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ANNUAL REPORT

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EPA CONTRACT No. CR806603

EFFECT OF AGRICULTURAL LAND USE PRACTICES ON STREAM WATER QUALITY

I. FIELD-TO-STREAM PROCESSES

SUBMITTED BY:

HOWARD P. JOHNSON
PRINCIPAL INVESTIGATOR
DEPT. OF AGRICULTURAL ENGINEERING
IOWA STATE UNIVERSITY

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EFFECT OF AGRICULTURAL LAND USE PRACTICES ON STREAM WATER QUALITY: FIELD TO STREAM PROCESSES

INTRODUCTION

The Rural Clean Water Program (RCWP) and the state "208" plans are important issues to agricultural production, resource conservation, environmental quality and the related research. The RCWP provides a framework for implementing the program and for use of the associated funding identified in the 1977 Amendments of the Federal Water Pollution Control Act, Section 208-J. Since the control or prevention of nonpoint pollution from agricultural land is directed at site-specific management, and compliance monitoring will probably be conducted on land rather than on water, the selection of land use practices (Best Management Practices, BMP's) which will most likely maintain good water quality in streams, as well as being economically feasible and socially acceptable, is essential.

The Environmental Protection Agency (EPA) judged that nonpoint pollution from agricultural lands can best be controlled by BMP's; the need for a good understanding of the relationship of BMP's to water quality, and to socio-economic feasibility is evident. This project, one of four submitted from an interdisciplinary team from Iowa State University, is directed to the relationship of field practices to stream water quality. After a period during which a data base has been collected, BMP changes within portions of the currently gaged watershed were initiated. According to the initial plan, after changes in practices were made, further data would be collected, and by the use of simulation models, a verified water quality management model should result. Simply stated, by use of

field measurements and sampling done before and after changes in practices, by laboratory analyses of samples, and by use of field data and laboratory analyses in simulation models, the physical and biological relationships between stream water quality and management practices would be better defined.

Because of the shift in funding within the Environmental Protection Agency, notification of termination of project support after 1980, and reduction of funds for 1980, some of the objectives were not pursued, some staff were not hired, equipment was not purchased and plans were made to terminate field work about August 15, 1980. The analyses will proceed as far as possible to meet the completion report deadline of December 31, 1980.

REVIEW OF OBJECTIVES

I. General Objectives

A good understanding of the relationship of the mechanics of surface runoff, base flow and the erosion process to nonpoint pollution sources of sediment, organic material, nutrients and pesticides is essential to prediction of the hazard therefrom. The systems involved, including the transport mechanism, soil, weather and management, are extremely complex. In addition an understanding of the chemistry of nutrients and pesticides, and how they interact with the climate, soil and biological systems is required.

The research proposed is based on the belief that there is only one technique available which enables synthesis of a system containing many sub-systems, namely simulation modeling. It is clearly impractical to implement the number of watershed studies needed to evaluate practices on the basis of long term field observations and statistical analyses. The time, money and personnel are not available. The use of relatively deterministic parametric models to simulate the system makes possible good short term judgments and leads to a better understanding of the various processes within the system and how they interact. Experience with real data and with testing and refining of such a model should provide a sound basis for the scientist and engineer making recommendations related to land management practices.

The study proposed herein will provide a better understanding of the impacts of agricultural systems on stream water quality, and provides an approach to analyzing effects of BMP by mathematical models.

The general objectives of the study are (1) to collect management, soils, hydrologic and water quality data before and after installation of Best Management Practices (BMPs), and to conduct simulation model oriented research related to impacts of BMP's on the quality of water from agricultural land. The study includes the transport of sediment, nutrients and pesticides from the field to the stream. The goals of the study are to provide a better understanding of the effect of management practices on stream water quality, and to enable more accurate analysis of alternative agricultural management practices with simulation (mathematical) models.

II. Specific Objectives

A. To collect field data suitable for use in calibration, testing, extending and refining simulation models designed to enable prediction of movement of nonpoint pollutants from the field to the stream.

1. Collect, analyze, reduce and disseminate data on sediment, nutrients and pesticides in runoff from field size and larger complex agricultural watersheds for use in models.
2. Sample soil profile, analyze samples, reduce and disseminate data on pesticides and nutrients in cropland and pasture soil profiles for use in models.
3. Relate the loss of nutrients and pesticides in runoff from farm unit size watersheds to that from larger complex watersheds, and to pesticide properties, application technology and associated hydrologic and management factors.
4. Determine the physical properties of transported sediment and the sediment along and in the stream bed, and measure cross-section changes in the channel.

B. To measure and relate the effect of best management practices to soil erosion, sedimentation, and movement of nutrients and pesticides from field to stream*.

1. Plan, select and assist in implementation of selected management practices on selected watersheds.
2. Collect, analyze, reduce and disseminate data on sediment, nutrients and pesticides in runoff from the selected complex watersheds.
3. By use of simulation models evaluate the effect of practices on water quality in streams within agricultural watersheds.

C. To obtain field data on sediment deposition patterns, soils and ground water to provide long term measures of movement of sediment from field to stream, to determine feasibility of BMP's by soils from the soils viewpoint, and to define groundwater quality below the tile drain level*.

1. Determine sedimentation patterns, differential erosion rates of soil mapping units, and sediment transport relative to landscape position, geometry, soil properties and stratigraphy.
2. Define soil mapping units, selected physical and chemical properties of soils and sediments, and stratigraphy of areas where best management practices are installed.
3. To evaluate groundwater quality in best management practice areas by use of water table levels, moisture gradients, and sampling groundwater below tile drain level.

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*These objectives will be partially achieved through 1980.

SCOPE

This project was contracted for two years, beginning January 1, 1979 after amendment. Parties cooperating and integrating efforts are Departments of Agricultural Engineering and Agronomy, Agriculture and Home Economics Experiment Station, Iowa State University, Ames, Iowa; and the United States Environmental Protection Agency, Environmental Research Laboratory, Athens, Georgia. The budget proposed for the calendar year 1980 is $408,164, $31,729 and $376,435 being committed by the Iowa Agriculture and Home Economics Experiment Station and U.S. Environmental Protection Agency, respectively. The budget was subsequently reduced to $301,480 ($269,751 from EPA funds). The planning horizon for the project was five years, through December 31, 1983, however, at present, termination is planned for December 31, 1980. The project is funded annually through a cooperative agreement, Mr. Charles Smith of the Environmental Research Laboratory, Athens, being the project officer.

APPROACH

The project follows a study conducted on the same watershed (1975-1978) and entitled "Development and Testing of Mathematical Models as Management Tools for Agricultural Non-point Pollution Control." The watershed is 20 square miles in area and contains several sub-watersheds ranging from 15 acres to 13 square miles in area. The area is typical of the intensely cropped land with good natural drainage found in the upper Middle West.

By gaging flow before and after land management practices are installed, and by sampling and analyzing samples for concentrations of non-point pollutants, data are to be collected reflecting impacts of practices and watershed size. Supplementary management data as well as sediment deposition and soil profile and groundwater quality data will be obtained. The data are to be available to modelers for calibration and verification of relatively deterministic simulation models. Use of the data in revised models is intended to provide a tool useful for prediction of the impacts of agricultural practices on water quality, and to aid in decisions related to improvement of stream and lake environment.

PROGRESS ON WORK PLAN - Agricultural Engineering

I. Introduction

The commitment of personnel, facilities in the Four Mile Creek Watershed and at Iowa State University has proceeded according to plan. Drs. H. P. Johnson and J. L. Baker act as principal investigator and co-principal investigator. Dr. Baker is project manager; Dr. Johnson acts as coordinator among the four projects associated with this study. Dr. C. E. Anderson, Agricultural Engineering and Dr. T. E. Fenton, Agronomy are co-investigators.

A. Personnel

The following are the annual time commitments of the Iowa State University personnel to the project.

Dr. Howard P. Johnson - Agricultural Engineer	- 15% SMY*
Dr. James L. Baker - Chemist	- 40% SMY
Dr. Carl E. Anderson - Agricultural Engineer	- 5% SMY
Dr. Tom E. Fenton - Agronomist (Soils)	- 10% SMY

Several supporting staff are associated with the project. Mr. Marvin Borcherding continued as field manager of the current project and thus has three years experience on the previous project. Mr. Borcherding is a 1975 honors graduate in Agronomy at Iowa State University; he completed an M.S. degree in 1979. His thesis was related to nutrient balances in the small watersheds gaged in the Four Mile Creek Watershed. Mr. Borcherding has a farm background and is acquainted with agriculture as practiced in Iowa. He also has a summer's work experience on a Minnesota Department of Transportation road surveying crew. He supervised field installations and coordinated research aspects where farmers are involved; in 1980 he will be the practices coordinator.

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*Scientist Man-Year.

Mr. James Hamlett was employed on the project in July 1979. He has a BS in Agricultural Engineering (1974) and has three years experience with the Iowa Natural Resources Council and two years experience with the Iowa Department of Soil Conservation. He has a background in agriculture in Iowa. Mr. Hamlett will be in charge of the sediment sampling and analysis (physical) and takes data on channel changes. He is enrolled in the Graduate School and will work toward an MS degree in Agricultural Engineering.

Mr. Keith Helmlinger continued on the current project as data analysis and computer operations specialist. Mr. Helmlinger has two years experience in industry where he became intimately acquainted with computer use. Mr. Helmlinger is acquainted with agriculture (Ohio) and has chosen to return to engineering research and study applied to agriculture. He is enrolled in the Graduate School working on an MS degree.

Dr. Frank Schaller was the Practices Coordinator for the project in 1979. Dr. Schaller, retired from the Iowa Central Agronomy staff, has many years of research and extension experience. We are very fortunate that he was able to accept the responsibility and to take the lead in coordinating the work of several agencies in preparation for installation of Best Management Practices. While he was able to assist for the first year only, his experience has been valuable in setting up procedures for operation during later years of the project. He returned for two months (April and May) of temporary service in 1980 to assist during the heaviest work load.

Mr. Loren Shiers will be in charge of the pesticide analysis on the project. Mr. Shiers has a BS degree in Chemistry and has completed some graduate work. He has 14 years of experience related to analytical chemistry obtained at the Ames Laboratory, Iowa State University. The Ames Laboratory has been associated with rare earths and atomic energy studies for many years. He is a resident of Ames and is transferring from the Ames Laboratory to the Agricultural Engineering Analytical Laboratory.

Mr. Wysocki has been employed three-fourths time in the Department of Agronomy in research associated with the soils and groundwater aspects of the project. Mr. Wysocki has an MS degree (1979) from VPI in Soil Morphology and Genesis. He is beginning work on a PhD program and has a farm background from Wisconsin.

Most of the laboratory analyses are done with the help of technicians. Linda Schultz assists in coordination of the laboratory work, prepares samples and performs analyses related to particle size and nutrients. She has several years experience and transferred to our laboratory from the College of Veterinary Medicine. She has completed some undergraduate work at Iowa State.

Sherry Dunston assists with the analysis of pesticides. She has a BS degree in Horticulture and is an honors graduate from Iowa State.

Susan Madsen assisted with nutrient analyses, especially those analyses associated with the auto analyzer. Susan is a biology graduate of Iowa State and has a minor in Chemistry. She transferred from the Engineering Research Laboratory where she had been doing similar work in water chemistry. After a period of illness Miss Madsen

resigned and Kenneth Johnson, BS graduate in Biology and part-time chemistry laboratory instructor, accepted the responsibility.

Mr. Larry Vest, a farmer living near the Traer gage site, assists with the field work. He takes daily samples at site 4, provides a shed for freezers, an area for the weather station and makes daily weather observations. He has also assisted in making meeting arrangements at the nearby Amity Church, where several meetings related to the Project have been held. Mr. Ken Bru, another farmer in the watershed, has assisted in sampling storm runoff from site 8. The help of these men makes storm sampling possible with a small field project staff.

Graduate students and undergraduate students have provided competent assistance on an hourly basis. Deserving special mention are Gillian Smith (data processing, editing) and James Korslund and George Hollins (summer field operations and laboratory assistance). Gillian is a graduate student in Education; James is an Agricultural Engineering sophomore and a Merit Scholar.

Barbara Kalsem and Lois Murphy provide the secretarial and accounting assistance in our front office. While they are not paid from project funds, they should be recognized for the extra effort required to support the project, especially at times when reports are typed, projects initiated and audits made.

B. Facilities

Iowa State office, laboratory, and shop facilities are available for project needs. Offices in room 217 Agricultural Engineering accommodate three research associates, and Dr. Schaller. The chemical analyses are done in one of the analytical laboratories of the Agricultural Engineering Department. A part of an additional laboratory has been isolated and is

utilized for chemical analyses and storing, setting up and checking equipment. Two refrigeration rooms in the Agricultural Engineering building are used to store water-sediment samples. A remodeled laboratory in an adjacent building is used for sediment size analyses. Arrangements have been made for temporary back-up support for chemical analyses with the Engineering Research Institute Laboratory, Town Engineering Building.

The University Motor Pool has made available on a rental basis such cars, pickups, and trucks as needed. A Ford field tractor has been obtained through the Agricultural College for use without charge for transporting samples from the sampling sites in the field to hard surface roads after rainfall. A trailer house has been loaned to the project from the Agriculture Experiment Station for storage and field personnel shelter during stormy weather. A neighbor near the field site permits free storage of the tractor and some equipment.

The Iowa State computer facilities, library, instrument shop, chemistry stores and physical plant stores are available. Assistance has been provided by Jim Andrew, USDA electronics technician, on electronics and mechanical instrumentation.

A small house has been rented from a retired farmer near sites 1 and 2 for housing for the field technician, and storage and freezer space.

C. Location of Field Studies

The Four Mile Creek basin, northwestern Tama County, Iowa is the location for the study. The latitude of the basin is 42°12'N, the longitude 90°35'W. United States Geological Survey runoff data for

the basin are available for the years October 1962 through September 1974, except for October 1967 to October 1969. Sediment yield data are available for the years October 1969 through September 1974. Data on nutrients in runoff (nitrogen and phosphorus) are available for the years 1971 through 1973 from previous studies at Iowa State University. Aerial photos were taken to define cropping for the same years. Farm surveys were also made to define fertilizer and pesticide practices and are on file in the Agricultural Engineering Department.

The watershed is typical of the heavily cropped regions of Iowa in which drainage is well developed. Sediment yields are about 500 tons per square mile for 100 square mile watersheds in the region according to an interagency study of the upper Mississippi river basin. The average water yield is about 6 inches per year. Nearly all of the land is devoted to agriculture except roads and yards. Some land is in pasture in the lower reaches of the watershed along the main stream and on the steeper land. Farmers usually plow the corn land and disk the bean land in preparation for the next crop although several are beginning to use minimum tillage systems. Most farmers apply pesticides; all farmers apply fertilizer.

Drain tiles have been installed along the waterways, in some cropped areas in the upper regions of the watershed and in some fields in the floodplain along the main stream. Part of the sewage effluent from septic tank fields from the town of Lincoln (population 184) discharges into the watershed. A very small acreage of the land in the watershed is terraced. A few farmers use conservation tillage methods, such as contouring and strip cropping.

II. Description of the Research Watershed

The present topographic features and drainage of the area are related to glaciation during the Pleistocene and subsequent modification during recent time. Glacial deposits (Nebraskan and Kansas till) mantle the bedrock to a maximum thickness of 360 feet. An overlying mantle of loess (Wisconsin loess) covers most of the till. Along the drainage divides the loess may be as much as 35 feet deep, but thins along the valley sides.

Figure 1 shows the location of all sites that have been instrumented and are now being operated by ISU or USGS personnel. United States Geological Survey personnel operate and maintain sites 4, 5 and 6.

The watershed has a humid region climate subject to a wide variety of weather conditions typical of Iowa. The 30-year average temperature (measured 17 mi from site) is 47.6°F and the 18-year mean annual precipitation (8 mi from site) is 32.4 inches.

The watershed is almost entirely in agricultural land. About 75% is in row crop and 25% in small grain, meadow, pasture, roads and yards. About 160 lbs per acre of nitrogen and about 75 lbs per acre of P_2O_5 are used on corn by farmers in the study watershed. Herbicides and insecticides commonly used are Lasso, Treflan, Amiben, Sutan, Atrazine and Thimet.

III. Public Relations Activities

The Iowa Field Evaluation Project (IFEP) is a cooperative effort between EPA, USDA, numerous state and local and other federal agencies and farm people. Public relations activities have focused on informing all interested groups and individuals of the project objectives and plans, and soliciting assistance and cooperation. Special effort is now being directed to farmers in the watershed, informing them about best management practices and cost sharing opportunities, and encouraging the application of practices.

A. Project Kickoff Meeting

A meeting was held in Des Moines, Iowa on January 19, 1979 to inform various state and local interests about the project and elicit their support and cooperation. The meeting was hosted by Larry Vance of the Iowa Department of Soil Conservation and conducted by EPA, ASCS and SCS. Over 40 persons from interested agencies attended.

B. BMP Planning Workshop

A planning meeting/workshop, hosted by Howard Johnson, was held February 21, 1979 at Iowa State University to develop material for finalizing a BMP implementation plan for submittal to ASCS. Representatives from interested federal, state and local agencies attended. A final plan was developed which served as the basis for the budgeting and allocation of ACP resources and approval of cost-sharing practices. Funding by ASCS was approved on July 19, 1979.

C. Farmer Meeting

A briefing was held March 2, 1979 in Tama County to inform farmers and other interested people in the area about the research project and the opportunities for installation of practices to be funded by ASCS as a special project under the ACP. The briefing was conducted by ISU staff, Russell Lyon, Tama County ASCS Director and Richard Pulse, Tama County Extension Director.

D. Senator Culver Visits Project

Senator John Culver (D, Iowa) visited the Four Mile Creek site on August 10, 1979 and met with farmers and representatives of agricultural and conservation agencies and Iowa State University. The Tama County ASCS office coordinated the Senator's visit. This visit did much to impress local people with the significance of this research effort and the impact that forthcoming research data can have on the nation's water quality and cropland protection. Over 50 persons registered at the event.

E. Summer Meeting and Watershed Tour

An informational meeting and watershed tour for technical personnel and farmers was held on August 30, 1979. Technical personnel from all interested agencies (over 45 persons) met in the park at Gladbrook, Iowa at 1:30 p.m. Project personnel presented an overview of research objectives and plans and a review of current findings. Presentations were made by Howard Johnson, Jim Baker, and Marvin Borcherding from the Department of Agricultural Engineering; Peter Nowak, Department of Sociology and Anthropology; John Miranowski, Department of Agricultural

Economics; and Bruce Menzel, Animal Ecology. In addition, Russell Lyon, Tama County ASCS Director discussed cost sharing to be used in the program. Following the discussions the group toured the watershed, making stops at key points.

Starting at 6:30 in the evening farmers in the area assembled at one of the gaging stations in the watershed. After a brief discussion, a tour was made of the watershed. The group then met at nearby Amity Church for an informational meeting and discussion. Richard Pulse, Tama County Extension Director, conducted the meeting. Presentations were made by ISU staff and Russell Lyon from ASCS. This event brought farmers up to date on current activity and future plans. Opportunity was provided for questions and discussion. Over 60 persons registered at the meeting.

F. Newsletters

A newsletter was prepared in June, 1979, and sent to all farmers in the watershed and agency personnel. The newsletter presented a summary of the crops grown in the watershed in 1978 plus the fertilizer and pesticides used. Also presented were summaries of data such as precipitation and measured losses of sediment, nutrients and pesticides.

A second newsletter was issued in August. It discussed recent project developments and current activities. Special attention was given to available cost sharing. The August meeting and tour was announced in this letter. Copies are found in Appendix B.

G. Other Contacts

In July and August the Practices Coordinator made numerous contacts with project leaders and individuals in cooperating agencies such as the Extension Service, Soil Conservation Service, Department of Soil Conservation, and the Agricultural Stabilization and Conservation Service. Personnel at both the state and local levels were involved. This effort has kept everyone informed and allowed inputs important to the development of this cooperative effort.

H. Conservation Tillage and Other Practices

Conservation tillage is one of the practices which will be widely used in the watershed. There are several tillage methods and variations within methods which can be used. A suitable publication setting out tillage procedures and specifications is not available. To meet this need, a publication has been developed and is now being reviewed and finalized.

Considerable effort is being made to identify all best management practices suitable for use in the watershed and to obtain agreement and understanding among technical agencies on specifications and procedures. A culmination of this effort was a meeting held on September 18, 1979 at the Tama County Extension Office. Persons with technical responsibility from several agencies were involved. Much of the discussion involved conservation tillage but also involved were terracing, strip cropping, filter strips and waterways. Various aspects of cost sharing were also discussed and clarified. This was a very successful effort and will enhance future contacts and educational efforts with farm operators.

I. Farm Visits

All farmers in the watershed were contacted in September or early October for a record of their 1979 cropping program. These on-farm visits provided opportunity to answer questions and to encourage the use of more conservation practices in 1980. Farmers were well informed about cost sharing opportunities and many have already signed with ASCS for cost sharing fall, 1979, and in 1980. Many farmers are considering terracing and/or waterway improvement. Farm visits are being continued and help in the selection of practices, the development of pooling agreements, and the location of contractors for terracing and waterway work.

J. Conservation Tillage Meeting

A conservation tillage meeting was held on December 5, 1979 for farmers in the watershed. Some 60 farmers including owners and operators attended. A copy of the program is attached in Appendix B.

Key aspects of conservation tillage including tillage alternatives, fertilizer application, weed control and economics were discussed. A panel in which farmers discussed their procedures and experience with conservation tillage was especially interesting.

A publication entitled "Conservation Tillage - Methods and Procedures" was made available to all farmers. Although this publication was prepared for use in the watershed it is being edited for publication as an extension pamphlet. A copy is attached in Appendix B.

IV. Watershed - Operation

A. Field Size Watersheds

The two field sized watersheds planted to corn and soybeans (sites 1 and 2) have been managed by the farm operator and the ISU field manager during the past year. The fields were tilled and planted in the spring and the corn and soybean crops were harvested in the fall. Due to severe weather and hail, the soybean field was replanted approximately 4 weeks after the first planting.

Fertilizer was applied in the spring by a local dealer. The rates applied were 150 lbs N, 75 lbs P_2O_5, and 50 lbs K_2O, per acre on the corn and 75 lbs P_2O_5 and 50 lbs K_2O on the soybeans. Site 2, covered with cornstalk residue, was plowed to incorporate the fertilizer, disked several times to prepare a seedbed and then planted to soybeans on May 19 and replanted on June 16. Site 1, covered with soybean residue, was disked to incorporate the fertilizer, and prepare a seedbed and then planted to corn on May 7. Lasso and Lexone were applied to site 2 on May 21 at the rates of 2.2 and 0.6 kg/ha, respectively. Bladex and Ramrod were applied to site 1 on May 8 at rates of about 2.2 and 2.2 kg/ha, respectively. The herbicides were applied by project personnel with an applicator that was purchased, calibrated, and used only on this project.

Site 3 has remained in permanent bluegrass and smooth bromegrass pasture throughout the entire year. Fertilizer was applied in the spring by a local dealer at the rate of 70 lbs N, 40 lbs P_2O_5, and 20 lbs K_2O per acre. There are approximately 50 cows with calves grazing the 80 acre pasture that includes site 3, from May through September.

A herbicide, 2,4-D, was applied to the pasture in June but no other herbicides will be applied during the project time period. No attempt will be made to analyze for the 2,4-D applied.

B. Traer and Lincoln Stations

The U.S. Geological Survey has operated the Traer, Lincoln and Gladbrook Stations (sites 4, 5 and 6) during the year. The control structure at the Traer Station was damaged again by scour below the lower section of the control. The structure was repaired by cooperative work between the U.S.G.S. personnel, county engineer and project staff on Oct. 4, 5 and 18. Rock was dumped into the scour hole and concrete poured under the control and onto the upstream face of the rock. The enlarging cross section of the creek makes it difficult to hold the control in its original position.

C. Intra-basin Stations

The Lincoln, Gladbrook, site 7 and site 8 gaging stations, have been maintained as intra-basin stations in the Four Mile Creek watershed. Flow measurement, sediment and nutrient sampling has continued at each of these stations by project and field personnel.

The flow control at site 7 was modified by installing a steel V-notch to measure low flows. The control at site 8 remained the same.

A laboratory study of the control at site #7 has also been initiated. An improved calibration curve will be developed and reported in future reports.

V. Field Installations, Measurements, and Sampling

A. Weather Data

The recording rain gauges located throughout the watershed and the weather station at the cooperator's farm have been maintained by the field manager. Two snow gauges, one at a farm yard near sites 1 and 2 and the other at the weather station, have also been maintained to record snowfall in the watershed. Precipitation, daily maximum and minimum temperatures, pan evaporation and solar radiation have all been recorded at the weather station. Soil temperatures at various depths have also been monitored at site 1 and the weather station during the winter months. Daily maximum and minimum temperatures and pan evaporation were not recorded during the winter months.

B. Runoff

The eight runoff stations described in earlier annual reports have been maintained during the year. Sites 1, 2, and 3 are equipped with 4-foot H-L flumes and PS-69 pumping samplers set to begin sampling at a selected stage (15 cm). Single stage samplers on the flumes were also maintained after snowmelt. Project staff members were on hand for all runoff events to insure that instruments functioned properly. USGS personnel did some gaging during the high flows of 1979. Changes in the rating curves for sites 4 (Traer) and 6 (Gladbrook) are expected.

C. Crop Inventory of Four Mile Creek Watershed

The field manager interviewed all of the farmers in The Four Mile Creek watershed during Aug. and Sept. Information obtained from each farmer included crops raised, fertilizer, herbicides and insecticides used, tillage systems and livestock present. Aerial photographs, taken in June, were used to help identify and define field boundaries.

The information obtained has been summarized for each watershed (#4 through #8) and is presented in Appendix C.

D. Crop Progress Photographs

Photographs recording the development of the leaf canopy for the corn and soybean crops at sites 1 and 2 were taken at approximately one week intervals throughout the growing season. The photographs were taken from the top of a ten-foot step ladder looking down onto the leaves of the crop. Three viewers then viewed the slides over the top of a grid to determine the percent of the area covered by the leaf canopy.

E. Sampling Runoff for Nutrients and Pesticides

During the large snowmelt this spring approximately 50 to 80 samples were taken at each of sites 1 through 8 for nutrient and sediment analyses. Storm caused runoff events occurred on 4/20, 6/4, 6/9, 6/12, 6/19, 6/27, 7/3, 7/13, 8/19, 8/21 and 10/22. Runoff during these events was also extensively sampled, particularly for the June and July events some of which were extreme. Runoff samples obtained at sites 1, 2, and 4, after herbicide application were analyzed for herbicide content as well as for nutrients.

F. Sampling Subsurface Drainage for Nutrients

The subsurface tile drains that are sampled in the watershed have had nearly continuous flows since the beginning of the year (continuing from 1978), with a few brief interruptions during dry conditions in August and September. These flows have been sampled on a weekly basis with extra samples taken after large increases in flows due to thawing or precipitation (during January and February some of the outlets were inaccessible).

G. Soil Sampling for Nutrients and Pesticides

Prior to planting corn (site 1) and soybeans (site 2) on May 7 and May 19, 1979, respectively, background core samples were taken. On site 1, volume samples were taken the day of herbicide application (5/21), 5/22, 5/23, 5/25, 5/27, 5/30 and 6/4. Core samples were taken 6/5 and also after major rainstorms. Deep core samples were taken to 150 cm for nutrient analyses on 6/7/79, 8/14/79, and 11/16/79. Samples were taken to 300 cm in some locations to determine the depth of NO_3-N leaching.

H. Management of Field Stations and Handling of Samples

The gauging stations have been maintained by the project field manager after they were opened to measure snowmelt in March. The stage recorder charts have been changed at least once a week during the runoff season.

Project personnel were present in the watershed during snowmelt and other runoff events to insure against equipment failure and to hand-sample runoff at those stations not equipped with automatic samplers. A farmhouse near the watershed has been rented to provide lodging for personnel.

I. Channel Measurement and Sampling

The following is a brief description of research and data collection activities conducted during 1979 relative to the stream channel system within the Four Mile Creek Watershed. The primary objectives of these activities are: (1) description of the composition of streambed and bedload material in the Four Mile Creek Channel, (2) analysis and description of sediment in transport from small field-sized watersheds to the main channel system, and (3) assessment of the channel contribution to the sediment load in Four Mile Creek (through measurement of channel cross sections).

Cross sections

As during previous years of the study, the channel cross sections were periodically measured at 15 designated stations on Four Mile Creek and one station on Half Mile Creek. The cross sections are measured by taking distance and elevation readings at the break points along the section. Previously (in 1977 and 1978) the channel sections were surveyed in the spring following snowmelt runoff. During 1979 measurements of the cross sections were conducted in April and also in July-August. Comparisons of the cross sectional areas from year to year and during 1979 were possible using these data.

Analyses of channel areas were completed for each cross section for the April and July-August surveys. (A common bank elevation was used for each date and section to allow more valid comparisons of channel areas). Comparisons were made of the channel areas based on the survey measurements above the deposited "loose" sediment of the channel bed.

In the past, the channel generally has increased in area when survey measurements were compared from one year to succeeding years. This did not appear to be the case, however, when the fall survey (July-August) was compared with the April survey of 1979. Data for these channel measurements are presented in Appendix D, pages D-2 to D-19.

Bed load samples

Bed load sampling on the channel of Four Mile Creek is conducted during major runoff events which produce pronounced rises in creek stage. Sampling sites during 1979 included: the bridge on highway T-55 (between cross sections 12 and 13), R. Thoms bridge (between cross sections 8 and 9), Babinet bridge (between cross sections 4 and 5) and Traer bridge

(below cross section 1); see Appendix D, page D-20 for these locations. Particle size distribution analyses of these bed load samples are conducted by project personnel.

Samples were collected using a US BMH-60 bed material sampler operated from the upstream side of the bridge at each location. Samples were collected from the left, center, and right portion of the channel during each runoff event. During 1979 bed load samples were taken during the runoff events of June 12, June 27, and July 3. Available data for these dates and locations are presented in Appendix D, page D-21.

Stream bank core samples

Sediment samples were taken from the banks of the designated cross sections along Four Mile Creek during 1979. Kimes et al. (1979)* concluded that these data showed, on the average, that 99% of the particles were finer than 50 microns, 95% finer than 21 microns, 55% finer than 16 microns, 35% finer than 8 microns, 20% finer than 4 microns, 12% finer than 2 microns, and 2% finer than 1 micron in size. No further data analysis was undertaken.

Stream bed scour chains

Efforts have been under way, using small brass chains with one end embedded in the stream bed, to study the depths of channel scour due to large runoff events. The chains were placed at three locations in Four

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*Kimes, S.C., J.L. Baker, and H.P. Johnson. 1979. Sediment Transport from Field to Stream: particle size and yield. Presentation at 1979 ASAE Winter Meeting, Dec. 11-14, 1979. ASAE Paper No. 79-2529.

Mile Creek with markers positioned along the banks for ease in relocating the chains. Due to the large runoff events during 1979 there was considerable sloughing of the stream banks and only one of the nine brass chains was relocated; therefore no stream bed scour data were obtained for 1979.

J. Sediment Sampling

During 1979 work continued toward analyzing the volume and particle size distribution of sediment deposited within the field-sized watersheds and sediment transported with runoff from the small watersheds to downstream areas. Within the field-sized watersheds at sites 1 and 2, samples of sediment deposited above the flumes were collected and volume and size analysis conducted. Samples of sediment transported in suspension in the runoff were collected and sediment concentration, particle size distribution, and volume analyses were made.

Sediment disks

Small plastic disks were placed in the ponding areas immediately upslope from the flumes and dikes at sites 1 and 2. (The arrangement and types of disks are shown in Appendix D, page D-24). Soil particles, which are eroded from the field, move downslope and a portion are deposited as sediment in the ponding areas above the flumes. The total volume of the sediment deposited on the plastic disks is collected; particle size analysis and moisture content are then determined. Using these data estimates are made of total volume of sediment deposited above the flumes.

During 1979 considerable erosion and sediment runoff occurred at

sites 1 and 2. Considerable sediment was deposited in the ponding area and upslope from the area where the sediment disks were located. No volume samples were obtained for the areas upslope from the plastic disks for the larger runoff-deposition events. The sediment disk data which were collected for 1979 are presented in Appendix D, pages D-25 to D-26.

Survey of sediment deposition area above sites 1 and 2

Considerable sediment was deposited above the flumes and dikes at sites 1 and 2 during the 1979 crop season. To better quantify the total volume of sediment deposited, a survey of this area was made during the fall following the last runoff events. Using this information and data from the original field surveys of 1976, estimates of the total amount of sediment deposited above the flumes during the three project years of 1977, 1978 and 1979 were made. The survey data, specific weight per unit area data, and estimates of total deposition are presented in Appendix D, pages D-27 to D-31.

The major portion of the sediment deposited above the flumes occurred during the severe runoff events of 1979. Future efforts will attempt to quantify the amount of deposition for each separate year and major runoff events.

Runoff sediment analysis

During runoff events samples are collected at various sites within the Four Mile Creek watershed (sites 1, 2, 3, 4, 5, 6, 7, and 8); see Appendix D, page D-32. Those runoff samples having sediment concentrations greater than 3000 parts per million are analyzed as to sediment particle size distribution. The Sedigraph 5000® Particle Size Analyzer

is used for particle size analysis, and continuous curves of "cumulative mass percent" versus "equivalent spherical diameter" are produced. The "percent finer than" values corresponding to particular particle sizes are determined from these curves. Due to the numerous samples taken in 1979, particle size analyses are not yet completed.

Stream bed core samples

Creek bed core samples of Four Mile Creek were taken during August in 1979 and analyzed as to particle size distribution of the samples. Three samples were taken across the channel bottom at each of ten locations corresponding to cross sections 2, 4, 6, 8, 10, 11, 12, 13, 14 and 15. The three samples taken corresponded to the left, center, and right portions of the stream channel. Each sample taken was divided into three layers (measured from the creek bed surface) of 0 - 2.5 cm, 2.5 - 7.5 cm, and 7.5 - 20 cm. Particle size distribution analysis was completed for each sample taken and data are presented for "percent finer than" for sizes 4 mm, 2 mm, and 1000, 500, 350, 250, 175, 125, 88, and 62 microns. Data results are found in Appendix D, pages D-22 to D-23.

VI. Data Reduction, Analysis, and Data Dissemination

A. Runoff records

Runoff records beginning January 1, 1979 and continuing through December 31, 1979 from sites 1, 2, 3, 7, and 8 (corn, soybeans, pasture, and mixed cover watersheds) have been analyzed. Streamflow data for Four Mile Creek (sites 4, 5, and 6) were processed by the USGS. Data for the Traer site (#4) and the Gladbrook site (#6) were revised due to changes in the flow rating curves. Data for all eight sites are given in Appendix E.

B. Precipitation Records

Precipitation data beginning January 1, 1979 and continuing through December 31, 1979 have also been analyzed for the five sites within the watershed and the one site just outside. Precipitation data are given in Appendix

C. Sediment and Dissolved Solids Concentrations and Loads

All sediment and dissolved solids concentration data for the numerous snowmelt, rainfall-runoff, creek flow, and subsurface drainage samples taken in 1979 are given in Appendix G. These concentration data have been combined with flow data from sites 1, 2, 3, 7, and 8 to calculate loads. Loads for sites 4, 5, and 6 were calculated from flow data available from the USGS (ther may be some minor revisions in this data at a later date).

D. Nutrient Concentrations and Loads

All nutrient concentration data for the numerous water samples taken (including precipitation) in 1979 are given in Appendix G. Load data have also been calculated for nutrients.

E. Pesticide Concentrations and Amounts

Runoff samples taken for pesticide analyses have been separated into the sediment and water phases. The water samples have been extracted with CH_2Cl_2 and the extracts frozen. The sediment samples taken have been stored in freez (-20°C). Analyses of these samples are in progress. Analyses of the soil samples have been completed and the data are given in Appendix H.

F. Sedimentation and Size Analysis Procedure

Sediment particle size analyses are performed by Ag Engineering project personnel using the Sedigraph 5000 Particle Size Analyzer, the Visual Accumulation Tube, and a set of nested sieves (sizes 4.0, 2.0, 1.18, and 0.062 mm). Analyses using this equipment provide the particle size distribution information desired for data processing. For all samples obtained, final results are reported as "percent finer than" for a given particle size, based on the total sample obtained.

Sediment and stream material samples are analyzed relative to particle size distribution as follows:

1. Sediment in runoff samples (sites 1 through 8) are analyzed using the Sedigraph 5000 Analyzer with data presented for particle sizes of 50, 40, 32, 24, 16, 12, 8, 6, 4, 3, 2, and 1 micron.
2. Sediment deposited upslope from the flumes and dikes at sites 1 and 2 is analyzed for particle size using the nested sieves and Sedigraph 5000. Data are presented for "percent finer than" the 62 micron size.
3. Stream bed core samples are analyzed using the nested sieves and the visual accumlation tube with particle size distribution presented for the 1000, 500, 350, 250, 175, 125, 88, and 62 micron sizes. (Samples of the less than 62 micron size material are retained for future sedigraph analysis).
4. Particle size distribution analyses of stream bed load samples are conducted and presented in the same manner as stream bed core samples.

The total volume of sediment deposited upslope from the flumes and dikes at sites 1 and 2 (as determined from the survey data) and the specific weight per unit area data allow determination of the amount (weight) of sediment which moves from the field to the ponding area.

Following is a brief description of procedures used in conducting these analyses:

1. Nested Sieves

Samples (or representative portions thereof) are sieved through four nested sieves of 4.0, 2.0, 1.18, and 0.062 mm size, one upon the other, with the size of sieve openings decreasing in the downward vertical direction. The sample is placed on the uppermost sieve and a gentle jet of native runoff water is used to wash the finer particles through the smaller sieves. Native water and particles which pass through the 0.062 mm sieve are retained for further size analysis with the sedigraph. Material retained on the 4.0, 2.0, and 1.18 mm sieves is backwashed into petri dishes and oven dried. The weight of each particle size is determined and "% finer than" amounts are determined following complete particle size analysis of the entire sample. The material retained on the 0.062 mm sieve is backwashed into a petri dish, oven dried and weighed. The particle size distribution of this sand sized material is then analyzed using the visual accumulation tube.

All compositing, splitting, sieving, etc. involved in analyzing the samples is accomplished using runoff water. No dispersing or flocculating agent is added and mechanical dispersion of the sample is avoided. Hydrogen peroxide (6% solution) is added to sand samples containing significant amounts of organic matter.

2. Visual Accumulation Tube Analysis

The Visual Accumulation Tube (VA Tube) is an instrument which allows the rapid and relatively simple determination of the size distribution of sand samples. The VA tube method employs the stratified system of sedimentation in which the particles start falling from a common source and become stratified according to settling velocities. A tracking device enables the operator to follow the accumulation of particles in the sedimentation tube; and, at the same time, a continuous curve of such accumulation is produced on a recorder chart. The recorder chart is a printed form which has incorporated the fall-diameter calibration for particles ranging from 1000 to 62.5 microns in size. The percent of a sample finer than a particular size is then read from the continuous curve. This information is combined with other particle size analysis data to determine the complete particle size distribution of the various samples collected.

A complete description of the Visual Accumulation Tube and operating procedure is contained in, "Report K = Operator's Manual on the Visual-Accumulation-Tube Method for Sedimentation Analysis of Sands", by Subcommittee on Sedimentation, Inter-Agency Committee on Water Resources, 1958. Procedures used in lab analyses are as outlined in this report.

3. Sedigraph 5000 Particle Size Analyzer

The Sedigraph 5000 Particle Size Analyzer (Sedigraph 5000) is capable of measuring the sedimentation rates of particles in suspension and automatically presenting the data as a cumulative percent finer distribution in terms of Stokesian or equivalent spherical diameter, in microns. The Sedigraph uses x-ray attenuation to continuously measure sediment concentrations in a small sedimentation cell, as a function of time and depth. To minimize time required for analysis, the position of the

sedimentation cell is continuously changed so that the effective sedimentation depth observed is inversely related to elapsed time. The size information is presented as a continuous curve on three cycle logarithmic paper of "cumulative mass percent" vs. "equivalent spherical diameter, microns". "Percent finer than" information for particular sizes can be read from the curves and combined with other particle size data to obtain the total particle size distribution of a sample.

Analyses of particle size distribution have been concerned with determination of aggregate-size distributions rather than primary particle size distribution. Lab procedures therefore reflect this approach. Samples analyzed were brought to a concentration of 6% (60,000 ppm) by dilution or decantation, depending on the concentration of the original sample. Native runoff water, with its natural load of dissolved solids, was used as a suspension fluid. A representative sample of approximately 50 ml was retained for sedigraph analysis. (Checks were made periodically to determine that fine particles were not decanted with the water).

The following reports provide details on the operation of the Sedigraph 5000 and analysis of the resulting data:

1. Kimes, Steven C. 1979. Particle Size Analysis and Sediment Transport: A Field to Stream Study. M. S. Thesis. Iowa State University, Ames, Iowa. Unpublished.

2. Micromeritics Instrument Corp. 1973. Instruction Manual Sedigraph 5000 Particle Size Analyzer. Micromeritics Instrument Corp., Norcross, Ga.

3. Shahvar, Z. 1978. Particle Size Analysis: Effect of Method, Sediment Concentration, and Dispersing Agent on Measured Size Distribution. Agr. Engr. Dept., Iowa State University, Ames, Iowa. Unpublished.

VII. Schedule of Accomplishments

1979

January 19	-	A meeting was held in Des Moines with EPA, ASCS and other state agency people to discuss the Four Mile Creek project.
February 6	-	A meeting was held in Athens, Georgia with EPA officials to discuss implementation of the Four Mile Creek project.
February 21	-	A meeting was held at ISU with EPA and ISU officials present to discuss the Four Mile Creek project.
March 1	-	Rented a farm house near the watershed.
March 2	-	A meeting was held in Gladbrook, Iowa with the farmers in the Four Mile Creek watershed to discuss the proposed project.
March 5	-	Snowmelt runoff began in the watershed. Gaging stations were prepared to measure runoff.
March 16-20	-	Sampling of snowmelt runoff.
March 28-30	-	Sampling of snowmelt runoff, with light rain.
April 5	-	Weather station at cooperator's farm was opened.
April 13	-	Finished opening rain gages.
April 18	-	Fertilizer was spread at site #2. Farmer began plowing site #2 with a moldboard plow.
April 23	-	Farmer completed plowing at site #2.
April 27	-	Measured creek cross-sections.
May 4	-	Fertilizer was spread at sites #1 and #3. Completed measuring of creek cross-sections.
May 7	-	Watershed at site #1 was planted to corn.
May 8	-	Herbicides were applied to the watershed at site #1 and pesticide sampling began.
May 19	-	Watershed at site #2 was planted to soybeans.
May 21	-	Herbicides were applied to the watershed at site #2 and pesticide sampling began.
May 29	-	A summer worker moved into the farm house that was rented near the watershed.

June 7-8	- 150 cm soil core samples for nutrient analysis were taken at sites # 1, 2 and 3.
June 12	- Runoff event occurred in the watershed.
June 14	- Aerial photos of Four Mile Creek watershed were taken. A newsletter was sent to all farmers in the watershed.
June 16	- Farmer replanted soybeans at site #2.
June 27	- Runoff event occurred in the watershed.
June 29	- Soybean field at site #2 was cultivated by the farmer.
July 3	- Runoff event occurred in the watershed.
July 12	- Measured creek cross-sections (#1-4).
July 13-14	- Runoff events occurred in the watershed.
July 20	- Soybean field at site #2 was cultivated by the farmer.
August 8-9	- Measured creek cross-sections (#5-15).
August 10	- A meeting was held in the Four Mile Creek watershed with Senator John Culver, local county ASCS, SCS, ISU extension personnel and the farmers in the watershed in attendance.
August 14-16	- 150 cm soil core samples for nutrient analysis were taken at sites #1, 2, and 3.
August 16	- Started interviewing farmers for the inventory of crops in the Four Mile Creek watershed.
August 21	- Runoff event occurred in the watershed.
August 29	- Control at site #7 was reconstructed to provide better low flow measurements.
August 30	- A tour and field day was held in the watershed for state agency people in the afternoon and farmers in the evening.
September 18	- A meeting was held in Toledo, Iowa with local ASCS, SCS and ISU extension personnel to discuss tillage operations in the watershed.
September 25	- A tour of the watershed was held for EPA officials. A meeting discussing progress of the project was held in the afternoon.

October 5	- Samples of soybeans were taken at site 2 to determine the yield of grain.
October 8	- Farmer harvested soybeans at site 2.
October 16	- Samples of corn were taken at site 1 to determine the yield of grain.
October 18	- The control at site #4 was repaired by ISU and the USGS.
October 25	- Core samples of the streambed of Four Mile Creek were taken at selected cross-sections. Farmer harvested corn at site 1.
November 1	- Completed farmer interviews.
November 13	- Conducted a tour of the watershed for EPA personnel from Athens.
November 15	- Held meeting with EPA personnel from Athens to discuss progress on the project.
November 16	- 150 cm soil core samples for nutrient analysis were taken at sites # 1, 2 and 3.
November 28	- Closed down gaging station and the weather station for the winter months.
December 5	- A meeting was held with area farmers at a church near the watershed to provide information about conservation practices.
December 10	- Fertilizer (phosphorus and potassium) was spread at sites 1 and 2.

PROGRESS ON WORK PLAN - Agronomy

I. Personnel and Equipment

The following time commitments of Iowa State University personnel have been made.

Dr. Thomas E. Fenton - Agronomist - 10% SMY

The following supporting personnel have been employed since Sept. 1, 1979.

Mr. Douglas Wysocki is employed as a research associate on the project. He received an M.S. degree in Agronomy from Virginia Polytechnic Institute and State University in 1979. In Virginia, Doug was involved in field and laboratory studies concerning Piedmont soils with emphasis on geomorphic relationships, soil mineralogy and exchangeable and titratable acidity. In this project, he is involved with soil and geomorphic studies related to the sedimentation patterns in the watershed. The work in this project will be a part of his Ph.D. dissertation.

Another graduate student employed on funds not associated with this project is studying the water quality and water movement within the watershed. Winston Hobson received an M.S. degree from Prairie View A&M University of Texas in 1978 in Soil Science. He is employed as a teaching assistant at Iowa State University and is presently enrolled in a Ph.D. program in Soil Genesis. His dissertation will be based on the water studies in this project.

The equipment included in this project has been purchased. The Atomic Absorption Unit will be installed in the near future. The Unit is a Perkin-Elmer 560. An unexpected complication in installation was a ruling by the

Environmental Health and Safety people that the fume hood exhaust fan has to be relocated to the roof. However, the work plan has now been approved.

A Soil Water Matric Potential Measurement System has been purchased and individual sites will be instrumented when the soil mapping is completed.

II. Field Studies

A. Soil Mapping

Arrangements have been made with the Soil Conservation Service to map the watershed at a scale of 1:15,840. They will use 1956 aerial photographs for a base map. We will supply them 1976 color infrared film positives for update of land use and field boundaries. A soil mapping legend to meet the needs of this project has been developed. Significant soil and landscape features less than 2 acres in size will be shown with a spot symbol.

B. Characterization of Selected Soil Mapping Units

Routine physical and chemical analyses needed to properly classify and map the soils in the area will be performed. The mapping units will be identified as to the landscape position and geomorphic surface on which they occur. A legend for identification of geomorphic surfaces has been prepared.

C. Water Table Observation Wells

PVC-160 pipe will be perforated at one end and used for water table observation wells. Wells will be installed on each geomorphic surface roughly at right angles to the major drainage net in the area. Sites will vary in loess thickness from 40 feet or more to surface on which no loess is present. Selected sites will be analyzed for water quality.

D. Sedimentation Patterns

Field observations in the study area indicate the thickness of post-cultural sediments may be 40 inches or more in some accumulating areas. Preliminary field studies have identified several potential study areas where the post-cultural sediments can be mapped in detail.

CONCURRENT STUDIES

Two studies related to simulation of runoff and transport processes are nearing completion. Mr. Kwun, Dr. Anderson and Dr. Beer are developing further a study initiated by David and Beer in 1972 with the aid of much better input and output data for calibration. Mr. Kwun is using a version of the Stanford Watershed Model as modified by James at the University of Kentucky. He expects to complete his PhD thesis by summer 1980.

Mr. Shahghasemi, Dr. Anderson and Dr. Johnson are developing a more deterministic sediment transport model based on a water balance model developed by Anderson, an erosion and transport processes component developed by Shahghasemi, and field data from small single cover watersheds in western Iowa.

SUMMARY OF PROGRESS AND OBSERVATIONS

Precipitation in 1979 was above normal and resulted in the obtaining of considerable runoff data, especially in June and July. As shown in the appendix of precipitation data, the watershed, on the average, received 958 mm which is about 140 mm above the annual average. It is also apparent in the data, that precipitation amounts are highly variable even within short distances (a few km), particularly on a storm-by-storm basis.

A summary table is presented of runoff, erosion, and soluble nutrient loss and flow-weighted sediment and nutrient concentration data for sites 1, 2, 3, 7, and 8 (where flow is ephemeral) for snowmelt and up to eleven rainfall-runoff events; for some storms, runoff did not occur on all watersheds. Consistent with data for past years, site 1 (just west of site 2) had about one-half again more snowmelt than site 2. This is seemingly the result of wind patterns, snow drifting, and the lay of the land, and not an effect of the type of residue, corn or soybeans on the soil surface. Also consistent with data for the past years, snowmelt from the pasture watershed, site 3, occurred sooner but was less than for sites 1 and 2. For all five sites snowmelt was a significant (32 up to 67%) portion of total runoff. During the year there were three major rainfall-runoff events in which more than 30 mm of flow occurred from sites 1 and 2. For these events, the amounts of runoff from sites 1 and 2 were very similar, with the amount of runoff from site 3 (pasture) less by a factor of 3 or more. For lesser events, in general the plowed ground (site 2) had less runoff than the disked ground (site 1). Overall, rainfall-runoff from sites 1 and 2 (total of 135 and 127 mm, respectively) was only slightly

greater than the larger watershed that contains them (site 8; 107 mm). The flat upland watershed (site 7) had only 37 mm of rainfall-runoff.

For the three major runoff events of over 30 mm, erosion was severe from sites 1, 2, and 8, totalling 45, 64, and 23 T/ha, respectively. The soil loss from these intense storms represented from 91 to 92% of the total for the year. At times sediment concentrations were very high, averaging over 70,000 ppm for site 2, 7/3/79 (this means over 7% of the mass of runoff was sediment). Generally for the storms in June and July, and also for summer storms of past years, sediment concentrations from the plowed ground in soybeans (site 2) had higher sediment concentrations than the disked ground in corn (site 1). However, for the two storms in August with less runoff and erosion this trend was reversed. Because both concentrations and runoff amounts for site 8 were less than for sites 1 and 2, erosion for site 8 was less than half that from sites 1 and 2. Concentrations and runoff amounts were even less for the pasture (site 3) and the upland flat watershed (site 7) resulting in very low soil losses (the calculated losses for sites 3 and 7 may be somewhat lower than actual losses because of inadequate sampling during some peak flows, a time when sediment concentrations are usually the highest).

From observation it is obvious that the measured soil losses from sites 1 and 2 are less than the total erosion because of sediment deposition behind the dikes and flumes necessary for making flow measurements. These desposition areas have been surveyed and sampled for density to estimate the amount of sediment deposited.

Suface runoff losses of NH_4-N (from 0.2 to 0.9 kg/ha) and NO_3-N (from 0.6 to 5.7 kg/ha) from the five sites were less than that deposited

with rainfall (about 7 kg/ha each). The maximum losses and concentrations occurred for the fertilized corn ground (site 1). Losses of PO_4-P (from 0.24 to 0.75 kg/ha) were at or slightly more than, that deposited with rainfall. Concentrations of PO_4-P were particularly high from the grazed (cattle) and surface-fertilized pasture watershed (site 3), averaging over 0.80 ppm. Concentrations for site 7 were also high, possibly the result of a now-vacant feedlot. Concentrations of Cl and TDS (total dissolved solids) averaged about 5 and 100 ppm, respectively, in surface runoff.

A summary table is also presented for annual flow, nutrient, and soil losses for the creek sites 4, 5, and 6 (the data are prelimiary and subject to revision; values for the other five sites are included for comparison). If one consider the nested watersheds 1, 2, 8, 5, and 4, it is obvious from the decreasing sediment loads that much of the soil eroded upland was deposited before reaching Four Mile Creek. A comparison of the soil loss values for sites 1 and 2 versus site 4 shows that only 12% as much soil left the whole watershed as left the row-crop sites.

How much entered the stream

Surface runoff from the five ephemeral sites averaged just 37% of the flow from the three creek sites which have considerable subsurface flow. Losses of NH_4-N and PO_4-P from the whole watershed were low in terms of kg/ha, being 2.18 and 0.65 kg/ha, respectively. Over 80% of these losses occurred with surface runoff at snowmelt time. For NO_3-N, Cl, and TDS losses from the whole watershed were 35, 52, and 955 kg/ha, respectively. These losses were 7 to 11 times the losses with surface runoff and occurred mainly with subsurface flow.

A comparison of concentration data between surface runoff and creek flow, as well as the concentration data for shallow subsurface drainage (tile flow) and precipitation, shows that NH_4-N concentrations are in the order: precipitation > surface runoff > creek flow > tile drainage (it is interesting to note that NH_4-N is extracted from precipitation by contact with soil). For NO_3-N, Cl, and TDS the order is: tile drainage > creek flow > tile flow > precipitation.

Also presented is the cropping and chemical use inventory of the whole watershed compiled from the 1979 data. The watershed continues to be intensively farmed with 80% of the area row cropped. Nitrogen use continues to rise with corn ground receiving an average of 181 kg/ha. Herbicides are applied to all but 2 or 3% of the corn and soybeans grown, and insecticides to 80% of the corn acres.

Kimes (1979) and Kimes et al. (1979)* reviewed sediment deposition and transport data obtained through the Four Mile Creek watershed study for the years 1976 through 1978, and also a portion of 1979. The previously described procedures were used to measure runoff, soil particle size, sediment yield and channel cross sectional area changes. The following points were concluded:

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*Kimes, S.C. 1979. Particle Size Analysis and Sediment Transport: a field to stream study. Master of Science Thesis, Iowa State University, Ames. Unpublished.

*Kimes, S.C., J.L. Baker, and H.P. Johnson. 1979. Sediment Transport from Field to Stream: particle size and yield. Presented at 1979 Winter Meeting of ASAE, Dec. 11-14, 1979. ASAE Paper No. 79-2519.

1. Timing and amount of tillage had a significant effect on runoff amounts for a storm occurring after tillage. For a given site and runoff event generally concentrations and flow were directly related, i.e. as the runoff rate increased, sediment concentration increased. Also storm events which start at a high rainfall intensity produce runoff with high sediment concentration.
2. There is a direct relationship between sediment concentration and particle size distribution for a given site and runoff event; as sediment concentration and flow decrease, average particle size decreases also.
3. The average size distribution of suspended sediment in runoff decreases for the field-sized watersheds at sites 1 and 2 and decreases again for site 8. The more coarse particles are deposited in the large grassed waterways between the field sites (1 and 2) and site 8. The average particle size then increases for sites 4 and 5 (on the main channel of Four Mile Creek), perhaps due to contribution of nearby field erosion or bank erosion. Soil particles from the creek bank undoubtedly add to the suspended load at sites 4 and 5.
4. Particle sizes of sediment deposited on the disks above sites 1 and 2 were predominantly in the silt and clay ranges.
5. Stream channel cross section measurements indicate that stream width increased about 10 times more than depth over the 12 year period of 1967 - 1979. During the period of spring 1978 to spring 1979 the average increase in channel cross sectional area was 5.5%.

Flow, nutrient and soil losses, and flow weighted concentrations (1979)

Site	Storm	Flow	Sediment		NH_4-N		NO_3-N		PO_4-P		Cl		TDS	
		mm	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha
1	Snowmelt	115.91	41	47	0.37	0.42	1.9	2.16	0.094	0.109	6.7	7.73	55	63
	4/20	1.32	3858	51	0.20	<0.01	0.5	0.01	0.379	0.005	2.2	0.03	22	<1
	6/4	1.17	8641	101	2.50	0.03	10.0	0.12	0.214	0.003	8.7	0.10	134	2
	6/12	36.21	65948	23880	1.03	0.37	7.0	2.53	0.123	0.044	3.5	1.28	109	39
	6/19	0.49	10823	53	0.08	<0.01	1.9	0.01	0.143	0.001	2.1	0.01	31	<1
	6/27	12.86	26120	3359	0.09	0.01	2.0	0.26	0.103	0.013	1.2	0.15	60	8
	7/3	34.33	40346	13850	0.02	0.01	1.0	0.36	0.077	0.027	1.0	0.33	107	36
	7/13-7/14	34.78	25340	8814	0.02	0.01	0.5	0.18	0.085	0.030	0.9	0.30	59	20
	8/19	4.07	7381	300	0.06	<0.01	0.3	0.01	0.108	0.004	0.3	0.01	39	2
	8/21	8.58	9706	833	0.05	<0.01	0.3	0.03	0.075	0.006	1.3	0.11	37	3
	10/22	1.56	2442	38	0.38	<0.01	0.0	0.00	0.130	0.002	4.6	0.07	47	<1
	Total or Average	251.28	20426	51326	0.35	0.86	2.3	5.67	0.097	0.244	4.0	10.12	69	174
2	Snowmelt	72.56	37	27	0.30	0.22	0.9	0.64	0.169	0.123	8.3	6.01	78	57
	4/20	0.01	856	<1	0.39	<0.01	0.9	<0.01	2.940	<0.001	12.4	<0.01	94	<1
	6/12	35.79	63819	22841	0.10	0.03	1.2	0.42	0.123	0.044	1.0	0.36	115	41
	6/27	12.71	46885	5959	0.03	<0.01	1.7	0.22	0.128	0.016	1.2	0.15	98	12
	7/3	40.29	79927	32202	0.03	0.01	1.3	0.51	0.076	0.031	0.7	0.28	106	43
	7/13-7/14	34.26	39954	13688	0.03	0.01	0.6	0.20	0.068	0.023	0.8	0.28	77	26
	8/19	0.77	3514	27	0.01	<0.01	0.8	0.01	0.065	0.001	0.5	<0.01	32	<1
	8/21	1.78	6645	118	0.06	<0.01	0.4	0.01	0.056	0.001	1.4	0.02	25	<1
	10/22*	1.08	-	-	-	-	-	-	-	-	-	-	-	-
	Total or Average	199.25	37777	74862	0.14	0.28	1.0	2.01	0.121	0.239	3.6	7.10	90	179
3	Snowmelt	38.25	63	24	0.39	0.15	1.2	0.53	0.812	0.311	4.7	1.80	92	35
	4/3*	2.62	-	-	-	-	-	-	-	-	-	-	-	-
	4/20	1.53	46	1	0.00	0.00	-	-	0.102	0.002	-	-	268	5
	7/3	13.60	89	12	0.12	0.02	0.2	0.03	0.752	0.102	2.2	0.30	-	-
	7/14	9.32	28	3	0.30	0.03	0.5	0.04	0.813	0.076	2.0	0.19	135	13
	8/21	0.58	258	2	0.41	<0.01	0.5	<0.01	1.326	0.008	8.6	0.05	-	-
	Total or Average	65.90	71	43	0.33	0.20	1.0	0.60	0.828	0.499	3.9	2.34	88	53

Flow, nutrient and soil losses, and flow weighted concentrations, continued

Flow, nutrient and soil losses, and flow weighted concentrations, continued

Site	Storm	Flow	Sediment		NH_4-N		NO_3-N		PO4-P		Cl		TDS	
		mm	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha	ppm	kg/ha
7	Snowmelt	74.64	120	89	0.65	0.49	2.4	1.78	0.608	0.454	7.4	5.53	112	84
	4/20-4/24	6.16	173	11	0.29	0.02	8.2	0.50	1.197	0.074	29.2	1.80	235	14
	6/12-6/13	5.39	5143	277	0.51	0.03	3.9	<0.21	0.679	0.037	4.1	0.22	134	7
	6/19	0.09	7185	6	0.11	<0.01	1.4	0.01	0.111	<0.001	2.3	<0.01	35	<1
	6/27	4.01	2695	108	0.42	0.02	1.7	0.07	0.766	0.031	3.1	0.13	61	2
	7/3	7.61	6455	491	0.13	0.01	2.3	0.17	0.347	0.026	2.8	0.21	83	6
	7/14	3.84	5979	230	0.21	0.01	1.2	0.05	0.596	0.023	2.7	0.10	57	2
	8/19-8/20	0.45	1095	5	0.04	<0.01	1.4	<0.01	0.356	0.002	3.6	0.02	76	<1
	8/21	1.08	582	67	0.04	<0.01	1.3	0.01	0.343	0.004	5.0	0.05	103	1
	10/22-10/25	8.13	19	2	0.06	0.01	13.0	1.06	1.214	0.099	21.6	1.75	398	32
	Total or Average	111.40	1100	1225	0.53	0.59	3.5	3.85	0.673	0.750	8.8	9.81	133	148
8	Snowmelt	49.23	179	88	0.33	0.16	2.5	1.22	0.364	0.179	10.1	4.98	89	44
	4/20	0.83	510	4	0.27	<0.01	4.7	0.04	0.506	0.004	25.9	0.22	195	2
	6/4	0.07	1289	1	0.04	0.00	4.3	<0.01	0.429	<0.001	4.6	<0.01	160	<1
	6/9	0.01	83	<1	0.04	0.00	16.0	<0.01	0.101	<0.001	19.6	<0.01	324	<1
	6/12	27.33	31571	8628	0.32	0.09	3.4	0.93	0.341	0.093	1.9	0.52	141	38
	6/19-6/20	0.90	10352	93	0.14	<0.01	3.1	0.03	0.144	0.001	2.2	0.02	27	<1
	6/27	6.39	29086	1859	0.12	0.01	3.2	0.20	0.191	0.012	1.9	0.12	94	6
	7/3	29.17	21038	6137	0.12	0.04	1.5	0.44	0.220	0.067	1.3	0.39	108	31
	7/13-7/14	35.56	25641	9118	0.13	0.05	0.7	0.26	0.158	0.056	1.3	0.46	85	30
	8/19-8/20	1.84	3070	56	0.02	<0.01	0.7	0.01	0.141	0.003	0.8	0.01	30	1
	8/21	3.18	2738	87	0.12	<0.01	0.6	0.02	0.204	0.006	1.6	0.06	51	2
	10/22*	1.72	-	-	-	-	-	-	-	-	-	-	-	-
	Total or Average	156.23	16873	26071	0.23	0.35	2.0	3.15	0.273	0.421	4.4	6.78	100	154

* Unsampled flow (for site 3, includes 4/3, 4/25, 5/3, 6/12, and 6/27).

Annual flow, nutrient and soil losses (1979)

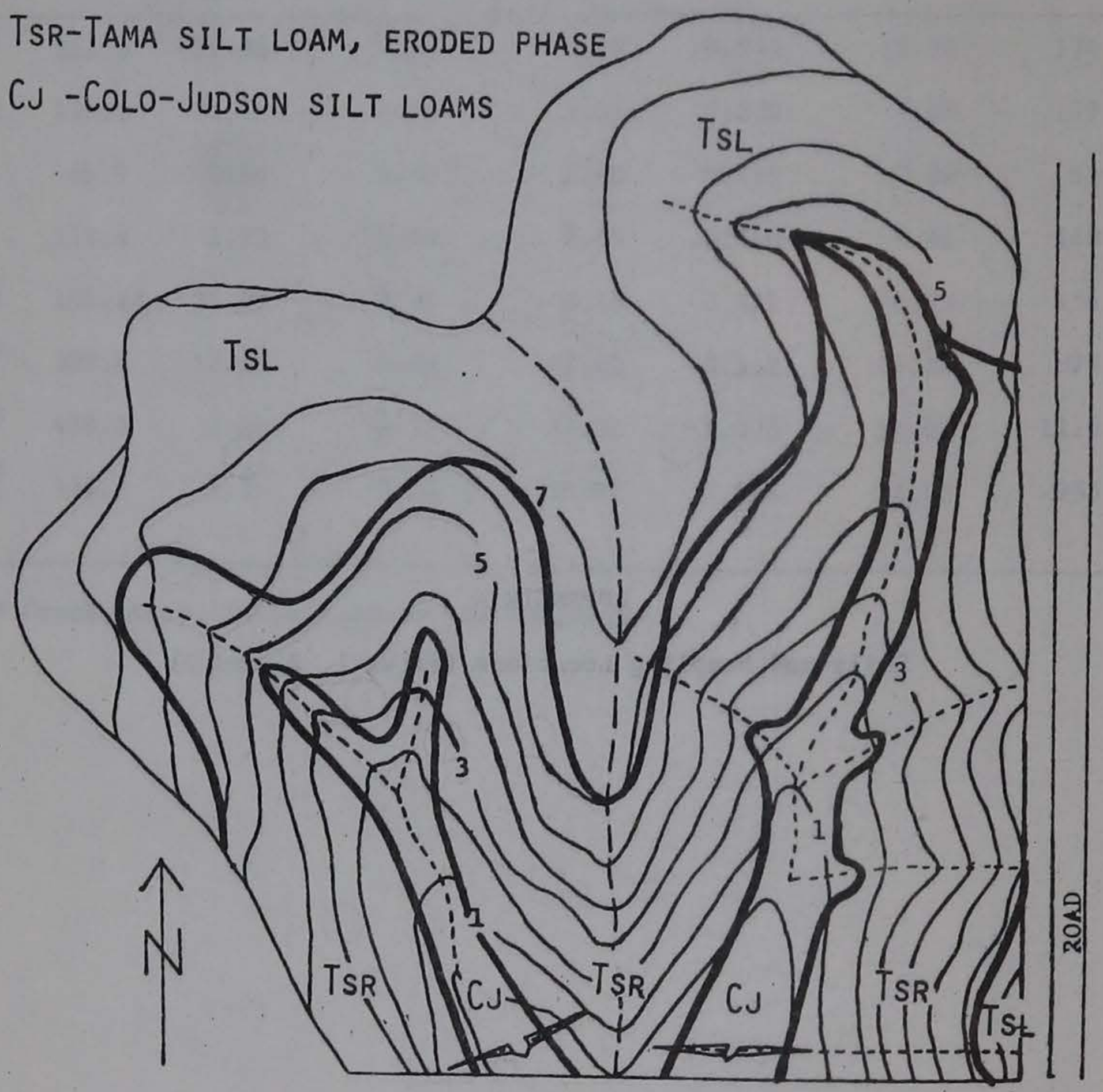
	Flow mm	Sed't T/ha	NH_4-N	NO_3-N	PO_4-P kg/ha	Cl	TDS
1	251.3	51.33	0.86	5.67	0.244	10.12	174
2	199.2	74.86	0.28	2.01	0.239	7.10	179
3	65.9	0.04	0.20	0.60	0.499	2.34	53
7	111.4	1.22	0.59	3.85	0.750	9.81	148
8	156.23	26.07	0.35	3.15	0.421	6.78	154
6*	389.8	15.05	0.94	32.62	0.512	44.49	876
5*	419.3	7.14	2.22	37.82	1.028	59.07	1125
4*	431.1	7.36	2.18	35.01	0.646	52.08	955

* Creek sites, include subsurface drainage

APPENDIX A

Soils and Sampling Locations (Sites 1, 2, and 3)

TSL-TAMA SILT LOAM, LEVEL PHASE
TSR-TAMA SILT LOAM, ERODED PHASE
CJ -COLO-JUDSON SILT LOAMS



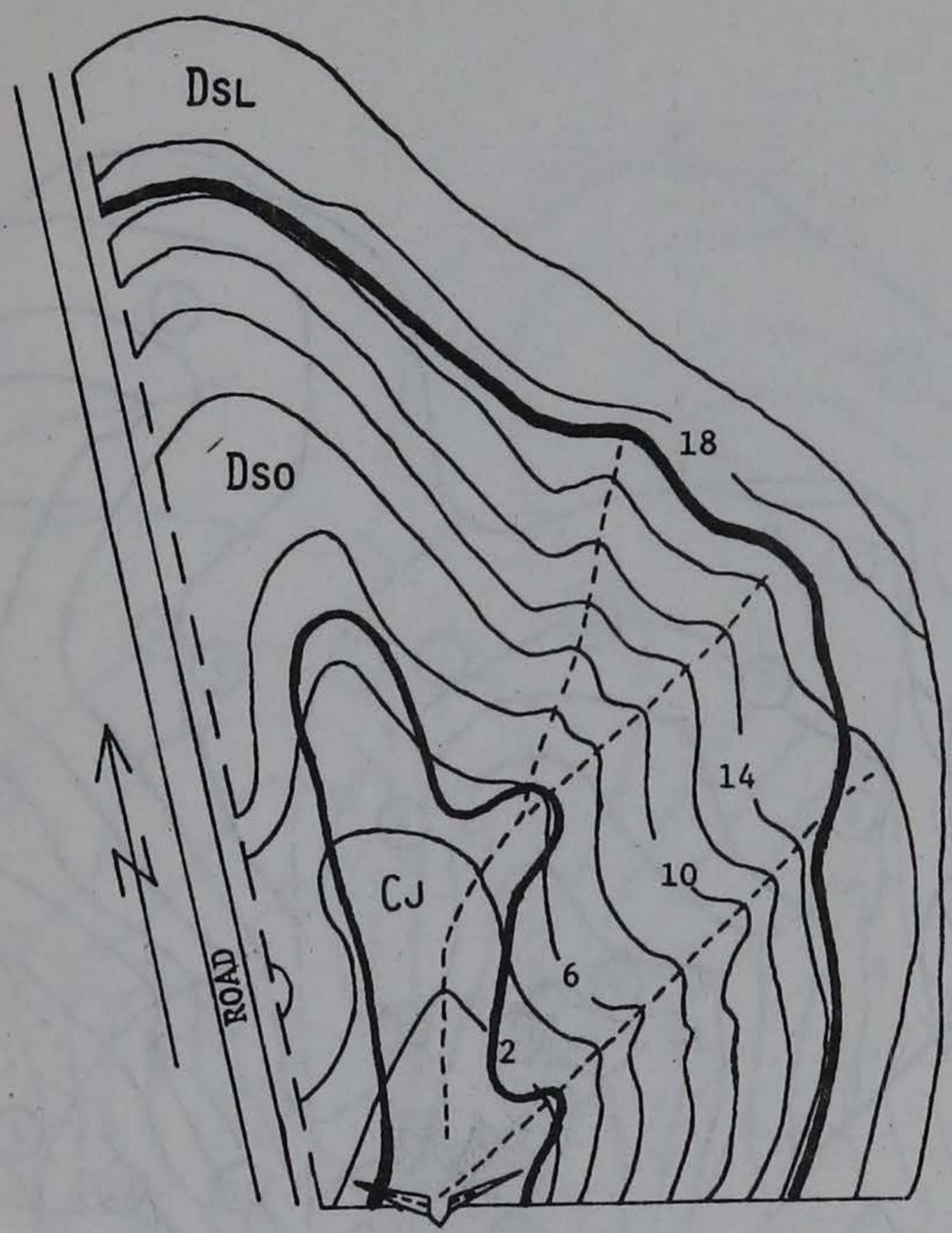
SITE 1
AREA: 5.05 ha

SITE 2
AREA: 6.37 ha

SCALE: 100 m

1.0m CONTOUR INTERVALS

Soil map of sites 1 and 2



SITE 3

AREA: 5.93 ha

SCALE: 100 m

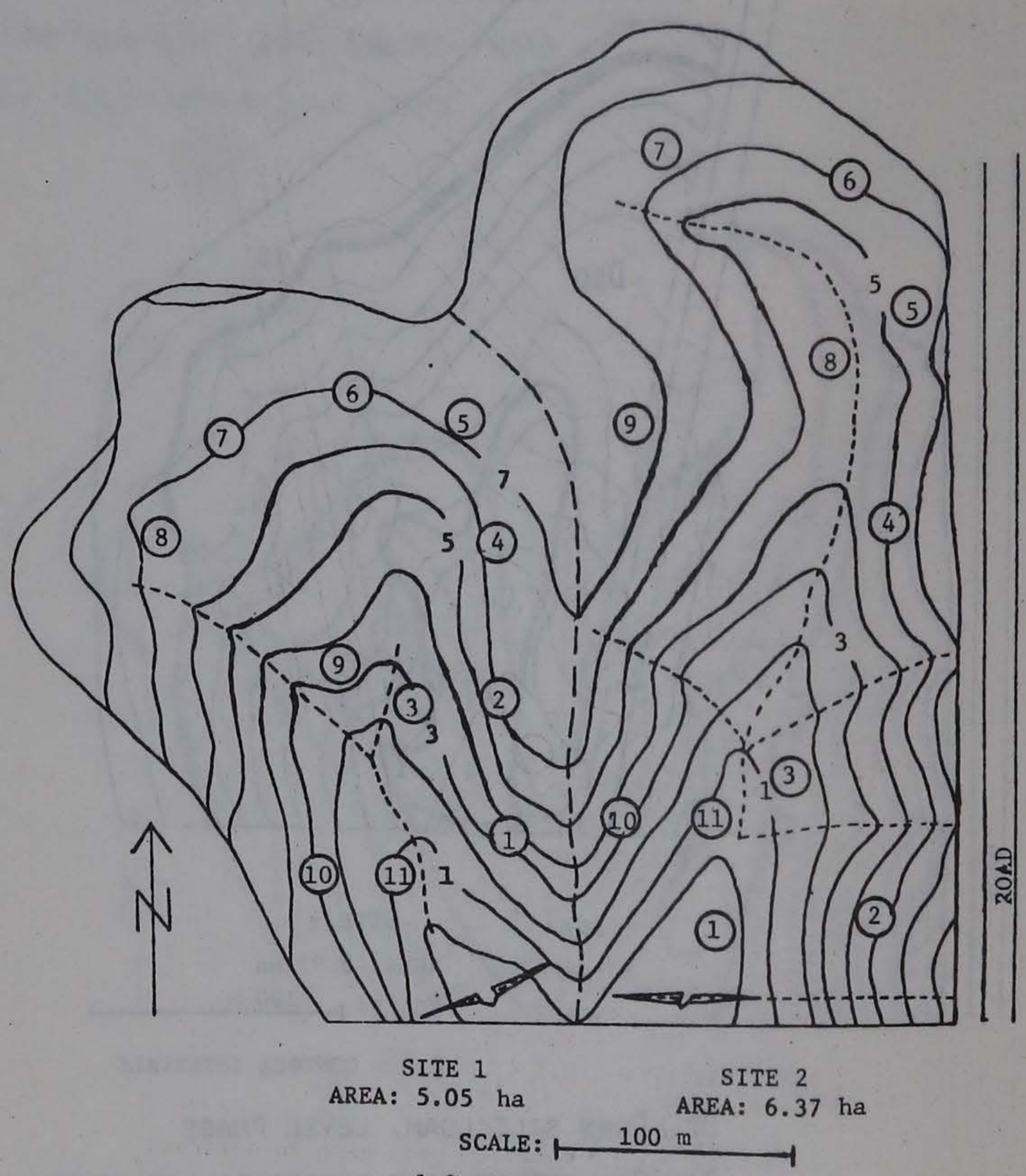
2.0 m CONTOUR INTERVALS

DSL-DOWN SILT LOAM, LEVEL PHASE

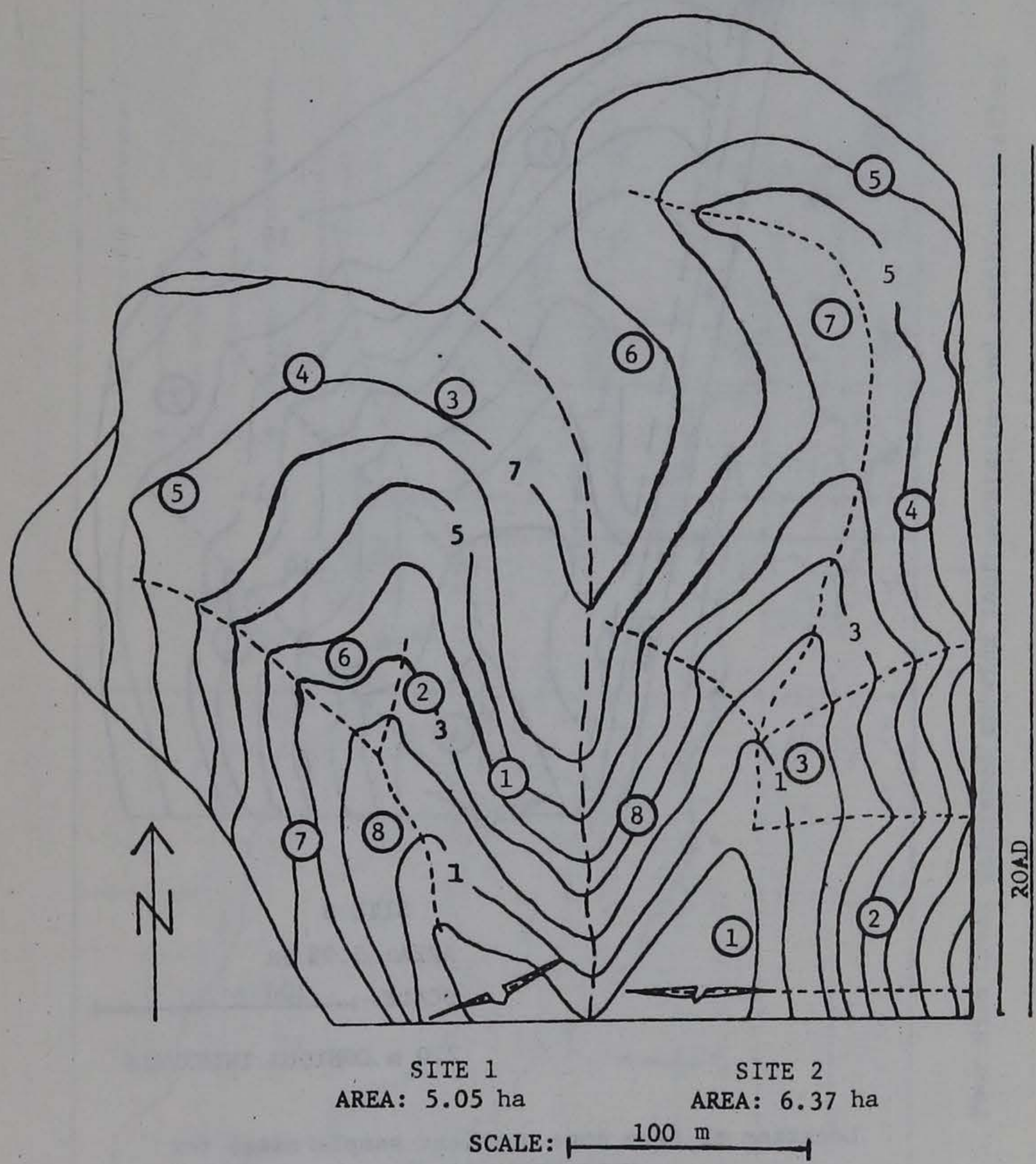
DSO-DOWNS SILT LOAM, ERODED ROLLING PHASE

CJ-COLO-JUDSON SILT LOAMS

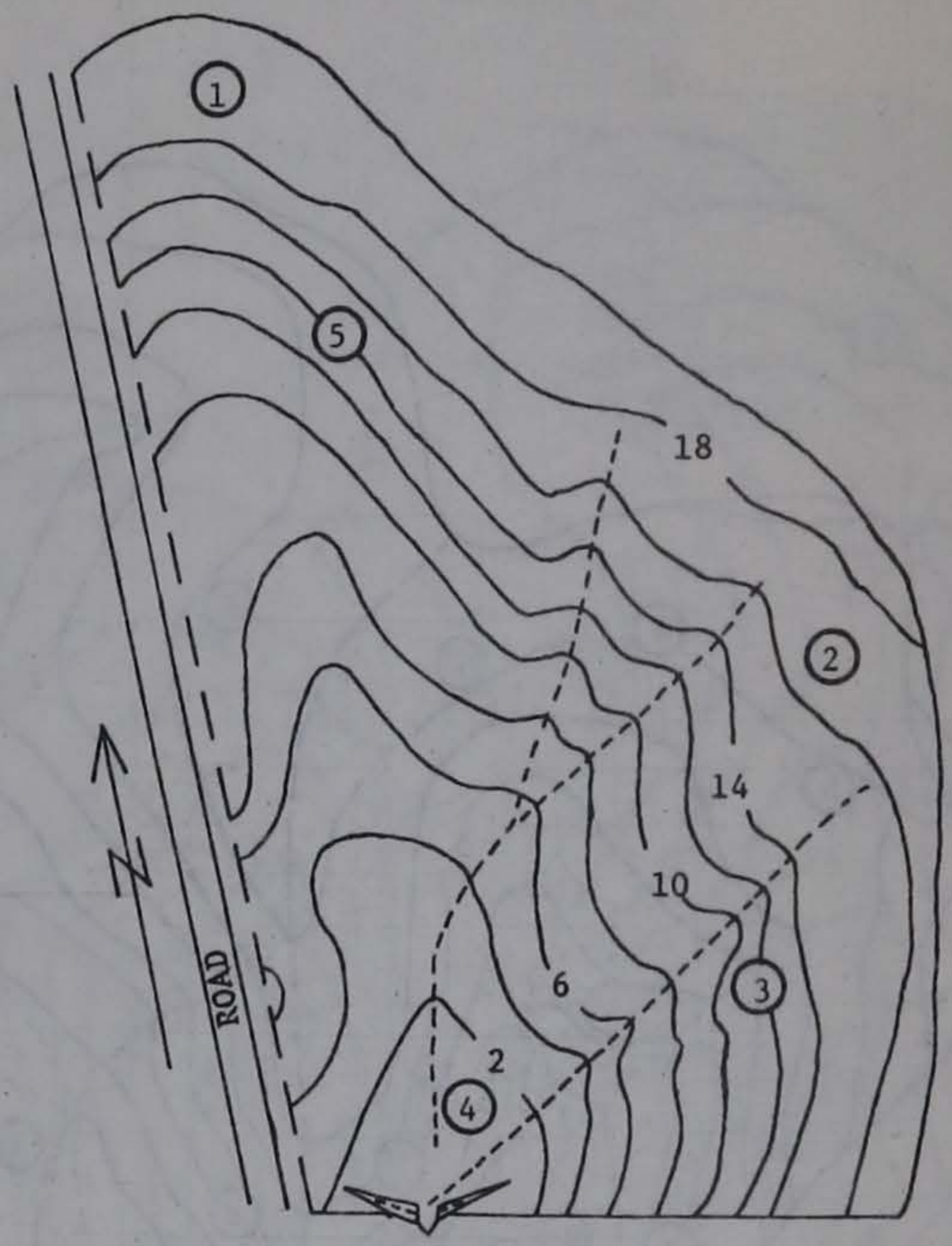
Soil map of site 3



Location of volume pesticide sample sites for watershed sites 1 and 2



Location of deep core nutrient sample sites for watershed sites 1 and 2



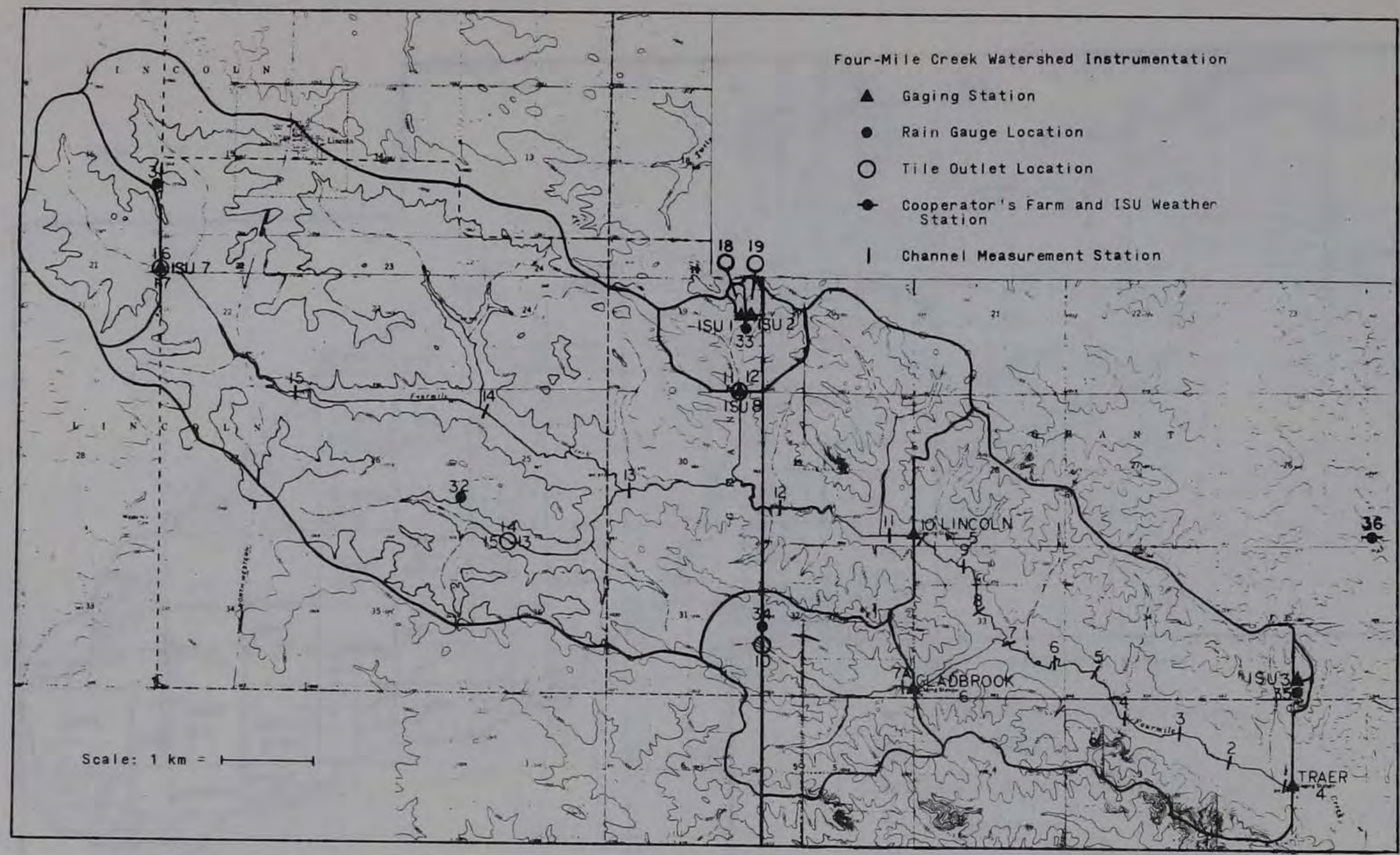
SITE 3

AREA: 5.93 ha

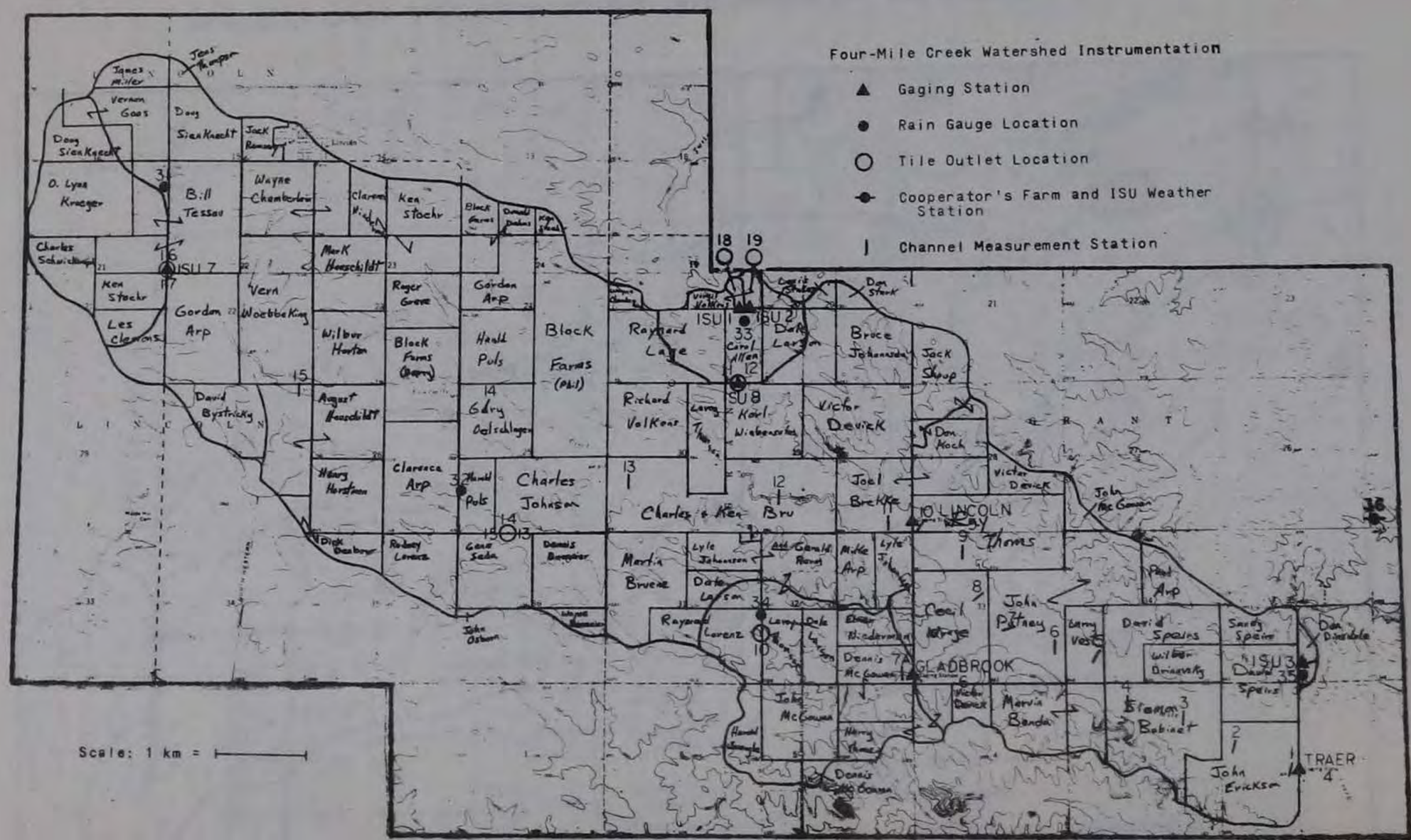
SCALE: 100 m

2.0 m CONTOUR INTERVALS

Location of deep core nutrient sample sites for watershed site 3



Four Mile Creek watershed showing instrumentation and sampling locations



Four Mile Creek watershed showing owner-operators of land within the watershed

APPENDIX B

Public Relations

Newsletter

Four-Mile Creek Watershed
August 20, 1979

Research and cost sharing funds are now approved for work in the 12,000 acre Four-Mile Creek Watershed. The Environmental Protection Agency (EPA) will provide about $1.8 million to Iowa State University for research over a 5-year period.

