790	--	2.8
31...	2140	--	.63	1950	--	3.3
31...	2340	--	.67	2100	--	3.8
AUG						
01...	0140	--	.73	3150	--	6.2
01...	0340	--	.73	3260	--	6.4
01...	0540	--	.76	2700	--	5.5
01...	0740	--	.76	2460	--	5.0
01...	1130	21.3	.94	2020	1.3	5.1
01...	1155	--	1.4	9200	8.9	35
16...	1300	--	.38	1320	--	1.4
16...	1500	--	.44	1490	--	1.8
16...	1700	--	.53	1880	--	2.7
16...	1710	--	.53	2050	1.5	2.9
16...	1745	22.2	.60	2250	--	3.6
16...	1900	--	.63	2220	--	3.8
16...	2100	--	.70	2080	--	3.9
16...	2300	--	.84	2380	--	5.4
17...	0100	--	.87	2190	--	5.1
17...	0300	--	.87	1870	--	4.4
17...	0500	--	.87	1730	--	4.1
17...	0700	--	.87	1660	--	3.9
17...	0900	--	.87	1550	--	3.6
17...	1100	--	.80	1210	--	2.6
SEP						
27...	1135	--	.07	6	--	.00 A

TABLE 10d.--Continued

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1979						
27...	1335	--	.07	7	--	.00 A
27...	1535	--	.07	9	--	.00 A
27...	1735	--	.07	7	--	.00 A
27...	1935	--	.07	4	--	.00 A
27...	2135	--	.07	6	--	.00 A
27...	2335	--	.07	6	--	.00 A
28...	0135	--	.07	6	--	.00 A
28...	0335	--	.07	10	--	.00 A
28...	0535	--	.07	13	--	.00 A
28...	0735	--	.07	4	--	.00 A
28...	0935	--	.07	10	--	.00 A
FEB , 1980						
19...	1335	--	11	18300	8.5	544
20...	1420	2.3	11	33500	14.1	995
21...	1355	--	.86	6240	1.0	14
APR						
23...	1220	--	.07	1750	1.4	.33
23...	1420	--	.06	1840	--	.30
23...	1620	--	.06	2100	--	.34
23...	1820	--	.07	2120	--	.40
23...	2020	--	.08	1880	--	.41
23...	2220	--	.09	1960	--	.48
24...	0020	--	.10	1830	--	.49
24...	0220	--	.10	2060	--	.56
24...	0420	--	.11	1850	--	.55
24...	0620	--	.11	1830	--	.54
24...	0820	--	.12	1990	--	.64
24...	1020	--	.11	1790	--	.53
MAY						
18...	0930	--	.19	490	--	.25
18...	1330	--	.19	692	--	.35
18...	1730	--	.22	559	--	.33
18...	2130	--	.22	553	--	.33
19...	0130	--	.25	532	--	.36
19...	0530	--	.29	668	--	.52
19...	0930	--	.27	536	--	.39
29...	1430	22.5	.61	996	1.4	1.6
JUN						
10...	1000	--	.27	88	--	.06
10...	1200	--	.07	161	--	.03
10...	1400	--	.07	127	--	.02
10...	1600	--	.08	93	--	.02
10...	1800	--	.08	83	--	.02

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN , 1980						
10...	2000	--	.10	86	--	.02
10...	2200	--	.11	99	--	.03
10...	2400	--	.11	128	--	.04
11...	0200	--	.12	122	--	.04
11...	0400	--	.12	124	--	.04
11...	0600	--	.12	93	--	.03
11...	0800	--	.12	76	--	.02
24...	1900	--	.07	173	--	.03
24...	2100	--	.10	401	--	.11
24...	2300	--	.14	818	--	.31
25...	0100	--	.12	2610	--	.85
25...	0300	--	.15	1870	--	.76
25...	0500	--	.14	918	--	.35
25...	0700	--	.11	641	--	.19
25...	0900	--	.11	500	--	.15
25...	1100	--	.11	1110	--	.33
25...	1300	--	.16	9380	--	4.1
25...	1500	--	.06	1030	--	.17
25...	1700	--	.05	384	--	.05
JUL						
02...	0940	--	.97	1610	1.6	4.2
02...	1125	19.0	1.0	1760	--	4.8
23...	1615	--	.16	46	--	.02
23...	1815	--	.18	56	--	.03
23...	2015	--	.19	60	--	.03
23...	2215	--	.22	62	--	.04
24...	0015	--	.24	66	--	.04
24...	0215	--	.25	70	--	.05
24...	0415	--	.25	64	--	.04
24...	0615	--	.27	59	--	.04
24...	0815	--	.25	52	--	.04
24...	1015	--	.14	50	--	.02
24...	1215	--	.09	48	--	.01
24...	1415	--	.10	26	--	.00 A
AUG						
21...	1030	--	.18	28	--	.01
21...	1230	--	.16	32	--	.01
21...	1430	--	.14	18	--	.00 A
21...	1550	--	.14	14	.01	.00 A
21...	1630	--	.14	11	--	.00 A
21...	1830	--	.14	11	--	.00 A

TABLE 10d.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG , 1980						
21...	2030	--	.18	13	--	.00 A
21...	2230	--	.18	11	--	.00 A
22...	0030	--	.19	8	--	.00 A
22...	0230	--	.19	10	--	.00 A
22...	0430	--	.19	8	--	.00 A
22...	0630	--	.19	9	--	.00 A
22...	0830	--	.19	6	--	.00 A
SEP						
04...	1450	--	.04	44	.01	.00 A
17...	1100	--	.24	2180	.05	1.4
17...	1300	--	.21	1900	--	1.1
17...	1500	--	.21	2800	--	1.6
17...	1545	19.4	.19	2810	--	1.4
17...	1700	--	.15	3090	--	1.3
17...	1900	--	.12	2890	--	.94
17...	2100	--	.08	1720	--	.37
17...	2300	--	.10	1270	--	.34
18...	0100	--	.10	2540	--	.69
18...	0300	--	.09	2110	--	.51
18...	0500	--	.10	2170	--	.59
18...	0700	--	.10	1740	--	.47
18...	0900	--	.10	1380	--	.37
OCT						
09...	1015	--	.09	48	--	.01
09...	1215	--	.09	54	--	.01
09...	1415	--	.09	42	--	.01
09...	1430	--	.08	54	.01	.01
09...	1615	--	.08	40	--	.00 A
09...	1815	--	.07	26	--	.00 A
09...	2015	--	.07	35	--	.00 A
09...	2215	--	.07	39	--	.00 A
10...	0015	--	.08	45	--	.00 A
10...	0215	--	.08	45	--	.00 A
10...	0415	--	.08	53	--	.01
10...	0615	--	.08	41	--	.00 A
10...	0815	--	.07	27	--	.00 A
MAR , 1981						
30...	1115	--	.04	45	<.10	.00 A
APR						
02...	1100	--	.04	12	<.10	.00 A
06...	1450	--	.04	34	<.10	.00 A
09...	1200	--	.10	1200	.70	.32
13...	1215	--	.11	6280	3.5	1.9

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1981						
16...	1030	--	.10	3640	1.4	.98
20...	1040	--	.10	12000	8.0	3.2
22...	1410	17.6	.08	17000	14.1	3.7
23...	1015	--	.05	3330	.70	.45
27...	1050	--	.15	6140	2.8	2.5
30...	1250	--	.22	5420	3.5	3.2
MAY						
04...	1145	--	.41	1580	.80	1.7
07...	1200	--	.33	944	.30	.84
11...	1212	--	.56	1110	3.5	1.7
11...	1300	--	.53	994	--	1.4
11...	1400	--	.51	959	--	1.3
11...	1500	--	.51	1070	--	1.5
11...	1600	--	.53	1270	--	1.8
11...	1700	--	.51	1220	--	1.7
11...	1800	--	.51	754	--	1.0
11...	1900	--	.51	975	--	1.3
11...	2000	--	.51	993	--	1.4
11...	2100	--	.51	1120	--	1.5
11...	2200	--	.53	1360	--	1.9
11...	2300	--	.56	1530	--	2.3
11...	2400	--	.58	1550	--	2.4
12...	0100	--	.58	1680	--	2.6
12...	0200	--	.61	1990	--	3.3
12...	0300	--	.61	1980	--	3.3
12...	0400	--	.61	1890	--	3.1
12...	0500	--	.63	1980	--	3.4
12...	0600	--	.63	1970	--	3.4
12...	0700	--	.63	1840	--	3.1
12...	0800	--	.63	1870	--	3.2
12...	0900	--	.63	3070	--	5.2
12...	1000	--	.63	2430	--	4.1
12...	1100	--	.63	2080	--	3.5
12...	1200	--	.58	2140	1.8	3.4
14...	1045	--	.25	6580	5.0	4.4
18...	1145	--	.31	7820	7.0	6.5
19...	1150	--	.25	2870	2.3	1.9
21...	1035	18.0	.29	1770	2.5	1.4
22...	1050	--	.27	2860	3.5	2.1
26...	1015	--	.37	6670	4.5	6.7

TABLE 10d.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1981						
28...	1118	--	.09	64	<.10	.02
JUN						
01...	1130	--	.16	2930	2.1	1.3
04...	1106	--	.22	3260	2.0	1.9
11...	1220	--	.22	116	<.10	.07
15...	1155	--	.31	122	<.10	.10
18...	1256	--	.58	22200	13.0	35
22...	1300	--	.48	813	.20	1.1
22...	1400	--	.48	778	--	1.0
22...	1500	--	.48	673	--	.87
22...	1600	--	.48	704	--	.91
22...	1700	--	.46	678	--	.84
22...	1800	--	.46	601	--	.75
22...	1900	--	.46	598	--	.74
22...	2000	--	.46	666	--	.83
22...	2100	--	.46	702	--	.87
22...	2200	--	.46	889	--	1.1
22...	2300	--	.46	788	--	.98
22...	2400	--	.46	741	--	.92
23...	0100	--	.46	741	--	.92
23...	0200	--	.46	666	--	.83
23...	0300	--	.46	707	--	.88
23...	0400	--	.46	667	--	.83
23...	0500	--	.46	632	--	.78
23...	0600	--	.48	587	--	.76
23...	0700	--	.48	568	--	.74
23...	0800	--	.48	561	--	.73
23...	0900	--	.48	513	--	.66
23...	1000	--	.48	410	--	.53
23...	1100	--	.46	350	--	.43
23...	1200	--	.44	314	--	.37
23...	1240	--	.33	276	.10	.25
23...	1440	23.0	.24	210	--	.14
25...	1236	--	.37	1450	.50	1.4
29...	1303	--	.21	1640	1.0	.93
JUL						
02...	1207	--	.37	2660	1.6	2.7
06...	1210	--	.83	7240	5.0	16
06...	1215	--	.83	8470	--	19
06...	1315	--	.83	8120	--	18
06...	1415	--	.83	8210	--	18