The Agricultural Stabilization and Conservation Service (ASCS) has agreed to add another $1 million in cost sharing funds over the 5-year period.

The project is a major research and demonstration effort of sufficient duration to collect badly needed information and experience. It involves the cooperation of all farmers in the watershed as well as cooperation between EPA, USDA, ISU and other interested state, local and federal agencies.

Senator John C. Culver, in a recent visit to the watershed, stated that this project, the first of its kind in the nation, "will make a substantial contribution to our ability to improve soil conservation and water quality programs alike." "The results will set the pattern for future efforts nationwide."

Data Collection

The major research objective is to evaluate agricultural management practices which have potential for effective soil and water conservation and maintenance of acceptable water quality. The conservation effectiveness of practices, cost relationship and social acceptability are all part of the study.

Many kinds of data are already being collected and others will be added or expanded as the project proceeds. For example, rainfall is now being measured at 6 locations. Streamflow is being gaged continuously at 8 sites. Sediment produced by water runoff is being sampled at several sites and analyzed for size and amount. Samples for plant nutrient analysis are being collected from rainfall, runoff waters, and sediment. Soluble nitrogen (N) and phosphorus (P) are being determined in runoff from field size watersheds, larger watersheds during storms, tile outlets and daily samples from Four-Mile Creek. N and P will also be determined on sediment collected during runoff from field size and larger watersheds and from soil cores. Samples for herbicide analysis in runoff water and sediment are being collected at several sites.

This kind of data will provide an improved basis for assessing agricultural management practices and for predicting benefits including water quality impacts. Technology can be developed for local planning and for extrapolating to other crop regions for assessing and solving their agricultural nonpoint source problems.

Attention is now being given to the selection of 4 sub-watersheds for studying specific practices. Included will be a small watershed for each of the following practices: terracing, strip cropping, conservation tillage such as chisel plowing, and no-till such as slot or till planting.

A concentration of specific practices in a small watershed will make it possible to gage and study the effectiveness and practicality of these practices. For installing the practices, cost sharing will be available and it is expected that special tillage equipment will be provided where needed.

It is also an objective to encourage the installation of as many soil and water conservation practices as possible throughout the watershed. Cost sharing, technical assistance, and other aids will be provided.

Information on other studies such as the economic and sociological phases will be provided as procedures are formulated.

Cost Sharing

ASCS has $130,000 in cost sharing funds available for use in the watershed during 1979. Seven practices are available for 90% cost share up to $3500 per farmer. The 7 practices are contour farming, strip cropping, conservation tillage, terraces, grass waterways, water impoundment structures, and animal waste control structures.

Also available are funds for 75% cost share on pasture seedings, wildlife plantings, timber stand improvement and diversions.

Provisions are available for pooling agreements. Two or more farmers must be involved. Cost share can go to $10,000 each.

Farmers who signed up for practices before July 17 and have completed the practice need only inform the ASCS office in Toledo for approval and processing for payment. Others who plan to carry out a practice yet this fall should sign up at the ASCS office.

Tour and Meeting - August 30

All owners and operators are invited to attend a short tour of the watershed followed by an informational meeting. We will assemble at the research site on the Grover Volkens farm at 6:30 pm, Thursday, August 30. Following the tour we will assemble at the Amity Church at 8:00 pm for refreshements and a meeting.

Dick Pulse, Tama County Extension Director, will preside at the meeting. Research leaders from Iowa State University, Bud Lyon from ASCS and Ted Hall from SCS will be on hand to provide information and answer questions.

Frank W. Schaller
Project Coordinator
Agricultural Engineering Dept.
Iowa State University, Ames

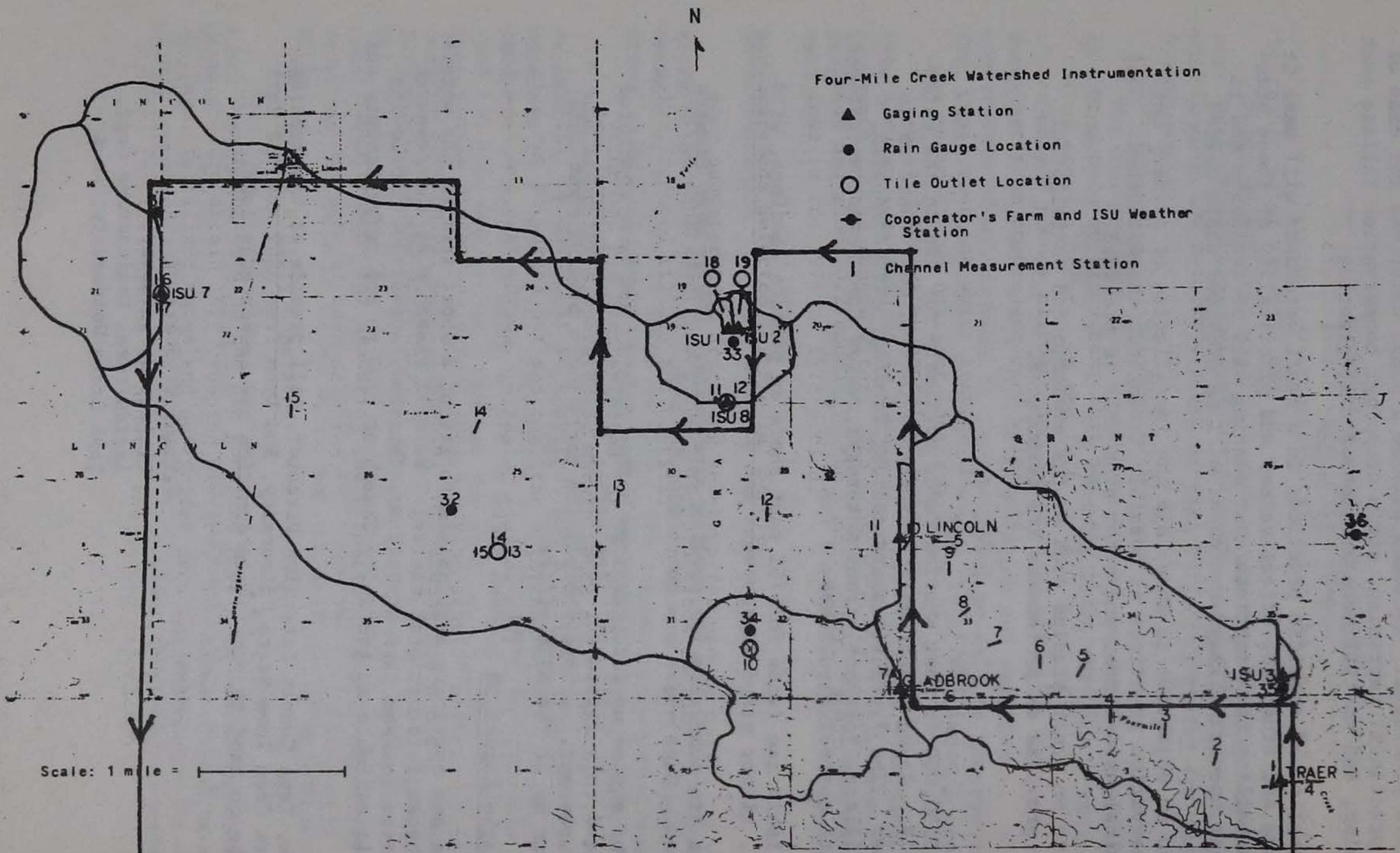


Figure 2. Four-Mile Creek Watershed Instrumentation.

Gladbrook

Newsletter
Four-Mile Creek Watershed
October 1979

Thanks to everyone who participated in the August 30 watershed meeting and tour. Forty-five persons from interested agencies registered for the afternoon event. In the evening over 60 farmers and others made the short tour and participated in the meeting at the Amity Church.

At the August 30 event participants were brought up-to-date on current activities and future plans. Data now available from measurements made in the watershed were presented. Cost sharing procedures were reviewed and plans were discussed for studies involving stream ecology, sociology and economics.

Some Watershed Data

At the August 30 meeting Dr. Jim Baker presented watershed data showing total water runoff and losses of sediment, nitrogen and phosphorus. The data are shown in Table 1. They include measurements from corn and soybeans grown in the two small watersheds (sites 1 and 2), and from Four-Mile Creek measured at the outlet (Traer station).

The first two columns in Table 1 show annual losses averaged for the 3 year period 1976 to 1978. The second two columns show the losses obtained in 1979 up to August 1.

The losses measured in 1979 are several times greater than those measured in the previous 3 years. This is due to higher total rainfall in 1979 and perhaps more important to the high intensity of several storms. Rainfall during 1979 is shown in Table 2.

Erosion was severe throughout the watershed in 1979. This is evident from observations on farm fields and from the measurements made in the two small row-cropped subwatersheds. The soil loss for the subwatersheds measured at the flume was 25 tons per acre. Some additional sediment was deposited above the flume and will be measured later. The 25 ton per acre loss is 5 times the soil loss considered allowable for this soil type.

In 1979, 6 tons of sediment per acre left the watershed in the creek flow as measured at the Traer Station. This is 20 times more than resulted per year in the 3 previous years.

Losses of nitrogen and phosphorus were severe in 1979. The 25 tons per acre of sediment which came off the small row-cropped watershed contained 4 pounds of nitrogen per ton. Thus 100 pounds of nitrogen per acre were lost by soil erosion. An additional 6 pounds per acre of soluble nitrate nitrogen were lost in the runoff water. It should be recognized that most of the nitrogen lost was contained in the soil organic matter and was not directly from applied nitrogen fertilizer.

Gladbrook

About 2 pounds of phosphorus were lost per ton of sediment. Thus 50 pounds per acre of phosphorus were lost in the 25 tons per acre of sediment which eroded from the row-cropped watershed. The amount of phosphorus in the runoff water was very small.

The phosphorus as well as the nitrogen in the sediment is mainly in organic form and not immediately available to growing crops or to cause water quality problems. Over time, however, these nutrients are slowly released and could be available to plants.

From this it is evident that severe nutrient losses can occur when high rates of erosion occur. In the 1976 to 1978 period when erosion was not severe only 7 pounds nitrogen and 3 pounds of phosphorus per acre per year were lost from the row-cropped watershed.

Quality of the water leaving the Four-Mile Creek watershed is indicated by the sediment and nutrient losses measured at the creek outlet, Traer station. In 1979 the water contained 6 tons per watershed acre of sediment. The nitrogen loss totaled 44 pounds per acre, 24 pounds in the sediment and 20 pounds in the runoff water. The phosphorus was 12 pounds per acre in the sediment and about 0.2 pounds in the runoff water. Again the losses were much less in the 1976 to 1978 period.

Subwatersheds Selected for Special Studies

Four subwatersheds are being selected for use in measuring the effect of specific management practices. The practices include terracing, strip cropping, reduced tillage and no-till.

A watershed has been selected for terracing. It is about 30 acres in size and is on farms operated by Marvin Benda and Victor Devick in section 4, Crystal Township. It is expected that a pooling agreement and other details can be worked out and that the watershed will be completely terraced this fall and next spring. A gaging station will be located at the outlet.

Martin Bruene has agreed that a gaging station may be located on his farm in section 31, Grant Township. Mr. Bruene has a modified strip cropping system on this 160 acre unit.

Subwatersheds for measuring the effectiveness of reduced tillage and no-till have not yet been selected.

1979 Cropping History Completed

Marvin Borcherding and Jim Korslund have been contacting farmers in the watershed to obtain 1979 cropping history. The acres of each crop, kind of tillage, fertilizer rates and pesticides used are recorded. This work is about completed and will be reported in a later newsletter. Our thanks to everyone for taking time to provide the needed information.

Early Sign-up For Cost Sharing Urged

Do you have plans for installing practices this fall or next spring such as terraces, waterways, water impoundment structures or animal waste control structures? If so, you are urged to sign-up at the ASCS office for cost sharing as soon as convenient. Early sign-up is needed to help plan for the required technical assistance and contractors to do the work. Having help available at the right time could be a bottle-neck with the heavy work load expected.

Requests for cost-sharing on file at this time include 8 for terracing, 11 for waterways, one for water impoundment and several for conservation tillage.

Tillage Cost-Sharing in 1979

Thirteen farmers requested cost-sharing for conservation tillage in 1979. On these farms 1363 acres were approved for chisel plowing, field cultivating or disking and 202 acres were approved for till-planting. Farmers who used conservation tillage in place of the moldboard plow were pleased with the results.

Conservation tillage saves time and work, reduces runoff and soil loss, and produces yields comparable to conventional tillage. To be an effective conservation measure, sloping land over 3% slope should be contoured and enough residue left on the surface at planting to provide effective ground cover. Conservation tillage has its limits, however. If slopes are too steep and/or too long it may be necessary to add other measures such as terracing, strip cropping or shift to more hay or pasture.

Frank W. Schaller
Practice Coordinator

IOWA STATE UNIVERSITY
of Science and Technology
AMES, IOWA 50011

Department of
Agricultural Engineering
Davidson Hall
Telephone 515-294-2871

July 31, 1979

TO: Agency personnel and other technical people interested in the Four-Mile Creek Watershed Research Project

FROM: Howard P. Johnson, Project Leader
Agricultural Engineering Department, ISU

Subject: Watershed Tour and Informational Meeting

On Thursday, August 30, 1979, a field day will be held at the Four-Mile Creek Watershed. The group will assemble at 1:30 p.m. in the Gladbrook City Park. The park is located 2 blocks south of the business district next to the high school.

Starting at 1:30 p.m. the objectives and plans for the project will be reviewed. Facts about the watershed, a summary of current findings and the ASCS cost sharing program will be presented. The proposed social and economic studies will also be reviewed.

Following the program (about 2:30 p.m.) a tour of the watershed will get underway. Stops will be made at several points of interest for observation and discussion. The days events will terminate at 4:00 p.m.

We hope you will put this date on your calendar and plan to attend. Please extend the invitation to your co-workers and others that might be interested.

On the evening of August 30, starting at 6:30 p.m., farmers in the watershed and area are invited to a short tour of the watershed. At 8:00 p.m., the group will assemble at the Amity Church for an update on plans and progress. The church is located on D65, 1 mile east of T55. You are welcome to participate in this tour and program if you wish.

HPJ/bjk

Mailing List - Watershed Field Day

Iowa State University - Campus

Howard P. Johnson, 109 Davidson Hall
Clarence W. Bockhop, 100 Davidson Hall
Marvin Borcherding, 217 Davidson Hall
Vernon M. Meyer, 200B Davidson Hall
James L. Baker, 207B Davidson Hall
John M. Laflen, 211 Davidson Hall
Stewart W. Melvin, 203 Davidson Hall
Wm. R. Oschwald, 108 Curtiss Hall
John P. Mahlstede, 104 Curtiss Hall
Howard M. Taylor, 225 Agronomy Building
John T. Pesek, 120 Agronomy Building
Wm. Shrader, 229 Agronomy Building
Minoru Amemiya, 117 Agronomy Building
Garren O. Benson, 117 Agronomy Building
Elwynn Taylor, 117 Agronomy Building
Harvey E. Thompson, 117 Agronomy Building
Regis D. Voss, 117 Agronomy Building
Peter F. Korsching, 216 East Hall
Peter J. Nowalk, 217A East Hall
John A. Miranowski, 377 East Hall
Roger W. Bachmann, 140 Science II
Bruce W. Menzel, 142 Science II
Merwin D. Dougal, 374 Town Engineering Building
Thomas Fenton, Agronomy Annex
Walter G. Lovely, 22 Curtiss Hall

Off-Campus

Ted Hall, Soil Conservation Service, USDA Building, Toledo, Iowa 52342
Russel Lyon, ASCS. USDA Building, Toledo, Iowa 52342
Richard D. Pulse, County Extension Director, USDA Building, Toledo, Iowa 52342
Calvin T. Goettsch, Area Extension Office, 335 Fletcher Avenue, Waterloo, Iowa 50701
Kay A. Connelly, Area Extension Office, 335 Fletcher Avenue, Waterloo, Iowa 50701
Wayne P. Dietz, Extension Area Office, 1890 John F. Kennedy Road, Dubuque, Iowa 52001
Larry Vance, Department of Soil Conservation, Wallace Building, Des Moines, Iowa 50319
James Webb, National Resources Council, Wallace Building, Des Moines, Iowa 50319
Robert Lounsberry, Secretary of Agriculture, State House, Des Moines, Iowa 50319
Wm. Brune, Soil Conservation Service, 693 Federal Building, Des Moines, Iowa 50319
Jerry Schnepf, Iowa Conservation Commission, Wallace Building, Des Moines, Iowa 50319
Roy Fagan, ASCS, 937 Federal Building, Des Moines, Iowa 50309
Larry Crane, Iowa Department of Environmental Quality, Wallace Building, Des Moines, Iowa 50319
Stanley Grant, Iowa Geological Survey, 123 North Capital Street, Iowa City, Iowa 52242
Roger Splinter, State Hygienics Lab, University of Iowa, Iowa City, Iowa 52242
Gerald Schnoor, College of Engineering, University of Iowa, Iowa City, Iowa 52242
Oscar Lara, U.S. Geological Survey, P. O. Box 1230, Iowa City, Iowa 52240
George Johnson, US Army Corps of Engineers, Clock Tower Building, Rock Island, Illinois 61201
Kathleen Q. Camin, U.S. EPA, 1735 Baltimore, Room 249, Kansas City, Missouri 64108

Legislators

Senator John Culver, 206 Federal Building, Cedar Rapids, IA 52401

Congressman Tom Harkin, Box 264, 213 Post Office Building, Ames, IA 50010

Congressman Charles E. Grassley, 210 Waterloo Building, 531 Commercial Street, Waterloo, Iowa 50701

Field Day, Four-Mile Creek Watershed
August 30, 1979

Program for Technical Personnel

1:30 - 2:30 Orientation and Discussion

Assemble at the park in Gladbrook located next to the high school 2 blocks south of the business district.

Program

1. Objectives and Plans, Howard P. Johnson, Project Leader, Agricultural Engineering Department

2. Facts about the Watershed, Marvin Borcherding, Project Field Technician, Agricultural Engineering Department

3. Summary of Data Obtained, Jim Baker, Project Co-Leader, Agricultural Engineering Department

4. ASCS Cost Sharing, Russell Lyon, Past Tama County ASCS Office Manager

5. Introduction of Other Research Project Leaders - Peter Korsching*, Peter Nowak*, and John Miranowski, Department of Agricultural Economics, Bruce Menzel, Animal Ecology, and Merwin Dougal, Civil Engineering

*Department of Sociology and Anthropology

2:30 - 4:00 Watershed Tour (see attached map)

Field Day, Four-Mile Creek Watershed
Date of Field Day, August 30, 1979

Evening Program
Dick Pulse, County Extension Director, Presiding

6:30 - 7:30 Watershed Tour

Assemble at research Site 1 and 2 located 1/2 mile south of D65 on T55 on the Grover Volkens farm.

Tour will start at Site 1 and 2, then south 2-1/2 miles and 1 mile east to Gladbrook gage, then east 2-1/2 miles to pasture watershed, then north to Amity Church located on D65, 1 mile east of T55.

7:30 - 8:00 Refreshments at Amity Church

8:00 - 9:00 Report of Watershed Progress and Plans

Discussion Participants

Howard Johnson, Project Leader
Jim Baker, Agricultural Engineering Department
Russel Lyon , ASCS
Ted Hall, SCS
Peter Korsching, Department of Sociology and Anthropology

CONSERVATION MEETING - FOUR MILE CREEK WATERSHED

Amity Church - December 5th, 1979

9:30a.m.	Coffee and Doughnuts
10:00a.m.	Update and introduction - (Dick Pulse)
10:15a.m.	Best Management Practices put in perspective - the need, cost, effectiveness, limitations, benefits - (Min Amemiya)
11:00a.m.	Farmers Look at Conservation Tillage Systems - (John Weber, Cecil Wrage - Stanley Dostal, Bob Wiese, Dave Podhajkey)
12:00a.m.	Luncheon served by Amity Church ladies
12:45p.m.	Summary of panel discussion and some insights into Conservation farming in Four Mile Creek Watershed - (Dr. Frank Schaller)
1:30p.m.	Weed Control Considerations with Conservation Tillage - (Kay Connelley)
2:00p.m.	Fertility Considerations with Conservation Tillage - (Dr. Regis Voss)
2:30p.m.	Questions and Answer Period

Thanks to Amity Church and their ladies for the fine facilities and the excellent lunch.

ACP PRACTICES - FOUR MILE CREEK WATERSHED

L1 - PERMANENT VEGETATIVE COVER ESTABLISHMENT
Cost share on lime, fertilizer and seed. (8 to 12# seed per acre).
Lifespan - must remain seeded 5 years following seeding year.
Cost-share - 75% of cost.
Iowa State University soil test required.

L2 - PERMANENT VEGETATIVE COVER IMPROVEMENT
Cost share same as SL1 - except permanent fencing can be cost-shared when pasture is on both sides of the fence.
Cost-share - 75% of cost.

L3 - STRIPCROPPING SYSTEMS
Strips must be maintained a minimum of 5 years.
Cost-share - $5.00 per acre and 90% of cost for fence row removal.

L4 - TERRACE SYSTEMS
Includes tile outlet or regular terraces.
Cost-share on earthwork, inlets, tile for outlets - 90% of cost.
Lifespan - 10 years.

L5 - DIVERSIONS
Cost share on earthwork, inlets, tile FOR outlets - 75% of cost.
Lifespan - 10 years.

L7 - WINDBREAK RESTORATION OR ESTABLISHMENT
Cost-share - 50% of cost of trees, shrubs, & fencing.
Not to exceed $5.00 per tree and $.50 per shrub, $7 per rod on fencing.
Lifespan - 10 years.

L9 - CONSERVATION TILLAGE SYSTEMS
1. Eligible operations - chisel plow, plow plant, disc plant (1978 bean ground will not qualify), slot and strip tillage ahead of the planter, chemical kill sods and plant.
2. All operations must be on the contour.
3. Approved operations must leave sufficient residue on surface after planting.
4. Cost-share each year to maximum of three years on the same field.
5. Cost-share - $9.00 per acre for minimum tillage.
   $12.00 per acre for no-till operation.

L11 -PERMANENT VEGETATIVE COVER ON CRITICAL AREAS
Applies to areas as gullies, roadsides, field borders, borrow pits, where erosion is a problem.
Cost-share - 75% of cost. Lifespan - 5 years.

L12 -VEGETATIVE ROW BARRIERS
A two row vegetative barrier of a permanent nature to control and retard wind and water erosion.
Cost-share on minerals, seed and seeding - 75% of cost. Lifespan - 5 years.

SL13 -CONTOUR FARMING
Cost-share each year for a maximum of three years on the same field.
Cost-share - 90% of cost of fence row removal, etc. $5.00 per acre.

WC1 - WATER IMPOUNDMENT RESERVOIRS
Structures must control erosion, may provide livestock water.
Cost-share - 90% of cost. Lifespan - 10 years.

WP1 - SEDIMENT RETENTION, EROSION OR WATER CONTROL STRUCTURES
(Do not impound water).
Cost-share - 75% of cost. Lifespan - 10 years.

WP2 - STREAM BANK PROTECTION
Cost-share - 75% of cost. Lifespan - 10 years.
Cost-share for permanent fencing to protect banks from damage by livestock.

WP3 - SOD WATERWAYS
Producer must have installed adequate soil conserving measures, as recommend by SCS, on the watershed under his control that drains into the waterway bei cost-shared prior to approval by the County Committee. This practice must b maintained during the 10 year lifespan of the waterway.
Cost-share - 90% of cost.

WP4 - ANIMAL WASTE CONTROL FACILITIES
Eligible structures are those required to prevent feed lot run off from entering a waterway or stream.
Cost-share - 90% of cost.

FR1 - FOREST TREE PLANTATIONS
Cost-share - 75% cost of trees, not to exceed $100 per acre.
Site preparation - not to exceed $45 per acre.
Fencing - 75% not to exceed $7 per rod. Lifespan - 10 years.

FR2 - FOREST TREE STAND IMPROVEMENT
Cost share - same as FR1.

WL1 - PERMANENT WILDLIFE HABITAT
Cost-share - 75% of cost. Lifespan - 5 years.

WL2 - SHALLOW WATER AREAS FOR WILDLIFE
Cost-share - 75% of cost. Lifespan - 10 years.

THE FOUR MILE CREEK RESEARCH PROJECT

IOWA STATE UNIVERSITY
DEPARTMENT OF AGRICULTURAL ENGINEERING

A WATERSHED STUDY IN TAMA COUNTY, IOWA TO HELP ACHIEVE NONPOINT POLLUTION CONTROL AND MEET WATER QUALITY GOALS.

The Four-Mile Creek Research Project
A Watershed Study in Tama County, Iowa

Four-Mile Creek is a small stream that drains a 12,000 acre watershed in Tama County, Iowa. The watershed is the site of a field evaluation study to better understand the role of agricultural best management practices (BMPs). The major purpose of the research is to obtain information to help in achieving nonpoint pollution control and meeting the nation's water quality goals. The following sections describe society's concern for water quality, research objectives and data collection, characteristics of the watershed, and the agencies involved.

Society's Concern for Clean Water

Improving and maintaining clean water in our nation's streams, rivers and lakes is an important societal concern. Clean water is necessary for drinking, agricultural and industrial use, recreation, and a healthful environment.

Society's concern for improving the nation's waters has led to congressional action. A federal and state effort to improve water quality was initiated in 1972 when Congress passed the Federal Water Pollution Control Act Amendments (FWPCA). The Act set water quality goals and established provisions for curbing and eliminating water pollution. Section 208 of the 1972 amendments requires the development of state and area wide water quality management programs. It mandates pollution abatement from both point and nonpoint sources. In agriculture this includes pollution from crop production and the feeding and pasturing of animals.

In 1977, Congress established the Rural Clean Water Program (RCWP). This program provides the framework for implementing Section 208, and, potentially, the funding for achieving the desired goals. Legally the federal government is bound by FWPCA-1972 to try to achieve "fishable and swimmable" quality waters throughout the nation by 1983.

Agricultural Pollutants and Research Needs

Agricultural pollutants are natural components of the countryside. They become pollutants only when they interfere with the beneficial uses of water. Six major agricultural pollutants have been identified; they are sediments, nutrients, salts, organics, pesticides, and disease-producing organisms. All are by-products of food and fiber production and can move from the land to water sources.

The kinds and amounts of pollutants which move from agricultural land to streams, rivers and lakes are strongly influenced by land use and management. The dominant technique for curbing pollution from the land is considered to be the development and application of agricultural best management practices (BMPs).

Research is needed to better understand the role of BMPs in the achievement of water quality, soil protection and other environmental amenities. There is a need to evaluate practice costs and social acceptability. Such information will enhance the development of feasible control programs, provide guidelines for policy decisions and indicate avenues for reaching desired environmental goals.

Measurements and data gathering for this study are centered in a heavily cropped watershed characteristic of Iowa agricultural land. The application of BMPs is being encouraged by increased levels of education, technical assistance and cost sharing. The project will be of sufficient duration, at least 5 years, to ensure that before-and-after effects of BMP implementation are characterized. Some background data are already available from earlier studies in the watershed.

Objectives and Data Collection

Research objectives for the project can be divided into four major categories. The first involves a determination of the effectiveness of BMPs in the control of agricultural nonpoint sources of pollution including a study of the chemistry of pollutants and the mechanisms influencing their movement from field to stream.

Many kinds of data are being collected to achieve this objective. Precipitation is measured at six locations, and streamflow is gaged at eight sites. Samples of surface runoff are collected from field size and larger watersheds during storms. Water samples are collected daily from creek flow and weekly from tile flow. The water samples are analyzed for their content of sediment, nutrients and pesticides. The sediment itself is separated from the water and analyzed for particle size and content of nutrients and pesticides. Sediment deposition is measured at some locations and Four Mile Creek itself is observed annually for changes in bottom characteristics and cross section. A survey is made each year of all farms in the watershed. The crops grown, tillage practices used, and kinds and rates of fertilizer and pesticides applied are recorded for each field.

A second objective is to determine the social and institutional processes which influence the awareness, adoption, and maintenance of BMPs. Four Mile Creek watershed will serve as an experimental area in which both education and monetary incentives will be applied and evaluated. Two other watersheds will be studied for comparison; one with only educational treatment, and the other with no treatment effects. Other relevant social and economic factors such as demographic and agricultural characteristics, various change agents, and the influence of farm organizations and local offices of state and federal agencies will be studied.

A third objective involves an economic analysis of nonpoint source pollution control and the development of water quality goals which are economically and socially acceptable. Considerable data collection and analyses will be required to accomplish this objective. There will be an assessment of water quality requirements needed to satisfy meaningful uses. The cost-effectiveness of alternative sets of BMPs will be evaluated.

Alternative pollution policy options that will encourage or require the adoption of BMPs will be studied. Both on-site and off-site benefits of pollution control will be assessed to determine socially desirable levels of control.

A fourth objective relates to the goal of "fishable and swimmable" waters where feasible. Application of BMPs may be expected to affect stream quality. Studies are already underway to identify and determine the abundance of fish species and major groups of benthic invertebrate organisms in Four Mile Creek and several nearby streams. In addition, base line water quality data in the streams will be obtained.

Description of Watershed

The Four Mile Creek watershed is located in the northwest corner of Tama County, Iowa and is part of the Iowa-Cedar River basin. It is about 2 miles wide and 10 miles long; the land area is about 12,000 acres. A map of the watershed is attached.

The topographic features and drainage of the area are related to glaciation during the Pleistocene and to subsequent modification. Nearly all the glacial till is covered by Wisconsin loess, up to 35 feet deep on the divides but thinning on the valley sides.

The watershed has a humid region climate subject to a wide variety of weather conditions typical of Iowa. The mean annual temperature of the area is 47.6°F; the mean annual precipitation is 32.4 inches.

Soils in the watershed are dominantly of loess origin and silt loam in texture. The parent material and prevalent soil phases are:

Loess - 69%

Tama, Downs, Fayette, Muscatine

Alluvial-Colluvial - 23%

Colo, Judson

Thin Loess over Glacial Till - 7%

Kenyon

Glacial Till - <1%

Shelby (Liscomb)

About 75% of the watershed is planted to corn and soybeans each year; 20% is in small grain, meadow and pasture; and 5% is in building sites, roads and other uses. Liberal amounts of fertilizer are used especially for corn. Herbicides are widely used for weed control, and some insecticides are used, mainly for control of corn rootworms.

Tile drains are commonly installed along waterways. Although most cropped soils have good natural drainage, some tile is used in the flatter upper regions of watersheds and in some flood plain areas. Many farmers plow cropland especially following corn. Contouring and conservation tillage, however, are increasing in the watershed. About 1% of the cropland is terraced. The soils are very productive and crop yields are excellent. Much of the cropland has slopes of 5 to 12% and on such lands runoff and erosion are often excessive.

Implementing BMPs

BMPs selected for emphasis in the watershed include contouring, conservation tillage, terracing, strip cropping, sod waterways, water impoundment reservoirs and animal waste control facilities. Practices such as vegetative cover improvement, tree planting, stream bank protection, wildlife habitat and others may be used.

The use of appropriate practices will be encouraged throughout the watershed. In addition, subwatersheds have been selected to implement specific practices and to measure their effectiveness. An all-pasture watershed is already under measurement. A terraced watershed, a strip cropped watershed, a minimum tillage watershed and a no-till watershed have been selected and the practices are being implemented.

Techniques used to facilitate interest and encourage application of practices include meetings and tours, publications, newsletters, and personal contact. Technical assistance and cost sharing are available.

A Cooperative Effort

Research in the Four Mile Creek project is interdisciplinary and detailed It is designed so results can be generalized and used beyond the borders of Four Mile Creek and the State of Iowa. To facilitate widespread application, data will be used in simulation models to establish relationships and predict alternative solutions, and to suggest policy for solving agricultural nonpoint source pollution problems.

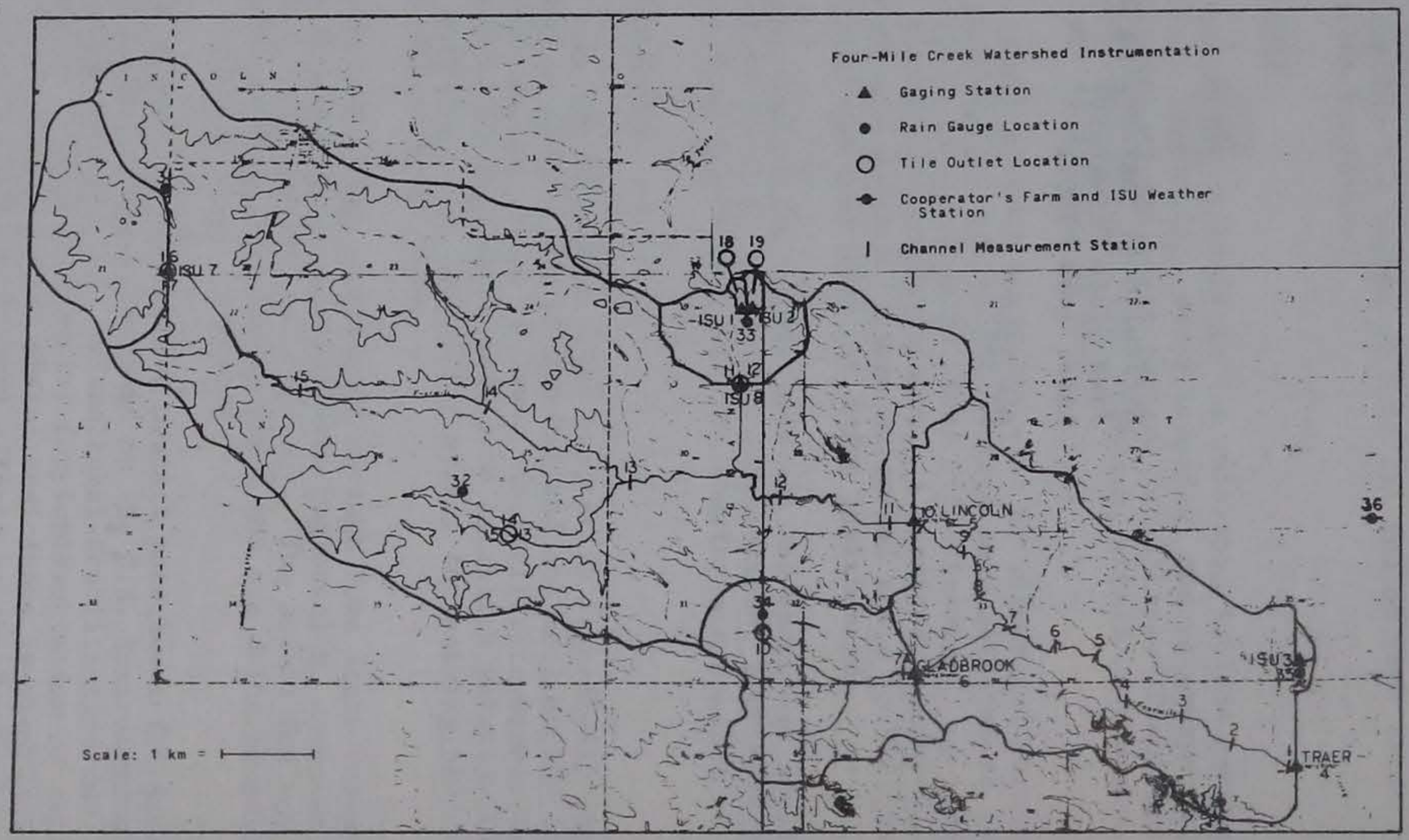
The project is being coordinated through Iowa State University and involves the departments of Agricultural Engineering, Agronomy, Agricultural Economics, and Sociology and Anthropology. The Animal Ecology and Civil Engineering departments are also involved and are doing complementary studies outside the Four Mile Creek Watershed.

Funding as well as cooperative project management for methodology development and data gathering is provided by the U.S. Environmental Protection Agency. Funding from the U.S. Agricultural Stabilization and Conservation Service provides cost sharing monies for implementation of conservation practices in the watershed. Technical assistance is provided by the Soil Conservation Service and educational efforts by the Cooperative Extension Service. The U.S. Geological Survey shares some of the data collection costs. Other federal and state agencies provide general support and advisory services.

In Tama County, the offices of the Agricultural Stabilization and Conservation Service, the Soil Conservation Service and the Cooperative Extension Service work with research personnel and farmers. Farmers in the watershed have a key role in cooperation and practice application; without their effort there would be no project.

Agricultural Engineering Department
Iowa State University
Ames, Iowa 50011

May 1980


Four-Mile Creek Watershed Instrumentation
Gaging Station
Rain Gauge Location
Tile Outlet Location
Cooperator's Farm and ISU Weather Station
Channel Measurement Station
ISU 7
ISU 1
ISU 2
ISU 8
ISU 3
LINCOLN
GLADBROOK
TRAER
Scale: 1 km =

Conservation Tillage
Methods and Procedures

Iowa State University
Department of Agricultural Engineering
Department of Agronomy
Cooperative Extension Service

This publication was prepared with the support of the Iowa Field Evaluation Project at Iowa State University which is funded by the US Environmental Protection Agency. Comments and suggestions will be considered before further publication.

Conservation Tillage

Methods and Procedures

Each year more farmers are changing tillage systems for growing corn and soybeans. The moldboard plow is being used less and techniques such as chisel plowing, disking, field cultivating, slot planting and till planting are gaining favor.

The greatest benefit from reduced tillage is credited to soil and water conservation. For this reason, the term conservation tillage is the favored term used to describe all reduced tillage methods. Other benefits from conservation tillage also are important. Most significant when compared to moldboard plowing is the reduction in field time and energy required for tillage and planting. These savings, combined with yields comparable to moldboard plowing, can result in greater returns per acre.

Conservation tillage has experienced several years of research and trial by farmers and industry. These efforts have resulted in practices and procedures that work and are acceptable to farm operators. Industry has played a key role by providing the power units, tillage equipment and planters that work well on rough seedbeds covered with residue. Also, effective herbicides are available that can be selected to meet conservation tillage requirements.

Conservation Tillage Methods

The effectiveness of all conservation tillage methods is closely related to the amount of crop residue remaining on the soil surface after planting. Thus, during seedbed preparation, the equipment used must be set and operated to leave as much of the previous crop residue on the soil surface as possible. Also, with reduced tillage, the seedbed will be somewhat rough which is a further aid to water intake and resistance to erosion. Conservation tillage must be performed on the contour or across slope on slopes in excess of 3 percent.

The following pages describe several conservation tillage methods and discuss alternative techniques that can be used within each method to complete the tillage, fertilizer application, weed control and planting. Soil tests should be used to determine fertilizer rates. Other Extension Service publications are available for details on fertilizer materials and application techniques. The latest Extension Service "Weed Control Guide" should be referred to for selecting appropriate herbicides and for details on chemical characteristics, rates to use, and application guidelines.

Prepared by Frank W. Schaller, professor emeritus, and Min Amemiya, extension agronomist. October 1979.

The methods discussed on the following pages include: (1) chisel plowing on cornstalk land, (2) disking on cornstalk land, (3) disking or field cultivating soybean land, (4) slot planting, and (5) till planting. Following the discussion of each tillage method, a method summary is presented. The summary lists the procedure which is considered best and most often used. Also, a listing of where the method is best suited and its advantages and disadvantages is provided.

A table at the end of the report compares fuel requirements of different tillage methods. In estimating fuel requirements, the operations considered for conventional tillage include moldboard plowing, all of the secondary tillage operations, planting and cultivations for weed control. Operations listed for five conservation tillage alternatives are those as given in the methods summaries, and considered most likely to be followed. However, some variation might be appropriate depending upon factors such as soil moisture conditions, weed potential, fertilizer choice, and available equipment.

I. Using the Chisel Plow on Cornstalk Land

The Chisel Plow and Its Use

1. Modern chisel plows have two or three rows of straight or curved, high clearance shanks attached to a heavy box frame. Shank spacing is usually 12 to 15 inches. Chisel points 2 to 4 inches wide are common.

2. Some chisel plows have a gang of straight coulters or disks ahead of the chisel shanks for chopping stalks. This eliminates the need for disking or chopping stalks ahead of chiseling.

3. Chisel plows can be purchased in different widths to fit available tractor power.

4. The draft of a chisel plow is about half that of a moldboard plow per foot of width of soil tilled at comparable depths.

5. Chisel plows are usually run about 8 inches deep which usually insures maximum tillage benefit. They loosen the soil and leave residues on the surface.

6. Chisel plows should be operated only when the top 8 inches of soil has a moisture content at field capacity or less. This insures shattering and loosening of the soil.

7. Chiseling at some angle to the old corn rows may help level ridges and spread stalks. On the other hand, it's best to chisel on the contour to help hold rainfall. Thus, on contoured land and between terraces, it may be best to follow the old corn rows.

8. Land can be chisel plowed in the fall or spring. Fall chiseling, however, is usually more successful because soil moisture conditions are more favorable for soil loosening. If large clods appear, they will mellow during the winter.

9. To be effective a chisel plow should leave a rough surface with 35 to 40 percent or more of the cornstalk residue on the soil surface.

Secondary Tillage

1. After chiseling, tillage prior to planting should involve one or two passes with a disk or field cultivator to break clods and smooth the surface for planting. Operating at some angle to the direction of chiseling may be helpful.

2. If a disk is used, it should be set to avoid excess coverage of residue. A leveling device on the disk is helpful in leveling the field for planting.

3. A field cultivator will leave more residue on the soil surface than a disk. It is not as effective, however, in incorporating herbicides.

Fertilizer Application

Several alternatives are available for applying fertilizer depending upon the kind of fertilizer used and time of application.

1. A common procedure when fall chiseling is to knife in anhydrous ammonia and broadcast phosphorus and potassium in dry form ahead of chiseling. The chisel plow will provide some coverage of the fertilizer.

2. Anhydrous ammonia and dry forms of phosphorus and potassium may also be spring applied ahead of spring chiseling or just ahead of secondary tillage such as disking or field cultivating.

3. Other alternatives include field spreading all nutrients as dry fertilizer, applying all nutrients as liquid fertilizer, or combinations of dry and liquid fertilizer. Applications should be made just ahead of chisel plowing or secondary tillage. If desired, all or part of the nitrogen can be applied as a sidedressing.

4. Some producers use chisel plows equipped to apply anhydrous ammonia or liquid fertilizers or both. This combines tillage and fertilizer application, eliminating one trip over the field.

Herbicide Application

1. Preplant herbicides may be spring applied and thoroughly incorporated before planting. Strive for good incorporation without excessive coverage of residue. Apply the herbicide after chiseling but ahead of secondary tillage.

2. An alternative technique is to spray the herbicide between the gangs of a tandem disk. The first gang will break clods and smooth the surface. The second gang will provide mixing. A second shallow disking or field cultivating is advisable to provide extra herbicide incorporation and smoothing.

3. If a field cultivator is used, apply the herbicide and cultivate twice. Better herbicide incorporation will result if the second cultivation is performed at an angle to the first time over.

4. Preemergence herbicides can be used with chisel plowing, but sometimes they are not as effective as preplant treatment. Rainfall

soon after application is needed to activate the chemical. Preemergence herbicides should be applied as soon after planting as possible to be most effective.

5. Postemergence herbicides are sometimes used for weed control after crop emergence. The herbicides should be applied when the weeds are small and actively growing.

6. Rotary hoes or sweep type cultivators may be used but some difficulty may arise if large amounts of residue are on or near the soil surface. A rolling cultivator or combination disk hiller and sweep, properly set, will provide excellent weed control and permit fast cultivating speeds.

Insecticide Application

1. Recommended corn rootworm insecticides may be applied in a 7-inch band at planting. Sometimes the treatment may fail, however, because the insecticides are relatively short-lived. Early applications, before April 25, are least likely to be effective.

2. Applying a corn rootworm insecticide with a cultivator attachment at first cultivation is an alternative. Covering or mixing the insecticide with the cultivator is necessary for effective control.

Planting

1. Cornstalks left on the surface usually do not interfere when using a conventional planter. Although most planters will work well, it is sometimes helpful to mount coulters ahead of the planter shoes for cutting through crop residues.

2. Planters equipped with disk openers have an advantage where crop residue is present. Disk openers equipped with depth controls insure a uniform planting depth under most soil conditions.

Method Summary:
Chisel Plowing Cornstalk Land

Suggested Procedure

1. Chisel plow in the fall. Soil moisture is usually more favorable for soil loosening in the fall than in the spring. Any clods formed will mellow over winter. Chisel plowing should be on the contour or across slope on sloping land.

2. Fertilizer may be fall applied before chiseling or spring applied before secondary tillage. All or part of the nitrogen for corn can be sidedressed if desired.

3. Herbicides may be spring applied and incorporated by secondary tillage.

4. Use a disk or field cultivator in the spring for secondary tillage. Once over is best for leaving residue on the surface. A second disking or field cultivating may be necessary but efforts should be made to avoid excess coverage of residue.

5. Plant with a conventional planter or mount coulters ahead of planter shoe for cutting through crop residue.

6. A corn rootworm insecticide can be applied with a planter attachment or at first cultivation. The latter is often more effective.

7. Conventional cultivators can usually be used for weed control. If a large amount of residue is present, a rolling cultivator or a combination of disk hillers and sweeps will work well.

Suitability

1. Chisel plowing is a conservation tillage method suitable for use on all soil types. It is often the first choice for use on cornstalk land when selecting a conservation tillage method for poor to moderately poorly drained soils that tend to have excess moisture in the spring.

Advantages

1. With fall chiseling, the soil surface remains rough and covered with residue over winter.

2. Chisel plowing reduces work inputs over conventional tillage and allows early spring operation.

3. The potential soil loss from chiseling will average 25 to 60 percent of conventional tillage.

Disadvantages

1. When chiseling is off the contour, water may flow down the chisel furrows and aggravate soil erosion.

2. The rough seedbed may require extra care in planting.

II. Disking for Primary Seedbed Preparation on Cornstalk Land

Disking Cornstalk Land

1. Modern heavy-duty disks may be used for initial seedbed preparation on land previously in corn. This is a reduced tillage operation that will save time and leave residues on the surface for improved control of runoff and erosion.

2. Heavy-duty disks are wheel mounted. They may be off-set or two-way types, or tandem disks with cone, notched or plain disks 24 to 32 inches in diameter. Furrow filler blades may be mounted on the disk to eliminate dead furrows and avoid a set driving pattern. Pretreatment of cornstalk residues by cutting or chopping is not necessary.

3. Two diskings are required for primary seedbed preparation. All disking should be done in the spring. It helps to angle across the old corn rows to cut up the corn stubs and level the field. Avoid disking wet soils. Problems of compaction and cloddiness will result unless the soil is dry enough to work well.

4. For acceptable erosion control, leave as much residue on the surface as possible. Disking too deeply and/or too many times may result in insufficient residue for effective erosion control.

Fertilizer Application

1. Liquid or dry fertilizers may be surface applied in the fall or spring.

2. Anhydrous ammonia and liquid fertilizers may be injected with regular applicators in either fall or spring.

3. All or a part of the nitrogen for corn can be sidedressed if desired.

Herbicide Application

1. Preplant herbicides are most commonly used and should be spring applied and thoroughly incorporated. Avoid disking more than 4 to 5 inches deep for best herbicide incorporation and less coverage of residue.

2. An alternative technique for applying herbicides is to spray the herbicide between the two gangs of a tandem disk during the first disking. The first gang will chop stalks and provide leveling for better herbicide placement. The second gang will provide some mixing. Then disk a second time or field cultivate at some angle to the first disking if possible. Working at an angle to the first disking may not be possible on contoured or terraced fields.

3. Some producers find it convenient to mix herbicides with liquid nitrogen and apply the mixture ahead of disking.

4. Preemergence and postemergence herbicides are also available.

5. Rotary hoes or sweep type cultivators may be used but difficulty may arise if large amounts of residue remain on or near the soil surface. A rolling cultivator or combination disk hiller and sweep, properly set, will provide excellent weed control and permit fast cultivating speeds.

Planting

1. Two diskings will usually leave the surface ready for planting. Additional light tillage with a field cultivator for smoothing can be performed if needed.

2. Conventional corn planters will usually work without problems. If residue is heavy, coulters mounted ahead of the planter shoe will eliminate the problem.

3. Planters equipped with disk openers have an advantage where crop residue is present. Disk openers equipped with depth control insure a uniform planting depth under most soil conditions.

Insecticide Application

1. If corn is being planted, a rootworm insecticide may be applied in a 7-inch band at planting. Sometimes the treatment may fail, however, because the insecticides are relatively short-lived. Early applications, before April 25, are least likely to be effective.

2. A cultivator application of a rootworm insecticide applied at the first cultivation is an alternative. Mixing or covering the insecticide with soil during cultivation is necessary for effective control.

Method Summary
Disking Cornstalk Land

Suggested Procedure

1. Disking should be done in the spring when the soil is dry enough to work well.

2. Disk one or two times or disk once and field cultivate once. Set disk to leave as much residue on the surface as possible.

3. Fertilizer may be fall applied or applied in the spring before or after the first disking. All or part of the nitrogen for corn can be sidedressed if desired.

4. Apply appropriate herbicides after the first disking and incorporate by a second disking or field cultivating.

5. Plant with conventional planter or mount coulters ahead of planter shoe for cutting through crop residue.

6. A corn rootworm insecticide can be applied with a planter attachment or at first cultivation. The latter is often more effective.

7. Conventional cultivators can usually be used for weed control. If residue is unusually heavy, a rolling cultivator or a combination of disk hillers and sweeps will work well.

Suitability

1. Disking cornstalk land for seedbed preparation can be done on all soils where some residue incorporation is desired but reduced tillage is an objective.

2. Disking is a good method for pesticide and shallow fertilizer incorporation.

Advantages

1. Disking is a fast method of seedbed preparation.

2. Disking usually provides a smoother seedbed than spring plowing and is more effective in conserving soil moisture.

3. Disking allows incorporation of herbicides and fertilizer.

4. The potential soil loss from disking will average 25 to 50 percent of conventional tillage.

Disadvantages

1. The reduced tillage and residue cover tends to slow soil warming in the spring.

2. Soil compaction may be a problem if disking is done when soils are too wet to produce a smooth friable seedbed.

III. Disking or Field Cultivating Land Previously in Soybeans

1. Seedbed preparation on soybean ground can be effectively accomplished with a minimum of effort. The main purpose of light disking or field cultivating is to kill weeds and incorporate herbicides.

2. Either a disk or field cultivator will do an effective job. The field cultivator is preferred, however, because it requires less power and will leave more residue on the surface for erosion control.

3. All tillage on soybean ground should be done in the spring. Fall tillage provides no benefit over spring tillage and it will increase the erosion hazard.

4. The first tillage is usually delayed until just before planting. If weeds make excessive early growth, tilling earlier to kill weeds may discourage egg laying by cutworm moths.

5. Some producers are successfully tilling soybean ground with just one pass of a field cultivator or a disk with a mounted leveling device. If the field is relatively smooth and soybean straw has been well spread, a once-over operation may be adequate. Other producers will till twice, mainly to achieve better incorporation of preplant herbicides.

Fertilizer Application

1. In the fall, anhydrous ammonia or liquid fertilizer may be knifed in. The knifing operation will add some roughness to the soil surface and still leave the soybean residue on the soil surface. There should be no additional fall tillage.

2. Dry fertilizer may be surface applied in the fall on soybean ground. There is more danger of fertilizer loss from erosion, however, than on corn ground with its greater amount of residue. For this reason, a spring application ahead of tillage may be more desirable on sloping ground.

3. In the spring, dry and liquid fertilizer may be surface applied ahead of the first tillage operation and worked in. Anhydrous ammonia and liquid fertilizers can be the fertilizer choice for spring application as well as fall. All or part of the nitrogen for corn can be sidedressed if desired.

Herbicide Application

1. Preplant herbicides may be spring applied before tillage. One disking 4 to 5 inches deep may be adequate to incorporate herbicides. When field cultivating, two times over is suggested for effective herbicide incorporation.

2. There is also the alternative of using preemergence or postemergence herbicides.

Insecticide Application

The application of a corn rootworm insecticide is usually not needed on land previously in soybeans. An insecticide may be beneficial if the previous crop contained a large amount of grass weeds or volunteer corn which tends to encourage egg laying by rootworm beetles.

Planting

1. Disking or field cultivating will leave the field ready for planting.

2. Corn or soybeans may be planted with any conventional planter.

Method Summary:
Disking or Field Cultivating Soybean Ground

Suggested Procedure

1. Disking or field cultivating soybean ground should be done in the spring just before planting. One tillage operation is preferable.

2. Fertilizer may be applied in the fall or in the spring before tillage. All or part of the nitrogen fertilizer for corn can be sidedressed if desired.

3. Preplant herbicides should be applied in the spring before tillage and incorporated. Using preemergence or postemergence herbicides is an alternative.

4. A corn rootworm insecticide is usually not needed on land previously in soybeans.

5. Conventional cultivators can be used for weed control.

Suitability

Disking or field cultivating for seedbed preparation on soybean ground is suitable for all soil types.

Advantages

1. Disking or field cultivating soybean ground markedly reduces work inputs compared to conventional tillage.

2. Disking or field cultivating allows incorporation of fertilizer and herbicides.

3. No special equipment is required.

4. The potential soil loss will average 25 to 50 percent of conventional tillage.

Disadvantages

Soil after tillage is loose and the amount of residue cover for erosion protection may be small.

IV. Slot Planting

Introduction

1. Slot planting is a one-pass tillage and planting operation. Seeds are planted in a slot created by a coulter. Planting is usually done without any previous processing of crop residue or soil disturbance. Some producers will chop cornstalks before slot planting but this is not always necessary and it destroys some of the advantages of this tillage method. Slot planting is often referred to as no-till.

2. Slot planting reduces tillage to a minimum and leaves most of the residue from the previous crop on the soil surface. It can be used to plant corn or soybeans on land previously in corn, soybeans, small grain or meadow.

3. Timeliness and use of proven procedures are especially important for successful slot planting. A once-over operation provides little opportunity to correct errors. Planting must be done with the right equipment and when soils are at a moisture content that works well.

4. There is no opportunity to incorporate fertilizers or herbicides when slot planting. Fertilizer may be knifed in or surface applied. Herbicides can be applied as a preplant or post emergence treatment or a combination of the two.

5. Slot planting is best adapted to well-drained soils. When properly done, yields will be comparable to other tillage methods, cost will be lower, and greater conservation of soil will result.

Slot Planters

1. Planters designed or adapted for slot planting are available from several manufacturers. The major difference from conventional planters is the coulter mounted directly ahead of the planter shoe and the disk furrow openers mounted on the planter shoe. A suitable packing wheel is essential for firming soil in the planted slot.

2. When planting land previously in corn or soybeans, it is usually best to follow the old rows because the soil will be looser and more mellow than in the row middles. On sloping land, planting should be done on the contour.

3. The major tillage in slot planting is provided by the coulter which runs directly ahead of the planter shoe. The coulter should run at or slightly below planting depth, usually not to exceed 2½ inches.

4. Seed depth control and coverage must be watched closely because of the small amount of tillage. If the coulter runs too shallow, poor seed coverage may result. On the other hand, excessive coulter penetration can result in a planting depth too deep for good germination and emergence.

Fertilizer Application

1. Anhydrous ammonia and liquid fertilizer containing nitrogen and/or phosphorus and potassium can be knifed in either in the fall or spring. Use a coulter blade ahead of the applicator knife in heavy residue.

2. Dry forms of fertilizer can be broadcast in the fall or spring. On sloping soybean ground, a spring application would be safer from loss by runoff.

3. On grass sods, fertilizer can be surface applied before slot planting. A common practice is to apply a mixture of nitrogen solutions and herbicides for effective grass kill.

4. The use of row applied starter fertilizer for corn is encouraged. The soils may warm slowly under the residue cover and starter fertilizer will insure faster plant development.

Herbicide Application

1. Slot planting does not allow the use of preplant incorporated herbicides, since no tillage is done before planting.

2. Herbicides may be applied as a preemergence or post emergence treatment. Preemergence herbicides should be applied as soon after planting as possible to be most effective. Most postemergence herbicides should be applied when weeds are small and actively growing.

3. Using an herbicide rate at the upper end of the range suggested on the label usually improves weed control when slot planting. The higher rate of chemical along with more water for a greater gallonage per acre will allow more herbicide to move through the residue and reach the soil.

4. There may be weeds present at planting time. Since there is no tillage prior to planting, the weeds should be destroyed with a contact herbicide before planting or soon after planting before crop emergence.

5. When slot planting in sod or a fall sown rye cover crop, a common practice is to use a tank mix of nitrogen solutions and herbicides for a once-over spray application at or near planting time.

6. Slot planted corn and soybeans are usually not cultivated and herbicides are relied upon for weed control. If cultivation becomes necessary, it can be done with a rolling cultivator or a disk hiller and sweep combination.

Insecticide Application

1. On cornstalk ground, corn rootworm insecticides may be applied in a 7-inch band at planting. Failure may occur occasionally, however, because the insecticides are relatively short-lived. Early applications, before April 25, are least likely to be effective.

2. An application at first cultivation is an alternative. Mixing or covering the insecticide with soil during cultivation is necessary for effective control.

Method Summary:
Slot Planting

Suggested Procedure

1. A planter designed or adapted for slot planting must be used.

2. Slot planting can be done in soybean ground without preplant tillage or chopping residue. It should be done on the contour or across slopes.

3. Chopping stalks before planting on cornstalk ground may be helpful but it is not considered necessary.

4. Fertilizer may be applied in the fall or spring. All or part of the nitrogen for corn can be sidedressed if desired.

5. A starter fertilizer should be used on corn to stimulate early plant growth.

6. Apply herbicides with a planter attachment or as a preemergence or postemergence treatment since there is no tillage to incorporate herbicides. If weeds or crop plants are growing before planting, apply a contact herbicide before or at planting time.

7. Corn rootworm insecticide can be planter applied or applied with a cultivator attachment. The latter is usually more effective.

8. Slot planted corn and soybeans are usually not cultivated. If cultivation becomes necessary, a rolling cultivator or disk hiller and sweep combination may be used.

Suitability

1. Slot planting is better suited to well-drained soils than to soils that dry and warm slowly in the spring.

2. Slot planting is well suited to soils susceptible to excessive erosion.

3. The method is helpful for situations where moisture conservation is required.

Advantages

1. Slot planting leaves most of the crop residue on the surface for excellent erosion control.

2. There is a minimum of soil disturbance and work requirements are reduced.

3. Average soil loss potential is 15 to 35 percent of conventional tillage.

Disadvantages

1. With slot planting, the large amount of residue left on the soil surface may cause slow drying and low soil temperatures in the spring.

2. Surface residue may increase need for extra herbicide for weed control.

3. There is no opportunity to incorporate fertilizer or herbicides.

4. Special equipment for planting and cultivating is required.

V. Till Planting

The Till-Planter

1. Till planting is a one-pass tillage and planting system that permits row cropping with limited soil disturbance. A special planter is required.

2. The till planter consists of a wide sweep (10 to 14 inches) that runs shallow, clearing a strip through the row area of the previous crop. Corn stubs are sliced off and all residue is moved out of the planting area into row middles by deflector rods mounted behind the sweep. The seed is placed in soil firmed by a runner-opener located behind the sweep. A narrow press wheel, followed by covering disks or drag chains completes the seed coverage. Press wheels, followed by covering devices, complete the planting.

3. The till planter can be used on land previously in corn, soybeans, small grains or sod crops. Constalks may be chopped but not disked before planting. Soybean ground should be till-planted without preplant treatment.

4. The till planter is commonly used to plant on old corn or soybean ridges built up by cultivation from a prior crop. Ridges should always be on the contour on sloping land. Planting can also be done on flat surfaces.

5. Till planting reduces operations to a minimum and provides excellent erosion control. The proper use of herbicides and some cultivation provides excellent weed control. Yields are comparable to conventional tillage.

Planting

1. The till planter is most effective when used on a system of ridges higher than those developed by conventional cultivations. Ridges vary in height but seldom exceed 7 or 8 inches.

2. Planting the first year can be done on a flat surface. Then during regular cultivations, ridges can be built using disk hillers or similar tools. Corn rather than soybeans should be used during the year when ridges are being formed. It's more difficult to build adequate ridges around soybeans without damaging the plants.

3. In following years, the planter can then be operated on the ridges at a shallow depth of about 2 inches. The ridge will be partially flattened and smoothed by the sweep running in front of the planter shoe. Crop residue will be moved into the row middles. A narrow press wheel following the planter shoe presses the seed into firm moist soil. Devices behind the planter shoe will throw some loose soil over the planted area.

4. It is important to run the tillage sweep shallow and stay on top of the ridges. This insures that seed will be planted in warm soil and rain will not wash out or bury the seed.

5. Some producers chop cornstalks before planting. Others feel that stalk chopping is not necessary and eliminating this step saves work and energy. Cornstalks can be chopped in the fall or spring although spring is considered best. Leaving standing stalks over winter helps collect snow and eliminates soil blowing problems. There is no need to chop soybean straw, but it should be spread during combining.

6. Till planting in sod is similar to planting unridged row crop ground except a contact herbicide must be used at or before planting to kill the existing vegetation.

Fertilizer Application

1. When till planting, fertilizer can be applied in the fall or spring. Anhydrous ammonia, liquid nitrogen, and liquid phosphorus and potassium may be knifed in. Coulters should be used on the applicator and treatment made in standing stalks to avoid dragging or bunching of cornstalks.

2. Some producers broadcast liquid or dry phosphorus and potassium and knife in anhydrous ammonia. This can be done in the fall or spring.

3. Fertilizer may be knifed in or surface applied on sod crops. A mix of liquid nitrogen and herbicides including a contact herbicide is an effective way to kill growing sod or cover crops.

4. The use of row applied starter fertilizer usually gives favorable response when till planting on ridges. It encourages faster plant development and rooting into depths below the ridges.

Herbicide Application and Cultivation

1. A combination of herbicides and cultivation can provide excellent weed control in till planted corn and soybeans. Since there is no tillage to incorporate herbicides, preemergence or postemergence treatments must be used.

2. Appropriate herbicides for corn and soybeans can be applied in a band over the row at planting time. Weeds that develop in the row middles must then be controlled by cultivation and/or with postemergence herbicides.

3. An alternative, especially for fields which tend to be very weedy, is to apply a blanket spray soon after planting. This will help control weeds between rows as well as in the row. It can be especially helpful if cultivation is delayed because of rain or other problems.

4. Cultivation is needed to build up and restore ridges and, in addition, it becomes part of the weed control program.

5. Special cultivators are available for till planting. Also, some conventional cultivators can be converted to use by replacing the two front sweeps with disk hillers and leaving one sweep to till soil between the rows.

6. One or two cultivations are suggested. If one cultivation is used, it should be done when corn is 8 to 12 inches tall. The disks should be set to throw soil around the plants and restore ridges for the next year. The large sweep will till between the rows.

7. When two cultivations are used, the first can be made when the corn is small. The disks should be set to cut weeds close to the row. The one large sweep cuts under the residue, removing weeds and mixing residue and soil. In the second cultivation, the disks are set to throw soil into the row to reform the ridge for the next year. The large sweeps will again till and control weeds between the rows.

8. Herbicide treatment and cultivation for till planting on sod or growing cover crops is similar to that used for land previously in corn or soybeans except that a contact herbicide must be used to kill the growing sod or cover crop.

Insecticide Application

1. A corn rootworm insecticide is not required if the previous crop was soybeans. When corn follows corn, a rootworm insecticide may be helpful.

2. The insecticide may be applied in a 7-inch band at planting. The treatment sometimes fails because rootworm insecticides are relatively short-lived. Early applications, before April 25, are least likely to be effective.

3. A cultivator application is an alternative. It should be done when the cultivator is set to throw soil into the row. Covering or mixing the insecticide with soil is necessary for effective control.

Method Summary:
Till Planting

Suggested Procedure

1. Cornstalks may be chopped before planting. No chopping or preplant tillage is needed on soybean ground.

2. Fertilizer can be applied in the fall or spring. All or part of the nitrogen for corn can be sidedressed.

3. A starter fertilizer should be used on corn to stimulate early plant growth.

4. A planter designed for till planting is required. Planting can be done on ridges built up by cultivation from a prior crop. Planting can also be done on a flat surface. On sloping land, all planting should be done on the contour or across slopes.

5. Since there is no tillage to incorporate herbicides, they must be applied with a planter attachment or as a preemergence or postemergence treatment. If weeds or crop plants are growing before planting, apply a contact herbicide just before or at planting time.

6. A combination disk hiller and sweep cultivator should be used for weed control and reshaping ridges.

Suitability

1. Till planting on the contour or across slopes is suitable on most soils that are nearly level to moderately sloping.

2. Till planting on ridges is well suited to slowly warming and poorly drained soils.

3. Till planting on a flat surface is best suited to well-drained soils and where moisture conservation is desirable.

Advantages

1. Till planting reduces work inputs compared to conventional tillage.

2. Planting on ridges enhances early planting because of improved soil drainage and early warming of the seedbed.

3. Starting with a flat surface and planting in a small depression favors moisture conservation.

4. The average potential soil loss is 35 to 55 percent of conventional tillage.

Disadvantages

Special planting and cultivating equipment is required. There is little opportunity to incorporate fertilizer or herbicides. Till planting on a flat surface may retard seedling growth because of slow drying and warming of the seedbed area.

Summary

All of the five conservation tillage methods discussed have certain requirements peculiar to the method. Each method, however, allows some adjustment for variable factors such as weather, choice of fertilizers and herbicides, disease problems, time schedules, equipment problems and others.

Thus, each producer must not only select the tillage method which best meets his conditions and desires but he must choose from alternative techniques within the methods which are most appropriate at the time. Success with any tillage method requires understanding of tillage requirements, proper equipment and carrying out the operations in a timely and skillful manner.

Estimated fuel requirements of alternative tillage systems.[1/]

Field Operations	Diesel Fuel Required					
	Conventional	Chisel Plowing Cornstalks	Disking Cornstalks	Disk or Field Cultivate Soybeans	Slot Plant	Till Plant
	Gallons per Acre					
Chop stalks	0.50	0.50	--	--	--	--
Spread dry fertilizer	0.15	0.15	0.15	0.15	0.15	0.15
Knife NH_3	0.60	0.60	0.60	0.60	0.60	0.60
Moldboard plow	1.90	--	--	--	--	--
Chisel plow	--	1.20	--	--	--	--
Disk	0.70	0.70	0.95	--	--	--
Disk	0.60	--	--	0.60	--	--
Field cultivate	--	0.70	0.70	0.70	--	--
Spike tooth harrow	0.30	--	--	--	--	--
Plant-conv. w/attach.	0.60	0.60	0.60	0.60	--	--
Plant-till planter (sweep)	--	--	--	--	--	0.60
Plant-slot plant (no-till)	--	--	--	--	0.50	--
Spray	0.10	0.10	0.10	0.10	0.10	0.10
Rotary hoe	0.20	--	--	--	--	--
Rolling cultivator	--	0.40	--	--	--	--
Sweep cultivator	0.45	--	0.45	0.45	--	--
Sweep cultivator	0.45	--	0.45	0.45	--	--
Disk hiller	--	--	--	--	0.45	(2x)0.90
Total	6.55	4.95	4.00	3.65	1.80	2.36
Percent of conventional	100	76	61	56	27	36
Number of trips	12	9	8	8	5	5

[1/] Adapted from G. E. Ayres, Pm-709, November 1976.

APPENDIX C

Watershed Inventory, Crop Cover, Yield and Tillage Operations

Crops grown and fertilizer applied in Four Mile Creek watershed(#4) during 1979

1979 crop	Total area	Fertilized area	Total N applied	Avg. N Applied to fertilizer area	Total P_2O_5 applied	Avg. P_2O_5 applied to fertilized area	Total K_2O applied	Avg. K_2O applied to fertilized area
	ha	ha	kg	kg/ha	kg	kg/ha	kg	kg/ha
Corn	2525	2464	446700	181	149600	61	168200	68
Soybeans	1515	389	1458	4	20240	52	27470	71
Oats	114	10	435	44	435	44	871	87
Hay	152	29	735	25	1361	47	1987	69
Pasture	317	113	5579	49	2236	20	3080	27
Grass+	35	0						
Other*	397							
Total	5055	3005	454900		173900		201600	

+ Includes government set-aside.

* Includes roads, farmyards, timber and waterways.

Crops grown and fertilizer applied in watershed # 5 during 1979

1979 crop	Total area ha	Fertilized area ha	Total N applied kg	Avg. N applied to fertilized area kg/ha	Total P_2O_5 applied kg	Avg. P_2O_5 applied to fertilized area kg/ha	Total K_2O applied kg	Avg. K_2O applied to fertilized area kg/ha
Corn	1943	1912	370500	194	122600	64	142700	75
Soybeans	1149	389	1548	4	20240	52	27470	71
Oats	61	10	435	44	435	44	871	87
Hay	111	29	735	25	1361	47	1987	69
Pasture	74	57	2785	49	445	8	1424	25
Grass +	19	0						
Other *	218							
Total	3575	2397	376000		145100		174500	

+ Includes government set-aside.

* Includes roads, farmyards, timber and waterways.

1979 crop	Watershed #	Total area ha	Fertilized ha	Total N applied kg	Avg. N applied to fertilized area kg/ha	Total P_2O_5 applied kg	Avg. P_2O_5 applied to fertilized area kg/ha	Total K_2O applied kg	Avg. K_2O applied to fertilized area kg/ha
Corn	6	167	144	24700	172	9956	69	10220	71
	7	101	101	19170	190	4664	46	4815	48
	8	72	72	13090	182	4878	68	4858	67
Soybeans	6	104	0						
	7	147	100	292	3	4305	43	8627	86
	8	54	19	0	0	1633	86	1429	75
Oats	6	19	0						
	7	0	-						
	8	0	-						
Hay	6	18	0						
	7	28	0						
	8	4	4	0	0	363	91	408	102
Pasture	6	28	0						
	7	0	-						
	8	3	1	36	36	18	18	18	18
Grass +	6	0	-						
	7	0	-						
	8	0	-						
Other *	6	14	-						
	7	9	-						
	8	17	-						
Total	6	350	144	24700		9956		10220	
	7	285	201	19460		8969		13440	
	8	150	96	13130		6892		6713	

+ Includes government set-aside.

* Includes roads, farmyards, timber and waterways.

Tillage Systems and Conservation Practices used in Four Mile Creek Watershed (#4) during 1979

1979 Δ Crop	Total Area	Primary Tillage+						Conservation Practice			
		Moldboard Plow	Disk		Chisel		Minimum-till	Contour	Contour strip crop	Filter strip	Terraced
			Soybean residue	Corn-stalks	Soybean residue	Corn-stalks					
	ha	ha	ha	ha	ha	ha	ha	ha	ha	ha	ha
Corn	2525	566	726	346	204	653	30	279	39	25	54
Soybeans	1515	693	132	267	26	370	27	132	35	39	0
Oats	114	0	18	96	0	0	0	0	0	8	0
Hay* Pasture & Grass	504	0	3	13	0	2	0	0	18	0	0
Total (Production Area)	4658	1259	879	722	230	1025	57	411	92	72	54

+ Primary tillage was the main tillage method used to bury residue from the previous crop and to prepare the soil for the crop to be planted. (Δ)

* Hay and pasture require no tillage, since they are normally established during the previous year. Most grass for government set-aside required the same tillage preparation as oats.

1979 Δ Crop	Total area	Primary Tillage+						Conservation Practice			
		Moldboard plow	Disk		Chisel		Minimum-till	Contour	Contour strip crop	Filter strip	Terraced
			Soybean residue	Corn-stalks	Soybean residue	Corn-stalks					
	ha	ha	ha	ha	ha	ha	ha	ha	ha	ha	ha
Corn	1943	351	620	240	204	528	0	183	39	25	42
Soybeans	1149	539	76	137	26	370	0	108	35	39	0
Oats	61	0	9	52	0	0	0	0	0	8	0
Hay * Pasture & Grass	204	0	3	13	0	2	0	0	18	0	0
Total (Production Area)	3357	890	708	442	230	900	0	291	92	72	42

+ Primary tillage was the main tillage method used to bury residue from the previous crop and to prepare the soil for the crop to be planted (Δ)

* Hay and pasture require no tillage, since they are normally established during the previous year. Most grass for government set-aside required the same tillage preparation as oats.

Tillage systems and conservation practices used in watersheds #6, 7 and 8 during 1979

1979Δ Crop and watershed #		Total area	Primary Tillage+						Conservation Practice			
			Moldboard plow	Disk		Chisel		Minimum-till	Contour	Contour strip crop	Filter strip	Terraced
				Soybean residue	Corn-stalks	Soybean residue	Corn-stalks					
		ha	ha	ha	ha	ha	ha	ha	ha	ha	ha	ha
Corn	#6	167	66	16	71	0	14	0	58	0	0	0
	#7	101	5	75	0	0	21	0	0	0	0	0
	#8	72	2	20	13	6	31	0	28	0	0	0
Soybeans	#6	104	22	0	82	0	0	0	0	0	0	0
	#7	147	47	30	37	0	33	0	0	0	0	0
	#8	54	9	0	25	2	18	0	12	0	0	0
Oats	#6	19	0	0	19	0	0	0	0	0	0	0
	#7	0										
	#8	0										
Hay* Pasture & Grass	#6	46										
	#7	28										
	#8	7										
Total (production area)	#6	336	88	16	172	0	14	0	58	0	0	
	#7	276	52	105	37	0	54	0	0	0	0	
	#8	133	11	20	38	8	49	0	40	0	0	

+ Primary tillage was the main tillage method used to bury residue from the previous crop and to prepare the soil for the crop to be planted (Δ).

* Hay and pasture require no tillage, since they are normally established during the previous year. There was no grass (government set-aside) in the three watersheds in 1979.

Pesticides used on Soybeans in Four Mile Creek watershed #4 during 1979

icide	Area applied ha	Total amount applied kg active ingredient	Avg. application rate kg/ha active ingredient	Recommended rate of application kg/ha active ingredient +
en	136	179	1.3	2.2
gran	147	136	0.9	1.1
ɔ	813	2414	3.0	3.4
k	15	17	1.1	1.1
wn	121	185	1.5	2.2
d-up	29	32	1.1	1.1
ɔr	1033	500	0.5	0.6
ɔne)				
an	15	13	0.9	0.8
lan	658	550	0.8	0.8

en the actual application rate was unkown, product recommendations were used for lculation of total amount of pesticide applied.
the pesticide was used in combination with another, the rates of both were wered.

p	Total Area	Number of herbicides applied 0	1	2	3	4
		Area of Application ha				
beans	1515	13	164	1261	71	6

Pesticides used on corn in Four Mile Creek watershed(#4)during 1979

Pesticide	Area applied ha	Total amount applied kg active ingredient	Avg. application rate kg/ha active ingredient	Recommended rate+ of application kg/ha active ingredient
Herbicide				
Atrazine	1021	1423	1.4	3.4
Banvel	166	67	0.4	0.6
Bladex	995	1740	1.8	4.5
Eradicane	30	141	4.7	5.6
Lasso	1286	3192	2.5	3.4
Ramrod	85	161	1.9	4.5
Sutan	895	3769	4.2	4.5
2,4-D	611	263	0.4	0.5
Insecticide				
Counter	1049	1237	1.2	1.1
Dyfonate	228	273	1.2	1.1
Furadan	348	390	1.1	1.1
Lorsban	120	135	1.1	1.1
Mocap	32	36	1.1	1.1
Thimet	195	236	1.2	1.1

+ When the actual application rate was unknown, product recommendations were used for calculation of total amount of pesticide applied. If the pesticide was used in combination with another, the rates of both were lowered.

Crop	Total Area ha	Number of herbicides applied 0	1	2	3	4
		Area of Application ha				
Corn	2525	61	632	1100	673	59

Pesticides used in watershed #5 during 1979

Crop	Pesticide	Area applied	Total amount applied
		ha	kg
Corn	Herbicide		
	Atrazine	830	970
	Banvel	146	56
	Bladex	811	1451
	Eradicane	0	0
	Lasso	965	2382
	Ramrod	59	103
	Sutan	859	3635
	2, 4-D	557	242
	None	30	
	Insecticide		
	Counter	905	1074
	Dyfonate	148	173
	Furadan	250	280
	Lorsban	105	117
	Mocap	26	29
	Thimet	127	137
	None	381	
Soybeans	Herbicide		
	Amiben	100	117
	Basagran	46	51
	Lasso	659	1950
	Lorox	15	17
	Modown	121	185
	Round-up	18	
	Sencor (Lexone)	827	393
	Tolban	15	13
	Treflan	461	391
	None	13	

Estimated crop yields at sites 1 and 2 for 1979

Location	Crop	Yield of Grain* Metric tonnes/ha
Site 1	Corn	8.07
Site 2	Soybeans	2.72

*The yield was calculated on an oven dry weight basis. The farmer should harvest approximately 5 to 10% less than the measured yields, due to harvest losses and end rows. The yields were calculated from 6 samples from each field before harvest in the fall.

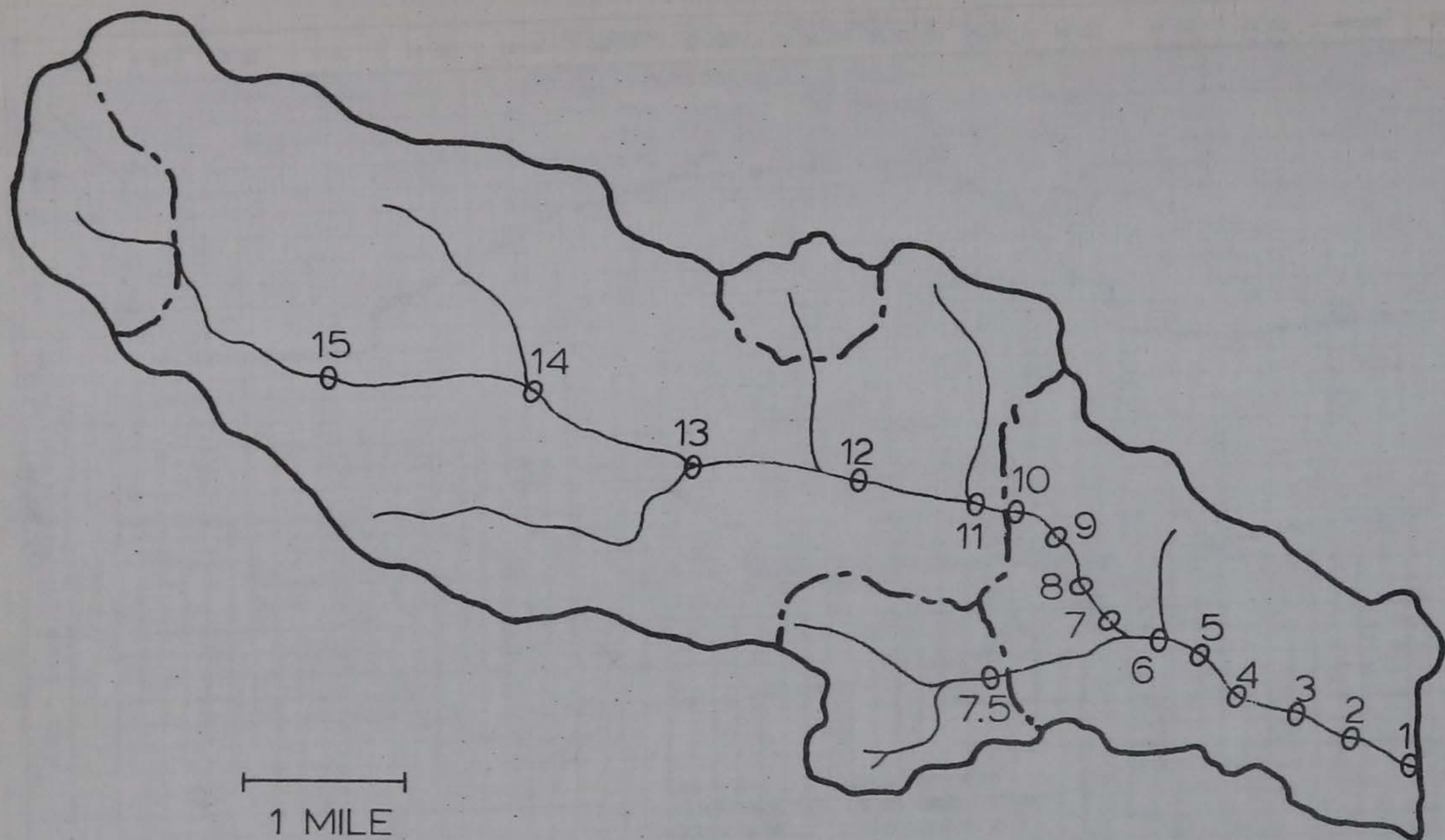
rcent of Soil Surface Area Covered by Leaf Canopy

ate	*Site 1 (Corn)	*Site 2 (Soybeans)
30 /79	5	2
5	9	4
11	11	7
14	15	5
25	36	3
6	73	16
14	68	24
20	85	48
3	78	69
16	--	68
24	--	86
20	80	99
2	--	90

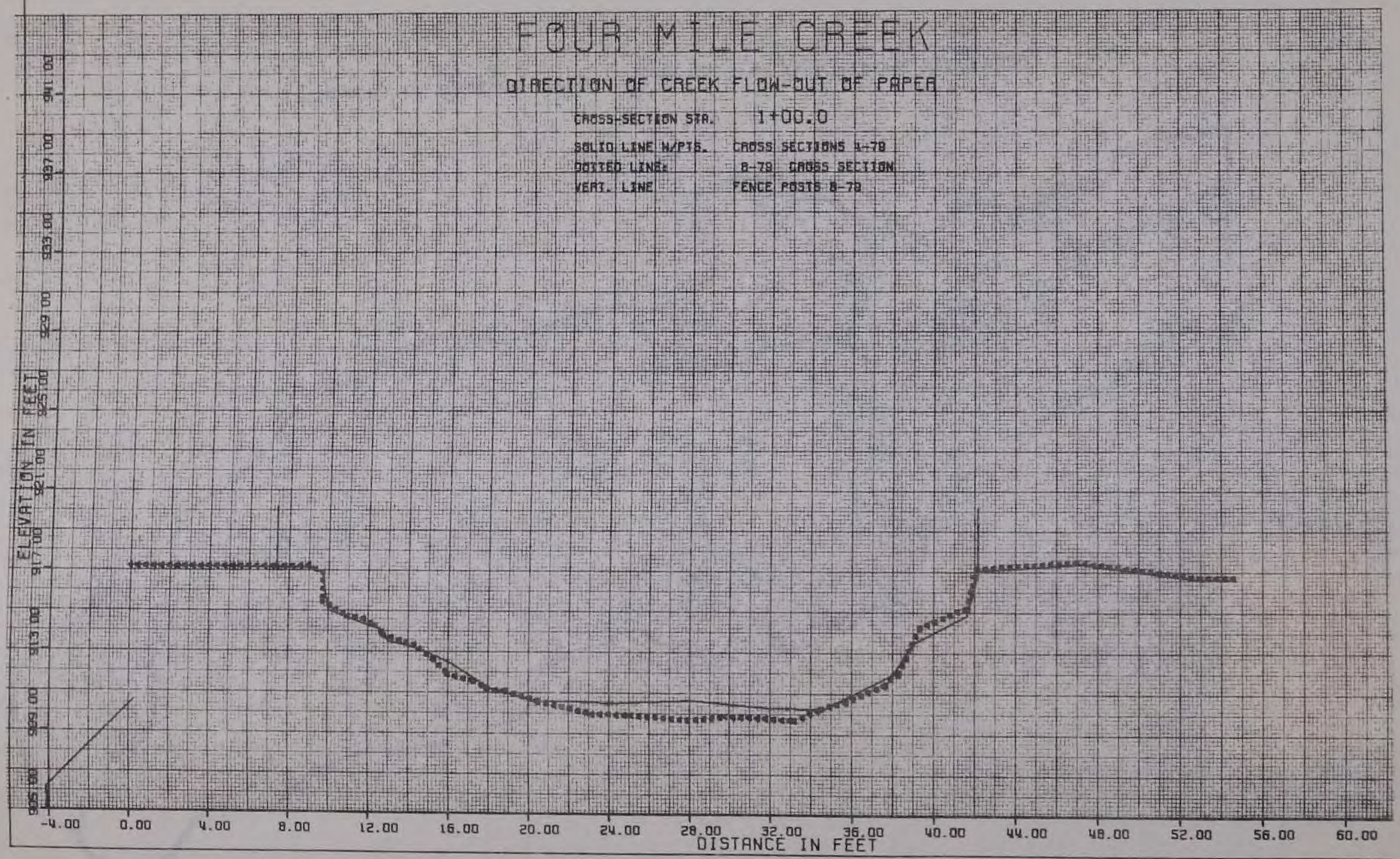
*Both fields were planted with 76 cm row spacings.