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	RESIDUE SETTLE-ABLE, 15 MIN. (ML/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1981						
06...	1515	--	.86	7180	--	17
06...	1615	--	.86	6870	--	16
06...	1715	--	.86	6870	--	16
06...	1815	--	.86	8300	--	19
06...	1915	--	.86	9450	--	22
06...	2015	--	.86	8070	--	19
06...	2115	--	.86	8530	--	20
06...	2215	--	.86	7610	--	18
06...	2315	--	.86	6290	--	15
07...	0015	--	.90	6200	--	15
07...	0115	--	.90	4650	--	11
07...	0215	--	.93	5040	--	13
07...	0315	--	.93	4360	--	11
07...	0415	--	.97	4390	--	11
07...	0515	--	.97	4280	--	11
07...	0615	--	.97	3870	--	10
07...	0715	--	1.0	4150	--	11
07...	0815	--	1.0	3390	--	9.2
07...	0915	--	1.0	3610	--	9.7
07...	1015	--	.97	4090	--	11
07...	1115	--	.80	2330	--	5.0
07...	1313	--	.71	2640	1.0	5.1
09...	1205	--	.53	1560	1.0	2.2
10...	1250	21.0	.44	2470	--	2.9
13...	1252	--	.53	3810	3.0	5.5
16...	1140	--	.39	3050	2.8	3.2
20...	1350	--	.46	1130	1.0	1.4
23...	1135	--	.80	1560	.70	3.4
27...	1217	--	.35	480	.10	.45
28...	1240	25.3	.44	2940	1.9	3.5
30...	1230	--	.35	1160	.50	1.1
AUG						
03...	1245	--	.39	2570	1.0	2.7
06...	1228	--	.48	3320	1.5	4.3
06...	1250	--	.46	3130	--	3.9
06...	1350	--	.44	4470	--	5.3
06...	1450	--	.39	4490	--	4.7
06...	1550	--	.41	4170	--	4.6
06...	1650	--	.43	3960	--	4.6
06...	1750	--	.43	4020	--	4.7

TABLE 10d.--Continued

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
AUG , 1981						
06...	1850	--	.48	3890	--	5.0
06...	1950	--	.53	3380	--	4.8
06...	2050	--	.56	3360	--	5.1
06...	2150	--	.58	3600	--	5.6
06...	2250	--	.63	3510	--	6.0
06...	2350	--	.69	4010	--	7.5
07...	0050	--	.71	4400	--	8.4
07...	0150	--	.74	8600	--	17
07...	0250	--	.74	4580	--	9.2
07...	0350	--	.77	5070	--	11
07...	0450	--	.80	2440	--	5.3
07...	0550	--	.80	2930	--	6.3
07...	0650	--	.83	2500	--	5.6
07...	0750	--	.83	2370	--	5.3
07...	0850	--	.77	2390	--	5.0
07...	0950	--	.66	2210	--	3.9
07...	1050	--	.61	1940	--	3.2
07...	1150	--	.53	2440	--	3.5
07...	1207	--	.51	3640	2.2	5.0
10...	1245	--	.21	2720	.40	1.5
13...	1205	--	.25	2840	1.5	1.9
17...	1205	--	.48	691	.30	.90
20...	1140	--	.71	2260	.70	4.3
24...	1125	--	.61	520	.20	.86
27...	1145	--	.63	192	<.10	.33
31...	1140	--	.09	74	<.10	.02
SEP						
03...	1115	--	.25	40	<.10	.03
03...	1125	--	.25	64	--	.04
03...	1225	--	.24	55	--	.04
03...	1325	--	.24	52	--	.03
03...	1425	--	.22	45	--	.03
03...	1525	--	.21	43	--	.02
03...	1625	--	.21	56	--	.03
03...	1725	--	.22	47	--	.03
03...	1825	--	.22	52	--	.03
03...	1925	--	.24	62	--	.04
03...	2025	--	.24	62	--	.04
03...	2125	--	.24	55	--	.04
03...	2225	--	.24	111	--	.07

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	RESIDUE SETTLE- ABLE, 15 MIN. (ML/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1981						
03...	2325	--	.25	79	--	.05
04...	0025	--	.25	82	--	.06
04...	0125	--	.25	338	--	.23
04...	0225	--	.25	130	--	.09
04...	0325	--	.25	83	--	.06
04...	0425	--	.25	76	--	.05
04...	0525	--	.25	75	--	.05
04...	0625	--	.25	77	--	.05
04...	0725	--	.25	64	--	.04
04...	0825	--	.25	64	--	.04
04...	0925	--	.25	64	--	.04
04...	1020	--	.25	62	<.10	.04
04...	1025	--	.25	68	--	.05
08...	1035	--	.56	357	.10	.54
10...	1045	--	.51	72	<.10	.10
14...	1055	--	.46	69	<.10	.09
17...	1115	--	.29	59	<.10	.05
21...	1125	--	.25	78	<.10	.05
24...	0944	--	.39	63	<.10	.07
28...	0956	--	.08	15	<.10	.00 A

TABLE 11a.--Once-daily water temperature for 12508755 Drain 61.0 (site 1) above Drain 61.4 near Sunnyside, Wash.

PROVISIONAL DATA

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	19.6	---	18.8	---
2							---	---	21.2	13.0	17.0	---
3							---	18.5	---	16.4	16.2	---
4							---	---	---	---	---	14.2
5							10.5	---	19.5	19.7	---	---
6							---	---	17.6	16.6	15.5	13.9
7							---	---	14.0	---	15.0	14.6
8							---	15.0	---	---	---	---
9							12.2	---	---	16.4	14.8	---
10							---	15.8	---	14.5	---	14.7
11							---	---	15.8	---	---	13.2
12							---	---	22.8	14.2	---	12.4
13							---	---	---	14.0	18.4	---
14							---	---	14.8	---	16.0	13.0
15							---	---	---	---	---	---
16							---	---	---	16.5	16.1	---
17							---	---	---	---	16.0	---
18							14.3	---	15.0	16.4	---	---
19							---	---	13.4	21.4	---	12.2
20							---	---	---	18.4	15.9	---
21							---	20.0	14.4	---	---	13.7
22							---	---	---	---	14.4	---
23							---	17.5	---	14.4	14.6	---
24							11.8	15.2	---	---	---	12.4
25							---	---	15.8	---	---	---
26							---	---	16.8	16.2	---	---
27							---	---	15.8	16.8	14.2	12.0
28							---	---	---	---	---	12.5
29							---	---	16.0	---	---	---
30							17.9	---	---	16.2	16.9	---
31							---	19.5	---	16.8	15.0	---
MAX							17.9	20.0	22.8	21.4	18.8	14.7
MIN							10.5	15.0	13.4	13.0	14.2	12.0

TABLE 11a.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	5.0	---	---	15.5	---	---	---	---
2	---	---	---	8.0	---	---	---	---	12.0	17.0	---	14.0
3	---	---	---	---	---	8.5	12.0	---	---	14.5	---	12.5
4	---	---	---	---	---	---	---	---	---	---	13.0	12.0
5	---	---	---	---	6.5	---	---	18.5	13.0	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	6.5	---	8.0	19.0	---	14.5	14.0	---
8	---	---	---	---	---	---	---	15.0	---	---	---	14.0
9	---	---	---	---	---	---	---	---	14.5	---	---	---
10	---	---	---	---	---	---	13.5	---	---	16.5	---	---
11	---	---	---	---	---	---	---	---	14.5	---	14.5	13.5
12	---	---	---	16.0	---	---	---	13.0	15.5	---	---	---
13	---	---	8.5	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	---	---	17.0	14.5	---
15	---	---	---	---	---	---	---	12.5	---	17.0	---	13.5
16	---	---	---	---	---	---	---	---	18.0	---	---	---
17	---	---	---	---	---	---	14.5	---	---	14.5	---	13.5
18	---	---	---	---	---	9.0	---	---	---	---	13.0	13.5
19	---	---	---	---	.0	---	---	---	13.5	---	---	---
20	---	---	9.5	6.5	.5	---	---	---	---	---	---	---
21	---	---	---	---	2.0	---	12.5	---	---	16.5	13.5	---
22	---	---	---	---	---	---	---	15.0	---	---	13.0	13.5
23	---	---	---	---	---	---	17.0	14.0	---	18.0	---	---
24	10.5	---	---	---	---	---	15.0	---	14.5	16.0	---	---
25	---	---	---	---	---	---	---	---	16.0	---	---	12.0
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	14.0	14.0	---	---	---
28	---	6	---	---	---	---	18.5	13.0	---	16.5	---	---
29	---	---	---	---	---	---	---	13.0	---	---	---	12.0
30	---	---	---	---	---	---	---	---	14.5	---	---	---
31	---	---	---	---	---	9.0	---	---	---	16.0	---	---
MAX	10.5	6	9.5	16.0	6.5	9.0	18.5	19.0	18.0	18.0	14.5	14.0
MIN	10.5	6	8.5	6.5	.0	8.5	8.0	12.5	12.0	14.5	13.0	12.0

TABLE 11a.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---		---	---	---	13.4	---	---	---
2	11.0	---	---	---		11.5	---	---	---	14.2	---	---
3	---	---	---	---		---	---	---	---	---	15.8	14.2
4	---	---	---	---		---	---	12.6	14.6	---	---	15.0
5	---	---	---	---		---	---	---	---	---	---	---
6	12.5	---	---	---		---	11.0	---	---	16.0	18.0	---
7	---	---	---	9.8		---	---	14.4	---	13.8	17.8	---
8	---	---	---	---		---	---	---	13.0	---	---	15.2
9	12.0	---	7.4	---		---	10.8	---	---	16.0	---	---
10	11.5	---	---	---		---	---	---	---	25.7	20.0	15.6
11	---	---	---	---		---	---	13.4	13.4	---	---	---
12	---	---	---	---		13.9	---	13.0	---	---	---	---
13	---	---	---	---		---	11.0	---	---	14.2	19.0	---
14	10.5	---	---	---		---	---	13.9	---	---	---	15.2
15	---	---	---	---		---	---	---	14.0	---	---	---
16	---	---	---	---		---	11.8	---	---	17.0	---	---
17	---	---	---	---		---	---	---	---	---	19.2	15.6
18	---	9.8	---	---		---	---	13.9	13.8	---	19.1	---
19	---	---	---	---		---	---	13.0	---	---	---	---
20	9.5	---	---	---		---	11.2	---	---	17.8	18.6	---
21	---	---	---	9.4		---	---	17.8	---	---	---	13.2
22	---	---	---	---		---	15.5	11.8	14.0	---	---	---
23	---	---	---	---		---	15.2	---	16.5	16.0	---	---
24	---	---	---	---		---	---	---	---	---	19.0	10.0
25	---	---	---	---		---	---	---	16.0	---	---	---
26	---	---	---	---		---	---	13.2	---	---	---	---
27	---	---	---	---		---	11.6	---	---	18.0	15.0	---
28	---	---	---	---		---	---	14.6	---	20.3	---	12.0
29	10.0	---	---	---		---	---	---	15.0	20.9	---	---
30	---	---	---	---		---	17.0	---	---	16.2	---	---
31	---	---	---	---		---	---	---	---	---	14.6	---
MAX	12.5	9.8	7.4	9.8		13.9	17.0	17.8	16.5	25.7	20.0	15.6
MIN	9.5	9.8	7.4	9.4		11.5	10.8	11.8	13.0	13.8	14.6	10.0

TABLE 11a.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---											
2	12.2											
3	---											
4	---											
5	10.6											
6	---											
7	11.4											
8	9.2											
9	---											
10	---											
11	---											
12	---											
13	8.2											
14	---											
15	---											
16	9.6											
17	---											
18	---											
19	---											
20	---											
21	---											
22	---											
23	---											
24	---											
25	---											
26	---											
27	---											
28	---											
29	---											
30	---											
31	---											
MAX	12.2											
MIN	8.2											

TABLE 11b.--Once-daily water temperature for 12508769 Drain 60.7 (site 2) near Sunnyside, Wash.