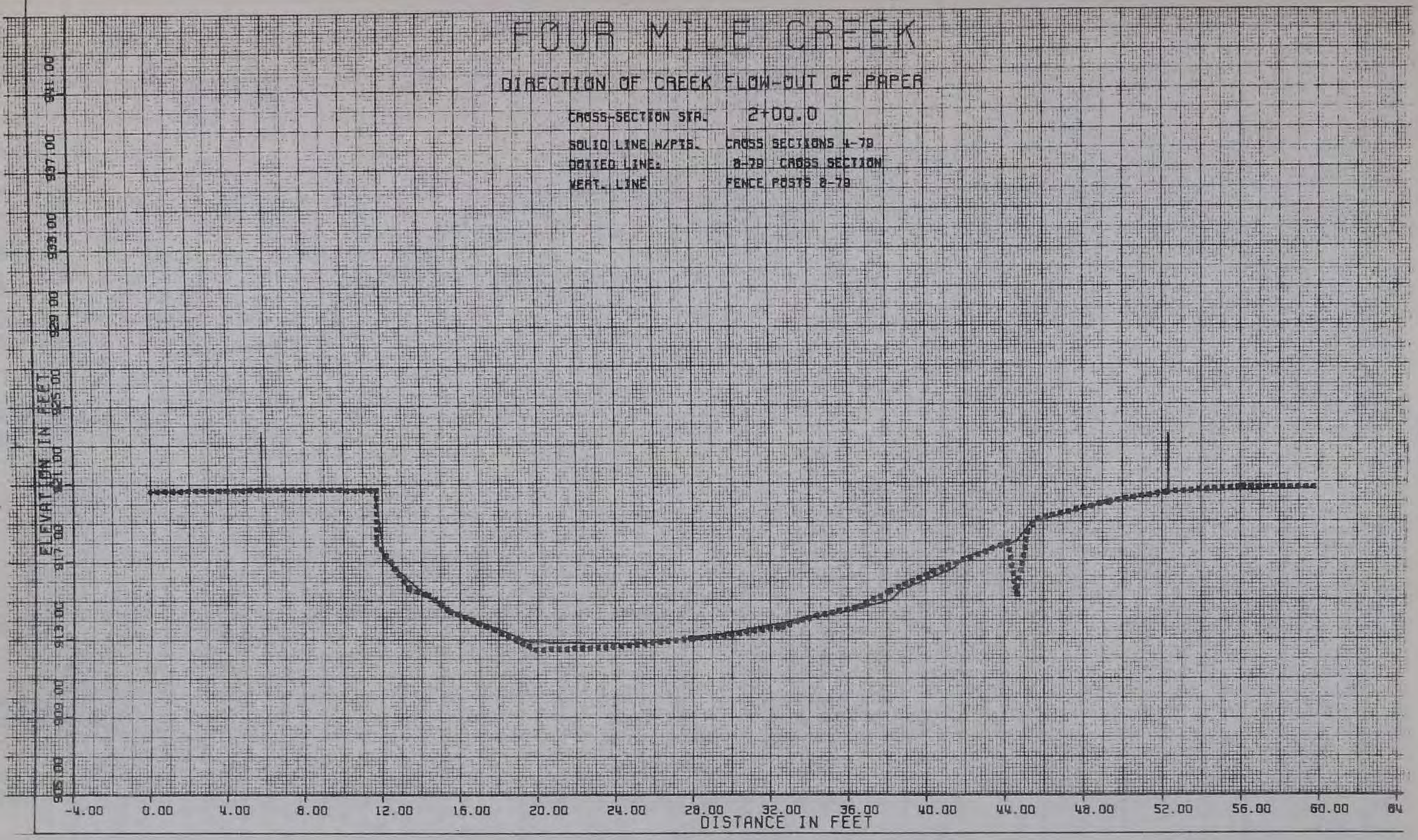
APPENDIX D

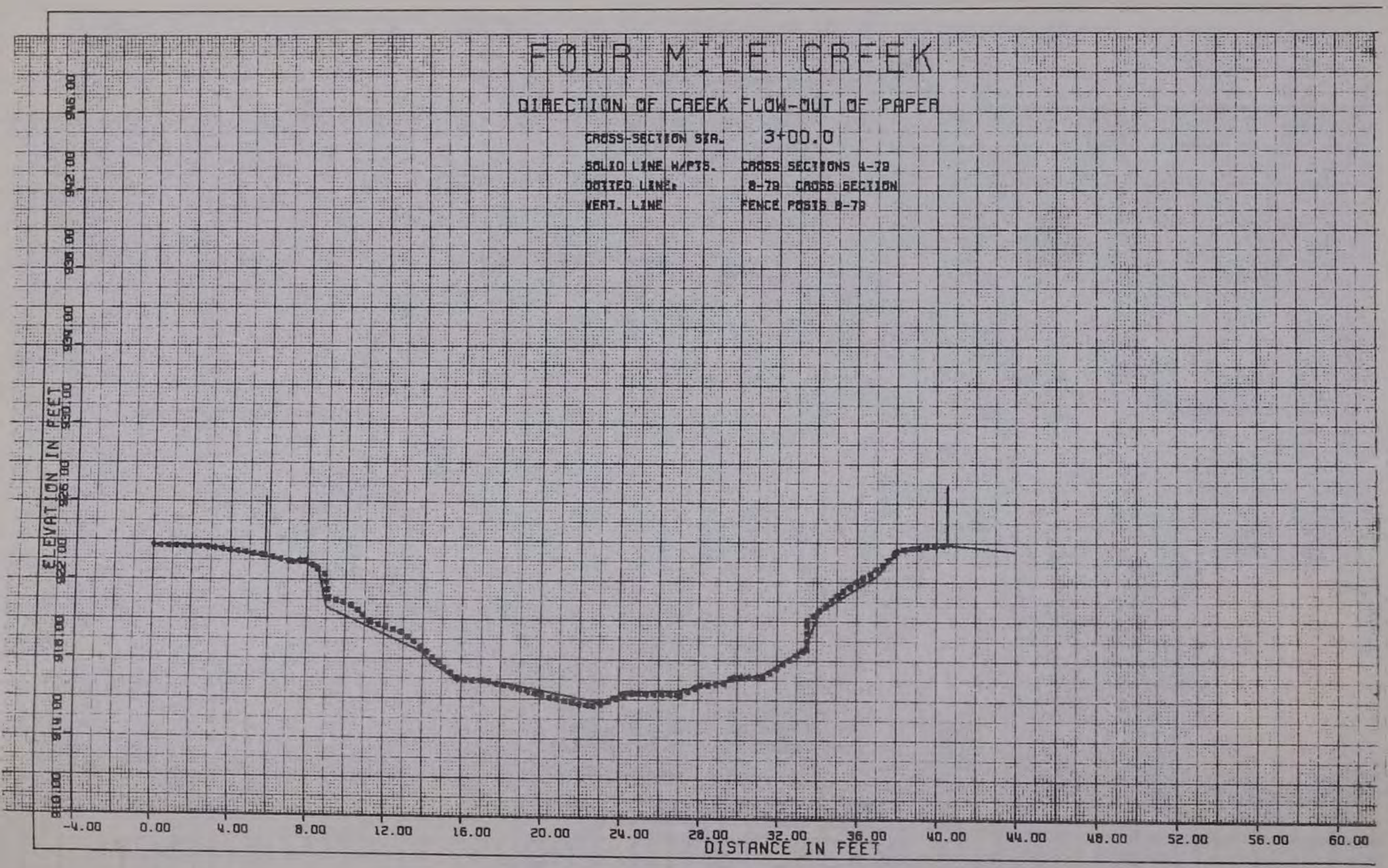
Particle Size Analysis and Stream Cross Sections

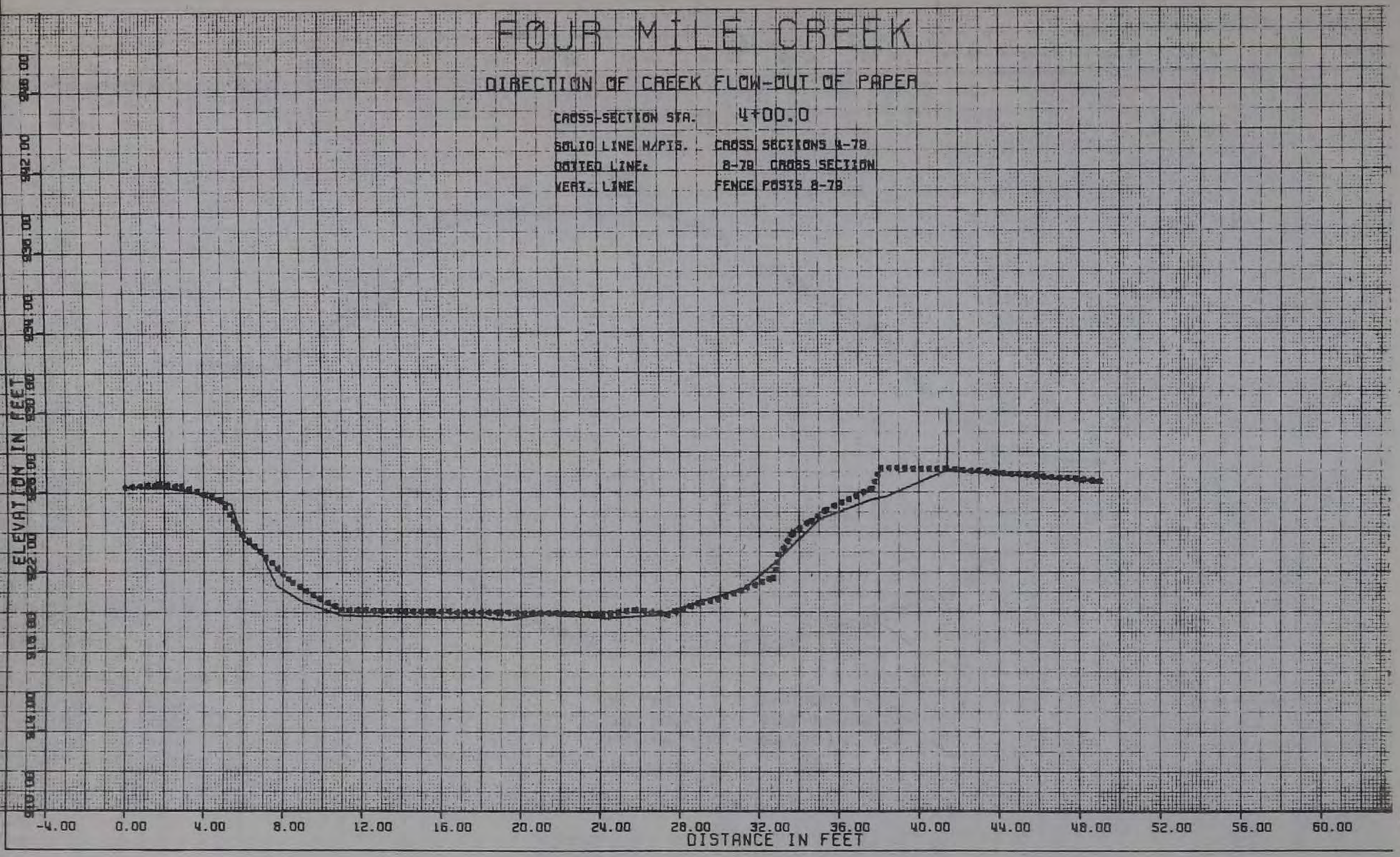


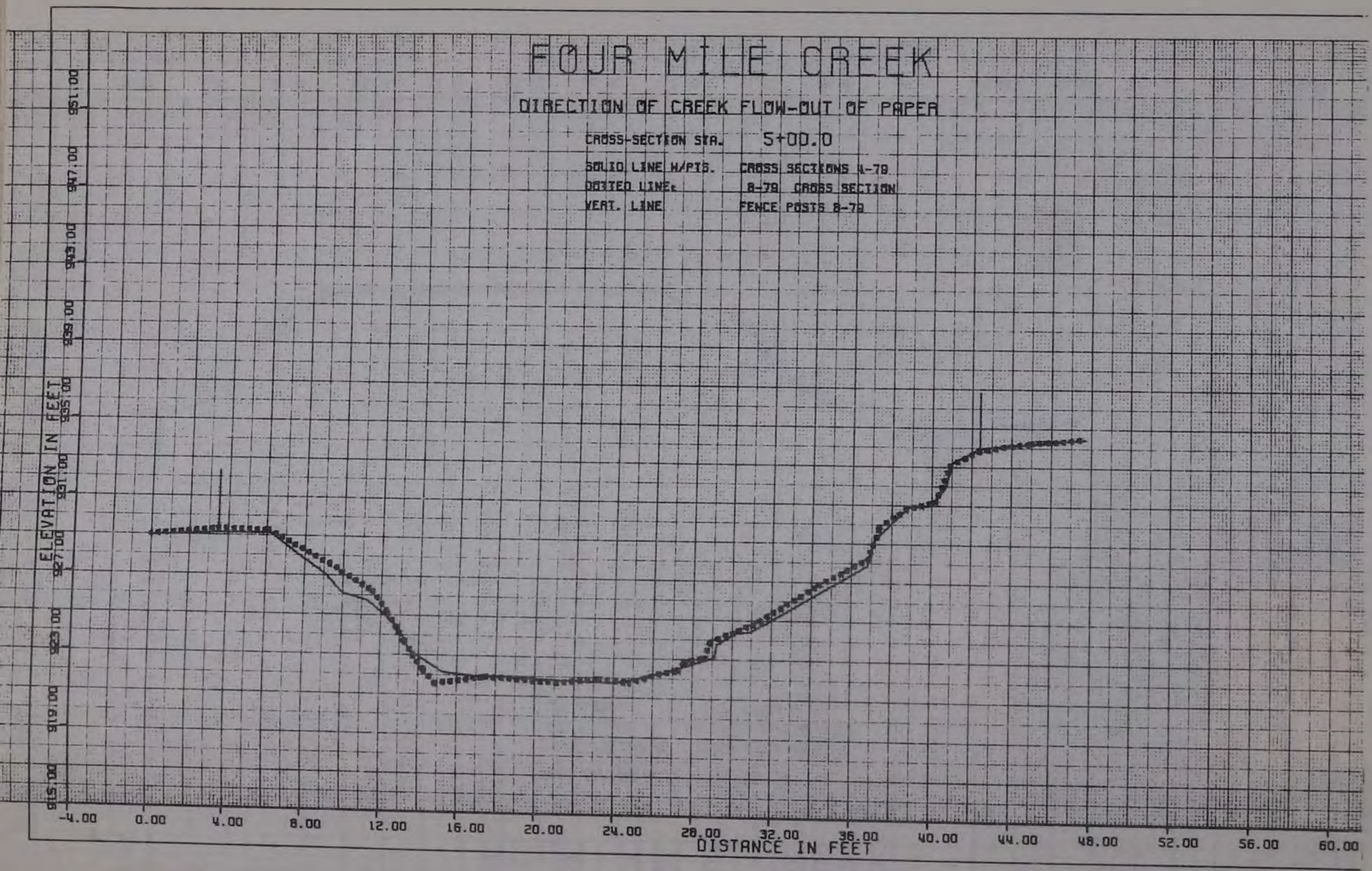
Locations of Channel Cross Sections, Four Mile Creek Watershed.

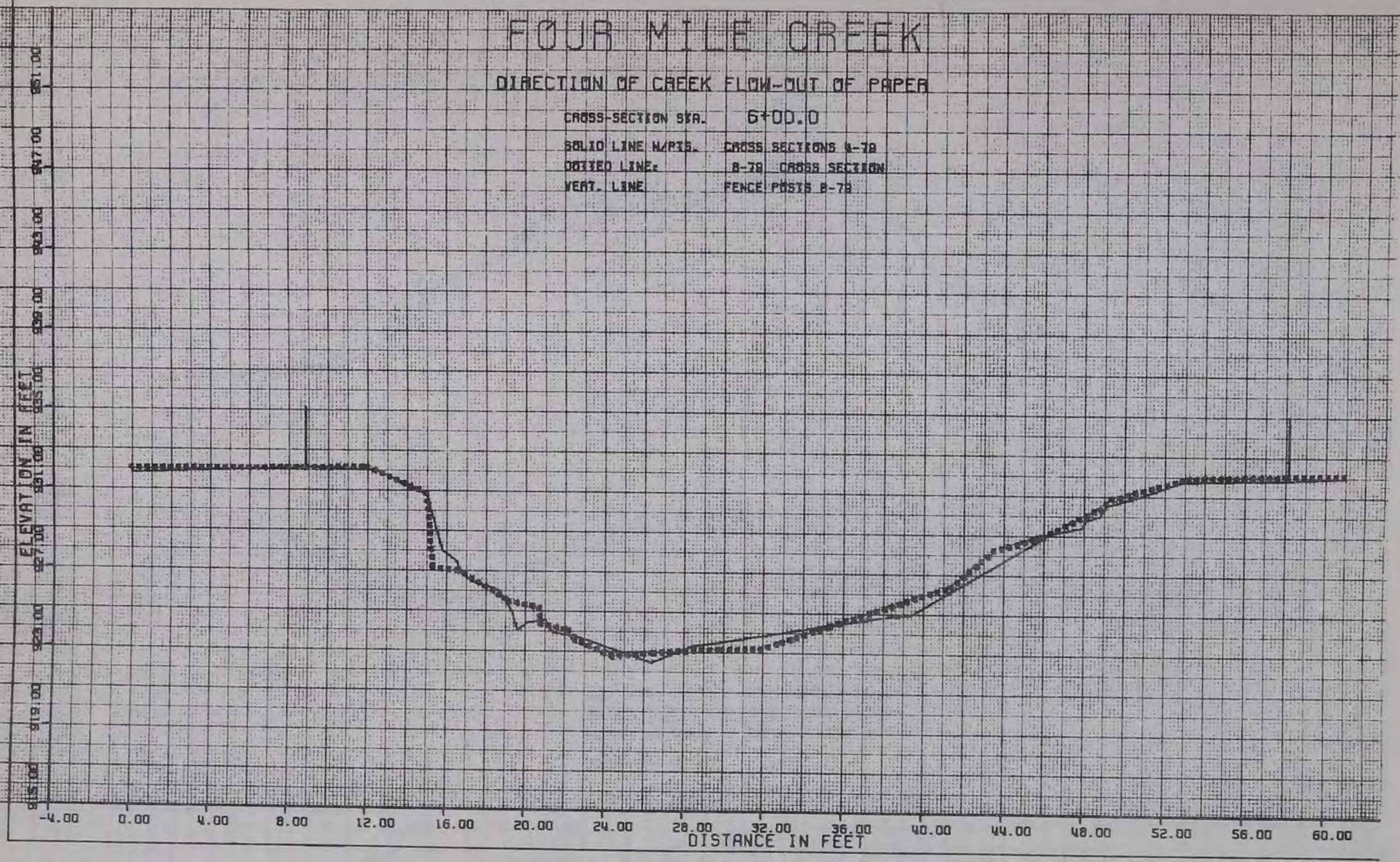

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 1+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78
ELEVATION IN FEET
905.00
909.00
913.00
917.00
921.00
925.00
929.00
933.00
937.00
941.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET

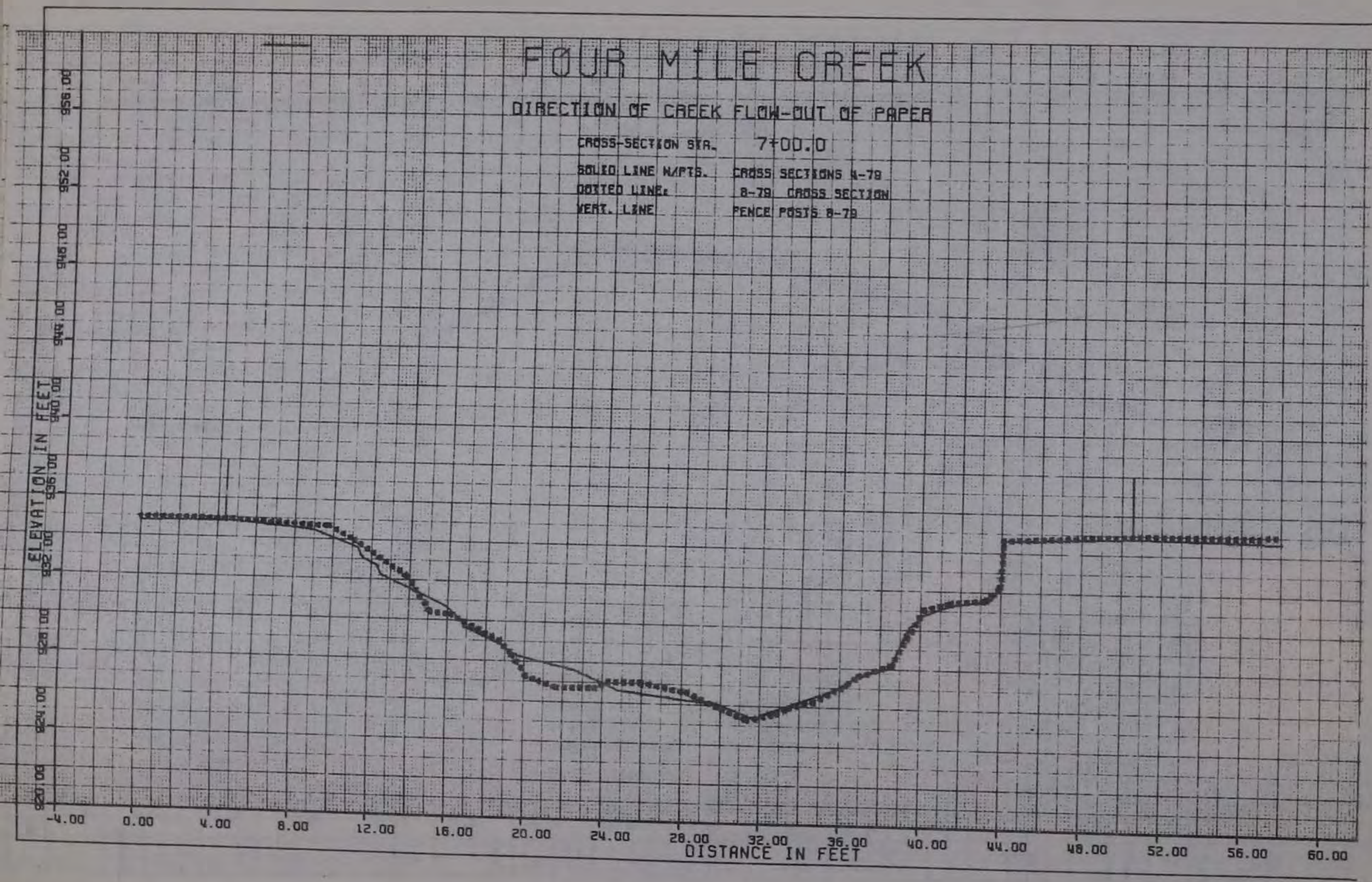

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 2+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-79
DOTTED LINE: 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
905.00
909.00
913.00
917.00
921.00
925.00
929.00
933.00
937.00
941.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
64
DISTANCE IN FEET


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 3+00.0
SOLID LINE MAPS. CROSS SECTIONS 4-79
DOTTED LINE. 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
930.00
926.00
922.00
918.00
914.00
910.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 4+00.0
SOLID LINE W/PIS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78
ELEVATION IN FEET
DISTANCE IN FEET
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 5+00.0
SOLID LINE W/PIS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78
ELEVATION IN FEET
915.00
919.00
923.00
927.00
931.00
935.00
939.00
943.00
947.00
951.00
DISTANCE IN FEET
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 6+00.0
SOLID LINE W/PTS. CROSS SECTIONS 6-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78
ELEVATION IN FEET
915.00
919.00
923.00
927.00
931.00
935.00
939.00
943.00
947.00
951.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET

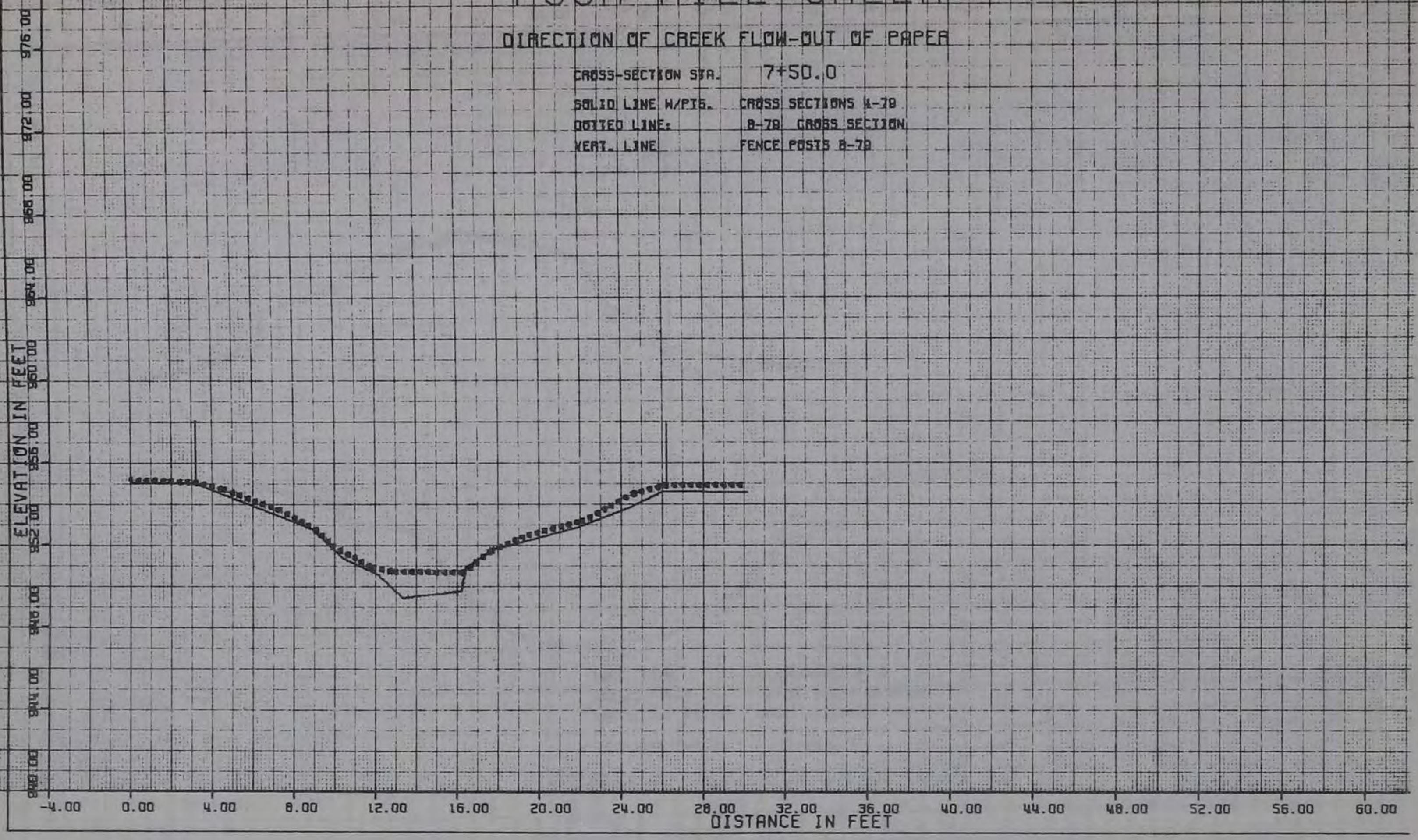

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 7+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-79
DOTTED LINE: 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
920.00
924.00
928.00
932.00
936.00
940.00
944.00
948.00
952.00
956.00
DISTANCE IN FEET
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00

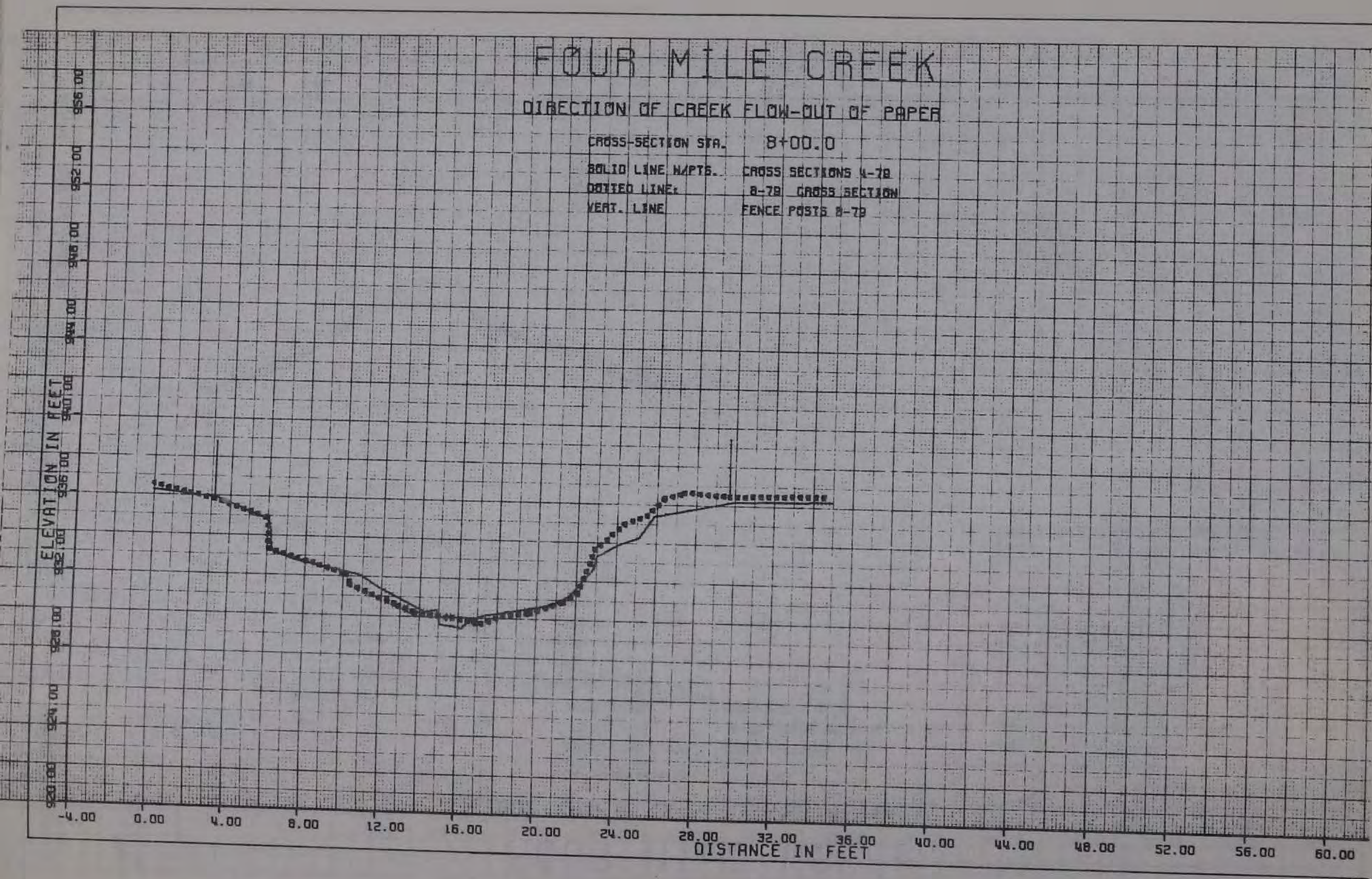
FOUR MILE CREEK

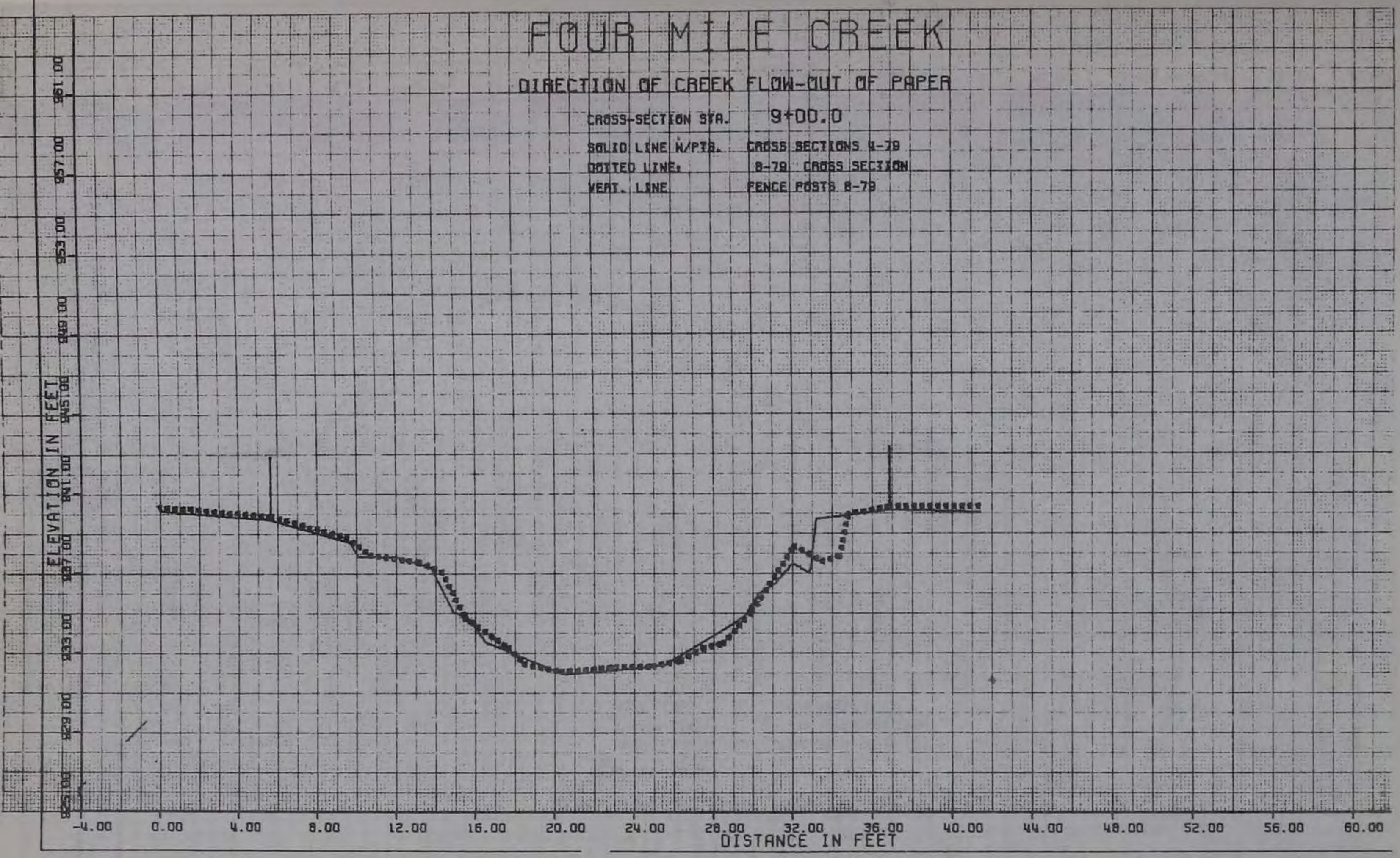
DIRECTION OF CREEK FLOW-OUT OF PAPER

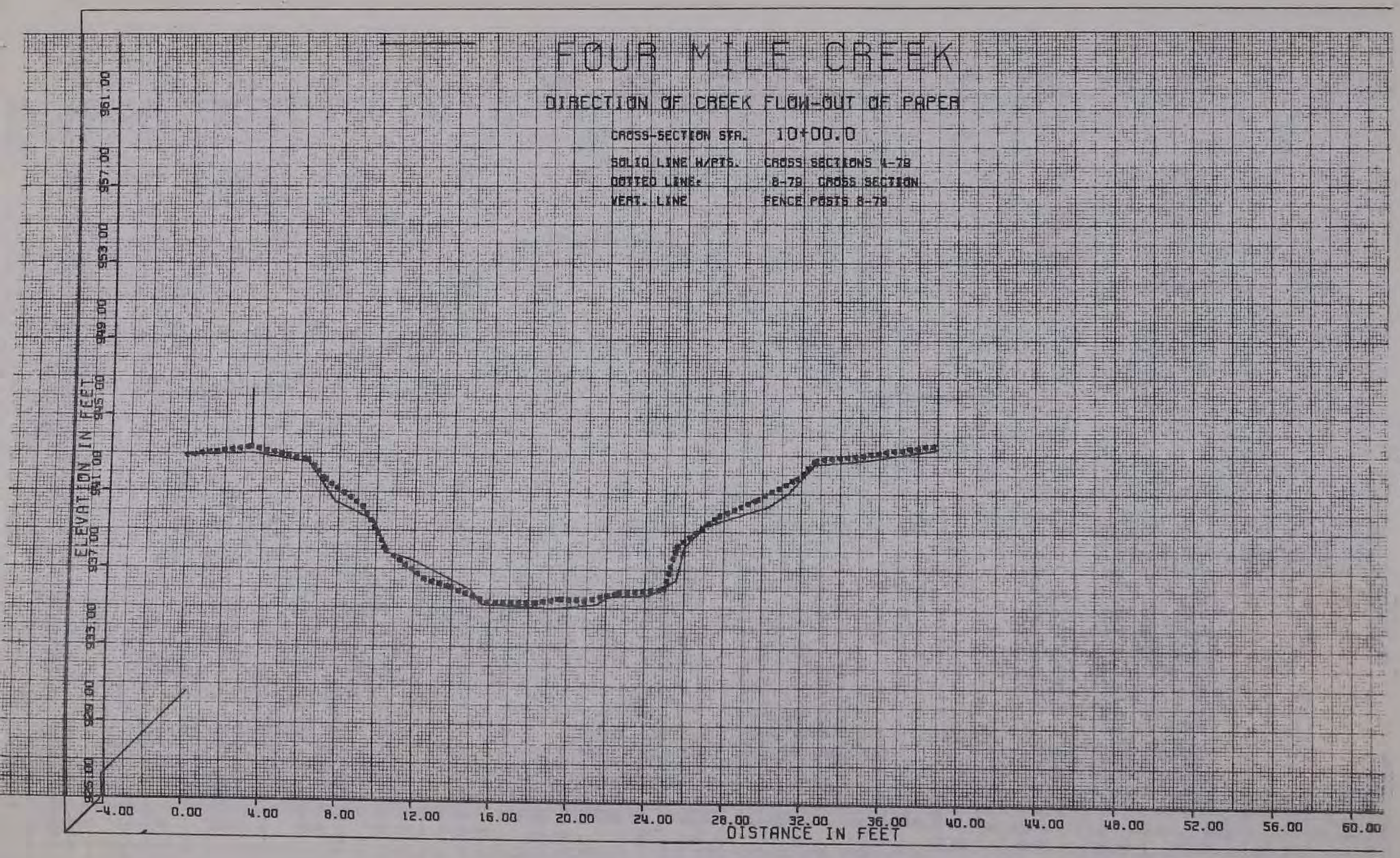
CROSS-SECTION STA. 7+50.0

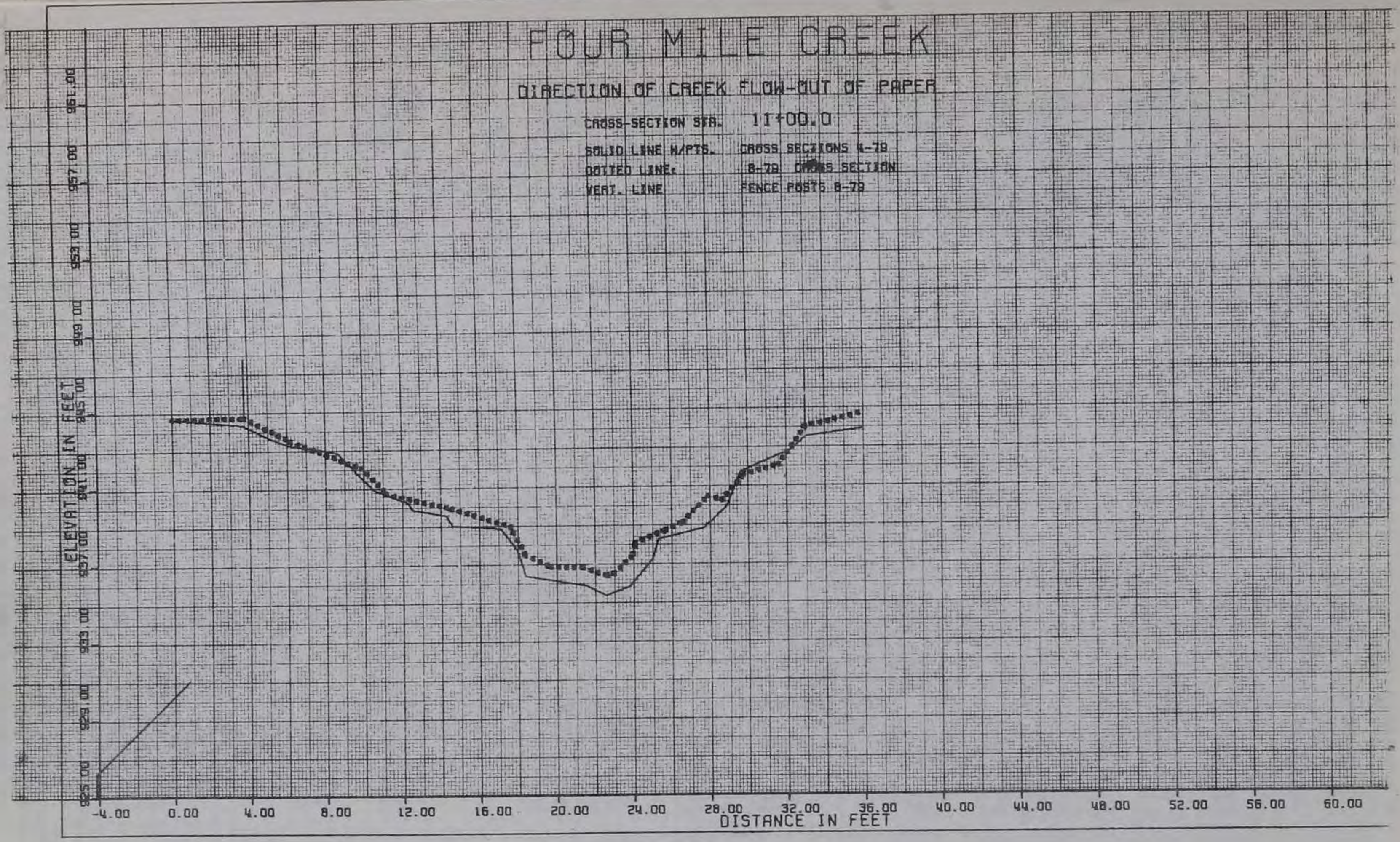
SOLID LINE W/PIS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78

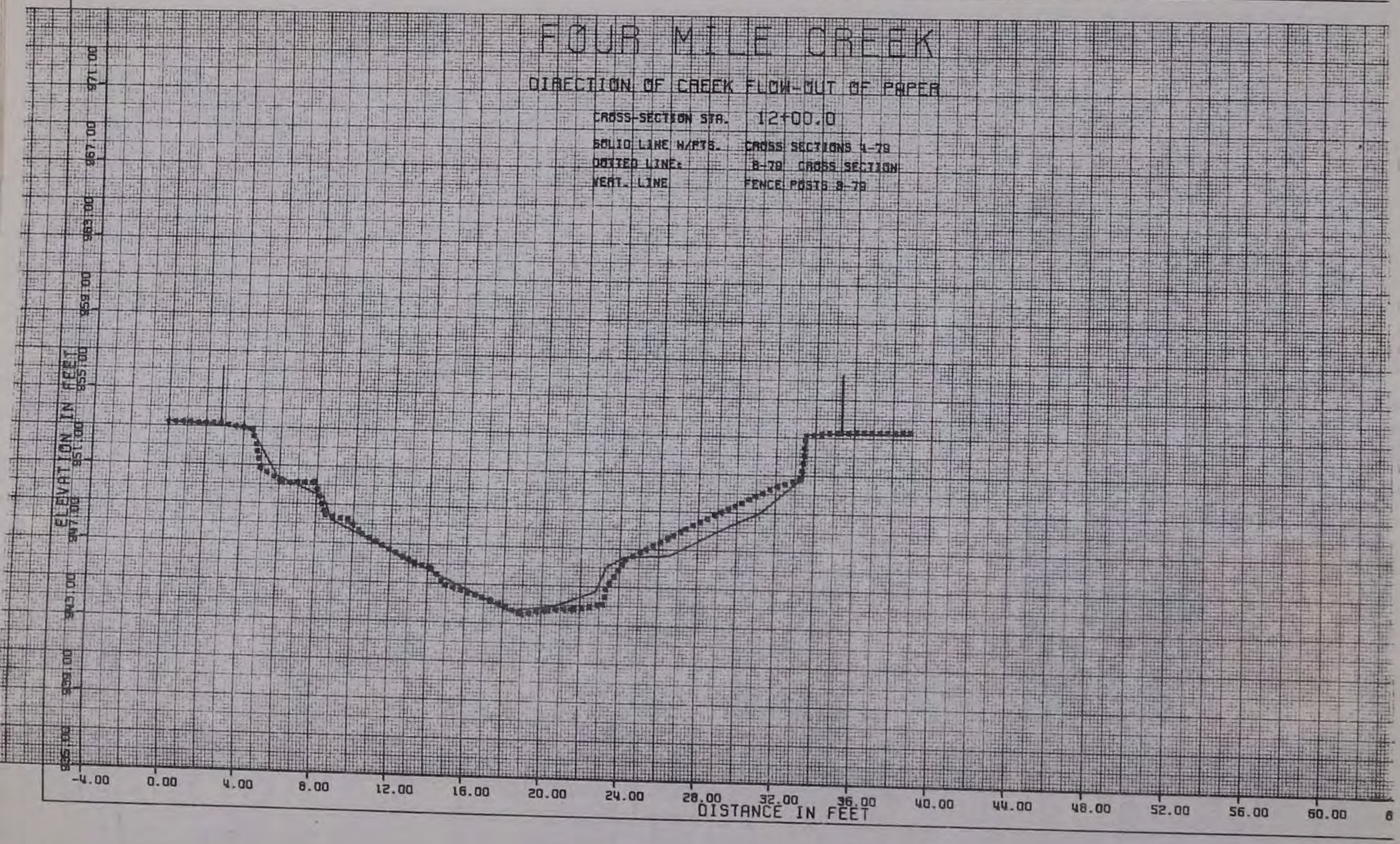


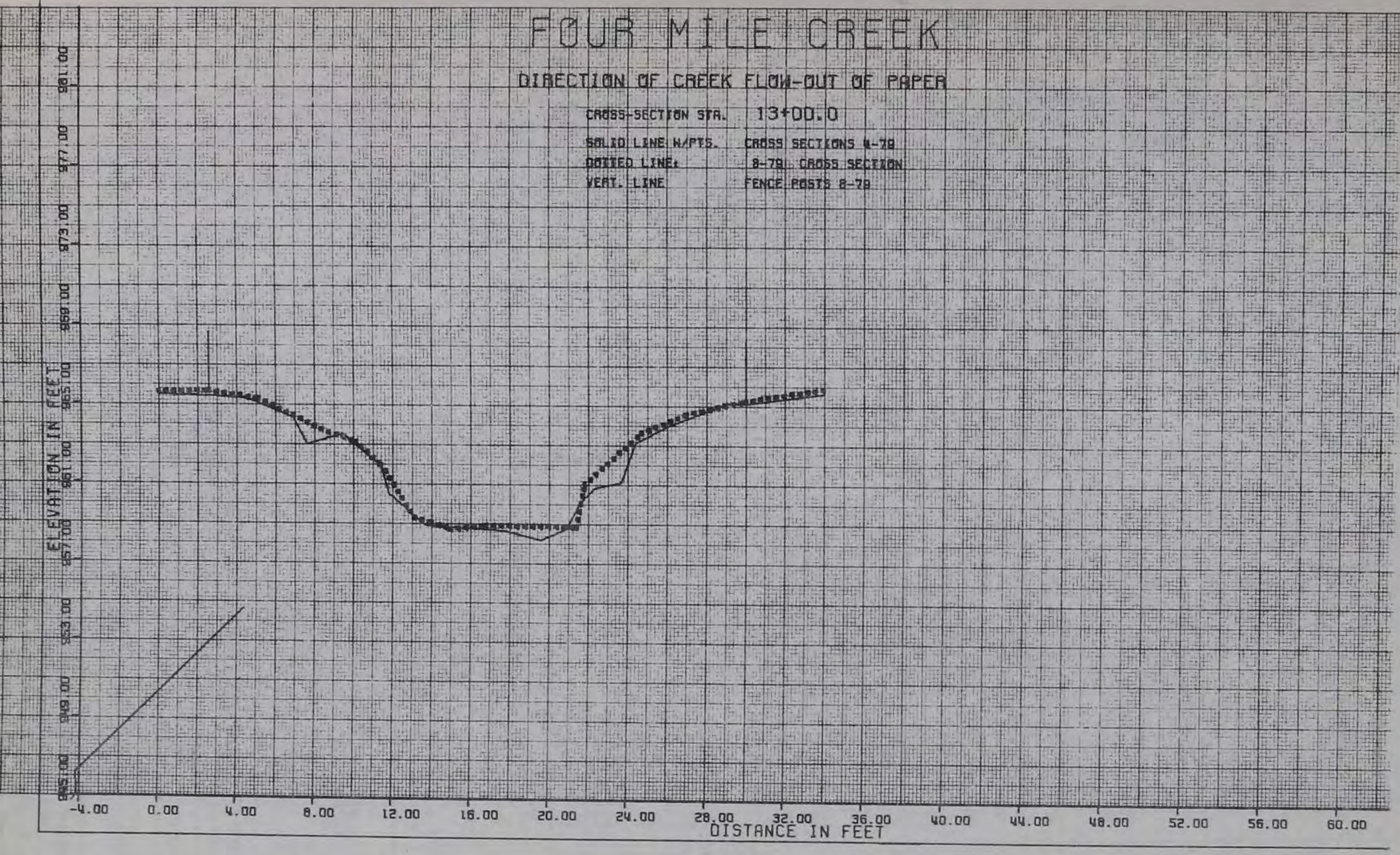

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 8+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
920.00
924.00
928.00
932.00
936.00
940.00
944.00
948.00
952.00
956.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET

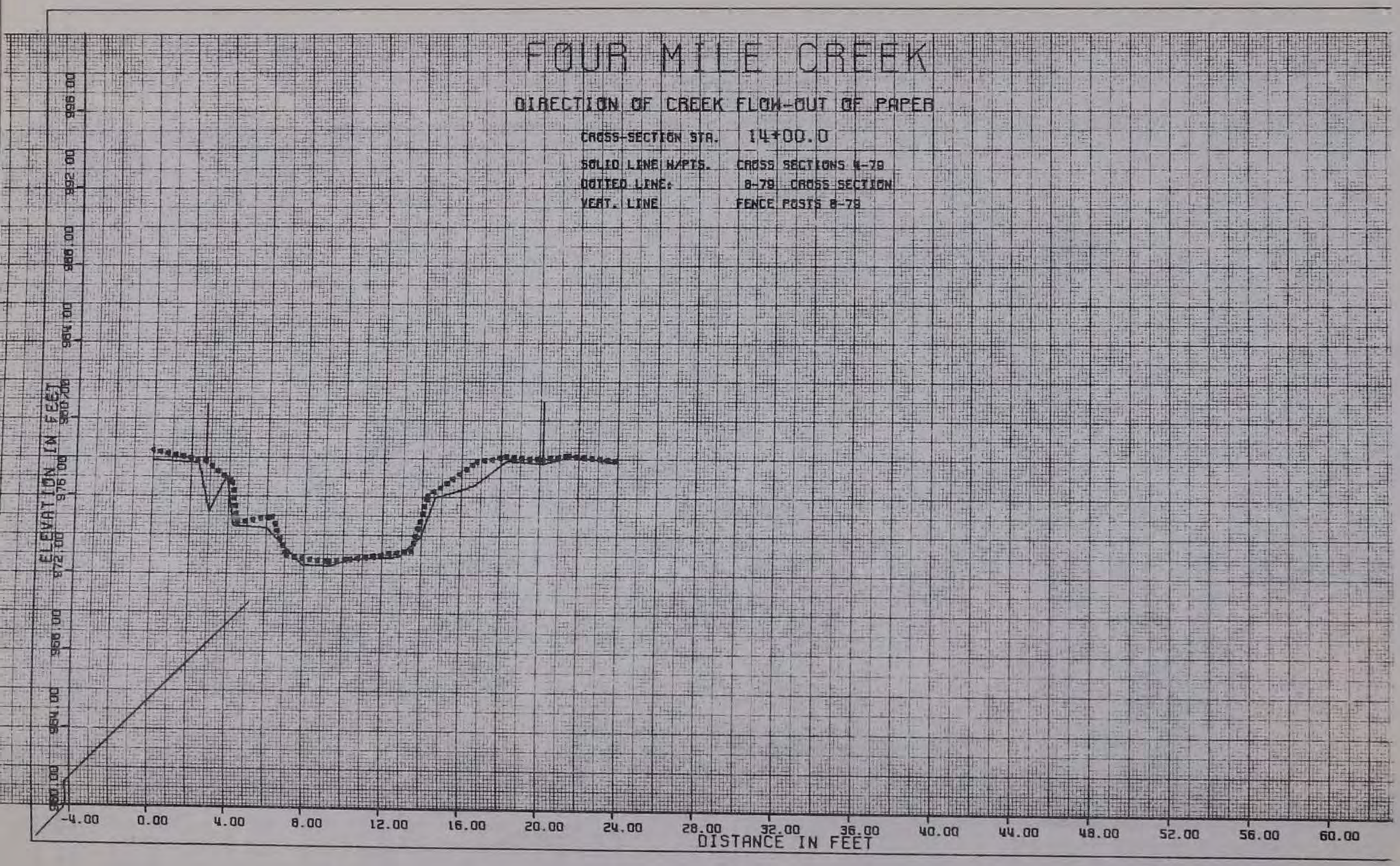

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 9+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-79
DOTTED LINE: 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
841.00
837.00
833.00
829.00
825.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET

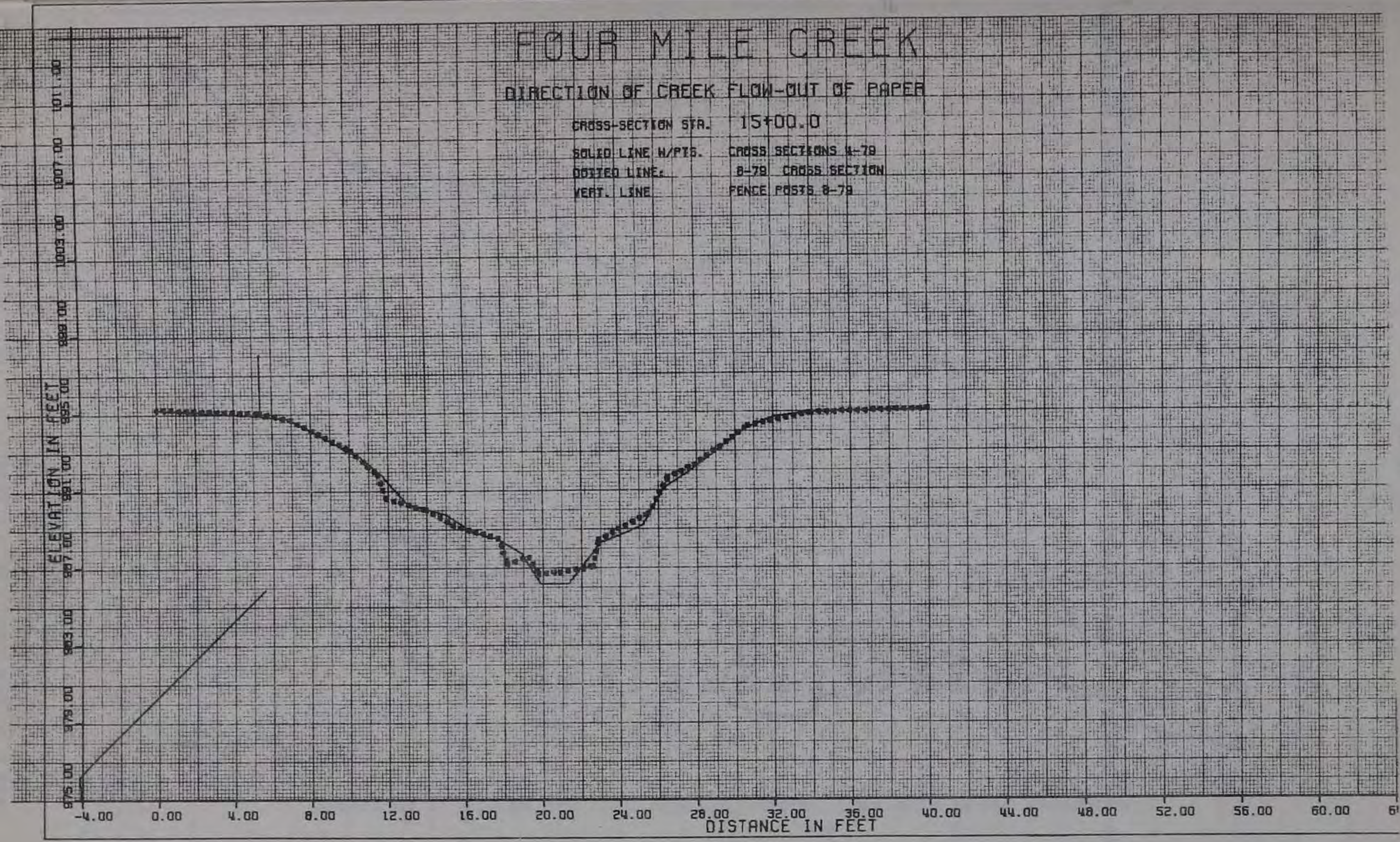

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 10+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78
ELEVATION IN FEET
925.00
929.00
933.00
937.00
941.00
945.00
949.00
953.00
957.00
961.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 11+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-79
DOTTED LINE. 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
961.00
957.00
953.00
949.00
945.00
941.00
937.00
933.00
929.00
925.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 12+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-79
DOTTED LINE: 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
955.00
959.00
963.00
967.00
971.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 13+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-78
DOTTED LINE: 8-78 CROSS SECTION
VERT. LINE FENCE POSTS 8-78
ELEVATION IN FEET
881.00
877.00
873.00
869.00
865.00
861.00
857.00
853.00
849.00
845.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET


FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 14+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-78
DOTTED LINE: 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
960.00
964.00
968.00
972.00
976.00
980.00
984.00
988.00
992.00
996.00
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00
DISTANCE IN FEET

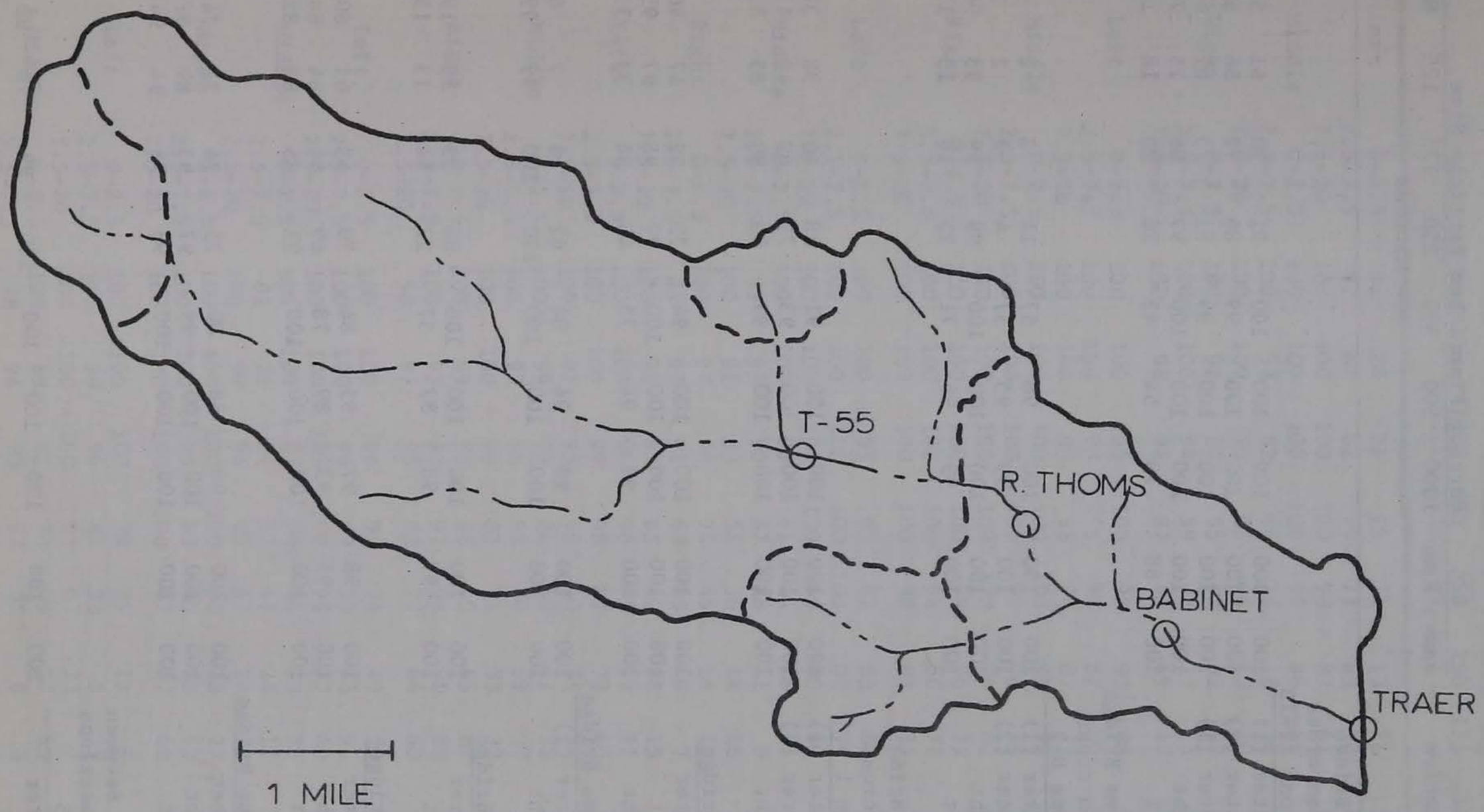

FOUR MILE CREEK
DIRECTION OF CREEK FLOW-OUT OF PAPER
CROSS-SECTION STA. 15+00.0
SOLID LINE W/PTS. CROSS SECTIONS 4-79
DOTTED LINE: 8-79 CROSS SECTION
VERT. LINE FENCE POSTS 8-79
ELEVATION IN FEET
DISTANCE IN FEET
-4.00
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
40.00
44.00
48.00
52.00
56.00
60.00

Four Mile Creek
Cross Sectional Areas
1979

Station	Overbank Elevation (m)	Area of Section (Square Meters)*	
		April Measurement	August Measurement
1+00	279.4	14.7	15.3
2+00	280.5	19.0	19.1
3+00	281.5	15.5	15.3
4+00	282.2	14.9	14.3
5+00	283.1	13.6	13.2
6+00	284.0	20.5	20.3
7+00	284.8	18.3	18.4
7+50**	291.0	5.0	4.2
8+00	285.3	8.4	8.3
9+00	286.4	11.1	11.1
10+00	287.1	10.2	9.8
11+00	287.3	10.4	9.1
12+00	290.3	15.0	14.7
13+00	294.1	7.6	6.9
14+00	297.9	4.2	3.6
15+00	303.2	9.5	9.5

*Cross Section Areas were measured up to the overbank elevation

**This station is on Half-Mile Creek



Locations of Stream Bed Load Sampling Sites, Four Mile Creek Watershed.

Four Mile Creek Bed Load Samples, 1979

Date	Location	Percent Finer than Particle Size									
		4 mm	2 mm	1000	500	350	250	175	125	88	62
				Microns							
6/12/79	T-55 Bridge Between cross sections 12-13										
	Center (1)	100	100	100	100	100	91	70	61	58	57
	Center (2)	100	100	100	100	99	88	72	66	64	63
	Center (5)	100	100	100	100	99	91	75	67	65	63
	Right	100	100	100	100	100	97	86	75	72	70
	Left	100	88	79	54	42	26	20	18	18	18
	R. Thoms Bridge Between cross sections 8-9										
	Center (1)	100	100	100	96	57	11	3	2	2	2
	Center (2)	100	100	99	95	57	4	2	2	2	2
	Right	100	100	100	100	100	99	99	98	98	97
	Left	100	100	99	96	71	25	16	15	13	11
	Traer Bridge Below cross section 1										
	Center (1)	100	100	100	100	91	68	40	38	37	36
	Center (2)	100	100	100	100	93	72	49	43	41	40
	Right	100	100	100	100	99	95	90	85	82	80
6/27/79	T-55 Bridge										
	Center	100	100	100	100	94	73	52	47	46	45
	Left	100	100	100	100	100	99	98	97	95	94
	Right	100	100	99	94	75	45	34	33	33	33
	R. Thoms Bridge										
	Center (1)	100	100	99	94	84	62	18	7	6	6
	Right	100	100	100	100	100	100	100	99	99	98
	Traer Bridge										
	Center	100	100	100	100	100	86	39	19	19	19
	Left	100	99	98	87	57	22	14	13	13	13
7/3/79	T-55 Bridge										
	Center	100	98	97	95	84	70	63	61	60	60
	Right	100	95	93	89	78	69	66	64	64	63
	Left	100	100	100	100	100	91	85	83	82	81
	R. Thoms Bridge										
	Center	100	100	93	88	80	75	74	74	74	73
	Right	100	100	100	100	99	97	93	89	87	86
	Left	100	100	100	100	100	98	95	94	94	93
	Bridge Between Cross sections 4 and 5										
	Center	100	100	100	100	100	100	99	98	98	98

(1), (2), & (5) represent sampling identification numbers

August 1979: Creek Bed Core Samples

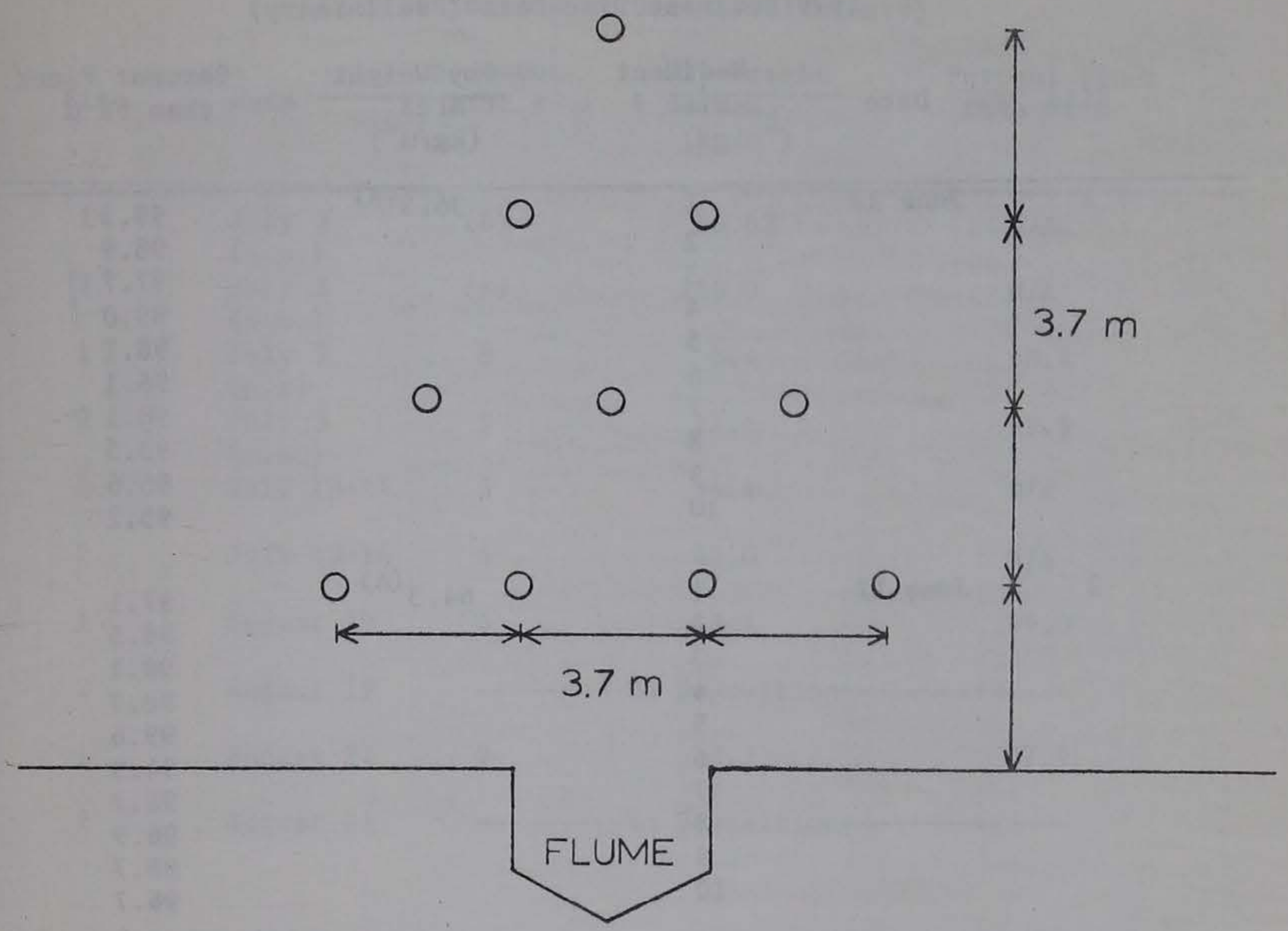
ss tion	Sample Location (A)	Depth (cm)	Per Cent Finer Than Particle Size									
			4 mm	2 mm	1000	500	350	250	175	125	88	62
					Microns							
00	Left	0-2.5	51	28	21	15	14	13	11	10	10	10
		2.5-7.5	87	82	82	79	77	69	50	41	41	41
		7.5-20	100	100	100	100	98	87	61	52	49	48
	Middle	0-2.5	100	100	100	100	99	96	86	78	72	70
		2.5-7.5	100	93	82	45	26	18	16	15	13	12
		7.5-20	100	100	99	85	44	13	10	8	8	8
	Right	0-2.5	100	92	84	55	40	32	27	25	24	23
		2.5-7.5	100	100	94	59	32	17	15	14	13	11
		7.5-20	100	98	94	87	64	49	47	46	46	46
00 (B)	Left	0-2.5	100	100	100	100	98	93	88	85	83	82
		2.5-7.5	100	100	98	96	92	87	80	77	75	74
		7.5-20	100	100	99	98	94	87	77	71	68	66
	Middle	0-2.5	100	100	100	100	100	98	90	82	76	73
		2.5-7.5	100	100	100	100	99	94	85	78	72	67
		7.5-20	100	100	100	100	100	96	82	68	63	63
	Right	0-2.5	100	100	100	100	98	90	77	71	69	68
		2.5-7.5	100	100	100	100	96	86	77	71	68	66
		7.5-20	100	100	100	100	98	92	84	78	73	71
00	Left	0-2.5	100	100	95	92	87	85	84	83	83	83
		2.5-7.5	100	100	100	100	100	100	99	99	99	99
		7.5-20	100	100	100	100	100	100	99	99	99	99
	Middle	0-2.5	100	100	97	61	34	18	15	15	15	15
		2.5-7.5	99	97	90	57	28	11	8	8	8	8
		7.5-20	100	91	83	54	36	18	16	16	16	16
	Right	0-2.5	100	97	94	74	46	16	13	13	13	13
		2.5-7.5	99	97	91	63	25	9	7	6	6	6
		7.5-20	100	95	87	65	42	28	15	12	12	12
00	Left	0-2.5	100	100	96	96	95	92	91	90	89	88
		2.5-7.5	100	100	99	98	87	73	60	56	55	55
		7.5-20	100	97	95	69	40	31	29	29	28	28
	Middle	0-2.5	100	99	98	84	59	41	32	31	30	30
		2.5-7.5	100	99	98	95	80	59	37	29	28	27
		7.5-20	100	100	99	87	71	53	32	29	28	28
	Right	0-2.5	100	99	98	98	90	85	82	81	80	80
		2.5-7.5	100	97	97	97	93	90	88	87	86	85
		7.5-20	98	97	95	82	72	64	60	60	59	59
1+00	Left	0-2.5	100	100	99	92	74	43	23	20	18	17
		2.5-7.5	100	100	99	99	98	93	91	89	88	87
		7.5-20	100	100	100	100	96	77	49	38	36	35
	Middle	0-2.5	100	100	97	94	86	73	53	44	41	40
		2.5-7.5	82	71	64	52	41	24	11	7	5	4
		7.5-20	100	99	96	80	47	22	15	14	13	13
	Right	0-2.5	100	100	100	100	93	72	27	17	15	13
		2.5-7.5	100	100	99	93	85	72	62	59	58	57
		7.5-20	100	100	100	100	87	67	48	37	31	28
1+00	Left	0-2.5	100	100	100	79	29	11	9	8	8	8
		2.5-7.5	100	99	96	81	33	5	3	3	3	3
		7.5-20	100	100	100	95	67	23	7	6	6	6
	Middle	0-2.5	100	89	81	73	49	27	15	12	11	10
		2.5-7.5	98	94	83	67	32	8	8	8	8	8
		7.5-20	100	98	94	77	51	8	4	4	4	4

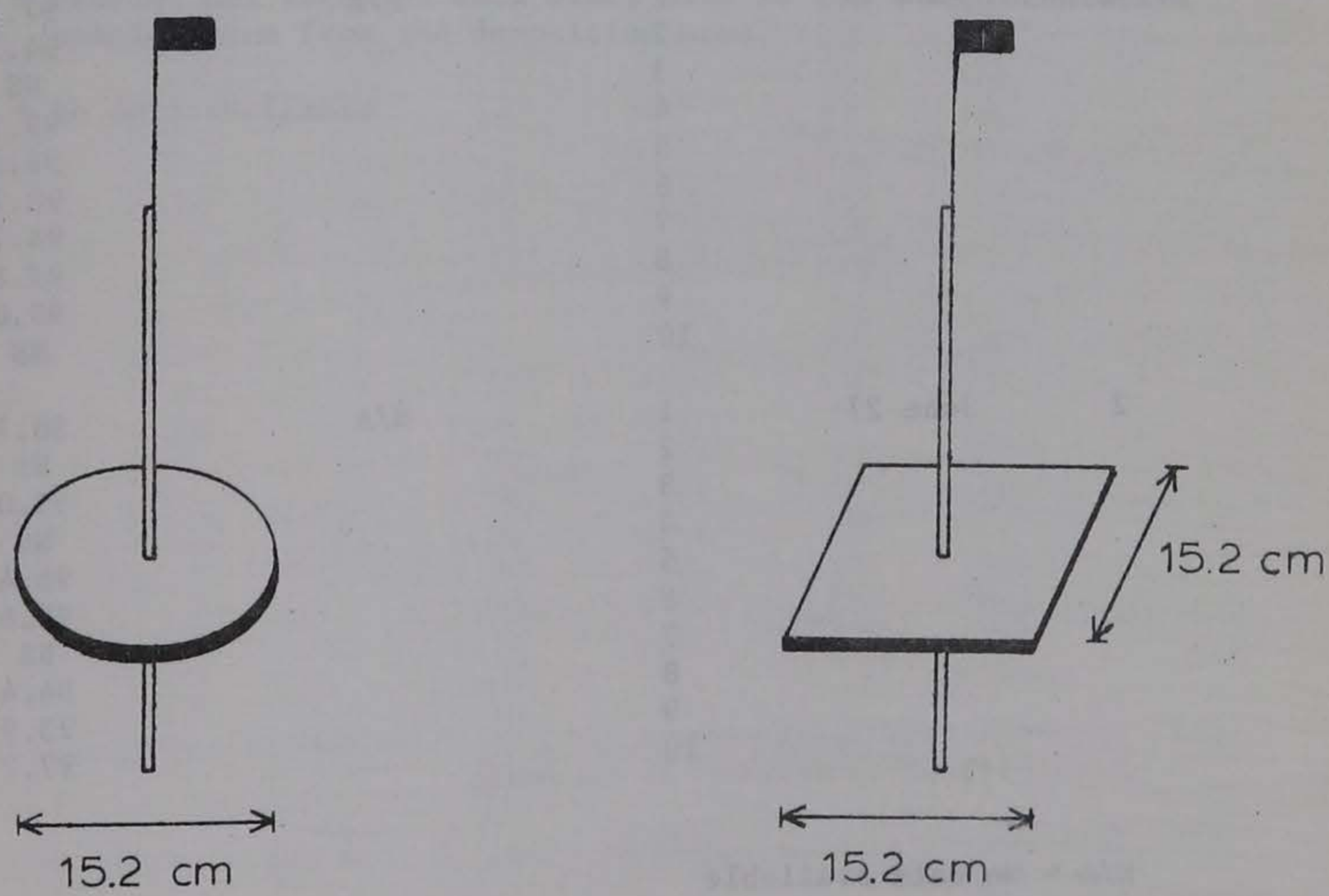
August 1979: Creek Bed Core Samples

Cross Section	Sample Location (A)	Depth (cm)	Per Cent Finer Than Particle Size									
			4 mm	2 mm	1000	500	350	250	175	125	88	62
					Microns							
	Right	0-2.5	100	100	100	98	89	74	59	52	50	49
		2.5-7.5	99	99	98	97	94	85	73	67	65	65
		7.5-20	100	100	100	100	89	85	60	42	35	31
12+00	Left	0-2.5	100	98	96	94	91	85	74	73	71	71
		2.5-7.5	100	99	98	97	94	84	70	66	64	64
		7.5-20	100	100	100	100	99	93	85	80	77	75
	Middle	0-2.5	66	54	49	36	23	13	9	8	8	8
		2.5-7.5	100	87	83	76	66	42	33	31	30	30
		7.5-20	100	100	99	92	73	46	31	29	29	29
	Right	0-2.5	100	98	95	89	77	62	48	44	43	43
		2.5-7.5	88	85	82	67	50	30	22	20	20	20
		7.5-20	100	99	96	84	71	60	51	47	44	43
13+00	Left	0-2.5	100	98	94	84	60	49	46	45	45	45
		2.5-7.5	100	100	100	100	97	92	86	84	82	81
		7.5-20	100	100	100	100	99	94	88	85	83	83
	Middle	0-2.5	100	100	98	94	82	58	16	16	16	16
		2.5-7.5	100	99	96	93	71	39	12	11	10	10
		7.5-20	98	95	90	77	54	31	23	21	21	21
	Right	0-2.5	100	100	100	100	100	96	91	87	84	83
		2.5-7.5	100	100	99	98	97	96	94	93	92	92
		7.5-20	100	100	100	100	99	95	90	89	88	87
14+00	Left	0-2.5	98	97	95	95	93	90	87	85	84	84
		2.5-7.5	100	100	100	100	99	96	94	93	92	92
		7.5-20	100	100	98	97	97	93	89	88	88	87
	Middle	0-2.5	100	97	89	84	73	57	47	44	44	44
		2.5-7.5	100	100	98	98	94	91	87	86	84	83
		7.5-20	100	100	98	98	95	92	88	86	86	85
	Right	0-2.5	100	98	95	94	92	89	85	83	82	82
		2.5-7.5	96	96	96	96	92	86	79	77	76	75
		7.5-20	100	100	98	97	96	94	91	89	88	88
15+00	Left	0-2.5	100	100	100	100	99	91	80	76	75	74
		2.5-7.5	95	93	92	91	86	77	67	64	64	63
		7.5-20	100	100	99	94	83	66	50	46	45	44
	Middle	0-2.5	93	86	79	67	58	52	49	48	47	46
		2.5-7.5	100	95	93	89	81	66	51	48	46	46
		7.5-20	79	75	71	65	56	43	35	34	34	34
	Right	0-2.5	100	99	98	93	79	54	39	37	37	37
		2.5-7.5	97	96	95	92	85	75	67	85	65	65
		7.5-20	94	93	92	89	76	61	51	48	48	48

(A) Sample Locations of Left, Middle, and Right are as viewed looking upstream at each cross section.

(B) Cores taken between cross sections 3+00 and 4+00, approximately 100 yards downstream from section 4+00.





Arrangement and types of Sediment Deposition Discs above Sites 1 and 2.

1979 Sediment Disc Data (Preliminary)

Site	Date	Sediment Disc #	Dry Weight / Area (kg/m^2)	Percent Finer than 62 μ
1	June 12	1	36.3(A)	98.3
		2		98.9
		3		97.7
		4		99.0
		5		98.1
		6		96.1
		7		98.1
		8		93.5
		9		95.6
		10		95.2
2	June 12	1	64.3(A)	97.1
		2		98.5
		3		98.1
		4		98.7
		5		99.6
		6		94.9
		7		98.7
		8		96.9
		9		98.7
		10		96.7
1	June 27	1	N/A	97.2
		2		94.5
		3		NS
		4		99.7
		5		98.2
		6		98.7
		7		94.7
		8		97.8
		9		99.0
		10		NS
2	June 27	1	N/A	88.7
		2		NS
		3		95.0
		4		NS
		5		96.4
		6		96.6
		7		NS
		8		84.4
		9		93.9
		10		97.7

N/A = No data available

(A) = Due to error in lab analysis the specific weight per acre was determined for only one sample.

NS = No sample taken

1979 Sediment Disc Data (Preliminary)

Site	Date	Sediment Disc #	Dry Weight / Area (kg/m^2)	Percent Finer than 62 μ
1	July 3 (a.m.)	(B)	56.62	N/A
2	July 3 (a.m.)	(B)	140.0	N/A
1	July 3 (p.m)	8	3.4	98.4
2	July 3 (p.m.)	9	11.6	99.9
1	July 13-14	5	54.4	N/A
2	July 13-14	4	42.0	N/A
1	August 19	6	12.1	99.0
2	August 19	---------No Deposition----------		
1	August 21	9	13.3	97.9
2	August 21	---------No Deposition----------		

(B) ≑ Samples not taken at each disc, data is for a representative sample taken from the deposition area.

N/A = No data available

Site 1: Sediment Deposition Survey Data

Cross Section (A)	1976 Survey Data (B)				Fall 1979 Survey Data			
	Station (ft)	Elev. (ft)	Station (m)	Elev. (m)	Station (ft)	Elev. (ft)	Station (m)	Ele (m
0+25	14	101	4.3	30.8	23.9	102	7.3	31
	33	100	10.1	30.5	24.	99.5	7.3	30
	52	99	15.8	30.2	28	99.4	8.5	30
	75 c	98.2	22.9	29.9	43	99.1	13.1	30
	102	99	31.1	30.2	68	99.2	20.7	30
	124	100	37.8	30.5	82	99.3	25.0	30
	147	101	44.8	30.8	93	99.6	28.3	30
	155	102	47.2	31.1	118	100.2	36.0	30
	182	104	55.5	31.7	143	101.2	43.6	30
					168	102.6	51.2	31.
0+50	4	102	1.2	31.1	18	100.3	5.5	30.
	22	101	6.7	30.8	43	99.6	13.1	30.
	42	100	12.8	30.5	68	99.3	20.7	30.
	62	99	18.9	30.2	82	99.7	25.0	30.
	75 c	98.6	22.9	30.1	93	99.7	28.3	30.
	88	99	26.8	30.2	118	100.3	36.0	30.
	109	100	33.2	30.5	143	101.3	43.6	30.
	137	101	41.8	30.8	168	102.8	51.2	31.
	148	102	45.1	31.1				
	178	104	54.3	31.7				
0+75	0	104	0	31.7	18	101.1	5.5	30.
	14	102	4.3	31.1	43	100.1	13.1	30.
	32	101	9.8	30.8	68	99.8	20.7	30.
	51	100	15.5	30.5	82	99.8	25.0	30.
	75 c	99.1	22.9	30.2	93	99.8	28.3	30.
	102	100	31.1	30.5	118	100.4	36.0	30.
	128	101	39.0	30.8	143	101.4	43.6	30.
	144	102	43.9	31.1				
	172	104	52.4	31.7				
1+00	5	104	1.5	31.7	17	102.0	5.2	31.
	25	102	7.6	31.1	42	100.4	12.8	30.
	42	101	12.8	30.8	67	100.1	20.4	30.
	58	100	17.7	30.5	81	99.9	24.7	30.
	75 c	99.5	22.9	30.3	92	100.0	28.0	30.
	97	100	29.6	30.5	117	100.6	35.7	30.
	120	101	36.6	30.8	142	101.4	43.3	30.
	138	102	42.1	31.1				
	165	104	50.3	31.7				

(A) Cross Section Stations are distances upslope from headwall of flume, i.e. Station 0+00 is located at headwall.

(B) 1976 Survey Data is based on a 100 ft grid survey made during the summer of 1976 .

c Represents the centerline of the flume as projected upslope.