PROVISIONAL DATA

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	18.6	---	17.2	---
2							10.0	---	18.3	14.0	16.6	---
3							---	17.0	---	15.8	17.0	---
4							---	---	---	---	---	16.0
5							11.2	---	19.5	16.4	---	---
6							---	---	17.4	---	16.2	14.6
7							---	---	14.2	---	16.6	15.2
8							---	15.0	---	---	---	---
9							12.0	---	---	17.9	16.0	---
10							---	16.4	---	---	---	---
11							---	---	16.8	---	---	15.6
12							---	---	---	15.9	---	15.4
13							---	---	---	14.2	17.2	---
14							---	---	15.0	---	15.8	15.2
15							---	---	---	---	---	---
16							---	---	---	16.6	16.4	---
17							---	---	---	---	17.6	---
18							13.8	---	15.7	18.6	---	---
19							---	---	---	19.0	---	15.2
20							---	---	---	18.8	16.4	---
21							---	17.0	15.4	---	---	---
22							---	---	---	---	14.5	14.8
23							---	18.0	---	17.0	15.2	---
24							12.5	16.4	---	---	---	15.0
25							---	---	20.0	---	---	---
26							---	---	17.5	18.0	---	---
27							---	---	15.8	17.4	15.4	14.8
28							---	15.0	---	---	---	15.4
29							---	---	18.2	---	---	---
30							17.6	17.2	---	17.6	18.2	---
31							---	15.8	---	17.0	16.6	---
MAX							17.6	18.0	20.0	19.0	18.2	16.0
MIN							10.0	15.0	14.2	14.0	14.5	14.6

TABLE 11b.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	11.0	---	---	15.5	---	---	---	---
2	---	---	---	12.0	---	---	---	---	13.5	20.0	---	15.0
3	14.5	---	---	---	---	12.5	13.0	---	---	16.5	---	15.5
4	---	---	---	---	---	---	---	---	---	---	14.5	14.5
5	---	---	---	---	11.5	---	---	16.5	14.5	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	11.0	---	13.0	15.5	---	15.0	14.5	---
8	---	---	---	---	---	---	---	15.5	---	---	17.0	15.5
9	---	---	---	---	---	---	---	---	15.5	---	---	---
10	---	---	---	---	---	---	13.5	---	---	16.5	---	---
11	---	---	---	---	---	---	---	---	15.0	---	16.0	15.0
12	---	---	---	19.5	---	---	---	14.5	15.0	---	---	---
13	---	---	9.0	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	---	---	17.0	16.5	---
15	---	---	---	---	---	---	---	15.5	---	19.5	---	15.0
16	---	---	---	---	---	---	---	---	16.5	---	---	---
17	---	---	---	---	---	---	15.0	---	---	16.0	---	15.5
18	---	---	---	---	---	13.0	---	---	---	---	14.5	15.0
19	---	---	---	---	11.0	---	---	---	15.5	---	---	---
20	---	---	12.5	---	---	---	---	---	---	---	---	---
21	---	---	---	11.0	11.0	---	14.0	---	---	16.5	---	---
22	---	---	---	---	---	---	---	16.0	---	---	15.0	13.5
23	---	---	---	---	---	---	16.0	15.5	---	19.0	---	---
24	14.0	---	---	---	---	---	15.5	---	16.5	17.0	---	---
25	---	---	---	---	---	---	---	---	17.0	---	---	13.5
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	14.0	14.5	---	---	---
28	---	12	---	---	---	---	---	16.5	---	16.5	---	---
29	---	---	---	---	---	---	---	16.5	---	---	---	14.0
30	---	---	---	---	---	---	---	---	16.0	---	---	---
31	---	---	---	---	---	13.0	---	---	---	16.5	---	---
MAX	14.5	12	12.5	19.5	11.5	13.0	16.0	16.5	17.0	20.0	17.0	15.5
MIN	14.0	12	9.0	11.0	11.0	12.5	13.0	14.0	13.5	15.0	14.5	13.5

TABLE 11b.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---		---	---		---	---	---	15.4	---	---	---
2	12.5		---	---		13.0	---	---	---	16.0	---	---
3	---		---	---		---	---	---	---	---	17.2	15.0
4	---		---	---		---	---	15.0	15.0	---	---	15.2
5	---		---	---		---	---	---	---	---	---	---
6	14.0		---	---		---	11.0	---	---	14.8	20.0	---
7	---		---	12		---	---	15.0	---	15.2	19.0	---
8	---		---	---		---	---	---	14.4	---	---	15.8
9	12.5		10.4	---		---	10.6	---	---	16.8	---	---
10	13.5		---	---		---	---	---	---	15.9	20.8	16.0
11	---		---	---		---	---	14.8	15.4	---	---	---
12	---		---	---		---	---	15.0	---	---	---	---
13	---		---	---		---	10.0	---	---	14.8	19.1	---
14	12.5		---	---		13.9	---	14.9	---	---	---	15.2
15	---		---	---		---	---	---	15.8	---	---	---
16	---		---	---		---	12.0	---	---	18.0	---	---
17	---		---	---		---	---	---	---	---	20.4	15.6
18	---		---	---		---	---	14.6	14.8	---	17.4	---
19	---		---	---		---	---	15.8	---	---	---	---
20	11.5		---	---		---	14.4	---	---	18.8	19.0	---
21	---		---	12		---	---	18.2	---	---	---	13.9
22	---		---	---		---	15.0	15.2	15.4	---	---	---
23	---		---	---		---	15.6	---	16.5	17.2	---	---
24	---		---	---		---	---	---	---	---	18.4	11.8
25	---		---	---		---	---	---	19.0	---	---	---
26	---		---	---		---	---	14.8	---	---	---	---
27	---		---	---		---	12.4	---	---	19.0	16.5	---
28	---		---	---		---	---	15.6	---	---	---	13.2
29	10.5		---	---		---	---	---	17.4	16.7	---	---
30	---		---	---		---	17.3	---	---	19.0	---	---
31	---		---	---		---	---	---	---	---	15.0	---
MAX	14.0		10.4	12		13.9	17.3	18.2	19.0	19.0	20.8	16.0
MIN	10.5		10.4	12		13.0	10.0	14.6	14.4	14.8	15.0	11.8

TABLE 11b.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---											
2	14.0											
3	---											
4	---											
5	12.6											
6	---											
7	---											
8	11.8											
9	---											
10	---											
11	---											
12	---											
13	10.6											
14	---											
15	---											
16	9.4											
17	---											
18	---											
19	---											
20	---											
21	---											
22	---											
23	---											
24	---											
25	---											
26	---											
27	---											
28	---											
29	---											
30	---											
31	---											
MAX	14.0											
MIN	9.4											

TABLE 11c.--Once-daily water temperatures for 12508775 Drain 59.6 (site 3) below Drain 60.2 near Sunnyside, Wash.

PROVISIONAL DATA

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	17.8	---	16.4	---
2							---	---	18.0	13.4	15.0	---
3							---	17.0	---	15.4	16.0	---
4							---	---	---	---	---	14.8
5							15.8	---	18.0	16.4	---	---
6							---	---	17.1	---	16.0	14.6
7							---	---	15.0	---	15.9	14.8
8							---	15.4	---	---	---	---
9							14.4	---	---	17.0	15.6	---
10							---	16.0	---	---	---	---
11							---	---	---	---	---	13.8
12							---	---	---	14.3	---	---
13							---	---	---	14.4	16.7	---
14							---	---	15.0	---	15.1	14.6
15							---	---	---	---	---	---
16							---	---	---	16.6	15.0	---
17							---	---	---	---	16.7	---
18							14.5	---	15.8	16.4	---	---
19							---	---	---	17.0	---	14.2
20							---	---	15.6	16.2	16.4	---
21							---	20.6	15.2	---	---	---
22							---	---	---	---	15.0	---
23							---	---	---	16.0	14.2	---
24							13.5	19.6	---	---	---	14.0
25							---	---	18.4	---	---	---
26							---	---	17.4	17.6	---	---
27							---	---	17.6	16.8	15.0	13.2
28							---	14.8	---	---	---	14.8
29							---	---	16.0	---	14.3	---
30							19.8	18.6	---	17.0	16.0	---
31							---	16.6	---	15.4	15.6	---
MAX							19.8	20.6	18.4	17.6	16.7	14.8
MIN							13.5	14.8	15.0	13.4	14.2	13.2

TABLE 11c.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	6.0	---	11.0	14.5	---	---	---	---
2	---	---	---	8.0	---	---	---	---	13.5	15.5	---	14.0
3	14.0	---	---	---	---	10.5	12.5	---	---	14.5	---	---
4	---	---	---	---	---	---	---	---	---	---	14.0	12.5
5	---	---	---	---	8.0	---	---	17.0	13.5	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	7.5	---	13.0	---	---	14.5	13.5	---
8	---	---	---	---	---	---	---	14.0	---	---	16.0	13.0
9	---	---	---	---	---	---	---	---	15.0	---	---	---
10	---	---	---	---	---	---	11.0	---	---	15.0	---	---
11	---	---	---	---	---	---	---	---	15.5	---	15.0	13.0
12	---	---	---	---	---	---	---	13.5	14.0	---	---	---
13	---	---	9.5	6.5	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	---	---	15.0	15.0	---
15	---	---	---	---	---	---	---	15.0	---	18.0	---	13.0
16	---	---	---	---	---	---	---	---	15.0	---	---	---
17	---	---	---	---	---	---	16.0	---	---	14.0	---	15.0
18	---	---	---	---	2.5	13.5	---	---	---	---	14.0	14.0
19	---	---	---	---	2.5	---	---	---	14.0	---	---	---
20	---	---	10.0	---	4.0	---	---	---	---	---	---	---
21	---	---	---	7.5	8.0	---	12.0	---	---	17.0	13.0	---
22	---	---	---	---	---	---	---	15.0	---	---	13.5	12.0
23	---	---	---	---	---	---	19.0	16.5	---	20.0	---	---
24	12.5	---	---	---	---	---	15.5	---	14.5	18.0	---	---
25	---	---	---	---	---	---	---	---	15.0	---	14.5	11.5
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	12.5	14.0	---	---	---
28	---	7	---	---	---	---	15.5	17.0	---	16.0	12.0	---
29	---	---	---	---	---	---	---	17.0	---	---	---	12.0
30	---	---	---	---	---	---	---	---	13.0	---	---	---
31	---	---	---	---	---	---	---	---	---	16.0	---	---
MAX	14.0	7	10.0	8.0	8.0	13.5	19.0	17.0	15.5	20.0	16.0	15.0
MIN	12.5	7	9.5	6.5	2.5	10.5	11.0	12.5	13.0	14.0	12.0	11.5

TABLE 11c.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---		---	---		---	---	---	14.4	---	---	---
2	11.5		---	---		9.6	13.9	---	---	16.2	---	---
3	---		---	---		---	---	---	---	---	16.4	13.2
4	---		---	---		---	---	13.8	15.0	---	---	13.6
5	---		---	---		---	---	---	---	---	---	---
6	12.0		---	---		---	12.0	---	---	15.8	15.8	---
7	---		---	9.5		---	---	14.2	---	14.8	16.8	---
8	---		---	---		---	---	---	14.0	---	---	13.8
9	10.0		6.8	---		---	12.0	---	---	17.0	---	---
10	10.5		---	---		---	---	---	---	14.5	18.0	14.0
11	---		---	---		---	---	16.2	14.8	---	---	---
12	---		---	---		13.3	---	15.0	---	---	---	---
13	---		---	---		---	9.8	---	---	15.0	17.8	---
14	11.5		---	---		---	---	14.4	---	15.0	---	14.2
15	---		---	---		---	---	---	14.8	---	---	---
16	---		---	---		---	12.4	---	---	17.0	---	---
17	---		---	---		---	---	---	---	---	17.2	14.8
18	---		---	---		---	---	13.6	14.6	---	17.5	---
19	---		---	---		---	---	14.4	---	---	---	---
20	12.5		---	---		---	14.0	---	---	18.4	16.4	---
21	---		---	9.6		---	---	15.4	---	---	---	13.2
22	---		---	---		---	15.7	---	15.0	---	---	---
23	---		---	---		---	19.4	14.0	15.8	16.6	---	---
24	---		---	---		---	---	---	---	---	15.6	10.4
25	---		---	---		---	---	---	15.4	---	---	---
26	---		---	---		---	---	13.6	---	---	---	---
27	---		---	---		---	12.0	---	---	19.0	---	---
28	---		---	---		---	---	15.0	---	18.3	---	12.0
29	11.0		---	---		---	---	---	16.4	---	---	---
30	---		---	---		---	18.4	---	---	16.3	---	---
31	---		---	---		---	---	---	---	---	---	---
MAX	12.5		6.8	9.6		13.3	19.4	16.2	16.4	19.0	18.0	14.8
MIN	10.0		6.8	9.5		9.6	9.8	13.6	14.0	14.5	15.6	10.4

TABLE 11c.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---											
2	12.0											
3	---											
4	---											
5	10.6											
6	---											
7	---											
8	11.0											
9	---											
10	---											
11	---											
12	---											
13	10.4											
14	---											
15	---											
16	9.6											
17	---											
18	---											
19	---											
20	---											
21	---											
22	---											
23	---											
24	---											
25	---											
26	---											
27	---											
28	---											
29	---											
30	---											
31	---											
MAX	12.0											
MIN	9.6											

TABLE 11d.--Once-daily water temperatures for 12508779 Drain 59.4 (site 4) near Sunnyside, Wash.

PROVISIONAL DATA

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	22.4	---	21.3	---
2							---	---	22.6	16.0	17.3	---
3							---	17.5	---	18.4	20.2	---
4							---	---	---	---	---	13.6
5							---	---	19.8	20.0	---	---
6							---	---	21.0	---	19.8	13.8
7							---	---	16.8	---	20.4	13.6
8							---	19.0	---	---	---	---
9							---	---	---	19.4	18.2	---
10							---	14.2	---	---	---	---
11							---	---	22.4	---	---	13.4
12							---	---	---	14.2	---	---
13							---	---	---	16.8	15.9	---
14							---	---	18.1	---	13.4	13.2
15							---	---	---	---	---	---
16							---	---	---	22.2	20.0	---
17							---	---	---	18.1	21.1	---
18							---	---	19.6	24.4	---	---
19							---	---	---	23.6	---	13.8
20							---	---	21.8	22.8	18.2	---
21							---	25.8	19.8	---	---	---
22							---	---	22.1	---	13.8	---
23							---	21.5	---	18.2	15.6	---
24							---	24.2	---	---	---	13.2
25							---	---	23.0	---	---	---
26							---	---	22.0	21.3	---	---
27							---	---	14.6	20.6	14.4	13.0
28							---	14.0	---	---	---	13.0
29							---	---	22.2	---	13.2	---
30							19.5	21.2	---	21.6	14.0	---
31							---	19.4	---	18.2	13.8	---
MAX							19.5	25.8	23.0	24.4	21.3	13.8
MIN							19.5	14.0	14.6	14.2	13.2	13.0

TABLE 11d.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	8.0	---	12.0	17.0	---	---	---	---
2	---	---	---	9.0	---	---	---	---	14.0	18.5	---	13.5
3	12.5	---	---	---	---	11.5	12.5	---	---	17.0	---	16.0
4	---	---	---	---	---	---	---	---	---	---	16.5	12.5
5	---	---	---	---	9.0	---	---	22.5	14.5	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	8.0	---	13.5	---	---	15.5	15.0	---
8	---	---	---	---	---	---	---	17.5	---	---	18.0	14.0
9	---	---	---	---	---	---	---	---	18.0	---	---	---
10	---	---	---	---	---	---	12.5	---	16.5	17.5	---	---
11	---	---	---	---	---	---	---	---	18.0	---	16.0	12.5
12	---	---	---	17.5	---	---	---	15.0	15.0	---	---	---
13	---	---	10.0	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	---	---	17.5	15.5	---
15	---	---	---	---	---	---	---	19.0	---	23.0	---	13.0
16	---	---	---	---	---	---	---	---	19.5	---	---	---
17	---	---	---	---	---	---	14.0	---	---	16.5	---	15.0
18	---	---	---	---	---	13.0	---	---	---	---	14.0	13.5
19	---	---	---	---	---	---	---	---	17.5	---	---	---
20	---	---	10.5	---	2.5	---	---	---	---	---	---	---
21	---	---	---	9.0	1.5	---	13.5	---	---	21.0	14.0	---
22	---	---	---	---	---	---	---	19.5	---	---	14.5	10.5
23	---	---	---	---	---	---	23.0	21.0	---	24.0	---	---
24	12.0	---	---	---	---	---	19.0	---	16.0	21.0	---	---
25	---	---	---	---	---	---	---	---	15.5	---	15.5	11.0
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	13,@	16.5	---	---	---
28	---	8.5	---	---	---	---	17.5	22.0	---	20.0	12.0	---
29	---	---	---	---	---	---	---	22.5	---	---	---	11.5
30	---	---	---	---	---	---	---	---	12.0	---	---	---
31	---	---	---	---	---	---	---	---	---	18.0	---	---
MAX	12.5	8.5	10.5	17.5	9.0	13.0	23.0	22.5	19.5	24.0	18.0	16.0
MIN	12.0	8.5	10.0	9.0	1.5	11.5	12.0	13.5	12.0	15.5	12.0	10.5

TABLE 11d.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---		---	---	---	22.2	---	---	---
2	12.4	---	---	---		11.2	10.0	---	---	22.0	---	---
3	---	---	---	---		---	---	---	---	---	23.8	15.0
4	---	---	---	---		---	---	17.0	18.0	---	---	15.6
5	12.0	---	---	---		---	---	---	---	---	---	---
6	12.0	---	---	---		---	11.8	---	---	18.0	22.0	---
7	---	---	---	10.2		---	---	17.8	---	19.2	22.0	---
8	10.2	---	---	---		---	---	---	15.0	---	---	17.2
9	10.0	---	8.6	---		---	12.2	---	---	22.6	---	---
10	9.5	---	---	---		---	---	---	---	21.0	24.2	16.6
11	---	---	---	---		---	---	19.0	18.8	---	---	---
12	11.0	---	---	---		12.4	---	19.0	---	---	---	---
13	---	---	---	---		---	15.2	---	---	18.2	22.6	---
14	10.5	---	---	---		---	---	17.0	---	---	---	15.6
15	---	---	---	---		---	---	---	19.4	---	---	---
16	10.6	---	---	---		---	16.4	---	---	25.0	---	---
17	---	---	---	---		---	---	---	---	---	23.0	15.6
18	---	9.6	---	---		---	---	15.4	17.6	---	20.3	---
19	---	---	---	---		---	---	16.8	---	---	---	---
20	12.5	---	---	---		---	17.0	---	---	26.4	20.6	---
21	---	---	---	10.1		---	---	18.0	---	---	---	13.2
22	---	---	---	---		---	17.6	17.6	17.0	---	---	---
23	---	---	---	---		---	---	---	21.2	22.0	---	---
24	---	---	---	---		---	---	---	---	---	19.8	13.2
25	---	---	---	---		---	---	---	22.4	---	---	---
26	---	---	---	---		---	---	17.6	---	---	---	---
27	---	---	---	---		---	12.8	---	---	14.6	17.8	---
28	---	---	---	---		---	---	19.2	---	25.3	---	9.2
29	11.0	---	---	---		---	---	---	22.8	---	---	---
30	---	---	---	---		---	24.8	---	---	21.2	---	---
31	---	---	---	---		---	---	---	---	---	15.8	---
MAX	12.5	9.6	8.6	10.2		12.4	24.8	19.2	22.8	26.4	24.2	17.2
MIN	9.5	9.6	8.6	10.1		11.2	10.0	15.4	15.0	14.6	15.8	9.2

TABLE 11d.--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
AM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---											
2	12.0											
3	---											
4	---											
5	10.2											
6	---											
7	---											
8	9.8											
9	---											
10	---											
11	---											
12	---											
13	10.2											
14	---											
15	---											
16	8.8											
17	---											
18	---											
19	---											
20	---											
21	---											
22	---											
23	---											
24	---											
25	---											
26	---											
27	---											
28	---											
29	---											
30	---											
31	---											
MAX	12.0											
MIN	8.8											

TABLE 12.--Analyses of miscellaneous suspended-sediment samples for sites in Drains 61.0, 60.7, 59.6, and 59.4 near Sunnyside, Wash.

[E = estimated; A = less than 0.005 tons]

SITE 11

12508776 - DRAIN 59.4 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 57 23)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1979						
03...	1450	0	17.5	.00	132	.00A
JUN						
14...	1010	0	--	.15	29500	12
26...	0745	0	16.8	.02	36	.00A
JUL						
05...	1520	0	--	.01	21	.00A
18...	1315	0	25.8	.03	803	.07
AUG						
01...	1425	0	21.0	.10	1740	.47
16...	1155	0	--	.01	74	.00A
APR , 1980						
23...	1400	0	17.7	E.02	1080	E.06
JUN						
25...	0825	0	16.2	E.02	66	E.00A
JUL						
02...	1640	0	16.0	E.02	745	E.04
AUG						
21...	1200	0	20.8	.06	74	.01
SEP						
17...	1320	0	15.6	.21	41400	23
APR , 1981						
22...	1600	0	--	E.02	E10	E.00A
JUN						
23...	1515	0	20.2	E.10	457	E.12
JUL						
29...	1630	0	25.0	E.02	76	E.00A
AUG						
18...	1215	0	25.4	E.70	3770	E7.1
SEP						
10...	1625	0	22.0	E.10	612	E.17

12508778 - DRAIN 59.4 TRIB AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 57 07)

SITE 12

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1979						
14...	1450	0	--	.30	1340	1.1
26...	0745	0	--	.05	107	.01
JUL						
05...	1520	0	--	.03	21	.00A
18...	1315	0	--	.14	2670	1.0
AUG						
01...	1425	0	--	.30	8140	6.6
16...	1155	0	--	.05	74	.00A
MAY , 1980						
07...	1425	0	16.8	E.02	212	E.01
JUN						
25...	0835	0	15.0	.13	11600	4.1
JUL						
15...	1050	0	18.0	E.26	499	E.35
AUG						
08...	0952	0	17.8	E.02	12	E.00A
21...	1145	0	15.0	E.02	394	.02
JUN , 1981						
23...	1517	0	21.8	E.15	8860	E3.6
JUL						
29...	1625	0	20.1	E.10	11	E.00A
AUG						
18...	1220	0	19.4	E.01	2	E.00A
SEP						
10...	1630	0	20.6	E.03	2	E.00A

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)

SITE 14

12508771 - DRAIN 60.0 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 56 47)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1979						
31...	1600	0	--	.50	1030	1.4
JUN						
26...	0800	0	17.4	1.4	472	1.8
JUL						
05...	1530	0	21.9	1.0	72	.19
18...	1350	0	22.2	.68	13500	25
AUG						
01...	1435	0	19.8	.54	44	.06
16...	1135	0	15.2	.30	851	.69
30...	1415	0	15.6	.28	13	.00A
SEP						
11...	1750	0	14.0	.14	2	.00A
28...	1045	0	--	.10	2	.00A
APR , 1980						
23...	1415	0	17.0	E.02	38	E.00A
MAY						
07...	1435	0	22.4	.27	1560	1.1
28...	1540	0	19.4	.34	209	.19
JUN						
11...	1335	0	18.4	.10	52	.01
25...	0910	0	14.6	.59	E2000	E3.2
JUL						
02...	1655	0	21.0	.41	222	.25
15...	1105	0	19.4	1.1	149	.44
24...	1515	0	23.4	.73	144	.28
AUG						
08...	1000	0	15.9	.31	53	.04
21...	1125	0	16.8	.85	626	1.4
SEP						
03...	1110	0	14.4	.56	2310	3.5
17...	1325	0	16.2	.28	125	.09
OCT						
09...	1320	0	15.5	.96	1380	3.6
APR , 1981						
22...	1615	0	14.2	E.07	46	E.01
JUN						
23...	1530	0	17.1	E.30	4220	E3.4
JUL						
29...	1620	0	21.1	E.30	944	E.76
AUG						
18...	1230	0	22.6	E.07	287	E.05
SEP						
10...	1635	0	18.2	E.05	19	E.00A