Site 1: Sediment Deposition Survey Data

Cross Section (A)	1976 Survey Data (B)				Fall 1979 Survey Data			
	Station (ft)	Elev. (ft)	Station (m)	Elev. (m)	Station (ft)	Elev. (ft)	Station (m)	Elev. (m)
1+25	7	104	2.1	31.7	10	103.1	3.0	31.4
	28	102	8.5	31.1	35	101.0	10.7	30.8
	48	101	14.6	30.8	60	101.4	18.3	30.6
	65	100	19.8	30.5	74	100.5	22.6	30.6
	75 c	99.9	22.9	30.4	85	100.4	25.9	30.6
	80	100	24.4	30.5	110	100.8	33.5	30.7
	110	101	33.5	30.8	135	101.8	41.1	31.0
	129	102	39.3	31.1				
	155	104	47.2	31.7				
1+50	8	104	2.4	31.7	26	101.9	7.9	31.1
	34	102	10.4	31.1	51	100.8	15.5	30.7
	53	101	16.2	30.8	65	100.8	19.8	30.7
	75 c	100.3	22.9	30.6	76	100.8	23.2	30.7
	99	101	30.2	30.8	101	101.8	30.8	31.0
	118	102	36.0	31.1	126	102.0	38.4	31.1
	145	104	44.2	31.7				
1+75	11	104	3.4	31.7	15	102.8	4.6	31.3
	41	102	12.5	31.1	40	101.5	12.2	30.9
	61	101	18.6	30.8	54	101.2	16.5	30.8
	75 c	100.7	22.9	30.7	65	101.2	19.8	30.8
	86	101	26.2	30.8	90	101.4	27.4	30.9
	107	102	32.6	31.1	115	102.3	35.1	31.2
	135	104	41.1	31.7				
2+00	15	104	4.6	31.7	5	103.5	1.5	31.5
	49	102	14.9	31.1	30	102.2	9.1	31.2
	75 c	101.2	22.9	30.8	44	101.9	13.4	31.1
	98	102	29.9	31.1	55	101.7	16.8	31.0
	128	104	39.0	31.7	75	101.6	22.9	31.0
					80	101.7	24.4	31.0
					105	102.6	32.0	31.3

(A) Cross Section Stations are distances upslope from headwall of flume, i.e. Station 0+00 is located at headwall.

(B) 1976 Survey Data is based on a 100 ft grid survey made during the summer of 1976.

c Represents the centerline of the flume as projected upslope.

Site 2: Sediment Deposition Survey Data

Cross Section (A)	1976 Survey Data (B)				Fall 1979 Survey Data			
	Station (ft)	Elev. (ft)	Station (m)	Elev. (m)	Station (ft)	Elev. (ft)	Station (m)	Elev (m)
0+25 (D)	4	101	1.2	30.8	10	100.4	3.0	30.6
	15	100	4.6	30.5	20	99.8	6.1	30.4
	30	99	9.1	30.2	45	99.0	13.7	30.2
	56	98	17.1	29.9	70	99.0	21.3	30.2
	75 c	98	22.9	29.9	82	99.0	25.0	30.2
	101	98	30.8	29.9	95	98.9	29.0	30.1
	150	99	45.7	30.2	120	99.1	36.6	30.2
	163	100	49.7	30.5	145	99.5	44.2	30.3
	163.1	102	49.7	31.1	160	100.1	48.8	30.5
					163	100.5	49.7	30.6
					163	102	49.7	31.1
0+50 (E)	10	101	3.0	30.8	21	100.3	6.4	30.6
	21	100	6.4	30.5	44	99.2	13.4	30.2
	34	99	10.4	30.2	69	99.0	21.0	30.2
	66	98	20.1	29.9	80	99.2	24.4	30.2
	75 c	98	22.9	29.9	94	99.1	28.7	30.2
	85	98	25.9	29.9	119	99.0	36.3	30.2
	141	99	43.0	30.2	144	99.8	43.9	30.4
	153	100	46.6	30.5	159	100.3	48.5	30.6
	168	101	51.2	30.8	169	100.7	51.5	30.7
0+75	2	102	0.6	31.1	18	100.6	5.5	30.7
	14	101	4.3	30.8	43	99.3	13.1	30.3
	26	100	7.9	30.5	68	99.2	20.7	30.2
	41	99	12.5	30.2	82	99.4	25.0	30.3
	75 c	98.2	22.9	29.9	93	99.6	28.3	30.4
	134	99	40.8	30.2	118	99.1	36.0	30.2
	147	100	44.8	30.5	142	99.9	43.3	30.4
	162	101	49.4	30.8	158	100.6	48.2	30.7
	174	102	53.0	31.1				
1+00	8	102	2.4	31.1	28	100.3	8.5	30.6
	20	101	6.1	30.8	43	99.8	13.1	30.4
	34	100	10.4	30.5	68	99.5	20.7	30.3
	61	99	18.6	30.2	82	99.8	25.0	30.4
	75 c	98.9	22.9	30.1	93	99.7	28.3	30.4
	116	99	35.4	30.2	118	99.4	36.0	30.3
	139	100	42.4	30.5	143	100.5	43.6	30.6
	152	101	46.3	30.8				
	164	102	50.0	31.1				
1+25	13	102	4.0	31.1	38	100.3	11.6	30.6
	27	101	8.2	30.8	43	100.2	13.1	30.5
	43	100	13.1	30.5	68	99.6	20.7	30.4
	75 c	99.2	22.9	30.2	82	99.8	25.0	30.4
	127	100	38.7	30.5	93	99.7	28.3	30.4
	141	101	43.0	30.8	118	99.9	36.0	30.4
	155	102	47.2	31.1				

Site 2: Sediment Deposition Survey Data

Cross Section (A)	1976 Survey Data (E)				Fall 1979 Survey Data			
	Station (ft)	Elev. (ft)	Station (m)	Elev. (m)	Station (ft)	Elev. (ft)	Station (m)	Elev. (m)
1+50	24	102	7.3	31.1	43	100.6	13.1	30.7
	36	101	11.0	30.8	46	100.5	14.0	30.6
	52	100	15.8	30.5	69	99.8	21.0	30.4
	75 c	99.8	22.9	30.4	83	100.0	25.3	30.5
	115	100	35.1	30.5	94	100.0	28.7	30.5
	132	101	40.2	30.8	119	100.2	36.3	30.5
	145	102	44.2	31.1				
1+75	32	102	9.8	31.1	44	100.9	13.4	30.8
	43	101	13.1	30.8	69	99.9	21.0	30.4
	58	100	17.7	30.5	83	100.1	25.3	30.5
	75 c	99.7	22.9	30.4	94	100.1	28.7	30.5
	103	100	31.4	30.5	109	100.1	33.2	30.5
	123	101	37.5	30.8				
	137	102	41.8	31.1				
2+00	37	102	11.3	31.1	66	100.0	20.1	30.5
	50	101	15.2	30.8	70	100.1	21.3	30.5
	67	100	20.4	30.5	84	100.3	25.6	30.6
	75 c	99.9	22.9	30.4	97	100.4	29.6	30.6
	86	100	26.2	30.5				
	112	101	34.1	30.8				
	130	102	39.6	31.1				
2+25	41	102	12.5	31.1	72	100.2	21.9	30.5
	56	101	17.1	30.8	84	100.5	25.6	30.6
	75 c	100.2	22.9	30.5	96	100.8	29.3	30.7
	105	101	32.0	30.8				
	128	102	39.0	31.1				

(A) Cross Section Stations are distances upslope from headwall of flume, i.e. Station 0+00 is located at headwall.

(B) 1976 Survey Data is based on a 100 ft grid survey made during the summer of 1976.

c Represents the centerline of the flume as projected upslope.

(D) Fall 1979 Survey at cross section 0+25 was taken at 0+30 due to disturbance of sediment by agricultural implements.

(E) Fall 1979 Survey at cross section 0+50 was taken at 0+56 due to disturbance of sediment by agricultural implements.

Sediment Deposition Above Sites 1 and 2*

(June, 1976 through November 1979)

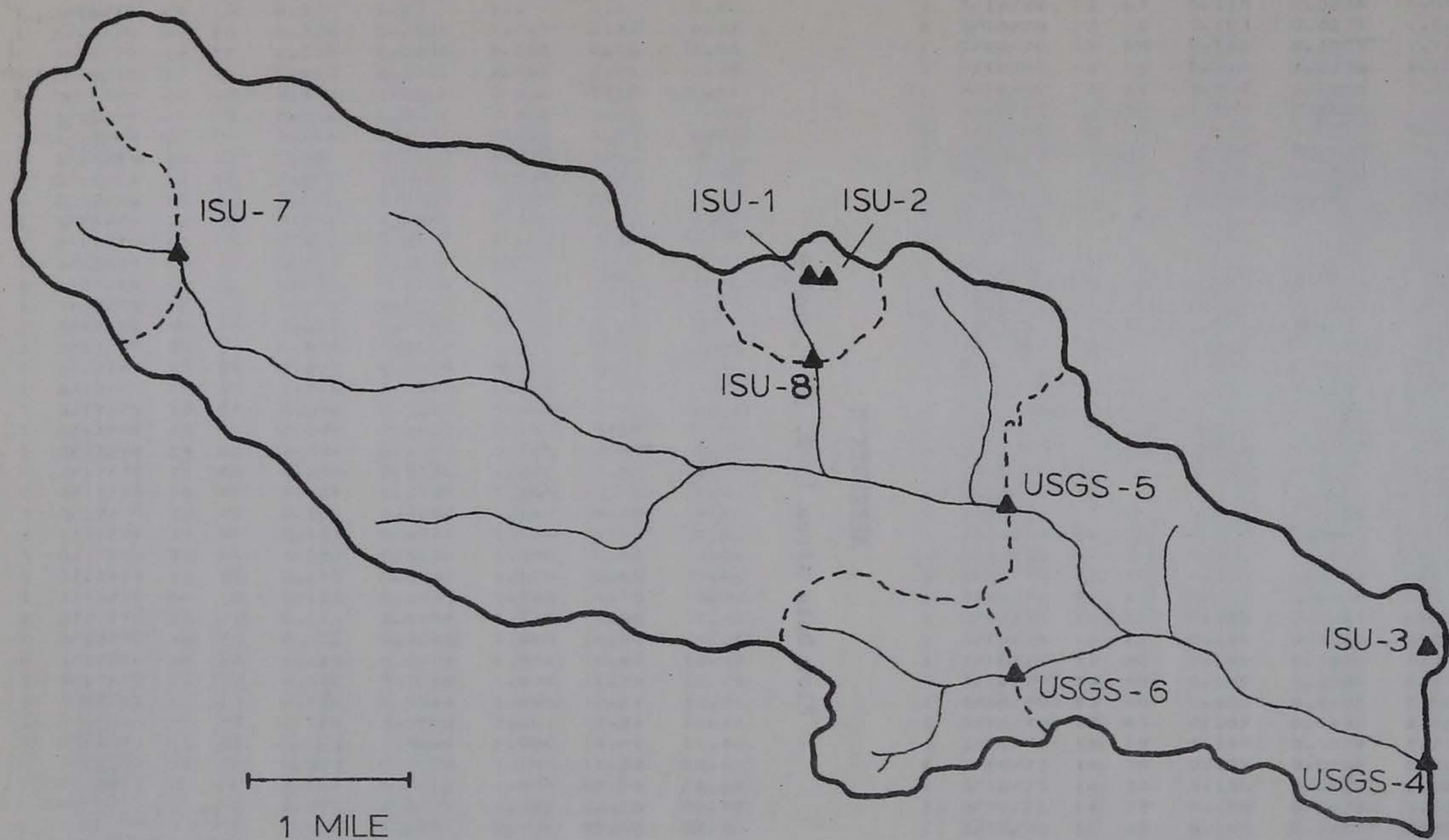
Site 1

Volume of Sediment deposition = 4535 ft^3 (128 m^3)
Specific Weight of Sediment Deposited = 84.3 lbs/ft^3 (1.35 gms/cm^3)
Sediment Deposited above Flume = 191 tons (173,000 kg)
Area of Watershed = 12.5 acres (5.05 ha)
Sediment Yield to Deposition Area = 15.3 tons/acre (34,300 kg/ha)

Site 2

Volume of Sediment Deposition = 9100 ft^3 (258 m^3)
Specific Weight of Sediment Deposited = 91.9 lbs/ft^3 (1.47 gms/cm^3)
Sediment Deposited above Flume = 418 tons (379,000 kg)
Area of Watershed = 15.7 acres (6.37 ha)
Sediment Yield to Deposition Area = 26.6 tons/acre (59,500 kg/ha)

* Based on comparison of survey data of June, 1976 and November, 1979 and specific weight data obtained during November, 1979.



Location of Runoff Samplings Sites 1 through 8, Four Mile Creek Watershed.

APPENDIX E

Flow Data Sites 1, 2, 3, 7, and 8

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	3/16/79	14	0	0.0	0.0	0.0	0.0	0.0
1	3/16/79	17	26	0.034	0.0031	0.218	0.37	0.37
1	3/16/79	18	12	0.037	0.0036	0.256	0.56	0.56
1	3/16/79	18	56	0.040	0.0041	0.294	0.76	0.76
1	3/16/79	20	10	0.043	0.0047	0.332	1.14	1.14
1	3/16/79	24	0	0.046	0.0052	0.370	2.49	2.49
1	3/17/79	11	16	0.049	0.0057	0.409	6.88	6.88
1	3/17/79	12	31	0.052	0.0063	0.447	7.41	7.41
1	3/17/79	13	40	0.055	0.0068	0.485	7.95	7.95
1	3/17/79	14	26	0.058	0.0073	0.523	8.34	8.34
1	3/17/79	14	48	0.061	0.0079	0.561	8.53	8.53
1	3/17/79	14	55	0.064	0.0087	0.619	8.60	8.60
1	3/17/79	15	0	0.067	0.0095	0.677	8.66	8.66
1	3/17/79	15	2	0.070	0.0103	0.735	8.68	8.68
1	3/17/79	15	7	0.073	0.0111	0.793	8.74	8.74
1	3/17/79	15	14	0.076	0.0119	0.851	8.84	8.84
1	3/17/79	15	21	0.079	0.0127	0.909	8.94	8.94
1	3/17/79	15	25	0.082	0.0136	0.967	9.01	9.01
1	3/17/79	15	29	0.085	0.0144	1.025	9.07	9.07
1	3/17/79	15	37	0.088	0.0152	1.083	9.21	9.21
1	3/17/79	15	40	0.091	0.0160	1.141	9.27	9.27
1	3/17/79	15	42	0.094	0.0171	1.216	9.31	9.31
1	3/17/79	15	45	0.098	0.0181	1.292	9.37	9.37
1	3/17/79	15	47	0.101	0.0192	1.368	9.41	9.41
1	3/17/79	15	49	0.104	0.0202	1.443	9.46	9.46
1	3/17/79	15	52	0.107	0.0213	1.519	9.53	9.53
1	3/17/79	15	55	0.110	0.0224	1.595	9.61	9.61
1	3/17/79	15	58	0.113	0.0234	1.670	9.69	9.69
1	3/17/79	16	0	0.116	0.0245	1.746	9.75	9.75
1	3/17/79	16	7	0.119	0.0256	1.822	9.96	9.96
1	3/17/79	16	16	0.122	0.0266	1.898	10.24	10.24
1	3/17/79	16	23	0.125	0.0280	1.994	10.47	10.47
1	3/17/79	17	4	0.122	0.0266	1.898	11.79	11.79
1	3/17/79	17	17	0.122	0.0266	1.898	12.21	12.21
1	3/17/79	17	19	0.128	0.0293	2.091	12.27	12.27
1	3/17/79	18	36	0.125	0.0280	1.994	14.89	14.89
1	3/17/79	20	30	0.125	0.0280	1.994	18.68	18.68
1	3/17/79	21	32	0.122	0.0266	1.898	20.69	20.69
1	3/17/79	22	19	0.119	0.0256	1.822	22.15	22.15
1	3/17/79	23	16	0.116	0.0245	1.746	23.85	23.85
1	3/17/79	23	51	0.113	0.0234	1.670	24.84	24.84
1	3/18/79	0	12	0.110	0.0224	1.595	25.41	25.41
1	3/18/79	0	14	0.116	0.0245	1.746	25.47	25.47
1	3/18/79	0	42	0.113	0.0234	1.670	26.27	26.27
1	3/18/79	0	48	0.110	0.0224	1.595	26.43	26.43
1	3/18/79	1	36	0.107	0.0213	1.519	27.68	27.68
1	3/18/79	1	40	0.104	0.0202	1.443	27.77	27.77
1	3/18/79	2	5	0.101	0.0192	1.368	28.36	28.36
1	3/18/79	2	24	0.098	0.0181	1.292	28.78	28.78
1	3/18/79	2	43	0.101	0.0192	1.368	29.20	29.20
1	3/18/79	2	48	0.104	0.0202	1.443	29.32	29.32
1	3/18/79	2	54	0.107	0.0213	1.519	29.47	29.47
1	3/18/79	2	57	0.110	0.0224	1.595	29.54	29.54
1	3/18/79	3	1	0.113	0.0234	1.670	29.65	29.65
1	3/18/79	3	15	0.116	0.0245	1.746	30.05	30.05
1	3/18/79	3	25	0.119	0.0256	1.822	30.35	30.35
1	3/18/79	3	29	0.122	0.0266	1.898	30.47	30.47
1	3/18/79	3	36	0.119	0.0256	1.822	30.69	30.69
1	3/18/79	3	40	0.116	0.0245	1.746	30.81	30.81
1	3/18/79	3	46	0.119	0.0256	1.822	30.99	30.99
1	3/18/79	3	58	0.122	0.0266	1.898	31.36	31.36
1	3/18/79	4	0	0.125	0.0280	1.994	31.42	31.42
1	3/18/79	4	4	0.122	0.0266	1.898	31.55	31.55
1	3/18/79	4	29	0.119	0.0256	1.822	32.33	32.33
1	3/18/79	4	50	0.119	0.0256	1.822	32.97	32.97
1	3/18/79	5	2	0.116	0.0245	1.746	33.32	33.32
1	3/18/79	5	25	0.113	0.0234	1.670	33.98	33.98
1	3/18/79	5	54	0.113	0.0234	1.670	34.79	34.79
1	3/18/79	6	40	0.110	0.0224	1.595	36.04	36.04
1	3/18/79	7	15	0.107	0.0213	1.519	36.95	36.95
1	3/18/79	8	24	0.107	0.0213	1.519	38.69	38.69
1	3/18/79	9	40	0.110	0.0224	1.595	40.66	40.66
1	3/18/79	10	13	0.113	0.0234	1.670	41.56	41.56
1	3/18/79	10	26	0.116	0.0245	1.746	41.93	41.93
1	3/18/79	11	1	0.119	0.0256	1.822	42.97	42.97
1	3/18/79	11	8	0.122	0.0266	1.898	43.19	43.19
1	3/18/79	11	15	0.125	0.0280	1.994	43.42	43.42
1	3/18/79	11	20	0.128	0.0293	2.091	43.59	43.59
1	3/18/79	11	31	0.131	0.0307	2.188	43.98	43.98
1	3/18/79	11	35	0.134	0.0321	2.285	44.13	44.13
1	3/18/79	11	40	0.137	0.0334	2.382	44.32	44.32
1	3/18/79	12	10	0.140	0.0348	2.479	45.54	45.54
1	3/18/79	12	17	0.143	0.0361	2.576	45.83	45.83
1	3/18/79	12	26	0.146	0.0375	2.673	46.23	46.23
1	3/18/79	12	45	0.149	0.0389	2.770	47.09	47.09
1	3/18/79	13	16	0.152	0.0402	2.866	48.54	48.54
1	3/18/79	13	43	0.152	0.0402	2.866	49.83	49.83
1	3/18/79	14	10	0.149	0.0389	2.770	51.10	51.10
1	3/18/79	14	28	0.152	0.0402	2.866	51.95	51.95
1	3/18/79	14	30	0.155	0.0419	2.986	52.05	52.05
1	3/18/79	14	32	0.158	0.0436	3.105	52.15	52.15
1	3/18/79	14	44	0.162	0.0452	3.224	52.78	52.78
1	3/18/79	14	57	0.158	0.0436	3.105	53.47	53.47
1	3/18/79	15	18	0.158	0.0436	3.105	54.55	54.55
1	3/18/79	15	22	0.162	0.0452	3.224	54.76	54.76
1	3/18/79	15	28	0.165	0.0469	3.343	55.09	55.09
1	3/18/79	15	31	0.168	0.0486	3.462	55.26	55.26
1	3/18/79	15	39	0.171	0.0502	3.581	55.73	55.73
1	3/18/79	15	42	0.174	0.0519	3.700	55.91	55.91
1	3/18/79	15	47	0.177	0.0536	3.819	56.23	56.23
1	3/18/79	15	52	0.180	0.0552	3.938	56.55	56.55
1	3/18/79	15	55	0.183	0.0569	4.057	56.75	56.75
1	3/18/79	16	3	0.186	0.0589	4.199	57.30	57.30
1	3/18/79	16	10	0.189	0.0609	4.340	57.80	57.80

TABLE D1- 1. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	3/18/79	15	27	0.192	0.0629	4.481	59.05	59.05
1	3/18/79	16	38	0.189	0.0609	4.340	59.86	59.86
1	3/18/79	16	43	0.186	0.0589	4.199	60.21	60.21
1	3/18/79	16	49	0.183	0.0569	4.057	60.62	60.62
1	3/18/79	17	46	0.183	0.0569	4.057	64.48	64.48
1	3/18/79	17	56	0.186	0.0589	4.199	65.17	65.17
1	3/18/79	18	20	0.189	0.0609	4.340	66.87	66.87
1	3/18/79	18	26	0.186	0.0589	4.199	67.30	67.30
1	3/18/79	18	57	0.183	0.0569	4.057	69.43	69.43
1	3/18/79	19	11	0.180	0.0552	3.938	70.37	70.37
1	3/18/79	19	28	0.177	0.0536	3.819	71.47	71.47
1	3/18/79	19	46	0.174	0.0519	3.700	72.59	72.59
1	3/18/79	20	4	0.171	0.0502	3.581	73.69	73.69
1	3/18/79	20	14	0.168	0.0486	3.462	74.27	74.27
1	3/18/79	20	30	0.165	0.0469	3.343	75.18	75.18
1	3/18/79	20	44	0.162	0.0452	3.224	75.95	75.95
1	3/18/79	20	56	0.158	0.0436	3.105	76.58	76.58
1	3/18/79	21	10	0.155	0.0419	2.986	77.29	77.29
1	3/18/79	21	28	0.152	0.0402	2.866	78.17	78.17
1	3/18/79	21	40	0.149	0.0389	2.770	78.73	78.73
1	3/18/79	21	48	0.146	0.0375	2.673	79.09	79.09
1	3/18/79	22	6	0.143	0.0361	2.576	79.88	79.88
1	3/18/79	22	28	0.140	0.0348	2.479	80.81	80.81
1	3/18/79	22	34	0.137	0.0334	2.382	81.05	81.05
1	3/18/79	22	45	0.134	0.0321	2.285	81.48	81.48
1	3/18/79	22	53	0.131	0.0307	2.188	81.78	81.78
1	3/18/79	22	59	0.128	0.0293	2.091	81.99	81.99
1	3/18/79	23	12	0.125	0.0280	1.994	82.43	82.43
1	3/18/79	23	32	0.122	0.0266	1.898	83.08	83.08
1	3/18/79	23	39	0.119	0.0256	1.822	83.30	83.30
1	3/18/79	23	52	0.116	0.0245	1.746	83.69	83.69
1	3/19/79	0	8	0.113	0.0234	1.670	84.14	84.14
1	3/19/79	0	29	0.110	0.0224	1.595	84.71	84.71
1	3/19/79	0	33	0.113	0.0234	1.670	84.82	84.82
1	3/19/79	0	40	0.116	0.0245	1.746	85.02	85.02
1	3/19/79	0	42	0.119	0.0256	1.822	85.08	85.08
1	3/19/79	0	44	0.122	0.0266	1.898	85.14	85.14
1	3/19/79	0	49	0.125	0.0280	1.994	85.30	85.30
1	3/19/79	0	58	0.122	0.0266	1.898	85.60	85.60
1	3/19/79	1	9	0.119	0.0256	1.822	85.94	85.94
1	3/19/79	1	18	0.116	0.0245	1.746	86.21	86.21
1	3/19/79	1	27	0.113	0.0234	1.670	86.46	86.46
1	3/19/79	1	40	0.110	0.0224	1.595	86.82	86.82
1	3/19/79	1	58	0.107	0.0213	1.519	87.28	87.28
1	3/19/79	2	18	0.104	0.0202	1.443	87.78	87.78
1	3/19/79	2	37	0.101	0.0192	1.368	88.22	88.22
1	3/19/79	2	56	0.098	0.0181	1.292	88.64	88.64
1	3/19/79	3	17	0.094	0.0171	1.216	89.08	89.08
1	3/19/79	3	35	0.091	0.0160	1.141	89.43	89.43
1	3/19/79	3	59	0.088	0.0152	1.083	89.88	89.88

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	3/19/79	4	45	0.079	0.0127	0.909	90.64	90.64
1	3/19/79	5	3	0.076	0.0119	0.851	90.90	90.90
1	3/19/79	5	20	0.073	0.0111	0.793	91.14	91.14
1	3/19/79	5	51	0.070	0.0103	0.735	91.53	91.53
1	3/19/79	6	20	0.067	0.0095	0.677	91.87	91.87
1	3/19/79	6	53	0.064	0.0087	0.619	92.23	92.23
1	3/19/79	7	16	0.061	0.0079	0.561	92.45	92.45
1	3/19/79	8	12	0.058	0.0073	0.523	92.96	92.96
1	3/19/79	9	5	0.055	0.0068	0.485	93.41	93.41
1	3/19/79	9	35	0.052	0.0063	0.447	93.64	93.64
1	3/19/79	10	34	0.049	0.0057	0.409	94.06	94.06
1	3/19/79	10	51	0.046	0.0052	0.370	94.17	94.17
1	3/19/79	11	33	0.043	0.0047	0.332	94.42	94.42
1	3/19/79	13	17	0.040	0.0041	0.294	94.96	94.96
1	3/19/79	13	57	0.037	0.0036	0.256	95.14	95.14
1	3/19/79	14	30	0.034	0.0031	0.218	95.27	95.27
1	3/19/79	15	4	0.030	0.0025	0.180	95.38	95.38
1	3/19/79	15	41	0.027	0.0023	0.162	95.49	95.49
1	3/19/79	16	20	0.024	0.0020	0.144	95.59	95.59
1	3/19/79	17	2	0.021	0.0018	0.126	95.68	95.68
1	3/19/79	17	59	0.018	0.0015	0.108	95.79	95.79
1	3/19/79	18	43	0.015	0.0013	0.090	95.87	95.87
1	3/19/79	19	0	0.012	0.0010	0.072	95.89	95.89
1	3/19/79	19	27	0.009	0.0008	0.054	95.92	95.92
1	3/19/79	19	50	0.006	0.0005	0.036	95.94	95.94
1	3/19/79	20	6	0.003	0.0003	0.018	95.94	95.94
1	3/19/79	20	20	0.0	0.0	0.0	95.94	95.94
1	3/22/79	23	24	0.0	0.0	0.0	0.0	95.94
1	3/22/79	23	45	0.003	0.0003	0.018	0.00	95.95
1	3/22/79	23	56	0.006	0.0005	0.036	0.01	95.95
1	3/22/79	23	58	0.009	0.0008	0.054	0.01	95.95
1	3/22/79	24	0	0.012	0.0010	0.072	0.01	95.96
1	3/23/79	0	10	0.015	0.0013	0.090	0.03	95.97
1	3/23/79	0	24	0.012	0.0010	0.072	0.04	95.99
1	3/23/79	0	34	0.009	0.0008	0.054	0.05	96.00
1	3/23/79	0	41	0.006	0.0005	0.036	0.06	96.00
1	3/23/79	0	53	0.003	0.0003	0.018	0.07	96.01
1	3/23/79	1	8	0.0	0.0	0.0	0.07	96.01
1	3/23/79	2	40	0.0	0.0	0.0	0.07	96.01
1	3/23/79	2	43	0.003	0.0003	0.018	0.07	96.01
1	3/23/79	2	47	0.006	0.0005	0.036	0.07	96.01
1	3/23/79	2	52	0.009	0.0008	0.054	0.07	96.02
1	3/23/79	3	1	0.012	0.0010	0.072	0.08	96.03
1	3/23/79	3	25	0.015	0.0013	0.090	0.12	96.06
1	3/23/79	3	52	0.018	0.0015	0.108	0.16	96.10
1	3/23/79	4	25	0.021	0.0018	0.126	0.22	96.17
1	3/23/79	4	41	0.021	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	3/23/79	7	40	0.012	0.0010	0.072	0.53	96.48
1	3/23/79	7	46	0.015	0.0013	0.090	0.54	96.49
1	3/23/79	7	56	0.018	0.0015	0.108	0.56	96.50
1	3/23/79	8	6	0.021	0.0018	0.126	0.58	96.52
1	3/23/79	8	13	0.024	0.0020	0.144	0.59	96.54
1	3/23/79	8	31	0.027	0.0023	0.162	0.64	96.58
1	3/23/79	9	0	0.030	0.0025	0.180	0.72	96.67
1	3/23/79	9	14	0.027	0.0023	0.162	0.76	96.71
1	3/23/79	9	26	0.024	0.0020	0.144	0.79	96.74
1	3/23/79	9	33	0.027	0.0023	0.162	0.81	96.76
1	3/23/79	10	5	0.030	0.0025	0.180	0.90	96.85
1	3/23/79	10	13	0.034	0.0031	0.218	0.93	96.87
1	3/23/79	10	33	0.037	0.0036	0.256	1.01	96.95
1	3/23/79	10	43	0.040	0.0041	0.294	1.05	97.00
1	3/23/79	11	4	0.043	0.0047	0.332	1.16	97.11
1	3/23/79	11	24	0.040	0.0041	0.294	1.27	97.21
1	3/23/79	12	0	0.037	0.0036	0.256	1.43	97.38
1	3/23/79	12	19	0.034	0.0031	0.218	1.51	97.45
1	3/23/79	12	33	0.030	0.0025	0.180	1.55	97.50
1	3/23/79	12	46	0.027	0.0023	0.162	1.59	97.54
1	3/23/79	12	54	0.024	0.0020	0.144	1.61	97.56
1	3/23/79	13	4	0.021	0.0018	0.126	1.63	97.58
1	3/23/79	13	44	0.018	0.0015	0.108	1.71	97.66
1	3/23/79	14	12	0.021	0.0018	0.126	1.77	97.71
1	3/23/79	14	17	0.024	0.0020	0.144	1.78	97.72
1	3/23/79	14	25	0.027	0.0023	0.162	1.80	97.74
1	3/23/79	14	30	0.030	0.0025	0.180	1.81	97.76
1	3/23/79	14	33	0.034	0.0031	0.218	1.82	97.77
1	3/23/79	14	37	0.037	0.0036	0.256	1.84	97.78
1	3/23/79	14	44	0.040	0.0041	0.294	1.87	97.81
1	3/23/79	14	47	0.043	0.0047	0.332	1.89	97.83
1	3/23/79	14	52	0.046	0.0052	0.370	1.91	97.86
1	3/23/79	14	58	0.049	0.0057	0.409	1.95	97.90
1	3/23/79	15	4	0.046	0.0052	0.370	1.99	97.94
1	3/23/79	15	11	0.043	0.0047	0.332	2.03	97.98
1	3/23/79	15	17	0.040	0.0041	0.294	2.06	98.01
1	3/23/79	15	21	0.037	0.0036	0.256	2.08	98.03
1	3/23/79	15	26	0.034	0.0031	0.218	2.10	98.05
1	3/23/79	15	31	0.030	0.0025	0.180	2.12	98.06
1	3/23/79	15	35	0.027	0.0023	0.162	2.13	98.07
1	3/23/79	15	48	0.024	0.0020	0.144	2.16	98.11
1	3/23/79	15	57	0.021	0.0018	0.126	2.18	98.13
1	3/23/79	16	3	0.021	0.0018	0.126	2.20	98.14
1	3/23/79	16	12	0.024	0.0020	0.144	2.22	98.16
1	3/23/79	16	17	0.027	0.0023	0.162	2.23	98.17
1	3/23/79	16	21	0.030	0.0025	0.180	2.24	98.19
1	3/23/79	16	22	0.034	0.0031	0.218	2.24	98.19
1	3/23/79	16	24	0.037	0.0036	0.256	2.25	98.20
1	3/23/79	16	26	0.040	0.0041	0.294	2.26	98.21
1	3/23/79	16	34	0.043	0.0047	0.332	2.30	98.25
1	3/23/79	16	44	0.040	0.0041	0.294	2.36	98.30
1	3/23/79	17	7	0.037	0.0036	0.256	2.46	98.40

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	3/23/79	17	17	0.034	0.0031	0.218	2.50	98.44
1	3/23/79	17	21	0.030	0.0025	0.180	2.51	98.46
1	3/23/79	17	27	0.027	0.0023	0.162	2.53	98.47
1	3/23/79	17	31	0.024	0.0020	0.144	2.54	98.48
1	3/23/79	17	35	0.021	0.0018	0.126	2.55	98.49
1	3/23/79	17	40	0.018	0.0015	0.108	2.56	98.50
1	3/23/79	17	43	0.015	0.0013	0.090	2.56	98.51
1	3/23/79	17	45	0.012	0.0010	0.072	2.57	98.51
1	3/23/79	17	46	0.009	0.0008	0.054	2.57	98.51
1	3/23/79	17	47	0.006	0.0005	0.036	2.57	98.51
1	3/23/79	17	49	0.003	0.0003	0.018	2.57	98.51
1	3/23/79	17	50	0.0	0.0	0.0	2.57	98.51
1	3/28/79	15	18	0.0	0.0	0.0	0.0	98.51
1	3/28/79	15	19	0.003	0.0003	0.018	0.00	98.51
1	3/28/79	15	20	0.006	0.0005	0.036	0.00	98.51
1	3/28/79	15	21	0.009	0.0008	0.054	0.00	98.52
1	3/28/79	15	25	0.012	0.0010	0.072	0.01	98.52
1	3/28/79	16	55	0.015	0.0013	0.090	0.13	98.64
1	3/28/79	17	14	0.018	0.0015	0.108	0.16	98.67
1	3/28/79	17	24	0.021	0.0018	0.126	0.18	98.69
1	3/28/79	17	31	0.024	0.0020	0.144	0.19	98.71
1	3/28/79	17	35	0.027	0.0023	0.162	0.20	98.72
1	3/28/79	17	39	0.030	0.0025	0.180	0.21	98.73
1	3/28/79	17	42	0.034	0.0031	0.218	0.22	98.74
1	3/28/79	17	44	0.037	0.0036	0.256	0.23	98.75
1	3/28/79	17	45	0.040	0.0041	0.294	0.24	98.75
1	3/28/79	17	46	0.043	0.0047	0.332	0.24	98.76
1	3/28/79	17	47	0.049	0.0057	0.409	0.25	98.76
1	3/28/79	17	50	0.052	0.0063	0.447	0.27	98.78
1	3/28/79	17	55	0.055	0.0068	0.485	0.31	98.82
1	3/28/79	18	20	0.055	0.0068	0.485	0.51	99.02
1	3/28/79	18	31	0.052	0.0063	0.447	0.60	99.11
1	3/28/79	18	42	0.049	0.0057	0.409	0.67	99.19
1	3/28/79	18	52	0.046	0.0052	0.370	0.74	99.25
1	3/28/79	19	2	0.043	0.0047	0.332	0.80	99.31
1	3/28/79	19	10	0.040	0.0041	0.294	0.84	99.35
1	3/28/79	19	23	0.037	0.0036	0.256	0.90	99.41
1	3/28/79	19	38	0.034	0.0031	0.218	0.96	99.47
1	3/28/79	19	56	0.030	0.0025	0.180	1.02	99.53
1	3/28/79	20	20	0.027	0.0023	0.162	1.09	99.60
1	3/28/79	20	46	0.024	0.0020	0.144	1.15	99.67
1	3/28/79	21	21	0.021	0.0018	0.126	1.23	99.75
1	3/28/79	21	57	0.018	0.0015	0.108	1.30	99.82
1	3/28/79	22	44	0.015	0.0013	0.090	1.38	99.89
1	3/28/79	23	44	0.012	0.0010	0.072	1.46	99.97
1	3/29/79	2	0	0.009	0.0008	0.054	1.60	100.12
1	3/29/79	6	19	0.009	0.0008	0.054	1.83	100.35
1	3/29/79	6	20	0.012	0.0010	0.072	1.84	100.35
1	3/29/79	6	21	0.015	0.0013	0.090	1.84	100.35
1	3/29/79	6	23	0.018	0.0015	0.108	1.84	100.35

TABLE 01- 1. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	3/29/79	6	24	0.021	0.0018	0.126	1.84	100.36
1	3/29/79	6	26	0.024	0.0020	0.144	1.85	100.36
1	3/29/79	6	28	0.027	0.0023	0.162	1.85	100.37
1	3/29/79	6	30	0.030	0.0025	0.180	1.86	100.37
1	3/29/79	6	32	0.034	0.0031	0.218	1.86	100.38
1	3/29/79	6	34	0.037	0.0036	0.256	1.87	100.39
1	3/29/79	6	36	0.040	0.0041	0.294	1.88	100.40
1	3/29/79	6	37	0.043	0.0047	0.332	1.89	100.40
1	3/29/79	6	40	0.046	0.0052	0.370	1.90	100.42
1	3/29/79	6	43	0.049	0.0057	0.409	1.92	100.44
1	3/29/79	6	46	0.052	0.0063	0.447	1.95	100.46
1	3/29/79	6	48	0.055	0.0068	0.485	1.96	100.47
1	3/29/79	6	51	0.058	0.0073	0.523	1.99	100.50
1	3/29/79	6	53	0.061	0.0079	0.561	2.00	100.52
1	3/29/79	6	57	0.064	0.0087	0.619	2.04	100.56
1	3/29/79	6	58	0.067	0.0095	0.677	2.05	100.57
1	3/29/79	7	5	0.070	0.0103	0.735	2.14	100.65
1	3/29/79	7	6	0.073	0.0111	0.793	2.15	100.66
1	3/29/79	7	8	0.076	0.0119	0.851	2.18	100.69
1	3/29/79	7	9	0.079	0.0127	0.909	2.19	100.70
1	3/29/79	7	10	0.082	0.0136	0.967	2.21	100.72
1	3/29/79	7	11	0.085	0.0144	1.025	2.22	100.74
1	3/29/79	7	12	0.091	0.0160	1.141	2.24	100.75
1	3/29/79	7	13	0.094	0.0171	1.216	2.26	100.77
1	3/29/79	7	14	0.098	0.0181	1.292	2.28	100.80
1	3/29/79	7	15	0.101	0.0192	1.368	2.30	100.82
1	3/29/79	7	16	0.104	0.0202	1.443	2.33	100.84
1	3/29/79	7	18	0.107	0.0213	1.519	2.38	100.89
1	3/29/79	7	19	0.110	0.0224	1.595	2.40	100.92
1	3/29/79	7	20	0.113	0.0234	1.670	2.43	100.94
1	3/29/79	7	21	0.116	0.0245	1.746	2.46	100.97
1	3/29/79	7	22	0.122	0.0266	1.898	2.49	101.00
1	3/29/79	7	23	0.125	0.0280	1.994	2.52	101.03
1	3/29/79	7	24	0.128	0.0293	2.091	2.56	101.07
1	3/29/79	7	25	0.131	0.0307	2.188	2.59	101.10
1	3/29/79	7	30	0.134	0.0321	2.285	2.78	101.29
1	3/29/79	7	36	0.131	0.0307	2.188	3.00	101.51
1	3/29/79	7	40	0.128	0.0293	2.091	3.14	101.66
1	3/29/79	7	43	0.125	0.0280	1.994	3.25	101.76
1	3/29/79	7	45	0.122	0.0266	1.898	3.31	101.82
1	3/29/79	7	47	0.119	0.0256	1.822	3.37	101.89
1	3/29/79	7	49	0.116	0.0245	1.746	3.43	101.95
1	3/29/79	7	51	0.113	0.0234	1.670	3.49	102.00
1	3/29/79	7	53	0.110	0.0224	1.595	3.54	102.06
1	3/29/79	7	55	0.107	0.0213	1.519	3.60	102.11
1	3/29/79	7	58	0.104	0.0202	1.443	3.67	102.18
1	3/29/79	8	0	0.101	0.0192	1.368	3.72	102.23
1	3/29/79	8	4	0.098	0.0181	1.292	3.81	102.32
1	3/29/79	8	8	0.094	0.0171	1.216	3.89	102.40
1	3/29/79	8	13	0.098	0.0181	1.292	3.99	102.51
1	3/29/79	8	15	0.101	0.0192	1.368	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	3/29/79	8	19	0.107	0.0213	1.519	4.13	102.65
1	3/29/79	8	20	0.110	0.0224	1.595	4.16	102.67
1	3/29/79	8	23	0.113	0.0234	1.670	4.24	102.75
1	3/29/79	8	25	0.116	0.0245	1.746	4.30	102.81
1	3/29/79	8	27	0.119	0.0256	1.822	4.36	102.87
1	3/29/79	8	29	0.122	0.0266	1.898	4.42	102.93
1	3/29/79	8	32	0.125	0.0280	1.994	4.52	103.03
1	3/29/79	8	34	0.128	0.0293	2.091	4.58	103.10
1	3/29/79	8	37	0.131	0.0307	2.188	4.69	103.20
1	3/29/79	8	39	0.134	0.0321	2.285	4.77	103.28
1	3/29/79	8	41	0.137	0.0334	2.382	4.84	103.36
1	3/29/79	8	45	0.140	0.0348	2.479	5.01	103.52
1	3/29/79	8	48	0.143	0.0361	2.576	5.13	103.64
1	3/29/79	8	53	0.146	0.0375	2.673	5.35	103.86
1	3/29/79	8	58	0.143	0.0361	2.576	5.57	104.08
1	3/29/79	9	0	0.140	0.0348	2.479	5.65	104.17
1	3/29/79	9	3	0.137	0.0334	2.382	5.77	104.29
1	3/29/79	9	6	0.134	0.0321	2.285	5.89	104.40
1	3/29/79	9	11	0.131	0.0307	2.188	6.08	104.59
1	3/29/79	9	12	0.125	0.0280	1.994	6.11	104.63
1	3/29/79	9	13	0.119	0.0256	1.822	6.14	104.66
1	3/29/79	9	14	0.116	0.0245	1.746	6.17	104.69
1	3/29/79	9	16	0.113	0.0234	1.670	6.23	104.74
1	3/29/79	9	18	0.110	0.0224	1.595	6.29	104.80
1	3/29/79	9	20	0.107	0.0213	1.519	6.34	104.85
1	3/29/79	9	22	0.104	0.0202	1.443	6.39	104.90
1	3/29/79	9	24	0.101	0.0192	1.368	6.43	104.95
1	3/29/79	9	24	0.098	0.0181	1.292	6.43	104.95
1	3/29/79	9	31	0.094	0.0171	1.216	6.58	105.09
1	3/29/79	9	36	0.091	0.0160	1.141	6.68	105.19
1	3/29/79	9	40	0.088	0.0152	1.083	6.75	105.27
1	3/29/79	9	47	0.085	0.0144	1.025	6.88	105.39
1	3/29/79	9	51	0.082	0.0136	0.967	6.94	105.45
1	3/29/79	9	57	0.079	0.0127	0.909	7.04	105.55
1	3/29/79	10	12	0.076	0.0119	0.851	7.26	105.77
1	3/29/79	10	17	0.076	0.0119	0.851	7.33	105.84
1	3/29/79	10	32	0.073	0.0111	0.793	7.53	106.04
1	3/29/79	10	44	0.070	0.0103	0.735	7.68	106.20
1	3/29/79	11	2	0.067	0.0095	0.677	7.90	106.41
1	3/29/79	11	17	0.064	0.0087	0.619	8.06	106.57
1	3/29/79	11	38	0.061	0.0079	0.561	8.26	106.78
1	3/29/79	11	52	0.064	0.0087	0.619	8.40	106.92
1	3/29/79	12	29	0.067	0.0095	0.677	8.80	107.32
1	3/29/79	12	39	0.070	0.0103	0.735	8.92	107.43
1	3/29/79	12	42	0.073	0.0111	0.793	8.96	107.47
1	3/29/79	12	44	0.076	0.0119	0.851	8.99	107.50
1	3/29/79	12	45	0.079	0.0127	0.909	9.00	107.51
1	3/29/79	12	46	0.082	0.0136	0.967	9.02	107.53
1	3/29/79	12	48	0.085	0.0144	1.025	9.05	107.56
1	3/29/79	12	50	0.088	0.0152	1.083	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	RUNOFF MM	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	3/29/79	12	56	0.098	0.0181	1.292	9.20	107.72	
1	3/29/79	13	0	0.101	0.0192	1.368	9.29	107.80	
1	3/29/79	13	3	0.104	0.0202	1.443	9.36	107.87	
1	3/29/79	13	8	0.107	0.0213	1.519	9.48	108.00	
1	3/29/79	13	13	0.110	0.0224	1.595	9.61	108.13	
1	3/29/79	13	24	0.113	0.0234	1.670	9.91	108.43	
1	3/29/79	13	31	0.110	0.0224	1.595	10.10	108.62	
1	3/29/79	13	38	0.107	0.0213	1.519	10.29	108.80	
1	3/29/79	13	45	0.104	0.0202	1.443	10.46	108.97	
1	3/29/79	13	50	0.101	0.0192	1.368	10.58	109.09	
1	3/29/79	13	56	0.098	0.0181	1.292	10.71	109.22	
1	3/29/79	14	1	0.094	0.0171	1.216	10.81	109.33	
1	3/29/79	14	7	0.091	0.0160	1.141	10.93	109.44	
1	3/29/79	14	13	0.088	0.0152	1.083	11.04	109.55	
1	3/29/79	14	21	0.085	0.0144	1.025	11.18	109.70	
1	3/29/79	14	27	0.082	0.0136	0.967	11.28	109.79	
1	3/29/79	14	34	0.079	0.0127	0.909	11.39	109.90	
1	3/29/79	14	40	0.076	0.0119	0.851	11.48	109.99	
1	3/29/79	14	57	0.073	0.0111	0.793	11.71	110.23	
1	3/29/79	15	8	0.070	0.0103	0.735	11.85	110.37	
1	3/29/79	15	20	0.067	0.0095	0.677	11.99	110.51	
1	3/29/79	15	28	0.064	0.0087	0.619	12.08	110.59	
1	3/29/79	15	42	0.061	0.0079	0.561	12.22	110.73	
1	3/29/79	16	12	0.058	0.0073	0.523	12.49	111.00	
1	3/29/79	16	26	0.055	0.0068	0.485	12.61	111.12	
1	3/29/79	16	40	0.052	0.0063	0.447	12.72	111.23	
1	3/29/79	16	53	0.049	0.0057	0.409	12.81	111.32	
1	3/29/79	17	9	0.046	0.0052	0.370	12.91	111.42	
1	3/29/79	17	56	0.043	0.0047	0.332	13.19	111.70	
1	3/29/79	18	9	0.046	0.0052	0.370	13.26	111.78	
1	3/29/79	18	17	0.049	0.0057	0.409	13.31	111.83	
1	3/29/79	18	19	0.052	0.0063	0.447	13.33	111.84	
1	3/29/79	18	22	0.055	0.0068	0.485	13.35	111.87	
1	3/29/79	18	34	0.058	0.0073	0.523	13.45	111.97	
1	3/29/79	18	56	0.058	0.0073	0.523	13.64	112.16	
1	3/29/79	19	9	0.055	0.0068	0.485	13.75	112.27	
1	3/29/79	19	20	0.052	0.0063	0.447	13.84	112.35	
1	3/29/79	19	34	0.049	0.0057	0.409	13.94	112.45	
1	3/29/79	19	46	0.046	0.0052	0.370	14.02	112.53	
1	3/29/79	19	48	0.049	0.0057	0.409	14.03	112.54	
1	3/29/79	19	49	0.052	0.0063	0.447	14.04	112.55	
1	3/29/79	19	50	0.061	0.0079	0.561	14.05	112.56	
1	3/29/79	19	51	0.067	0.0095	0.677	14.06	112.57	
1	3/29/79	19	52	0.076	0.0119	0.851	14.07	112.58	
1	3/29/79	19	53	0.079	0.0127	0.909	14.08	112.60	
1	3/29/79	19	54	0.082	0.0136	0.967	14.10	112.61	
1	3/29/79	19	56	0.085	0.0144	1.025	14.13	112.64	
1	3/29/79	20	4	0.088	0.0152	1.083	14.27	112.79	
1	3/29/79	20	5	0.091	0.0160	1.141	14.29	112.80	
1	3/29/79	20	6	0.094	0.0171	1.216	14.31	112.82	
1	3/29/79	20	7	0.098	0.0181	1.292	14.33	112.84	
1	3/29/79	20	8	0.101	0.0192	1.368	14.35	112.87	
1	3/29/79	20	9	0.104	0.0202	1.443	14.38	112.89	
1	3/29/79	20	10	0.107	0.0213	1.519	14.40	112.91	
1	3/29/79	20	11	0.110	0.0224	1.595	14.43	112.94	
1	3/29/79	20	16	0.113	0.0234	1.670	14.56	113.08	
1	3/29/79	20	23	0.110	0.0224	1.595	14.75	113.27	
1	3/29/79	20	26	0.107	0.0213	1.519	14.83	113.34	
1	3/29/79	20	30	0.104	0.0202	1.443	14.93	113.44	
1	3/29/79	20	33	0.101	0.0192	1.368	15.00	113.51	
1	3/29/79	20	37	0.098	0.0181	1.292	15.09	113.60	
1	3/29/79	20	39	0.094	0.0171	1.216	15.13	113.64	
1	3/29/79	20	42	0.091	0.0160	1.141	15.19	113.70	
1	3/29/79	20	45	0.088	0.0152	1.083	15.25	113.76	
1	3/29/79	20	49	0.085	0.0144	1.025	15.32	113.83	
1	3/29/79	20	52	0.082	0.0136	0.967	15.37	113.88	
1	3/29/79	20	56	0.079	0.0127	0.909	15.43	113.94	
1	3/29/79	21	0	0.076	0.0119	0.851	15.49	114.00	
1	3/29/79	21	5	0.073	0.0111	0.793	15.56	114.07	
1	3/29/79	21	9	0.070	0.0103	0.735	15.61	114.12	
1	3/29/79	21	14	0.067	0.0095	0.677	15.67	114.18	
1	3/29/79	21	19	0.064	0.0087	0.619	15.72	114.23	
1	3/29/79	21	25	0.061	0.0079	0.561	15.78	114.29	
1	3/29/79	21	32	0.058	0.0073	0.523	15.84	114.35	
1	3/29/79	21	40	0.055	0.0068	0.485	15.91	114.42	
1	3/29/79	21	47	0.052	0.0063	0.447	15.96	114.48	
1	3/29/79	21	56	0.049	0.0057	0.409	16.03	114.54	
1	3/29/79	22	6	0.046	0.0052	0.370	16.09	114.60	
1	3/29/79	22	27	0.043	0.0047	0.332	16.22	114.73	
1	3/29/79	22	34	0.043	0.0047	0.332	16.25	114.77	
1	3/29/79	23	1	0.040	0.0041	0.294	16.40	114.91	
1	3/29/79	23	24	0.037	0.0036	0.256	16.50	115.01	
1	3/29/79	23	39	0.034	0.0031	0.218	16.56	115.07	
1	3/29/79	24	0	0.030	0.0025	0.180	16.63	115.14	
1	3/30/79	0	25	0.027	0.0023	0.162	16.70	115.21	
1	3/30/79	1	4	0.024	0.0020	0.144	16.80	115.31	
1	3/30/79	1	40	0.021	0.0018	0.126	16.88	115.39	
1	3/30/79	3	1	0.018	0.0015	0.108	17.04	115.55	
1	3/30/79	4	40	0.015	0.0013	0.090	17.20	115.71	
1	3/30/79	5	35	0.012	0.0010	0.072	17.28	115.79	
1	3/30/79	6	17	0.009	0.0008	0.054	17.32	115.83	
1	3/30/79	7	10	0.006	0.0005	0.036	17.36	115.87	
1	3/30/79	8	17	0.003	0.0003	0.018	17.39	115.90	
1	3/30/79	9	0	0.0	0.0	0.0	17.40	115.91	
1	4/19/79	7	6	0.0	0.0	0.0	0.0	115.91	
1	4/19/79	9	22	0.003	0.0003	0.018	0.02	115.93	
1	4/19/79	10	56	0.003	0.0003	0.018	0.05	115.96	
1	4/19/79	11	5	0.006	0.0005	0.036	0.05	115.96	
1	4/19/79	12	2	0.006	0.0005	0.036	0.09	115.99	
1	4/19/79	12	46	0.009	0.0008	0.054	0.12	116.03	
1	4/19/79	12	58	0.012	0.0010	0.072	0.13	116.04	
1	4/19/79	13	4	0.009	0.0008	0.054	0.14	116.05	

TABLE D1- 1. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	4/19/79	14	6	0.006	0.0005	0.036	0.18	116.09
1	4/19/79	14	54	0.003	0.0003	0.018	0.21	116.11
1	4/19/79	16	0	0.0	0.0	0.0	0.22	116.12
1	4/20/79	3	40	0.0	0.0	0.0	0.0	116.12
1	4/20/79	3	41	0.006	0.0005	0.036	0.00	116.12
1	4/20/79	3	42	0.009	0.0008	0.054	0.00	116.13
1	4/20/79	3	53	0.012	0.0010	0.072	0.01	116.14
1	4/20/79	4	23	0.012	0.0010	0.072	0.05	116.17
1	4/20/79	4	26	0.015	0.0013	0.090	0.05	116.18
1	4/20/79	4	27	0.018	0.0015	0.108	0.05	116.18
1	4/20/79	4	28	0.024	0.0020	0.144	0.06	116.18
1	4/20/79	4	29	0.027	0.0023	0.162	0.06	116.18
1	4/20/79	4	30	0.034	0.0031	0.218	0.06	116.19
1	4/20/79	4	32	0.037	0.0036	0.256	0.07	116.19
1	4/20/79	4	35	0.034	0.0031	0.218	0.08	116.21
1	4/20/79	4	36	0.030	0.0025	0.180	0.09	116.21
1	4/20/79	4	37	0.027	0.0023	0.162	0.09	116.21
1	4/20/79	4	39	0.024	0.0020	0.144	0.09	116.22
1	4/20/79	4	41	0.021	0.0018	0.126	0.10	116.22
1	4/20/79	4	43	0.018	0.0015	0.108	0.10	116.23
1	4/20/79	4	49	0.015	0.0013	0.090	0.11	116.24
1	4/20/79	4	57	0.012	0.0010	0.072	0.12	116.25
1	4/20/79	5	14	0.009	0.0008	0.054	0.14	116.26
1	4/20/79	5	40	0.006	0.0005	0.036	0.16	116.28
1	4/20/79	7	3	0.009	0.0008	0.054	0.22	116.35
1	4/20/79	7	13	0.012	0.0010	0.072	0.23	116.36
1	4/20/79	7	23	0.012	0.0010	0.072	0.24	116.37
1	4/20/79	7	38	0.009	0.0008	0.054	0.26	116.38
1	4/20/79	8	22	0.006	0.0005	0.036	0.29	115.42
1	4/20/79	8	58	0.006	0.0005	0.036	0.31	116.44
1	4/20/79	9	16	0.009	0.0008	0.054	0.33	116.45
1	4/20/79	9	24	0.012	0.0010	0.072	0.34	116.46
1	4/20/79	9	47	0.015	0.0013	0.090	0.37	116.49
1	4/20/79	10	9	0.015	0.0013	0.090	0.40	116.52
1	4/20/79	10	24	0.012	0.0010	0.072	0.42	116.54
1	4/20/79	10	55	0.012	0.0010	0.072	0.46	116.58
1	4/20/79	11	5	0.015	0.0013	0.090	0.47	116.59
1	4/20/79	11	13	0.018	0.0015	0.108	0.48	116.61
1	4/20/79	11	16	0.021	0.0018	0.126	0.49	116.61
1	4/20/79	11	18	0.024	0.0020	0.144	0.49	116.62
1	4/20/79	11	23	0.027	0.0023	0.162	0.51	116.63
1	4/20/79	11	31	0.024	0.0020	0.144	0.53	116.65
1	4/20/79	11	38	0.021	0.0018	0.126	0.54	116.67
1	4/20/79	11	46	0.018	0.0015	0.108	0.56	116.68
1	4/20/79	11	58	0.015	0.0013	0.090	0.58	116.70
1	4/20/79	12	3	0.018	0.0015	0.108	0.59	116.71
1	4/20/79	12	9	0.021	0.0018	0.126	0.60	116.72
1	4/20/79	12	28	0.021	0.0018	0.126	0.64	116.76
1	4/20/79	12	32	0.030	0.0025	0.180	0.65	116.77
1	4/20/79	12	33	0.034	0.0031	0.218	0.65	116.78
1	4/20/79	12	34	0.040	0.0041	0.294	0.66	116.78
1	4/20/79	12	35	0.046	0.0052	0.370	0.66	116.78
1	4/20/79	12	36	0.049	0.0057	0.409	0.67	116.79
1	4/20/79	12	37	0.055	0.0068	0.485	0.68	116.80
1	4/20/79	12	38	0.061	0.0079	0.561	0.68	116.81
1	4/20/79	12	39	0.037	0.0036	0.256	0.69	116.81
1	4/20/79	12	40	0.030	0.0025	0.180	0.69	116.82
1	4/20/79	12	42	0.027	0.0023	0.162	0.70	116.82
1	4/20/79	12	45	0.030	0.0025	0.180	0.71	116.83
1	4/20/79	12	46	0.034	0.0031	0.218	0.71	116.84
1	4/20/79	12	48	0.037	0.0036	0.256	0.72	116.84
1	4/20/79	12	49	0.040	0.0041	0.294	0.72	116.85
1	4/20/79	12	54	0.043	0.0047	0.332	0.75	116.87
1	4/20/79	13	5	0.043	0.0047	0.332	0.81	116.94
1	4/20/79	13	15	0.040	0.0041	0.294	0.86	116.99
1	4/20/79	13	38	0.040	0.0041	0.294	0.98	117.10
1	4/20/79	13	42	0.037	0.0036	0.256	0.99	117.12
1	4/20/79	13	45	0.034	0.0031	0.218	1.01	117.13
1	4/20/79	13	47	0.030	0.0025	0.180	1.01	117.14
1	4/20/79	13	52	0.027	0.0023	0.162	1.03	117.15
1	4/20/79	13	57	0.024	0.0020	0.144	1.04	117.16
1	4/20/79	14	4	0.021	0.0018	0.126	1.06	117.18
1	4/20/79	14	14	0.018	0.0015	0.108	1.08	117.20
1	4/20/79	14	29	0.015	0.0013	0.090	1.10	117.22
1	4/20/79	14	45	0.012	0.0010	0.072	1.12	117.25
1	4/20/79	15	4	0.009	0.0008	0.054	1.14	117.26
1	4/20/79	15	30	0.006	0.0005	0.036	1.16	117.28
1	4/20/79	16	30	0.003	0.0003	0.018	1.19	117.31
1	4/20/79	17	0	0.0	0.0	0.0	1.19	117.32
1	6/ 4/79	18	58	0.0	0.0	0.0	0.0	117.32
1	6/ 4/79	18	59	0.037	0.0036	0.256	0.00	117.32
1	6/ 4/79	19	0	0.064	0.0087	0.619	0.01	117.33
1	6/ 4/79	19	1	0.082	0.0136	0.967	0.02	117.34
1	6/ 4/79	19	2	0.098	0.0181	1.292	0.04	117.36
1	6/ 4/79	19	3	0.113	0.0234	1.670	0.07	117.38
1	6/ 4/79	19	4	0.122	0.0266	1.898	0.10	117.41
1	6/ 4/79	19	5	0.128	0.0293	2.091	0.13	117.44
1	6/ 4/79	19	6	0.131	0.0307	2.188	0.16	117.48
1	6/ 4/79	19	7	0.131	0.0307	2.188	0.20	117.52
1	6/ 4/79	19	8	0.134	0.0321	2.285	0.24	117.55
1	6/ 4/79	19	9	0.149	0.0389	2.770	0.28	117.60
1	6/ 4/79	19	10	0.171	0.0502	3.581	0.33	117.65
1	6/ 4/79	19	11	0.180	0.0552	3.938	0.40	117.71
1	6/ 4/79	19	12	0.183	0.0569	4.057	0.46	117.78
1	6/ 4/79	19	13	0.177	0.0536	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	M	RUNOFF CMS	RUNOFF MMPH	STORM MM	ANNUAL MM
1	6/ 4/79	19	20	0.116	0.0245	1.746	0.85	118.16
1	6/ 4/79	19	26	0.082	0.0136	0.967	0.98	118.30
1	6/ 4/79	19	30	0.064	0.0087	0.619	1.03	118.35
1	6/ 4/79	19	36	0.049	0.0057	0.409	1.09	118.40
1	6/ 4/79	19	45	0.030	0.0025	0.180	1.13	118.45
1	6/ 4/79	19	49	0.024	0.0020	0.144	1.14	118.46
1	6/ 4/79	19	55	0.018	0.0015	0.108	1.15	118.47
1	6/ 4/79	20	2	0.012	0.0010	0.072	1.16	118.48
1	6/ 4/79	20	13	0.006	0.0005	0.036	1.17	118.49
1	6/ 4/79	20	16	0.0	0.0	0.0	1.17	118.49
1	6/ 9/79	10	51	0.0	0.0	0.0	0.0	118.49
1	6/ 9/79	11	0	0.003	0.0003	0.018	0.00	118.49
1	6/ 9/79	11	5	0.006	0.0005	0.036	0.00	118.49
1	6/ 9/79	11	6	0.009	0.0008	0.054	0.00	118.49
1	6/ 9/79	11	7	0.012	0.0010	0.072	0.01	118.50
1	6/ 9/79	11	9	0.015	0.0013	0.090	0.01	118.50
1	6/ 9/79	11	11	0.018	0.0015	0.108	0.01	118.50
1	6/ 9/79	11	15	0.015	0.0013	0.090	0.02	118.51
1	6/ 9/79	11	19	0.012	0.0010	0.072	0.02	118.51
1	6/ 9/79	11	22	0.009	0.0008	0.054	0.03	118.52
1	6/ 9/79	11	26	0.006	0.0005	0.036	0.03	118.52
1	6/ 9/79	11	37	0.003	0.0003	0.018	0.03	118.52
1	6/ 9/79	11	40	0.0	0.0	0.0	0.03	118.52
1	6/12/79	17	47	0.0	0.0	0.0	0.0	118.52
1	6/12/79	17	56	0.232	0.0907	6.464	0.48	119.01
1	6/12/79	17	57	0.259	0.1134	8.085	0.61	119.13
1	6/12/79	17	58	0.268	0.1215	8.660	0.75	119.27
1	6/12/79	17	59	0.262	0.1161	8.276	0.89	119.41
1	6/12/79	18	0	0.247	0.1026	7.318	1.02	119.54
1	6/12/79	18	1	0.226	0.0860	6.133	1.13	119.65
1	6/12/79	18	2	0.207	0.0728	5.188	1.22	119.75
1	6/12/79	18	3	0.198	0.0668	4.764	1.31	119.83
1	6/12/79	18	4	0.195	0.0648	4.623	1.38	119.91
1	6/12/79	18	5	0.244	0.1000	7.126	1.48	120.01
1	6/12/79	18	6	0.347	0.2061	14.696	1.66	120.19
1	6/12/79	18	8	0.732	1.0336	73.680	3.14	121.66
1	6/12/79	18	9	0.802	1.2677	90.374	4.50	123.03
1	6/12/79	18	10	0.853	1.4611	104.161	6.13	124.65
1	6/12/79	18	11	0.927	1.7619	125.599	8.04	126.56
1	6/12/79	18	12	1.052	2.3560	167.950	10.49	129.01
1	6/12/79	18	13	1.036	2.2795	162.500	13.24	131.76
1	6/12/79	18	14	1.018	2.1861	155.838	15.89	134.42
1	6/12/79	18	15	0.997	2.0813	148.369	18.43	136.95
1	6/12/79	18	16	0.978	1.9963	142.313	20.85	139.37
1	6/12/79	18	17	0.951	1.8712	133.391	23.15	141.67
1	6/12/79	18	18	0.930	1.7755	126.568	25.31	143.84
1	6/12/79	18	19	0.896	1.6327	116.394	27.34	145.86
1	6/12/79	18	20	0.860	1.4855	105.897	29.19	147.72
1	6/12/79	18	21	0.799	1.2567	89.587	30.82	149.34
1	6/12/79	18	22	0.707	0.9565	68.189	32.13	150.66
1	6/12/79	18	23	0.588	0.6366	45.379	33.08	151.61
1	6/12/79	18	27	0.354	0.2135	15.220	35.10	153.63
1	6/12/79	18	28	0.326	0.1812	12.919	35.34	153.86
1	6/12/79	18	29	0.287	0.1391	9.915	35.53	154.05
1	6/12/79	18	30	0.247	0.1026	7.318	35.67	154.19
1	6/12/79	18	31	0.223	0.0837	5.967	35.78	154.30
1	6/12/79	18	32	0.192	0.0629	4.481	35.87	154.39
1	6/12/79	18	33	0.177	0.0536	3.819	35.94	154.46
1	6/12/79	18	34	0.149	0.0389	2.770	35.99	154.52
1	6/12/79	18	35	0.131	0.0307	2.188	36.03	154.56
1	6/12/79	18	36	0.116	0.0245	1.746	36.07	154.59
1	6/12/79	18	37	0.104	0.0202	1.443	36.09	154.62
1	6/12/79	18	38	0.091	0.0160	1.141	36.11	154.64
1	6/12/79	18	39	0.082	0.0136	0.967	36.13	154.66
1	6/12/79	18	40	0.073	0.0111	0.793	36.15	154.67
1	6/12/79	18	41	0.064	0.0087	0.619	36.16	154.68
1	6/12/79	18	42	0.058	0.0073	0.523	36.17	154.69
1	6/12/79	18	45	0.040	0.0041	0.294	36.19	154.71
1	6/12/79	18	46	0.037	0.0036	0.256	36.19	154.72
1	6/12/79	18	48	0.024	0.0020	0.144	36.20	154.72
1	6/12/79	18	49	0.021	0.0018	0.126	36.20	154.73
1	6/12/79	18	51	0.012	0.0010	0.072	36.20	154.73
1	6/12/79	18	53	0.006	0.0005	0.036	36.21	154.73
1	6/12/79	18	55	0.003	0.0003	0.018	36.21	154.73
1	6/12/79	19	4	0.0	0.0	0.0	36.21	154.73
1	6/19/79	22	26	0.0	0.0	0.0	0.0	154.73
1	6/19/79	22	27	0.018	0.0015	0.108	0.00	154.73
1	6/19/79	22	28	0.030	0.0025	0.180	0.00	154.74
1	6/19/79	22	29	0.049	0.0057	0.409	0.01	154.74
1	6/19/79	22	30	0.070	0.0103	0.735	0.02	154.75
1	6/19/79	22	31	0.082	0.0136	0.967	0.03	154.76
1	6/19/79	22	32	0.091	0.0160	1.141	0.05	154.78
1	6/19/79	22	33	0.101	0.0192	1.368	0.07	154.80
1	6/19/79	22	34	0.107	0.0213	1.519	0.09	154.83
1	6/19/79	22	35	0.119	0.0256	1.822	0.12	154.86
1	6/19/79	22	37	0.125	0.0280	1.994	0.19	154.92
1	6/19/79	22	39	0.122	0.0266	1.898	0.25	154.98
1	6/19/79	22	40	0.119	0.0256	1.822	0.28	155.01
1	6/19/79	22	41	0.113	0.0234	1.670	0.31	155.04
1	6/19/79	22	42	0.104	0.0202	1.443	0.34	155.07
1	6/19/79	22	43	0.098	0.0181	1.292	0.36	155.09
1	6/19/79	22	44	0.088	0.0152	1.083	0.38	155.11
1	6/19/79	22	45	0.082	0.0136	0.967	0.40	155.13
1	6/19/79	22	46	0.076	0.0119	0.851	0.41	155.14
1	6/19/79	22	47	0.070	0.0103	0.735	0.42	155.16
1	6/19/79	22	48	0.064	0.0087	0.619	0.44	155.17
1	6/19/79	22	49	0.058	0.0073	0.523	0.45	155.18
1	6/19/79	22	50	0.052	0.0063	0.447	0.45	155.19

TABLE D1- 1. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	6/19/79	22	51	0.046	0.0052	0.370	0.46	155.19
1	6/19/79	22	52	0.043	0.0047	0.332	0.47	155.20
1	6/19/79	22	53	0.037	0.0036	0.256	0.47	155.20
1	6/19/79	22	54	0.030	0.0025	0.180	0.47	155.21
1	6/19/79	22	55	0.027	0.0023	0.162	0.48	155.21
1	6/19/79	22	56	0.024	0.0020	0.144	0.48	155.21
1	6/19/79	22	57	0.021	0.0018	0.126	0.48	155.22
1	6/19/79	22	58	0.018	0.0015	0.108	0.48	155.22
1	6/19/79	22	59	0.015	0.0013	0.090	0.49	155.22
1	6/19/79	23	1	0.012	0.0010	0.072	0.49	155.22
1	6/19/79	23	2	0.009	0.0008	0.054	0.49	155.22
1	6/19/79	23	5	0.0	0.0	0.0	0.49	155.22
1	6/27/79	0	10	0.0	0.0	0.0	0.0	155.22
1	6/27/79	0	11	0.009	0.0008	0.054	0.00	155.22
1	6/27/79	0	12	0.049	0.0057	0.409	0.00	155.23
1	6/27/79	0	13	0.098	0.0181	1.292	0.02	155.24
1	6/27/79	0	14	0.168	0.0486	3.462	0.06	155.28
1	6/27/79	0	15	0.241	0.0976	6.960	0.14	155.37
1	6/27/79	0	16	0.634	0.7493	53.413	0.65	155.87
1	6/27/79	0	17	0.671	0.8495	60.559	1.60	156.82
1	6/27/79	0	18	0.692	0.9110	64.939	2.64	157.87
1	6/27/79	0	19	0.677	0.8671	61.810	3.70	158.92
1	6/27/79	0	20	0.643	0.7730	55.108	4.67	159.90
1	6/27/79	0	21	0.597	0.6586	46.953	5.52	160.75
1	6/27/79	0	22	0.552	0.5508	39.262	6.24	161.47
1	6/27/79	0	23	0.500	0.4457	31.773	6.84	162.06
1	6/27/79	0	24	0.469	0.3896	27.776	7.33	162.56
1	6/27/79	0	25	0.436	0.3324	23.699	7.76	162.98
1	6/27/79	0	26	0.396	0.2704	19.278	8.12	163.34
1	6/27/79	0	27	0.363	0.2246	16.008	8.41	163.64
1	6/27/79	0	28	0.338	0.1951	13.908	8.66	163.89
1	6/27/79	0	29	0.317	0.1710	12.192	8.88	164.10
1	6/27/79	0	30	0.283	0.1360	9.697	9.06	164.29
1	6/27/79	0	31	0.268	0.1215	8.660	9.21	164.44
1	6/27/79	0	32	0.253	0.1080	7.701	9.35	164.57
1	6/27/79	0	33	0.244	0.1000	7.126	9.47	164.70
1	6/27/79	0	34	0.238	0.0953	6.795	9.59	164.81
1	6/27/79	0	35	0.232	0.0907	6.464	9.70	164.92
1	6/27/79	0	36	0.226	0.0860	6.133	9.81	165.03
1	6/27/79	0	37	0.223	0.0837	5.967	9.91	165.13
1	6/27/79	0	38	0.219	0.0814	5.802	10.00	165.23
1	6/27/79	0	40	0.216	0.0791	5.636	10.20	165.42
1	6/27/79	0	41	0.219	0.0814	5.802	10.29	165.51
1	6/27/79	0	42	0.223	0.0837	5.967	10.39	165.61
1	6/27/79	0	43	0.226	0.0860	6.133	10.49	165.71
1	6/27/79	0	44	0.232	0.0907	6.464	10.59	165.82
1	6/27/79	0	45	0.235	0.0930	6.629	10.70	165.93
1	6/27/79	0	46	0.241	0.0976	6.960	10.82	166.04
1	6/27/79	0	47	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	6/27/79	0	49	0.262	0.1161	8.276	11.19	166.42
1	6/27/79	0	50	0.274	0.1269	9.043	11.34	166.56
1	6/27/79	0	51	0.283	0.1360	9.697	11.49	166.72
1	6/27/79	0	52	0.287	0.1391	9.915	11.66	166.88
1	6/27/79	0	53	0.293	0.1452	10.352	11.83	167.05
1	6/27/79	0	54	0.290	0.1422	10.134	12.00	167.22
1	6/27/79	0	55	0.271	0.1242	8.852	12.16	167.38
1	6/27/79	0	56	0.250	0.1053	7.509	12.29	167.52
1	6/27/79	0	57	0.226	0.0860	6.133	12.41	167.63
1	6/27/79	0	58	0.201	0.0688	4.905	12.50	167.72
1	6/27/79	0	59	0.183	0.0569	4.057	12.57	167.80
1	6/27/79	1	0	0.165	0.0469	3.343	12.63	167.86
1	6/27/79	1	1	0.140	0.0348	2.479	12.68	167.91
1	6/27/79	1	2	0.122	0.0266	1.898	12.72	167.94
1	6/27/79	1	3	0.107	0.0213	1.519	12.75	167.97
1	6/27/79	1	4	0.094	0.0171	1.216	12.77	167.99
1	6/27/79	1	5	0.085	0.0144	1.025	12.79	168.01
1	6/27/79	1	6	0.076	0.0119	0.851	12.81	168.03
1	6/27/79	1	7	0.067	0.0095	0.677	12.82	168.04
1	6/27/79	1	8	0.058	0.0073	0.523	12.83	168.05
1	6/27/79	1	9	0.049	0.0057	0.409	12.84	168.06
1	6/27/79	1	10	0.043	0.0047	0.332	12.84	168.07
1	6/27/79	1	11	0.037	0.0036	0.256	12.85	168.07
1	6/27/79	1	12	0.030	0.0025	0.180	12.85	168.07
1	6/27/79	1	13	0.024	0.0020	0.144	12.85	168.08
1	6/27/79	1	14	0.021	0.0018	0.126	12.86	168.08
1	6/27/79	1	15	0.015	0.0013	0.090	12.86	168.08
1	6/27/79	1	16	0.012	0.0010	0.072	12.86	168.08
1	6/27/79	1	17	0.009	0.0008	0.054	12.86	168.08
1	6/27/79	1	18	0.006	0.0005	0.036	12.86	168.08
1	6/27/79	1	20	0.003	0.0003	0.018	12.86	168.08
1	6/27/79	1	23	0.0	0.0	0.0	12.86	168.08
1	7/ 3/79	7	57	0.0	0.0	0.0	0.0	168.08
1	7/ 3/79	7	58	0.006	0.0005	0.036	0.00	168.09
1	7/ 3/79	7	59	0.018	0.0015	0.108	0.00	168.09
1	7/ 3/79	8	0	0.037	0.0036	0.256	0.00	168.09
1	7/ 3/79	8	1	0.040	0.0041	0.294	0.01	168.09
1	7/ 3/79	8	2	0.043	0.0047	0.332	0.01	168.10
1	7/ 3/79	8	3	0.046	0.0052	0.370	0.02	168.10
1	7/ 3/79	8	4	0.055	0.0068	0.485	0.03	168.11
1	7/ 3/79	8	5	0.061	0.0079	0.561	0.04	168.12
1	7/ 3/79	8	7	0.067	0.0095	0.677	0.06	168.14
1	7/ 3/79	8	8	0.073	0.0111	0.793	0.07	168.15
1	7/ 3/79	8	9	0.076	0.0119	0.851	0.08	168.17
1	7/ 3/79	8	10	0.082	0.0136	0.967	0.10	168.18
1	7/ 3/79	8	11	0.091	0.0160	1.141	0.12	168.20
1	7/ 3/79	8	12	0.098	0.0181	1.292	0.14	168.22
1	7/ 3/79	8	13	0.101	0.0192	1.368	0.16	168.24

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	7/ 3/79	8	19	0.091	0.0160	1.141	0.29	168.37
1	7/ 3/79	8	20	0.085	0.0144	1.025	0.31	168.39
1	7/ 3/79	8	21	0.076	0.0119	0.851	0.32	168.41
1	7/ 3/79	8	22	0.067	0.0095	0.677	0.33	168.42
1	7/ 3/79	8	23	0.061	0.0079	0.561	0.34	168.43
1	7/ 3/79	8	24	0.055	0.0068	0.485	0.35	168.44
1	7/ 3/79	8	25	0.046	0.0052	0.370	0.36	168.45
1	7/ 3/79	8	26	0.040	0.0041	0.294	0.37	168.45
1	7/ 3/79	8	27	0.030	0.0025	0.180	0.37	168.45
1	7/ 3/79	8	28	0.024	0.0020	0.144	0.37	168.46
1	7/ 3/79	8	29	0.018	0.0015	0.108	0.38	168.46
1	7/ 3/79	8	30	0.012	0.0010	0.072	0.38	168.46
1	7/ 3/79	8	31	0.009	0.0008	0.054	0.38	168.46
1	7/ 3/79	8	32	0.006	0.0005	0.036	0.38	168.46
1	7/ 3/79	8	33	0.003	0.0003	0.018	0.38	168.46
1	7/ 3/79	8	34	0.0	0.0	0.0	0.38	168.46
1	7/ 3/79	8	44	0.0	0.0	0.0	0.38	168.46
1	7/ 3/79	8	45	0.034	0.0031	0.218	0.38	168.47
1	7/ 3/79	8	46	0.079	0.0127	0.909	0.39	168.47
1	7/ 3/79	8	47	0.128	0.0293	2.091	0.42	168.50
1	7/ 3/79	8	48	0.174	0.0519	3.700	0.46	168.55
1	7/ 3/79	8	49	0.216	0.0791	5.636	0.54	168.63
1	7/ 3/79	8	50	0.262	0.1161	8.276	0.66	168.74
1	7/ 3/79	8	51	0.329	0.1846	13.161	0.84	168.92
1	7/ 3/79	8	52	0.387	0.2578	18.376	1.10	169.18
1	7/ 3/79	8	53	0.415	0.2985	21.276	1.43	169.51
1	7/ 3/79	8	54	0.408	0.2891	20.610	1.78	169.86
1	7/ 3/79	8	55	0.396	0.2704	19.278	2.11	170.19
1	7/ 3/79	8	56	0.390	0.2620	18.676	2.43	170.51
1	7/ 3/79	8	57	0.375	0.2409	17.172	2.73	170.81
1	7/ 3/79	8	58	0.357	0.2172	15.483	3.00	171.08
1	7/ 3/79	8	59	0.338	0.1951	13.908	3.24	171.33
1	7/ 3/79	9	0	0.326	0.1812	12.919	3.47	171.55
1	7/ 3/79	9	1	0.320	0.1744	12.435	3.68	171.76
1	7/ 3/79	9	2	0.311	0.1642	11.708	3.88	171.96
1	7/ 3/79	9	3	0.296	0.1483	10.570	4.06	172.15
1	7/ 3/79	9	4	0.280	0.1330	9.479	4.23	172.32
1	7/ 3/79	9	5	0.271	0.1242	8.852	4.38	172.47
1	7/ 3/79	9	6	0.265	0.1188	8.468	4.53	172.61
1	7/ 3/79	9	7	0.259	0.1134	8.085	4.67	172.75
1	7/ 3/79	9	8	0.250	0.1053	7.509	4.80	172.88
1	7/ 3/79	9	9	0.238	0.0953	6.795	4.92	173.00
1	7/ 3/79	9	10	0.223	0.0837	5.967	5.02	173.11
1	7/ 3/79	9	11	0.207	0.0728	5.188	5.11	173.20
1	7/ 3/79	9	12	0.192	0.0629	4.481	5.20	173.28
1	7/ 3/79	9	13	0.180	0.0552	3.938	5.27	173.35
1	7/ 3/79	9	14	0.168	0.0486	3.462	5.33	173.41
1	7/ 3/79	9	15	0.155	0.0419	2.986	5.38	173.47
1	7/ 3/79	9	16	0.146	0.0375	2.673	5.43	173.51
1	7/ 3/79	9	17	0.140	0.0348	2.479	5.47	173.56
1	7/ 3/79	9	18	0.134	0.0321	2.285	5.51	173.60
1	7/ 3/79	9	19	0.125	0.0280	1.994	5.55	173.63
1	7/ 3/79	9	20	0.116	0.0245	1.746	5.58	173.66
1	7/ 3/79	9	22	0.110	0.0224	1.595	5.63	173.72
1	7/ 3/79	9	23	0.122	0.0266	1.898	5.66	173.75
1	7/ 3/79	9	24	0.143	0.0361	2.576	5.70	173.78
1	7/ 3/79	9	25	0.180	0.0552	3.938	5.75	173.84
1	7/ 3/79	9	26	0.216	0.0791	5.636	5.83	173.92
1	7/ 3/79	9	27	0.262	0.1161	8.276	5.95	174.03
1	7/ 3/79	9	28	0.329	0.1846	13.161	6.13	174.21
1	7/ 3/79	9	29	0.448	0.3528	25.152	6.45	174.53
1	7/ 3/79	9	30	0.546	0.5375	38.314	6.98	175.06
1	7/ 3/79	9	31	0.576	0.6074	43.300	7.66	175.74
1	7/ 3/79	9	32	0.616	0.7034	50.143	8.44	176.52
1	7/ 3/79	9	33	0.643	0.7730	55.108	9.31	177.40
1	7/ 3/79	9	34	0.664	0.8325	59.348	10.27	178.35
1	7/ 3/79	9	35	0.701	0.9373	66.816	11.32	179.40
1	7/ 3/79	9	36	0.738	1.0528	75.052	12.50	180.58
1	7/ 3/79	9	37	0.756	1.1106	79.170	13.78	181.87
1	7/ 3/79	9	38	0.768	1.1508	82.037	15.13	183.21
1	7/ 3/79	9	39	0.774	1.1718	83.531	16.51	184.59
1	7/ 3/79	9	40	0.768	1.1508	82.037	17.89	185.97
1	7/ 3/79	9	41	0.756	1.1106	79.170	19.23	187.32
1	7/ 3/79	9	42	0.768	1.1508	82.037	20.57	188.66
1	7/ 3/79	9	43	0.789	1.2241	87.265	21.99	190.07
1	7/ 3/79	9	44	0.811	1.3009	92.736	23.49	191.57
1	7/ 3/79	9	46	0.792	1.2346	88.012	26.50	194.58
1	7/ 3/79	9	47	0.725	1.0143	72.307	27.83	195.92
1	7/ 3/79	9	48	0.640	0.7646	54.503	28.89	196.97
1	7/ 3/79	9	49	0.555	0.5578	39.767	29.68	197.76
1	7/ 3/79	9	50	0.500	0.4457	31.773	30.27	198.36
1	7/ 3/79	9	51	0.445	0.3477	24.789	30.74	198.83
1	7/ 3/79	9	52	0.378	0.2451	17.473	31.10	199.18
1	7/ 3/79	9	53	0.338	0.1951	13.908	31.36	199.44
1	7/ 3/79	9	54	0.311	0.1642	11.708	31.57	199.65
1	7/ 3/79	9	55	0.262	0.1161	8.276	31.74	199.82
1	7/ 3/79	9	56	0.229	0.0883	6.298	31.86	199.94
1	7/ 3/79	9	57	0.195	0.0648	4.623	31.95	200.03
1	7/ 3/79	9	58	0.171	0.0502	3.581	32.02	200.10
1	7/ 3/79	9	59	0.143	0.0361	2.576	32.07	200.15
1	7/ 3/79	10	0	0.125	0.0280	1.994	32.11	200.19
1	7/ 3/79	10	1	0.110	0.0224	1.595	32.14	200.22
1	7/ 3/79	10	2	0.094	0.0171	1.216	32.16	200.25
1	7/ 3/79	10	3	0.082	0.0136	0.967	32.18	200.26
1	7/ 3/79	10	4	0.070	0.0103	0.735	32.19	200.28
1	7/ 3/79	10	5	0.058	0.0073	0.523	32.20	200.29
1	7/ 3/79	10	6	0.046	0.0052	0.370	32.21	200.30
1	7/ 3/79	10	7	0.040	0.0041	0.294	32.22	200.30
1	7/ 3/79	10	8	0.030	0.0025	0.180	32.22	200.30
1	7/ 3/79	10	9	0.024	0.0020	0.144	32.22	200.31
1	7/ 3/79	10	10	0.018	0.0015	0.108	32.23	200.31
1	7/ 3/79	10	11	0.012	0.0010	0.072	32.23	200.31
1	7/ 3/79	10	12	0.006	0.0005	0.036	32.23	200.31
1	7/ 3/79	10	15	0.003	0.0003	0.018	32.23	200.31