TABLE 12.--Continued

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PEND. D (T/DAY)

SITE 15

12508773 - DRAIN 60.2 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 56 29)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PEND. D (T/DAY)
MAY , 1979						
31...	1555	0	16.5	.10	48	.01
JUN						
26...	0820	0	19.4	.06	10	.00A
JUL						
05...	1540	0	26.2	.06	13	.00A
18...	1405	0	29.0	.26	339	.24
JUL , 1980						
24...	1530	0	26.6	E.15	28	E.01
AUG						
08...	1030	0	18.4	.14	155	.06
21...	1110	0	18.2	E.05	17	E.00A
JUN , 1981						
23...	1540	0	25.9	E.04	48	E.01
JUL						
29...	1615	0	26.8	E.05	27	E.00A
AUG						
18...	1235	0	25.7	E.05	191	E.03

TABLE 12.--Continued

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SITE 16						
12508766 - DRAIN 60.5 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 56 14)						
JUN , 1979						
14...	0950	0	--	.30	7560	6.1
26...	0830	0	19.0	.60	563	.91
JUL						
05...	1550	0	--	.02	126	.00A
18...	1420	0	33.0	.19	451	.23
AUG						
01...	1440	0	--	.02	50	.00A
16...	1100	0	22.8	.37	100	.10
30...	1445	0	28.2	.65	100	.18
MAY , 1980						
07...	1455	0	23.2	.32	55	.05
28...	1555	0	24.0	E.40	195	E.21
JUN						
11...	1345	0	19.0	E.10	181	E.05
25...	0935	0	15.8	E.60	31	E.05
JUL						
02...	1720	0	26.0	E.05	277	E.04
15...	1150	0	19.8	E.62	26	E.04
24...	1535	0	28.0	E.06	160	E.03
AUG						
08...	1040	0	18.2	E.02	380	E.02
SEP						
17...	1335	0	21.0	.23	768	.48
OCT						
09...	1245	0	13.6	.44	69	.08
APR , 1981						
22...	1625	0	--	E.10	49	E.01
JUN						
23...	1550	0	18.5	E.08	1980	E.43
JUL						
29...	1605	0	25.3	E.50	4420	E6.0
AUG						
18...	1240	0	26.4	E.05	950	E.13
SEP						
10...	1645	0	22.2	E.07	419	E.08
SITE 13						
12508770 - DRAIN 59.6 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 56 55)						
JUN , 1979						
14...	1005	0	--	.10	272	.07
JUL						
18...	1340	0	32.8	.01	28400	.77

TABLE 12.--Continued

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)

SITE 17

12508765 - DRAIN 60.7 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 56 04)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1979						
31...	1545	0	18.5	.80	2800	6.0
JUN						
14...	0945	0	--	.50	2660	3.6
26...	0900	0	21.2	.73	52900	104
JUL						
05...	1600	0	28.4	.37	9920	9.9
18...	1440	0	29.6	.29	5950	4.7
AUG						
01...	1450	0	25.2	.88	974	2.3
16...	1030	0	20.6	.45	955	1.2
30...	1450	0	--	.60	39	.06
MAY , 1980						
07...	1515	0	20.7	E.10	4770	E1.3
28...	1600	0	25.0	.44	3160	3.8
JUN						
11...	1355	0	22.0	E.10	815	E.22
25...	0950	0	21.8	.41	302	.33
JUL						
02...	1720	0	21.8	E.50	305	E.41
15...	1200	0	22.8	.48	37	.05
24...	1545	0	26.0	E.05	20	E .00A
AUG						
08...	1050	0	18.6	.05	4	.00A
21...	1055	0	18.8	.06	0	.00A
SEP						
03...	1050	0	16.6	.06	1	.00A
17...	1345	0	24.0	.07	528	.10
OCT						
09...	1235	0	14.7	E.03	15	E.00A
APR , 1981						
22...	1630	0	17.0	E.05	1130	E.15
JUN						
23...	1555	0	24.0	E.35	66900	E63
JUL						
29...	1555	0	24.9	E.42	2670	E3.0
AUG						
18...	1245	0	25.7	E.06	131	E.02
SEP						
10...	1650	0	25.5	E.08	5660	E1.2

TABLE 12.--Continued

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)

SITE 18

12508753 - DRAIN 61.0 AT SLI RD. NR SUNNYSIDE, WASH. (LAT 46 21 40 LONG 119 55 44)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1979						
26...	0850	0	17.2	.34	152	.14
JUL						
05...	1605	0	22.4	.31	1780	1.5
18...	1500	0	22.4	1.4	595	2.2
AUG						
01...	1455	0	21.4	.30	197	.16
16...	1015	0	--	.37	194	.19
30...	1525	0	--	.15	29	.01
SEP						
11...	1730	0	--	.01	20	.00A
APR , 1980						
23...	1430	0	16.2	.20	9	.00A
MAY						
07...	1525	0	17.2	E.70	10	E.02
28...	1615	0	18.8	E.10	19	E.01
JUN						
11...	1400	0	19.4	E.10	967	E.26
25...	1015	0	16.0	.29	18	.01
JUL						
02...	1730	0	21.0	.16	11	.00A
15...	1220	0	18.8	.28	12	.00A
24...	1550	0	19.6	.14	4	.00A
AUG						
08...	1110	0	15.0	.16	1	.00A
21...	1040	0	14.0	.02	2	.00A
SEP						
03...	1030	0	12.6	.29	6	.00A
17...	1350	0	15.0	.08	4	.00A
OCT						
09...	1210	0	11.0	.19	5	.00A
APR , 1981						
22...	1635	0	15.0	E.30	9	E.01
JUN						
23...	1610	0	18.4	E.40	51	E.06
JUL						
29...	1550	0	20.9	E.24	628	E.41
AUG						
18...	1250	0	19.3	E.80	17	E.04
SEP						
10...	1655	0	17.9	E.08	34	E.01

TABLE 12.--Continued

SITE 19

462115119563301 - DRAIN 60.7 AB SED POND NR SUNNYSIDE, WA (LAT 46 21 15 LONG 119 56 33)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1979						
02...	1310	0	26.4	1.2	4170	14
14...	1410	0	--	1.3	6220	22
25...	1445	0	16.6	.73	1110	2.2
JUL						
05...	1045	0	20.6	.56	2730	4.1
18...	1015	0	22.4	.88	7880	19
AUG						
01...	0830	0	18.2	1.1	1640	4.9
16...	1435	0	24.6	1.0	988	2.7
30...	1045	0	19.4	1.3	804	2.8
SEP						
11...	1150	0	13.7	.07	19	.00A
28...	1245	0	13.7	.06	4	.00A
OCT						
18...	1300	0	--	.07	256	.05
24...	1335	0	--	E .10	55	E.01
NOV						
28...	1220	0	4.8	E .10	51	E.01
DEC						
13...	1255	0	--	E .10	3	E.00A
FEB , 1980						
20...	1746	0	--	--	8060	--
21...	1430	0	--	.10	30	.00A
MAR						
18...	1530	0	8.8	E.05	44	E.01
APR						
23...	1520	0	23.4	E.01	16	E.00A
MAY						
07...	1325	0	20.5	.64	585	1.0
28...	1350	0	21.0	.91	157	.39
JUN						
11...	1140	0	17.0	E1.1	74	E.22
25...	1440	0	19.2	.71	364	.70
JUL						
02...	1230	0	22.2	1.1	2410	7.2
15...	1400	0	21.8	E1.2	1840	E6.0
23...	1147	0	22.4	.37	444	.44
AUG						
08...	1730	0	21.0	.23	275	.17
21...	1450	0	19.4	.15	121	.05
SEP						
03...	1540	0	17.0	.25	44	.03
17...	1405	0	18.4	.18	60	.03
OCT						
09...	1645	0	14.2	.74	50	.10
APR , 1981						
22...	1315	0	15.2	.30	80	.06
MAY						
21...	1440	0	22.4	.72	297	.58
JUL						
10...	1440	0	22.0	E.50	4560	E6.2
29...	1110	0	19.9	E.60	1880	E3.0
AUG						
18...	0930	0	18.8	E1.0	300	E.81
SEP						
10...	1600	0	21.8	.92	283	.70

TABLE 12.--Continued

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SITE 20						
462115119563302 - DRAIN 60.7 TRIB AB SED POND NR SUNNYSIDE, WA (LAT 46 21 15 LONG 119 56 33)						
JUN , 1980						
25...	1445	0	16.4	.31	68	.06
JUL						
02...	1235	0	18.7	.18	17	.00 A
23...	1155	0	17.8	E.04	11	E.00A
SEP						
17...	1410	0	18.4	E.02	22	E.00A
APR , 1981						
22...	1320	0	15.0	.50	35	.05
JUL						
10...	1443	0	26.0	E.10	7	E.00A
AUG						
18...	0933	0	20.5	E.50	9	E.01
SITE 24						
462202119552401 - DRAIN 61.0 ABOVE ROZA CANAL NR SUNNYSIDE, WA (LAT 46 22 02 LONG 119 55 24)						
FEB , 1980						
19...	1710	0	.2	3.8	2330	24
20...	0900	0	--	E.50	131	E.18
20...	1805	0	--	E6.0	6060	E98
SITE 23						
462205119554201 - DRAIN 60.7 ABOVE ROZA CANAL NR SUNNYSIDE, WA (LAT 46 22 05 LONG 119 55 42)						
FEB , 1980						
19...	1725	0	.1	.43	965	1.1
20...	1815	0	--	E.80	2540	E5.5

TABLE 12.--Continued

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)

SITE 21

462114119563501 - DRAIN 60.7 BL SED POND NR SUNNYSIDE, WA (LAT 46 21 14 LONG 119 56 35)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1979						
02...	1310	0	22.0	1.2	2350	7.6
14...	1415	0	--	.71	713	1.4
25...	1510	0	17.0	.44	249	.30
JUL						
05...	1140	0	19.0	.37	324	.32
18...	1020	0	21.2	.80	371	.80
AUG						
01...	0840	0	18.4	.81	168	.37
16...	1515	0	24.0	.60	158	.26
30...	1105	0	19.6	.69	129	.24
SEP						
11...	1200	0	15.4	.07	11	.00A
28...	1240	0	16.5	.05	9	.00A
OCT						
18...	1305	0	--	.07	100	.02
24...	1345	0	--	E.10	10	E.00A
NOV						
28...	1230	0	2.2	E.10	27	E.01
DEC						
13...	1300	0	8.4	E.10	14	E.00A
FEB , 1980						
20...	1745	0	--	--	6760	--
21...	1435	0	--	E.10	149	E.04
MAR						
18...	1535	0	9.4	E.02	33	.00A
APR						
23...	1555	0	15.0	.01	19	.00A
MAY						
07...	1330	0	19.4	.04	277	.03
28...	1345	0	19.0	.28	101	.08
JUN						
11...	1145	0	16.6	E.90	61	.15
25...	1450	0	18.2	1.0	81	.22
JUL						
02...	1300	0	21.0	E1.1	291	E.86
15...	1415	0	22.2	.84	76	.17
23...	1145	0	22.0	E.41	126	E.14
AUG						
08...	1755	0	23.0	E.20	44	E.02
SEP						
03...	1525	0	17.2	E.02	5	E.00A
17...	1410	0	19.5	E.20	66	E.04
OCT						
09...	1650	0	13.8	E.10	17	E.00A
APR , 1981						
22...	1310	0	14.2	E.80	100	E.22
JUL						
10...	1450	0	28.0	E.03	360	E.03
29...	1115	0	20.0	E.60	297	E.48
AUG						
18...	0940	0	19.6	E1.5	1010	E4.1
SEP						
10...	1615	0	21.0	E.10	136	E.04

TABLE 13.--Analysis of suspended-sediment samples taken at the diversion on Roza Canal at mile 59.9 (site 7) near Sunnyside, Wash.