TABLE D1- 1. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	7/ 3/79	10	22	0.0	0.0	0.0	32.23	200.31
1	7/ 3/79	20	48	0.0	0.0	0.0	0.0	200.31
1	7/ 3/79	20	49	0.018	0.0015	0.108	0.00	200.32
1	7/ 3/79	20	50	0.055	0.0068	0.485	0.01	200.32
1	7/ 3/79	20	51	0.076	0.0119	0.851	0.02	200.33
1	7/ 3/79	20	52	0.116	0.0245	1.746	0.04	200.35
1	7/ 3/79	20	53	0.158	0.0436	3.105	0.08	200.39
1	7/ 3/79	20	54	0.195	0.0648	4.623	0.14	200.46
1	7/ 3/79	20	55	0.235	0.0930	6.629	0.24	200.55
1	7/ 3/79	20	56	0.283	0.1360	9.697	0.37	200.69
1	7/ 3/79	20	57	0.335	0.1914	13.646	0.57	200.88
1	7/ 3/79	20	58	0.351	0.2098	14.958	0.81	201.12
1	7/ 3/79	20	59	0.335	0.1914	13.646	1.04	201.36
1	7/ 3/79	21	0	0.320	0.1744	12.435	1.26	201.58
1	7/ 3/79	21	1	0.283	0.1360	9.697	1.45	201.76
1	7/ 3/79	21	2	0.250	0.1053	7.509	1.59	201.90
1	7/ 3/79	21	3	0.223	0.0837	5.967	1.70	202.02
1	7/ 3/79	21	4	0.192	0.0629	4.481	1.79	202.10
1	7/ 3/79	21	5	0.174	0.0519	3.700	1.86	202.17
1	7/ 3/79	21	6	0.152	0.0402	2.866	1.91	202.23
1	7/ 3/79	21	7	0.134	0.0321	2.285	1.95	202.27
1	7/ 3/79	21	8	0.116	0.0245	1.746	1.99	202.30
1	7/ 3/79	21	9	0.101	0.0192	1.368	2.01	202.33
1	7/ 3/79	21	10	0.085	0.0144	1.025	2.03	202.35
1	7/ 3/79	21	11	0.073	0.0111	0.793	2.05	202.36
1	7/ 3/79	21	12	0.064	0.0087	0.619	2.06	202.38
1	7/ 3/79	21	13	0.055	0.0068	0.485	2.07	202.38
1	7/ 3/79	21	14	0.046	0.0052	0.370	2.08	202.39
1	7/ 3/79	21	15	0.037	0.0036	0.256	2.08	202.40
1	7/ 3/79	21	16	0.030	0.0025	0.180	2.09	202.40
1	7/ 3/79	21	17	0.024	0.0020	0.144	2.09	202.40
1	7/ 3/79	21	18	0.015	0.0013	0.090	2.09	202.41
1	7/ 3/79	21	19	0.012	0.0010	0.072	2.09	202.41
1	7/ 3/79	21	20	0.009	0.0008	0.054	2.09	202.41
1	7/ 3/79	21	21	0.006	0.0005	0.036	2.09	202.41
1	7/ 3/79	21	23	0.003	0.0003	0.018	2.10	202.41
1	7/ 3/79	21	26	0.006	0.0005	0.036	2.10	202.41
1	7/ 3/79	21	31	0.006	0.0005	0.036	2.10	202.41
1	7/ 3/79	21	36	0.003	0.0003	0.018	2.10	202.42
1	7/ 3/79	21	39	0.0	0.0	0.0	2.10	202.42
1	7/13/79	9	52	0.0	0.0	0.0	0.0	202.42
1	7/13/79	9	53	0.006	0.0005	0.036	0.00	202.42
1	7/13/79	9	54	0.012	0.0010	0.072	0.00	202.42
1	7/13/79	9	56	0.009	0.0008	0.054	0.00	202.42
1	7/13/79	9	57	0.006	0.0005	0.036	0.00	202.42
1	7/13/79	9	59	0.003	0.0003	0.018	0.00	202.42
1	7/13/79	10	7	0.006	0.0005	0.036	0.01	202.43
1	7/13/79	10	9	0.0	0.0	0.0	0.01	202.43
1	7/13/79	20	2	0.0	0.0	0.0	0.01	202.43
1	7/13/79	20	3	0.030	0.0025	0.180	0.01	202.43
1	7/13/79	20	4	0.064	0.0087	0.619	0.02	202.44
1	7/13/79	20	5	0.094	0.0171	1.216	0.03	202.45
1	7/13/79	20	6	0.137	0.0334	2.382	0.06	202.48
1	7/13/79	20	7	0.195	0.0648	4.623	0.12	202.54
1	7/13/79	20	8	0.244	0.1000	7.126	0.22	202.64
1	7/13/79	20	9	0.287	0.1391	9.915	0.36	202.78
1	7/13/79	20	10	0.448	0.3528	25.152	0.65	203.07
1	7/13/79	20	11	0.494	0.4338	30.925	1.12	203.54
1	7/13/79	20	12	0.448	0.3528	25.152	1.59	204.01
1	7/13/79	20	13	0.411	0.2938	20.943	1.97	204.39
1	7/13/79	20	14	0.372	0.2367	16.872	2.29	204.70
1	7/13/79	20	15	0.341	0.1988	14.171	2.55	204.96
1	7/13/79	20	16	0.314	0.1676	11.950	2.77	205.18
1	7/13/79	20	17	0.259	0.1134	8.085	2.93	205.35
1	7/13/79	20	18	0.219	0.0814	5.802	3.05	205.46
1	7/13/79	20	19	0.189	0.0609	4.340	3.13	205.55
1	7/13/79	20	20	0.162	0.0452	3.224	3.20	205.61
1	7/13/79	20	21	0.137	0.0334	2.382	3.24	205.66
1	7/13/79	20	22	0.116	0.0245	1.746	3.28	205.69
1	7/13/79	20	23	0.098	0.0181	1.292	3.30	205.72
1	7/13/79	20	24	0.079	0.0127	0.909	3.32	205.74
1	7/13/79	20	25	0.064	0.0087	0.619	3.33	205.75
1	7/13/79	20	26	0.049	0.0057	0.409	3.34	205.76
1	7/13/79	20	27	0.037	0.0036	0.256	3.35	205.76
1	7/13/79	20	28	0.030	0.0025	0.180	3.35	205.77
1	7/13/79	20	29	0.021	0.0018	0.126	3.35	205.77
1	7/13/79	20	30	0.015	0.0013	0.090	3.35	205.77
1	7/13/79	20	31	0.012	0.0010	0.072	3.36	205.77
1	7/13/79	20	32	0.009	0.0008	0.054	3.36	205.77
1	7/13/79	20	33	0.006	0.0005	0.036	3.36	205.77
1	7/13/79	20	36	0.003	0.0003	0.018	3.36	205.78
1	7/13/79	20	44	0.0	0.0	0.0	3.36	205.78
1	7/14/79	0	45	0.0	0.0	0.0	3.36	205.78
1	7/14/79	0	46	0.006	0.0005	0.036	3.36	205.78
1	7/14/79	0	47	0.043	0.0047	0.332	3.36	205.78
1	7/14/79	0	48	0.082	0.0136	0.967	3.37	205.79
1	7/14/79	0	49	0.140	0.0348	2.479	3.40	205.82
1	7/14/79	0	50	0.201	0.0688	4.905	3.47	205.88
1	7/14/79	0	51	0.259	0.1134	8.085	3.57	205.99
1	7/14/79	0	52	0.622	0.7187	51.233	4.07	206.48
1	7/14/79	0	53	0.658	0.8155	58.136	4.98	207.39
1	7/14/79	0	54	0.683	0.8846	63.062	5.99	208.40
1	7/14/79	0	55	0.671	0.8495	60.559	7.02	209.43
1	7/14/79	0	56	0.646	0.7815	55.714	7.99	210.40
1	7/14/79	0	57	0.597	0.6586	46.953	8.84	211.26

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	7/14/79	1	1	0.457	0.3681	26.242	11.20	213.62
1	7/14/79	1	2	0.411	0.2938	20.943	11.59	214.01
1	7/14/79	1	3	0.390	0.2620	18.676	11.93	214.34
1	7/14/79	1	4	0.378	0.2451	17.473	12.23	214.64
1	7/14/79	1	5	0.366	0.2282	16.270	12.51	214.92
1	7/14/79	1	6	0.372	0.2367	16.872	12.78	215.20
1	7/14/79	1	7	0.337	0.2578	18.376	13.08	215.49
1	7/14/79	1	8	0.421	0.3078	21.942	13.41	215.83
1	7/14/79	1	9	0.488	0.4219	30.078	13.85	216.26
1	7/14/79	1	11	0.494	0.4338	30.925	14.86	217.28
1	7/14/79	1	12	0.515	0.4754	33.893	15.40	217.82
1	7/14/79	1	13	0.533	0.5125	36.537	15.99	218.41
1	7/14/79	1	14	0.579	0.6145	43.804	16.66	219.08
1	7/14/79	1	15	0.634	0.7493	53.413	17.47	219.89
1	7/14/79	1	16	0.658	0.8155	58.136	18.40	220.82
1	7/14/79	1	17	0.646	0.7815	55.714	19.35	221.76
1	7/14/79	1	18	0.585	0.6292	44.354	20.19	222.60
1	7/14/79	1	19	0.543	0.5312	37.869	20.88	223.29
1	7/14/79	1	20	0.509	0.4635	33.045	21.47	223.88
1	7/14/79	1	21	0.460	0.3735	26.626	21.96	224.38
1	7/14/79	1	22	0.411	0.2938	20.943	22.36	224.78
1	7/14/79	1	23	0.375	0.2409	17.172	22.68	225.09
1	7/14/79	1	24	0.344	0.2025	14.433	22.94	225.36
1	7/14/79	1	25	0.323	0.1778	12.677	23.17	225.58
1	7/14/79	1	26	0.274	0.1269	9.043	23.35	225.76
1	7/14/79	1	27	0.543	0.5312	37.869	23.74	226.16
1	7/14/79	1	28	0.518	0.4814	34.317	24.34	226.76
1	7/14/79	1	29	0.506	0.4576	32.621	24.90	227.31
1	7/14/79	1	31	0.512	0.4695	33.469	26.00	228.42
1	7/14/79	1	32	0.518	0.4814	34.317	26.57	228.98
1	7/14/79	1	33	0.527	0.5001	35.649	27.15	229.56
1	7/14/79	1	34	0.546	0.5375	38.314	27.76	230.18
1	7/14/79	1	35	0.567	0.5862	41.786	28.43	230.85
1	7/14/79	1	36	0.588	0.6366	45.379	29.16	231.57
1	7/14/79	1	37	0.326	0.1812	12.919	29.64	232.06
1	7/14/79	1	38	0.332	0.1880	13.404	29.86	232.28
1	7/14/79	1	39	0.335	0.1914	13.646	30.09	232.50
1	7/14/79	1	40	0.332	0.1880	13.404	30.31	232.73
1	7/14/79	1	41	0.329	0.1846	13.161	30.54	232.95
1	7/14/79	1	42	0.320	0.1744	12.435	30.75	233.16
1	7/14/79	1	43	0.317	0.1710	12.192	30.95	233.37
1	7/14/79	1	44	0.314	0.1676	11.950	31.16	233.57
1	7/14/79	1	45	0.317	0.1710	12.192	31.36	233.77
1	7/14/79	1	46	0.323	0.1778	12.677	31.56	233.98
1	7/14/79	1	47	0.338	0.1951	13.908	31.79	234.20
1	7/14/79	1	48	0.354	0.2135	15.220	32.03	234.44
1	7/14/79	1	49	0.363	0.2246	16.008	32.29	234.70
1	7/14/79	1	50	0.366	0.2282	16.270	32.56	234.97
1	7/14/79	1	51	0.363	0.2246	16.008	32.83	235.24
1	7/14/79	1	52	0.347	0.2061	14.696	33.08	235.50
1	7/14/79	1	53	0.332	0.1880	13.404	33.32	235.73
1	7/14/79	1	54	0.314	0.1676	11.950	33.53	235.94
1	7/14/79	1	55	0.271	0.1242	8.852	33.70	236.12
1	7/14/79	1	56	0.241	0.0976	6.960	33.83	236.25
1	7/14/79	1	57	0.213	0.0767	5.470	33.94	236.35
1	7/14/79	1	58	0.189	0.0609	4.340	34.02	236.43
1	7/14/79	1	59	0.165	0.0469	3.343	34.08	236.50
1	7/14/79	2	0	0.143	0.0361	2.576	34.13	236.55
1	7/14/79	2	1	0.134	0.0321	2.285	34.17	236.59
1	7/14/79	2	2	0.116	0.0245	1.746	34.21	236.62
1	7/14/79	2	3	0.101	0.0192	1.368	34.23	236.65
1	7/14/79	2	4	0.088	0.0152	1.083	34.25	236.67
1	7/14/79	2	5	0.076	0.0119	0.851	34.27	236.68
1	7/14/79	2	6	0.061	0.0079	0.561	34.28	236.70
1	7/14/79	2	7	0.055	0.0068	0.485	34.29	236.70
1	7/14/79	2	10	0.052	0.0063	0.447	34.31	236.73
1	7/14/79	2	12	0.049	0.0057	0.409	34.33	236.74
1	7/14/79	2	14	0.046	0.0052	0.370	34.34	236.75
1	7/14/79	2	16	0.043	0.0047	0.332	34.35	236.77
1	7/14/79	2	17	0.040	0.0041	0.294	34.36	236.77
1	7/14/79	2	19	0.037	0.0036	0.256	34.36	236.78
1	7/14/79	2	22	0.034	0.0031	0.218	34.38	236.79
1	7/14/79	2	25	0.030	0.0025	0.180	34.39	236.80
1	7/14/79	2	29	0.027	0.0023	0.162	34.40	236.81
1	7/14/79	2	33	0.024	0.0020	0.144	34.41	236.82
1	7/14/79	2	40	0.021	0.0018	0.126	34.42	236.84
1	7/14/79	2	43	0.024	0.0020	0.144	34.43	236.85
1	7/14/79	2	52	0.024	0.0020	0.144	34.45	236.87
1	7/14/79	2	58	0.021	0.0018	0.126	34.47	236.88
1	7/14/79	3	5	0.018	0.0015	0.108	34.48	236.90
1	7/14/79	3	16	0.015	0.0013	0.090	34.50	236.91
1	7/14/79	3	25	0.012	0.0010	0.072	34.51	236.93
1	7/14/79	3	28	0.015	0.0013	0.090	34.51	236.93
1	7/14/79	3	42	0.012	0.0010	0.072	34.53	236.95
1	7/14/79	3	53	0.012	0.0010	0.072	34.55	236.96
1	7/14/79	3	54	0.015	0.0013	0.090	34.55	236.96
1	7/14/79	3	55	0.018	0.0015	0.108	34.55	236.96
1	7/14/79	3	59	0.021	0.0018	0.126	34.56	236.97
1	7/14/79	4	6	0.024	0.0020	0.144	34.57	236.99
1	7/14/79	4	21	0.021	0.0018	0.126	34.61	237.02
1	7/14/79	4	30	0.018	0.0015	0.108	34.62	237.04
1	7/14/79	4	41	0.015	0.0013	0.090	34.64	237.06
1	7/14/79	4	48	0.012	0.0010	0.072	34.65	237.07
1	7/14/79	5	0	0.009	0.0008	0.054	34.66	237.08
1	7/14/79	5	9	0.006	0.0005	0.036	34.67	237.09
1	7/14/79	5	28	0.006	0.0005	0.036	34.68	237.10
1	7/14/79	5	29	0.009	0.0008	0.054	34.68	237.10
1	7/14/79	5	30	0.015	0.0013	0.090	34.68	237.10
1	7/14/79	5	32	0.018	0.0015	0.108	34.69	237.10
1	7/14/79	5	39	0.021	0.0018	0.126	34.70	237.12
1	7/14/79	5	50	0.018	0.0015	0.108	34.72	237.14
1	7/14/79	6	1	0.015	0.0013	0.090	34.74	237.16
1	7/14/79	6	9	0.012	0.0010	0.072	34.75	237.17
1	7/14/79	6	17	0.009	0.0008	0.054	34.76	237.17

TABLE D1- 1. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	7/14/79	6	26	0.006	0.0005	0.036	34.77	237.18
1	7/14/79	6	43	0.003	0.0003	0.018	34.77	237.19
1	7/14/79	7	9	0.0	0.0	0.0	34.78	237.19
1	8/19/79	5	25	0.0	0.0	0.0	0.0	237.19
1	8/19/79	5	26	0.012	0.0010	0.072	0.00	237.19
1	8/19/79	5	27	0.018	0.0015	0.108	0.00	237.20
1	8/19/79	5	29	0.024	0.0020	0.144	0.01	237.20
1	8/19/79	5	31	0.021	0.0018	0.126	0.01	237.20
1	8/19/79	5	35	0.012	0.0010	0.072	0.02	237.21
1	8/19/79	5	37	0.018	0.0015	0.108	0.02	237.21
1	8/19/79	5	39	0.021	0.0018	0.126	0.02	237.22
1	8/19/79	5	40	0.024	0.0020	0.144	0.03	237.22
1	8/19/79	5	43	0.030	0.0025	0.180	0.03	237.23
1	8/19/79	5	47	0.024	0.0020	0.144	0.05	237.24
1	8/19/79	5	50	0.015	0.0013	0.090	0.05	237.24
1	8/19/79	5	52	0.024	0.0020	0.144	0.06	237.25
1	8/19/79	5	54	0.037	0.0036	0.256	0.06	237.25
1	8/19/79	5	56	0.043	0.0047	0.332	0.07	237.26
1	8/19/79	5	58	0.055	0.0068	0.485	0.09	237.28
1	8/19/79	5	59	0.061	0.0079	0.561	0.09	237.29
1	8/19/79	6	1	0.073	0.0111	0.793	0.12	237.31
1	8/19/79	6	4	0.104	0.0202	1.443	0.17	237.37
1	8/19/79	6	5	0.131	0.0307	2.188	0.20	237.40
1	8/19/79	6	6	0.158	0.0436	3.105	0.25	237.44
1	8/19/79	6	7	0.186	0.0589	4.199	0.31	237.50
1	8/19/79	6	8	0.192	0.0629	4.481	0.38	237.57
1	8/19/79	6	9	0.198	0.0668	4.764	0.46	237.65
1	8/19/79	6	11	0.189	0.0609	4.340	0.61	237.80
1	8/19/79	6	13	0.174	0.0519	3.700	0.74	237.94
1	8/19/79	6	14	0.158	0.0436	3.105	0.80	237.99
1	8/19/79	6	15	0.146	0.0375	2.673	0.85	238.04
1	8/19/79	6	16	0.134	0.0321	2.285	0.89	238.08
1	8/19/79	6	17	0.122	0.0266	1.898	0.92	238.12
1	8/19/79	6	18	0.110	0.0224	1.595	0.95	238.15
1	8/19/79	6	20	0.091	0.0160	1.141	1.00	238.19
1	8/19/79	6	22	0.076	0.0119	0.851	1.03	238.22
1	8/19/79	6	23	0.067	0.0095	0.677	1.04	238.24
1	8/19/79	6	24	0.061	0.0079	0.561	1.05	238.25
1	8/19/79	6	27	0.055	0.0068	0.485	1.08	238.27
1	8/19/79	6	32	0.049	0.0057	0.409	1.12	238.31
1	8/19/79	6	34	0.043	0.0047	0.332	1.13	238.32
1	8/19/79	6	38	0.040	0.0041	0.294	1.15	238.34
1	8/19/79	6	40	0.037	0.0036	0.256	1.16	238.35
1	8/19/79	6	43	0.024	0.0020	0.144	1.17	238.36
1	8/19/79	6	45	0.018	0.0015	0.108	1.17	238.37
1	8/19/79	6	48	0.012	0.0010	0.072	1.18	238.37
1	8/19/79	6	52	0.009	0.0008	0.054	1.18	238.38
1	8/19/79	6	54	0.006	0.0005	0.036	1.18	238.38
1	8/19/79	21	3	0.0	0.0	0.0	0.0	238.38
1	8/19/79	21	4	0.012	0.0010	0.072	0.00	238.38
1	8/19/79	21	6	0.024	0.0020	0.144	0.00	238.38
1	8/19/79	21	7	0.030	0.0025	0.180	0.01	238.39
1	8/19/79	21	8	0.037	0.0036	0.256	0.01	238.39
1	8/19/79	21	11	0.037	0.0036	0.256	0.02	238.40
1	8/19/79	21	13	0.030	0.0025	0.180	0.03	238.41
1	8/19/79	21	14	0.027	0.0023	0.162	0.03	238.41
1	8/19/79	21	16	0.021	0.0018	0.126	0.04	238.42
1	8/19/79	21	17	0.024	0.0020	0.144	0.04	238.42
1	8/19/79	21	18	0.037	0.0036	0.256	0.04	238.42
1	8/19/79	21	19	0.046	0.0052	0.370	0.05	238.43
1	8/19/79	21	20	0.055	0.0068	0.485	0.06	238.44
1	8/19/79	21	21	0.064	0.0087	0.619	0.07	238.44
1	8/19/79	21	22	0.073	0.0111	0.793	0.08	238.46
1	8/19/79	21	23	0.076	0.0119	0.851	0.09	238.47
1	8/19/79	21	24	0.082	0.0136	0.967	0.11	238.49
1	8/19/79	21	25	0.088	0.0152	1.083	0.12	238.50
1	8/19/79	21	26	0.094	0.0171	1.216	0.14	238.52
1	8/19/79	21	27	0.104	0.0202	1.443	0.16	238.54
1	8/19/79	21	28	0.113	0.0234	1.670	0.19	238.57
1	8/19/79	21	29	0.131	0.0307	2.188	0.22	238.60
1	8/19/79	21	30	0.149	0.0389	2.770	0.26	238.64
1	8/19/79	21	31	0.165	0.0469	3.343	0.31	238.69
1	8/19/79	21	32	0.177	0.0536	3.819	0.37	238.75
1	8/19/79	21	33	0.186	0.0589	4.199	0.44	238.82
1	8/19/79	21	34	0.192	0.0629	4.481	0.51	238.89
1	8/19/79	21	35	0.198	0.0668	4.764	0.59	238.97
1	8/19/79	21	36	0.201	0.0688	4.905	0.67	239.05
1	8/19/79	21	38	0.198	0.0668	4.764	0.83	239.21
1	8/19/79	21	39	0.195	0.0648	4.623	0.91	239.29
1	8/19/79	21	40	0.189	0.0609	4.340	0.99	239.36
1	8/19/79	21	42	0.168	0.0486	3.462	1.12	239.49
1	8/19/79	21	44	0.149	0.0389	2.770	1.22	239.60
1	8/19/79	21	46	0.134	0.0321	2.285	1.30	239.68
1	8/19/79	21	48	0.128	0.0293	2.091	1.38	239.76
1	8/19/79	21	49	0.122	0.0266	1.898	1.41	239.79
1	8/19/79	21	51	0.110	0.0224	1.595	1.47	239.85
1	8/19/79	21	53	0.101	0.0192	1.368	1.52	239.90
1	8/19/79	21	55	0.098	0.0181	1.292	1.56	239.94
1	8/19/79	21	57	0.091	0.0160	1.141	1.60	239.98
1	8/19/79	22	0	0.070	0.0103	0.735	1.65	240.03
1	8/19/79	22	1	0.061	0.0079	0.561	1.66	240.04
1	8/19/79	22	3	0.046	0.0052	0.370	1.68	240.05
1	8/19/79	22	5	0.034	0.0031	0.218	1.68	240.06
1	8/19/79	22	7	0.024	0.0020	0.144	1.69	240.07
1	8/19/79	22	9	0.015	0.0013	0.090	1.69	240.07
1	8/19/79	22	11	0.012	0.0010	0.072	1.70	240.08

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	8/19/79	22	23	0.046	0.0052	0.370	1.72	240.10
1	8/19/79	22	24	0.067	0.0095	0.677	1.73	240.10
1	8/19/79	22	25	0.085	0.0144	1.025	1.74	240.12
1	8/19/79	22	26	0.098	0.0181	1.292	1.76	240.14
1	8/19/79	22	27	0.110	0.0224	1.595	1.78	240.16
1	8/19/79	22	28	0.134	0.0321	2.285	1.82	240.19
1	8/19/79	22	29	0.158	0.0436	3.105	1.86	240.24
1	8/19/79	22	30	0.189	0.0609	4.340	1.92	240.30
1	8/19/79	22	31	0.207	0.0728	5.188	2.00	240.38
1	8/19/79	22	32	0.216	0.0791	5.636	2.09	240.47
1	8/19/79	22	33	0.219	0.0814	5.802	2.19	240.57
1	8/19/79	22	34	0.210	0.0748	5.329	2.28	240.66
1	8/19/79	22	35	0.198	0.0668	4.764	2.36	240.74
1	8/19/79	22	36	0.186	0.0589	4.199	2.44	240.82
1	8/19/79	22	37	0.168	0.0486	3.462	2.50	240.88
1	8/19/79	22	38	0.155	0.0419	2.986	2.56	240.94
1	8/19/79	22	39	0.140	0.0348	2.479	2.60	240.98
1	8/19/79	22	40	0.122	0.0266	1.898	2.64	241.02
1	8/19/79	22	41	0.110	0.0224	1.595	2.67	241.05
1	8/19/79	22	42	0.098	0.0181	1.292	2.69	241.07
1	8/19/79	22	43	0.088	0.0152	1.083	2.71	241.09
1	8/19/79	22	44	0.079	0.0127	0.909	2.73	241.11
1	8/19/79	22	45	0.070	0.0103	0.735	2.74	241.12
1	8/19/79	22	46	0.061	0.0079	0.561	2.75	241.13
1	8/19/79	22	47	0.052	0.0063	0.447	2.76	241.14
1	8/19/79	22	48	0.043	0.0047	0.332	2.77	241.15
1	8/19/79	22	49	0.037	0.0036	0.256	2.77	241.15
1	8/19/79	22	51	0.030	0.0025	0.180	2.78	241.16
1	8/19/79	22	52	0.024	0.0020	0.144	2.78	241.16
1	8/19/79	22	54	0.018	0.0015	0.108	2.79	241.17
1	8/19/79	22	55	0.015	0.0013	0.090	2.79	241.17
1	8/19/79	22	57	0.013	0.0015	0.108	2.79	241.17
1	8/19/79	22	58	0.024	0.0020	0.144	2.79	241.17
1	8/19/79	23	0	0.030	0.0025	0.180	2.80	241.18
1	8/19/79	23	3	0.030	0.0025	0.180	2.81	241.19
1	8/19/79	23	6	0.024	0.0020	0.144	2.82	241.19
1	8/19/79	23	8	0.034	0.0031	0.218	2.82	241.20
1	8/19/79	23	9	0.037	0.0036	0.256	2.83	241.20
1	8/19/79	23	10	0.040	0.0041	0.294	2.83	241.21
1	8/19/79	23	14	0.037	0.0036	0.256	2.85	241.23
1	8/19/79	23	16	0.030	0.0025	0.180	2.86	241.23
1	8/19/79	23	17	0.024	0.0020	0.144	2.86	241.24
1	8/19/79	23	19	0.018	0.0015	0.108	2.86	241.24
1	8/19/79	23	22	0.012	0.0010	0.072	2.87	241.25
1	8/19/79	23	26	0.009	0.0008	0.054	2.87	241.25
1	8/19/79	23	29	0.006	0.0005	0.036	2.87	241.25
1	8/19/79	23	34	0.0	0.0	0.0	2.88	241.25
1	8/21/79	18	43	0.0	0.0	0.0	0.0	241.25
1	8/21/79	18	45	0.009	0.0008	0.054	0.00	241.25
1	8/21/79	18	46	0.024	0.0020	0.144	0.00	241.26

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
1	8/21/79	18	47	0.043	0.0047	0.332	0.01	241.26
1	8/21/79	18	48	0.070	0.0103	0.735	0.02	241.27
1	8/21/79	18	49	0.098	0.0181	1.292	0.03	241.29
1	8/21/79	18	50	0.125	0.0280	1.994	0.06	241.31
1	8/21/79	18	51	0.149	0.0389	2.770	0.10	241.35
1	8/21/79	18	52	0.177	0.0536	3.819	0.15	241.41
1	8/21/79	18	53	0.213	0.0767	5.470	0.23	241.49
1	8/21/79	18	54	0.268	0.1215	8.660	0.35	241.60
1	8/21/79	18	55	0.381	0.2493	17.774	0.57	241.82
1	8/21/79	18	56	0.439	0.3375	24.062	0.92	242.17
1	8/21/79	18	57	0.448	0.3528	25.152	1.33	242.58
1	8/21/79	18	58	0.457	0.3681	26.242	1.76	243.01
1	8/21/79	18	59	0.463	0.3789	27.009	2.20	243.45
1	8/21/79	19	1	0.469	0.3896	27.776	3.11	244.37
1	8/21/79	19	4	0.463	0.3789	27.009	4.48	245.74
1	8/21/79	19	5	0.445	0.3477	24.789	4.91	246.17
1	8/21/79	19	6	0.433	0.3273	23.335	5.32	246.57
1	8/21/79	19	7	0.424	0.3125	22.276	5.70	246.95
1	8/21/79	19	8	0.402	0.2798	19.944	6.05	247.30
1	8/21/79	19	9	0.381	0.2493	17.774	6.36	247.62
1	8/21/79	19	10	0.360	0.2209	15.745	6.64	247.90
1	8/21/79	19	11	0.341	0.1988	14.171	6.89	248.14
1	8/21/79	19	12	0.326	0.1812	12.919	7.12	248.37
1	8/21/79	19	13	0.305	0.1574	11.224	7.32	248.57
1	8/21/79	19	14	0.280	0.1330	9.479	7.49	248.74
1	8/21/79	19	15	0.256	0.1107	7.893	7.64	248.89
1	8/21/79	19	16	0.235	0.0930	6.629	7.76	249.01
1	8/21/79	19	17	0.216	0.0791	5.636	7.86	249.11
1	8/21/79	19	18	0.201	0.0688	4.905	7.95	249.20
1	8/21/79	19	19	0.189	0.0609	4.340	8.02	249.28
1	8/21/79	19	20	0.177	0.0536	3.819	8.09	249.34
1	8/21/79	19	21	0.165	0.0469	3.343	8.15	249.40
1	8/21/79	19	22	0.152	0.0402	2.866	8.20	249.46
1	8/21/79	19	23	0.143	0.0361	2.576	8.25	249.50
1	8/21/79	19	24	0.134	0.0321	2.285	8.29	249.54
1	8/21/79	19	25	0.128	0.0293	2.091	8.32	249.58
1	8/21/79	19	27	0.116	0.0245	1.746	8.39	249.64
1	8/21/79	19	29	0.098	0.0181	1.292	8.44	249.69
1	8/21/79	19	31	0.082	0.0136	0.967	8.48	249.73
1	8/21/79	19	33	0.067	0.0095	0.677	8.50	249.76
1	8/21/79	19	35	0.055	0.0068	0.485	8.52	249.78
1	8/21/79	19	36	0.046	0.0052	0.370	8.53	249.78
1	8/21/79	19	37	0.040	0.0041	0.294	8.54	249.79
1	8/21/79	19	39	0.027	0.0023	0.162	8.54	249.80
1	8/21/79	19	41	0.021	0.0018	0.126	8.55	249.80
1	8/21/79	19	44	0.012	0.0010	0.072	8.55	249.81
1	8/21/79	19	45	0.009	0.0008	0.054	8.55	249.81
1	8/21/79	19	54	0.009	0.0008	0.054	8.56	249.82
1	8/21/79	20	9	0.006	0.0005	0.036	8.57	249.83
1	8/21/79	20	15	0.003	0.0003	0.018	8.58	249.83
1	8/21/79	20	20	0.0	0.0	0.0	8.58	249.83

TABLE 01- 1. CONCLUDED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
1	10/22/79	4	32	0.0	0.0	0.0	0.0	249.83
1	10/22/79	4	36	0.003	0.0003	0.018	0.00	249.83
1	10/22/79	4	47	0.006	0.0005	0.036	0.01	249.84
1	10/22/79	5	0	0.009	0.0008	0.054	0.02	249.85
1	10/22/79	5	12	0.012	0.0010	0.072	0.03	249.86
1	10/22/79	5	36	0.015	0.0013	0.090	0.06	249.89
1	10/22/79	5	45	0.015	0.0013	0.090	0.07	249.90
1	10/22/79	6	4	0.012	0.0010	0.072	0.10	249.93
1	10/22/79	6	14	0.015	0.0013	0.090	0.11	249.94
1	10/22/79	6	26	0.012	0.0010	0.072	0.13	249.96
1	10/22/79	6	43	0.009	0.0008	0.054	0.15	249.98
1	10/22/79	6	59	0.009	0.0008	0.054	0.16	249.99
1	10/22/79	7	6	0.012	0.0010	0.072	0.17	250.00
1	10/22/79	7	19	0.009	0.0008	0.054	0.18	250.01
1	10/22/79	7	28	0.012	0.0010	0.072	0.19	250.02
1	10/22/79	7	35	0.015	0.0013	0.090	0.20	250.03
1	10/22/79	7	48	0.012	0.0010	0.072	0.22	250.05
1	10/22/79	8	10	0.015	0.0013	0.090	0.25	250.08
1	10/22/79	8	25	0.012	0.0010	0.072	0.27	250.10
1	10/22/79	8	29	0.012	0.0010	0.072	0.27	250.10
1	10/22/79	8	31	0.015	0.0013	0.090	0.28	250.11
1	10/22/79	8	36	0.015	0.0013	0.090	0.28	250.11
1	10/22/79	8	40	0.012	0.0010	0.072	0.29	250.12
1	10/22/79	8	43	0.009	0.0008	0.054	0.29	250.12
1	10/22/79	8	46	0.006	0.0005	0.036	0.29	250.13
1	10/22/79	8	54	0.0	0.0	0.0	0.30	250.13
1	10/22/79	9	59	0.0	0.0	0.0	0.30	250.13
1	10/22/79	10	4	0.003	0.0003	0.018	0.30	250.13
1	10/22/79	10	6	0.006	0.0005	0.036	0.30	250.13
1	10/22/79	10	18	0.006	0.0005	0.036	0.31	250.14
1	10/22/79	10	21	0.009	0.0008	0.054	0.31	250.14
1	10/22/79	10	23	0.012	0.0010	0.072	0.31	250.14
1	10/22/79	10	25	0.015	0.0013	0.090	0.31	250.14
1	10/22/79	10	28	0.018	0.0015	0.108	0.32	250.15
1	10/22/79	10	36	0.018	0.0015	0.108	0.33	250.16
1	10/22/79	10	40	0.015	0.0013	0.090	0.34	250.17
1	10/22/79	10	41	0.021	0.0018	0.126	0.34	250.17
1	10/22/79	10	42	0.030	0.0025	0.180	0.34	250.17
1	10/22/79	10	43	0.040	0.0041	0.294	0.35	250.18
1	10/22/79	10	44	0.049	0.0057	0.409	0.35	250.18
1	10/22/79	10	45	0.055	0.0068	0.485	0.36	250.19
1	10/22/79	10	46	0.058	0.0073	0.523	0.37	250.20
1	10/22/79	10	49	0.058	0.0073	0.523	0.39	250.23
1	10/22/79	10	52	0.055	0.0068	0.485	0.42	250.25
1	10/22/79	10	53	0.052	0.0063	0.447	0.43	250.26
1	10/22/79	10	55	0.049	0.0057	0.409	0.44	250.27
1	10/22/79	10	56	0.046	0.0052	0.370	0.45	250.28
1	10/22/79	10	59	0.040	0.0041	0.294	0.46	250.30
1	10/22/79	11	1	0.037	0.0036	0.256	0.47	250.30
1	10/22/79	11	16	0.027	0.0023	0.162	0.52	250.35
1	10/22/79	11	20	0.027	0.0023	0.162	0.53	250.37
1	10/22/79	11	23	0.034	0.0031	0.218	0.54	250.37
1	10/22/79	11	27	0.040	0.0041	0.294	0.56	250.39
1	10/22/79	11	32	0.037	0.0036	0.256	0.58	250.41
1	10/22/79	11	35	0.034	0.0031	0.218	0.60	250.43
1	10/22/79	11	40	0.030	0.0025	0.180	0.61	250.44
1	10/22/79	11	44	0.030	0.0025	0.180	0.62	250.45
1	10/22/79	11	47	0.034	0.0031	0.218	0.63	250.46
1	10/22/79	11	51	0.040	0.0041	0.294	0.65	250.48
1	10/22/79	11	53	0.046	0.0052	0.370	0.66	250.49
1	10/22/79	11	55	0.058	0.0073	0.523	0.68	250.51
1	10/22/79	11	57	0.070	0.0103	0.735	0.70	250.53
1	10/22/79	11	59	0.082	0.0136	0.967	0.73	250.56
1	10/22/79	12	1	0.094	0.0171	1.216	0.76	250.59
1	10/22/79	12	3	0.107	0.0213	1.519	0.81	250.64
1	10/22/79	12	5	0.119	0.0256	1.822	0.86	250.69
1	10/22/79	12	6	0.125	0.0280	1.994	0.90	250.73
1	10/22/79	12	8	0.131	0.0307	2.188	0.97	250.80
1	10/22/79	12	10	0.137	0.0334	2.382	1.04	250.87
1	10/22/79	12	12	0.131	0.0307	2.188	1.12	250.95
1	10/22/79	12	14	0.125	0.0280	1.994	1.19	251.02
1	10/22/79	12	16	0.113	0.0234	1.670	1.25	251.08
1	10/22/79	12	18	0.104	0.0202	1.443	1.30	251.13
1	10/22/79	12	20	0.094	0.0171	1.216	1.34	251.18
1	10/22/79	12	22	0.088	0.0152	1.083	1.38	251.21
1	10/22/79	12	24	0.079	0.0127	0.909	1.42	251.25
1	10/22/79	12	26	0.070	0.0103	0.735	1.44	251.27
1	10/22/79	12	28	0.064	0.0087	0.619	1.47	251.30
1	10/22/79	12	30	0.058	0.0073	0.523	1.49	251.32
1	10/22/79	12	31	0.052	0.0063	0.447	1.49	251.32
1	10/22/79	12	32	0.049	0.0057	0.409	1.50	251.33
1	10/22/79	12	33	0.046	0.0052	0.370	1.51	251.34
1	10/22/79	12	34	0.040	0.0041	0.294	1.51	251.34
1	10/22/79	12	37	0.034	0.0031	0.218	1.53	251.36
1	10/22/79	12	39	0.027	0.0023	0.162	1.53	251.36
1	10/22/79	12	42	0.021	0.0018	0.126	1.54	251.37
1	10/22/79	12	44	0.018	0.0015	0.108	1.54	251.37
1	10/22/79	12	46	0.015	0.0013	0.090	1.55	251.38
1	10/22/79	12	49	0.012	0.0010	0.072	1.55	251.38
1	10/22/79	12	51	0.009	0.0008	0.054	1.55	251.38
1	10/22/79	12	55	0.006	0.0005	0.036	1.56	251.39
1	10/22/79	13	4	0.0	0.0	0.0	1.56	251.39

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
2	3/16/79	18	34	0.0	0.0	0.0	0.0	0.0
2	3/16/79	18	36	0.003	0.0003	0.014	0.00	0.00
2	3/16/79	18	39	0.006	0.0005	0.028	0.00	0.00
2	3/16/79	18	42	0.009	0.0008	0.043	0.00	0.00
2	3/16/79	18	44	0.012	0.0010	0.057	0.00	0.00
2	3/16/79	21	1	0.015	0.0013	0.071	0.15	0.15
2	3/16/79	23	8	0.018	0.0015	0.085	0.32	0.32
2	3/17/79	11	10	0.021	0.0018	0.100	1.43	1.43
2	3/17/79	12	16	0.024	0.0020	0.114	1.55	1.55
2	3/17/79	13	25	0.027	0.0023	0.128	1.69	1.69
2	3/17/79	14	12	0.030	0.0025	0.142	1.79	1.79
2	3/17/79	14	46	0.034	0.0031	0.173	1.88	1.88
2	3/17/79	15	5	0.037	0.0036	0.203	1.94	1.94
2	3/17/79	15	9	0.040	0.0041	0.233	1.96	1.96
2	3/17/79	15	37	0.043	0.0047	0.263	2.07	2.07
2	3/17/79	15	47	0.046	0.0052	0.294	2.12	2.12
2	3/17/79	16	12	0.049	0.0057	0.324	2.25	2.25
2	3/17/79	16	30	0.052	0.0063	0.354	2.35	2.35
2	3/17/79	16	48	0.055	0.0068	0.384	2.46	2.46
2	3/17/79	17	5	0.058	0.0073	0.415	2.57	2.57
2	3/17/79	17	16	0.061	0.0079	0.445	2.65	2.65
2	3/17/79	17	24	0.064	0.0087	0.491	2.71	2.71
2	3/17/79	17	25	0.067	0.0095	0.537	2.72	2.72
2	3/17/79	17	27	0.070	0.0103	0.583	2.74	2.74
2	3/17/79	17	28	0.073	0.0111	0.629	2.75	2.75
2	3/17/79	17	30	0.076	0.0119	0.675	2.77	2.77
2	3/17/79	17	31	0.079	0.0127	0.720	2.79	2.79
2	3/17/79	17	32	0.085	0.0144	0.812	2.80	2.80
2	3/17/79	17	33	0.088	0.0152	0.858	2.81	2.81
2	3/17/79	17	35	0.091	0.0160	0.904	2.84	2.84
2	3/17/79	17	36	0.094	0.0171	0.964	2.86	2.86
2	3/17/79	17	39	0.098	0.0181	1.024	2.91	2.91
2	3/17/79	17	40	0.101	0.0192	1.084	2.92	2.92
2	3/17/79	17	46	0.104	0.0202	1.144	3.04	3.04
2	3/17/79	17	54	0.101	0.0192	1.084	3.18	3.18
2	3/17/79	17	57	0.098	0.0181	1.024	3.24	3.24
2	3/17/79	17	59	0.094	0.0171	0.964	3.27	3.27
2	3/17/79	18	2	0.091	0.0160	0.904	3.32	3.32
2	3/17/79	18	4	0.088	0.0152	0.858	3.35	3.35
2	3/17/79	18	7	0.085	0.0144	0.812	3.39	3.39
2	3/17/79	18	13	0.082	0.0136	0.766	3.47	3.47
2	3/17/79	18	19	0.079	0.0127	0.720	3.54	3.54
2	3/17/79	18	26	0.076	0.0119	0.675	3.62	3.62
2	3/17/79	18	38	0.073	0.0111	0.629	3.75	3.75
2	3/17/79	19	12	0.070	0.0103	0.583	4.10	4.10
2	3/17/79	20	40	0.073	0.0111	0.629	4.98	4.98
2	3/17/79	20	57	0.076	0.0119	0.675	5.17	5.17
2	3/17/79	21	6	0.079	0.0127	0.720	5.27	5.27
2	3/17/79	21	14	0.082	0.0136	0.766	5.37	5.37
2	3/17/79	21	25	0.085	0.0144	0.812	5.52	5.52
2	3/17/79	21	44	0.088	0.0152	0.858	5.78	5.78
2	3/17/79	22	44	0.091	0.0160	0.904	6.66	6.66

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
2	3/17/79	23	12	0.091	0.0160	0.904	7.09	7.09
2	3/17/79	23	52	0.088	0.0152	0.858	7.67	7.67
2	3/18/79	0	32	0.085	0.0144	0.812	8.23	8.23
2	3/18/79	1	0	0.082	0.0136	0.766	8.60	8.60
2	3/18/79	1	24	0.079	0.0127	0.720	8.90	8.90
2	3/18/79	2	3	0.076	0.0119	0.675	9.35	9.35
2	3/18/79	2	42	0.076	0.0119	0.675	9.79	9.79
2	3/18/79	2	48	0.079	0.0127	0.720	9.86	9.86
2	3/18/79	2	52	0.082	0.0136	0.766	9.91	9.91
2	3/18/79	2	56	0.085	0.0144	0.812	9.96	9.96
2	3/18/79	3	3	0.088	0.0152	0.858	10.06	10.06
2	3/18/79	3	22	0.091	0.0160	0.904	10.34	10.34
2	3/18/79	3	29	0.094	0.0171	0.964	10.44	10.44
2	3/18/79	3	56	0.098	0.0181	1.024	10.89	10.89
2	3/18/79	3	57	0.101	0.0192	1.084	10.91	10.91
2	3/18/79	3	59	0.104	0.0202	1.144	10.95	10.95
2	3/18/79	4	11	0.107	0.0213	1.204	11.18	11.18
2	3/18/79	4	18	0.110	0.0224	1.264	11.33	11.33
2	3/18/79	4	42	0.110	0.0224	1.264	11.83	11.83
2	3/18/79	4	46	0.113	0.0234	1.324	11.92	11.92
2	3/18/79	5	4	0.110	0.0224	1.264	12.31	12.31
2	3/18/79	5	28	0.107	0.0213	1.204	12.80	12.80
2	3/18/79	6	16	0.104	0.0202	1.144	13.74	13.74
2	3/18/79	6	42	0.101	0.0192	1.084	14.22	14.22
2	3/18/79	7	5	0.098	0.0181	1.024	14.63	14.63
2	3/18/79	7	22	0.094	0.0171	0.964	14.91	14.91
2	3/18/79	8	2	0.091	0.0160	0.904	15.53	15.53
2	3/18/79	9	12	0.088	0.0152	0.858	16.56	16.56
2	3/18/79	10	4	0.088	0.0152	0.858	17.30	17.30
2	3/18/79	10	18	0.091	0.0160	0.904	17.51	17.51
2	3/18/79	10	27	0.094	0.0171	0.964	17.65	17.65
2	3/18/79	10	36	0.098	0.0181	1.024	17.80	17.80
2	3/18/79	10	46	0.101	0.0192	1.084	17.97	17.97
2	3/18/79	10	55	0.104	0.0202	1.144	18.14	18.14
2	3/18/79	11	0	0.107	0.0213	1.204	18.24	18.24
2	3/18/79	11	12	0.110	0.0224	1.264	18.48	18.48
2	3/18/79	11	16	0.113	0.0234	1.324	18.57	18.57
2	3/18/79	11	18	0.116	0.0245	1.384	18.62	18.62
2	3/18/79	11	20	0.119	0.0256	1.444	18.66	18.66
2	3/18/79	11	23	0.122	0.0266	1.504	18.74	18.74
2	3/18/79	11	26	0.125	0.0280	1.581	18.81	18.81
2	3/18/79	11	28	0.128	0.0293	1.658	18.87	18.87
2	3/18/79	11	32	0.131	0.0307	1.735	18.98	18.98
2	3/18/79	11	34	0.134	0.0321	1.812	19.04	19.04
2	3/18/79	11	38	0.137	0.0334	1.888	19.16	19.16
2	3/18/79	11	43	0.140	0.0348	1.965	19.32	19.32
2	3/18/79	11	50	0.143	0.0361	2.042	19.56	19.56
2	3/18/79	11	59	0.146	0.0375	2.119	19.87	19.87
2	3/18/79	12	6	0.149	0.0389	2.196	20.12	20.12
2	3/18/79	12	12	0.152	0.0402	2.272	20.34	20.34
2	3/18/79	12	20	0.155	0.0419	2.367	20.65	20.65
2	3/18/79	12	48	0.158	0.0436	2.461	21.78	21.78

TABLE D1- 2. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	3/18/79	13	8	0.162	0.0452	2.556	22.62	22.62
2	3/18/79	13	22	0.165	0.0469	2.650	23.22	23.22
2	3/18/79	13	26	0.168	0.0486	2.745	23.40	23.40
2	3/18/79	13	36	0.168	0.0486	2.745	23.86	23.86
2	3/18/79	13	39	0.165	0.0469	2.650	24.00	24.00
2	3/18/79	13	55	0.162	0.0452	2.556	24.69	24.69
2	3/18/79	14	11	0.158	0.0436	2.461	25.36	25.36
2	3/18/79	14	30	0.162	0.0452	2.556	26.15	26.15
2	3/18/79	14	40	0.165	0.0469	2.650	26.59	26.59
2	3/18/79	14	58	0.162	0.0452	2.556	27.37	27.37
2	3/18/79	15	12	0.158	0.0436	2.461	27.95	27.95
2	3/18/79	15	25	0.162	0.0452	2.556	28.50	28.50
2	3/18/79	15	36	0.165	0.0469	2.650	28.97	28.97
2	3/18/79	15	43	0.168	0.0486	2.745	29.29	29.29
2	3/18/79	15	52	0.171	0.0502	2.839	29.71	29.71
2	3/18/79	15	57	0.174	0.0519	2.933	29.95	29.95
2	3/18/79	16	3	0.177	0.0536	3.028	30.25	30.25
2	3/18/79	16	10	0.180	0.0552	3.122	30.61	30.61
2	3/18/79	16	14	0.183	0.0569	3.217	30.82	30.82
2	3/18/79	16	20	0.186	0.0589	3.329	31.14	31.14
2	3/18/79	16	24	0.189	0.0609	3.441	31.37	31.37
2	3/18/79	16	32	0.192	0.0629	3.553	31.84	31.84
2	3/18/79	17	0	0.195	0.0648	3.665	33.52	33.52
2	3/18/79	17	20	0.192	0.0629	3.553	34.72	34.72
2	3/18/79	17	30	0.189	0.0609	3.441	35.31	35.31
2	3/18/79	18	40	0.189	0.0609	3.441	39.32	39.32
2	3/18/79	18	58	0.186	0.0589	3.329	40.33	40.33
2	3/18/79	19	10	0.183	0.0569	3.217	40.99	40.99
2	3/18/79	19	21	0.180	0.0552	3.122	41.57	41.57
2	3/18/79	19	47	0.177	0.0536	3.028	42.90	42.90
2	3/18/79	19	52	0.174	0.0519	2.933	43.15	43.15
2	3/18/79	20	6	0.171	0.0502	2.839	43.82	43.82
2	3/18/79	20	22	0.168	0.0486	2.745	44.57	44.57
2	3/18/79	20	37	0.165	0.0469	2.650	45.24	45.24
2	3/18/79	20	47	0.162	0.0452	2.556	45.68	45.68
2	3/18/79	20	53	0.158	0.0436	2.461	45.93	45.93
2	3/18/79	21	4	0.155	0.0419	2.367	46.37	46.37
2	3/18/79	21	17	0.152	0.0402	2.272	46.87	46.87
2	3/18/79	21	26	0.149	0.0389	2.196	47.21	47.21
2	3/18/79	21	40	0.146	0.0375	2.119	47.71	47.71
2	3/18/79	21	51	0.143	0.0361	2.042	48.09	48.09
2	3/18/79	22	2	0.140	0.0348	1.965	48.46	48.46
2	3/18/79	22	15	0.137	0.0334	1.888	48.88	48.88
2	3/18/79	22	40	0.134	0.0321	1.812	49.65	49.65
2	3/18/79	23	24	0.134	0.0321	1.812	50.98	50.98
2	3/18/79	23	51	0.131	0.0307	1.735	51.78	51.78
2	3/19/79	0	6	0.131	0.0307	1.735	52.21	52.21
2	3/19/79	0	8	0.134	0.0321	1.812	52.27	52.27
2	3/19/79	0	28	0.131	0.0307	1.735	52.86	52.86
2	3/19/79	0	40	0.134	0.0321	1.812	53.21	53.21

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	3/19/79	1	12	0.140	0.0348	1.965	54.25	54.25
2	3/19/79	1	25	0.137	0.0334	1.888	54.67	54.67
2	3/19/79	1	39	0.134	0.0321	1.812	55.10	55.10
2	3/19/79	1	53	0.131	0.0307	1.735	55.51	55.51
2	3/19/79	2	8	0.128	0.0293	1.658	55.94	55.94
2	3/19/79	2	29	0.125	0.0280	1.581	56.50	56.50
2	3/19/79	2	40	0.122	0.0266	1.504	56.79	56.79
2	3/19/79	2	57	0.119	0.0256	1.444	57.20	57.20
2	3/19/79	3	10	0.116	0.0245	1.384	57.51	57.51
2	3/19/79	3	22	0.113	0.0234	1.324	57.78	57.78
2	3/19/79	3	41	0.110	0.0224	1.264	58.19	58.19
2	3/19/79	4	1	0.107	0.0213	1.204	58.60	58.60
2	3/19/79	4	20	0.104	0.0202	1.144	58.97	58.97
2	3/19/79	4	41	0.101	0.0192	1.084	59.36	59.36
2	3/19/79	5	0	0.098	0.0181	1.024	59.70	59.70
2	3/19/79	5	25	0.094	0.0171	0.964	60.11	60.11
2	3/19/79	5	50	0.091	0.0160	0.904	60.50	60.50
2	3/19/79	6	19	0.088	0.0152	0.858	60.93	60.93
2	3/19/79	6	53	0.085	0.0144	0.812	61.40	61.40
2	3/19/79	7	15	0.082	0.0136	0.766	61.69	61.69
2	3/19/79	7	48	0.079	0.0127	0.720	62.10	62.10
2	3/19/79	8	34	0.076	0.0119	0.675	62.63	62.63
2	3/19/79	9	10	0.073	0.0111	0.629	63.03	63.03
2	3/19/79	9	41	0.070	0.0103	0.583	63.34	63.34
2	3/19/79	10	57	0.067	0.0095	0.537	64.05	64.05
2	3/19/79	11	38	0.064	0.0087	0.491	64.40	64.40
2	3/19/79	12	20	0.061	0.0079	0.445	64.73	64.73
2	3/19/79	14	6	0.058	0.0073	0.415	65.48	65.48
2	3/19/79	14	23	0.055	0.0068	0.384	65.60	65.60
2	3/19/79	14	32	0.052	0.0063	0.354	65.65	65.65
2	3/19/79	14	42	0.049	0.0057	0.324	65.71	65.71
2	3/19/79	14	56	0.046	0.0052	0.294	65.78	65.78
2	3/19/79	15	13	0.043	0.0047	0.263	65.86	65.86
2	3/19/79	15	32	0.040	0.0041	0.233	65.94	65.94
2	3/19/79	15	52	0.037	0.0036	0.203	66.01	66.01
2	3/19/79	16	10	0.034	0.0031	0.173	66.07	66.07
2	3/19/79	16	20	0.030	0.0025	0.142	66.09	66.09
2	3/19/79	16	39	0.027	0.0023	0.128	66.14	66.14
2	3/19/79	17	0	0.024	0.0020	0.114	66.18	66.18
2	3/19/79	17	22	0.021	0.0018	0.100	66.22	66.22
2	3/19/79	17	44	0.018	0.0015	0.085	66.25	66.25
2	3/19/79	18	3	0.015	0.0013	0.071	66.28	66.28
2	3/19/79	18	13	0.012	0.0010	0.057	66.29	66.29
2	3/19/79	18	30	0.0	0.0	0.0	66.30	66.30
2	3/29/79	8	45	0.0	0.0	0.0	0.0	66.30
2	3/29/79	8	46	0.027	0.0023	0.128	0.00	66.30
2	3/29/79	8	47	0.030	0.0025	0.142	0.00	66.30
2	3/29/79	8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	3/29/79	8	57	0.073	0.0111	0.629	0.05	66.35
2	3/29/79	8	58	0.079	0.0127	0.720	0.06	66.36
2	3/29/79	8	59	0.082	0.0136	0.766	0.08	66.37
2	3/29/79	9	1	0.085	0.0144	0.812	0.10	66.40
2	3/29/79	9	6	0.088	0.0152	0.858	0.17	66.47
2	3/29/79	9	7	0.085	0.0144	0.812	0.19	66.48
2	3/29/79	9	8	0.079	0.0127	0.720	0.20	66.50
2	3/29/79	9	9	0.076	0.0119	0.675	0.21	66.51
2	3/29/79	9	12	0.079	0.0127	0.720	0.25	66.54
2	3/29/79	9	15	0.082	0.0136	0.766	0.28	66.58
2	3/29/79	9	18	0.085	0.0144	0.812	0.32	66.62
2	3/29/79	9	22	0.088	0.0152	0.858	0.38	66.67
2	3/29/79	9	45	0.085	0.0144	0.812	0.70	66.99
2	3/29/79	9	52	0.082	0.0136	0.766	0.79	67.09
2	3/29/79	9	57	0.079	0.0127	0.720	0.85	67.15
2	3/29/79	10	1	0.076	0.0119	0.675	0.90	67.20
2	3/29/79	10	5	0.073	0.0111	0.629	0.94	67.24
2	3/29/79	10	12	0.070	0.0103	0.583	1.01	67.31
2	3/29/79	10	21	0.067	0.0095	0.537	1.10	67.39
2	3/29/79	10	34	0.064	0.0087	0.491	1.21	67.50
2	3/29/79	10	55	0.061	0.0079	0.445	1.37	67.67
2	3/29/79	11	8	0.058	0.0073	0.415	1.46	67.76
2	3/29/79	11	18	0.055	0.0068	0.384	1.53	67.83
2	3/29/79	11	27	0.052	0.0063	0.354	1.59	67.88
2	3/29/79	11	29	0.049	0.0057	0.324	1.60	67.89
2	3/29/79	11	55	0.046	0.0052	0.294	1.73	68.03
2	3/29/79	12	47	0.046	0.0052	0.294	1.99	68.28
2	3/29/79	12	53	0.049	0.0057	0.324	2.02	68.31
2	3/29/79	13	0	0.052	0.0063	0.354	2.06	68.35
2	3/29/79	13	6	0.055	0.0068	0.384	2.09	68.39
2	3/29/79	13	10	0.058	0.0073	0.415	2.12	68.42
2	3/29/79	13	18	0.061	0.0079	0.445	2.18	68.47
2	3/29/79	13	26	0.064	0.0087	0.491	2.24	68.54
2	3/29/79	13	29	0.067	0.0095	0.537	2.27	68.56
2	3/29/79	13	30	0.070	0.0103	0.583	2.28	68.57
2	3/29/79	13	37	0.073	0.0111	0.629	2.35	68.64
2	3/29/79	13	42	0.076	0.0119	0.675	2.40	68.70
2	3/29/79	13	46	0.079	0.0127	0.720	2.45	68.74
2	3/29/79	13	55	0.082	0.0136	0.766	2.56	68.85
2	3/29/79	14	9	0.085	0.0144	0.812	2.74	69.04
2	3/29/79	14	16	0.082	0.0136	0.766	2.83	69.13
2	3/29/79	14	20	0.079	0.0127	0.720	2.88	69.18
2	3/29/79	14	22	0.076	0.0119	0.675	2.91	69.20
2	3/29/79	14	29	0.073	0.0111	0.629	2.98	69.28
2	3/29/79	14	39	0.070	0.0103	0.583	3.08	69.38
2	3/29/79	14	49	0.067	0.0095	0.537	3.18	69.47
2	3/29/79	15	0	0.064	0.0087	0.491	3.27	69.57
2	3/29/79	15	8	0.061	0.0079	0.445	3.33	69.63
2	3/29/79	15	20	0.058	0.0073	0.415	3.42	69.72
2	3/29/79	15	30	0.055	0.0068	0.384	3.49	69.78
2	3/29/79	15	35	0.052	0.0063	0.354	3.52	69.81
2	3/29/79	15	50	0.049	0.0057	0.324	3.60	69.90
2	3/29/79	16	1	0.046	0.0052	0.294	3.66	69.95
2	3/29/79	16	14	0.043	0.0047	0.263	3.72	70.02
2	3/29/79	16	29	0.040	0.0041	0.233	3.78	70.08
2	3/29/79	16	44	0.037	0.0036	0.203	3.84	70.13
2	3/29/79	16	59	0.034	0.0031	0.173	3.88	70.18
2	3/29/79	17	17	0.030	0.0025	0.142	3.93	70.23
2	3/29/79	17	42	0.027	0.0023	0.128	3.99	70.28
2	3/29/79	18	0	0.024	0.0020	0.114	4.02	70.32
2	3/29/79	18	29	0.027	0.0023	0.128	4.08	70.38
2	3/29/79	19	45	0.030	0.0025	0.142	4.25	70.55
2	3/29/79	19	46	0.034	0.0031	0.173	4.26	70.55
2	3/29/79	19	48	0.037	0.0036	0.203	4.26	70.56
2	3/29/79	19	50	0.040	0.0041	0.233	4.27	70.56
2	3/29/79	19	53	0.043	0.0047	0.263	4.28	70.58
2	3/29/79	19	55	0.046	0.0052	0.294	4.29	70.59
2	3/29/79	19	57	0.049	0.0057	0.324	4.30	70.60
2	3/29/79	20	0	0.052	0.0063	0.354	4.32	70.61
2	3/29/79	20	2	0.055	0.0068	0.384	4.33	70.63
2	3/29/79	20	5	0.058	0.0073	0.415	4.35	70.65
2	3/29/79	20	8	0.061	0.0079	0.445	4.37	70.67
2	3/29/79	20	11	0.064	0.0087	0.491	4.39	70.69
2	3/29/79	20	15	0.067	0.0095	0.537	4.43	70.73
2	3/29/79	20	17	0.070	0.0103	0.583	4.45	70.74
2	3/29/79	20	20	0.073	0.0111	0.629	4.48	70.77
2	3/29/79	20	23	0.076	0.0119	0.675	4.51	70.81
2	3/29/79	20	27	0.079	0.0127	0.720	4.56	70.85
2	3/29/79	20	30	0.082	0.0136	0.766	4.59	70.89
2	3/29/79	20	33	0.085	0.0144	0.812	4.63	70.93
2	3/29/79	20	37	0.088	0.0152	0.858	4.69	70.99
2	3/29/79	20	43	0.091	0.0160	0.904	4.78	71.07
2	3/29/79	20	52	0.091	0.0160	0.904	4.91	71.21
2	3/29/79	20	57	0.088	0.0152	0.858	4.99	71.28
2	3/29/79	21	3	0.085	0.0144	0.812	5.07	71.37
2	3/29/79	21	9	0.082	0.0136	0.766	5.15	71.44
2	3/29/79	21	12	0.079	0.0127	0.720	5.19	71.48
2	3/29/79	21	17	0.076	0.0119	0.675	5.24	71.54
2	3/29/79	21	21	0.073	0.0111	0.629	5.29	71.58
2	3/29/79	21	28	0.070	0.0103	0.583	5.36	71.65
2	3/29/79	21	34	0.067	0.0095	0.537	5.41	71.71
2	3/29/79	21	42	0.064	0.0087	0.491	5.48	71.78
2	3/29/79	21	48	0.061	0.0079	0.445	5.53	71.83
2	3/29/79	21	51	0.058	0.0073	0.415	5.55	71.85
2	3/29/79	21	52	0.055	0.0068	0.384	5.56	71.85
2	3/29/79	21	57	0.052	0.0063	0.354	5.59	71.88
2	3/29/79	22	8	0.049	0.0057	0.324	5.65	71.95
2	3/29/79	22	17	0.046	0.0052	0.294	5.70	71.99
2	3/29/79	22	37	0.043	0.0047	0.263	5.79	72.09
2	3/29/79	23	0	0.040	0.0041	0.233	5.88	72.18
2	3/29/79	23	13	0.037	0.0036	0.203	5.93	72.23
2	3/29/79	23	26	0.034	0.0031	0.173	5.97	72.27
2	3/29/79	23	40	0.030	0.0025	0.142	6.01	72.31
2	3/29/79	23	59	0.027	0.0023	0.128	6.05	72.35

TABLE D1- 2. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	3/30/79	0	16	0.024	0.0020	0.114	6.09	72.38
2	3/30/79	0	34	0.021	0.0018	0.100	6.12	72.41
2	3/30/79	0	54	0.018	0.0015	0.085	6.15	72.45
2	3/30/79	1	20	0.015	0.0013	0.071	6.18	72.48
2	3/30/79	2	8	0.012	0.0010	0.057	6.23	72.53
2	3/30/79	2	26	0.009	0.0008	0.043	6.25	72.55
2	3/30/79	3	0	0.0	0.0	0.0	6.26	72.56
2	4/20/79	4	20	0.0	0.0	0.0	0.0	72.56
2	4/20/79	4	27	0.003	0.0003	0.014	0.00	72.56
2	4/20/79	5	0	0.0	0.0	0.0	0.00	72.56
2	4/20/79	12	30	0.0	0.0	0.0	0.00	72.56
2	4/20/79	13	6	0.003	0.0003	0.014	0.01	72.57
2	4/20/79	13	30	0.0	0.0	0.0	0.01	72.57
2	6/12/79	17	46	0.0	0.0	0.0	0.0	72.57
2	6/12/79	17	48	0.064	0.0087	0.491	0.01	72.58
2	6/12/79	17	50	0.073	0.0111	0.629	0.03	72.60
2	6/12/79	18	2	0.076	0.0119	0.675	0.16	72.73
2	6/12/79	18	6	0.442	0.3426	19.364	0.83	73.39
2	6/12/79	18	8	0.808	1.2898	72.895	2.36	74.93
2	6/12/79	18	10	0.960	1.9128	108.102	5.38	77.95
2	6/12/79	18	12	1.113	2.6887	151.951	9.71	82.28
2	6/12/79	18	14	1.027	2.2328	126.185	14.35	86.92
2	6/12/79	18	16	1.006	2.1238	120.024	18.45	91.02
2	6/12/79	18	18	0.981	2.0105	113.623	22.35	94.92
2	6/12/79	18	20	0.960	1.9128	108.102	26.04	98.61
2	6/12/79	18	22	0.850	1.4495	81.921	29.21	101.78
2	6/12/79	18	24	0.741	1.0624	60.044	31.58	104.14
2	6/12/79	18	26	0.628	0.7340	41.480	33.27	105.84
2	6/12/79	18	28	0.515	0.4754	26.869	34.41	106.98
2	6/12/79	18	30	0.384	0.2535	14.329	35.09	107.66
2	6/12/79	18	32	0.259	0.1134	6.409	35.44	108.01
2	6/12/79	18	34	0.149	0.0389	2.196	35.58	108.15
2	6/12/79	18	36	0.125	0.0280	1.581	35.65	108.21
2	6/12/79	18	38	0.094	0.0171	0.964	35.69	108.26
2	6/12/79	18	40	0.076	0.0119	0.675	35.71	108.28
2	6/12/79	18	42	0.061	0.0079	0.445	35.73	108.30
2	6/12/79	18	44	0.055	0.0068	0.384	35.75	108.32
2	6/12/79	18	46	0.046	0.0052	0.294	35.76	108.33
2	6/12/79	18	48	0.040	0.0041	0.233	35.77	108.34
2	6/12/79	18	50	0.034	0.0031	0.173	35.77	108.34
2	6/12/79	18	52	0.027	0.0023	0.128	35.78	108.35
2	6/12/79	18	54	0.021	0.0018	0.100	35.78	108.35
2	6/12/79	18	56	0.018	0.0015	0.085	35.79	108.36
2	6/12/79	18	58	0.015	0.0013	0.071	35.79	108.36
2	6/12/79	19	0	0.012	0.0010	0.057	35.79	108.36
2	6/12/79	19	1	0.009	0.0008	0.043	35.79	108.36
2	6/12/79	19	12	0.0	0.0	0.0	35.79	108.36
2	6/27/79	0	9	0.0	0.0	0.0	0.0	108.36
2	6/27/79	0	10	0.021	0.0018	0.100	0.00	108.37
2	6/27/79	0	11	0.088	0.0152	0.858	0.01	108.37
2	6/27/79	0	12	0.131	0.0307	1.735	0.03	108.39
2	6/27/79	0	13	0.189	0.0609	3.441	0.07	108.44
2	6/27/79	0	14	0.283	0.1360	7.688	0.17	108.53
2	6/27/79	0	15	0.491	0.4279	24.181	0.43	108.80
2	6/27/79	0	16	0.661	0.8240	46.569	1.02	109.39
2	6/27/79	0	17	0.683	0.8846	49.994	1.83	110.19
2	6/27/79	0	18	0.686	0.8934	50.490	2.66	111.03
2	6/27/79	0	19	0.680	0.8758	49.498	3.50	111.86
2	6/27/79	0	20	0.652	0.7985	45.129	4.29	112.65
2	6/27/79	0	21	0.625	0.7263	41.048	5.00	113.37
2	6/27/79	0	22	0.594	0.6513	36.807	5.65	114.02
2	6/27/79	0	23	0.546	0.5375	30.374	6.21	114.58
2	6/27/79	0	24	0.479	0.4058	22.933	6.66	115.02
2	6/27/79	0	25	0.451	0.3579	20.228	7.02	115.38
2	6/27/79	0	26	0.405	0.2844	16.075	7.32	115.68
2	6/27/79	0	27	0.363	0.2246	12.691	7.56	115.92
2	6/27/79	0	28	0.335	0.1914	10.818	7.75	116.12
2	6/27/79	0	29	0.320	0.1744	9.858	7.93	116.29
2	6/27/79	0	30	0.296	0.1483	8.379	8.08	116.44
2	6/27/79	0	31	0.290	0.1422	8.034	8.22	116.58
2	6/27/79	0	32	0.283	0.1360	7.688	8.35	116.71
2	6/27/79	0	33	0.280	0.1330	7.515	8.47	116.84
2	6/27/79	0	34	0.287	0.1391	7.861	8.60	116.97
2	6/27/79	0	40	0.290	0.1422	8.034	9.40	117.76
2	6/27/79	0	41	0.293	0.1452	8.206	9.53	117.90
2	6/27/79	0	42	0.296	0.1483	8.379	9.67	118.03
2	6/27/79	0	43	0.302	0.1544	8.725	9.81	118.18
2	6/27/79	0	44	0.314	0.1676	9.474	9.96	118.33
2	6/27/79	0	45	0.329	0.1846	10.434	10.13	118.49
2	6/27/79	0	46	0.338	0.1951	11.026	10.31	118.67
2	6/27/79	0	47	0.351	0.2098	11.858	10.50	118.86
2	6/27/79	0	48	0.363	0.2246	12.691	10.70	119.07
2	6/27/79	0	49	0.369	0.2325	13.137	10.92	119.28
2	6/27/79	0	50	0.366	0.2282	12.899	11.14	119.50
2	6/27/79	0	51	0.363	0.2246	12.691	11.35	119.71
2	6/27/79	0	52	0.357	0.2172	12.274	11.56	119.92
2	6/27/79	0	53	0.338	0.1951	11.026	11.75	120.12
2	6/27/79	0	54	0.320	0.1744	9.858	11.93	120.29
2	6/27/79	0	55	0.302	0.1544	8.725	12.08	120.44
2	6/27/79	0	56	0.253	0.1080	6.105	12.20	120.57
2	6/27/79	0	57	0.223	0.0837	4.731	12.29	120.66
2	6/27/79	0	58	0.201	0.0688	3.889	12.37	120.73
2	6/27/79	0	59	0.177	0.0536	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
2	6/27/79	1	3	0.113	0.0234	1.324	12.56	120.92
2	6/27/79	1	4	0.101	0.0192	1.084	12.58	120.94
2	6/27/79	1	5	0.094	0.0171	0.964	12.60	120.96
2	6/27/79	1	6	0.085	0.0144	0.812	12.61	120.97
2	6/27/79	1	7	0.079	0.0127	0.720	12.62	120.99
2	6/27/79	1	8	0.073	0.0111	0.629	12.63	121.00
2	6/27/79	1	9	0.064	0.0087	0.491	12.64	121.01
2	6/27/79	1	10	0.058	0.0073	0.415	12.65	121.02
2	6/27/79	1	11	0.055	0.0068	0.384	12.66	121.02
2	6/27/79	1	12	0.052	0.0063	0.354	12.66	121.03
2	6/27/79	1	13	0.049	0.0057	0.324	12.67	121.03
2	6/27/79	1	14	0.046	0.0052	0.294	12.67	121.04
2	6/27/79	1	15	0.043	0.0047	0.263	12.68	121.04
2	6/27/79	1	16	0.037	0.0036	0.203	12.68	121.05
2	6/27/79	1	17	0.030	0.0025	0.142	12.69	121.05
2	6/27/79	1	18	0.027	0.0023	0.128	12.69	121.05
2	6/27/79	1	19	0.024	0.0020	0.114	12.69	121.05
2	6/27/79	1	20	0.021	0.0018	0.100	12.69	121.06
2	6/27/79	1	22	0.018	0.0015	0.085	12.70	121.06
2	6/27/79	1	24	0.015	0.0013	0.071	12.70	121.06
2	6/27/79	1	26	0.012	0.0010	0.057	12.70	121.06
2	6/27/79	1	29	0.009	0.0008	0.043	12.70	121.07
2	6/27/79	1	31	0.006	0.0005	0.028	12.70	121.07
2	6/27/79	1	34	0.003	0.0003	0.014	12.70	121.07
2	6/27/79	1	45	0.0	0.0	0.0	12.71	121.07
2	7/ 3/79	7	58	0.0	0.0	0.0	0.0	121.07
2	7/ 3/79	8	0	0.006	0.0005	0.028	0.00	121.07
2	7/ 3/79	8	2	0.012	0.0010	0.057	0.00	121.07
2	7/ 3/79	8	4	0.018	0.0015	0.085	0.00	121.07
2	7/ 3/79	8	7	0.024	0.0020	0.114	0.01	121.08
2	7/ 3/79	8	12	0.027	0.0023	0.128	0.02	121.09
2	7/ 3/79	8	14	0.034	0.0031	0.173	0.02	121.09
2	7/ 3/79	8	16	0.037	0.0036	0.203	0.03	121.10
2	7/ 3/79	8	20	0.040	0.0041	0.233	0.05	121.12
2	7/ 3/79	8	22	0.046	0.0052	0.294	0.05	121.12
2	7/ 3/79	8	24	0.049	0.0057	0.324	0.06	121.13
2	7/ 3/79	8	28	0.046	0.0052	0.294	0.08	121.15
2	7/ 3/79	8	30	0.037	0.0036	0.203	0.09	121.16
2	7/ 3/79	8	32	0.030	0.0025	0.142	0.10	121.17
2	7/ 3/79	8	34	0.024	0.0020	0.114	0.10	121.17
2	7/ 3/79	8	36	0.021	0.0018	0.100	0.11	121.18
2	7/ 3/79	8	38	0.015	0.0013	0.071	0.11	121.18
2	7/ 3/79	8	40	0.009	0.0008	0.043	0.11	121.18
2	7/ 3/79	8	44	0.006	0.0005	0.028	0.11	121.18
2	7/ 3/79	8	46	0.012	0.0010	0.057	0.12	121.19
2	7/ 3/79	8	48	0.076	0.0119	0.675	0.13	121.20
2	7/ 3/79	8	50	0.131	0.0307	1.735	0.17	121.24
2	7/ 3/79	8	52	0.195	0.0648	3.665	0.26	121.33
2	7/ 3/79	8	54	0.347	0.2061	11.650	0.51	121.58
2	7/ 3/79	8	56	0.430	0.3222	18.212	1.01	122.08

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
2	7/ 3/79	8	58	0.451	0.3579	20.228	1.65	122.72
2	7/ 3/79	9	0	0.424	0.3125	17.660	2.28	123.35
2	7/ 3/79	9	2	0.405	0.2844	16.075	2.84	123.91
2	7/ 3/79	9	4	0.390	0.2620	14.806	3.36	124.43
2	7/ 3/79	9	6	0.378	0.2451	13.852	3.84	124.91
2	7/ 3/79	9	8	0.344	0.2025	11.442	4.26	125.33
2	7/ 3/79	9	10	0.305	0.1574	8.898	4.60	125.67
2	7/ 3/79	9	12	0.268	0.1215	6.865	4.86	125.93
2	7/ 3/79	9	14	0.238	0.0953	5.387	5.06	126.13
2	7/ 3/79	9	16	0.223	0.0837	4.731	5.23	126.30
2	7/ 3/79	9	18	0.216	0.0791	4.468	5.39	126.46
2	7/ 3/79	9	20	0.210	0.0748	4.225	5.53	126.60
2	7/ 3/79	9	22	0.213	0.0767	4.337	5.67	126.74
2	7/ 3/79	9	24	0.256	0.1107	6.257	5.85	126.92
2	7/ 3/79	9	26	0.378	0.2451	13.852	6.19	127.26
2	7/ 3/79	9	28	0.500	0.4457	25.189	6.84	127.91
2	7/ 3/79	9	30	0.597	0.6586	37.223	7.88	128.95
2	7/ 3/79	9	32	0.655	0.8070	45.609	9.26	130.33
2	7/ 3/79	9	34	0.701	0.9373	52.971	10.90	131.97
2	7/ 3/79	9	36	0.826	1.3567	76.671	13.06	134.13
2	7/ 3/79	9	38	0.884	1.5829	89.458	15.83	136.90
2	7/ 3/79	9	40	0.914	1.7075	96.499	18.93	140.00
2	7/ 3/79	9	44	0.972	1.9683	111.238	25.85	146.92
2	7/ 3/79	9	46	0.908	1.6826	95.091	29.29	150.36
2	7/ 3/79	9	48	0.756	1.1106	62.765	31.92	152.99
2	7/ 3/79	9	50	0.634	0.7493	42.345	33.68	154.75
2	7/ 3/79	9	52	0.445	0.3477	19.652	34.71	155.78
2	7/ 3/79	9	54	0.329	0.1846	10.434	35.21	156.28
2	7/ 3/79	9	56	0.256	0.1107	6.257	35.49	156.56
2	7/ 3/79	9	58	0.219	0.0814	4.599	35.67	156.74
2	7/ 3/79	10	0	0.180	0.0552	3.122	35.80	156.87
2	7/ 3/79	10	2	0.149	0.0389	2.196	35.89	156.96
2	7/ 3/79	10	4	0.122	0.0266	1.504	35.95	157.02
2	7/ 3/79	10	6	0.091	0.0160	0.904	35.99	157.06
2	7/ 3/79	10	8	0.073	0.0111	0.629	36.01	157.08
2	7/ 3/79	10	10	0.058	0.0073	0.415	36.03	157.10
2	7/ 3/79	10	12	0.046	0.0052	0.294	36.04	157.11
2	7/ 3/79	10	14	0.037	0.0036	0.203	36.05	157.12
2	7/ 3/79	10	16	0.034	0.0031	0.173	36.06	157.13
2	7/ 3/79	10	18	0.027	0.0023	0.128	36.06	157.13
2	7/ 3/79	10	22	0.021	0.0018	0.100	36.07	157.14
2	7/ 3/79	10	26	0.015	0.0013	0.071	36.08	157.15
2	7/ 3/79	10	28	0.012	0.0010	0.057	36.08	157.15
2	7/ 3/79	10	32	0.006	0.0005	0.028	36.08	157.15
2	7/ 3/79	10	38	0.0	0.0	0.0	36.08	157.15
2	7/ 3/79	20	46	0.0	0.0	0.0	0.0	157.15
2	7/ 3/79	20	47	0.052	0.0063	0.354	0.00	157.16
2	7/ 3/79	20	48	0.104	0.0202	1.144	0.02	157.17
2	7/ 3/79	20	49	0.158	0.0436	2.461	0.05	157.20
2	7/ 3/79	20	50	0.232	0.0907	5.124	0.11	157.26

TABLE D1- 2. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	7/ 3/79	20	51	0.366	0.2282	12.899	0.26	157.41
2	7/ 3/79	20	52	0.515	0.4754	26.869	0.59	157.74
2	7/ 3/79	20	53	0.543	0.5312	30.022	1.06	158.22
2	7/ 3/79	20	54	0.533	0.5125	28.966	1.56	158.71
2	7/ 3/79	20	55	0.500	0.4457	25.189	2.01	159.16
2	7/ 3/79	20	56	0.460	0.3735	21.108	2.39	159.55
2	7/ 3/79	20	57	0.415	0.2985	16.867	2.71	159.86
2	7/ 3/79	20	58	0.378	0.2451	13.852	2.97	160.12
2	7/ 3/79	20	59	0.341	0.1988	11.234	3.17	160.33
2	7/ 3/79	21	0	0.323	0.1778	10.050	3.35	160.50
2	7/ 3/79	21	1	0.274	0.1269	7.169	3.50	160.65
2	7/ 3/79	21	2	0.238	0.0953	5.387	3.60	160.75
2	7/ 3/79	21	3	0.207	0.0728	4.113	3.68	160.83
2	7/ 3/79	21	4	0.192	0.0629	3.553	3.74	160.90
2	7/ 3/79	21	5	0.168	0.0486	2.745	3.80	160.95
2	7/ 3/79	21	6	0.149	0.0389	2.196	3.84	160.99
2	7/ 3/79	21	7	0.134	0.0321	1.812	3.87	161.02
2	7/ 3/79	21	8	0.119	0.0256	1.444	3.90	161.05
2	7/ 3/79	21	9	0.110	0.0224	1.264	3.92	161.07
2	7/ 3/79	21	10	0.098	0.0181	1.024	3.94	161.09
2	7/ 3/79	21	11	0.088	0.0152	0.858	3.95	161.11
2	7/ 3/79	21	12	0.082	0.0136	0.766	3.97	161.12
2	7/ 3/79	21	13	0.076	0.0119	0.675	3.98	161.13
2	7/ 3/79	21	14	0.073	0.0111	0.629	3.99	161.14
2	7/ 3/79	21	15	0.070	0.0103	0.583	4.00	161.15
2	7/ 3/79	21	16	0.067	0.0095	0.537	4.01	161.16
2	7/ 3/79	21	18	0.061	0.0079	0.445	4.03	161.18
2	7/ 3/79	21	20	0.055	0.0068	0.384	4.04	161.19
2	7/ 3/79	21	23	0.052	0.0063	0.354	4.06	161.21
2	7/ 3/79	21	24	0.055	0.0068	0.384	4.07	161.22
2	7/ 3/79	21	25	0.058	0.0073	0.415	4.07	161.22
2	7/ 3/79	21	28	0.061	0.0079	0.445	4.09	161.25
2	7/ 3/79	21	30	0.064	0.0087	0.491	4.11	161.26
2	7/ 3/79	21	33	0.064	0.0087	0.491	4.13	161.29
2	7/ 3/79	21	35	0.061	0.0079	0.445	4.15	161.30
2	7/ 3/79	21	38	0.055	0.0068	0.384	4.17	161.32
2	7/ 3/79	21	42	0.037	0.0036	0.203	4.19	161.34
2	7/ 3/79	21	47	0.018	0.0015	0.085	4.20	161.35
2	7/ 3/79	21	50	0.009	0.0008	0.043	4.20	161.36
2	7/ 3/79	21	52	0.003	0.0003	0.014	4.21	161.36
2	7/ 3/79	21	55	0.0	0.0	0.0	4.21	161.36
2	7/13/79	9	52	0.0	0.0	0.0	0.0	161.36
2	7/13/79	9	54	0.006	0.0005	0.028	0.00	161.36
2	7/13/79	9	56	0.018	0.0015	0.085	0.00	161.36
2	7/13/79	9	58	0.012	0.0010	0.057	0.00	161.36
2	7/13/79	10	0	0.009	0.0008	0.043	0.01	161.36
2	7/13/79	10	8	0.012	0.0010	0.057	0.01	161.37
2	7/13/79	10	12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	7/13/79	10	40	0.0	0.0	0.0	0.02	161.38
2	7/13/79	20	2	0.0	0.0	0.0	0.02	161.38
2	7/13/79	20	3	0.015	0.0013	0.071	0.02	161.38
2	7/13/79	20	4	0.070	0.0103	0.583	0.03	161.39
2	7/13/79	20	5	0.152	0.0402	2.272	0.05	161.41
2	7/13/79	20	6	0.384	0.2535	14.329	0.19	161.55
2	7/13/79	20	7	0.561	0.5720	32.327	0.58	161.94
2	7/13/79	20	8	0.646	0.7815	44.169	1.22	162.58
2	7/13/79	20	9	0.652	0.7985	45.129	1.96	163.32
2	7/13/79	20	10	0.634	0.7493	42.345	2.69	164.05
2	7/13/79	20	11	0.604	0.6734	38.056	3.36	164.72
2	7/13/79	20	12	0.561	0.5720	32.327	3.95	165.30
2	7/13/79	20	13	0.503	0.4517	25.525	4.43	165.79
2	7/13/79	20	14	0.442	0.3426	19.364	4.80	166.16
2	7/13/79	20	15	0.399	0.2751	15.547	5.09	166.45
2	7/13/79	20	16	0.308	0.1608	9.090	5.30	166.66
2	7/13/79	20	17	0.287	0.1391	7.861	5.44	166.80
2	7/13/79	20	18	0.265	0.1188	6.713	5.56	166.92
2	7/13/79	20	19	0.241	0.0976	5.518	5.66	167.02
2	7/13/79	20	20	0.226	0.0860	4.862	5.75	167.11
2	7/13/79	20	21	0.207	0.0728	4.113	5.83	167.18
2	7/13/79	20	22	0.158	0.0436	2.461	5.88	167.24
2	7/13/79	20	23	0.131	0.0307	1.735	5.92	167.27
2	7/13/79	20	24	0.104	0.0202	1.144	5.94	167.30
2	7/13/79	20	25	0.076	0.0119	0.675	5.95	167.31
2	7/13/79	20	26	0.067	0.0095	0.537	5.96	167.32
2	7/13/79	20	27	0.061	0.0079	0.445	5.97	167.33
2	7/13/79	20	28	0.055	0.0068	0.384	5.98	167.34
2	7/13/79	20	30	0.049	0.0057	0.324	5.99	167.35
2	7/13/79	20	31	0.043	0.0047	0.263	6.00	167.35
2	7/13/79	20	33	0.037	0.0036	0.203	6.00	167.36
2	7/13/79	20	34	0.030	0.0025	0.142	6.01	167.36
2	7/13/79	20	35	0.024	0.0020	0.114	6.01	167.37
2	7/13/79	20	37	0.021	0.0018	0.100	6.01	167.37
2	7/13/79	20	39	0.018	0.0015	0.085	6.02	167.37
2	7/13/79	20	41	0.015	0.0013	0.071	6.02	167.38
2	7/13/79	20	43	0.012	0.0010	0.057	6.02	167.38
2	7/13/79	20	47	0.009	0.0008	0.043	6.02	167.38
2	7/13/79	20	50	0.006	0.0005	0.028	6.03	167.38
2	7/13/79	20	53	0.003	0.0003	0.014	6.03	167.38
2	7/13/79	21	0	0.0	0.0	0.0	6.03	167.38
2	7/14/79	0	44	0.0	0.0	0.0	6.03	167.38
2	7/14/79	0	46	0.037	0.0036	0.203	6.03	167.39
2	7/14/79	0	48	0.122	0.0266	1.504	6.06	167.42
2	7/14/79	0	50	0.232	0.0907	5.124	6.17	167.53
2	7/14/79	0	52	0.497	0.4398	24.853	6.67	168.03
2	7/14/79	0	54	0.765	1.1403	64.445	8.16	169.52
2	7/14/79	0	56	0.759	1.1202	63.309	10.29	171.64
2	7/14/79	0	58	0.640	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
2	7/14/79	1	6	0.491	0.4279	24.181	15.73	177.09
2	7/14/79	1	8	0.585	0.6292	35.559	16.73	178.09
2	7/14/79	1	10	0.591	0.6439	36.391	17.93	179.29
2	7/14/79	1	12	0.616	0.7034	39.752	19.20	180.55
2	7/14/79	1	14	0.689	0.9022	50.986	20.71	182.07
2	7/14/79	1	16	0.738	1.0528	59.500	22.55	183.91
2	7/14/79	1	18	0.607	0.6807	38.472	24.18	185.54
2	7/14/79	1	20	0.475	0.4004	22.629	25.20	186.56
2	7/14/79	1	22	0.402	0.2798	15.811	25.84	187.20
2	7/14/79	1	24	0.341	0.1988	11.234	26.29	187.65
2	7/14/79	1	26	0.287	0.1391	7.861	26.61	187.97
2	7/14/79	1	28	0.219	0.0814	4.599	26.82	188.18
2	7/14/79	1	30	0.244	0.1000	5.649	26.99	188.35
2	7/14/79	1	32	0.299	0.1513	8.552	27.23	188.58
2	7/14/79	1	34	0.378	0.2451	13.852	27.60	188.96
2	7/14/79	1	36	0.427	0.3171	17.924	28.13	189.49
2	7/14/79	1	37	0.439	0.3375	19.076	28.44	189.80
2	7/14/79	1	38	0.427	0.3171	17.924	28.75	190.10
2	7/14/79	1	40	0.381	0.2493	14.091	29.28	190.64
2	7/14/79	1	42	0.354	0.2135	12.066	29.72	191.07
2	7/14/79	1	44	0.396	0.2704	15.283	30.17	191.53
2	7/14/79	1	46	0.457	0.3681	20.804	30.77	192.13
2	7/14/79	1	48	0.445	0.3477	19.652	31.45	192.81
2	7/14/79	1	50	0.424	0.3125	17.660	32.07	193.43
2	7/14/79	1	52	0.375	0.2409	13.614	32.59	193.95
2	7/14/79	1	54	0.329	0.1846	10.434	32.99	194.35
2	7/14/79	1	56	0.250	0.1053	5.953	33.26	194.62
2	7/14/79	1	57	0.226	0.0860	4.862	33.35	194.71
2	7/14/79	1	58	0.201	0.0688	3.889	33.43	194.79
2	7/14/79	1	59	0.189	0.0609	3.441	33.49	194.85
2	7/14/79	2	0	0.174	0.0519	2.933	33.54	194.90
2	7/14/79	2	1	0.152	0.0402	2.272	33.59	194.94
2	7/14/79	2	2	0.137	0.0334	1.888	33.62	194.98
2	7/14/79	2	3	0.125	0.0280	1.581	33.65	195.01
2	7/14/79	2	4	0.116	0.0245	1.384	33.67	195.03
2	7/14/79	2	5	0.107	0.0213	1.204	33.70	195.05
2	7/14/79	2	7	0.101	0.0192	1.084	33.73	195.09
2	7/14/79	2	8	0.098	0.0181	1.024	33.75	195.11
2	7/14/79	2	9	0.091	0.0160	0.904	33.77	195.12
2	7/14/79	2	10	0.085	0.0144	0.812	33.78	195.14
2	7/14/79	2	11	0.079	0.0127	0.720	33.79	195.15
2	7/14/79	2	12	0.073	0.0111	0.629	33.81	195.16
2	7/14/79	2	14	0.067	0.0095	0.537	33.82	195.18
2	7/14/79	2	17	0.061	0.0079	0.445	33.85	195.21
2	7/14/79	2	19	0.055	0.0068	0.384	33.86	195.22
2	7/14/79	2	22	0.049	0.0057	0.324	33.88	195.24
2	7/14/79	2	23	0.046	0.0052	0.294	33.89	195.24
2	7/14/79	2	26	0.037	0.0036	0.203	33.90	195.26
2	7/14/79	2	30	0.034	0.0031	0.173	33.91	195.27
2	7/14/79	2	33	0.030	0.0025	0.142	33.92	195.28
2	7/14/79	2	36	0.027	0.0023	0.128	33.93	195.28
2	7/14/79	2	38	0.024	0.0020	0.114	33.93	195.29
2	7/14/79	2	40	0.021	0.0018	0.100	33.93	195.29
2	7/14/79	2	42	0.018	0.0015	0.085	33.94	195.29
2	7/14/79	2	43	0.030	0.0025	0.142	33.94	195.30
2	7/14/79	2	44	0.043	0.0047	0.263	33.94	195.30
2	7/14/79	2	46	0.046	0.0052	0.294	33.95	195.31
2	7/14/79	2	47	0.049	0.0057	0.324	33.96	195.31
2	7/14/79	2	49	0.052	0.0063	0.354	33.97	195.32
2	7/14/79	2	50	0.055	0.0068	0.384	33.97	195.33
2	7/14/79	2	52	0.052	0.0063	0.354	33.99	195.34
2	7/14/79	2	53	0.049	0.0057	0.324	33.99	195.35
2	7/14/79	2	56	0.043	0.0047	0.263	34.01	195.36
2	7/14/79	2	58	0.037	0.0036	0.203	34.01	195.37
2	7/14/79	3	0	0.030	0.0025	0.142	34.02	195.38
2	7/14/79	3	4	0.024	0.0020	0.114	34.03	195.39
2	7/14/79	3	6	0.021	0.0018	0.100	34.03	195.39
2	7/14/79	3	9	0.018	0.0015	0.085	34.04	195.39
2	7/14/79	3	15	0.012	0.0010	0.057	34.04	195.40
2	7/14/79	3	20	0.006	0.0005	0.028	34.05	195.40
2	7/14/79	3	27	0.0	0.0	0.0	34.05	195.41
2	7/14/79	3	53	0.0	0.0	0.0	34.05	195.41
2	7/14/79	3	54	0.006	0.0005	0.028	34.05	195.41
2	7/14/79	3	55	0.018	0.0015	0.085	34.05	195.41
2	7/14/79	3	56	0.037	0.0036	0.203	34.05	195.41
2	7/14/79	3	58	0.043	0.0047	0.263	34.06	195.42
2	7/14/79	4	1	0.049	0.0057	0.324	34.07	195.43
2	7/14/79	4	2	0.055	0.0068	0.384	34.08	195.44
2	7/14/79	4	3	0.058	0.0073	0.415	34.09	195.44
2	7/14/79	4	6	0.055	0.0068	0.384	34.11	195.46
2	7/14/79	4	9	0.049	0.0057	0.324	34.12	195.48
2	7/14/79	4	12	0.043	0.0047	0.263	34.14	195.50
2	7/14/79	4	15	0.037	0.0036	0.203	34.15	195.51
2	7/14/79	4	19	0.030	0.0025	0.142	34.16	195.52
2	7/14/79	4	23	0.027	0.0023	0.128	34.17	195.53
2	7/14/79	4	27	0.024	0.0020	0.114	34.18	195.54
2	7/14/79	4	28	0.021	0.0018	0.100	34.18	195.54
2	7/14/79	4	30	0.018	0.0015	0.085	34.18	195.54
2	7/14/79	4	35	0.012	0.0010	0.057	34.19	195.55
2	7/14/79	4	39	0.006	0.0005	0.028	34.19	195.55
2	7/14/79	4	47	0.0	0.0	0.0	34.19	195.55
2	7/14/79	5	27	0.0	0.0	0.0	34.19	195.55
2	7/14/79	5	28	0.006	0.0005	0.028	34.20	195.55
2	7/14/79	5	29	0.015	0.0013	0.071	34.20	195.55
2	7/14/79	5	30	0.021	0.0018	0.100	34.20	195.55
2	7/14/79	5	31	0.018	0.0015	0.085	34.20	195.56
2	7/14/79	5	32	0.043	0.0047	0.263	34.20	195.56
2	7/14/79	5	35	0.046	0.0052	0.294	34.22	195.57
2	7/14/79	5	36	0.043	0.0047	0.263	34.22	195.58
2	7/14/79	5	38	0.037	0.0036	0.203	34.23	195.59
2	7/14/79	5	39	0.034	0.0031	0.173	34.23	195.59
2	7/14/79	5	42	0.030	0.0025	0.142	34.24	195.60
2	7/14/79	5	44	0.024	0.0020	0.114	34.24	195.60
2	7/14/79	5	47	0.018	0.0015	0.085	34.25	195.61

TABLE D1- 2. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	7/14/79	5	50	0.012	0.0010	0.057	34.25	195.61
2	7/14/79	5	53	0.006	0.0005	0.028	34.25	195.61
2	7/14/79	5	57	0.0	0.0	0.0	34.26	195.61
2	8/19/79	2	26	0.0	0.0	0.0	0.0	195.61
2	8/19/79	2	27	0.027	0.0023	0.128	0.00	195.61
2	8/19/79	2	28	0.034	0.0031	0.173	0.00	195.62
2	8/19/79	2	29	0.037	0.0036	0.203	0.01	195.62
2	8/19/79	2	30	0.030	0.0025	0.142	0.01	195.62
2	8/19/79	2	31	0.027	0.0023	0.128	0.01	195.62
2	8/19/79	2	33	0.030	0.0025	0.142	0.02	195.63
2	8/19/79	2	34	0.034	0.0031	0.173	0.02	195.63
2	8/19/79	2	36	0.027	0.0023	0.128	0.02	195.64
2	8/19/79	2	37	0.024	0.0020	0.114	0.03	195.64
2	8/19/79	2	39	0.018	0.0015	0.085	0.03	195.64
2	8/19/79	2	40	0.012	0.0010	0.057	0.03	195.64
2	8/19/79	2	41	0.006	0.0005	0.028	0.03	195.64
2	8/19/79	2	42	0.0	0.0	0.0	0.03	195.64
2	8/19/79	5	25	0.0	0.0	0.0	0.03	195.64
2	8/19/79	5	26	0.015	0.0013	0.071	0.03	195.64
2	8/19/79	5	27	0.024	0.0020	0.114	0.03	195.65
2	8/19/79	5	28	0.034	0.0031	0.173	0.04	195.65
2	8/19/79	5	29	0.040	0.0041	0.233	0.04	195.65
2	8/19/79	5	31	0.037	0.0036	0.203	0.05	195.66
2	8/19/79	5	32	0.030	0.0025	0.142	0.05	195.66
2	8/19/79	5	33	0.024	0.0020	0.114	0.05	195.66
2	8/19/79	5	35	0.021	0.0018	0.100	0.06	195.67
2	8/19/79	5	36	0.024	0.0020	0.114	0.06	195.67
2	8/19/79	5	37	0.030	0.0025	0.142	0.06	195.67
2	8/19/79	5	39	0.034	0.0031	0.173	0.06	195.68
2	8/19/79	5	40	0.037	0.0036	0.203	0.07	195.68
2	8/19/79	5	41	0.049	0.0057	0.324	0.07	195.68
2	8/19/79	5	42	0.055	0.0068	0.384	0.08	195.69
2	8/19/79	5	45	0.058	0.0073	0.415	0.10	195.71
2	8/19/79	5	47	0.055	0.0068	0.384	0.11	195.72
2	8/19/79	5	49	0.049	0.0057	0.324	0.12	195.74
2	8/19/79	5	50	0.043	0.0047	0.263	0.13	195.74
2	8/19/79	5	51	0.037	0.0036	0.203	0.13	195.74
2	8/19/79	5	53	0.030	0.0025	0.142	0.14	195.75
2	8/19/79	5	56	0.024	0.0020	0.114	0.14	195.76
2	8/19/79	5	58	0.037	0.0036	0.203	0.15	195.76
2	8/19/79	5	59	0.052	0.0063	0.354	0.15	195.77
2	8/19/79	6	0	0.064	0.0087	0.491	0.16	195.77
2	8/19/79	6	1	0.070	0.0103	0.583	0.17	195.78
2	8/19/79	6	3	0.076	0.0119	0.675	0.19	195.80
2	8/19/79	6	5	0.073	0.0111	0.629	0.21	195.82
2	8/19/79	6	8	0.061	0.0079	0.445	0.24	195.85
2	8/19/79	6	9	0.055	0.0068	0.384	0.25	195.86
2	8/19/79	6	11	0.049	0.0057	0.324	0.26	195.87
2	8/19/79	6	17	0.030	0.0025	0.142	0.28	195.89
2	8/19/79	6	20	0.034	0.0031	0.173	0.29	195.90
2	8/19/79	6	23	0.030	0.0025	0.142	0.29	195.91
2	8/19/79	6	26	0.027	0.0023	0.128	0.30	195.91
2	8/19/79	6	27	0.030	0.0025	0.142	0.30	195.91
2	8/19/79	6	29	0.037	0.0036	0.203	0.31	195.92
2	8/19/79	6	31	0.030	0.0025	0.142	0.31	195.93
2	8/19/79	6	34	0.021	0.0018	0.100	0.32	195.93
2	8/19/79	6	36	0.018	0.0015	0.085	0.32	195.94
2	8/19/79	6	40	0.015	0.0013	0.071	0.33	195.94
2	8/19/79	6	44	0.012	0.0010	0.057	0.33	195.95
2	8/19/79	6	50	0.006	0.0005	0.028	0.34	195.95
2	8/19/79	6	55	0.0	0.0	0.0	0.34	195.95
2	8/19/79	21	1	0.0	0.0	0.0	0.0	195.95
2	8/19/79	21	2	0.006	0.0005	0.028	0.00	195.95
2	8/19/79	21	3	0.015	0.0013	0.071	0.00	195.95
2	8/19/79	21	4	0.021	0.0018	0.100	0.00	195.95
2	8/19/79	21	5	0.030	0.0025	0.142	0.00	195.96
2	8/19/79	21	6	0.034	0.0031	0.173	0.01	195.96
2	8/19/79	21	7	0.030	0.0025	0.142	0.01	195.96
2	8/19/79	21	9	0.024	0.0020	0.114	0.01	195.96
2	8/19/79	21	11	0.021	0.0018	0.100	0.02	195.97
2	8/19/79	21	15	0.021	0.0018	0.100	0.02	195.97
2	8/19/79	21	17	0.024	0.0020	0.114	0.03	195.98
2	8/19/79	21	18	0.030	0.0025	0.142	0.03	195.98
2	8/19/79	21	19	0.040	0.0041	0.233	0.03	195.98
2	8/19/79	21	20	0.049	0.0057	0.324	0.04	195.99
2	8/19/79	21	21	0.052	0.0063	0.354	0.04	195.99
2	8/19/79	21	22	0.055	0.0068	0.384	0.05	196.00
2	8/19/79	21	24	0.061	0.0079	0.445	0.06	196.01
2	8/19/79	21	27	0.067	0.0095	0.537	0.09	196.04
2	8/19/79	21	29	0.073	0.0111	0.629	0.11	196.06
2	8/19/79	21	31	0.076	0.0119	0.675	0.13	196.08
2	8/19/79	21	33	0.073	0.0111	0.629	0.15	196.10
2	8/19/79	21	34	0.067	0.0095	0.537	0.16	196.11
2	8/19/79	21	36	0.061	0.0079	0.445	0.18	196.13
2	8/19/79	21	37	0.055	0.0068	0.384	0.18	196.13
2	8/19/79	21	38	0.052	0.0063	0.354	0.19	196.14
2	8/19/79	21	39	0.049	0.0057	0.324	0.20	196.15
2	8/19/79	21	41	0.046	0.0052	0.294	0.21	196.16
2	8/19/79	21	43	0.049	0.0057	0.324	0.22	196.17
2	8/19/79	21	44	0.052	0.0063	0.354	0.22	196.17
2	8/19/79	21	45	0.058	0.0073	0.415	0.23	196.18
2	8/19/79	21	46	0.061	0.0079	0.445	0.24	196.19
2	8/19/79	21	48	0.055	0.0068	0.384	0.25	196.20
2	8/19/79	21	51	0.040	0.0041	0.233	0.26	196.21
2	8/19/79	21	53	0.030	0.0025	0.142	0.27	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	DISCHARGE RATE CMS	DISCHARGE INTENSITY MMPH	STORM RUNOFF MM	TOTAL RUNOFF MM
2	8/19/79	21	59	0.009	0.0008	0.043	0.28	196.23
2	8/19/79	22	2	0.006	0.0005	0.028	0.28	196.23
2	8/19/79	22	17	0.003	0.0003	0.014	0.29	196.24
2	8/19/79	22	19	0.006	0.0005	0.028	0.29	196.24
2	8/19/79	22	20	0.024	0.0020	0.114	0.29	196.24
2	8/19/79	22	21	0.040	0.0041	0.233	0.29	196.24
2	8/19/79	22	22	0.055	0.0068	0.384	0.30	196.25
2	8/19/79	22	23	0.064	0.0087	0.491	0.30	196.25
2	8/19/79	22	27	0.061	0.0079	0.445	0.34	196.29
2	8/19/79	22	29	0.052	0.0063	0.354	0.35	196.30
2	8/19/79	22	30	0.049	0.0057	0.324	0.35	196.30
2	8/19/79	22	32	0.040	0.0041	0.233	0.36	196.31
2	8/19/79	22	35	0.030	0.0025	0.142	0.37	196.32
2	8/19/79	22	38	0.024	0.0020	0.114	0.38	196.33
2	8/19/79	22	41	0.018	0.0015	0.085	0.38	196.33
2	8/19/79	22	44	0.015	0.0013	0.071	0.39	196.34
2	8/19/79	22	50	0.012	0.0010	0.057	0.39	196.34
2	8/19/79	22	55	0.015	0.0013	0.071	0.40	196.35
2	8/19/79	22	56	0.018	0.0015	0.085	0.40	196.35
2	8/19/79	22	57	0.024	0.0020	0.114	0.40	196.35
2	8/19/79	22	58	0.027	0.0023	0.128	0.40	196.35
2	8/19/79	23	1	0.024	0.0020	0.114	0.41	196.36
2	8/19/79	23	5	0.018	0.0015	0.085	0.42	196.37
2	8/19/79	23	8	0.015	0.0013	0.071	0.42	196.37
2	8/19/79	23	15	0.009	0.0008	0.043	0.43	196.38
2	8/19/79	23	22	0.003	0.0003	0.014	0.43	196.38
2	8/19/79	23	30	0.0	0.0	0.0	0.43	196.38
2	8/21/79	18	43	0.0	0.0	0.0	0.0	196.38
2	8/21/79	18	44	0.006	0.0005	0.028	0.00	196.38
2	8/21/79	18	45	0.009	0.0008	0.043	0.00	196.38
2	8/21/79	18	46	0.018	0.0015	0.085	0.00	196.38
2	8/21/79	18	47	0.037	0.0036	0.203	0.00	196.39
2	8/21/79	18	48	0.070	0.0103	0.583	0.01	196.39
2	8/21/79	18	49	0.091	0.0160	0.904	0.02	196.41
2	8/21/79	18	50	0.113	0.0234	1.324	0.04	196.42
2	8/21/79	18	51	0.140	0.0348	1.965	0.07	196.45
2	8/21/79	18	52	0.149	0.0389	2.196	0.10	196.49
2	8/21/79	18	53	0.158	0.0436	2.461	0.14	196.53
2	8/21/79	18	54	0.165	0.0469	2.650	0.19	196.57
2	8/21/79	18	55	0.168	0.0486	2.745	0.23	196.61
2	8/21/79	18	57	0.171	0.0502	2.839	0.32	196.71
2	8/21/79	18	58	0.186	0.0589	3.329	0.37	196.76
2	8/21/79	18	59	0.198	0.0668	3.777	0.43	196.82
2	8/21/79	19	0	0.204	0.0708	4.001	0.50	196.88
2	8/21/79	19	1	0.210	0.0748	4.225	0.57	196.95
2	8/21/79	19	2	0.213	0.0767	4.337	0.64	197.02
2	8/21/79	19	3	0.219	0.0814	4.599	0.71	197.10
2	8/21/79	19	5	0.213	0.0767	4.337	0.86	197.24
2	8/21/79	19	6	0.207	0.0728	4.113	0.93	197.31
2	8/21/79	19	8	0.201	0.0688	3.889	1.07	197.45

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
2	8/21/79	19	9	0.195	0.0648	3.665	1.13	197.51
2	8/21/79	19	10	0.186	0.0589	3.329	1.19	197.57
2	8/21/79	19	11	0.177	0.0536	3.028	1.24	197.62
2	8/21/79	19	12	0.168	0.0486	2.745	1.29	197.67
2	8/21/79	19	13	0.158	0.0436	2.461	1.33	197.71
2	8/21/79	19	17	0.134	0.0321	1.812	1.47	197.86
2	8/21/79	19	20	0.119	0.0256	1.444	1.56	197.94
2	8/21/79	19	22	0.104	0.0202	1.144	1.60	197.98
2	8/21/79	19	23	0.098	0.0181	1.024	1.62	198.00
2	8/21/79	19	24	0.088	0.0152	0.858	1.63	198.01
2	8/21/79	19	25	0.082	0.0136	0.766	1.65	198.03
2	8/21/79	19	26	0.073	0.0111	0.629	1.66	198.04
2	8/21/79	19	27	0.067	0.0095	0.537	1.67	198.05
2	8/21/79	19	28	0.061	0.0079	0.445	1.68	198.06
2	8/21/79	19	30	0.055	0.0068	0.384	1.69	198.07
2	8/21/79	19	31	0.052	0.0063	0.354	1.70	198.08
2	8/21/79	19	33	0.043	0.0047	0.263	1.71	198.09
2	8/21/79	19	35	0.034	0.0031	0.173	1.71	198.09
2	8/21/79	19	36	0.030	0.0025	0.142	1.72	198.10
2	8/21/79	19	38	0.024	0.0020	0.114	1.72	198.10
2	8/21/79	19	42	0.021	0.0018	0.100	1.73	198.11
2	8/21/79	19	47	0.021	0.0018	0.100	1.74	198.12
2	8/21/79	19	57	0.024	0.0020	0.114	1.75	198.14
2	8/21/79	20	0	0.024	0.0020	0.114	1.76	198.14
2	8/21/79	20	4	0.021	0.0018	0.100	1.77	198.15
2	8/21/79	20	8	0.018	0.0015	0.085	1.77	198.15
2	8/21/79	20	10	0.012	0.0010	0.057	1.77	198.16
2	8/21/79	20	12	0.006	0.0005	0.028	1.78	198.16
2	8/21/79	20	15	0.0	0.0	0.0	1.78	198.16
2	10/22/79	3	44	0.0	0.0	0.0	0.0	198.16
2	10/22/79	3	54	0.003	0.0003	0.014	0.00	198.16
2	10/22/79	4	13	0.003	0.0003	0.014	0.01	198.16
2	10/22/79	4	25	0.006	0.0005	0.028	0.01	198.17
2	10/22/79	4	38	0.009	0.0008	0.043	0.02	198.18
2	10/22/79	4	57	0.012	0.0010	0.057	0.03	198.19
2	10/22/79	5	2	0.015	0.0013	0.071	0.04	198.20
2	10/22/79	5	8	0.018	0.0015	0.085	0.05	198.21
2	10/22/79	5	15	0.018	0.0015	0.085	0.06	198.22
2	10/22/79	5	18	0.021	0.0018	0.100	0.06	198.22
2	10/22/79	5	23	0.024	0.0020	0.114	0.07	198.23
2	10/22/79	5	29	0.024	0.0020	0.114	0.08	198.24
2	10/22/79	5	34	0.027	0.0023	0.128	0.09	198.25
2	10/22/79	5	56	0.027	0.0023	0.128	0.14	198.30
2	10/22/79	6	7	0.024	0.0020	0.114	0.16	198.32
2	10/22/79	6	9	0.027	0.0023	0.128	0.16	198.32
2	10/22/79	6	20	0.027	0.0023	0.128	0.19	198.35
2	10/22/79	6	28	0.024	0.0020	0.114	0.20	198.36
2	10/22/79	6	44	0.021	0.0018	0.100	0.23	198.39
2	10/22/79	6	57	0.018	0.0015	0.085	0.25	198.41
2	10/22/79	7	0	0.024	0.0020	0.114	0.26	198.42

TABLE D1- 2. CONCLUDED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
2	10/22/79	7	9	0.027	0.0023	0.128	0.28	198.43
2	10/22/79	7	16	0.024	0.0020	0.114	0.29	198.45
2	10/22/79	7	40	0.024	0.0020	0.114	0.34	198.49
2	10/22/79	8	4	0.018	0.0015	0.085	0.38	198.53
2	10/22/79	8	24	0.012	0.0010	0.057	0.40	198.56
2	10/22/79	8	44	0.006	0.0005	0.028	0.41	198.57
2	10/22/79	9	0	0.0	0.0	0.0	0.42	198.58
2	10/22/79	10	0	0.0	0.0	0.0	0.42	198.58
2	10/22/79	10	25	0.012	0.0010	0.057	0.43	198.59
2	10/22/79	10	42	0.024	0.0020	0.114	0.45	198.61
2	10/22/79	11	6	0.037	0.0036	0.203	0.52	198.68
2	10/22/79	11	26	0.049	0.0057	0.324	0.60	198.76
2	10/22/79	11	48	0.061	0.0079	0.445	0.75	198.90
2	10/22/79	12	8	0.073	0.0111	0.629	0.92	199.08
2	10/22/79	12	16	0.055	0.0068	0.384	0.99	199.15
2	10/22/79	12	26	0.037	0.0036	0.203	1.04	199.20
2	10/22/79	12	38	0.018	0.0015	0.085	1.07	199.23
2	10/22/79	12	48	0.006	0.0005	0.028	1.08	199.24
2	10/22/79	13	0	0.0	0.0	0.0	1.08	199.24

SITE	DATE	HOUR	MIN	M	RUNOFF CMS	RUNOFF MMPH	STORM MM	ANNUAL MM
3	3/16/79	12	0	0.0	0.0	0.0	0.0	0.0
3	3/16/79	18	44	0.061	0.0079	0.478	1.61	1.61
3	3/16/79	19	0	0.061	0.0079	0.478	1.74	1.74
3	3/16/79	19	1	0.058	0.0073	0.445	1.74	1.74
3	3/16/79	19	14	0.055	0.0068	0.413	1.84	1.84
3	3/16/79	19	24	0.052	0.0063	0.380	1.90	1.90
3	3/16/79	19	39	0.049	0.0057	0.348	1.99	1.99
3	3/16/79	19	56	0.046	0.0052	0.315	2.09	2.09
3	3/16/79	20	15	0.043	0.0047	0.283	2.18	2.18
3	3/16/79	20	32	0.040	0.0041	0.250	2.26	2.26
3	3/16/79	20	50	0.037	0.0036	0.218	2.33	2.33
3	3/16/79	21	13	0.034	0.0031	0.185	2.41	2.41
3	3/16/79	21	36	0.030	0.0025	0.153	2.47	2.47
3	3/16/79	22	7	0.027	0.0023	0.138	2.55	2.55
3	3/16/79	22	35	0.024	0.0020	0.122	2.61	2.61
3	3/16/79	23	12	0.021	0.0018	0.107	2.68	2.68
3	3/16/79	23	34	0.018	0.0015	0.092	2.71	2.71
3	3/17/79	0	5	0.015	0.0013	0.076	2.76	2.76
3	3/17/79	0	36	0.012	0.0010	0.061	2.79	2.79
3	3/17/79	1	5	0.009	0.0008	0.046	2.82	2.82
3	3/17/79	1	31	0.006	0.0005	0.031	2.84	2.84
3	3/17/79	1	45	0.003	0.0003	0.015	2.84	2.84
3	3/17/79	2	0	0.0	0.0	0.0	2.84	2.84
3	3/17/79	6	38	0.0	0.0	0.0	2.84	2.84
3	3/17/79	6	52	0.003	0.0003	0.015	2.84	2.84
3	3/17/79	7	37	0.006	0.0005	0.031	2.86	2.86
3	3/17/79	8	9	0.009	0.0008	0.046	2.88	2.88
3	3/17/79	8	40	0.012	0.0010	0.061	2.91	2.91
3	3/17/79	9	16	0.015	0.0013	0.076	2.95	2.95
3	3/17/79	10	0	0.018	0.0015	0.092	3.01	3.01
3	3/17/79	10	40	0.021	0.0018	0.107	3.08	3.08
3	3/17/79	11	12	0.024	0.0020	0.122	3.14	3.14
3	3/17/79	11	42	0.027	0.0023	0.138	3.21	3.21
3	3/17/79	12	12	0.030	0.0025	0.153	3.28	3.28
3	3/17/79	12	35	0.034	0.0031	0.185	3.34	3.34
3	3/17/79	12	54	0.037	0.0036	0.218	3.41	3.41
3	3/17/79	13	10	0.040	0.0041	0.250	3.47	3.47
3	3/17/79	13	21	0.043	0.0047	0.283	3.52	3.52
3	3/17/79	13	33	0.046	0.0052	0.315	3.58	3.58
3	3/17/79	13	44	0.049	0.0057	0.348	3.64	3.64
3	3/17/79	13	50	0.052	0.0063	0.380	3.68	3.68
3	3/17/79	13	55	0.055	0.0068	0.413	3.71	3.71
3	3/17/79	14	0	0.058	0.0073	0.445	3.74	3.74
3	3/17/79	14	7	0.061	0.0079	0.478	3.80	3.80
3	3/17/79	14	12	0.064	0.0087	0.527	3.84	3.84
3	3/17/79	14	21	0.067	0.0095	0.577	3.92	3.92
3	3/17/79	14	30	0.070	0.0103	0.626	4.01	4.01
3	3/17/79	14	43	0.073	0.0111	0.675	4.15	4.15
3	3/17/79	15	6	0.076	0.0119	0.725	4.42	4.42
3	3/17/79	15	26	0.079	0.0127	0.774	4.67	4.67
3	3/17/79	15	44	0.076	0.0119	0.725	4.90	4.90
3	3/17/79	16	1	0.073	0.0111	0.675	5.09	5.09

SITE	DATE	HOUR	MIN	M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	3/17/79	16	15	0.070	0.0103	0.626	5.25	5.25
3	3/17/79	16	29	0.067	0.0095	0.577	5.39	5.39
3	3/17/79	16	47	0.064	0.0087	0.527	5.55	5.55
3	3/17/79	17	3	0.061	0.0079	0.478	5.69	5.69
3	3/17/79	17	25	0.058	0.0073	0.445	5.86	5.86
3	3/17/79	17	42	0.055	0.0068	0.413	5.98	5.98
3	3/17/79	18	8	0.052	0.0063	0.380	6.15	6.15
3	3/17/79	18	40	0.049	0.0057	0.348	6.34	6.34
3	3/17/79	19	26	0.046	0.0052	0.315	6.60	6.60
3	3/17/79	20	51	0.043	0.0047	0.283	7.02	7.02
3	3/18/79	0	25	0.040	0.0041	0.250	7.97	7.97
3	3/18/79	1	20	0.037	0.0036	0.218	8.19	8.19
3	3/18/79	1	44	0.037	0.0036	0.218	8.27	8.27
3	3/18/79	2	52	0.040	0.0041	0.250	8.54	8.54
3	3/18/79	3	8	0.043	0.0047	0.283	8.61	8.61
3	3/18/79	3	25	0.046	0.0052	0.315	8.70	8.70
3	3/18/79	3	46	0.049	0.0057	0.348	8.81	8.81
3	3/18/79	4	40	0.049	0.0057	0.348	9.13	9.13
3	3/18/79	4	53	0.052	0.0063	0.380	9.20	9.20
3	3/18/79	5	8	0.055	0.0068	0.413	9.30	9.30
3	3/18/79	6	16	0.055	0.0068	0.413	9.77	9.77
3	3/18/79	6	40	0.052	0.0063	0.380	9.93	9.93
3	3/18/79	7	8	0.049	0.0057	0.348	10.10	10.10
3	3/18/79	7	50	0.046	0.0052	0.315	10.33	10.33
3	3/18/79	9	10	0.043	0.0047	0.283	10.73	10.73
3	3/18/79	10	22	0.046	0.0052	0.315	11.09	11.09
3	3/18/79	10	38	0.049	0.0057	0.348	11.18	11.18
3	3/18/79	10	56	0.049	0.0057	0.348	11.28	11.28
3	3/18/79	11	12	0.052	0.0063	0.380	11.38	11.38
3	3/18/79	11	17	0.055	0.0068	0.413	11.41	11.41
3	3/18/79	11	22	0.058	0.0073	0.445	11.45	11.45
3	3/18/79	11	24	0.061	0.0079	0.478	11.46	11.46
3	3/18/79	11	28	0.064	0.0087	0.527	11.50	11.50
3	3/18/79	11	38	0.067	0.0095	0.577	11.59	11.59
3	3/18/79	11	54	0.070	0.0103	0.626	11.75	11.75
3	3/18/79	12	13	0.073	0.0111	0.675	11.96	11.96
3	3/18/79	12	40	0.073	0.0111	0.675	12.26	12.26
3	3/18/79	13	5	0.070	0.0103	0.626	12.53	12.53
3	3/18/79	13	16	0.067	0.0095	0.577	12.64	12.64
3	3/18/79	13	36	0.064	0.0087	0.527	12.83	12.83
3	3/18/79	14	10	0.061	0.0079	0.478	13.11	13.11
3	3/18/79	15	24	0.064	0.0087	0.527	13.73	13.73
3	3/18/79	15	32	0.067	0.0095	0.577	13.80	13.80
3	3/18/79	15	42	0.070	0.0103	0.626	13.90	13.90
3	3/18/79	15	52	0.073	0.0111	0.675	14.01	14.01
3	3/18/79	16	4	0.076	0.0119	0.725	14.15	14.15
3	3/18/79	16	25	0.079	0.0127	0.774	14.41	14.41
3	3/18/79	16	36	0.082	0.0136	0.823	14.56	14.56
3	3/18/79	17	4	0.082	0.0136	0.823	14.95	14.95
3	3/18/79	18	11	0.079	0.0127	0.774	15.84	15.84
3	3/18/79	20	35	0.076	0.0119	0.725	17.64	17.64
3	3/18/79	21	36	0.073	0.0111	0.675	18.35	18.35

TABLE D1- 3. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	3/18/79	22	28	0.070	0.0103	0.626	18.91	18.91
3	3/18/79	23	8	0.067	0.0095	0.577	19.31	19.31
3	3/18/79	23	42	0.064	0.0087	0.527	19.62	19.62
3	3/19/79	0	30	0.061	0.0079	0.478	20.03	20.03
3	3/19/79	0	39	0.064	0.0087	0.527	20.10	20.10
3	3/19/79	0	44	0.067	0.0095	0.577	20.15	20.15
3	3/19/79	0	50	0.067	0.0095	0.577	20.21	20.21
3	3/19/79	1	3	0.064	0.0087	0.527	20.32	20.32
3	3/19/79	1	42	0.061	0.0079	0.478	20.65	20.65
3	3/19/79	2	8	0.058	0.0073	0.445	20.85	20.85
3	3/19/79	2	29	0.058	0.0073	0.445	21.01	21.01
3	3/19/79	3	48	0.055	0.0068	0.413	21.57	21.57
3	3/19/79	4	29	0.052	0.0063	0.380	21.84	21.84
3	3/19/79	5	20	0.049	0.0057	0.348	22.15	22.15
3	3/19/79	7	3	0.046	0.0052	0.315	22.72	22.72
3	3/19/79	8	18	0.046	0.0052	0.315	23.12	23.12
3	3/19/79	12	40	0.046	0.0052	0.315	24.49	24.49
3	3/19/79	15	40	0.043	0.0047	0.283	25.39	25.39
3	3/19/79	16	52	0.040	0.0041	0.250	25.71	25.71
3	3/19/79	17	45	0.037	0.0036	0.218	25.92	25.92
3	3/19/79	18	21	0.034	0.0031	0.185	26.04	26.04
3	3/19/79	19	0	0.030	0.0025	0.153	26.15	26.15
3	3/19/79	19	35	0.027	0.0023	0.138	26.23	26.23
3	3/19/79	20	14	0.024	0.0020	0.122	26.32	26.32
3	3/19/79	21	6	0.021	0.0018	0.107	26.42	26.42
3	3/19/79	21	54	0.018	0.0015	0.092	26.50	26.50
3	3/19/79	23	22	0.015	0.0013	0.076	26.62	26.62
3	3/20/79	1	14	0.012	0.0010	0.061	26.75	26.75
3	3/20/79	1	40	0.0	0.0	0.0	26.76	26.76
3	3/20/79	6	36	0.0	0.0	0.0	26.76	26.76
3	3/20/79	6	52	0.003	0.0003	0.015	26.77	26.77
3	3/20/79	11	0	0.003	0.0003	0.015	26.83	26.83
3	3/20/79	12	20	0.0	0.0	0.0	26.84	26.84
3	3/22/79	23	0	0.0	0.0	0.0	0.0	26.84
3	3/22/79	23	16	0.006	0.0005	0.031	0.00	26.84
3	3/22/79	23	31	0.009	0.0008	0.046	0.01	26.85
3	3/22/79	23	37	0.012	0.0010	0.061	0.02	26.86
3	3/22/79	23	41	0.015	0.0013	0.076	0.02	26.86
3	3/22/79	23	45	0.018	0.0015	0.092	0.03	26.87
3	3/22/79	23	47	0.021	0.0018	0.107	0.03	26.87
3	3/22/79	23	57	0.024	0.0020	0.122	0.05	26.89
3	3/23/79	0	11	0.021	0.0018	0.107	0.08	26.92
3	3/23/79	0	42	0.018	0.0015	0.092	0.13	26.97
3	3/23/79	1	40	0.015	0.0013	0.076	0.21	27.05
3	3/23/79	3	7	0.012	0.0010	0.061	0.31	27.15
3	3/23/79	7	0	0.012	0.0010	0.061	0.55	27.39
3	3/23/79	7	11	0.015	0.0013	0.076	0.56	27.40
3	3/23/79	7	20	0.018	0.0015	0.092	0.57	27.41
3	3/23/79	7	40	0.021	0.0018	0.107	0.61	27.45

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	3/23/79	8	46	0.027	0.0023	0.138	0.75	27.58
3	3/23/79	9	5	0.024	0.0020	0.122	0.79	27.63
3	3/23/79	9	25	0.021	0.0018	0.107	0.82	27.66
3	3/23/79	10	0	0.018	0.0015	0.092	0.88	27.72
3	3/23/79	11	6	0.018	0.0015	0.092	0.98	27.82
3	3/23/79	12	4	0.015	0.0013	0.076	1.07	27.90
3	3/23/79	12	43	0.015	0.0013	0.076	1.11	27.95
3	3/23/79	13	39	0.018	0.0015	0.092	1.19	28.03
3	3/23/79	14	38	0.021	0.0018	0.107	1.29	28.13
3	3/23/79	15	0	0.024	0.0020	0.122	1.33	28.17
3	3/23/79	15	24	0.021	0.0018	0.107	1.38	28.22
3	3/23/79	15	46	0.018	0.0015	0.092	1.42	28.25
3	3/23/79	16	13	0.015	0.0013	0.076	1.45	28.29
3	3/23/79	16	41	0.012	0.0010	0.061	1.49	28.32
3	3/23/79	16	55	0.012	0.0010	0.061	1.50	28.34
3	3/23/79	17	1	0.015	0.0013	0.076	1.51	28.35
3	3/23/79	17	3	0.018	0.0015	0.092	1.51	28.35
3	3/23/79	17	4	0.021	0.0018	0.107	1.51	28.35
3	3/23/79	17	6	0.024	0.0020	0.122	1.52	28.35
3	3/23/79	17	8	0.027	0.0023	0.138	1.52	28.36
3	3/23/79	17	11	0.030	0.0025	0.153	1.53	28.36
3	3/23/79	17	12	0.034	0.0031	0.185	1.53	28.37
3	3/23/79	17	17	0.034	0.0031	0.185	1.55	28.38
3	3/23/79	17	24	0.037	0.0036	0.218	1.57	28.41
3	3/23/79	17	40	0.037	0.0036	0.218	1.63	28.46
3	3/23/79	17	57	0.034	0.0031	0.185	1.68	28.52
3	3/23/79	18	2	0.030	0.0025	0.153	1.70	28.54
3	3/23/79	18	12	0.027	0.0023	0.138	1.72	28.56
3	3/23/79	18	24	0.024	0.0020	0.122	1.75	28.59
3	3/23/79	18	56	0.021	0.0018	0.107	1.81	28.65
3	3/23/79	19	6	0.018	0.0015	0.092	1.83	28.66
3	3/23/79	19	11	0.015	0.0013	0.076	1.83	28.67
3	3/23/79	19	13	0.012	0.0010	0.061	1.84	28.67
3	3/23/79	19	17	0.009	0.0008	0.046	1.84	28.68
3	3/23/79	19	20	0.006	0.0005	0.031	1.84	28.68
3	3/23/79	19	22	0.003	0.0003	0.015	1.84	28.68
3	3/23/79	19	24	0.0	0.0	0.0	1.84	28.68
3	3/28/79	13	0	0.0	0.0	0.0	0.0	28.68
3	3/28/79	14	40	0.009	0.0008	0.046	0.04	28.72
3	3/28/79	15	18	0.012	0.0010	0.061	0.07	28.75
3	3/28/79	16	0	0.012	0.0010	0.061	0.12	28.79
3	3/28/79	18	12	0.009	0.0008	0.046	0.23	28.91
3	3/28/79	18	56	0.006	0.0005	0.031	0.26	28.94
3	3/28/79	19	27	0.003	0.0003	0.015	0.27	28.95
3	3/28/79	20	0	0.0	0.0	0.0	0.28	28.96
3	3/29/79	6	1	0.0	0.0	0.0	0.0	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
3	3/29/79	6	7	0.012	0.0010	0.061	0.00	28.96
3	3/29/79	6	11	0.015	0.0013	0.076	0.01	28.97
3	3/29/79	6	21	0.018	0.0015	0.092	0.02	28.98
3	3/29/79	6	26	0.021	0.0018	0.107	0.03	28.99
3	3/29/79	6	28	0.024	0.0020	0.122	0.04	28.99
3	3/29/79	6	29	0.027	0.0023	0.138	0.04	28.99
3	3/29/79	6	31	0.030	0.0025	0.153	0.04	29.00
3	3/29/79	6	33	0.034	0.0031	0.185	0.05	29.00
3	3/29/79	6	34	0.037	0.0036	0.218	0.05	29.01
3	3/29/79	6	36	0.043	0.0047	0.283	0.06	29.02
3	3/29/79	6	38	0.055	0.0068	0.413	0.07	29.03
3	3/29/79	6	40	0.061	0.0079	0.478	0.09	29.04
3	3/29/79	6	42	0.073	0.0111	0.675	0.11	29.06
3	3/29/79	6	44	0.079	0.0127	0.774	0.13	29.09
3	3/29/79	6	46	0.088	0.0152	0.922	0.16	29.11
3	3/29/79	6	47	0.091	0.0160	0.971	0.17	29.13
3	3/29/79	6	49	0.098	0.0181	1.100	0.21	29.16
3	3/29/79	6	50	0.101	0.0192	1.165	0.23	29.18
3	3/29/79	6	51	0.104	0.0202	1.229	0.25	29.20
3	3/29/79	6	56	0.110	0.0224	1.358	0.35	29.31
3	3/29/79	7	1	0.104	0.0202	1.229	0.46	29.42
3	3/29/79	7	3	0.098	0.0181	1.100	0.50	29.46
3	3/29/79	7	5	0.091	0.0160	0.971	0.54	29.49
3	3/29/79	7	7	0.085	0.0144	0.873	0.57	29.52
3	3/29/79	7	9	0.082	0.0136	0.823	0.59	29.55
3	3/29/79	7	11	0.079	0.0127	0.774	0.62	29.58
3	3/29/79	7	12	0.073	0.0111	0.675	0.63	29.59
3	3/29/79	7	20	0.070	0.0103	0.626	0.72	29.68
3	3/29/79	7	24	0.067	0.0095	0.577	0.76	29.72
3	3/29/79	7	31	0.064	0.0087	0.527	0.82	29.78
3	3/29/79	7	33	0.067	0.0095	0.577	0.84	29.80
3	3/29/79	7	34	0.073	0.0111	0.675	0.85	29.81
3	3/29/79	7	41	0.073	0.0111	0.675	0.93	29.89
3	3/29/79	7	44	0.070	0.0103	0.626	0.96	29.92
3	3/29/79	7	46	0.067	0.0095	0.577	0.98	29.94
3	3/29/79	7	49	0.064	0.0087	0.527	1.01	29.97
3	3/29/79	7	51	0.061	0.0079	0.478	1.03	29.99
3	3/29/79	7	57	0.061	0.0079	0.478	1.08	30.03
3	3/29/79	7	59	0.064	0.0087	0.527	1.09	30.05
3	3/29/79	8	1	0.061	0.0079	0.478	1.11	30.07
3	3/29/79	8	2	0.040	0.0041	0.250	1.12	30.07
3	3/29/79	8	3	0.037	0.0036	0.218	1.12	30.08
3	3/29/79	8	4	0.034	0.0031	0.185	1.12	30.08
3	3/29/79	8	13	0.030	0.0025	0.153	1.15	30.11
3	3/29/79	8	27	0.034	0.0031	0.185	1.19	30.14
3	3/29/79	8	45	0.037	0.0036	0.218	1.25	30.21
3	3/29/79	8	53	0.040	0.0041	0.250	1.28	30.24
3	3/29/79	9	13	0.037	0.0036	0.218	1.36	30.31
3	3/29/79	9	31	0.034	0.0031	0.185	1.42	30.38
3	3/29/79	9	49	0.030	0.0025	0.153	1.47	30.43
3	3/29/79	10	5	0.027	0.0023	0.138	1.51	30.46
3	3/29/79	11	9	0.024	0.0020	0.122	1.65	30.60

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
3	3/29/79	12	0	0.024	0.0020	0.122	1.75	30.71
3	3/29/79	12	18	0.027	0.0023	0.138	1.79	30.75
3	3/29/79	12	27	0.030	0.0025	0.153	1.81	30.77
3	3/29/79	12	34	0.034	0.0031	0.185	1.83	30.79
3	3/29/79	12	39	0.037	0.0036	0.218	1.85	30.80
3	3/29/79	12	44	0.040	0.0041	0.250	1.87	30.82
3	3/29/79	12	48	0.043	0.0047	0.283	1.89	30.84
3	3/29/79	12	53	0.046	0.0052	0.315	1.91	30.87
3	3/29/79	13	0	0.049	0.0057	0.348	1.95	30.91
3	3/29/79	13	12	0.052	0.0063	0.380	2.02	30.98
3	3/29/79	13	25	0.049	0.0057	0.348	2.10	31.06
3	3/29/79	13	40	0.046	0.0052	0.315	2.18	31.14
3	3/29/79	13	48	0.049	0.0057	0.348	2.23	31.18
3	3/29/79	14	7	0.049	0.0057	0.348	2.34	31.29
3	3/29/79	14	25	0.046	0.0052	0.315	2.44	31.39
3	3/29/79	14	38	0.043	0.0047	0.283	2.50	31.46
3	3/29/79	14	50	0.040	0.0041	0.250	2.56	31.51
3	3/29/79	15	6	0.037	0.0036	0.218	2.62	31.57
3	3/29/79	15	33	0.034	0.0031	0.185	2.71	31.67
3	3/29/79	16	4	0.030	0.0025	0.153	2.80	31.75
3	3/29/79	16	58	0.027	0.0023	0.138	2.93	31.88
3	3/29/79	17	38	0.027	0.0023	0.138	3.02	31.98
3	3/29/79	17	48	0.030	0.0025	0.153	3.04	32.00
3	3/29/79	18	15	0.034	0.0031	0.185	3.12	32.08
3	3/29/79	18	24	0.037	0.0036	0.218	3.15	32.11
3	3/29/79	18	44	0.037	0.0036	0.218	3.22	32.18
3	3/29/79	19	7	0.034	0.0031	0.185	3.30	32.26
3	3/29/79	19	41	0.030	0.0025	0.153	3.40	32.35
3	3/29/79	19	45	0.034	0.0031	0.185	3.41	32.36
3	3/29/79	19	47	0.037	0.0036	0.218	3.41	32.37
3	3/29/79	19	49	0.040	0.0041	0.250	3.42	32.38
3	3/29/79	19	52	0.043	0.0047	0.283	3.44	32.39
3	3/29/79	19	56	0.046	0.0052	0.315	3.46	32.41
3	3/29/79	20	27	0.046	0.0052	0.315	3.62	32.57
3	3/29/79	20	44	0.043	0.0047	0.283	3.70	32.66
3	3/29/79	20	52	0.043	0.0047	0.283	3.74	32.70
3	3/29/79	21	4	0.046	0.0052	0.315	3.80	32.76
3	3/29/79	21	28	0.043	0.0047	0.283	3.92	32.88
3	3/29/79	22	2	0.040	0.0041	0.250	4.07	33.03
3	3/29/79	22	28	0.043	0.0047	0.283	4.19	33.14
3	3/30/79	0	10	0.043	0.0047	0.283	4.67	33.62
3	3/30/79	1	2	0.046	0.0052	0.315	4.93	33.88
3	3/30/79	1	55	0.049	0.0057	0.348	5.22	34.18
3	3/30/79	2	49	0.052	0.0063	0.380	5.55	34.50
3	3/30/79	4	18	0.055	0.0068	0.413	6.14	35.09
3	3/30/79	4	23	0.058	0.0073	0.445	6.17	35.13
3	3/30/79	4	26	0.061	0.0079	0.478	6.20	35.15
3	3/30/79	4	42	0.058	0.0073	0.445	6.32	35.27
3	3/30/79	5	3	0.055	0.0068	0.413	6.47	35.42
3	3/30/79	5	23	0.052	0.0063	0.380	6.60	35.56
3	3/30/79	5	50	0.049	0.0057	0.348	6.76	35.72
3	3/30/79	6	26	0.046	0.0052	0.315	6.96	35.92

TABLE D1- 3. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	3/30/79	6	44	0.043	0.0047	0.283	7.05	36.01
3	3/30/79	7	5	0.040	0.0041	0.250	7.15	36.10
3	3/30/79	7	22	0.037	0.0036	0.218	7.21	36.17
3	3/30/79	7	27	0.040	0.0041	0.250	7.23	36.19
3	3/30/79	7	32	0.043	0.0047	0.283	7.25	36.21
3	3/30/79	7	40	0.046	0.0052	0.315	7.29	36.25
3	3/30/79	7	52	0.043	0.0047	0.283	7.35	36.31
3	3/30/79	8	7	0.040	0.0041	0.250	7.42	36.38
3	3/30/79	8	21	0.037	0.0036	0.218	7.48	36.43
3	3/30/79	8	54	0.034	0.0031	0.185	7.59	36.54
3	3/30/79	9	14	0.030	0.0025	0.153	7.64	36.60
3	3/30/79	9	56	0.027	0.0023	0.138	7.75	36.70
3	3/30/79	10	44	0.024	0.0020	0.122	7.85	36.80
3	3/30/79	12	2	0.021	0.0018	0.107	8.00	36.95
3	3/30/79	14	0	0.018	0.0015	0.092	8.19	37.15
3	3/30/79	16	43	0.015	0.0013	0.076	8.42	37.38
3	3/30/79	20	20	0.012	0.0010	0.061	8.67	37.63
3	3/31/79	2	0	0.009	0.0008	0.046	8.97	37.93
3	3/31/79	9	4	0.006	0.0005	0.031	9.25	38.20
3	3/31/79	10	35	0.003	0.0003	0.015	9.28	38.24
3	3/31/79	12	0	0.0	0.0	0.0	9.29	38.25
3	4/ 3/79	21	16	0.0	0.0	0.0	0.0	38.25
3	4/ 3/79	21	21	0.006	0.0005	0.031	0.00	38.25
3	4/ 3/79	21	25	0.009	0.0008	0.046	0.00	38.25
3	4/ 3/79	21	29	0.012	0.0010	0.061	0.01	38.25
3	4/ 3/79	21	33	0.018	0.0015	0.092	0.01	38.26
3	4/ 3/79	21	35	0.021	0.0018	0.107	0.02	38.26
3	4/ 3/79	21	40	0.024	0.0020	0.122	0.03	38.27
3	4/ 3/79	21	44	0.027	0.0023	0.138	0.03	38.28
3	4/ 3/79	21	48	0.030	0.0025	0.153	0.04	38.29
3	4/ 3/79	21	54	0.034	0.0031	0.185	0.06	38.31
3	4/ 3/79	21	59	0.037	0.0036	0.218	0.08	38.32
3	4/ 3/79	22	57	0.037	0.0036	0.218	0.29	38.53
3	4/ 3/79	23	17	0.034	0.0031	0.185	0.36	38.60
3	4/ 3/79	23	26	0.030	0.0025	0.153	0.38	38.63
3	4/ 3/79	23	38	0.027	0.0023	0.138	0.41	38.66
3	4/ 3/79	23	43	0.024	0.0020	0.122	0.42	38.67
3	4/ 3/79	23	49	0.021	0.0018	0.107	0.43	38.68
3	4/ 4/79	0	2	0.018	0.0015	0.092	0.45	38.70
3	4/ 4/79	0	19	0.015	0.0013	0.076	0.48	38.72
3	4/ 4/79	0	24	0.012	0.0010	0.061	0.48	38.73
3	4/ 4/79	0	30	0.009	0.0008	0.046	0.49	38.74
3	4/ 4/79	0	36	0.006	0.0005	0.031	0.49	38.74
3	4/ 4/79	0	43	0.003	0.0003	0.015	0.50	38.74
3	4/ 4/79	1	0	0.0	0.0	0.0	0.50	38.74
3	4/ 4/79	12	10	0.0	0.0	0.0	0.50	38.74
3	4/ 4/79	12	12	0.027	0.0023	0.138	0.50	38.75
3	4/ 4/79	12	16	0.040	0.0041	0.250	0.51	38.76
SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	4/ 4/79	12	35	0.040	0.0041	0.250	0.60	38.85
3	4/ 4/79	12	56	0.037	0.0036	0.218	0.68	38.93
3	4/ 4/79	13	12	0.037	0.0036	0.218	0.74	38.99
3	4/ 4/79	13	18	0.030	0.0025	0.153	0.76	39.00
3	4/ 4/79	13	22	0.027	0.0023	0.138	0.77	39.01
3	4/ 4/79	13	32	0.024	0.0020	0.122	0.79	39.04
3	4/ 4/79	13	37	0.021	0.0018	0.107	0.80	39.04
3	4/ 4/79	13	46	0.018	0.0015	0.092	0.81	39.06
3	4/ 4/79	13	59	0.015	0.0013	0.076	0.83	39.08
3	4/ 4/79	14	29	0.012	0.0010	0.061	0.87	39.11
3	4/ 4/79	15	43	0.012	0.0010	0.061	0.94	39.19
3	4/ 4/79	16	2	0.015	0.0013	0.076	0.96	39.21
3	4/ 4/79	16	42	0.015	0.0013	0.076	1.01	39.26
3	4/ 4/79	18	20	0.012	0.0010	0.061	1.13	39.37
3	4/ 4/79	20	40	0.0	0.0	0.0	1.20	39.44
3	4/19/79	11	30	0.0	0.0	0.0	0.0	39.44
3	4/19/79	11	33	0.003	0.0003	0.015	0.00	39.44
3	4/19/79	11	38	0.006	0.0005	0.031	0.00	39.45
3	4/19/79	12	0	0.006	0.0005	0.031	0.01	39.46
3	4/19/79	12	13	0.003	0.0003	0.015	0.02	39.46
3	4/19/79	12	37	0.003	0.0003	0.015	0.02	39.47
3	4/19/79	12	48	0.006	0.0005	0.031	0.03	39.47
3	4/19/79	13	0	0.009	0.0008	0.046	0.04	39.48
3	4/19/79	13	7	0.012	0.0010	0.061	0.04	39.49
3	4/19/79	13	13	0.015	0.0013	0.076	0.05	39.49
3	4/19/79	13	24	0.018	0.0015	0.092	0.07	39.51
3	4/19/79	13	32	0.021	0.0018	0.107	0.08	39.52
3	4/19/79	13	38	0.024	0.0020	0.122	0.09	39.53
3	4/19/79	13	46	0.027	0.0023	0.138	0.11	39.55
3	4/19/79	13	56	0.030	0.0025	0.153	0.13	39.58
3	4/19/79	14	3	0.034	0.0031	0.185	0.15	39.60
3	4/19/79	14	14	0.030	0.0025	0.153	0.18	39.63
3	4/19/79	14	20	0.027	0.0023	0.138	0.20	39.64
3	4/19/79	14	28	0.024	0.0020	0.122	0.21	39.66
3	4/19/79	14	33	0.021	0.0018	0.107	0.22	39.67
3	4/19/79	14	44	0.018	0.0015	0.092	0.24	39.69
3	4/19/79	14	55	0.015	0.0013	0.076	0.26	39.70
3	4/19/79	15	10	0.012	0.0010	0.061	0.27	39.72
3	4/19/79	15	32	0.009	0.0008	0.046	0.29	39.74
3	4/19/79	16	1	0.006	0.0005	0.031	0.31	39.76
3	4/19/79	16	24	0.003	0.0003	0.015	0.32	39.77
3	4/19/79	16	48	0.0	0.0	0.0	0.32	39.77
3	4/20/79	4	38	0.0	0.0	0.0	0.0	39.77
3	4/20/79	4	40	0.006	0.0005	0.031	0.00	39.77
3	4/20/79	4	42	0.009	0.0008	0.046	0.00	39.77
3	4/20/79	4	45	0.012	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	RUNOFF M	RUNOFF CMS	RUNOFF MMPH	STORM MM	ANNUAL MM
3	4/20/79	5	38	0.012	0.0010	0.061	0.07	39.84
3	4/20/79	6	9	0.009	0.0008	0.046	0.10	39.86
3	4/20/79	9	0	0.006	0.0005	0.031	0.20	39.97
3	4/20/79	9	3	0.009	0.0008	0.046	0.21	39.98
3	4/20/79	9	8	0.012	0.0010	0.061	0.21	39.98
3	4/20/79	9	14	0.015	0.0013	0.076	0.22	39.99
3	4/20/79	9	20	0.018	0.0015	0.092	0.23	39.99
3	4/20/79	9	29	0.021	0.0018	0.107	0.24	40.01
3	4/20/79	9	51	0.024	0.0020	0.122	0.28	40.05
3	4/20/79	10	10	0.027	0.0023	0.138	0.32	40.09
3	4/20/79	10	29	0.027	0.0023	0.138	0.37	40.14
3	4/20/79	10	42	0.024	0.0020	0.122	0.40	40.16
3	4/20/79	10	56	0.021	0.0018	0.107	0.42	40.19
3	4/20/79	11	6	0.021	0.0018	0.107	0.44	40.21
3	4/20/79	11	19	0.024	0.0020	0.122	0.47	40.23
3	4/20/79	11	27	0.027	0.0023	0.138	0.48	40.25
3	4/20/79	11	40	0.030	0.0025	0.153	0.51	40.28
3	4/20/79	11	53	0.027	0.0023	0.138	0.55	40.31
3	4/20/79	12	13	0.024	0.0020	0.122	0.59	40.36
3	4/20/79	12	24	0.024	0.0020	0.122	0.61	40.38
3	4/20/79	12	39	0.027	0.0023	0.138	0.64	40.41
3	4/20/79	12	43	0.030	0.0025	0.153	0.65	40.42
3	4/20/79	12	49	0.034	0.0031	0.185	0.67	40.44
3	4/20/79	12	53	0.037	0.0036	0.218	0.68	40.45
3	4/20/79	12	57	0.040	0.0041	0.250	0.70	40.47
3	4/20/79	13	0	0.043	0.0047	0.283	0.71	40.48
3	4/20/79	13	8	0.046	0.0052	0.315	0.75	40.52
3	4/20/79	13	28	0.049	0.0057	0.348	0.86	40.63
3	4/20/79	13	44	0.046	0.0052	0.315	0.95	40.72
3	4/20/79	13	52	0.043	0.0047	0.283	0.99	40.76
3	4/20/79	13	57	0.040	0.0041	0.250	1.01	40.78
3	4/20/79	14	3	0.037	0.0036	0.218	1.04	40.81
3	4/20/79	14	8	0.034	0.0031	0.185	1.05	40.82
3	4/20/79	14	18	0.030	0.0025	0.153	1.08	40.85
3	4/20/79	14	28	0.027	0.0023	0.138	1.11	40.88
3	4/20/79	14	40	0.024	0.0020	0.122	1.13	40.90
3	4/20/79	14	50	0.021	0.0018	0.107	1.15	40.92
3	4/20/79	15	7	0.018	0.0015	0.092	1.18	40.95
3	4/20/79	15	31	0.015	0.0013	0.076	1.21	40.98
3	4/20/79	16	7	0.012	0.0010	0.061	1.26	41.02
3	4/20/79	16	56	0.009	0.0008	0.046	1.30	41.07
3	4/21/79	3	0	0.0	0.0	0.0	1.53	41.30
3	4/25/79	10	48	0.0	0.0	0.0	0.0	41.30
3	4/25/79	10	49	0.003	0.0003	0.015	0.00	41.30
3	4/25/79	10	51	0.006	0.0005	0.031	0.00	41.30
3	4/25/79	10	52	0.009	0.0008	0.046	0.00	41.30
3	4/25/79	10	56	0.012	0.0010	0.061	0.01	41.30
3	4/25/79	11	12	0.015	0.0013	0.076	0.02	41.32
3	4/25/79	11	20	0.015	0.0013	0.076	0.03	41.33
3	4/25/79	11	46	0.012	0.0010	0.061	0.06	41.36

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	RUNOFF MM	RUNOFF MM
3	4/25/79	12	21	0.009	0.0008	0.046	0.09	41.39
3	4/25/79	12	43	0.006	0.0005	0.031	0.11	41.41
3	4/25/79	13	11	0.003	0.0003	0.015	0.12	41.42
3	4/25/79	13	35	0.0	0.0	0.0	0.12	41.42
3	4/25/79	15	23	0.0	0.0	0.0	0.12	41.42
3	4/25/79	15	27	0.003	0.0003	0.015	0.12	41.42
3	4/25/79	15	31	0.006	0.0005	0.031	0.12	41.42
3	4/25/79	15	45	0.009	0.0008	0.046	0.13	41.43
3	4/25/79	16	29	0.009	0.0008	0.046	0.17	41.47
3	4/25/79	16	55	0.012	0.0010	0.061	0.19	41.49
3	4/25/79	17	48	0.012	0.0010	0.061	0.24	41.54
3	4/25/79	18	20	0.009	0.0008	0.046	0.27	41.57
3	4/25/79	19	50	0.006	0.0005	0.031	0.33	41.63
3	4/25/79	20	32	0.003	0.0003	0.015	0.35	41.64
3	4/25/79	21	0	0.0	0.0	0.0	0.35	41.65
3	5/ 3/79	11	16	0.0	0.0	0.0	0.0	41.65
3	5/ 3/79	11	19	0.003	0.0003	0.015	0.00	41.65
3	5/ 3/79	11	27	0.006	0.0005	0.031	0.00	41.65
3	5/ 3/79	11	43	0.009	0.0008	0.046	0.01	41.66
3	5/ 3/79	12	16	0.012	0.0010	0.061	0.04	41.69
3	5/ 3/79	13	25	0.015	0.0013	0.076	0.12	41.77
3	5/ 3/79	14	19	0.018	0.0015	0.092	0.20	41.85
3	5/ 3/79	15	34	0.018	0.0015	0.092	0.31	41.96
3	5/ 3/79	16	3	0.015	0.0013	0.076	0.35	42.00
3	5/ 3/79	16	24	0.012	0.0010	0.061	0.38	42.03
3	5/ 3/79	17	17	0.009	0.0008	0.046	0.42	42.07
3	5/ 3/79	18	40	0.009	0.0008	0.046	0.49	42.14
3	5/ 3/79	19	26	0.006	0.0005	0.031	0.52	42.17
3	5/ 3/79	20	32	0.003	0.0003	0.015	0.54	42.19
3	5/ 3/79	21	0	0.0	0.0	0.0	0.55	42.19
3	6/12/79	18	40	0.0	0.0	0.0	0.0	42.19
3	6/12/79	18	42	0.006	0.0005	0.031	0.00	42.19
3	6/12/79	18	44	0.015	0.0013	0.076	0.00	42.20
3	6/12/79	18	46	0.021	0.0018	0.107	0.01	42.20
3	6/12/79	18	48	0.030	0.0025	0.153	0.01	42.20
3	6/12/79	18	51	0.037	0.0036	0.218	0.02	42.21
3	6/12/79	18	54	0.030	0.0025	0.153	0.03	42.22
3	6/12/79	18	56	0.027	0.0023	0.138	0.03	42.23
3	6/12/79	18	58	0.024	0.0020	0.122	0.04	42.23
3	6/12/79	19	0	0.021	0.0018	0.107	0.04	42.24
3	6/12/79	19	4	0.018	0.0015	0.092	0.05	42.24
3	6/12/79	19	8	0.015	0.0013	0.076	0.05	42.25
3	6/12/79	19	11	0.012	0.0010	0.061	0.06	42.25
3	6/12/79	19	14	0.009	0.0008	0.046	0.06	42.25
3	6/12/79	19	18	0.006	0.0005	0.031	0.06	42.26
3	6/12/79	19	20	0.003	0.0003	0.015	0.06	42.26
3	6/12/79	19	24	0.0	0.0	0.0	0.06	42.26

TABLE D1- 3. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	6/27/79	0	32	0.0	0.0	0.0	0.0	42.26
3	6/27/79	0	33	0.012	0.0010	0.061	0.00	42.26
3	6/27/79	0	35	0.027	0.0023	0.138	0.00	42.26
3	6/27/79	0	36	0.037	0.0036	0.218	0.01	42.26
3	6/27/79	0	37	0.049	0.0057	0.348	0.01	42.27
3	6/27/79	0	38	0.055	0.0068	0.413	0.02	42.28
3	6/27/79	0	43	0.055	0.0068	0.413	0.05	42.31
3	6/27/79	0	46	0.049	0.0057	0.348	0.07	42.33
3	6/27/79	0	48	0.043	0.0047	0.283	0.08	42.34
3	6/27/79	0	49	0.037	0.0036	0.218	0.09	42.34
3	6/27/79	0	50	0.030	0.0025	0.153	0.09	42.35
3	6/27/79	0	54	0.024	0.0020	0.122	0.10	42.36
3	6/27/79	0	56	0.021	0.0018	0.107	0.10	42.36
3	6/27/79	1	3	0.018	0.0015	0.092	0.11	42.37
3	6/27/79	1	6	0.015	0.0013	0.076	0.12	42.38
3	6/27/79	1	14	0.012	0.0010	0.061	0.13	42.38
3	6/27/79	1	20	0.009	0.0008	0.046	0.13	42.39
3	6/27/79	1	24	0.006	0.0005	0.031	0.13	42.39
3	6/27/79	1	30	0.003	0.0003	0.015	0.14	42.39
3	6/27/79	1	38	0.0	0.0	0.0	0.14	42.40
3	7/ 3/79	9	20	0.0	0.0	0.0	0.0	42.40
3	7/ 3/79	9	26	0.012	0.0010	0.061	0.00	42.40
3	7/ 3/79	9	30	0.015	0.0013	0.076	0.01	42.40
3	7/ 3/79	9	33	0.018	0.0015	0.092	0.01	42.41
3	7/ 3/79	9	34	0.024	0.0020	0.122	0.01	42.41
3	7/ 3/79	9	37	0.030	0.0025	0.153	0.02	42.42
3	7/ 3/79	9	38	0.037	0.0036	0.218	0.02	42.42
3	7/ 3/79	9	39	0.049	0.0057	0.348	0.03	42.42
3	7/ 3/79	9	40	0.058	0.0073	0.445	0.03	42.43
3	7/ 3/79	9	41	0.070	0.0103	0.626	0.04	42.44
3	7/ 3/79	9	42	0.119	0.0256	1.551	0.06	42.46
3	7/ 3/79	9	43	0.213	0.0767	4.659	0.11	42.51
3	7/ 3/79	9	44	0.280	0.1330	8.073	0.22	42.62
3	7/ 3/79	9	45	0.314	0.1676	10.177	0.37	42.77
3	7/ 3/79	9	46	0.332	0.1880	11.415	0.55	42.95
3	7/ 3/79	9	47	0.347	0.2061	12.515	0.75	43.15
3	7/ 3/79	9	48	0.372	0.2367	14.368	0.98	43.37
3	7/ 3/79	9	49	0.408	0.2891	17.552	1.24	43.64
3	7/ 3/79	9	50	0.451	0.3579	21.729	1.57	43.96
3	7/ 3/79	9	51	0.500	0.4457	27.058	1.98	44.37
3	7/ 3/79	9	52	0.549	0.5437	33.006	2.48	44.87
3	7/ 3/79	9	53	0.573	0.6003	36.444	3.05	45.45
3	7/ 3/79	9	54	0.604	0.6734	40.879	3.70	46.09
3	7/ 3/79	9	55	0.594	0.6513	39.539	4.37	46.76
3	7/ 3/79	9	56	0.579	0.6145	37.304	5.01	47.41
3	7/ 3/79	9	57	0.567	0.5862	35.585	5.62	48.01
3	7/ 3/79	9	58	0.555	0.5578	33.866	6.20	48.59
				STAGE	RATE	INTENSITY	RUNOFF	ANNUAL
3	7/ 3/79	10	1	0.539	0.5250	31.871	7.79	50.19
3	7/ 3/79	10	2	0.518	0.4814	29.224	8.30	50.70
3	7/ 3/79	10	3	0.500	0.4457	27.058	8.77	51.17
3	7/ 3/79	10	4	0.485	0.4165	25.287	9.21	51.60
3	7/ 3/79	10	5	0.463	0.3789	23.001	9.61	52.01
3	7/ 3/79	10	6	0.415	0.2985	18.119	9.95	52.35
3	7/ 3/79	10	7	0.405	0.2844	17.268	10.25	52.64
3	7/ 3/79	10	8	0.393	0.2662	16.161	10.53	52.92
3	7/ 3/79	10	9	0.375	0.2409	14.624	10.78	53.18
3	7/ 3/79	10	10	0.363	0.2246	13.632	11.02	53.41
3	7/ 3/79	10	11	0.347	0.2061	12.515	11.24	53.63
3	7/ 3/79	10	12	0.332	0.1880	11.415	11.44	53.83
3	7/ 3/79	10	13	0.320	0.1744	10.589	11.62	54.01
3	7/ 3/79	10	14	0.308	0.1608	9.764	11.79	54.18
3	7/ 3/79	10	15	0.296	0.1483	9.001	11.94	54.34
3	7/ 3/79	10	16	0.287	0.1391	8.444	12.09	54.49
3	7/ 3/79	10	17	0.271	0.1242	7.538	12.22	54.62
3	7/ 3/79	10	18	0.262	0.1161	7.048	12.34	54.74
3	7/ 3/79	10	19	0.250	0.1053	6.395	12.46	54.85
3	7/ 3/79	10	20	0.241	0.0976	5.927	12.56	54.96
3	7/ 3/79	10	21	0.226	0.0860	5.223	12.65	55.05
3	7/ 3/79	10	22	0.216	0.0791	4.800	12.74	55.13
3	7/ 3/79	10	23	0.207	0.0728	4.418	12.81	55.21
3	7/ 3/79	10	24	0.201	0.0688	4.177	12.88	55.28
3	7/ 3/79	10	25	0.192	0.0629	3.816	12.95	55.35
3	7/ 3/79	10	26	0.180	0.0552	3.354	13.01	55.41
3	7/ 3/79	10	27	0.174	0.0519	3.151	13.06	55.46
3	7/ 3/79	10	28	0.165	0.0469	2.847	13.11	55.51
3	7/ 3/79	10	29	0.152	0.0402	2.441	13.16	55.55
3	7/ 3/79	10	30	0.146	0.0375	2.276	13.20	55.59
3	7/ 3/79	10	31	0.140	0.0348	2.111	13.23	55.63
3	7/ 3/79	10	32	0.134	0.0321	1.946	13.27	55.66
3	7/ 3/79	10	33	0.125	0.0280	1.698	13.30	55.69
3	7/ 3/79	10	34	0.119	0.0256	1.551	13.33	55.72
3	7/ 3/79	10	35	0.113	0.0234	1.423	13.35	55.75
3	7/ 3/79	10	36	0.107	0.0213	1.294	13.37	55.77
3	7/ 3/79	10	37	0.104	0.0202	1.229	13.39	55.79
3	7/ 3/79	10	38	0.094	0.0171	1.036	13.41	55.81
3	7/ 3/79	10	39	0.091	0.0160	0.971	13.43	55.83
3	7/ 3/79	10	40	0.085	0.0144	0.873	13.45	55.84
3	7/ 3/79	10	41	0.079	0.0127	0.774	13.46	55.85
3	7/ 3/79	10	42	0.073	0.0111	0.675	13.47	55.87
3	7/ 3/79	10	43	0.067	0.0095	0.577	13.48	55.88
3	7/ 3/79	10	44	0.064	0.0087	0.527	13.49	55.89
3	7/ 3/79	10	46	0.061	0.0079	0.478	13.51	55.90
3	7/ 3/79	10	47	0.055	0.0068	0.413	13.52	55.91
3	7/ 3/79	10	49	0.049	0.0057	0.348	13.53	55.92
3	7/ 3/79	10	52	0.043	0.0047	0.283	13.54	55.94
3	7/ 3/79	10	54	0.037	0.0036	0.218	13.55	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF CMS	RUNOFF MMPH	STORM MM	ANNUAL RUNOFF MM
3	7/ 3/79	11	7	0.021	0.0018	0.107	13.58	55.98
3	7/ 3/79	11	10	0.018	0.0015	0.092	13.59	55.98
3	7/ 3/79	11	14	0.015	0.0013	0.076	13.59	55.99
3	7/ 3/79	11	16	0.012	0.0010	0.061	13.60	55.99
3	7/ 3/79	11	20	0.009	0.0008	0.046	13.60	55.99
3	7/ 3/79	11	23	0.006	0.0005	0.031	13.60	56.00
3	7/ 3/79	11	26	0.003	0.0003	0.015	13.60	56.00
3	7/ 3/79	11	30	0.0	0.0	0.0	13.60	56.00
3	7/14/79	1	12	0.0	0.0	0.0	0.0	56.00
3	7/14/79	1	15	0.006	0.0005	0.031	0.00	56.00
3	7/14/79	1	18	0.012	0.0010	0.061	0.00	56.00
3	7/14/79	1	22	0.015	0.0013	0.076	0.01	56.01
3	7/14/79	1	23	0.018	0.0015	0.092	0.01	56.01
3	7/14/79	1	25	0.021	0.0018	0.107	0.01	56.01
3	7/14/79	1	27	0.027	0.0023	0.138	0.02	56.01
3	7/14/79	1	28	0.037	0.0036	0.218	0.02	56.02
3	7/14/79	1	29	0.049	0.0057	0.348	0.02	56.02
3	7/14/79	1	30	0.070	0.0103	0.626	0.03	56.03
3	7/14/79	1	31	0.113	0.0234	1.423	0.05	56.05
3	7/14/79	1	32	0.158	0.0436	2.644	0.08	56.08
3	7/14/79	1	33	0.186	0.0589	3.576	0.14	56.13
3	7/14/79	1	34	0.198	0.0668	4.057	0.20	56.20
3	7/14/79	1	35	0.207	0.0728	4.418	0.27	56.27
3	7/14/79	1	36	0.213	0.0767	4.659	0.34	56.34
3	7/14/79	1	37	0.216	0.0791	4.800	0.42	56.42
3	7/14/79	1	38	0.223	0.0837	5.082	0.51	56.50
3	7/14/79	1	39	0.229	0.0883	5.363	0.59	56.59
3	7/14/79	1	40	0.238	0.0953	5.786	0.69	56.68
3	7/14/79	1	41	0.253	0.1080	6.558	0.79	56.79
3	7/14/79	1	42	0.280	0.1330	8.073	0.91	56.91
3	7/14/79	1	43	0.311	0.1642	9.971	1.06	57.06
3	7/14/79	1	44	0.335	0.1914	11.621	1.24	57.24
3	7/14/79	1	45	0.351	0.2098	12.738	1.44	57.44
3	7/14/79	1	46	0.363	0.2246	13.632	1.66	57.66
3	7/14/79	1	47	0.372	0.2367	14.368	1.90	57.90
3	7/14/79	1	48	0.381	0.2493	15.136	2.14	58.14
3	7/14/79	1	49	0.390	0.2620	15.905	2.40	58.40
3	7/14/79	1	50	0.396	0.2704	16.417	2.67	58.67
3	7/14/79	1	51	0.399	0.2751	16.701	2.95	58.94
3	7/14/79	1	53	0.402	0.2798	16.984	3.51	59.51
3	7/14/79	1	55	0.402	0.2798	16.984	4.07	60.07
3	7/14/79	1	57	0.396	0.2704	16.417	4.63	60.63
3	7/14/79	1	58	0.393	0.2662	16.161	4.90	60.90
3	7/14/79	1	59	0.387	0.2578	15.649	5.17	61.17
3	7/14/79	2	0	0.381	0.2493	15.136	5.42	61.42
3	7/14/79	2	1	0.375	0.2409	14.624	5.67	61.67
3	7/14/79	2	2	0.366	0.2282	13.856	5.91	61.91
3	7/14/79	2	3	0.360	0.2209	13.409	6.14	62.13
3	7/14/79	2	4	0.351	0.2098	12.738	6.35	62.35
3	7/14/79	2	5	0.341	0.1988	12.068	6.56	62.56
3	7/14/79	2	6	0.332	0.1880	11.415	6.76	62.76
3	7/14/79	2	7	0.323	0.1778	10.796	6.94	62.94
3	7/14/79	2	8	0.317	0.1710	10.383	7.12	63.12
3	7/14/79	2	9	0.302	0.1544	9.372	7.28	63.28
3	7/14/79	2	10	0.293	0.1452	8.815	7.44	63.43
3	7/14/79	2	11	0.280	0.1330	8.073	7.58	63.57
3	7/14/79	2	12	0.271	0.1242	7.538	7.71	63.70
3	7/14/79	2	13	0.262	0.1161	7.048	7.83	63.83
3	7/14/79	2	14	0.256	0.1107	6.722	7.94	63.94
3	7/14/79	2	15	0.244	0.1000	6.068	8.05	64.05
3	7/14/79	2	16	0.232	0.0907	5.504	8.15	64.14
3	7/14/79	2	17	0.223	0.0837	5.082	8.23	64.23
3	7/14/79	2	18	0.213	0.0767	4.659	8.31	64.31
3	7/14/79	2	19	0.207	0.0728	4.418	8.39	64.39
3	7/14/79	2	20	0.201	0.0688	4.177	8.46	64.46
3	7/14/79	2	21	0.192	0.0629	3.816	8.53	64.53
3	7/14/79	2	22	0.186	0.0589	3.576	8.59	64.59
3	7/14/79	2	23	0.180	0.0552	3.354	8.65	64.65
3	7/14/79	2	24	0.171	0.0502	3.050	8.70	64.70
3	7/14/79	2	25	0.165	0.0469	2.847	8.75	64.75
3	7/14/79	2	26	0.158	0.0436	2.644	8.80	64.79
3	7/14/79	2	27	0.149	0.0389	2.359	8.84	64.84
3	7/14/79	2	28	0.143	0.0361	2.194	8.88	64.87
3	7/14/79	2	29	0.137	0.0334	2.028	8.91	64.91
3	7/14/79	2	30	0.134	0.0321	1.946	8.94	64.94
3	7/14/79	2	31	0.128	0.0293	1.781	8.97	64.97
3	7/14/79	2	32	0.122	0.0266	1.616	9.00	65.00
3	7/14/79	2	33	0.116	0.0245	1.487	9.03	65.03
3	7/14/79	2	34	0.113	0.0234	1.423	9.05	65.05
3	7/14/79	2	35	0.107	0.0213	1.294	9.08	65.07
3	7/14/79	2	36	0.101	0.0192	1.165	9.10	65.09
3	7/14/79	2	37	0.094	0.0171	1.036	9.11	65.11
3	7/14/79	2	38	0.091	0.0160	0.971	9.13	65.13
3	7/14/79	2	40	0.082	0.0136	0.823	9.16	65.16
3	7/14/79	2	42	0.076	0.0119	0.725	9.19	65.18
3	7/14/79	2	44	0.070	0.0103	0.626	9.21	65.21
3	7/14/79	2	46	0.064	0.0087	0.527	9.23	65.23
3	7/14/79	2	47	0.061	0.0079	0.478	9.24	65.24
3	7/14/79	2	49	0.055	0.0068	0.413	9.25	65.25
3	7/14/79	2	52	0.049	0.0057	0.348	9.27	65.27
3	7/14/79	2	54	0.043	0.0047	0.283	9.28	65.28
3	7/14/79	2	56	0.037	0.0036	0.218	9.29	65.29
3	7/14/79	2	59	0.030	0.0025	0.153	9.30	65.30
3	7/14/79	3	2	0.024	0.0020	0.122	9.31	65.30
3	7/14/79	3	5	0.018	0.0015	0.092	9.31	65.31
3	7/14/79	3	7	0.015	0.0013	0.076	9.31	65.31
3	7/14/79	3	8	0.012	0.0010	0.061	9.32	65.31
3	7/14/79	3	10	0.009	0.0008	0.046	9.32	65.31
3	7/14/79	3	11	0.006	0.0005	0.031	9.32	65.32
3	7/14/79	3	13	0.003	0.0003	0.015	9.32	65.32
3	7/14/79	3	17	0.0	0.0	0.0	9.32	65.32

TABLE D1- 3. CONCLUDED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
3	8/21/79	19	6	0.0	0.0	0.0	0.0	65.32
3	8/21/79	19	8	0.006	0.0005	0.031	0.00	65.32
3	8/21/79	19	10	0.061	0.0079	0.478	0.01	65.33
3	8/21/79	19	12	0.107	0.0213	1.294	0.04	65.36
3	8/21/79	19	14	0.116	0.0245	1.487	0.08	65.40
3	8/21/79	19	16	0.113	0.0234	1.423	0.13	65.45
3	8/21/79	19	18	0.110	0.0224	1.358	0.18	65.50
3	8/21/79	19	20	0.107	0.0213	1.294	0.22	65.54
3	8/21/79	19	22	0.104	0.0202	1.229	0.27	65.58
3	8/21/79	19	26	0.101	0.0192	1.165	0.35	65.66
3	8/21/79	19	28	0.094	0.0171	1.036	0.38	65.70
3	8/21/79	19	30	0.088	0.0152	0.922	0.42	65.73
3	8/21/79	19	32	0.082	0.0136	0.823	0.44	65.76
3	8/21/79	19	34	0.070	0.0103	0.626	0.47	65.78
3	8/21/79	19	36	0.064	0.0087	0.527	0.49	65.80
3	8/21/79	19	38	0.058	0.0073	0.445	0.50	65.82
3	8/21/79	19	40	0.052	0.0063	0.380	0.52	65.83
3	8/21/79	19	42	0.046	0.0052	0.315	0.53	65.85
3	8/21/79	19	44	0.040	0.0041	0.250	0.54	65.86
3	8/21/79	19	46	0.034	0.0031	0.185	0.55	65.86
3	8/21/79	19	48	0.030	0.0025	0.153	0.55	65.87
3	8/21/79	19	50	0.024	0.0020	0.122	0.56	65.87
3	8/21/79	19	54	0.021	0.0018	0.107	0.56	65.88
3	8/21/79	19	56	0.018	0.0015	0.092	0.57	65.88
3	8/21/79	19	58	0.015	0.0013	0.076	0.57	65.89
3	8/21/79	20	4	0.012	0.0010	0.061	0.58	65.89
3	8/21/79	20	10	0.006	0.0005	0.031	0.58	65.90
3	8/21/79	20	20	0.0	0.0	0.0	0.58	65.90

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	3/16/79	16	0	0.0	0.0	0.0	0.0	0.0
7	3/16/79	24	0	0.152	0.1784	0.226	0.90	0.90
7	3/17/79	12	0	0.183	0.2407	0.305	4.09	4.09
7	3/17/79	15	0	0.305	0.5465	0.693	5.59	5.59
7	3/18/79	11	44	0.536	1.8066	2.290	36.51	36.51
7	3/18/79	11	46	0.558	1.9199	2.434	36.59	36.59
7	3/18/79	11	48	0.567	1.9709	2.498	36.67	36.67
7	3/18/79	11	50	0.570	1.9878	2.520	36.76	36.76
7	3/18/79	11	56	0.567	1.9709	2.498	37.01	37.01
7	3/18/79	11	58	0.561	1.9369	2.455	37.09	37.09
7	3/18/79	12	0	0.552	1.8859	2.391	37.17	37.17
7	3/18/79	12	2	0.543	1.8378	2.330	37.25	37.25
7	3/18/79	12	6	0.536	1.8066	2.290	37.40	37.40
7	3/18/79	12	10	0.539	1.8222	2.310	37.56	37.56
7	3/18/79	12	11	0.543	1.8378	2.330	37.59	37.59
7	3/18/79	12	12	0.555	1.9029	2.412	37.63	37.63
7	3/18/79	12	14	0.564	1.9539	2.477	37.72	37.72
7	3/18/79	12	15	0.576	2.0218	2.563	37.76	37.76
7	3/18/79	12	16	0.588	2.0898	2.649	37.80	37.80
7	3/18/79	12	17	0.600	2.1577	2.735	37.85	37.85
7	3/18/79	12	18	0.613	2.2271	2.823	37.89	37.89
7	3/18/79	12	19	0.631	2.3376	2.963	37.94	37.94
7	3/18/79	12	20	0.619	2.2639	2.870	37.99	37.99
7	3/18/79	12	24	0.610	2.2087	2.800	38.18	38.18
7	3/18/79	12	27	0.616	2.2455	2.846	38.32	38.32
7	3/18/79	12	28	0.622	2.2823	2.893	38.37	38.37
7	3/18/79	12	29	0.628	2.3191	2.940	38.42	38.42
7	3/18/79	12	30	0.631	2.3376	2.963	38.46	38.46
7	3/18/79	12	31	0.640	2.3928	3.033	38.51	38.51
7	3/18/79	12	33	0.646	2.4296	3.080	38.62	38.62
7	3/18/79	12	35	0.652	2.4664	3.126	38.72	38.72
7	3/18/79	12	40	0.640	2.3928	3.033	38.98	38.98
7	3/18/79	12	45	0.631	2.3376	2.963	39.23	39.23
7	3/18/79	12	51	0.625	2.3007	2.916	39.52	39.52
7	3/18/79	12	53	0.619	2.2639	2.870	39.62	39.62
7	3/18/79	12	59	0.628	2.3191	2.940	39.91	39.91
7	3/18/79	13	6	0.643	2.4112	3.056	40.26	40.26
7	3/18/79	13	27	0.622	2.2823	2.893	41.30	41.30
7	3/18/79	13	33	0.628	2.3191	2.940	41.59	41.59
7	3/18/79	13	43	0.610	2.2087	2.800	42.07	42.07
7	3/18/79	13	50	0.597	2.1408	2.714	42.39	42.39
7	3/18/79	14	8	0.573	2.0048	2.541	43.18	43.18
7	3/18/79	14	20	0.564	1.9539	2.477	43.68	43.68
7	3/18/79	14	26	0.567	1.9709	2.498	43.93	43.93
7	3/18/79	14	35	0.561	1.9369	2.455	44.30	44.30
7	3/18/79	14	49	0.570	1.9878	2.520	44.88	44.88
7	3/18/79	14	58	0.564	1.9539	2.477	45.25	45.25
7	3/18/79	15	9	0.561	1.9369	2.455	45.71	45.71
7	3/18/79	15	14	0.567	1.9709	2.498	45.91	45.91
7	3/18/79	15	25	0.573	2.0048	2.541	46.38	46.38
7	3/18/79	15	30	0.570	1.9878	2.520	46.59	46.59
7	3/18/79	15	46	0.582	2.0558	2.606	47.27	47.27
7	3/18/79	15	50	0.588	2.0898	2.649	47.44	47.44
7	3/18/79	16	0	0.582	2.0558	2.606	47.88	47.88
7	3/18/79	16	10	0.594	2.1238	2.692	48.32	48.32
7	3/18/79	16	21	0.607	2.1917	2.778	48.83	48.83
7	3/18/79	16	28	0.597	2.1408	2.714	49.15	49.15
7	3/18/79	16	35	0.597	2.1408	2.714	49.46	49.46
7	3/18/79	16	54	0.631	2.3376	2.963	50.36	50.36
7	3/18/79	17	0	0.634	2.3560	2.986	50.66	50.66
7	3/18/79	17	14	0.622	2.2823	2.893	51.34	51.34
7	3/18/79	17	20	0.613	2.2271	2.823	51.63	51.63
7	3/18/79	17	30	0.600	2.1577	2.735	52.09	52.09
7	3/18/79	17	43	0.585	2.0728	2.627	52.67	52.67
7	3/18/79	17	50	0.573	2.0048	2.541	52.98	52.98
7	3/18/79	18	4	0.555	1.9029	2.412	53.55	53.55
7	3/18/79	18	16	0.536	1.8066	2.290	54.02	54.02
7	3/18/79	18	29	0.512	1.6820	2.132	54.50	54.50
7	3/18/79	18	46	0.488	1.5574	1.974	55.09	55.09
7	3/18/79	19	16	0.439	1.2856	1.630	55.99	55.99
7	3/18/79	19	26	0.424	1.2006	1.522	56.25	56.25
7	3/18/79	19	36	0.408	1.1157	1.414	56.49	56.49
7	3/18/79	19	50	0.390	1.0137	1.285	56.81	56.81
7	3/18/79	19	59	0.378	0.9458	1.199	56.99	56.99
7	3/18/79	20	14	0.360	0.8450	1.071	57.28	57.28
7	3/18/79	20	30	0.344	0.7629	0.967	57.55	57.55
7	3/18/79	20	54	0.323	0.6468	0.820	57.91	57.91
7	3/18/79	21	14	0.308	0.5632	0.714	58.16	58.16
7	3/18/79	21	42	0.290	0.5040	0.639	58.48	58.48
7	3/18/79	22	20	0.268	0.4457	0.565	58.86	58.86
7	3/18/79	22	50	0.256	0.4140	0.525	59.13	59.13
7	3/18/79	23	26	0.244	0.3823	0.485	59.44	59.44
7	3/18/79	23	55	0.232	0.3528	0.447	59.66	59.66
7	3/19/79	0	18	0.223	0.3307	0.419	59.83	59.83
7	3/19/79	0	40	0.216	0.3160	0.401	59.98	59.98
7	3/19/79	1	24	0.213	0.3087	0.391	60.27	60.27
7	3/19/79	2	20	0.207	0.2951	0.374	60.62	60.62
7	3/19/79	3	6	0.195	0.2679	0.340	60.90	60.90
7	3/19/79	3	56	0.183	0.2407	0.305	61.17	61.17
7	3/19/79	4	48	0.171	0.2158	0.274	61.42	61.42
7	3/19/79	5	40	0.158	0.1909	0.242	61.64	61.64
7	3/19/79	6	24	0.149	0.1730	0.219	61.81	61.81
7	3/19/79	7	10	0.140	0.1569	0.199	61.97	61.97
7	3/19/79	7	40	0.134	0.1461	0.185	62.07	62.07
7	3/19/79	8	20	0.128	0.1354	0.172	62.18	62.18
7	3/19/79	9	0	0.122	0.1246	0.158	62.29	62.29
7	3/19/79	9	50	0.116	0.1161	0.147	62.42	62.42
7	3/19/79	10	34	0.110	0.1076	0.136	62.53	62.53
7	3/19/79	11	33	0.104	0.0991	0.126	62.65	62.65
7	3/19/79	12	18	0.098	0.0906	0.115	62.74	62.74
7	3/19/79	13	7	0.094	0.0864	0.109	62.84	62.84
7	3/19/79	13	47	0.091	0.0821	0.104	62.91	62.91
7	3/19/79	14	30	0.088	0.0784	0.099	62.98	62.98
7	3/19/79	15	16	0.085	0.0748	0.095	63.05	63.05