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979					
24...	1145	13.5	.52	549	.77
MAY					
03...	1600	16.0	1.2	81	.26
05...	1800	18.5	2.1	65	.37
08...	1615	11.1	1.9	93	.48
10...	1720	12.4	1.9	79	.41
15...	1445	--	1.9	82	.42
17...	1510	--	1.9	93	.48
18...	1535	15.0	1.9	111	.57
24...	1630	17.4	1.4	84	.32
28...	1825	14.5	1.4	90	.34
29...	1630	13.4	1.4	68	.26
30...	1330	13.8	1.4	64	.24
31...	1100	--	1.4	32	.12
31...	1305	16.2	1.4	47	.18
31...	1500	--	1.4	42	.16
31...	1700	--	1.4	41	.15
31...	1900	--	1.4	50	.19
31...	2100	--	1.4	50	.19
31...	2300	--	1.4	46	.17
JUN					
01...	0100	--	1.4	37	.14
01...	0300	--	1.4	48	.18
01...	0500	--	1.4	53	.20
01...	0700	--	1.4	48	.18
01...	0900	--	1.4	70	.26
01...	1300	17.6	1.2	62	.20
06...	1600	16.4	1.2	74	.24
07...	1600	15.5	1.2	69	.22
08...	1350	15.2	1.2	54	.17
11...	1023	18.1	1.2	57	.18
12...	0940	18.3	2.1	60	.34
13...	1530	18.2	2.1	74	.42
14...	1200	17.4	2.1	80	.45
15...	1500	16.8	1.6	63	.27
18...	1200	15.6	1.4	42	.16
19...	1120	16.5	1.4	63	.24
20...	1615	15.8	1.4	56	.21
21...	1350	16.1	1.4	64	.24
22...	1143	16.4	2.3	78	.48
25...	1045	18.8	2.3	104	.65

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1979					
25...	1046	18.8	2.3	43	.27
25...	1245	--	2.3	61	.38
25...	1445	--	2.3	73	.45
25...	1645	--	2.3	60	.37
25...	1845	--	2.3	68	.42
25...	2045	--	2.3	65	.40
25...	2245	--	2.3	56	.35
26...	0045	--	2.3	59	.37
26...	0245	--	2.3	64	.40
26...	0445	--	2.3	59	.37
26...	0645	--	2.3	62	.39
26...	0845	--	2.3	56	.35
26...	0907	18.4	2.3	48	.30
26...	0920	19.6	2.3	46	.29
27...	1345	20.1	2.3	35	.22
28...	1320	20.3	1.7	36	.17
29...	1115	21.1	1.2	32	.10
JUL					
02...	1105	15.7	1.5	37	.15
03...	0840	15.4	1.5	35	.14
05...	1140	18.4	2.0	76	.41
06...	1210	18.6	1.6	44	.19
09...	1200	18.8	1.6	38	.16
10...	1340	17.8	1.8	82	.40
11...	0840	18.8	1.8	55	.27
12...	0950	18.2	1.8	37	.18
13...	1023	17.6	1.5	32	.13
16...	1235	20.6	1.0	23	.06
17...	0930	20.0	1.0	22	.06
18...	0835	21.5	1.6	32	.14
18...	1035	--	1.6	37	.16
18...	1150	22.2	1.6	26	.11
18...	1235	--	1.6	32	.14
18...	1435	--	1.6	37	.16
18...	1635	--	1.6	36	.16
18...	1835	--	1.6	36	.16
18...	2035	--	1.6	30	.13
18...	2235	--	1.6	37	.16
19...	0035	--	1.6	35	.15
19...	0235	--	1.6	35	.15

TABLE 13.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1979					
19...	0435	--	1.6	38	.16
19...	0635	--	1.6	37	.16
19...	0751	22.0	1.6	30	.13
19...	1145	22.6	1.6	31	.13
20...	1005	22.6	1.7	37	.17
23...	1150	20.4	2.2	36	.21
24...	1300	21.0	2.2	28	.17
25...	1400	21.6	2.2	32	.19
26...	1350	21.9	2.2	34	.20
27...	1145	22.2	.52	20	.03
30...	1415	20.0	.70	39	.07
31...	1045	20.6	.70	20	.04
AUG					
01...	1025	21.6	.70	19	.04
01...	1515	22.4	.70	30	.06
02...	1120	21.2	.70	18	.03
03...	1200	21.2	1.2	18	.06
06...	1230	20.6	.90	16	.04
07...	1320	21.0	.90	16	.04
08...	1055	20.6	.90	22	.05
09...	1305	21.9	.43	5	.00
10...	1020	21.4	.60	8	.01
15...	0955	19.8	.74	7	.01
16...	0930	20.3	.74	10	.02
16...	1130	--	.74	7	.01
16...	1145	20.8	.74	5	.00
16...	1330	--	.74	7	.01
16...	1530	--	.74	6	.01
16...	1730	--	.74	5	.00
16...	1930	--	.74	9	.02
16...	2130	--	.74	8	.02
16...	2330	--	.74	8	.02
17...	0130	--	.74	8	.02
17...	0330	--	.74	8	.02
17...	0530	--	.74	9	.02
17...	0730	--	.74	10	.02
17...	0930	--	.74	11	.02
17...	1000	20.6	.74	5	.00
17...	1131	20.9	.74	6	.01
28...	1115	20.4	.60	10	.02

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG , 1979					
29...	1025	19.8	.60	8	.01
30...	1230	20.8	.60	10	.02
APR , 1980					
14...	1430	12.4	.84	16	.04
15...	1420	11.8	.84	20	.05
16...	1040	11.0	1.2	35	.11
17...	0945	10.6	1.2	23	.07
18...	1100	10.4	1.6	24	.10
21...	1000	9.6	1.6	30	.13
22...	1045	10.0	1.4	34	.13
23...	1045	13.2	1.4	37	.14
23...	1245	--	1.4	33	.12
23...	1445	--	1.4	34	.13
23...	1645	--	1.4	31	.12
23...	1845	--	1.4	33	.12
23...	2045	--	1.4	33	.12
23...	2245	--	1.4	32	.12
24...	0045	--	1.4	32	.12
24...	0245	--	1.4	31	.12
24...	0445	--	1.4	32	.12
24...	0645	--	1.4	27	.10
24...	0845	11.4	1.4	26	.10
25...	1300	12.8	1.4	40	.15
28...	1030	13.6	2.1	28	.16
29...	1415	12.4	2.7	36	.26
30...	1210	11.2	2.7	82	.60
MAY					
01...	1000	11.0	2.7	68	.50
02...	1155	14.0	1.8	48	.23
05...	1100	13.8	1.8	38	.18
06...	1335	15.0	1.8	45	.22
07...	0935	12.8	1.8	65	.32
07...	1410	14.2	2.4	65	.42
08...	1005	13.4	1.9	41	.21
09...	1145	13.6	1.3	71	.25
12...	1225	13.0	1.3	45	.16
13...	1240	15.4	1.3	60	.21
14...	1225	14.8	1.3	50	.18
15...	1010	14.0	1.4	48	.18
16...	1340	12.2	1.5	35	.14
22...	1305	15.2	1.5	69	.28

TABLE 13.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1980					
23...	1345	14.2	1.5	83	.34
27...	0950	11.8	.84	48	.11
28...	1120	14.0	.84	35	.08
28...	1200	--	.84	46	.10
28...	1400	--	.84	50	.11
28...	1600	--	.84	54	.12
28...	1800	--	.84	59	.13
28...	2000	--	.84	62	.14
28...	2200	--	.84	55	.12
28...	2400	--	.84	56	.13
29...	0200	--	.84	59	.13
29...	0400	--	.84	49	.11
29...	0600	--	.84	45	.10
29...	0800	--	.84	43	.10
29...	1000	--	.84	41	.09
29...	1640	14.6	.79	38	.08
30...	1240	15.8	.79	39	.08
JUN					
02...	1155	15.8	2.0	44	.24
03...	1100	14.4	2.0	40	.22
04...	1110	14.2	2.0	36	.19
05...	1115	14.6	2.0	36	.19
10...	1150	16.8	3.0	42	.34
11...	1225	16.6	3.0	42	.34
11...	1424	16.6	3.0	50	.41
12...	1205	16.0	3.0	50	.41
13...	1035	15.2	1.8	72	.35
16...	1005	18.2	1.8	47	.23
17...	1035	18.8	1.8	48	.23
18...	1135	18.8	1.8	47	.23
19...	0925	18.2	1.8	38	.18
20...	1250	19.2	1.8	39	.19
24...	1200	17.0	1.8	24	.12
24...	1225	17.2	1.8	28	.14
24...	1400	--	1.8	28	.14
24...	1600	--	1.8	25	.12
24...	1800	--	1.8	35	.17
24...	2000	--	1.8	48	.23
24...	2200	--	1.8	36	.17
24...	2400	--	1.8	39	.19

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1980					
25...	0200	--	1.8	47	.23
25...	0400	--	1.8	41	.20
25...	0600	--	1.8	37	.18
25...	0800	--	1.8	32	.16
25...	1000	--	1.8	34	.17
25...	1100	16.4	1.8	38	.18
27...	1105	16.0	.84	34	.08
30...	1145	18.4	2.0	44	.24
JUL					
02...	1250	19.4	2.0	38	.21
03...	1240	19.4	2.0	32	.17
07...	1130	18.6	2.0	32	.17
08...	1255	20.0	2.0	34	.18
09...	1200	26.0	1.2	27	.09
10...	1115	19.6	1.2	21	.07
11...	1135	18.6	1.2	18	.06
14...	1215	22.0	1.2	14	.05
15...	1021	19.1	1.2	130	.42
15...	1050	19.6	1.2	19	.06
16...	1220	18.5	.84	44	.10
17...	1200	19.0	.84	31	.07
18...	1110	19.0	.84	32	.07
21...	1155	18.0	.84	28	.06
22...	1005	19.0	1.1	34	.10
23...	1045	19.2	1.3	36	.13
23...	1204	18.5	1.3	36	.13
23...	1245	--	1.3	36	.13
23...	1645	--	1.3	44	.15
23...	1845	--	1.3	42	.15
23...	2045	--	1.3	41	.14
23...	2245	--	1.3	40	.14
24...	0045	--	1.3	40	.14
24...	0245	--	1.3	36	.13
24...	0445	--	1.3	37	.13
24...	0645	--	1.3	39	.14
24...	0845	--	1.3	38	.13
24...	0920	17.8	1.3	38	.13
24...	1130	17.6	1.3	36	.13
25...	1140	17.6	1.3	36	.13
28...	1150	18.0	1.3	26	.09