TABLE D1- 4. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	3/19/79	15	30	0.082	0.0711	0.090	63.08	63.08
7	3/19/79	15	54	0.079	0.0674	0.085	63.11	63.11
7	3/19/79	16	30	0.076	0.0637	0.081	63.16	63.16
7	3/19/79	16	58	0.073	0.0600	0.076	63.20	63.20
7	3/19/79	17	28	0.070	0.0564	0.071	63.23	63.23
7	3/19/79	18	0	0.067	0.0527	0.067	63.27	63.27
7	3/19/79	18	37	0.064	0.0490	0.062	63.31	63.31
7	3/19/79	19	20	0.061	0.0453	0.057	63.35	63.35
7	3/19/79	20	6	0.058	0.0422	0.053	63.40	63.40
7	3/19/79	20	46	0.055	0.0391	0.050	63.43	63.43
7	3/19/79	21	23	0.052	0.0360	0.046	63.46	63.46
7	3/19/79	22	4	0.049	0.0328	0.042	63.49	63.49
7	3/19/79	22	55	0.046	0.0297	0.038	63.52	63.52
7	3/19/79	23	32	0.043	0.0266	0.034	63.55	63.55
7	3/20/79	0	11	0.040	0.0235	0.030	63.57	63.57
7	3/20/79	0	36	0.037	0.0204	0.026	63.58	63.58
7	3/20/79	1	33	0.034	0.0173	0.022	63.60	63.60
7	3/20/79	2	54	0.030	0.0142	0.018	63.63	63.63
7	3/20/79	4	2	0.027	0.0127	0.016	63.65	63.65
7	3/20/79	6	40	0.024	0.0113	0.014	63.69	63.69
7	3/20/79	10	46	0.024	0.0113	0.014	63.75	63.75
7	3/20/79	11	58	0.018	0.0085	0.011	63.76	63.76
7	3/20/79	13	30	0.0	0.0	0.0	63.77	63.77
7	3/23/79	3	48	0.0	0.0	0.0	0.0	63.77
7	3/23/79	3	50	0.024	0.0113	0.014	0.00	63.77
7	3/23/79	3	52	0.034	0.0173	0.022	0.00	63.77
7	3/23/79	3	54	0.037	0.0204	0.026	0.00	63.77
7	3/23/79	3	57	0.040	0.0235	0.030	0.00	63.77
7	3/23/79	4	5	0.043	0.0266	0.034	0.01	63.78
7	3/23/79	5	5	0.043	0.0266	0.034	0.04	63.81
7	3/23/79	6	58	0.040	0.0235	0.030	0.10	63.87
7	3/23/79	8	10	0.043	0.0266	0.034	0.14	63.91
7	3/23/79	8	38	0.046	0.0297	0.038	0.16	63.92
7	3/23/79	8	49	0.049	0.0328	0.042	0.16	63.93
7	3/23/79	9	3	0.052	0.0360	0.046	0.17	63.94
7	3/23/79	9	21	0.055	0.0391	0.050	0.19	63.96
7	3/23/79	9	52	0.058	0.0422	0.053	0.21	63.98
7	3/23/79	10	8	0.061	0.0453	0.057	0.23	64.00
7	3/23/79	10	19	0.064	0.0490	0.062	0.24	64.01
7	3/23/79	10	25	0.067	0.0527	0.067	0.25	64.02
7	3/23/79	10	33	0.070	0.0564	0.071	0.26	64.02
7	3/23/79	10	36	0.073	0.0600	0.076	0.26	64.03
7	3/23/79	10	42	0.076	0.0637	0.081	0.27	64.04
7	3/23/79	10	46	0.079	0.0674	0.085	0.27	64.04
7	3/23/79	10	50	0.082	0.0711	0.090	0.28	64.05
7	3/23/79	10	55	0.085	0.0748	0.095	0.29	64.05
7	3/23/79	10	57	0.088	0.0784	0.099	0.29	64.06
7	3/23/79	11	3	0.091	0.0821	0.104	0.30	64.07

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	3/23/79	11	9	0.101	0.0949	0.120	0.31	64.08
7	3/23/79	11	11	0.104	0.0991	0.126	0.31	64.08
7	3/23/79	11	13	0.107	0.1034	0.131	0.32	64.09
7	3/23/79	11	14	0.110	0.1076	0.136	0.32	64.09
7	3/23/79	11	16	0.113	0.1119	0.142	0.33	64.09
7	3/23/79	11	19	0.116	0.1161	0.147	0.33	64.10
7	3/23/79	11	22	0.119	0.1203	0.153	0.34	64.11
7	3/23/79	11	25	0.122	0.1246	0.158	0.35	64.12
7	3/23/79	11	30	0.125	0.1300	0.165	0.36	64.13
7	3/23/79	11	34	0.128	0.1354	0.172	0.37	64.14
7	3/23/79	11	36	0.131	0.1407	0.178	0.38	64.15
7	3/23/79	11	39	0.134	0.1461	0.185	0.39	64.16
7	3/23/79	11	43	0.137	0.1515	0.192	0.40	64.17
7	3/23/79	11	46	0.140	0.1569	0.199	0.41	64.18
7	3/23/79	11	49	0.143	0.1623	0.206	0.42	64.19
7	3/23/79	11	56	0.146	0.1676	0.212	0.44	64.21
7	3/23/79	12	2	0.149	0.1730	0.219	0.47	64.24
7	3/23/79	12	15	0.152	0.1784	0.226	0.51	64.28
7	3/23/79	12	44	0.155	0.1846	0.234	0.63	64.39
7	3/23/79	13	10	0.158	0.1909	0.242	0.73	64.50
7	3/23/79	13	32	0.155	0.1846	0.234	0.82	64.59
7	3/23/79	13	43	0.152	0.1784	0.226	0.86	64.63
7	3/23/79	13	51	0.149	0.1730	0.219	0.89	64.66
7	3/23/79	14	5	0.146	0.1676	0.212	0.94	64.71
7	3/23/79	14	10	0.143	0.1623	0.206	0.96	64.72
7	3/23/79	14	20	0.140	0.1569	0.199	0.99	64.76
7	3/23/79	14	25	0.137	0.1515	0.192	1.01	64.77
7	3/23/79	14	33	0.134	0.1461	0.185	1.03	64.80
7	3/23/79	14	47	0.131	0.1407	0.178	1.07	64.84
7	3/23/79	14	53	0.128	0.1354	0.172	1.09	64.86
7	3/23/79	15	8	0.125	0.1300	0.165	1.13	64.90
7	3/23/79	15	20	0.122	0.1246	0.158	1.17	64.93
7	3/23/79	15	37	0.119	0.1203	0.153	1.21	64.98
7	3/23/79	15	49	0.116	0.1161	0.147	1.24	65.01
7	3/23/79	16	1	0.113	0.1119	0.142	1.27	65.04
7	3/23/79	16	8	0.110	0.1076	0.136	1.28	65.05
7	3/23/79	16	18	0.107	0.1034	0.131	1.31	65.08
7	3/23/79	16	22	0.104	0.0991	0.126	1.32	65.08
7	3/23/79	16	29	0.101	0.0949	0.120	1.33	65.10
7	3/23/79	16	32	0.098	0.0906	0.115	1.34	65.10
7	3/23/79	16	34	0.094	0.0864	0.109	1.34	65.11
7	3/23/79	16	36	0.088	0.0784	0.099	1.34	65.11
7	3/23/79	16	40	0.085	0.0748	0.095	1.35	65.12
7	3/23/79	16	43	0.082	0.0711	0.090	1.35	65.12
7	3/23/79	16	46	0.079	0.0674	0.085	1.36	65.13
7	3/23/79	16	50	0.076	0.0637	0.081	1.36	65.13
7	3/23/79	16	56	0.073	0.0600	0.076	1.37	65.14
7	3/23/79	16	58	0.070	0.0564	0.071	1.37	65.14
7	3/23/79	17	1	0.067	0.0527	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	RUNOFF M	RUNOFF CMS	RUNOFF MMPH	STORM MM	ANNUAL MM
7	3/23/79	17	22	0.055	0.0391	0.050	1.40	65.17
7	3/23/79	17	27	0.052	0.0360	0.046	1.40	65.17
7	3/23/79	17	35	0.049	0.0328	0.042	1.41	65.18
7	3/23/79	17	43	0.046	0.0297	0.038	1.41	65.18
7	3/23/79	17	53	0.046	0.0297	0.038	1.42	65.19
7	3/23/79	18	5	0.043	0.0266	0.034	1.43	65.19
7	3/23/79	18	21	0.040	0.0235	0.030	1.43	65.20
7	3/23/79	18	35	0.037	0.0204	0.026	1.44	65.21
7	3/23/79	18	42	0.034	0.0173	0.022	1.44	65.21
7	3/23/79	18	58	0.030	0.0142	0.018	1.45	65.22
7	3/23/79	19	10	0.027	0.0127	0.016	1.45	65.22
7	3/23/79	19	20	0.024	0.0113	0.014	1.45	65.22
7	3/23/79	19	31	0.027	0.0127	0.016	1.46	65.23
7	3/23/79	19	34	0.024	0.0113	0.014	1.46	65.23
7	3/23/79	19	58	0.021	0.0099	0.013	1.46	65.23
7	3/23/79	20	58	0.018	0.0085	0.011	1.48	65.24
7	3/23/79	21	30	0.015	0.0071	0.009	1.48	65.25
7	3/23/79	21	53	0.012	0.0057	0.007	1.48	65.25
7	3/23/79	22	9	0.009	0.0042	0.005	1.49	65.25
7	3/23/79	22	24	0.006	0.0028	0.004	1.49	65.25
7	3/23/79	22	43	0.003	0.0014	0.002	1.49	65.26
7	3/23/79	23	59	0.0	0.0	0.0	1.49	65.26
7	3/28/79	15	22	0.0	0.0	0.0	0.0	65.26
7	3/28/79	15	25	0.073	0.0600	0.076	0.00	65.26
7	3/28/79	15	26	0.091	0.0821	0.104	0.00	65.26
7	3/28/79	15	27	0.110	0.1076	0.136	0.01	65.26
7	3/28/79	15	28	0.122	0.1246	0.158	0.01	65.26
7	3/28/79	15	30	0.128	0.1354	0.172	0.01	65.27
7	3/28/79	15	31	0.131	0.1407	0.178	0.02	65.27
7	3/28/79	15	35	0.134	0.1461	0.185	0.03	65.29
7	3/28/79	15	40	0.137	0.1515	0.192	0.04	65.30
7	3/28/79	15	41	0.146	0.1676	0.212	0.05	65.30
7	3/28/79	15	50	0.146	0.1676	0.212	0.08	65.34
7	3/28/79	15	55	0.143	0.1623	0.206	0.10	65.35
7	3/28/79	15	58	0.140	0.1569	0.199	0.11	65.36
7	3/28/79	16	2	0.137	0.1515	0.192	0.12	65.38
7	3/28/79	16	5	0.134	0.1461	0.185	0.13	65.39
7	3/28/79	16	15	0.131	0.1407	0.178	0.16	65.42
7	3/28/79	16	26	0.131	0.1407	0.178	0.19	65.45
7	3/28/79	16	35	0.128	0.1354	0.172	0.22	65.48
7	3/28/79	16	48	0.125	0.1300	0.165	0.26	65.51
7	3/28/79	17	0	0.122	0.1246	0.158	0.29	65.54
7	3/28/79	17	22	0.125	0.1300	0.165	0.35	65.60
7	3/28/79	17	34	0.128	0.1354	0.172	0.38	65.64
7	3/28/79	17	42	0.131	0.1407	0.178	0.40	65.66
7	3/28/79	17	45	0.134	0.1461	0.185	0.41	65.67
7	3/28/79	17	48	0.137	0.1515	0.192	0.42	65.68
7	3/28/79	17	50	0.140	0.1569	0.199	0.43	65.69
7	3/28/79	17	52	0.143	0.1623	0.206	0.44	65.69
7	3/28/79	17	54	0.146	0.1676	0.212	0.44	65.70

SITE	DATE	HOUR	MIN	STAGE M	RATE, INTENSITY CMS	RATE, INTENSITY MMPH	RUNOFF MM	RUNOFF MM
7	3/28/79	17	56	0.149	0.1730	0.219	0.45	65.71
7	3/28/79	17	59	0.152	0.1784	0.226	0.46	65.72
7	3/28/79	18	1	0.155	0.1846	0.234	0.47	65.72
7	3/28/79	18	4	0.158	0.1909	0.242	0.48	65.74
7	3/28/79	18	6	0.162	0.1971	0.250	0.49	65.74
7	3/28/79	18	10	0.165	0.2033	0.258	0.51	65.76
7	3/28/79	18	14	0.168	0.2095	0.266	0.52	65.78
7	3/28/79	18	19	0.171	0.2158	0.274	0.55	65.80
7	3/28/79	18	36	0.171	0.2158	0.274	0.62	65.88
7	3/28/79	18	49	0.168	0.2095	0.266	0.68	65.94
7	3/28/79	18	55	0.165	0.2033	0.258	0.71	65.96
7	3/28/79	19	1	0.162	0.1971	0.250	0.73	65.99
7	3/28/79	19	6	0.158	0.1909	0.242	0.75	66.01
7	3/28/79	19	14	0.155	0.1846	0.234	0.78	66.04
7	3/28/79	19	20	0.152	0.1784	0.226	0.81	66.06
7	3/28/79	19	26	0.180	0.2345	0.297	0.83	66.09
7	3/28/79	19	32	0.146	0.1676	0.212	0.86	66.12
7	3/28/79	19	38	0.143	0.1623	0.206	0.88	66.14
7	3/28/79	19	44	0.140	0.1569	0.199	0.90	66.16
7	3/28/79	19	50	0.137	0.1515	0.192	0.92	66.18
7	3/28/79	19	56	0.134	0.1461	0.185	0.94	66.20
7	3/28/79	20	2	0.131	0.1407	0.178	0.96	66.21
7	3/28/79	20	11	0.128	0.1354	0.172	0.98	66.24
7	3/28/79	20	22	0.125	0.1300	0.165	1.01	66.27
7	3/28/79	20	35	0.122	0.1246	0.158	1.05	66.31
7	3/28/79	20	50	0.119	0.1203	0.153	1.09	66.34
7	3/28/79	21	18	0.116	0.1161	0.147	1.16	66.41
7	3/28/79	21	36	0.113	0.1119	0.142	1.20	66.46
7	3/28/79	21	47	0.110	0.1076	0.136	1.23	66.48
7	3/28/79	21	55	0.107	0.1034	0.131	1.24	66.50
7	3/28/79	22	2	0.104	0.0991	0.126	1.26	66.52
7	3/28/79	22	10	0.101	0.0949	0.120	1.28	66.53
7	3/28/79	22	19	0.098	0.0906	0.115	1.29	66.55
7	3/28/79	22	29	0.094	0.0864	0.109	1.31	66.57
7	3/28/79	22	45	0.091	0.0821	0.104	1.34	66.60
7	3/28/79	22	57	0.088	0.0784	0.099	1.36	66.62
7	3/28/79	23	6	0.085	0.0748	0.095	1.38	66.63
7	3/28/79	23	16	0.082	0.0711	0.090	1.39	66.65
7	3/28/79	23	28	0.079	0.0674	0.085	1.41	66.66
7	3/28/79	23	42	0.076	0.0637	0.081	1.43	66.68
7	3/28/79	23	58	0.073	0.0600	0.076	1.45	66.71
7	3/29/79	0	17	0.070	0.0564	0.071	1.47	66.73
7	3/29/79	0	30	0.067	0.0527	0.067	1.49	66.74
7	3/29/79	0	42	0.064	0.0490	0.062	1.50	66.76
7	3/29/79	1	0	0.061	0.0453	0.057	1.52	66.77
7	3/29/79	1	23	0.058	0.0422	0.053	1.54	66.80
7	3/29/79	1	42	0.055	0.0391	0.050	1.56	66.81
7	3/29/79	2	7	0.052	0.0360	0.046	1.58	66.83
7	3/29/79	2	34	0.049	0.0328	0.042	1.60	66.85
7	3/29/79	3	16	0.046	0.0297	0.038	1.62	66.88
7	3/29/79	3	52	0.043	0.0266	0.034	1.64	66.90
7	3/29/79	4	31	0.040	0.0235	0.030	1.66	66.92

TABLE D1- 4. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	3/29/79	5	20	0.037	0.0204	0.026	1.69	66.94
7	3/29/79	6	17	0.037	0.0204	0.026	1.71	66.97
7	3/29/79	6	21	0.040	0.0235	0.030	1.71	66.97
7	3/29/79	6	24	0.043	0.0266	0.034	1.72	66.97
7	3/29/79	6	28	0.049	0.0328	0.042	1.72	66.97
7	3/29/79	6	33	0.055	0.0391	0.050	1.72	66.98
7	3/29/79	6	35	0.058	0.0422	0.053	1.72	66.98
7	3/29/79	6	37	0.061	0.0453	0.057	1.73	66.98
7	3/29/79	6	40	0.064	0.0490	0.062	1.73	66.98
7	3/29/79	6	43	0.067	0.0527	0.067	1.73	66.99
7	3/29/79	6	46	0.070	0.0564	0.071	1.74	66.99
7	3/29/79	6	47	0.073	0.0600	0.076	1.74	66.99
7	3/29/79	6	48	0.076	0.0637	0.081	1.74	66.99
7	3/29/79	6	50	0.085	0.0748	0.095	1.74	67.00
7	3/29/79	6	53	0.091	0.0821	0.104	1.75	67.00
7	3/29/79	6	54	0.094	0.0864	0.109	1.75	67.00
7	3/29/79	6	55	0.098	0.0906	0.115	1.75	67.01
7	3/29/79	6	56	0.104	0.0991	0.126	1.75	67.01
7	3/29/79	6	58	0.116	0.1161	0.147	1.76	67.01
7	3/29/79	7	0	0.128	0.1354	0.172	1.76	67.02
7	3/29/79	7	2	0.143	0.1623	0.206	1.77	67.02
7	3/29/79	7	3	0.149	0.1730	0.219	1.77	67.03
7	3/29/79	7	4	0.162	0.1971	0.250	1.77	67.03
7	3/29/79	7	5	0.168	0.2095	0.266	1.78	67.04
7	3/29/79	7	6	0.174	0.2220	0.281	1.78	67.04
7	3/29/79	7	7	0.180	0.2345	0.297	1.79	67.04
7	3/29/79	7	8	0.189	0.2543	0.322	1.79	67.05
7	3/29/79	7	14	0.213	0.3087	0.391	1.83	67.09
7	3/29/79	7	21	0.244	0.3823	0.485	1.88	67.14
7	3/29/79	7	27	0.274	0.4616	0.585	1.93	67.19
7	3/29/79	7	29	0.283	0.4870	0.617	1.95	67.21
7	3/29/79	7	30	0.287	0.4955	0.628	1.96	67.22
7	3/29/79	7	33	0.305	0.5465	0.693	2.00	67.25
7	3/29/79	7	34	0.335	0.7136	0.905	2.01	67.27
7	3/29/79	7	38	0.341	0.7464	0.946	2.07	67.33
7	3/29/79	7	46	0.323	0.6468	0.820	2.19	67.45
7	3/29/79	7	54	0.305	0.5465	0.693	2.29	67.55
7	3/29/79	7	57	0.302	0.5380	0.682	2.33	67.58
7	3/29/79	7	58	0.287	0.4955	0.628	2.34	67.59
7	3/29/79	8	4	0.283	0.4870	0.617	2.40	67.65
7	3/29/79	8	7	0.280	0.4786	0.607	2.43	67.69
7	3/29/79	8	10	0.277	0.4701	0.596	2.46	67.72
7	3/29/79	8	11	0.274	0.4616	0.585	2.47	67.72
7	3/29/79	8	13	0.247	0.3902	0.495	2.49	67.74
7	3/29/79	8	18	0.244	0.3823	0.485	2.53	67.78
7	3/29/79	8	20	0.235	0.3602	0.457	2.54	67.80
7	3/29/79	8	29	0.229	0.3455	0.438	2.61	67.87
7	3/29/79	8	31	0.247	0.3902	0.495	2.63	67.88
7	3/29/79	8	34	0.244	0.3823	0.485	2.65	67.91
7	3/29/79	8	37	0.247	0.3902	0.495	2.68	67.93
7	3/29/79	8	39	0.241	0.3760	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	3/29/79	8	46	0.253	0.4061	0.515	2.75	68.00
7	3/29/79	8	50	0.244	0.3823	0.485	2.78	68.04
7	3/29/79	8	53	0.232	0.3528	0.447	2.80	68.06
7	3/29/79	8	56	0.226	0.3381	0.429	2.83	68.08
7	3/29/79	8	58	0.216	0.3160	0.401	2.84	68.10
7	3/29/79	9	0	0.213	0.3087	0.391	2.85	68.11
7	3/29/79	9	1	0.207	0.2951	0.374	2.86	68.12
7	3/29/79	9	2	0.204	0.2883	0.365	2.87	68.12
7	3/29/79	9	3	0.198	0.2747	0.348	2.87	68.13
7	3/29/79	9	5	0.195	0.2679	0.340	2.88	68.14
7	3/29/79	9	6	0.189	0.2543	0.322	2.89	68.14
7	3/29/79	9	7	0.183	0.2407	0.305	2.89	68.15
7	3/29/79	9	8	0.174	0.2220	0.281	2.90	68.15
7	3/29/79	9	12	0.168	0.2095	0.266	2.92	68.17
7	3/29/79	9	15	0.171	0.2158	0.274	2.93	68.19
7	3/29/79	9	17	0.177	0.2282	0.289	2.94	68.20
7	3/29/79	9	18	0.198	0.2747	0.348	2.95	68.20
7	3/29/79	9	23	0.195	0.2679	0.340	2.97	68.23
7	3/29/79	9	25	0.183	0.2407	0.305	2.98	68.24
7	3/29/79	9	30	0.168	0.2095	0.266	3.01	68.26
7	3/29/79	9	33	0.162	0.1971	0.250	3.02	68.28
7	3/29/79	9	40	0.168	0.2095	0.266	3.05	68.31
7	3/29/79	9	44	0.162	0.1971	0.250	3.07	68.32
7	3/29/79	9	50	0.162	0.1971	0.250	3.09	68.35
7	3/29/79	9	57	0.168	0.2095	0.266	3.12	68.38
7	3/29/79	10	2	0.162	0.1971	0.250	3.14	68.40
7	3/29/79	10	24	0.186	0.2475	0.314	3.25	68.50
7	3/29/79	10	38	0.204	0.2883	0.365	3.33	68.58
7	3/29/79	10	52	0.216	0.3160	0.401	3.42	68.67
7	3/29/79	11	10	0.241	0.3749	0.475	3.55	68.80
7	3/29/79	11	14	0.244	0.3823	0.485	3.58	68.84
7	3/29/79	11	16	0.250	0.4140	0.525	3.60	68.85
7	3/29/79	11	18	0.259	0.4219	0.535	3.61	68.87
7	3/29/79	11	27	0.259	0.4219	0.535	3.69	68.95
7	3/29/79	11	35	0.265	0.4378	0.555	3.77	69.02
7	3/29/79	11	39	0.271	0.4536	0.575	3.81	69.06
7	3/29/79	11	44	0.274	0.4616	0.585	3.85	69.11
7	3/29/79	11	50	0.280	0.4786	0.607	3.91	69.17
7	3/29/79	12	0	0.287	0.4955	0.628	4.02	69.27
7	3/29/79	12	12	0.290	0.5040	0.639	4.14	69.40
7	3/29/79	12	19	0.290	0.5040	0.639	4.22	69.47
7	3/29/79	12	22	0.293	0.5125	0.650	4.25	69.51
7	3/29/79	12	27	0.290	0.5040	0.639	4.30	69.56
7	3/29/79	12	42	0.293	0.5125	0.650	4.46	69.72
7	3/29/79	12	51	0.296	0.5210	0.660	4.56	69.82
7	3/29/79	12	55	0.299	0.5295	0.671	4.61	69.86
7	3/29/79	12	58	0.305	0.5465	0.693	4.64	69.90
7	3/29/79	13	1	0.311	0.5799	0.735	4.68	69.93
7	3/29/79	13	4	0.323	0.6468	0.820	4.72	69.97
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
7	3/29/79	13	35	0.375	0.9288	1.177	5.25	70.51
7	3/29/79	13	42	0.372	0.9118	1.156	5.39	70.64
7	3/29/79	13	46	0.369	0.8948	1.134	5.46	70.72
7	3/29/79	14	0	0.366	0.8778	1.113	5.73	70.98
7	3/29/79	14	16	0.363	0.8614	1.092	6.02	71.27
7	3/29/79	14	23	0.360	0.8450	1.071	6.15	71.40
7	3/29/79	14	26	0.357	0.8285	1.050	6.20	71.45
7	3/29/79	14	31	0.354	0.8121	1.029	6.29	71.54
7	3/29/79	14	34	0.351	0.7957	1.009	6.34	71.59
7	3/29/79	14	36	0.347	0.7793	0.988	6.37	71.62
7	3/29/79	14	38	0.344	0.7629	0.967	6.40	71.66
7	3/29/79	14	41	0.341	0.7464	0.946	6.45	71.71
7	3/29/79	14	45	0.335	0.7136	0.905	6.51	71.77
7	3/29/79	14	48	0.332	0.6969	0.883	6.56	71.81
7	3/29/79	14	50	0.329	0.6802	0.862	6.59	71.84
7	3/29/79	14	54	0.323	0.6468	0.820	6.64	71.90
7	3/29/79	14	56	0.320	0.6300	0.799	6.67	71.92
7	3/29/79	14	59	0.317	0.6133	0.777	6.71	71.96
7	3/29/79	15	2	0.314	0.5966	0.756	6.75	72.00
7	3/29/79	15	4	0.311	0.5799	0.735	6.77	72.03
7	3/29/79	15	7	0.308	0.5632	0.714	6.81	72.06
7	3/29/79	15	9	0.305	0.5465	0.693	6.83	72.09
7	3/29/79	15	11	0.302	0.5380	0.682	6.85	72.11
7	3/29/79	15	13	0.299	0.5295	0.671	6.88	72.13
7	3/29/79	15	17	0.293	0.5125	0.650	6.92	72.18
7	3/29/79	15	21	0.287	0.4955	0.628	6.96	72.22
7	3/29/79	15	24	0.280	0.4786	0.607	6.99	72.25
7	3/29/79	15	29	0.274	0.4616	0.585	7.04	72.30
7	3/29/79	15	34	0.268	0.4457	0.565	7.09	72.35
7	3/29/79	15	42	0.259	0.4219	0.535	7.16	72.42
7	3/29/79	15	51	0.250	0.3981	0.505	7.24	72.50
7	3/29/79	15	59	0.244	0.3823	0.485	7.31	72.56
7	3/29/79	16	8	0.232	0.3528	0.447	7.38	72.63
7	3/29/79	16	19	0.219	0.3234	0.410	7.46	72.71
7	3/29/79	16	34	0.207	0.2951	0.374	7.55	72.81
7	3/29/79	16	50	0.195	0.2679	0.340	7.65	72.91
7	3/29/79	17	2	0.183	0.2407	0.305	7.71	72.97
7	3/29/79	17	36	0.152	0.1784	0.226	7.86	73.12
7	3/29/79	18	0	0.143	0.1623	0.206	7.95	73.21
7	3/29/79	18	10	0.134	0.1461	0.185	7.98	73.24
7	3/29/79	18	23	0.134	0.1461	0.185	8.02	73.28
7	3/29/79	18	34	0.131	0.1407	0.178	8.06	73.31
7	3/29/79	18	46	0.128	0.1354	0.172	8.09	73.35
7	3/29/79	19	2	0.128	0.1354	0.172	8.14	73.39
7	3/29/79	19	19	0.125	0.1300	0.165	8.19	73.44
7	3/29/79	19	35	0.122	0.1246	0.158	8.23	73.48
7	3/29/79	19	55	0.119	0.1203	0.153	8.28	73.54
7	3/29/79	20	3	0.116	0.1161	0.147	8.30	73.56
7	3/29/79	20	34	0.113	0.1119	0.142	8.38	73.63
7	3/29/79	20	53	0.110	0.1076	0.136	8.42	73.67
7	3/29/79	21	11	0.107	0.1034	0.131	8.46	73.71
7	3/29/79	21	23	0.104	0.0991	0.126	8.48	73.74

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
7	3/29/79	21	35	0.101	0.0949	0.120	8.51	73.76
7	3/29/79	21	46	0.098	0.0906	0.115	8.53	73.79
7	3/29/79	21	55	0.094	0.0864	0.109	8.55	73.80
7	3/29/79	22	9	0.091	0.0821	0.104	8.57	73.83
7	3/29/79	22	21	0.088	0.0784	0.099	8.59	73.85
7	3/29/79	22	31	0.085	0.0748	0.095	8.61	73.86
7	3/29/79	22	43	0.082	0.0711	0.090	8.63	73.88
7	3/29/79	22	59	0.079	0.0674	0.085	8.65	73.91
7	3/29/79	23	17	0.076	0.0637	0.081	8.68	73.93
7	3/29/79	23	54	0.073	0.0600	0.076	8.72	73.98
7	3/30/79	0	13	0.070	0.0564	0.071	8.75	74.00
7	3/30/79	0	39	0.067	0.0527	0.067	8.78	74.03
7	3/30/79	0	55	0.064	0.0490	0.062	8.79	74.05
7	3/30/79	1	32	0.061	0.0453	0.057	8.83	74.09
7	3/30/79	2	10	0.058	0.0422	0.053	8.87	74.12
7	3/30/79	2	41	0.055	0.0391	0.050	8.89	74.15
7	3/30/79	3	8	0.052	0.0360	0.046	8.91	74.17
7	3/30/79	4	40	0.049	0.0328	0.042	8.98	74.24
7	3/30/79	6	40	0.046	0.0297	0.038	9.06	74.32
7	3/30/79	8	20	0.043	0.0266	0.034	9.12	74.38
7	3/30/79	12	10	0.040	0.0235	0.030	9.24	74.50
7	3/30/79	12	39	0.037	0.0204	0.026	9.26	74.51
7	3/30/79	13	5	0.034	0.0173	0.022	9.27	74.52
7	3/30/79	13	56	0.030	0.0142	0.018	9.28	74.54
7	3/30/79	14	46	0.027	0.0127	0.016	9.30	74.55
7	3/30/79	15	29	0.024	0.0113	0.014	9.31	74.56
7	3/30/79	16	30	0.021	0.0099	0.013	9.32	74.58
7	3/30/79	17	20	0.018	0.0085	0.011	9.33	74.59
7	3/30/79	20	8	0.018	0.0085	0.011	9.36	74.62
7	3/30/79	20	58	0.015	0.0071	0.009	9.37	74.63
7	3/30/79	21	26	0.012	0.0057	0.007	9.37	74.63
7	3/30/79	22	10	0.009	0.0042	0.005	9.38	74.63
7	3/30/79	22	50	0.006	0.0028	0.004	9.38	74.64
7	3/30/79	23	9	0.003	0.0014	0.002	9.38	74.64
7	3/30/79	23	59	0.0	0.0	0.0	9.38	74.64
7	4/20/79	9	26	0.0	0.0	0.0	0.0	74.64
7	4/20/79	9	29	0.116	0.1161	0.147	0.00	74.64
7	4/20/79	9	30	0.119	0.1203	0.153	0.01	74.64
7	4/20/79	9	31	0.125	0.1300	0.165	0.01	74.65
7	4/20/79	9	32	0.131	0.1407	0.178	0.01	74.65
7	4/20/79	9	34	0.137	0.1515	0.192	0.02	74.66
7	4/20/79	9	36	0.140	0.1569	0.199	0.02	74.66
7	4/20/79	9	40	0.143	0.1623	0.206	0.04	74.68
7	4/20/79	9	46	0.140	0.1569	0.199	0.06	74.70
7	4/20/79	9	52	0.137	0.1515	0.192	0.08	74.72
7	4/20/79	9	56	0.134	0.1461	0.185	0.09	74.73
7	4/20/79	10	8	0.131	0.1407	0.178	0.13	74.76
7	4/20/79	10	29	0.134	0.1461	0.185	0.19	74.83
7	4/20/79	10	48	0.137	0.1515	0.192	0.25	74.89
7	4/20/79	11	6	0.140	0.1569	0.199	0.31	74.95

TABLE D1- 4. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	4/20/79	11	15	0.143	0.1623	0.206	0.34	74.98
7	4/20/79	11	19	0.146	0.1676	0.212	0.35	74.99
7	4/20/79	11	22	0.149	0.1730	0.219	0.36	75.00
7	4/20/79	11	26	0.155	0.1846	0.234	0.38	75.02
7	4/20/79	11	23	0.158	0.1909	0.242	0.39	75.02
7	4/20/79	11	31	0.162	0.1971	0.250	0.40	75.04
7	4/20/79	11	38	0.165	0.2033	0.258	0.43	75.07
7	4/20/79	11	46	0.162	0.1971	0.250	0.46	75.10
7	4/20/79	11	56	0.158	0.1909	0.242	0.50	75.14
7	4/20/79	12	11	0.155	0.1846	0.234	0.56	75.20
7	4/20/79	12	24	0.155	0.1846	0.234	0.61	75.25
7	4/20/79	12	34	0.158	0.1909	0.242	0.65	75.29
7	4/20/79	12	37	0.162	0.1971	0.250	0.67	75.30
7	4/20/79	12	40	0.165	0.2033	0.258	0.68	75.32
7	4/20/79	12	43	0.168	0.2095	0.266	0.69	75.33
7	4/20/79	12	45	0.171	0.2158	0.274	0.70	75.34
7	4/20/79	12	48	0.174	0.2220	0.281	0.71	75.35
7	4/20/79	12	50	0.177	0.2282	0.289	0.72	75.36
7	4/20/79	13	2	0.180	0.2345	0.297	0.78	75.42
7	4/20/79	13	4	0.186	0.2475	0.314	0.79	75.43
7	4/20/79	13	6	0.192	0.2611	0.331	0.80	75.44
7	4/20/79	13	8	0.201	0.2815	0.357	0.81	75.45
7	4/20/79	13	9	0.204	0.2883	0.365	0.82	75.46
7	4/20/79	13	10	0.210	0.3019	0.383	0.83	75.46
7	4/20/79	13	11	0.216	0.3160	0.401	0.83	75.47
7	4/20/79	13	12	0.226	0.3381	0.429	0.84	75.48
7	4/20/79	13	13	0.232	0.3528	0.447	0.85	75.49
7	4/20/79	13	14	0.241	0.3749	0.475	0.86	75.49
7	4/20/79	13	15	0.256	0.4140	0.525	0.86	75.50
7	4/20/79	13	16	0.271	0.4536	0.575	0.87	75.51
7	4/20/79	13	17	0.283	0.4870	0.617	0.88	75.52
7	4/20/79	13	18	0.290	0.5040	0.639	0.89	75.53
7	4/20/79	13	22	0.296	0.5210	0.660	0.94	75.57
7	4/20/79	13	33	0.296	0.5210	0.660	1.06	75.70
7	4/20/79	13	49	0.283	0.4870	0.617	1.23	75.87
7	4/20/79	14	2	0.274	0.4616	0.585	1.36	76.00
7	4/20/79	14	11	0.265	0.4378	0.555	1.44	76.08
7	4/20/79	14	29	0.253	0.4061	0.515	1.60	76.24
7	4/20/79	14	43	0.244	0.3823	0.485	1.72	76.36
7	4/20/79	14	50	0.241	0.3749	0.475	1.78	76.41
7	4/20/79	15	4	0.238	0.3676	0.466	1.89	76.52
7	4/20/79	15	13	0.235	0.3602	0.457	1.96	76.59
7	4/20/79	15	22	0.232	0.3528	0.447	2.02	76.66
7	4/20/79	15	30	0.229	0.3455	0.438	2.08	76.72
7	4/20/79	15	36	0.226	0.3381	0.429	2.13	76.76
7	4/20/79	15	41	0.223	0.3307	0.419	2.16	76.80
7	4/20/79	15	48	0.219	0.3234	0.410	2.21	76.85
7	4/20/79	15	54	0.216	0.3160	0.401	2.25	76.89
7	4/20/79	16	2	0.213	0.3087	0.391	2.30	76.94
7	4/20/79	16	7	0.210	0.3019	[illegible]	[illegible]	[illegible]
				STAGE	RUNOFF RATE	RUNOFF INTENSITY	STORM RUNOFF	ANNUAL RUNOFF
7	4/20/79	16	26	0.201	0.2815	0.357	2.45	77.09
7	4/20/79	16	30	0.198	0.2747	0.348	2.48	77.11
7	4/20/79	16	35	0.195	0.2679	0.340	2.50	77.14
7	4/20/79	16	39	0.192	0.2611	0.331	2.53	77.16
7	4/20/79	16	45	0.189	0.2543	0.322	2.56	77.20
7	4/20/79	16	50	0.186	0.2475	0.314	2.59	77.22
7	4/20/79	16	56	0.183	0.2407	0.305	2.62	77.25
7	4/20/79	17	2	0.180	0.2345	0.297	2.65	77.28
7	4/20/79	17	8	0.177	0.2282	0.289	2.68	77.31
7	4/20/79	17	15	0.174	0.2220	0.281	2.71	77.35
7	4/20/79	17	20	0.171	0.2158	0.274	2.73	77.37
7	4/20/79	17	28	0.168	0.2095	0.266	2.77	77.41
7	4/20/79	17	35	0.165	0.2033	0.258	2.80	77.44
7	4/20/79	17	41	0.162	0.1971	0.250	2.82	77.46
7	4/20/79	17	50	0.158	0.1909	0.242	2.86	77.50
7	4/20/79	17	57	0.155	0.1846	0.234	2.89	77.53
7	4/20/79	18	6	0.152	0.1784	0.226	2.92	77.56
7	4/20/79	18	20	0.149	0.1730	0.219	2.98	77.61
7	4/20/79	18	33	0.146	0.1676	0.212	3.02	77.66
7	4/20/79	18	49	0.143	0.1623	0.206	3.08	77.72
7	4/20/79	19	3	0.140	0.1569	0.199	3.13	77.76
7	4/20/79	19	14	0.137	0.1515	0.192	3.16	77.80
7	4/20/79	19	35	0.134	0.1461	0.185	3.23	77.86
7	4/20/79	19	56	0.131	0.1407	0.178	3.29	77.93
7	4/20/79	20	26	0.128	0.1354	0.172	3.38	78.02
7	4/20/79	20	53	0.125	0.1300	0.165	3.45	78.09
7	4/20/79	21	25	0.122	0.1246	0.158	3.54	78.18
7	4/20/79	21	59	0.119	0.1203	0.153	3.63	78.27
7	4/20/79	22	49	0.116	0.1161	0.147	3.75	78.39
7	4/20/79	23	46	0.113	0.1119	0.142	3.89	78.53
7	4/21/79	1	0	0.110	0.1076	0.136	4.06	78.70
7	4/21/79	2	0	0.107	0.1034	0.131	4.20	78.83
7	4/21/79	7	0	0.091	0.0821	0.104	4.78	79.42
7	4/21/79	12	0	0.076	0.0637	0.081	5.25	79.88
7	4/21/79	17	0	0.061	0.0453	0.057	5.59	80.23
7	4/21/79	22	0	0.046	0.0297	0.038	5.83	80.47
7	4/22/79	3	0	0.030	0.0142	0.018	5.97	80.61
7	4/22/79	8	0	0.015	0.0071	0.009	6.04	80.67
7	4/22/79	12	0	0.003	0.0014	0.002	6.06	80.69
7	4/22/79	18	0	0.003	0.0014	0.002	6.07	80.70
7	4/22/79	24	0	0.003	0.0014	0.002	6.08	80.72
7	4/23/79	6	0	0.003	0.0014	0.002	6.09	80.73
7	4/23/79	12	0	0.003	0.0014	0.002	6.10	80.74
7	4/23/79	18	0	0.003	0.0014	0.002	6.11	80.75
7	4/23/79	24	0	0.003	0.0014	0.002	6.12	80.76
7	4/24/79	6	0	0.003	0.0014	0.002	6.13	80.77
7	4/24/79	12	0	0.003	0.0014	0.002	6.14	80.78
7	4/24/79	18	0	0.003	0.0014	0.002	6.15	80.79
7	4/24/79	23	59	0.0	0.0	0.0	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
7	6/12/79	18	9	0.155	0.1846	0.234	0.00	80.80
7	6/12/79	18	10	0.192	0.2611	0.331	0.01	80.80
7	6/12/79	18	12	0.451	1.3535	1.716	0.04	80.84
7	6/12/79	18	14	0.710	2.7977	3.546	0.13	80.92
7	6/12/79	18	16	0.914	3.9077	4.953	0.27	81.07
7	6/12/79	18	18	1.119	5.1882	6.577	0.46	81.26
7	6/12/79	18	19	1.151	5.4499	6.908	0.57	81.37
7	6/12/79	18	20	1.192	5.6368	7.145	0.69	81.49
7	6/12/79	18	21	1.210	5.7489	7.287	0.81	81.61
7	6/12/79	18	22	1.228	5.8627	7.432	0.93	81.73
7	6/12/79	18	23	1.244	5.9590	7.554	1.06	81.86
7	6/12/79	18	24	1.256	6.0360	7.651	1.19	81.98
7	6/12/79	18	26	1.247	5.9783	7.578	1.44	82.24
7	6/12/79	18	28	1.237	5.9205	7.505	1.69	82.49
7	6/12/79	18	30	1.216	5.7863	7.335	1.94	82.73
7	6/12/79	18	31	1.201	5.6928	7.216	2.06	82.86
7	6/12/79	18	32	1.189	5.6181	7.121	2.18	82.98
7	6/12/79	18	33	1.167	5.4872	6.956	2.30	83.09
7	6/12/79	18	34	1.152	5.3938	6.837	2.41	83.21
7	6/12/79	18	35	1.131	5.2630	6.671	2.52	83.32
7	6/12/79	18	36	1.116	5.1695	6.553	2.63	83.43
7	6/12/79	18	37	1.088	5.0013	6.340	2.74	83.54
7	6/12/79	18	39	1.015	4.5432	5.759	2.94	83.74
7	6/12/79	18	41	0.945	4.1003	5.198	3.13	83.92
7	6/12/79	18	42	0.908	3.3737	4.910	3.21	84.01
7	6/12/79	18	43	0.863	3.6189	4.587	3.29	84.09
7	6/12/79	18	44	0.820	3.3810	4.286	3.36	84.16
7	6/12/79	18	45	0.765	3.0880	3.914	3.43	84.23
7	6/12/79	18	47	0.695	2.7128	3.439	3.55	84.35
7	6/12/79	18	49	0.625	2.3007	2.916	3.66	84.46
7	6/12/79	18	50	0.604	2.1747	2.757	3.71	84.50
7	6/12/79	18	51	0.582	2.0558	2.606	3.75	84.55
7	6/12/79	18	52	0.564	1.9539	2.477	3.79	84.59
7	6/12/79	18	53	0.546	1.8533	2.349	3.83	84.63
7	6/12/79	18	54	0.533	1.7910	2.270	3.87	84.67
7	6/12/79	18	55	0.524	1.7443	2.211	3.91	84.71
7	6/12/79	18	56	0.518	1.7132	2.172	3.95	84.74
7	6/12/79	18	58	0.503	1.6353	2.073	4.02	84.81
7	6/12/79	19	0	0.488	1.5574	1.974	4.09	84.88
7	6/12/79	19	2	0.479	1.5065	1.910	4.15	84.95
7	6/12/79	19	4	0.463	1.4215	1.802	4.21	85.01
7	6/12/79	19	6	0.451	1.3535	1.716	4.27	85.07
7	6/12/79	19	8	0.433	1.2516	1.587	4.33	85.12
7	6/12/79	19	10	0.418	1.1667	1.479	4.38	85.17
7	6/12/79	19	13	0.405	1.0987	1.393	4.45	85.24
7	6/12/79	19	15	0.393	1.0307	1.307	4.49	85.29
7	6/12/79	19	17	0.378	0.9458	1.199	4.54	85.33
7	6/12/79	19	19	0.363	0.8614	1.092	4.57	85.37
7	6/12/79	19	21	0.354	0.8121	1.029	4.61	85.40
7	6/12/79	19	22	0.347	0.7793	0.988	4.63	85.42
7	6/12/79	19	24	0.335	0.7136	0.905	4.66	85.45
7	6/12/79	19	26	0.326	0.6635	0.841	4.69	85.48

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
7	6/12/79	19	28	0.311	0.5799	0.735	4.71	85.51
7	6/12/79	19	30	0.299	0.5295	0.671	4.74	85.53
7	6/12/79	19	32	0.290	0.5040	0.639	4.76	85.55
7	6/12/79	19	34	0.277	0.4701	0.596	4.78	85.57
7	6/12/79	19	36	0.268	0.4457	0.565	4.80	85.59
7	6/12/79	19	38	0.259	0.4219	0.535	4.82	85.61
7	6/12/79	19	40	0.250	0.3981	0.505	4.83	85.63
7	6/12/79	19	42	0.244	0.3823	0.485	4.85	85.65
7	6/12/79	19	44	0.235	0.3602	0.457	4.87	85.66
7	6/12/79	19	46	0.229	0.3455	0.438	4.88	85.68
7	6/12/79	19	48	0.223	0.3307	0.419	4.89	85.69
7	6/12/79	19	50	0.216	0.3160	0.401	4.91	85.70
7	6/12/79	19	52	0.213	0.3087	0.391	4.92	85.72
7	6/12/79	19	54	0.210	0.3019	0.383	4.93	85.73
7	6/12/79	19	56	0.204	0.2883	0.365	4.95	85.74
7	6/12/79	19	58	0.198	0.2747	0.348	4.96	85.75
7	6/12/79	20	0	0.195	0.2679	0.340	4.97	85.77
7	6/12/79	20	3	0.189	0.2543	0.322	4.99	85.78
7	6/12/79	20	4	0.186	0.2475	0.314	4.99	85.79
7	6/12/79	20	6	0.183	0.2407	0.305	5.00	85.80
7	6/12/79	20	8	0.180	0.2345	0.297	5.01	85.81
7	6/12/79	20	11	0.174	0.2220	0.281	5.03	85.82
7	6/12/79	20	15	0.168	0.2095	0.266	5.05	85.84
7	6/12/79	20	17	0.165	0.2033	0.258	5.05	85.85
7	6/12/79	20	19	0.162	0.1971	0.250	5.06	85.86
7	6/12/79	20	21	0.158	0.1909	0.242	5.07	85.87
7	6/12/79	20	23	0.155	0.1846	0.234	5.08	85.87
7	6/12/79	20	26	0.152	0.1784	0.226	5.09	85.89
7	6/12/79	20	28	0.149	0.1730	0.219	5.10	85.89
7	6/12/79	20	30	0.146	0.1676	0.212	5.10	85.90
7	6/12/79	20	33	0.143	0.1623	0.206	5.12	85.91
7	6/12/79	20	36	0.140	0.1569	0.199	5.13	85.92
7	6/12/79	20	38	0.137	0.1515	0.192	5.13	85.93
7	6/12/79	20	40	0.134	0.1461	0.185	5.14	85.93
7	6/12/79	20	42	0.131	0.1407	0.178	5.14	85.94
7	6/12/79	20	45	0.128	0.1354	0.172	5.15	85.95
7	6/12/79	20	48	0.125	0.1300	0.165	5.16	85.96
7	6/12/79	20	52	0.122	0.1246	0.158	5.17	85.97
7	6/12/79	20	58	0.119	0.1203	0.153	5.19	85.98
7	6/12/79	21	10	0.116	0.1161	0.147	5.22	86.01
7	6/12/79	21	26	0.113	0.1119	0.142	5.26	86.05
7	6/12/79	21	44	0.101	0.0949	0.120	5.30	86.09
7	6/12/79	22	0	0.088	0.0784	0.099	5.32	86.12
7	6/12/79	22	40	0.052	0.0360	0.046	5.37	86.17
7	6/12/79	23	12	0.021	0.0099	0.013	5.39	86.18
7	6/12/79	23	30	0.009	0.0042	0.005	5.39	86.19
7	6/12/79	23	42	0.003	0.0014	0.002	5.39	86.19
7	6/13/79	1	0	0.0	0.0	0.0	5.39	86.19
7	6/19/79	22	0	0.0	0.0	0.0	0.0	86.19
7	6/19/79	22	27	0.024	0.0113	0.014	0.00	86.19

TABLE D1- 4. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	6/19/79	22	57	0.088	0.0784	0.099	0.03	86.22
7	6/19/79	23	27	0.049	0.0328	0.042	0.07	86.26
7	6/19/79	23	57	0.024	0.0113	0.014	0.08	86.27
7	6/20/79	1	0	0.0	0.0	0.0	0.09	86.28
7	6/27/79	0	5	0.0	0.0	0.0	0.0	86.28
7	6/27/79	0	10	0.101	0.0949	0.120	0.01	86.28
7	6/27/79	0	12	0.107	0.1034	0.131	0.01	86.29
7	6/27/79	0	14	0.113	0.1119	0.142	0.01	86.29
7	6/27/79	0	16	0.116	0.1161	0.147	0.02	86.30
7	6/27/79	0	18	0.119	0.1203	0.153	0.02	86.30
7	6/27/79	0	20	0.216	0.3160	0.401	0.03	86.31
7	6/27/79	0	22	0.424	1.2006	1.522	0.06	86.34
7	6/27/79	0	24	0.466	1.4385	1.823	0.12	86.40
7	6/27/79	0	26	0.503	1.6353	2.073	0.19	86.46
7	6/27/79	0	28	0.524	1.7443	2.211	0.26	86.53
7	6/27/79	0	30	0.533	1.7910	2.270	0.33	86.61
7	6/27/79	0	32	0.543	1.8378	2.330	0.41	86.69
7	6/27/79	0	34	0.552	1.8859	2.391	0.49	86.76
7	6/27/79	0	36	0.570	1.9878	2.520	0.57	86.85
7	6/27/79	0	38	0.585	2.0728	2.627	0.65	86.93
7	6/27/79	0	40	0.604	2.1747	2.757	0.74	87.02
7	6/27/79	0	42	0.631	2.3376	2.963	0.84	87.12
7	6/27/79	0	44	0.655	2.4848	3.150	0.94	87.22
7	6/27/79	0	46	0.677	2.6108	3.309	1.05	87.33
7	6/27/79	0	48	0.671	2.5768	3.266	1.16	87.44
7	6/27/79	0	50	0.658	2.5032	3.173	1.27	87.54
7	6/27/79	0	52	0.649	2.4480	3.103	1.37	87.65
7	6/27/79	0	54	0.631	2.3376	2.963	1.47	87.75
7	6/27/79	0	56	0.610	2.2087	2.800	1.57	87.84
7	6/27/79	0	58	0.591	2.1068	2.671	1.66	87.94
7	6/27/79	1	0	0.573	2.0048	2.541	1.75	88.02
7	6/27/79	1	2	0.546	1.8533	2.349	1.83	88.10
7	6/27/79	1	4	0.530	1.7755	2.251	1.90	88.18
7	6/27/79	1	6	0.509	1.6664	2.112	1.98	88.25
7	6/27/79	1	8	0.485	1.5404	1.953	2.04	88.32
7	6/27/79	1	10	0.466	1.4385	1.823	2.11	88.38
7	6/27/79	1	12	0.451	1.3535	1.716	2.17	88.44
7	6/27/79	1	14	0.427	1.2176	1.543	2.22	88.50
7	6/27/79	1	16	0.411	1.1327	1.436	2.27	88.55
7	6/27/79	1	18	0.399	1.0647	1.350	2.32	88.59
7	6/27/79	1	20	0.390	1.0137	1.285	2.36	88.64
7	6/27/79	1	22	0.378	0.9458	1.199	2.40	88.68
7	6/27/79	1	24	0.369	0.8948	1.134	2.44	88.72
7	6/27/79	1	26	0.363	0.8614	1.092	2.48	88.75
7	6/27/79	1	31	0.360	0.3450	1.071	2.57	88.84
7	6/27/79	1	35	0.363	0.8614	1.092	2.64	88.92
7	6/27/79	1	40	0.369	0.8948	1.134	2.73	89.01
7	6/27/79	1	44	0.369	0.8948	1.134	2.81	89.09
7	6/27/79	2	0	0.344	0.7629	0.967	3.09	89.37
7	6/27/79	2	12	0.308	0.5632	0.714	3.26	89.54
7	6/27/79	2	20	0.283	0.4870	0.617	3.35	89.63
7	6/27/79	2	30	0.253	0.4061	0.515	3.44	89.72
7	6/27/79	2	42	0.229	0.3455	0.438	3.54	89.82
7	6/27/79	2	50	0.216	0.3160	0.401	3.59	89.87
7	6/27/79	3	2	0.198	0.2747	0.348	3.67	89.95
7	6/27/79	3	12	0.180	0.2345	0.297	3.72	90.00
7	6/27/79	3	20	0.168	0.2095	0.266	3.76	90.04
7	6/27/79	3	32	0.155	0.1846	0.234	3.81	90.09
7	6/27/79	3	44	0.143	0.1623	0.206	3.85	90.13
7	6/27/79	3	50	0.137	0.1515	0.192	3.87	90.15
7	6/27/79	4	0	0.125	0.1300	0.165	3.90	90.18
7	6/27/79	4	8	0.113	0.1119	0.142	3.92	90.20
7	6/27/79	4	17	0.101	0.0949	0.120	3.94	90.22
7	6/27/79	4	26	0.088	0.0784	0.099	3.96	90.24
7	6/27/79	4	34	0.076	0.0637	0.081	3.97	90.25
7	6/27/79	4	44	0.064	0.0490	0.062	3.98	90.26
7	6/27/79	4	54	0.052	0.0360	0.046	3.99	90.27
7	6/27/79	5	4	0.040	0.0235	0.030	4.00	90.28
7	6/27/79	5	10	0.034	0.0173	0.022	4.00	90.28
7	6/27/79	5	16	0.027	0.0127	0.016	4.00	90.28
7	6/27/79	5	23	0.021	0.0099	0.013	4.01	90.28
7	6/27/79	5	30	0.015	0.0071	0.009	4.01	90.28
7	6/27/79	5	39	0.009	0.0042	0.005	4.01	90.28
7	6/27/79	5	44	0.006	0.0028	0.004	4.01	90.29
7	6/27/79	5	51	0.003	0.0014	0.002	4.01	90.29
7	6/27/79	6	0	0.0	0.0	0.0	4.01	90.29
7	7/ 3/79	8	10	0.0	0.0	0.0	0.0	90.29
7	7/ 3/79	8	12	0.113	0.1119	0.142	0.00	90.29
7	7/ 3/79	8	14	0.171	0.2158	0.274	0.01	90.30
7	7/ 3/79	8	16	0.287	0.4955	0.628	0.02	90.31
7	7/ 3/79	8	18	0.326	0.6635	0.841	0.05	90.33
7	7/ 3/79	8	20	0.344	0.7629	0.967	0.08	90.36
7	7/ 3/79	8	22	0.357	0.8285	1.050	0.11	90.40
7	7/ 3/79	8	24	0.363	0.8614	1.092	0.15	90.43
7	7/ 3/79	8	26	0.369	0.8948	1.134	0.19	90.47
7	7/ 3/79	8	28	0.381	0.9628	1.220	0.22	90.51
7	7/ 3/79	8	30	0.405	1.0987	1.393	0.27	90.55
7	7/ 3/79	8	32	0.408	1.1157	1.414	0.31	90.60
7	7/ 3/79	8	34	0.415	1.1497	1.457	0.36	90.65
7	7/ 3/79	8	36	0.424	1.2006	1.522	0.41	90.70
7	7/ 3/79	8	38	0.430	1.2346	1.565	0.46	90.75
7	7/ 3/79	8	40	0.436	1.2686	1.608	0.52	90.80
7	7/ 3/79	8	41	0.442	1.3026	1.651	0.54	90.83
7	7/ 3/79	8	42	0.439	1.2856	1.630	0.57	90.86
7	7/ 3/79	8	44	0.433	1.2516	1.587	0.62	90.91

SITE	DATE	HOUR	MIN	STAGE M	DISCHARGE CMS	DISCHARGE MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	7/ 3/79	8	52	0.399	1.0647	1.350	0.82	91.11
7	7/ 3/79	8	54	0.393	1.0307	1.307	0.87	91.15
7	7/ 3/79	8	56	0.375	0.9288	1.177	0.91	91.19
7	7/ 3/79	8	58	0.363	0.8614	1.092	0.95	91.23
7	7/ 3/79	9	0	0.354	0.8121	1.029	0.98	91.27
7	7/ 3/79	9	2	0.341	0.7464	0.946	1.01	91.30
7	7/ 3/79	9	4	0.329	0.6802	0.862	1.04	91.33
7	7/ 3/79	9	6	0.320	0.6300	0.799	1.07	91.36
7	7/ 3/79	9	8	0.311	0.5799	0.735	1.10	91.38
7	7/ 3/79	9	10	0.302	0.5380	0.682	1.12	91.41
7	7/ 3/79	9	12	0.293	0.5125	0.650	1.14	91.43
7	7/ 3/79	9	14	0.280	0.4786	0.607	1.16	91.45
7	7/ 3/79	9	16	0.274	0.4616	0.585	1.18	91.47
7	7/ 3/79	9	18	0.271	0.4536	0.575	1.20	91.49
7	7/ 3/79	9	19	0.268	0.4457	0.565	1.21	91.50
7	7/ 3/79	9	21	0.271	0.4536	0.575	1.23	91.52
7	7/ 3/79	9	24	0.283	0.4870	0.617	1.26	91.55
7	7/ 3/79	9	26	0.302	0.5380	0.682	1.28	91.57
7	7/ 3/79	9	28	0.332	0.6969	0.883	1.31	91.59
7	7/ 3/79	9	30	0.424	1.2006	1.522	1.35	91.63
7	7/ 3/79	9	32	0.463	1.4215	1.802	1.40	91.69
7	7/ 3/79	9	34	0.530	1.7755	2.251	1.47	91.76
7	7/ 3/79	9	36	0.588	2.0898	2.649	1.55	91.84
7	7/ 3/79	9	38	0.628	2.3191	2.940	1.65	91.93
7	7/ 3/79	9	40	0.637	2.3744	3.010	1.75	92.03
7	7/ 3/79	9	42	0.655	2.4848	3.150	1.85	92.13
7	7/ 3/79	9	50	0.686	2.6618	3.374	2.28	92.57
7	7/ 3/79	9	56	0.698	2.7297	3.460	2.63	92.91
7	7/ 3/79	10	3	0.680	2.6278	3.331	3.02	93.31
7	7/ 3/79	10	10	0.649	2.4480	3.103	3.40	93.68
7	7/ 3/79	10	15	0.616	2.2455	2.846	3.64	93.93
7	7/ 3/79	10	20	0.573	2.0048	2.541	3.87	94.15
7	7/ 3/79	10	22	0.552	1.8859	2.391	3.95	94.24
7	7/ 3/79	10	24	0.533	1.7910	2.270	4.03	94.31
7	7/ 3/79	10	26	0.515	1.6976	2.152	4.10	94.39
7	7/ 3/79	10	28	0.494	1.5886	2.014	4.17	94.46
7	7/ 3/79	10	30	0.475	1.4895	1.888	4.24	94.52
7	7/ 3/79	10	32	0.457	1.3875	1.759	4.30	94.58
7	7/ 3/79	10	34	0.439	1.2856	1.630	4.35	94.64
7	7/ 3/79	10	36	0.424	1.2006	1.522	4.41	94.69
7	7/ 3/79	10	38	0.415	1.1497	1.457	4.46	94.74
7	7/ 3/79	10	40	0.405	1.0987	1.393	4.50	94.79
7	7/ 3/79	10	42	0.387	0.9968	1.263	4.55	94.83
7	7/ 3/79	10	44	0.372	0.9118	1.156	4.59	94.87
7	7/ 3/79	10	46	0.369	0.8948	1.134	4.63	94.91
7	7/ 3/79	10	48	0.363	0.8614	1.092	4.66	94.95
7	7/ 3/79	10	50	0.357	0.8285	1.050	4.70	94.98
7	7/ 3/79	11	4	0.357	0.8285	1.050	4.94	95.23
7	7/ 3/79	11	15	0.363	0.8614	1.092	5.14	95.43
7	7/ 3/79	11	24	0.363	0.8614	1.092	5.30	95.59
7	7/ 3/79	11	31	0.357	0.8285	1.050	5.43	95.71
7	7/ 3/79	11	39	0.344	0.7629	0.967	5.56	95.85
7	7/ 3/79	11	48	0.326	0.6035	0.841	5.70	95.98
7	7/ 3/79	11	59	0.299	0.5295	0.671	5.84	96.12
7	7/ 3/79	12	5	0.283	0.4870	0.617	5.90	96.19
7	7/ 3/79	12	10	0.271	0.4536	0.575	5.95	96.24
7	7/ 3/79	12	18	0.253	0.4061	0.515	6.03	96.31
7	7/ 3/79	12	30	0.229	0.3455	0.438	6.12	96.41
7	7/ 3/79	12	40	0.216	0.3160	0.401	6.19	96.48
7	7/ 3/79	12	50	0.204	0.2883	0.365	6.25	96.54
7	7/ 3/79	13	2	0.186	0.2475	0.314	6.32	96.61
7	7/ 3/79	13	10	0.174	0.2220	0.281	6.36	96.65
7	7/ 3/79	13	20	0.162	0.1971	0.250	6.41	96.69
7	7/ 3/79	13	32	0.149	0.1730	0.219	6.45	96.74
7	7/ 3/79	13	40	0.143	0.1623	0.206	6.48	96.77
7	7/ 3/79	13	48	0.137	0.1515	0.192	6.51	96.79
7	7/ 3/79	13	55	0.131	0.1407	0.178	6.53	96.81
7	7/ 3/79	14	3	0.125	0.1300	0.165	6.55	96.84
7	7/ 3/79	14	12	0.119	0.1203	0.153	6.58	96.86
7	7/ 3/79	18	36	0.024	0.0113	0.014	6.94	97.23
7	7/ 3/79	22	26	0.076	0.0637	0.081	7.13	97.41
7	7/ 4/79	8	0	0.024	0.0113	0.014	7.58	97.87
7	7/ 4/79	11	0	0.006	0.0028	0.004	7.61	97.89
7	7/ 4/79	14	0	0.0	0.0	0.0	7.61	97.90
7	7/14/79	0	50	0.0	0.0	0.0	0.0	97.90
7	7/14/79	1	0	0.113	0.1119	0.142	0.01	97.91
7	7/14/79	1	6	0.113	0.1119	0.142	0.03	97.92
7	7/14/79	1	8	0.128	0.1354	0.172	0.03	97.93
7	7/14/79	1	10	0.146	0.1676	0.212	0.04	97.94
7	7/14/79	1	12	0.177	0.2282	0.289	0.05	97.94
7	7/14/79	1	14	0.216	0.3160	0.401	0.06	97.96
7	7/14/79	1	16	0.265	0.4378	0.555	0.07	97.97
7	7/14/79	1	18	0.320	0.6300	0.799	0.10	97.99
7	7/14/79	1	20	0.360	0.8450	1.071	0.13	98.02
7	7/14/79	1	22	0.402	1.0817	1.371	0.17	98.07
7	7/14/79	1	24	0.415	1.1497	1.457	0.21	98.11
7	7/14/79	1	26	0.421	1.1836	1.500	0.26	98.16
7	7/14/79	1	28	0.427	1.2176	1.543	0.31	98.21
7	7/14/79	1	30	0.424	1.2006	1.522	0.37	98.26
7	7/14/79	1	34	0.415	1.1497	1.457	0.47	98.36
7	7/14/79	1	39	0.408	1.1157	1.414	0.59	98.48
7	7/14/79	1	42	0.411	1.1327	1.436	0.66	98.55
7	7/14/79	1	47	0.430	1.2346	1.565	0.78	98.68
7	7/14/79	1	50	0.454	1.3705	1.737	0.86	98.76
7	7/14/79	1	52	0.469	1.4555	1.845	0.92	98.82
7	7/14/79	1	54	0.482	1.5234	1.931	0.99	98.88
7	7/14/79	1	59	0.497	1.6041	2.033	1.15	99.05
7	7/14/79	2	5	0.479	1.5065	1.910	1.35	99.25
7	7/14/79	2	12	0.448	1.3366	1.694	1.56	99.46
7	7/14/79	2	16	0.430	1.2346	1.565	1.67	99.57
7	7/14/79	2	22	0.411	1.1327	1.436	1.82	99.72
7	7/14/79	2	27	0.405	1.0987	1.393	1.94	99.83

TABLE D1- 4. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
7	7/14/79	2	33	0.393	1.0307	1.307	2.07	99.97
7	7/14/79	2	39	0.369	0.8948	1.134	2.19	100.09
7	7/14/79	2	47	0.338	0.7300	0.925	2.33	100.23
7	7/14/79	2	54	0.311	0.5799	0.735	2.43	100.32
7	7/14/79	3	0	0.290	0.5040	0.639	2.50	100.39
7	7/14/79	3	6	0.277	0.4701	0.596	2.56	100.45
7	7/14/79	3	10	0.274	0.4616	0.585	2.60	100.49
7	7/14/79	3	30	0.274	0.4616	0.585	2.79	100.69
7	7/14/79	3	39	0.265	0.4378	0.555	2.88	100.77
7	7/14/79	3	51	0.241	0.3749	0.475	2.98	100.88
7	7/14/79	4	0	0.223	0.3307	0.419	3.05	100.94
7	7/14/79	4	15	0.192	0.2611	0.331	3.14	101.04
7	7/14/79	4	29	0.171	0.2158	0.274	3.21	101.11
7	7/14/79	4	43	0.155	0.1846	0.234	3.27	101.17
7	7/14/79	4	51	0.149	0.1730	0.219	3.30	101.20
7	7/14/79	5	0	0.143	0.1623	0.206	3.33	101.23
7	7/14/79	5	14	0.131	0.1407	0.178	3.38	101.28
7	7/14/79	5	30	0.116	0.1161	0.147	3.42	101.32
7	7/14/79	5	50	0.101	0.0949	0.120	3.47	101.36
7	7/14/79	9	0	0.055	0.0391	0.050	3.73	101.63
7	7/14/79	12	0	0.018	0.0085	0.011	3.82	101.72
7	7/14/79	13	0	0.009	0.0042	0.005	3.83	101.73
7	7/14/79	14	0	0.003	0.0014	0.002	3.84	101.73
7	7/14/79	15	0	0.0	0.0	0.0	3.84	101.73
7	8/21/79	19	0	0.0	0.0	0.0	0.0	101.73
7	8/21/79	19	42	0.119	0.1203	0.153	0.05	101.79
7	8/21/79	19	50	0.131	0.1407	0.178	0.08	101.81
7	8/21/79	19	56	0.137	0.1515	0.192	0.09	101.83
7	8/21/79	20	3	0.140	0.1569	0.199	0.12	101.85
7	8/21/79	20	11	0.137	0.1515	0.192	0.14	101.88
7	8/21/79	20	19	0.131	0.1407	0.178	0.17	101.90
7	8/21/79	20	25	0.125	0.1300	0.165	0.18	101.92
7	8/21/79	20	33	0.119	0.1203	0.153	0.21	101.94
7	8/21/79	20	40	0.110	0.1076	0.136	0.22	101.96
7	8/21/79	20	49	0.119	0.1203	0.153	0.24	101.98
7	8/21/79	20	56	0.125	0.1300	0.165	0.26	102.00
7	8/21/79	21	4	0.131	0.1407	0.178	0.29	102.02
7	8/21/79	21	11	0.134	0.1461	0.185	0.31	102.04
7	8/21/79	21	24	0.134	0.1461	0.185	0.35	102.08
7	8/21/79	21	33	0.131	0.1407	0.178	0.37	102.11
7	8/21/79	21	42	0.125	0.1300	0.165	0.40	102.13
7	8/21/79	21	51	0.119	0.1203	0.153	0.42	102.16
7	8/22/79	2	0	0.061	0.0453	0.057	0.86	102.59
7	8/22/79	8	0	0.015	0.0071	0.009	1.06	102.79
7	8/22/79	11	0	0.003	0.0014	0.002	1.07	102.81
7	8/22/79	12	0	0.0	0.0	0.0	1.08	102.81
7	8/19/79	8	0	0.061	0.0453	0.057	0.11	102.92
7	8/19/79	12	0	0.0	0.0	0.0	0.22	103.04
7	8/19/79	22	0	0.0	0.0	0.0	0.0	103.04
7	8/19/79	23	0	0.061	0.0453	0.057	0.03	103.06
7	8/20/79	6	0	0.0	0.0	0.0	0.23	103.26
7	10/22/79	4	58	0.0	0.0	0.0	0.0	103.26
7	10/22/79	5	3	0.034	0.0173	0.022	0.00	103.27
7	10/22/79	5	11	0.037	0.0204	0.026	0.00	103.27
7	10/22/79	5	19	0.043	0.0266	0.034	0.01	103.27
7	10/22/79	5	27	0.049	0.0328	0.042	0.01	103.28
7	10/22/79	5	43	0.055	0.0391	0.050	0.03	103.29
7	10/22/79	5	55	0.058	0.0422	0.053	0.04	103.30
7	10/22/79	6	7	0.061	0.0453	0.057	0.05	103.31
7	10/22/79	6	13	0.067	0.0527	0.067	0.05	103.32
7	10/22/79	6	21	0.073	0.0600	0.076	0.06	103.33
7	10/22/79	6	29	0.079	0.0674	0.085	0.07	103.34
7	10/22/79	6	33	0.085	0.0748	0.095	0.08	103.34
7	10/22/79	6	37	0.091	0.0821	0.104	0.09	103.35
7	10/22/79	6	41	0.098	0.0906	0.115	0.09	103.36
7	10/22/79	6	47	0.104	0.0991	0.126	0.11	103.37
7	10/22/79	6	51	0.110	0.1076	0.136	0.11	103.38
7	10/22/79	6	57	0.116	0.1161	0.147	0.13	103.39
7	10/22/79	7	1	0.122	0.1246	0.158	0.14	103.40
7	10/22/79	7	6	0.128	0.1354	0.172	0.15	103.42
7	10/22/79	7	11	0.134	0.1461	0.185	0.17	103.43
7	10/22/79	7	13	0.140	0.1569	0.199	0.17	103.44
7	10/22/79	7	20	0.143	0.1623	0.206	0.20	103.46
7	10/22/79	7	24	0.146	0.1676	0.212	0.21	103.48
7	10/22/79	7	33	0.152	0.1784	0.226	0.24	103.51
7	10/22/79	7	44	0.155	0.1846	0.234	0.29	103.55
7	10/22/79	7	54	0.158	0.1909	0.242	0.33	103.59
7	10/22/79	8	5	0.165	0.2033	0.258	0.37	103.64
7	10/22/79	8	23	0.171	0.2158	0.274	0.45	103.72
7	10/22/79	8	37	0.174	0.2220	0.281	0.52	103.78
7	10/22/79	9	1	0.177	0.2282	0.289	0.63	103.89
7	10/22/79	9	17	0.177	0.2282	0.289	0.71	103.97
7	10/22/79	9	35	0.174	0.2220	0.281	0.79	104.06
7	10/22/79	9	49	0.171	0.2158	0.274	0.86	104.12
7	10/22/79	10	1	0.168	0.2095	0.266	0.91	104.18
7	10/22/79	10	16	0.165	0.2033	0.258	0.98	104.24
7	10/22/79	10	57	0.168	0.2095	0.266	1.16	104.42
7	10/22/79	11	7	0.171	0.2158	0.274	1.20	104.46
7	10/22/79	11	16	0.177	0.2282	0.289	1.24	104.51
7	10/22/79	11	23	0.183	0.2407	0.305	1.28	104.54
7	10/22/79	11	31	0.189	0.2543	0.322	1.32	104.58

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
7	10/22/79	11	57	0.213	0.3087	0.391	1.47	104.74
7	10/22/79	12	1	0.219	0.3234	0.410	1.50	104.76
7	10/22/79	12	7	0.226	0.3381	0.429	1.54	104.81
7	10/22/79	12	15	0.232	0.3528	0.447	1.60	104.86
7	10/22/79	12	24	0.238	0.3676	0.466	1.67	104.93
7	10/22/79	12	28	0.244	0.3823	0.485	1.70	104.96
7	10/22/79	12	37	0.262	0.4298	0.545	1.78	105.04
7	10/22/79	12	41	0.274	0.4616	0.585	1.81	105.08
7	10/22/79	12	50	0.280	0.4786	0.607	1.90	105.17
7	10/22/79	13	0	0.274	0.4616	0.585	2.00	105.27
7	10/22/79	13	5	0.268	0.4457	0.565	2.05	105.32
7	10/22/79	13	11	0.262	0.4298	0.545	2.11	105.37
7	10/22/79	13	19	0.250	0.3981	0.505	2.18	105.44
7	10/22/79	13	28	0.244	0.3823	0.485	2.25	105.51
7	10/22/79	13	37	0.238	0.3676	0.466	2.32	105.59
7	10/22/79	13	49	0.232	0.3528	0.447	2.41	105.68
7	10/22/79	14	1	0.226	0.3381	0.429	2.50	105.76
7	10/22/79	14	15	0.219	0.3234	0.410	2.60	105.86
7	10/22/79	14	32	0.213	0.3087	0.391	2.71	105.98
7	10/22/79	13	52	0.207	0.2951	0.374	2.46	105.72
7	10/22/79	15	13	0.201	0.2815	0.357	2.95	106.21
7	10/22/79	15	41	0.195	0.2679	0.340	3.11	106.38
7	10/22/79	16	7	0.189	0.2543	0.322	3.26	106.52
7	10/22/79	16	23	0.183	0.2407	0.305	3.34	106.60
7	10/22/79	16	51	0.177	0.2282	0.289	3.48	106.74
7	10/22/79	17	12	0.171	0.2158	0.274	3.58	106.84
7	10/22/79	17	37	0.165	0.2033	0.258	3.69	106.95
7	10/22/79	18	12	0.158	0.1909	0.242	3.83	107.10
7	10/22/79	18	50	0.152	0.1784	0.226	3.98	107.25
7	10/22/79	19	30	0.146	0.1676	0.212	4.13	107.39
7	10/22/79	20	41	0.140	0.1569	0.199	4.37	107.64
7	10/22/79	22	26	0.134	0.1461	0.185	4.71	107.97
7	10/23/79	0	18	0.128	0.1354	0.172	5.04	108.30
7	10/23/79	1	52	0.122	0.1246	0.158	5.30	108.56
7	10/23/79	3	11	0.116	0.1161	0.147	5.50	108.76
7	10/23/79	4	10	0.110	0.1076	0.136	5.64	108.90
7	10/23/79	5	37	0.104	0.0991	0.126	5.83	109.09
7	10/23/79	7	4	0.098	0.0906	0.115	6.00	109.27
7	10/23/79	8	34	0.091	0.0821	0.104	6.17	109.43
7	10/23/79	10	4	0.085	0.0748	0.095	6.32	109.58
7	10/23/79	12	35	0.079	0.0674	0.085	6.54	109.81
7	10/23/79	14	48	0.073	0.0600	0.076	6.72	109.99
7	10/23/79	16	36	0.067	0.0527	0.067	6.85	110.11
7	10/23/79	20	30	0.061	0.0453	0.057	7.09	110.36
7	10/24/79	2	38	0.055	0.0391	0.050	7.42	110.68
7	10/24/79	7	0	0.049	0.0328	0.042	7.62	110.88
7	10/24/79	12	45	0.043	0.0266	0.034	7.84	111.10
7	10/24/79	17	38	0.037	0.0204	0.026	7.98	111.25
7	10/24/79	21	0	0.027	0.0127	0.016	8.05	111.32
7	10/24/79	24	0	0.018	0.0085	0.011	8.09	111.36
7	10/25/79	3	0	0.009	0.0042	0.005	8.12	111.38
7	10/25/79	6	0	0.0	0.0	0.0	8.13	111.39

TABLE D1- 5. FOUR MILE CREEK WATERSHED RUNOFF DATA FOR 1979 SITE 3

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	3/16/79	14	0	0.0	0.0	0.0	0.0	0.0
8	3/16/79	15	0	0.003	0.0088	0.021	0.01	0.01
8	3/17/79	7	20	0.006	0.0176	0.042	0.53	0.53
8	3/17/79	11	48	0.006	0.0176	0.042	0.72	0.72
8	3/17/79	12	15	0.009	0.0263	0.064	0.74	0.74
8	3/17/79	12	36	0.012	0.0351	0.085	0.77	0.77
8	3/17/79	12	48	0.012	0.0351	0.085	0.79	0.79
8	3/17/79	12	56	0.015	0.0439	0.106	0.80	0.80
8	3/17/79	13	17	0.018	0.0527	0.127	0.84	0.84
8	3/17/79	13	32	0.021	0.0614	0.148	0.87	0.87
8	3/17/79	13	40	0.021	0.0614	0.148	0.89	0.89
8	3/17/79	13	45	0.024	0.0702	0.170	0.91	0.91
8	3/17/79	13	47	0.027	0.0790	0.191	0.91	0.91
8	3/17/79	13	56	0.030	0.0878	0.212	0.94	0.94
8	3/17/79	13	58	0.024	0.0702	0.170	0.95	0.95
8	3/17/79	14	6	0.021	0.0614	0.148	0.97	0.97
8	3/17/79	14	13	0.024	0.0702	0.170	0.99	0.99
8	3/17/79	14	22	0.027	0.0790	0.191	1.02	1.02
8	3/17/79	14	26	0.030	0.0878	0.212	1.03	1.03
8	3/17/79	14	34	0.034	0.1045	0.252	1.06	1.06
8	3/17/79	14	40	0.037	0.1212	0.293	1.09	1.09
8	3/17/79	14	54	0.040	0.1379	0.333	1.16	1.16
8	3/17/79	15	16	0.043	0.1546	0.374	1.29	1.29
8	3/17/79	15	39	0.043	0.1546	0.374	1.43	1.43
8	3/17/79	15	59	0.046	0.1713	0.414	1.57	1.57
8	3/17/79	16	14	0.046	0.1713	0.414	1.67	1.67
8	3/17/79	17	3	0.043	0.1546	0.374	1.99	1.99
8	3/17/79	17	10	0.040	0.1379	0.333	2.03	2.03
8	3/17/79	17	16	0.043	0.1546	0.374	2.07	2.07
8	3/17/79	17	22	0.040	0.1379	0.333	2.10	2.10
8	3/17/79	17	56	0.037	0.1212	0.293	2.28	2.28
8	3/17/79	18	44	0.034	0.1045	0.252	2.50	2.50
8	3/17/79	18	52	0.034	0.1045	0.252	2.53	2.53
8	3/17/79	19	3	0.037	0.1212	0.293	2.58	2.58
8	3/17/79	19	15	0.040	0.1379	0.333	2.64	2.64
8	3/17/79	19	20	0.043	0.1546	0.374	2.67	2.67
8	3/17/79	19	54	0.046	0.1713	0.414	2.90	2.90
8	3/17/79	20	25	0.049	0.1880	0.454	3.12	3.12
8	3/17/79	20	35	0.049	0.1880	0.454	3.20	3.20
8	3/17/79	20	43	0.052	0.2047	0.495	3.26	3.26
8	3/17/79	20	49	0.052	0.2047	0.495	3.31	3.31
8	3/17/79	20	56	0.049	0.1880	0.454	3.36	3.36
8	3/17/79	21	6	0.049	0.1880	0.454	3.44	3.44
8	3/17/79	21	22	0.052	0.2047	0.495	3.57	3.57
8	3/17/79	22	9	0.052	0.2047	0.495	3.95	3.95
8	3/17/79	22	28	0.055	0.2214	0.535	4.12	4.12
8	3/17/79	23	3	0.058	0.2381	0.575	4.44	4.44
8	3/17/79	23	22	0.061	0.2549	0.616	4.63	4.63
8	3/17/79	23	24	0.064	0.2772	0.670	4.65	4.65
8	3/17/79	23	30	0.064	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	3/18/79	0	26	0.058	0.2381	0.575	5.27	5.27
8	3/18/79	0	29	0.055	0.2214	0.535	5.30	5.30
8	3/18/79	0	42	0.055	0.2214	0.535	5.41	5.41
8	3/18/79	1	5	0.052	0.2047	0.495	5.61	5.61
8	3/18/79	1	32	0.049	0.1880	0.454	5.82	5.82
8	3/18/79	2	7	0.049	0.1880	0.454	6.09	6.09
8	3/18/79	2	46	0.052	0.2047	0.495	6.40	6.40
8	3/18/79	2	52	0.055	0.2214	0.535	6.45	6.45
8	3/18/79	3	0	0.058	0.2381	0.575	6.52	6.52
8	3/18/79	3	16	0.061	0.2549	0.616	6.68	6.68
8	3/18/79	3	20	0.064	0.2772	0.670	6.72	6.72
8	3/18/79	3	27	0.067	0.2996	0.724	6.81	6.81
8	3/18/79	3	28	0.070	0.3220	0.778	6.82	6.82
8	3/18/79	3	32	0.073	0.3443	0.832	6.87	6.87
8	3/18/79	3	41	0.076	0.3667	0.886	7.00	7.00
8	3/18/79	3	48	0.079	0.3891	0.940	7.11	7.11
8	3/18/79	3	50	0.082	0.4114	0.994	7.14	7.14
8	3/18/79	3	52	0.085	0.4338	1.048	7.17	7.17
8	3/18/79	3	58	0.088	0.4562	1.102	7.28	7.28
8	3/18/79	4	2	0.091	0.4786	1.156	7.36	7.36
8	3/18/79	4	4	0.094	0.5060	1.223	7.40	7.40
8	3/18/79	4	6	0.098	0.5335	1.289	7.44	7.44
8	3/18/79	4	12	0.098	0.5335	1.289	7.57	7.57
8	3/18/79	4	15	0.101	0.5610	1.355	7.63	7.63
8	3/18/79	4	21	0.104	0.5884	1.422	7.77	7.77
8	3/18/79	4	27	0.101	0.5610	1.355	7.91	7.91
8	3/18/79	4	31	0.098	0.5335	1.289	8.00	8.00
8	3/18/79	4	36	0.094	0.5060	1.223	8.10	8.10
8	3/18/79	4	42	0.091	0.4786	1.156	8.22	8.22
8	3/18/79	4	47	0.094	0.5060	1.223	8.32	8.32
8	3/18/79	4	54	0.094	0.5060	1.223	8.46	8.46
8	3/18/79	4	55	0.091	0.4786	1.156	8.48	8.48
8	3/18/79	5	1	0.088	0.4562	1.102	8.60	8.60
8	3/18/79	5	9	0.085	0.4338	1.048	8.74	8.74
8	3/18/79	5	19	0.085	0.4338	1.048	8.91	8.91
8	3/18/79	5	21	0.082	0.4114	0.994	8.95	8.95
8	3/18/79	5	25	0.085	0.4338	1.048	9.02	9.02
8	3/18/79	5	30	0.082	0.4114	0.994	9.10	9.10
8	3/18/79	5	46	0.079	0.3891	0.940	9.36	9.36
8	3/18/79	5	52	0.076	0.3667	0.886	9.45	9.45
8	3/18/79	5	54	0.073	0.3443	0.832	9.48	9.48
8	3/18/79	6	8	0.073	0.3443	0.832	9.67	9.67
8	3/18/79	6	10	0.067	0.2996	0.724	9.70	9.70
8	3/18/79	6	16	0.064	0.2772	0.670	9.77	9.77
8	3/18/79	6	22	0.061	0.2549	0.616	9.83	9.83
8	3/18/79	6	34	0.061	0.2549	0.616	9.96	9.96
8	3/18/79	6	42	0.058	0.2381	0.575	10.04	10.04
8	3/18/79	7	6	0.055	0.2214	0.535	10.26	10.26
8	3/18/79	7	29	0.055	0.2214	0.535	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
8	3/17/79	23	22	0.061	0.2549	0.616	4.63	4.63
8	3/18/79	23	25	0.064	0.2772	0.670	[illegible]	[illegible]
8	3/18/79	7	37	0.046	0.1713	0.414	10.53	10.53
8	3/18/79	7	48	0.049	0.1880	0.454	10.61	10.61
8	3/18/79	8	5	0.052	0.2047	0.495	10.74	10.74
8	3/18/79	8	7	0.049	0.1880	0.454	10.76	10.76
8	3/18/79	8	8	0.043	0.1546	0.374	10.76	10.76
8	3/18/79	8	20	0.046	0.1713	0.414	10.84	10.84
8	3/18/79	8	23	0.049	0.1880	0.454	10.86	10.86
8	3/18/79	8	25	0.052	0.2047	0.495	10.88	10.88
8	3/18/79	8	27	0.055	0.2214	0.535	10.90	10.90
8	3/18/79	8	28	0.058	0.2381	0.575	10.90	10.90
8	3/18/79	8	30	0.061	0.2549	0.616	10.92	10.92
8	3/18/79	8	39	0.064	0.2772	0.670	11.02	11.02
8	3/18/79	8	43	0.067	0.2996	0.724	11.07	11.07
8	3/18/79	8	53	0.064	0.2772	0.670	11.18	11.18
8	3/18/79	8	59	0.061	0.2549	0.616	11.25	11.25
8	3/18/79	9	1	0.058	0.2381	0.575	11.27	11.27
8	3/18/79	9	4	0.061	0.2549	0.616	11.30	11.30
8	3/18/79	9	5	0.064	0.2772	0.670	11.31	11.31
8	3/18/79	9	8	0.067	0.2996	0.724	11.34	11.34
8	3/18/79	9	12	0.067	0.2996	0.724	11.39	11.39
8	3/18/79	9	17	0.064	0.2772	0.670	11.45	11.45
8	3/18/79	9	33	0.064	0.2772	0.670	11.63	11.63
8	3/18/79	9	38	0.067	0.2996	0.724	11.69	11.69
8	3/18/79	10	7	0.070	0.3220	0.778	12.05	12.05
8	3/18/79	10	16	0.073	0.3443	0.832	12.17	12.17
8	3/18/79	10	22	0.076	0.3667	0.886	12.26	12.26
8	3/18/79	10	26	0.079	0.3891	0.940	12.32	12.32
8	3/18/79	10	31	0.076	0.3667	0.886	12.39	12.39
8	3/18/79	10	37	0.073	0.3443	0.832	12.48	12.48
8	3/18/79	10	43	0.076	0.3667	0.886	12.56	12.56
8	3/18/79	10	46	0.079	0.3891	0.940	12.61	12.61
8	3/18/79	10	50	0.082	0.4114	0.994	12.67	12.67
8	3/18/79	10	58	0.085	0.4338	1.048	12.81	12.81
8	3/18/79	11	3	0.085	0.4338	1.048	12.90	12.90
8	3/18/79	11	20	0.091	0.4786	1.156	13.21	13.21
8	3/18/79	11	24	0.110	0.6434	1.554	13.30	13.30
8	3/18/79	11	33	0.104	0.5884	1.422	13.52	13.52
8	3/18/79	11	39	0.098	0.5335	1.289	13.66	13.66
8	3/18/79	11	42	0.094	0.5060	1.223	13.72	13.72
8	3/18/79	11	43	0.098	0.5335	1.289	13.74	13.74
8	3/18/79	11	44	0.104	0.5884	1.422	13.77	13.77
8	3/18/79	11	45	0.107	0.6159	1.488	13.79	13.79
8	3/18/79	11	46	0.110	0.6434	1.554	13.82	13.82
8	3/18/79	11	48	0.107	0.6159	1.488	13.87	13.87
8	3/18/79	11	50	0.104	0.5884	1.422	13.91	13.91
8	3/18/79	11	53	0.101	0.5610	1.355	13.98	13.98
8	3/18/79	11	55	0.098	0.5335	1.289	14.03	14.03
8	3/18/79	11	57	0.143	0.9792	2.366	14.09	14.09
8	3/18/79	11	58	0.140	0.9469	2.288	14.13	14.13
8	3/18/79	12	0	0.134	0.8824	2.132	14.20	14.20
8	3/18/79	12	2	0.131	0.8501	2.054	14.27	14.27
8	3/18/79	12	5	0.125	0.7855	1.898	14.37	14.37
8	3/18/79	12	7	0.122	0.7532	1.820	14.43	14.43
8	3/18/79	12	8	0.119	0.7258	1.754	14.46	14.46
8	3/18/79	12	10	0.116	0.6983	1.687	14.52	14.52
8	3/18/79	12	13	0.110	0.6434	1.554	14.60	14.60
8	3/18/79	12	15	0.104	0.5884	1.422	14.65	14.65
8	3/18/79	12	16	0.098	0.5335	1.289	14.67	14.67
8	3/18/79	12	18	0.088	0.4562	1.102	14.71	14.71
8	3/18/79	12	20	0.079	0.3891	0.940	14.75	14.75
8	3/18/79	12	21	0.076	0.3667	0.886	14.76	14.76
8	3/18/79	12	23	0.073	0.3443	0.832	14.79	14.79
8	3/18/79	12	29	0.076	0.3667	0.886	14.88	14.88
8	3/18/79	12	30	0.082	0.4114	0.994	14.89	14.89
8	3/18/79	12	31	0.091	0.4786	1.156	14.91	14.91
8	3/18/79	12	33	0.098	0.5335	1.289	14.95	14.95
8	3/18/79	12	56	0.101	0.5610	1.355	15.46	15.46
8	3/18/79	13	30	0.101	0.5610	1.355	16.23	16.23
8	3/18/79	13	48	0.098	0.5335	1.289	16.62	16.62
8	3/18/79	14	9	0.094	0.5060	1.223	17.06	17.06
8	3/18/79	14	28	0.091	0.4786	1.156	17.44	17.44
8	3/18/79	14	58	0.088	0.4562	1.102	18.00	18.00
8	3/18/79	15	0	0.091	0.4786	1.156	18.04	18.04
8	3/18/79	15	2	0.098	0.5335	1.289	18.08	18.08
8	3/18/79	15	7	0.098	0.5335	1.289	18.19	18.19
8	3/18/79	15	9	0.091	0.4786	1.156	18.23	18.23
8	3/18/79	15	20	0.088	0.4562	1.102	18.44	18.44
8	3/18/79	15	53	0.091	0.4786	1.156	19.06	19.06
8	3/18/79	16	5	0.094	0.5060	1.223	19.30	19.30
8	3/18/79	16	18	0.098	0.5335	1.289	19.57	19.57
8	3/18/79	16	31	0.101	0.5610	1.355	19.85	19.85
8	3/18/79	16	50	0.104	0.5884	1.422	20.29	20.29
8	3/18/79	17	8	0.107	0.6159	1.488	20.73	20.73
8	3/18/79	17	25	0.107	0.6159	1.488	21.15	21.15
8	3/18/79	17	31	0.104	0.5884	1.422	21.30	21.30
8	3/18/79	18	19	0.101	0.5610	1.355	22.41	22.41
8	3/18/79	19	25	0.098	0.5335	1.289	23.86	23.86
8	3/18/79	19	38	0.094	0.5060	1.223	24.13	24.13
8	3/18/79	19	55	0.091	0.4786	1.156	24.47	24.47
8	3/18/79	20	21	0.088	0.4562	1.102	24.96	24.96
8	3/18/79	20	38	0.085	0.4338	1.048	25.26	25.26
8	3/18/79	20	52	0.082	0.4114	0.994	25.50	25.50
8	3/18/79	21	10	0.079	0.3891	0.940	25.79	25.79
8	3/18/79	21	43	0.076	0.3667	0.886	26.30	26.30
8	3/18/79	22	7	0.073	0.3443	0.832	26.64	26.64
8	3/18/79	22	26	0.070	0.3220	0.778	26.89	26.89
8	3/18/79	23	0	0.067	0.2996	0.724	27.32	27.32
8	3/19/79	2	0	0.067	0.2996	0.724	29.49	29.49
8	3/19/79	3	2	0.064	0.2772	0.670	30.21	30.21
8	3/19/79	4	4	0.061	0.2549	0.616	30.88	30.88
8	3/19/79	5	13	0.058	0.2381	0.575	31.56	31.56
8	3/19/79	6	4	0.055	0.2214	0.535	32.03	32.03
8	3/19/79	7	22	0.052	0.2047	0.495	32.70	32.70
8	3/19/79	9	3	0.049	0.1880	0.454	33.50	33.50