TABLE 13.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1980					
29...	1145	18.0	1.3	31	.11
30...	1230	18.0	1.3	33	.12
31...	1120	20.0	1.3	34	.12
AUG					
01...	1110	17.0	.90	36	.09
04...	1130	15.8	.90	29	.07
05...	1115	16.4	.90	32	.08
06...	1200	16.2	.90	31	.08
07...	1130	16.6	.90	28	.07
08...	1015	16.6	.90	56	.14
08...	1150	16.5	.90	43	.10
11...	1050	18.0	.90	25	.06
12...	1100	18.2	1.0	26	.07
14...	1050	18.6	1.0	30	.08
15...	1230	18.2	1.0	24	.06
18...	1105	16.2	1.0	22	.06
19...	1420	16.2	1.2	22	.07
20...	1150	16.6	1.2	22	.07
21...	1000	17.6	1.2	25	.08
21...	1200	--	1.2	23	.07
21...	1400	--	1.2	20	.06
21...	1600	--	1.2	21	.07
21...	1800	--	1.2	24	.08
21...	2000	--	1.2	24	.08
21...	2200	--	1.2	30	.10
21...	2400	--	1.2	24	.08
22...	0200	--	1.2	26	.08
22...	0400	--	1.2	28	.09
22...	0600	--	1.2	30	.10
22...	0800	17.6	1.2	28	.09
22...	1130	--	.56	14	.02
27...	1145	--	.56	25	.04
28...	1140	16.6	1.2	22	.07
SEP					
02...	1220	16.4	1.9	23	.12
03...	1005	15.8	1.9	20	.10
03...	1305	16.2	1.9	26	.13
04...	1230	16.2	1.9	16	.08
05...	1200	16.6	1.1	16	.05
08...	1230	17.0	1.1	16	.05
09...	1230	17.2	1.1	14	.04

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SEP , 1980					
10...	1200	17.6	1.1	11	.03
11...	1145	17.6	1.1	12	.04
12...	1040	17.8	1.1	10	.03
15...	1205	15.8	1.4	6	.02
16...	1140	17.2	1.4	7	.03
17...	1020	17.8	1.4	18	.07
17...	1220	--	1.4	16	.06
17...	1420	--	1.4	13	.05
17...	1620	--	1.4	12	.05
17...	1820	--	1.4	15	.06
17...	2020	--	1.4	11	.04
17...	2220	--	1.4	15	.06
18...	0020	--	1.4	11	.04
18...	0620	--	1.4	16	.06
18...	0820	17.6	1.4	13	.05
18...	1220	--	1.4	--	--
19...	1120	16.0	1.8	11	.05
22...	1220	13.8	1.8	10	.05
23...	1235	14.6	1.8	9	.04
24...	1200	14.6	1.8	10	.05
25...	1105	15.0	1.8	16	.08
26...	0945	14.4	1.8	15	.07
29...	1140	15.6	1.8	8	.04
30...	1120	15.2	1.8	9	.04
OCT					
01...	0930	14.4	1.8	6	.03
02...	1130	14.2	2.0	7	.04
03...	1210	14.2	2.0	6	.03
06...	1215	15.0	2.0	6	.03
07...	1000	14.8	2.0	10	.05
08...	1000	14.6	2.0	7	.04
09...	1100	13.6	2.0	9	.05
09...	1300	--	2.0	10	.05
09...	1500	--	2.0	8	.04
09...	1700	--	2.0	9	.05
09...	1900	--	2.0	10	.05
09...	2100	--	2.0	9	.05
09...	2300	--	2.0	11	.06
10...	0100	--	2.0	13	.07
10...	0300	--	2.0	8	.04

TABLE 13.--Continued

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT , 1980					
10...	0500	--	2.0	12	.06
10...	0700	--	2.0	11	.06
10...	0900	--	2.0	6	.03
10...	1100	--	2.0	5	.03
10...	1300	--	2.0	3	.02
10...	1325	13.2	2.0	5	.03
13...	1025	11.4	2.0	3	.02
14...	1110	11.2	2.0	6	.03
MAR , 1981					
30...	1240	--	.70	18	.03
31...	1111	--	.70	12	.02
APR					
01...	1235	--	.70	6	.01
02...	1505	--	.70	22	.04
06...	1530	8.0	.70	10	.02
08...	1523	8.3	.70	14	.03
09...	1315	9.0	.70	18	.03
10...	1445	9.2	1.2	14	.05
14...	1250	9.8	1.2	12	.04
15...	1250	10.0	1.2	6	.02
16...	1435	11.6	1.2	12	.04
20...	1312	13.0	.79	11	.02
21...	1325	13.0	.79	10	.02
22...	1025	12.8	.79	13	.03
23...	1045	13.4	.79	11	.02
24...	1227	14.2	.79	12	.03
27...	1225	11.0	.70	26	.05
28...	1030	12.8	.70	13	.02
29...	1045	11.2	.70	17	.03
29...	1100	--	.70	22	.04
29...	1200	--	.70	22	.04
29...	1300	--	.70	17	.03
29...	1400	--	.70	15	.03
29...	1500	--	.70	16	.03
29...	1600	--	.70	19	.04
29...	1700	--	.70	13	.02
29...	1800	--	.70	16	.03
29...	1900	--	.70	9	.02
29...	2000	--	.70	13	.02
29...	2100	--	.70	12	.02
29...	2200	--	.70	12	.02

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
APR , 1981					
29...	2300	--	.70	10	.02
29...	2400	--	.70	14	.03
30...	0100	--	.70	31	.06
30...	0200	--	.70	17	.03
30...	0300	--	.70	14	.03
30...	0400	--	.70	15	.03
30...	0500	--	.70	15	.03
30...	0600	--	.70	13	.02
30...	0700	--	.70	11	.02
30...	0800	--	.70	18	.03
30...	0900	--	.70	17	.03
30...	1000	--	.70	16	.03
30...	1040	14.0	.70	18	.03
MAY					
04...	1300	12.2	.84	40	.09
05...	1235	11.2	.84	36	.08
06...	1135	11.4	.84	40	.09
11...	1315	14.0	1.3	47	.16
11...	1500	--	1.3	42	.15
11...	1600	--	1.3	40	.14
11...	1700	--	1.3	35	.12
11...	1800	--	1.3	43	.15
11...	1900	--	1.3	40	.14
11...	2000	--	1.3	42	.15
11...	2100	--	1.3	54	.19
11...	2200	--	1.3	50	.18
11...	2300	--	1.3	45	.16
11...	2400	--	1.3	50	.18
12...	0100	--	1.3	53	.19
12...	0200	--	1.3	49	.17
12...	0300	--	1.3	46	.16
12...	0400	--	1.3	49	.17
12...	0500	--	1.3	49	.17
12...	0600	--	1.3	57	.20
12...	0700	--	1.3	52	.18
12...	0800	--	1.3	51	.18
12...	0900	--	1.3	47	.16
12...	1000	--	1.3	47	.16
12...	1100	--	1.3	49	.17
12...	1200	--	1.3	44	.15

TABLE 13.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY , 1981					
12...	1240	13.6	1.6	42	.18
13...	1200	14.2	1.6	46	.20
14...	1315	14.8	1.6	35	.15
15...	1145	13.4	1.6	26	.11
18...	1240	14.0	.84	27	.06
19...	1350	14.4	.84	26	.06
20...	1200	15.0	.52	17	.02
21...	1130	15.8	.52	24	.03
26...	1325	17.0	1.1	30	.09
26...	1340	--	1.1	31	.09
26...	1440	--	1.1	26	.08
26...	1540	--	1.1	31	.09
26...	1640	--	1.1	45	.13
26...	1740	--	1.1	30	.09
26...	1840	--	1.1	34	.10
26...	1940	--	1.1	33	.10
26...	2040	--	1.1	30	.09
26...	2140	--	1.1	25	.07
26...	2240	--	1.1	32	.10
27...	0040	--	1.1	22	.07
27...	0140	--	1.1	40	.12
27...	0240	--	1.1	33	.10
27...	0340	--	1.1	31	.09
27...	0440	--	1.1	28	.08
27...	0540	--	1.1	34	.10
27...	0640	--	1.1	35	.10
27...	0740	--	1.1	30	.09
27...	0840	--	1.1	33	.10
27...	0940	--	1.1	21	.06
27...	1040	--	1.1	33	.10
27...	1140	--	1.1	30	.09
27...	1225	17.4	.52	25	.04
27...	1240	--	.52	31	.04
27...	1340	--	1.1	26	.08
28...	1210	18.0	.52	16	.02
29...	1250	19.0	1.1	30	.09
JUN					
01...	1232	16.8	1.1	31	.09
02...	1200	17.0	1.1	32	.10
03...	1207	17.0	1.1	36	.11

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUN , 1981					
04...	1400	15.0	1.1	42	.12
05...	1250	15.8	1.7	42	.19
09...	1325	14.0	1.6	36	.16
10...	1300	15.4	1.6	37	.16
11...	1245	16.0	1.1	28	.08
16...	1500	16.8	1.7	28	.13
17...	1235	16.0	1.7	31	.14
18...	1350	15.8	1.7	28	.13
19...	1130	15.0	1.7	32	.15
22...	1145	15.0	1.2	30	.10
22...	1455	--	1.6	47	.20
22...	1555	--	1.6	42	.18
22...	1655	--	1.6	45	.19
22...	1755	--	1.6	40	.17
22...	1855	--	1.6	47	.20
22...	1955	--	1.6	40	.17
22...	2055	--	1.6	44	.19
22...	2155	--	1.6	40	.17
22...	2255	--	1.6	43	.19
22...	2355	--	1.6	41	.18
23...	0055	--	1.6	37	.16
23...	0155	--	1.6	38	.16
23...	0255	--	1.6	40	.17
23...	0355	--	1.6	39	.17
23...	0455	--	1.6	40	.17
23...	0555	--	1.6	38	.16
23...	0655	--	1.6	46	.20
23...	0755	--	1.6	41	.18
23...	0855	--	1.6	40	.17
23...	0955	--	1.6	38	.16
23...	1055	--	1.6	42	.18
23...	1130	15.0	1.6	32	.14
23...	1155	--	1.6	36	.16
23...	1255	--	1.6	42	.18
23...	1355	--	1.6	43	.19
25...	1440	18.0	1.6	44	.19
29...	1445	--	1.2	--	--
30...	1145	18.0	1.2	46	.15
JUL					
01...	1130	--	2.0	--	--

TABLE 13.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1981					
01...	1425	17.6	1.7	39	.18
02...	1330	16.2	1.8	47	.23
06...	1330	16.4	1.0	49	.13
06...	1340	--	1.0	33	.09
06...	1440	--	1.0	39	.11
06...	1540	--	1.0	35	.09
06...	1640	--	1.0	31	.08
06...	1740	--	1.0	37	.10
06...	1840	--	1.0	33	.09
06...	1940	--	1.0	39	.11
06...	2040	--	1.0	34	.09
06...	2140	--	1.0	37	.10
06...	2240	--	1.0	72	.19
06...	2340	--	1.0	35	.09
07...	0040	--	1.0	36	.10
07...	0140	--	1.0	35	.09
07...	0240	--	1.0	31	.08
07...	0340	--	1.0	35	.09
07...	0440	--	1.0	36	.10
07...	0540	--	1.0	39	.11
07...	0640	--	1.0	45	.12
07...	0740	--	1.0	35	.09
07...	0840	--	1.0	39	.11
07...	0940	--	1.0	29	.08
07...	1040	--	1.0	33	.09
07...	1140	--	1.0	31	.08
07...	1240	--	.90	38	.09
07...	1340	14.0	.90	24	.06
08...	1240	14.8	.90	28	.07
09...	1425	15.0	1.5	30	.12
10...	1330	14.8	1.5	32	.13
13...	1324	15.6	1.5	34	.14
14...	1340	15.8	1.5	23	.09
15...	1253	17.0	1.5	53	.21
17...	1250	19.2	1.6	19	.08
20...	1440	19.2	1.6	17	.07
21...	1350	18.8	1.6	24	.10
23...	1200	18.4	1.6	28	.12
24...	1130	18.1	1.6	28	.12

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
JUL , 1981					
27...	1050	18.6	1.6	23	.10
28...	1215	20.0	1.4	19	.07
29...	1245	19.9	.60	21	.03
29...	1525	20.0	.60	22	.04
31...	1200	18.0	.60	13	.02
AUG					
04...	1225	18.6	1.1	14	.04
05...	1400	19.2	1.1	13	.04
06...	1150	19.8	1.1	16	.05
06...	1250	--	1.1	28	.08
06...	1350	--	1.1	20	.06
06...	1450	--	1.1	23	.07
06...	1550	--	1.1	30	.09
06...	1650	--	1.1	26	.08
06...	1750	--	1.1	27	.08
06...	1850	--	1.1	23	.07
06...	1950	--	1.1	24	.07
06...	2050	--	1.1	26	.08
06...	2150	--	1.1	23	.07
06...	2250	--	1.1	26	.08
06...	2350	--	1.1	23	.07
07...	0050	--	1.1	19	.06
07...	0150	--	1.1	25	.07
07...	0250	--	1.1	21	.06
07...	0350	--	1.1	24	.07
07...	0450	--	1.1	25	.07
07...	0550	--	1.1	22	.07
07...	0650	--	1.1	20	.06
07...	0750	--	1.1	39	.12
07...	0850	--	1.1	21	.06
07...	0950	--	1.1	25	.07
07...	1050	--	1.1	24	.07
07...	1100	20.0	1.1	20	.06
10...	1145	21.2	1.1	16	.05
11...	1010	23.0	1.7	16	.07
12...	1240	21.6	1.7	13	.06
13...	1110	21.8	1.7	22	.10
14...	1105	21.8	1.3	18	.06
17...	1124	21.6	1.3	74	.26
18...	0935	21.0	1.3	17	.06

TABLE 13.--Continued

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG , 1981					
19...	1005	21.0	1.3	18	.06
20...	1035	20.2	.84	20	.05
21...	1045	19.6	.84	20	.05
24...	1040	20.0	.84	26	.06
25...	1125	20.0	1.4	22	.08
26...	1110	19.0	1.4	19	.07
27...	1230	18.8	1.1	26	.08
31...	1220	18.6	.30	9	.00
SEP					
01...	1050	19.4	.01	8	.00
02...	1245	19.4	.01	6	.00
09...	1120	19.8	.52	21	.03
09...	1320	19.8	1.2	14	.05
10...	1130	19.4	1.2	19	.06
10...	1230	--	1.4	16	.06
10...	1330	--	1.4	15	.06
10...	1430	--	1.4	12	.05
10...	1530	--	1.4	17	.06
10...	1630	--	1.4	13	.05
10...	1730	--	1.4	14	.05
10...	1830	--	1.4	15	.06
10...	1930	--	1.4	13	.05
10...	2030	--	1.4	22	.08
10...	2130	--	1.4	19	.07
10...	2230	--	1.4	16	.06
10...	2330	--	1.4	19	.07
11...	0030	--	1.4	19	.07
11...	0130	--	1.4	17	.06
11...	0230	--	1.4	15	.06
11...	0330	--	1.4	19	.07
11...	0430	--	1.4	17	.06
11...	0530	--	1.4	14	.05
11...	0630	--	1.4	18	.07
11...	0730	--	1.4	19	.07
11...	0830	--	1.4	12	.05
11...	0930	--	1.4	16	.06
11...	1030	--	1.4	14	.05
14...	1020	18.6	1.4	18	.07
21...	1047	15.2	.65	10	.02
22...	1400	14.4	.65	10	.02

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
SEP , 1981					
23...	1118	13.6	.65	6	.01
24...	1240	13.4	.65	8	.01
25...	0955	13.2	.65	8	.01
28...	1135	13.2	.65	6	.01
30...	1013	12.8	.65	6	.01

TABLE 14.--Miscellaneous sediment data for diversions (sites 5, 6, 8, 9, 10) from Roza Canal flowing into Drains 61.0, 60.7, 59.6, and 59.4, near Sunnyside, Wash.

[E = Estimated; A = Less than 0.005 tons]

SITE 5

462222119570400 - DIVERSION FR ROZA CNL AT MI 59.3 NR SUNNYSIDE WA (LAT 46 22 22 LONG 119 57 04)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
02...	1345	0	8.4	1.5	5	.02
09...	1435	0	10.0	1.7	19	.09
MAY						
31...	1435	0	16.3	4.1	57	.63
JUN						
25...	1735	0	19.7	4.9	66	.87
JUL						
18...	0910	0	21.6	3.4	47	.43
AUG						
01...	1525	0	22.4	3.4	28	.26
16...	0900	0	20.2	1.3	9	.03
MAY , 1980						
29...	1625	0	14.8	2.6	42	.29
JUN						
25...	1125	0	16.5	3.9	32	.34
JUL						
23...	1015	0	19.0	2.6	35	.25
AUG						
08...	1200	0	16.4	2.6	49	.34
21...	0950	0	17.4	2.2	83	.49
SEP						
03...	0950	0	15.8	1.7	20	.09
17...	1007	0	17.8	2.6	13	.09
OCT						
09...	1115	0	13.6	1.3	8	.03
APR , 1981						
30...	1050	0	14.0	3.6	19	.18
MAY						
26...	1310	0	16.8	2.4	44	.29
JUN						
29...	1510	0	17.4	3.7	42	.42
JUL						
06...	1315	0	16.6	4.7	71	.90
29...	1510	0	19.8	2.6	31	.22
AUG						
04...	1140	0	18.4	2.3	24	.15
SEP						
09...	1230	0	19.8	3.6	32	.31

TABLE 14.--Continued

SITE 6

462221119565300 - DIVERSION FR ROZA CNL AT MI 59.5 NR SUNNYSIDE WA (LAT 46 22 21 LONG 119 56 53)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
09...	1430	0	10.0	.83	8	.02
MAY						
21...	0920	0	15.5	1.4	91	.34
31...	1445	0	16.3	.52	17	.02
JUN						
25...	1713	0	19.7	.38	16	.02
JUL						
18...	0905	0	21.5	1.4	18	.07
AUG						
01...	1520	0	22.4	2.1	31	.18
16...	0910	0	20.9	1.2	9	.03
MAY , 1980						
29...	1635	0	14.8	.30	25	.02
JUN						
25...	1120	0	16.4	1.5	30	.12
JUL						
23...	1022	0	19.3	1.3	33	.12
AUG						
08...	1150	0	16.5	.45	29	.04
21...	0955	0	17.6	1.9	22	.11
SEP						
03...	1000	0	15.8	1.1	19	.06
17...	1008	0	17.5	.00	4	.00A
OCT						
09...	1125	0	13.6	2.2	7	.04
APR , 1981						
30...	1100	0	15.4	E.01	10	E.00A
JUN						
29...	1500	0	17.6	1.2	23	.07
JUL						
06...	1330	0	16.4	.83	47	.11
29...	1515	0	19.8	.86	26	.06
AUG						
04...	1155	0	18.0	.45	16	.02
SEP						
09...	1225	0	20.0	.96	13	.03

TABLE 14.--Continued

SITE 8

462204119560400 - DIVERSION FROM ROZA CANAL AT MILE 60.3 (LAT 46 22 04 LONG 119 56 04)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
24...	1515	0	12.7	1.2	16	.05
30...	1605	0	16.0	2.8	32	.24
MAY						
31...	1515	0	16.2	2.0	45	.24
JUN						
25...	1707	0	19.6	3.3	38	.34
JUL						
18...	0900	0	21.5	2.7	27	.20
AUG						
01...	1510	0	22.6	1.7	20	.09
16...	0945	0	20.4	1.7	9	.04
MAY , 1980						
29...	1645	0	14.6	1.1	42	.12
JUN						
25...	1040	0	16.4	1.3	30	.11
JUL						
23...	1055	0	19.4	2.0	37	.20
AUG						
08...	1140	0	16.6	2.0	49	.26
21...	1020	0	17.8	1.0	40	.11
SEP						
03...	1010	0	15.8	1.6	14	.06
17...	1029	0	18.0	1.9	16	.08
OCT						
09...	1135	0	13.7	3.8	9	.09
APR , 1981						
30...	1115	0	14.0	1.1	17	.05
MAY						
26...	1330	0	18.0	E.01	15	E.00A
JUN						
29...	1445	0	17.4	2.2	29	.17
JUL						
20...	1445	0	19.0	2.0	19	.10
29...	1530	0	20.0	1.9	25	.13
AUG						
04...	1215	0	18.0	1.8	14	.07
SEP						
09...	1215	0	20.1	1.2	6	.02

TABLE 14.--Continued

SITE 9

462158119553900 - DIVERSION FROM ROZA CANAL AT MILE 60.8 (LAT 46 21 58 LONG 119 55 39)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
02...	1425	0	8.4	1.7	14	.06
05...	1330	0	10.5	1.7	9	.04
09...	1455	0	10.0	1.3	10	.04
MAY						
31...	1525	0	16.2	4.2	68	.77
JUN						
25...	1700	0	19.6	4.5	35	.43
JUL						
18...	0855	0	21.5	2.8	25	.19
AUG						
01...	1505	0	22.4	3.4	23	.21
16...	0955	0	20.9	2.1	12	.07
MAY , 1980						
29...	1650	0	14.8	3.6	57	.55
JUN						
25...	1050	0	16.4	2.8	44	.33
JUL						
23...	1100	0	19.4	3.4	47	.43
AUG						
08...	1130	0	16.6	2.8	49	.37
21...	1025	0	17.8	2.8	E30	E.23
SEP						
03...	1015	0	15.8	3.0	18	.15
17...	1033	0	18.0	1.3	10	.04
OCT						
09...	1140	0	13.7	1.5	8	.03
APR , 1981						
30...	1125	0	14.2	3.2	22	.19
MAY						
26...	1318	0	16.8	2.8	24	.18
JUN						
29...	1445	0	17.6	3.8	42	.43
JUL						
20...	1439	0	18.6	3.0	19	.15
29...	1535	0	20.0	4.1	45	.50
AUG						
05...	1227	0	17.8	2.4	11	.07
SEP						
09...	1207	0	20.0	2.7	21	.15

TABLE 14.--Continued

SITE 10

462143119551700 - DIVERSION FROM ROZA CANAL AT MILE 61.4 (LAT 46 21 43 LONG 119 55 17)

DATE	TIME	TYPE	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1979						
18...	1300	0	96.0	.84	13	.03
MAY						
31...	1535	0	16.3	2.7	38	.28
JUN						
25...	1655	0	20.0	2.4	27	.17
JUL						
18...	0850	0	21.5	2.4	23	.15
AUG						
01...	1500	0	22.6	3.0	24	.19
16...	1000	0	20.6	2.0	5	.03
MAY , 1980						
29...	1700	0	15.0	1.0	41	.11
JUN						
25...	1035	0	16.4	1.1	30	.09
JUL						
23...	1105	0	19.4	3.0	34	.28
AUG						
08...	1125	0	16.6	2.4	49	.32
21...	1030	0	17.6	2.8	18	.14
SEP						
03...	1020	0	15.8	2.2	11	.07
17...	1036	0	17.5	1.2	5	.02
OCT						
09...	1150	0	13.7	2.2	6	.04
APR , 1981						
30...	1135	0	14.2	1.5	19	.08
MAY						
26...	1306	0	16.8	2.1	28	.16
JUN						
29...	1440	0	17.4	2.8	33	.25
JUL						
20...	1432	0	19.0	2.8	18	.14
29...	1540	0	20.0	1.9	25	.13
AUG						
05...	1240	0	17.2	2.1	14	.08
SEP						
09...	1200	0	20.0	3.5	23	.22