TABLE D1- 5. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	3/19/79	11	43	0.046	0.1713	0.414	34.66	34.66
8	3/19/79	14	16	0.043	0.1546	0.374	35.66	35.66
8	3/19/79	14	46	0.040	0.1379	0.333	35.84	35.84
8	3/19/79	15	10	0.037	0.1212	0.293	35.96	35.96
8	3/19/79	16	20	0.034	0.1045	0.252	36.28	36.28
8	3/19/79	16	38	0.030	0.0878	0.212	36.35	36.35
8	3/19/79	17	56	0.027	0.0790	0.191	36.61	36.61
8	3/19/79	18	30	0.024	0.0702	0.170	36.72	36.72
8	3/19/79	18	59	0.021	0.0614	0.148	36.79	36.79
8	3/19/79	19	40	0.018	0.0527	0.127	36.89	36.89
8	3/19/79	20	36	0.015	0.0439	0.106	37.00	37.00
8	3/19/79	20	52	0.012	0.0351	0.085	37.02	37.02
8	3/19/79	20	54	0.006	0.0176	0.042	37.02	37.02
8	3/19/79	22	51	0.003	0.0088	0.021	37.08	37.08
8	3/20/79	15	0	0.0	0.0	0.0	37.26	37.26
8	3/23/79	7	50	0.0	0.0	0.0	0.0	37.26
8	3/23/79	8	30	0.003	0.0088	0.021	0.01	37.26
8	3/23/79	9	13	0.006	0.0176	0.042	0.03	37.29
8	3/23/79	10	4	0.009	0.0263	0.064	0.07	37.33
8	3/23/79	10	44	0.012	0.0351	0.085	0.12	37.38
8	3/23/79	11	32	0.015	0.0439	0.106	0.20	37.46
8	3/23/79	12	38	0.012	0.0351	0.085	0.31	37.56
8	3/23/79	13	8	0.009	0.0263	0.064	0.34	37.60
8	3/23/79	13	51	0.006	0.0176	0.042	0.38	37.64
8	3/23/79	14	19	0.006	0.0176	0.042	0.40	37.66
8	3/23/79	14	52	0.009	0.0263	0.064	0.43	37.69
8	3/23/79	15	16	0.012	0.0351	0.085	0.46	37.72
8	3/23/79	15	22	0.012	0.0351	0.085	0.47	37.72
8	3/23/79	15	36	0.009	0.0263	0.064	0.49	37.74
8	3/23/79	15	47	0.006	0.0176	0.042	0.50	37.75
8	3/23/79	16	20	0.003	0.0088	0.021	0.51	37.77
8	3/23/79	21	50	0.0	0.0	0.0	0.57	37.83
8	3/28/79	13	30	0.0	0.0	0.0	0.0	37.83
8	3/28/79	13	40	0.006	0.0176	0.042	0.00	37.83
8	3/28/79	14	36	0.006	0.0176	0.042	0.04	37.87
8	3/28/79	15	4	0.009	0.0263	0.064	0.07	37.89
8	3/28/79	15	41	0.012	0.0351	0.085	0.11	37.94
8	3/28/79	15	45	0.015	0.0439	0.106	0.12	37.95
8	3/28/79	15	51	0.018	0.0527	0.127	0.13	37.96
8	3/28/79	16	10	0.018	0.0527	0.127	0.17	38.00
8	3/28/79	17	40	0.015	0.0439	0.106	0.35	38.17
8	3/28/79	18	8	0.012	0.0351	0.085	0.39	38.22
8	3/28/79	18	36	0.009	0.0263	0.064	0.43	38.25
8	3/28/79	19	12	0.006	0.0176	0.042	0.46	38.28
8	3/28/79	19	40	0.006	0.0176	0.042	0.48	38.30
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	3/29/79	6	26	0.006	0.0176	0.042	0.63	38.45
8	3/29/79	6	30	0.009	0.0263	0.064	0.63	38.46
8	3/29/79	6	35	0.012	0.0351	0.085	0.64	38.46
8	3/29/79	6	39	0.015	0.0439	0.106	0.64	38.47
8	3/29/79	6	45	0.018	0.0527	0.127	0.65	38.48
8	3/29/79	6	55	0.021	0.0614	0.148	0.68	38.50
8	3/29/79	7	2	0.024	0.0702	0.170	0.70	38.52
8	3/29/79	7	7	0.027	0.0790	0.191	0.71	38.54
8	3/29/79	7	14	0.030	0.0878	0.212	0.73	38.56
8	3/29/79	7	16	0.034	0.1045	0.252	0.74	38.57
8	3/29/79	7	18	0.037	0.1212	0.293	0.75	38.58
8	3/29/79	7	19	0.040	0.1379	0.333	0.76	38.58
8	3/29/79	7	28	0.043	0.1546	0.374	0.81	38.64
8	3/29/79	7	55	0.043	0.1546	0.374	0.98	38.80
8	3/29/79	8	5	0.040	0.1379	0.333	1.04	38.86
8	3/29/79	8	14	0.040	0.1379	0.333	1.09	38.91
8	3/29/79	8	20	0.043	0.1546	0.374	1.12	38.95
8	3/29/79	8	24	0.046	0.1713	0.414	1.15	38.97
8	3/29/79	8	30	0.046	0.1713	0.414	1.19	39.02
8	3/29/79	8	36	0.049	0.1880	0.454	1.23	39.06
8	3/29/79	8	39	0.052	0.2047	0.495	1.26	39.08
8	3/29/79	8	42	0.055	0.2214	0.535	1.28	39.11
8	3/29/79	8	47	0.058	0.2381	0.575	1.33	39.16
8	3/29/79	8	49	0.061	0.2549	0.616	1.35	39.18
8	3/29/79	8	52	0.064	0.2772	0.670	1.38	39.21
8	3/29/79	8	55	0.067	0.2996	0.724	1.42	39.24
8	3/29/79	8	57	0.070	0.3220	0.778	1.44	39.27
8	3/29/79	8	58	0.067	0.2996	0.724	1.45	39.28
8	3/29/79	9	0	0.064	0.2772	0.670	1.48	39.30
8	3/29/79	9	3	0.067	0.2996	0.724	1.51	39.34
8	3/29/79	9	8	0.070	0.3220	0.778	1.57	39.40
8	3/29/79	9	15	0.073	0.3443	0.832	1.67	39.49
8	3/29/79	9	20	0.076	0.3667	0.886	1.74	39.57
8	3/29/79	9	22	0.073	0.3443	0.832	1.77	39.59
8	3/29/79	9	41	0.073	0.3443	0.832	2.03	39.86
8	3/29/79	10	3	0.070	0.3220	0.778	2.33	40.15
8	3/29/79	10	11	0.067	0.2996	0.724	2.43	40.25
8	3/29/79	10	28	0.064	0.2772	0.670	2.62	40.45
8	3/29/79	10	39	0.061	0.2549	0.616	2.74	40.57
8	3/29/79	10	53	0.058	0.2381	0.575	2.88	40.71
8	3/29/79	11	19	0.055	0.2214	0.535	3.12	40.95
8	3/29/79	12	22	0.055	0.2214	0.535	3.68	41.51
8	3/29/79	12	24	0.052	0.2047	0.495	3.70	41.53
8	3/29/79	12	29	0.049	0.1880	0.454	3.74	41.57
8	3/29/79	12	50	0.052	0.2047	0.495	3.91	41.73
8	3/29/79	12	54	0.055	0.2214	0.535	3.94	41.77
8	3/29/79	12	59	0.058	0.2381	0.575	3.99	41.81
8	3/29/79	13	8	0.061	0.2549	0.616	4.08	41.90
8	3/29/79	13	21	0.064	0.2772	0.670	4.22	42.04

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
8	3/29/79	13	34	0.076	0.3667	0.886	4.38	42.20
8	3/29/79	13	37	0.079	0.3891	0.940	4.42	42.25
8	3/29/79	13	40	0.082	0.4114	0.994	4.47	42.30
8	3/29/79	13	44	0.070	0.3220	0.778	4.53	42.36
8	3/29/79	13	48	0.067	0.2996	0.724	4.58	42.41
8	3/29/79	14	33	0.067	0.2996	0.724	5.12	42.95
8	3/29/79	14	50	0.064	0.2772	0.670	5.32	43.15
8	3/29/79	14	53	0.061	0.2549	0.616	5.35	43.18
8	3/29/79	15	4	0.058	0.2381	0.575	5.46	43.29
8	3/29/79	15	6	0.049	0.1880	0.454	5.48	43.31
8	3/29/79	15	8	0.046	0.1713	0.414	5.49	43.32
8	3/29/79	15	33	0.046	0.1713	0.414	5.67	43.49
8	3/29/79	15	34	0.049	0.1880	0.454	5.67	43.50
8	3/29/79	15	36	0.052	0.2047	0.495	5.69	43.52
8	3/29/79	15	56	0.052	0.2047	0.495	5.85	43.68
8	3/29/79	15	58	0.046	0.1713	0.414	5.87	43.70
8	3/29/79	15	59	0.043	0.1546	0.374	5.88	43.70
8	3/29/79	16	2	0.046	0.1713	0.414	5.90	43.72
8	3/29/79	16	3	0.049	0.1880	0.454	5.90	43.73
8	3/29/79	16	35	0.049	0.1880	0.454	6.14	43.97
8	3/29/79	16	40	0.046	0.1713	0.414	6.18	44.01
8	3/29/79	16	56	0.043	0.1546	0.374	6.29	44.11
8	3/29/79	17	16	0.040	0.1379	0.333	6.40	44.23
8	3/29/79	17	51	0.037	0.1212	0.293	6.59	44.41
8	3/29/79	18	10	0.037	0.1212	0.293	6.68	44.51
8	3/29/79	18	30	0.040	0.1379	0.333	6.78	44.61
8	3/29/79	19	3	0.043	0.1546	0.374	6.98	44.80
8	3/29/79	19	44	0.046	0.1713	0.414	7.25	45.07
8	3/29/79	19	48	0.049	0.1880	0.454	7.28	45.10
8	3/29/79	19	50	0.052	0.2047	0.495	7.29	45.12
8	3/29/79	19	53	0.055	0.2214	0.535	7.32	45.14
8	3/29/79	19	54	0.058	0.2381	0.575	7.33	45.15
8	3/29/79	20	4	0.061	0.2549	0.616	7.43	45.25
8	3/29/79	20	17	0.064	0.2772	0.670	7.57	45.39
8	3/29/79	20	27	0.067	0.2996	0.724	7.68	45.51
8	3/29/79	20	40	0.070	0.3220	0.778	7.84	45.67
8	3/29/79	20	59	0.067	0.2996	0.724	8.08	45.91
8	3/29/79	21	7	0.064	0.2772	0.670	8.17	46.00
8	3/29/79	21	21	0.061	0.2549	0.616	8.32	46.15
8	3/29/79	21	32	0.058	0.2381	0.575	8.43	46.26
8	3/29/79	21	49	0.055	0.2214	0.535	8.59	46.42
8	3/29/79	21	58	0.052	0.2047	0.495	8.67	46.49
8	3/29/79	22	12	0.049	0.1880	0.454	8.78	46.60
8	3/29/79	22	27	0.046	0.1713	0.414	8.89	46.71
8	3/29/79	23	49	0.043	0.1546	0.374	9.43	47.25
8	3/30/79	0	26	0.040	0.1379	0.333	9.64	47.47
8	3/30/79	1	5	0.037	0.1212	0.293	9.85	47.67
8	3/30/79	1	36	0.034	0.1045	0.252	9.99	47.81
8	3/30/79	2	41	0.030	0.0878	0.212	10.24	48.07
8	3/30/79	3	35	0.027	0.0790	0.191	10.42	48.25
8	3/30/79	4	7	0.024	0.0702	0.170	10.52	48.34
8	3/30/79	5	52	0.021	0.0614	0.148	10.80	48.62

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	3/30/79	6	26	0.018	0.0527	0.127	10.87	48.70
8	3/30/79	7	33	0.015	0.0439	0.106	11.00	48.83
8	3/30/79	8	38	0.012	0.0351	0.085	11.11	48.93
8	3/30/79	9	41	0.009	0.0263	0.064	11.18	49.01
8	3/30/79	10	51	0.006	0.0176	0.042	11.25	49.07
8	3/30/79	11	50	0.003	0.0088	0.021	11.28	49.10
8	3/30/79	23	59	0.0	0.0	0.0	11.41	49.23
8	4/19/79	13	15	0.0	0.0	0.0	0.0	49.23
8	4/19/79	13	41	0.003	0.0088	0.021	0.00	49.24
8	4/19/79	19	0	0.0	0.0	0.0	0.06	49.29
8	4/20/79	4	22	0.0	0.0	0.0	0.0	49.29
8	4/20/79	11	20	0.003	0.0088	0.021	0.07	49.37
8	4/20/79	11	30	0.006	0.0176	0.042	0.08	49.37
8	4/20/79	12	10	0.003	0.0088	0.021	0.10	49.39
8	4/20/79	12	25	0.006	0.0176	0.042	0.11	49.40
8	4/20/79	12	34	0.009	0.0263	0.064	0.12	49.41
8	4/20/79	12	43	0.012	0.0351	0.085	0.13	49.42
8	4/20/79	12	49	0.015	0.0439	0.106	0.14	49.43
8	4/20/79	12	57	0.018	0.0527	0.127	0.15	49.45
8	4/20/79	13	6	0.021	0.0614	0.148	0.17	49.47
8	4/20/79	13	16	0.024	0.0702	0.170	0.20	49.49
8	4/20/79	13	28	0.027	0.0790	0.191	0.24	49.53
8	4/20/79	13	40	0.030	0.0878	0.212	0.28	49.57
8	4/20/79	14	21	0.030	0.0878	0.212	0.42	49.71
8	4/20/79	14	40	0.027	0.0790	0.191	0.48	49.78
8	4/20/79	14	53	0.024	0.0702	0.170	0.52	49.82
8	4/20/79	15	5	0.021	0.0614	0.148	0.56	49.85
8	4/20/79	15	22	0.018	0.0527	0.127	0.59	49.89
8	4/20/79	15	43	0.015	0.0439	0.106	0.64	49.93
8	4/20/79	16	14	0.012	0.0351	0.085	0.68	49.98
8	4/20/79	16	45	0.009	0.0263	0.064	0.72	50.02
8	4/20/79	17	18	0.006	0.0176	0.042	0.75	50.05
8	4/20/79	17	40	0.003	0.0088	0.021	0.76	50.06
8	4/20/79	23	59	0.0	0.0	0.0	0.83	50.12
8	6/ 4/79	19	25	0.0	0.0	0.0	0.0	50.12
8	6/ 4/79	19	28	0.024	0.0702	0.170	0.00	50.13
8	6/ 4/79	19	30	0.021	0.0614	0.148	0.01	50.13
8	6/ 4/79	19	32	0.015	0.0439	0.106	0.01	50.14
8	6/ 4/79	19	34	0.009	0.0263	0.064	0.02	50.14
8	6/ 4/79	19	36	0.006	0.0176	0.042	0.02	50.14
8	6/ 4/79	19	38	0.003	0.0088	0.021	0.02	50.14
8	6/ 4/79	19	41	0.0	0.0	0.0	0.02	50.14
8	6/ 4/79	19	46	0.003	0.0088	0.021	0.02	50.15
8	6/ 4/79	19	48	0.015	0.0439	0.106	0.02	50.15
8	6/ 4/79	19	50	0.018	0.0527	0.127	0.03	50.15
8	6/ 4/79	19	54	0.015	0.0439	0.106	0.03	50.16

TABLE D1- 5. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	6/ 4/79	19	59	0.012	0.0351	0.085	0.04	50.17
8	6/ 4/79	20	10	0.006	0.0176	0.042	0.05	50.18
8	6/ 4/79	20	20	0.003	0.0088	0.021	0.06	50.18
8	6/ 4/79	21	0	0.0	0.0	0.0	0.07	50.19
8	6/ 9/79	11	30	0.0	0.0	0.0	0.0	50.19
8	6/ 9/79	11	53	0.003	0.0088	0.021	0.00	50.20
8	6/ 9/79	12	15	0.0	0.0	0.0	0.01	50.20
8	6/12/79	17	50	0.0	0.0	0.0	0.0	50.20
8	6/12/79	18	20	1.789	25.5758	61.794	15.45	65.65
8	6/12/79	18	30	1.411	7.0962	17.145	22.03	72.23
8	6/12/79	18	35	1.320	5.9890	14.470	23.34	73.54
8	6/12/79	18	40	1.295	5.9041	14.265	24.54	74.74
8	6/12/79	18	45	0.427	3.5962	8.689	25.50	75.70
8	6/12/79	18	50	0.219	1.9595	4.734	26.06	76.26
8	6/12/79	19	0	0.171	1.2969	3.133	26.71	76.91
8	6/12/79	19	5	0.125	0.7855	1.898	26.92	77.12
8	6/12/79	19	10	0.098	0.5335	1.289	27.06	77.25
8	6/12/79	19	15	0.076	0.3667	0.886	27.15	77.34
8	6/12/79	19	20	0.061	0.2549	0.616	27.21	77.41
8	6/12/79	19	30	0.037	0.1212	0.293	27.28	77.48
8	6/12/79	19	50	0.0	0.0	0.0	27.33	77.53
8	6/18/79	6	48	0.0	0.0	0.0	0.0	77.53
8	6/18/79	6	49	0.024	0.0702	0.170	0.00	77.53
8	6/18/79	6	50	0.027	0.0790	0.191	0.00	77.54
8	6/18/79	6	51	0.021	0.0614	0.148	0.01	77.54
8	6/18/79	6	52	0.018	0.0527	0.127	0.01	77.54
8	6/18/79	6	53	0.015	0.0439	0.106	0.01	77.54
8	6/18/79	6	54	0.012	0.0351	0.085	0.01	77.54
8	6/18/79	6	55	0.046	0.1713	0.414	0.02	77.55
8	6/18/79	6	56	0.055	0.2214	0.535	0.03	77.56
8	6/18/79	6	58	0.052	0.2047	0.495	0.04	77.57
8	6/18/79	6	59	0.049	0.1880	0.454	0.05	77.58
8	6/18/79	7	0	0.043	0.1546	0.374	0.06	77.59
8	6/18/79	7	2	0.037	0.1212	0.293	0.07	77.60
8	6/18/79	7	5	0.030	0.0878	0.212	0.08	77.61
8	6/18/79	7	7	0.027	0.0790	0.191	0.09	77.62
8	6/18/79	7	9	0.024	0.0702	0.170	0.09	77.63
8	6/18/79	7	11	0.021	0.0614	0.148	0.10	77.63
8	6/18/79	7	12	0.018	0.0527	0.127	0.10	77.63
8	6/18/79	7	16	0.015	0.0439	0.106	0.11	77.64
8	6/18/79	7	18	0.012	0.0351	0.085	0.11	77.64
8	6/18/79	7	23	0.009	0.0263	0.064	0.12	77.65
8	6/18/79	7	28	0.006	0.0176	0.042	0.12	77.65
8	6/18/79	7	35	0.003	0.0088	0.021	0.13	77.66

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	6/19/79	22	14	0.0	0.0	0.0	0.0	77.66
8	6/19/79	22	16	0.009	0.0263	0.064	0.00	77.66
8	6/19/79	22	21	0.012	0.0351	0.085	0.01	77.67
8	6/19/79	22	22	0.034	0.1045	0.252	0.01	77.67
8	6/19/79	22	23	0.058	0.2381	0.575	0.02	77.68
8	6/19/79	22	24	0.061	0.2549	0.616	0.03	77.69
8	6/19/79	22	30	0.064	0.2772	0.670	0.09	77.75
8	6/19/79	22	36	0.067	0.2996	0.724	0.16	77.82
8	6/19/79	22	39	0.064	0.2772	0.670	0.20	77.86
8	6/19/79	22	42	0.061	0.2549	0.616	0.23	77.89
8	6/19/79	22	43	0.067	0.2996	0.724	0.24	77.90
8	6/19/79	22	44	0.088	0.4562	1.102	0.25	77.91
8	6/19/79	22	46	0.091	0.4786	1.156	0.29	77.95
8	6/19/79	22	49	0.088	0.4562	1.102	0.35	78.01
8	6/19/79	22	51	0.085	0.4338	1.048	0.38	78.04
8	6/19/79	22	52	0.082	0.4114	0.994	0.40	78.06
8	6/19/79	22	53	0.079	0.3891	0.940	0.42	78.08
8	6/19/79	22	54	0.073	0.3443	0.832	0.43	78.09
8	6/19/79	22	57	0.070	0.3220	0.778	0.47	78.13
8	6/19/79	22	58	0.067	0.2996	0.724	0.48	78.14
8	6/19/79	23	0	0.064	0.2772	0.670	0.51	78.17
8	6/19/79	23	2	0.061	0.2549	0.616	0.53	78.19
8	6/19/79	23	5	0.058	0.2381	0.575	0.56	78.22
8	6/19/79	23	8	0.055	0.2214	0.535	0.59	78.25
8	6/19/79	23	10	0.052	0.2047	0.495	0.60	78.26
8	6/19/79	23	13	0.049	0.1880	0.454	0.63	78.29
8	6/19/79	23	16	0.046	0.1713	0.414	0.65	78.31
8	6/19/79	23	20	0.043	0.1546	0.374	0.68	78.34
8	6/19/79	23	23	0.040	0.1379	0.333	0.69	78.35
8	6/19/79	23	30	0.037	0.1212	0.293	0.73	78.39
8	6/19/79	23	39	0.034	0.1045	0.252	0.77	78.43
8	6/19/79	23	48	0.030	0.0878	0.212	0.81	78.47
8	6/19/79	23	56	0.024	0.0702	0.170	0.83	78.49
8	6/20/79	0	6	0.018	0.0527	0.127	0.86	78.52
8	6/20/79	0	16	0.012	0.0351	0.085	0.87	78.53
8	6/20/79	0	29	0.006	0.0176	0.042	0.89	78.55
8	6/20/79	0	45	0.003	0.0088	0.021	0.90	78.56
8	6/20/79	1	20	0.0	0.0	0.0	0.90	78.56
8	6/27/79	0	12	0.0	0.0	0.0	0.0	78.56
8	6/27/79	0	14	0.030	0.0878	0.212	0.00	78.57
8	6/27/79	0	16	0.067	0.2996	0.724	0.02	78.58
8	6/27/79	0	18	0.070	0.3220	0.778	0.04	78.61
8	6/27/79	0	20	0.140	0.9469	2.288	0.10	78.66
8	6/27/79	0	22	0.180	1.4073	3.400	0.19	78.75
8	6/27/79	0	24	0.354	3.3527	8.101	0.38	78.94
8	6/27/79	0	26	0.658	4.2419	10.249	0.69	79.25

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
8	6/27/79	0	32	0.463	3.6982	3.935	1.67	80.23
8	6/27/79	0	34	0.335	3.2848	7.936	1.95	80.51
8	6/27/79	0	36	0.274	2.7751	6.705	2.20	80.76
8	6/27/79	0	38	0.253	2.4579	5.939	2.41	80.97
8	6/27/79	0	40	0.238	2.2314	5.391	2.60	81.16
8	6/27/79	1	4	0.232	2.1408	5.172	4.71	83.27
8	6/27/79	1	10	0.210	1.3264	4.413	5.19	83.75
8	6/27/79	1	14	0.180	1.4073	3.400	5.45	84.01
8	6/27/79	1	17	0.158	1.1497	2.778	5.60	84.17
8	6/27/79	1	20	0.140	0.9469	2.288	5.73	84.29
8	6/27/79	1	24	0.119	0.7258	1.754	5.87	84.43
8	6/27/79	1	26	0.104	0.5884	1.422	5.92	84.48
8	6/27/79	1	28	0.091	0.4786	1.156	5.96	84.52
8	6/27/79	1	30	0.085	0.4338	1.048	6.00	84.56
8	6/27/79	1	34	0.073	0.3443	0.832	6.06	84.62
8	6/27/79	1	40	0.061	0.2549	0.616	6.13	84.69
8	6/27/79	1	46	0.049	0.1880	0.454	6.19	84.75
8	6/27/79	1	50	0.043	0.1546	0.374	6.21	84.78
8	6/27/79	1	55	0.037	0.1212	0.293	6.24	84.80
8	6/27/79	2	2	0.030	0.0878	0.212	6.27	84.83
8	6/27/79	2	10	0.024	0.0702	0.170	6.30	84.86
8	6/27/79	2	22	0.018	0.0527	0.127	6.33	84.89
8	6/27/79	2	30	0.015	0.0439	0.106	6.34	84.90
8	6/27/79	2	38	0.012	0.0351	0.085	6.35	84.92
8	6/27/79	2	47	0.009	0.0263	0.064	6.37	84.93
8	6/27/79	2	59	0.006	0.0176	0.042	6.38	84.94
8	6/27/79	3	14	0.003	0.0088	0.021	6.38	84.95
8	6/27/79	3	40	0.0	0.0	0.0	6.39	84.95
8	7/ 3/79	7	57	0.0	0.0	0.0	0.0	84.95
8	7/ 3/79	7	58	0.018	0.0527	0.127	0.00	84.95
8	7/ 3/79	7	59	0.021	0.0614	0.148	0.00	84.95
8	7/ 3/79	8	1	0.024	0.0702	0.170	0.01	84.96
8	7/ 3/79	8	2	0.037	0.1212	0.293	0.01	84.96
8	7/ 3/79	8	4	0.052	0.2047	0.495	0.03	84.98
8	7/ 3/79	8	6	0.073	0.3443	0.832	0.05	85.00
8	7/ 3/79	8	10	0.079	0.3891	0.940	0.11	85.06
8	7/ 3/79	8	12	0.085	0.4338	1.048	0.14	85.09
8	7/ 3/79	8	14	0.094	0.5060	1.223	0.18	85.13
8	7/ 3/79	8	20	0.083	0.4562	1.102	0.29	85.24
8	7/ 3/79	8	22	0.094	0.5060	1.223	0.33	85.28
8	7/ 3/79	8	24	0.119	0.7258	1.754	0.38	85.33
8	7/ 3/79	8	26	0.131	0.8501	2.054	0.45	85.40
8	7/ 3/79	8	28	0.137	0.9146	2.210	0.52	85.47
8	7/ 3/79	8	32	0.128	0.8178	1.976	0.66	85.61
8	7/ 3/79	8	38	0.110	0.6434	1.554	0.83	85.78
8	7/ 3/79	8	44	0.091	0.4786	1.156	0.97	85.92
8	7/ 3/79	8	46	0.098	0.5335	1.289	1.01	85.96
8	7/ 3/79	8	48	0.113	0.6708	1.621	1.06	86.01
8	7/ 3/79	8	51	0.140	0.9469	2.288	1.16	86.11
8	7/ 3/79	8	52	0.158	1.1497	2.778	1.20	86.15

SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
8	7/ 3/79	8	53	0.174	1.3337	3.222	1.25	86.20
8	7/ 3/79	8	54	0.189	1.5291	3.694	1.31	86.26
8	7/ 3/79	8	56	0.210	1.8264	4.413	1.44	86.39
8	7/ 3/79	9	0	0.226	2.0501	4.953	1.75	86.70
8	7/ 3/79	9	5	0.244	2.3220	5.610	2.19	87.14
8	7/ 3/79	9	10	0.256	2.5032	6.048	2.68	87.63
8	7/ 3/79	9	15	0.259	2.5485	6.157	3.19	88.14
8	7/ 3/79	9	21	0.229	2.0954	5.063	3.75	88.70
8	7/ 3/79	9	26	0.250	2.4126	5.829	4.20	89.15
8	7/ 3/79	9	28	0.323	3.2281	7.799	4.43	89.38
8	7/ 3/79	9	30	0.719	4.4118	10.659	4.74	89.69
8	7/ 3/79	9	32	1.116	5.4878	13.259	5.14	90.09
8	7/ 3/79	9	34	1.384	6.6375	16.037	5.62	90.57
8	7/ 3/79	9	36	1.484	8.9396	21.599	6.25	91.20
8	7/ 3/79	9	38	1.548	11.4967	27.777	7.07	92.02
8	7/ 3/79	9	40	1.551	11.6241	28.085	8.00	92.95
8	7/ 3/79	9	41	1.558	11.8733	28.687	8.48	93.43
8	7/ 3/79	9	42	1.573	12.4821	30.158	8.97	93.92
8	7/ 3/79	9	44	1.603	13.7846	33.305	10.03	94.98
8	7/ 3/79	9	46	1.634	15.3817	37.164	11.20	96.15
8	7/ 3/79	9	49	1.603	13.7846	33.305	12.96	97.91
8	7/ 3/79	9	50	1.591	13.2410	31.992	13.51	98.46
8	7/ 3/79	9	51	1.573	12.4821	30.158	14.02	98.97
8	7/ 3/79	9	52	1.564	12.1168	29.275	14.52	99.47
8	7/ 3/79	9	54	1.554	11.7515	28.393	15.48	100.43
8	7/ 3/79	9	56	1.509	9.8401	23.775	16.35	101.30
8	7/ 3/79	9	58	1.484	8.9396	21.599	17.11	102.06
8	7/ 3/79	10	0	1.445	7.8495	18.965	17.78	102.73
8	7/ 3/79	10	2	1.384	6.6375	16.037	18.37	103.32
8	7/ 3/79	10	4	1.332	6.0456	14.607	18.88	103.83
8	7/ 3/79	10	6	1.219	5.7200	13.820	19.35	104.30
8	7/ 3/79	10	8	1.134	5.5388	13.382	19.80	104.75
8	7/ 3/79	10	10	0.981	5.1423	12.424	20.23	105.18
8	7/ 3/79	10	12	0.677	4.2928	10.372	20.61	105.56
8	7/ 3/79	10	14	0.372	3.4207	8.265	20.92	105.87
8	7/ 3/79	10	16	0.335	3.2848	7.936	21.19	106.14
8	7/ 3/79	10	20	0.305	3.1432	7.594	21.71	106.66
8	7/ 3/79	10	24	0.274	2.7751	6.705	22.19	107.14
8	7/ 3/79	10	34	0.241	2.2767	5.501	23.21	108.16
8	7/ 3/79	10	44	0.201	1.6990	4.105	24.01	108.96
8	7/ 3/79	10	49	0.177	1.3705	3.311	24.32	109.26
8	7/ 3/79	10	52	0.155	1.1129	2.689	24.47	109.41
8	7/ 3/79	10	54	0.085	0.4338	1.048	24.53	109.48
8	7/ 3/79	11	0	0.067	0.2996	0.724	24.62	109.57
8	7/ 3/79	11	5	0.058	0.2381	0.575	24.67	109.62
8	7/ 3/79	11	13	0.049	0.1880	0.454	24.74	109.69
8	7/ 3/79	11	22	0.043	0.1546	0.374	24.80	109.75
8	7/ 3/79	11	39	0.037	0.1212	0.293	24.90	109.85
8	7/ 3/79	12	0	0.034	0.1045	0.252	24.99	109.94
8	7/ 3/79	12	44	0.030	0.0878	0.212	25.16	110.11
8	7/ 3/79	13	14	0.024	0.0702	0.170	25.26	110.21
8	7/ 3/79	14	4	0.018	0.0527	0.127	25.38	110.33

TABLE DI- 5. CONTINUED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	7/ 3/79	14	54	0.012	0.0351	0.085	25.47	110.42
8	7/ 3/79	15	54	0.006	0.0176	0.042	25.53	110.48
8	7/ 3/79	16	28	0.003	0.0088	0.021	25.55	110.50
8	7/ 3/79	17	14	0.0	0.0	0.0	25.56	110.51
8	7/ 3/79	20	47	0.0	0.0	0.0	25.56	110.51
8	7/ 3/79	20	50	0.021	0.0614	0.148	25.56	110.51
8	7/ 3/79	20	52	0.058	0.2381	0.575	25.57	110.52
8	7/ 3/79	20	54	0.073	0.3443	0.832	25.60	110.55
8	7/ 3/79	20	56	0.119	0.7258	1.754	25.64	110.59
8	7/ 3/79	20	58	0.143	0.9792	2.366	25.71	110.66
8	7/ 3/79	21	0	0.158	1.1497	2.778	25.79	110.74
8	7/ 3/79	21	2	0.192	1.5716	3.797	25.90	110.85
8	7/ 3/79	21	4	0.244	2.3220	5.610	26.06	111.01
8	7/ 3/79	21	6	0.268	2.6844	6.486	26.26	111.21
8	7/ 3/79	21	8	0.305	3.1432	7.594	26.50	111.45
8	7/ 3/79	21	10	0.274	2.7751	6.705	26.74	111.69
8	7/ 3/79	21	12	0.244	2.3220	5.610	26.94	111.89
8	7/ 3/79	21	14	0.226	2.0501	4.953	27.12	112.07
8	7/ 3/79	21	18	0.207	1.7840	4.310	27.43	112.38
8	7/ 3/79	21	24	0.189	1.5291	3.694	27.83	112.78
8	7/ 3/79	21	31	0.165	1.2233	2.956	28.21	113.16
8	7/ 3/79	21	36	0.146	1.0115	2.444	28.44	113.39
8	7/ 3/79	21	39	0.131	0.8501	2.054	28.55	113.50
8	7/ 3/79	21	42	0.110	0.6434	1.554	28.64	113.59
8	7/ 3/79	21	46	0.091	0.4786	1.156	28.73	113.68
8	7/ 3/79	21	50	0.076	0.3667	0.886	28.80	113.75
8	7/ 3/79	21	54	0.054	0.2772	0.670	28.85	113.80
8	7/ 3/79	22	4	0.049	0.1880	0.454	28.95	113.90
8	7/ 3/79	22	14	0.037	0.1212	0.293	29.01	113.96
8	7/ 3/79	22	25	0.027	0.0790	0.191	29.05	114.00
8	7/ 3/79	22	35	0.021	0.0614	0.148	29.08	114.03
8	7/ 3/79	22	42	0.018	0.0527	0.127	29.10	114.05
8	7/ 3/79	22	51	0.015	0.0439	0.106	29.11	114.06
8	7/ 3/79	23	0	0.012	0.0351	0.085	29.13	114.08
8	7/ 3/79	23	13	0.009	0.0263	0.064	29.14	114.09
8	7/ 3/79	23	33	0.006	0.0176	0.042	29.16	114.11
8	7/ 3/79	23	39	0.003	0.0088	0.021	29.17	114.12
8	7/ 4/79	0	10	0.0	0.0	0.0	29.17	114.12
8	7/13/79	20	6	0.0	0.0	0.0	0.0	114.12
8	7/13/79	20	7	0.037	0.1212	0.293	0.00	114.12
8	7/13/79	20	9	0.040	0.1379	0.333	0.01	114.13
8	7/13/79	20	10	0.079	0.3891	0.940	0.02	114.14
8	7/13/79	20	11	0.125	0.7855	1.898	0.05	114.17
8	7/13/79	20	12	0.140	0.9469	2.288	0.08	114.20
8	7/13/79	20	14	0.149	1.0438	2.522	0.16	114.28
8	7/13/79	20	16	0.131	0.8501	2.054	0.24	114.36
8	7/13/79	20	18	0.110	0.6434	1.554	0.30	114.42
8	7/13/79	20	19	0.125	0.7855	1.898	0.33	114.45
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM
8	7/13/79	20	24	0.238	2.2314	5.391	14.11	128.23
8	7/13/79	20	25	0.219	1.9595	4.734	14.19	128.31
8	7/13/79	20	27	0.213	1.8689	4.515	14.35	128.47
8	7/13/79	20	28	0.204	1.7415	4.208	14.42	128.54
8	7/13/79	20	30	0.183	1.4442	3.489	14.55	128.67
8	7/13/79	20	32	0.165	1.2233	2.956	14.65	128.78
8	7/13/79	20	34	0.152	1.0760	2.600	14.75	128.87
8	7/13/79	20	36	0.137	0.9146	2.210	14.83	128.95
8	7/13/79	20	38	0.122	0.7532	1.820	14.89	129.02
8	7/13/79	20	40	0.104	0.5884	1.422	14.95	129.07
8	7/13/79	20	42	0.091	0.4786	1.156	14.99	129.11
8	7/13/79	20	44	0.082	0.4114	0.994	15.03	129.15
8	7/13/79	20	46	0.073	0.3443	0.832	15.06	129.18
8	7/13/79	20	47	0.082	0.4114	0.994	15.07	129.19
8	7/13/79	20	49	0.073	0.3443	0.832	15.10	129.22
8	7/13/79	20	54	0.061	0.2549	0.616	15.16	129.28
8	7/13/79	20	58	0.052	0.2047	0.495	15.20	129.32
8	7/13/79	21	2	0.043	0.1546	0.374	15.23	129.35
8	7/13/79	21	12	0.030	0.0878	0.212	15.28	129.40
8	7/13/79	21	18	0.024	0.0702	0.170	15.30	129.42
8	7/13/79	21	22	0.021	0.0614	0.148	15.31	129.43
8	7/13/79	21	27	0.018	0.0527	0.127	15.32	129.44
8	7/13/79	21	33	0.015	0.0439	0.106	15.33	129.45
8	7/13/79	21	40	0.012	0.0351	0.085	15.34	129.46
8	7/13/79	21	46	0.009	0.0263	0.064	15.35	129.47
8	7/13/79	21	54	0.006	0.0176	0.042	15.36	129.48
8	7/13/79	22	5	0.003	0.0088	0.021	15.36	129.48
8	7/13/79	22	37	0.0	0.0	0.0	15.37	129.49
8	7/14/79	0	48	0.0	0.0	0.0	15.37	129.49
8	7/14/79	0	50	0.043	0.1546	0.374	15.38	129.50
8	7/14/79	0	52	0.085	0.4338	1.048	15.40	129.52
8	7/14/79	0	54	0.177	1.3705	3.311	15.47	129.59
8	7/14/79	0	56	0.232	2.1408	5.172	15.61	129.73
8	7/14/79	0	58	0.283	2.8855	6.972	15.82	129.94
8	7/14/79	1	0	0.789	4.6071	11.131	16.12	130.24
8	7/14/79	1	2	1.298	5.9126	14.285	16.54	130.66
8	7/14/79	1	4	1.359	6.3090	15.243	17.03	131.15
8	7/14/79	1	6	1.381	6.5922	15.927	17.55	131.67
8	7/14/79	1	8	1.387	6.6828	16.146	18.09	132.21
8	7/14/79	1	14	1.387	6.6828	16.146	19.70	133.82
8	7/14/79	1	16	1.390	6.7281	16.256	20.24	134.36
8	7/14/79	1	22	1.393	6.7734	16.365	21.87	135.99
8	7/14/79	1	25	1.396	6.8187	16.475	22.69	136.81
8	7/14/79	1	28	1.393	6.7734	16.365	23.51	137.63
8	7/14/79	1	30	1.372	6.4562	15.599	24.05	138.17
8	7/14/79	1	32	1.317	5.9749	14.436	24.55	138.67
8	7/14/79	1	34	1.268	5.8389	14.107	25.02	139.14
8	7/14/79	1	36	1.225	5.7370	13.861	25.49	139.61
8	7/14/79	1	38	1.201	5.6860	13.738	25.95	140.07
8	7/14/79	1	40	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SITE	DATE	HOUR	MIN	STAGE M	RATE CMS	INTENSITY MMPH	RUNOFF MM	RUNOFF MM

SITE	DATE	HOUR	MIN	STAGE M	DISCHARGE RATE CMS	RUNOFF INTENSITY MMPH	RUNOFF MM	TOTAL RUNOFF MM
8	7/14/79	1	46	1.158	5.6067	13.546	27.76	141.88
8	7/14/79	1	48	1.204	5.6917	13.752	28.21	142.33
8	7/14/79	1	50	1.228	5.7455	13.882	28.67	142.79
8	7/14/79	1	51	1.234	5.7625	13.923	28.91	143.03
8	7/14/79	1	52	1.228	5.7455	13.882	29.14	143.26
8	7/14/79	1	54	1.210	5.7030	13.779	29.60	143.72
8	7/14/79	1	56	1.170	5.6294	13.601	30.06	144.18
8	7/14/79	1	58	1.119	5.4963	13.280	30.50	144.62
8	7/14/79	2	0	1.015	5.2358	12.650	30.94	145.06
8	7/14/79	2	2	0.689	4.3268	10.454	31.32	145.44
8	7/14/79	2	4	0.366	3.3980	8.210	31.63	145.75
8	7/14/79	2	6	0.299	3.0695	7.416	31.89	146.01
8	7/14/79	2	8	0.274	2.7751	6.705	32.13	146.25
8	7/14/79	2	12	0.256	2.5032	6.048	32.55	146.67
8	7/14/79	2	14	0.244	2.3220	5.610	32.75	146.87
8	7/14/79	2	16	0.232	2.1408	5.172	32.93	147.05
8	7/14/79	2	18	0.219	1.9595	4.734	33.09	147.21
8	7/14/79	2	20	0.204	1.7415	4.208	33.24	147.36
8	7/14/79	2	22	0.195	1.6141	3.900	33.38	147.50
8	7/14/79	2	24	0.183	1.4442	3.489	33.50	147.62
8	7/14/79	2	26	0.171	1.2969	3.133	33.61	147.73
8	7/14/79	2	28	0.158	1.1497	2.778	33.71	147.83
8	7/14/79	2	30	0.146	1.0115	2.444	33.79	147.91
8	7/14/79	2	32	0.137	0.9146	2.210	33.87	147.99
8	7/14/79	2	34	0.125	0.7855	1.898	33.94	148.06
8	7/14/79	2	36	0.116	0.6983	1.687	34.00	148.12
8	7/14/79	2	38	0.101	0.5610	1.355	34.05	148.17
8	7/14/79	2	40	0.088	0.4562	1.102	34.09	148.21
8	7/14/79	2	42	0.082	0.4114	0.994	34.13	148.25
8	7/14/79	2	44	0.076	0.3667	0.886	34.16	148.28
8	7/14/79	2	50	0.073	0.3443	0.832	34.24	148.36
8	7/14/79	2	54	0.073	0.3443	0.832	34.30	148.42
8	7/14/79	3	2	0.067	0.2996	0.724	34.40	148.52
8	7/14/79	3	9	0.061	0.2549	0.616	34.48	148.60
8	7/14/79	3	16	0.055	0.2214	0.535	34.55	148.67
8	7/14/79	3	23	0.049	0.1880	0.454	34.61	148.73
8	7/14/79	3	32	0.043	0.1546	0.374	34.67	148.79
8	7/14/79	3	42	0.037	0.1212	0.293	34.72	148.84
8	7/14/79	3	54	0.030	0.0878	0.212	34.77	148.89
8	7/14/79	4	12	0.027	0.0790	0.191	34.83	148.96
8	7/14/79	4	27	0.030	0.0878	0.212	34.89	149.01
8	7/14/79	4	41	0.034	0.1045	0.252	34.94	149.06
8	7/14/79	5	1	0.030	0.0878	0.212	35.02	149.14
8	7/14/79	5	11	0.027	0.0790	0.191	35.05	149.17
8	7/14/79	5	21	0.024	0.0702	0.170	35.08	149.20
8	7/14/79	5	36	0.021	0.0614	0.148	35.12	149.24
8	7/14/79	5	56	0.018	0.0527	0.127	35.17	149.29
8	7/14/79	6	25	0.015	0.0439	0.106	35.22	149.34
8	7/14/79	7	47	0.012	0.0351	0.085	35.35	149.47
8	7/14/79	9	47	0.009	0.0263	0.064	35.50	149.62
8	7/14/79	10	32	0.006	0.0176	0.042	35.54	149.66
8	7/14/79	10	55	0.003	0.0088	0.021	35.55	149.67

SITE	DATE	HOUR	MIN	STAGE M	DISCHARGE RATE CMS	RUNOFF INTENSITY MMPH	RUNOFF MM	TOTAL RUNOFF MM
8	7/14/79	11	30	0.0	0.0	0.0	35.56	149.68
8	8/19/79	2	45	0.0	0.0	0.0	0.0	149.68
8	8/19/79	2	46	0.003	0.0088	0.021	0.00	149.68
8	8/19/79	2	53	0.006	0.0176	0.042	0.00	149.68
8	8/19/79	3	9	0.003	0.0088	0.021	0.01	149.69
8	8/19/79	3	41	0.003	0.0088	0.021	0.02	149.70
8	8/19/79	4	15	0.0	0.0	0.0	0.03	149.71
8	8/19/79	5	45	0.0	0.0	0.0	0.03	149.71
8	8/19/79	5	56	0.003	0.0088	0.021	0.03	149.71
8	8/19/79	6	2	0.006	0.0176	0.042	0.03	149.71
8	8/19/79	6	8	0.009	0.0263	0.064	0.04	149.72
8	8/19/79	6	18	0.012	0.0351	0.085	0.05	149.73
8	8/19/79	6	23	0.015	0.0439	0.106	0.06	149.74
8	8/19/79	6	25	0.018	0.0527	0.127	0.06	149.74
8	8/19/79	6	26	0.027	0.0790	0.191	0.07	149.75
8	8/19/79	6	30	0.052	0.2047	0.495	0.09	149.77
8	8/19/79	6	32	0.055	0.2214	0.535	0.11	149.79
8	8/19/79	6	39	0.049	0.1880	0.454	0.16	149.84
8	8/19/79	6	46	0.043	0.1546	0.374	0.21	149.89
8	8/19/79	6	56	0.037	0.1212	0.293	0.27	149.95
8	8/19/79	7	5	0.030	0.0878	0.212	0.31	149.99
8	8/19/79	7	14	0.024	0.0702	0.170	0.34	150.01
8	8/19/79	7	28	0.018	0.0527	0.127	0.37	150.05
8	8/19/79	7	48	0.012	0.0351	0.085	0.41	150.08
8	8/19/79	8	2	0.009	0.0263	0.064	0.42	150.10
8	8/19/79	8	16	0.006	0.0176	0.042	0.43	150.11
8	8/19/79	8	38	0.003	0.0088	0.021	0.45	150.13
8	8/19/79	9	0	0.0	0.0	0.0	0.45	150.13
8	8/19/79	21	7	0.0	0.0	0.0	0.0	150.13
8	8/19/79	21	19	0.003	0.0088	0.021	0.00	150.13
8	8/19/79	21	22	0.006	0.0176	0.042	0.00	150.13
8	8/19/79	21	25	0.012	0.0351	0.085	0.01	150.14
8	8/19/79	21	29	0.018	0.0527	0.127	0.01	150.14
8	8/19/79	21	37	0.024	0.0702	0.170	0.03	150.16
8	8/19/79	21	43	0.030	0.0878	0.212	0.05	150.18
8	8/19/79	21	47	0.037	0.1212	0.293	0.07	150.20
8	8/19/79	21	49	0.064	0.2772	0.670	0.09	150.22
8	8/19/79	21	50	0.076	0.3667	0.886	0.10	150.23
8	8/19/79	21	51	0.082	0.4114	0.994	0.11	150.24
8	8/19/79	21	55	0.098	0.5335	1.289	0.19	150.32
8	8/19/79	21	59	0.088	0.4562	1.102	0.27	150.40
8	8/19/79	22	3	0.082	0.4114	0.994	0.34	150.47
8	8/19/79	22	11	0.076	0.3667	0.886	0.47	150.60
8	8/19/79	22	21	0.061	0.2549	0.616	0.59	150.72
8	8/19/79	22	27	0.055	0.2214	0.535	0.65	150.78
8	8/19/79	22	35	0.052	0.2047	0.495	0.72	150.85
8	8/19/79	22	42	0.043	0.1546	0.374	0.77	150.90
8	8/19/79	22	46	0.052	0.2047	0.495	0.80	150.93

TABLE D1- 5. CONCLUDED

SITE	DATE	HOUR	MIN	STAGE M	RUNOFF RATE CMS	RUNOFF INTENSITY MMPH	STORM RUNOFF MM	ANNUAL RUNOFF MM
8	8/19/79	22	43	0.061	0.2549	0.615	0.31	150.94
8	8/19/79	22	53	0.067	0.2996	0.724	0.87	151.00
8	8/19/79	23	2	0.058	0.2381	0.575	0.97	151.10
8	8/19/79	23	11	0.055	0.2214	0.535	1.05	151.18
8	8/19/79	23	22	0.043	0.1546	0.374	1.13	151.26
8	8/19/79	23	30	0.037	0.1212	0.293	1.18	151.31
8	8/19/79	23	39	0.030	0.0878	0.212	1.22	151.35
8	8/20/79	0	4	0.018	0.0527	0.127	1.29	151.42
8	8/20/79	0	29	0.012	0.0351	0.085	1.33	151.46
8	8/20/79	0	42	0.009	0.0263	0.064	1.35	151.48
8	8/20/79	1	1	0.006	0.0176	0.042	1.36	151.49
8	8/20/79	1	30	0.003	0.0088	0.021	1.38	151.51
8	8/20/79	2	15	0.0	0.0	0.0	1.39	151.52
8	8/21/79	18	47	0.0	0.0	0.0	0.0	151.52
8	8/21/79	18	48	0.021	0.0614	0.148	0.00	151.52
8	8/21/79	18	50	0.030	0.0878	0.212	0.01	151.52
8	8/21/79	18	52	0.034	0.1045	0.252	0.01	151.53
8	8/21/79	18	56	0.037	0.1212	0.293	0.03	151.55
8	8/21/79	18	58	0.088	0.4562	1.102	0.06	151.57
8	8/21/79	19	0	0.119	0.7258	1.754	0.10	151.62
8	8/21/79	19	2	0.140	0.9469	2.288	0.17	151.69
8	8/21/79	19	4	0.162	1.1865	2.867	0.26	151.77
8	8/21/79	19	8	0.183	1.4442	3.489	0.47	151.99
8	8/21/79	19	10	0.192	1.5716	3.797	0.59	152.11
8	8/21/79	19	12	0.213	1.8689	4.515	0.73	152.25
8	8/21/79	19	14	0.226	2.0501	4.953	0.89	152.40
8	8/21/79	19	18	0.244	2.3220	5.610	1.24	152.76
8	8/21/79	19	20	0.229	2.0954	5.063	1.42	152.93
8	8/21/79	19	22	0.213	1.8689	4.515	1.58	153.09
8	8/21/79	19	25	0.174	1.3337	3.222	1.77	153.29
8	8/21/79	19	28	0.152	1.0760	2.600	1.92	153.43
8	8/21/79	19	31	0.140	0.9469	2.288	2.04	153.56
8	8/21/79	19	40	0.122	0.7532	1.820	2.35	153.86
8	8/21/79	19	51	0.098	0.5335	1.289	2.63	154.15
8	8/21/79	20	0	0.073	0.3443	0.832	2.79	154.31
8	8/21/79	20	7	0.058	0.2381	0.575	2.87	154.39
8	8/21/79	20	17	0.046	0.1713	0.414	2.95	154.47
8	8/21/79	20	25	0.037	0.1212	0.293	3.00	154.52
8	8/21/79	20	34	0.030	0.0878	0.212	3.04	154.56
8	8/21/79	20	44	0.024	0.0702	0.170	3.07	154.59
8	8/21/79	20	49	0.021	0.0614	0.148	3.08	154.60
8	8/21/79	20	57	0.018	0.0527	0.127	3.10	154.62
8	8/21/79	21	8	0.015	0.0439	0.106	3.12	154.64
8	8/21/79	21	18	0.012	0.0351	0.085	3.14	154.66
8	8/21/79	21	30	0.009	0.0263	0.064	3.15	154.67
8	8/21/79	21	44	0.006	0.0176	0.042	3.17	154.68
8	8/21/79	22	4	0.003	0.0088	0.021	3.18	154.70
8	8/21/79	22	25	0.0	0.0	0.0	3.18	154.70
8	10/22/79	5	1	0.0	0.0	0.0	0.0	154.70
8	10/22/79	5	18	0.003	0.0088	0.021	0.00	154.70
8	10/22/79	5	36	0.006	0.0176	0.042	0.01	154.71
8	10/22/79	5	54	0.009	0.0263	0.064	0.03	154.73
8	10/22/79	5	57	0.012	0.0351	0.085	0.03	154.73
8	10/22/79	6	3	0.015	0.0439	0.106	0.04	154.74
8	10/22/79	6	11	0.018	0.0527	0.127	0.06	154.76
8	10/22/79	6	17	0.021	0.0614	0.148	0.07	154.77
8	10/22/79	6	29	0.024	0.0702	0.170	0.10	154.80
8	10/22/79	7	26	0.021	0.0614	0.148	0.25	154.95
8	10/22/79	7	36	0.021	0.0614	0.148	0.28	154.98
8	10/22/79	8	12	0.024	0.0702	0.170	0.37	155.07
8	10/22/79	8	55	0.024	0.0702	0.170	0.50	155.19
8	10/22/79	9	6	0.021	0.0614	0.148	0.52	155.22
8	10/22/79	9	20	0.018	0.0527	0.127	0.56	155.26
8	10/22/79	9	36	0.015	0.0439	0.106	0.59	155.29
8	10/22/79	9	49	0.012	0.0351	0.085	0.61	155.31
8	10/22/79	10	16	0.009	0.0263	0.064	0.64	155.34
8	10/22/79	10	30	0.012	0.0351	0.085	0.66	155.36
8	10/22/79	10	49	0.015	0.0439	0.106	0.69	155.39
8	10/22/79	11	1	0.018	0.0527	0.127	0.71	155.41
8	10/22/79	11	5	0.024	0.0702	0.170	0.72	155.42
8	10/22/79	11	14	0.030	0.0878	0.212	0.75	155.45
8	10/22/79	11	39	0.030	0.0878	0.212	0.84	155.54
8	10/22/79	11	51	0.037	0.1212	0.293	0.89	155.59
8	10/22/79	11	58	0.043	0.1546	0.374	0.93	155.63
8	10/22/79	12	6	0.049	0.1880	0.454	0.98	155.68
8	10/22/79	12	12	0.052	0.2047	0.495	1.03	155.73
8	10/22/79	12	15	0.058	0.2381	0.575	1.06	155.76
8	10/22/79	12	20	0.067	0.2996	0.724	1.11	155.81
8	10/22/79	12	29	0.061	0.2549	0.616	1.21	155.91
8	10/22/79	12	35	0.055	0.2214	0.535	1.27	155.97
8	10/22/79	12	42	0.049	0.1880	0.454	1.33	156.03
8	10/22/79	12	52	0.043	0.1546	0.374	1.40	156.10
8	10/22/79	13	3	0.037	0.1212	0.293	1.46	156.16
8	10/22/79	13	13	0.030	0.0878	0.212	1.50	156.20
8	10/22/79	13	27	0.024	0.0702	0.170	1.55	156.24
8	10/22/79	13	46	0.018	0.0527	0.127	1.59	156.29
8	10/22/79	13	59	0.015	0.0439	0.106	1.62	156.32
8	10/22/79	14	15	0.012	0.0351	0.085	1.64	156.34
8	10/22/79	14	35	0.009	0.0263	0.064	1.67	156.37
8	10/22/79	15	0	0.006	0.0176	0.042	1.69	156.39
8	10/22/79	15	36	0.003	0.0088	0.021	1.71	156.41
8	10/22/79	16	21	0.0	0.0	0.0	1.72	156.42

LATITUDE 421207 LONGITUDE 0923344 DRAINAGE AREA 19.51 DATUM 905.87 STATE 19 COUNTY 171

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

PROVISIONAL DATA

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	5.5	12	3.0	4.1	4.7	41	29	12	16	8.1	6.0
2	9.7	5.7	11	4.0	4.3	4.6	37	~~43~~ 46	12	15	7.7	5.6
3	11	5.5	12	5.1	4.2	~~5.4~~ 6.0	36	~~60~~ 61	12	~~378~~ 379	7.2	5.1
4	10	5.5	11	6.2	3.9	~~15~~ 40	36	46	~~15~~ 16	62	6.7	4.9
5	9.7	5.7	10	5.8	3.4	~~50~~ 214	36	42	15	31	6.1	4.7
6	8.6	5.2	9.6	4.8	4.2	~~47~~ 105	62	38	12	23	5.8	4.8
7	8.1	5.2	8.9	5.3	4.2	~~40~~ 56	26	35	12	18	5.3	4.1
8	8.1	5.3	8.9	5.1	3.9	~~29~~ 30	25	35	12	14	5.5	4.0
9	8.9	5.2	8.7	4.5	3.7	~~20~~ 22	21	32	15	12	7.6	3.8
10	13	5.0	8.6	5.1	4.0	17	20	26	~~17~~ 16	9.5	6.5	3.7
11	12	4.7	8.5	5.2	4.0	~~16~~ 18	19	24	14	7.8	5.6	3.4
12	11	5.2	8.4	5.0	3.9	~~15~~ 19	24	23	~~133~~ 130	6.7	5.2	3.3
13	9.7	27	8.0	5.2	3.8	~~40~~ 80	22	22	~~131~~ 134	~~19~~ 18	5.1	3.4
14	9.2	20	8.0	4.0	4.2	~~140~~ 210	20	20	31	375	5.1	3.2
15	9.2	15	7.8	4.2	3.9	~~71~~ 147	19	20	24	35	4.7	3.1
16	8.4	14	7.4	4.4	3.6	~~146~~ 145	18	19	19	26	4.6	3.0
17	8.1	31	6.9	4.8	3.7	~~281~~ 284	17	19	18	22	4.4	2.8
18	7.9	37	7.4	5.0	3.7	~~1030~~ 1028	16	18	28	19	4.0	2.7
19	7.5	29	6.7	4.8	3.8	~~335~~ 346	~~23~~ 25	19	18	17	~~27~~ 26	2.7
20	7.5	23	7.0	4.8	3.9	~~54~~ 57	~~163~~ 162	17	35	16	52	2.7
21	7.5	20	7.7	4.7	4.0	37	86	16	19	14	80	2.5
22	7.0	19	6.0	4.5	3.8	33	51	16	16	13	~~69~~ 68	2.3
23	6.0	16	6.2	4.6	4.1	~~86~~ 93	41	15	14	12	25	2.3
24	6.8	15	5.4	4.5	3.8	~~26~~ 27	36	15	12	11	16	2.8
25	7.0	15	6.0	4.6	3.8	42	39	14	12	11	12	2.9
26	6.2	13	5.6	4.5	3.9	~~30~~ 31	49	15	~~12~~ 11	10	11	2.4
27	6.2	13	5.3	4.5	4.1	25	40	14	144	9.4	9.8	2.3
28	5.9	13	5.9	4.4	4.4	~~45~~ 54	35	13	27	9.1	8.6	2.3
29	5.9	13	5.3	4.1	---	~~284~~ 297	34	14	22	9.0	7.8	2.3
30	5.9	12	4.3	4.2	---	~~169~~ 180	30	13	19	9.3	6.8	2.3
31	5.5	---	4.2	4.1	---	~~56~~ 56	---	13	---	8.3	6.4	---
TOTAL	256.7	434.7	238.7	146.0	110.3	~~3192.7~~ 3709.3	~~1122~~ 1123	~~745~~ 749	~~882~~ 884	1238.1	~~476.6~~ 434.6	101.4
MEAN	8.28	14.5	7.70	4.71	3.94	~~103~~ 120	37.4	~~24.0~~ 24.2	~~29.4~~ 29.5	39.9	~~14.1~~ 14.0	3.38
MAX	13	51	12	6.2	4.4	~~1030~~ 1028	~~163~~ 162	~~60~~ 61	144	~~378~~ 379	80	6.0
MIN	5.5	4.7	4.2	3.0	3.4	4.6	16	13	12	6.7	4.0	2.3
CFSM	.42	.74	.40	.24	.20	~~5.28~~ 6.13	1.92	~~1.23~~ 1.24	1.51	2.05	.72	.17
IN.	.49	.83	.46	.28	.21	~~6.09~~ 7.07	2.14	~~1.42~~ 1.43	1.68	2.36	.83	.19
AC-FT	509	862	473	290	219	~~6330~~ 7360	2230	~~1480~~ 1490	1750	2460	~~866~~ 862	201

WTR YR 1979 TOTAL ~~9394.2~~ 9425.8 MEAN ~~24.4~~ 25.8 MAX ~~1030~~ 1028 MIN 2.3 CFSM ~~1.25~~ 1.32 IN ~~16.98~~ 17.96 AC-FT ~~17660~~ 18,700

CAL YR 1979 9201.1 25.2 1028 2.2 1.29 17.53 18,250

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY

PROCESS DATE IS 07-19-80

STATION NUMBER 05464137 FOURMILE CREEK NEAR TRAER, IOWA STREAM SOURCE AGENCY USGS
LATITUDE 421207 LONGITUDE 0923344 DRAINAGE AREA 19.51 DATUM 905.87 STATE 19 COUNTY 171

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

PROVISIONAL DATA

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	11	6.3	4.8	3.9	5.6	5.6	4.8	30			
2	2.6	9.4	6.6	4.7	4.0	6.5	8.7	4.7	240			
3	2.5	8.8	7.0	4.2	3.7	5.7	16	4.5	78			
4	2.4	8.4	6.8	4.5	3.5	5.1	21	4.5	40			
5	2.4	8.6	7.1	4.6	3.7	3.4	15	4.3	29			
6	2.4	11	6.4	3.4	3.5	3.8	13	4.2	25			
7	2.3	11	6.3	.75	3.4	4.1	12	4.1	42			
8	2.2	10	5.4	1.0	3.4	4.1	11	4.1	22			
9	2.2	9.1	6.2	2.7	3.4	16	11	4.0	19			
10	2.2	8.1	6.2	4.5	3.5	89	11	4.2	17			
11	2.4	7.8	6.0	8.6	3.5	31	9.3	4.1	16			
12	2.4	7.8	4.8	11	3.2	14	9.0	3.8	15			
13	2.2	7.4	5.3	6.4	3.3	7.5	10	3.9	16			
14	2.2	7.2	5.1	6.0	3.2	50	8.6	3.7	30			
15	2.3	7.2	5.7	6.4	3.2	253	7.9	3.7	50			
16	2.2	6.9	3.7	178	3.7	69	6.9	3.5	---			
17	3.8	7.0	3.9	60	3.4	18	6.7	4.0	---			
18	2.3	6.7	4.6	16	3.3	13	6.6	4.2	---			
19	5.3	6.5	5.8	10	3.5	14	5.7	4.1	---			
20	3.7	6.2	5.3	8.7	4.7	11	6.9	3.8	---			
21	2.8	7.7	5.4	8.2	194	8.9	6.0	3.7	---			
22	~~66~~ 70	13	5.8	6.6	114	8.0	5.7	3.6	---			
23	40	11	7.2	5.7	27	8.0	5.5	3.7	---			
24	26	9.5	5.6	9.0	3.1	7.9	5.4	3.4	---			
25	19	9.0	5.0	9.7	2.2	6.6	5.4	3.2	---			
26	15	8.7	5.0	4.7	2.3	5.3	5.3	3.1	---			
27	13	7.9	4.8	6.0	6.4	5.3	5.1	21	---			
28	11	7.3	4.7	5.5	5.9	5.4	5.0	10	---			
29	9.7	6.9	4.8	5.4	6.0	5.8	5.1	250	---			
30	9.0	7.6	5.0	5.0	---	5.9	4.9	120	---			
31	10	---	4.8	4.3	---	5.6	---	50	---			
TOTAL	~~274.1~~ 278.1	254.7	172.6	416.35	438.0	696.5	255.3	553.9	---			
MEAN	~~8.84~~ 8.97	8.49	5.57	13.4	15.1	22.5	8.51	17.9	---			
MAX	~~66~~ 70	13	7.2	178	194	253	21	250	---			
MIN	2.2	6.2	3.7	.75	2.2	3.4	4.9	3.1	---			
CFSM	~~.45~~ 0.46	.44	.29	.69	.77	1.15	.44	.92	---			
IN.	~~.52~~ 0.53	.49	.33	.79	.84	1.33	.49	1.06	---			
AC-FT	~~544~~ 552	505	342	826	869	1380	506	1100	---			

PROVISIONAL DATA DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

LATITUDE 42.332 LONGITUDE 0923639 DRAINAGE AREA 13.78 DATUM 931.76 STATE 16 COUNTY 171

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

PROVISIONAL DATA

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	3.8	8.7	2.4	2.6	~~2.2~~ 2.3	21	16	7.6	11	6.0	3.9
2	5.6	3.8	7.9	3.4	2.6	~~2.1~~ 2.2	19	~~29~~ 27	7.6	~~10~~ 16	5.8	3.6
3	6.9	3.8	7.8	4.4	2.6	~~10~~ 14	25	34	~~7.4~~ 7.5	~~293~~ 297	5.2	3.4
4	6.7	3.6	7.6	4.5	2.3	~~35~~ 44	25	25	8.1	~~37~~ 43	4.7	3.2
5	5.5	3.6	7.2	3.9	2.1	~~33~~ 38	24	21	~~8.1~~ 8.2	23	4.4	3.0
6	4.5	3.2	6.4	3.4	2.3	~~28~~ 46	17	20	~~7.6~~ 7.5	18	4.1	2.9
7	4.2	3.4	5.8	3.7	2.4	~~20~~ 31	16	18	~~7.4~~ 7.3	15	3.8	2.5
8	4.4	3.5	6.6	3.9	2.3	~~14~~ 18	15	18	~~7.1~~ 7.2	14	3.6	2.4
9	5.2	3.4	6.4	3.2	2.2	~~11~~ 13	13	17	~~9.6~~ 9.5	12	4.5	2.3
10	8.7	3.2	6.3	3.4	2.3	~~10~~ 11	12	16	11	11	4.5	2.2
11	7.9	2.9	6.2	3.3	2.4	~~6.5~~ 9.4	12	15	9.6	11	3.8	2.0
12	7.4	3.5	6.0	3.2	2.4	~~12~~ 17	15	14	~~123~~ 128	9.9	3.6	2.0
13	6.4	20	5.8	2.7	2.3	~~35~~ 39	13	14	~~56~~ 67	14	3.5	1.9
14	5.4	13	5.6	2.3	2.3	~~100~~ 145	12	13	23	~~302~~ 292	3.5	1.8
15	5.8	10	5.5	2.5	2.3	~~50~~ 144	11	12	19	25	3.2	1.7
16	5.6	9.3	5.4	2.8	1.9	~~145~~ 144	11	12	16	17	3.2	1.6
17	5.8	40	5.4	3.1	1.9	~~162~~ 166	11	12	14	14	3.0	1.5
18	5.6	29	5.6	2.9	2.0	~~600~~ 618	10	12	~~22~~ 21	13	2.8	1.4
19	5.2	21	5.4	3.0	2.0	~~205~~ 198	14	12	~~15~~ 14	11	~~20~~ 19	1.4
20	5.2	17	5.0	3.1	2.1	36	~~87~~ 97	11	~~29~~ 26	11	~~23~~ 31	1.4
21	5.2	15	5.2	3.1	2.0	~~24~~ 23	~~55~~ 56	11	13	9.6	~~64~~ 75	1.2
22	4.7	14	4.7	3.0	2.0	20	35	10	12	9.0	~~38~~ 37	1.2
23	4.4	12	4.9	2.9	2.2	~~61~~ 62	30	9.9	11	8.4	15	1.2
24	4.9	11	4.5	2.9	2.0	13	26	9.6	10	8.4	9.9	1.8
25	4.9	11	4.9	2.9	1.8	~~25~~ 24	29	9.3	~~9.6~~ 9.7	7.9	7.9	1.6
26	4.2	10	4.4	2.8	1.9	~~13~~ 12	33	9.6	~~9.3~~ 9.4	7.4	7.1	1.4
27	4.2	9.6	4.4	2.7	2.0	12	27	9.0	~~108~~ 120	7.1	6.4	1.3
28	3.9	9.3	4.7	2.6	2.1	~~44~~ 41	21	8.7	20	6.9	5.8	1.2
29	3.9	9.3	3.8	2.6	---	~~299~~ 286	20	8.7	15	6.7	5.2	1.2
30	3.9	8.7	3.6	2.5	---	~~93~~ 101	17	8.1	13	6.9	4.5	1.5
31	3.6	---	3.4	2.7	---	~~39~~ 32	---	7.9	---	6.4	4.2	---
TOTAL	155.3	310.9	175.1	95.8	61.3	~~2151.8~~ 2411.7	~~676~~ 687	~~442.8~~ 440.8	~~629.0~~ 652.0	~~956.6~~ 962.6	~~294.2~~ 301.2	59.7
MEAN	5.33	10.4	5.65	3.09	2.19	~~69.4~~ 77.8	~~22.5~~ 22.9	~~14.3~~ 14.2	~~21.0~~ 21.7	~~30.9~~ 31.1	~~9.49~~ 9.72	1.99
MAX	8.7	40	8.7	4.5	2.6	~~600~~ 618	~~87~~ 97	34	~~123~~ 128	~~302~~ 297	~~64~~ 75	3.9
MIN	3.6	2.9	3.4	2.3	1.8	~~2.1~~ 2.2	10	7.9	~~7.1~~ 7.2	6.4	2.8	1.2
CFSM	.39	.76	.41	.22	.16	~~5.04~~ 5.65	~~1.63~~ 1.66	~~1.04~~ 1.03	~~1.52~~ 1.58	~~2.24~~ 2.25	~~.69~~ 0.71	.14
IN.	.45	.84	.47	.26	.17	~~5.81~~ 6.49	~~1.82~~ 1.85	~~1.20~~ 1.19	~~1.70~~ 1.76	~~2.58~~ 2.59	~~.79~~ 0.81	.16
AC-FT	323	617	347	190	122	~~4270~~ 4780	~~1340~~ 1360	~~878~~ 874	~~1260~~ 1290	~~1900~~ 1910	~~584~~ 597	118

CAL YR 1978	TOTAL	2941.01	MEAN	8.06	MAX	155	MIN	.38	CFSM	.59	IN	7.94	AC-FT	5830
WTR YR 1979	TOTAL	~~6018.50~~	MEAN	~~16.5~~	MAX	~~600~~	MIN	1.2	CFSM	~~1.20~~	IN	~~16.25~~	AC-FT	~~11940~~
		6323.4		17.3		618				1.26		17.04		12,540
CAL YR 1979		6176.8		16.9		618		1.0		1.23		16.64		12,250

FOURMILE CREEK NEAR LINCOLN, IOWA

STATION 5464130 DRAINAGE AREA
LATITUDE 421332 DATUM
LONGITUDE 923639

MEAN DISCHARGE (CFS) - WATER YEAR OCT 1979 TO SEPT

DAY	OCT	NOV	DEC
1	2.1	7.4	5.0
2	1.3	6.6	5.1
3	1.3	6.0	5.2
4	1.1	5.7	5.1
5	1.2	6.0	5.3
6	1.2	7.7	4.8
7	1.1	7.4	4.6
8	1.2	7.0	4.1
9	1.1	6.7	4.4
10	1.1	5.7	4.6
11	1.3	5.6	4.0
12	1.2	5.6	3.9
13	1.0	5.3	3.9
14	1.3	5.2	3.8
15	1.3	5.3	4.2
16	1.3	5.0	2.6
17	1.1	5.0	4.9
18	1.1	5.0	4.2
19	3.9	4.7	4.0
20	2.4	4.5	3.7
21	1.9	6.0	3.8
22	55	9.2	3.9
23	30	7.7	4.2
24	18	7.0	3.7
25	13	6.9	3.4
26	11	6.6	3.5
27	9.1	5.9	3.2
28	7.3	6.1	3.2
29	6.7	5.6	3.4
30	6.2	5.6	3.5
31	7.3		3.4
TOTAL	194.1	184.0	126.6
MEAN	6.26	6.13	4.08
MAX	55	9.2	5.3
MIN	1.0	4.5	2.6
CFSM	0.45	0.45	0.30
IN	0.52	0.50	0.34
AC-FT.	385	365	251

LATITUDE 421240 LONGITUDE 0923539 DRAINAGE AREA

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

ROVISIONAL DATA

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	.57	.82	.25	.26	.23	2.5 2.4	2.0	.91	2.1	.56	.80
2	1.0	.57	.79	.35	.25	.23	~~2.6~~ 2.3	~~4.2~~ 4.1	.91	1.9	.54	.71
3	.91	.57	.79	.41	.25	2.0	~~2.9~~ 2.3	~~3.0~~ 3.1	.85	31	.52	.66
4	.85	.57	.76	.44	.25	8.0	~~3.0~~ 3.1	2.3	~~2.7~~ 2.3	~~3.0~~ 2.4	.50	.62
5	.79	.57	.71	.38	.25	3.2	2.8	2.1	1.8	2.2	.49	.58
6	.73	.57	.66	.33	.25	1.1	2.4	2.1	~~1.2~~ 1.1	1.9	.48	.56
7	.71	.57	.63	.36	.25	.90	2.3	2.0	~~1.1~~ 0.96	1.6	.48	.53
8	.68	.57	.63	.38	.24	.80	2.1	2.1	~~1.1~~ 0.97	1.4	.48	.51
9	.91	.57	.62	.31	.24	.70	1.9	2.0	~~1.6~~ 1.4	1.3	.54	.46
10	.94	.57	.59	.33	.24	.62	1.8	2.0	~~1.5~~ 1.4	1.2	.50	.44
11	.88	.57	.59	.32	.24	.60	1.8	1.9	~~1.3~~ 1.2	1.0	.46	.41
12	.79	.55	.58	.30	.24	.80	2.0	1.8	19	.89	.42	.39
13	.73	.51	.57	.28	.24	3.0	1.7	1.7	~~2.1~~ 1.9	~~.91~~ 0.96	.39	.37
14	.71	.88	.56	.23	.24	10	1.6	1.7	~~2.1~~ 1.8	~~12~~ 11	.37	.36
15	.71	1.0	.55	.27	.23	~~1.1~~ 2.5	1.4	1.5	~~1.1~~ 1.8	3.1	.36	.34
16	.63	1.1	.54	.31	.22	~~7.7~~ 11	1.3	1.5	~~1.1~~ 1.7	2.0	.36	.31
17	.61	5.7	.51	.34	.21	~~8.0~~ 11	~~1.3~~ 1.4	1.4	1.1 1.7	1.7	.33	.30
18	.61	2.8	.52	.33	.21	~~33~~ 25	~~1.2~~ 1.4	1.4	1.1 1.6	1.4	.31	.28
19	.59	2.1	.52	.34	.22	8.5 6.1	~~2.8~~ 2.7	1.8	1.1 1.5	1.2	~~1.7~~ 1.6	.27
20	.59	1.8	.52	.33	.22	~~5.3~~ 1.9	~~4.8~~ 4.9	1.7	.91 1.4	1.0	2.0	.26
21	.57	1.6	.48	.33	.22	~~3.1~~ 3.0	~~3.1~~ 3.3	1.6	.71 1.2	.94	3.0	.24
22	.57	1.5	.46	.32	.21	~~2.9~~ 3.0	~~3.1~~ 3.2	1.5	.68 1.2	.86	3.0	.22
23	.57	1.3	.46	.31	.21	5.2	~~2.7~~ 2.6	1.4	.82 0.81	.80	2.0	.21
24	.57	1.2	.45	.30	.20	~~5.8~~ 5.6	~~2.5~~ 2.6	1.7	.82 0.83	.76	1.9	.20
25	.59	1.1	.43	.29	.19	~~3.3~~ 3.1	3.2	1.7	.82	.72	1.8	.20
26	.57	1.0	.40	.29	.20	~~2.1~~ 2.2	3.0	1.8	.82 0.80	.68	1.6	.19
27	.59	.97	.39	.28	.21	2.0	2.5	1.1	9.8	.66	1.4	.18
28	.59	.91	.38	.28	.22	2.3	2.3	1.0	2.2	.64	1.2	.12
29	.59	.91	.36	.27	---	~~4.8~~ 4.9	2.2	1.0	2.2	.62	1.1	.08
30	.59	.82	.32	.27	---	2.5	2.1	.97	2.2	.60	.97	.08
31	.59	---	.31	.27	---	2.5	---	.94	---	.58	.88	---
TOTAL	21.47	34.02	16.90	9.00	6.41	~~131.28~~ 125.58	~~70.8~~ 71.1	54.91	~~65.65~~ 68.36	~~80.66~~ 79.11	~~36.64~~ 36.54	10.88
MEAN	.69	1.13	.55	.32	.23	~~4.23~~ 4.19	~~2.36~~ 2.37	1.77	~~2.19~~ 2.28	~~2.60~~ 2.55	1.18	.36
MAX	1.0	5.7	.82	.44	.26	~~33~~ 25	~~4.8~~ 4.9	4.2	19	31	7.0	.80
MIN	.57	.51	.31	.23	.19	.23	~~1.2~~ 1.3	.94	~~.68~~ 0.80	.58	.31	.08
CFSM	.52	.85	.41	.24	.17	~~3.18~~ 3.15	~~1.77~~ 1.78	1.33	~~1.65~~ 1.71	~~1.96~~ 1.92	.89	.27
IN.	.60	.95	.47	.27	.18	~~3.67~~ 3.51	~~1.98~~ 1.99	1.53	~~1.83~~ 1.91	~~2.25~~ 2.21	1.02	.30
AC-FT	43	67	34	19	13	~~260~~ 249	~~140~~ 141	109	~~130~~ 136	~~150~~ 157	~~73~~ 72	22

WTR YR 1979 TOTAL ~~539.42~~ 535.08 MEAN ~~1.48~~ 1.47 MAX ~~33~~ 31 MIN .08 CFSM 1.11 IN ~~15.08~~ 14.94 AC-FT ~~1070~~ 1062

CAL YR 1979 492.40 1.35 31 .06 1.02 13.76 977

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE IS 07-19-80

STATION NUMBER 05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA STREAM SOURCE AGENCY USGS
LATITUDE 421240 LONGITUDE 0923639 DRAINAGE AREA 1.33 DATUM 948.16 STATE 19 COUNTY 171

PROVISIONAL DATA

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.29	.30	.25	.26	.27	.37	.25	1.5			
2	.09	.27	.30	.23	.23	.27	.49	.24	12			
3	.14	.26	.32	.22	.24	.32	1.3	.24	3.6			
4	.09	.28	.34	.23	.25	.28	1.1	.22	2.0			
5	.09	.34	.35	.23	.27	.25	.76	.22	1.5			
6	.08	.36	.32	.13	.26	.24	.72	.21	1.3			
7	.08	.35	.41	.10	.26	.24	.64	.21	2.0			
8	.07	.33	.98	.15	.26	.26	.59	.21	1.1			
9	.06	.32	.30	.15	.26	4.2	.58	.21	.95			
10	.08	.27	.33	.15	.26	5.3	.55	.22	.67			
11	.08	.29	.86	.16	.26	1.8	.52	.21	.80			
12	.08	.30	.23	.16	.25	.49	.48	.20	.74			
13	.08	.27	.24	.13	.22	.30	.45	.20	.80			
14	.08	.27	.25	.33	.22	3.1	.44	.19	1.5			
15	.08	.27	.28	.55	.21	3.6	.40	.18	2.8			
16	.08	.26	.35	16	.20	2.1	.36	.19	---			
17	.07	.26	.55	2.5	.20	1.6	.36	.20	---			
18	.08	.27	.36	.86	.20	1.1	.35	.21	---			
19	.14	.25	.27	.59	.22	1.1	.35	.20	---			
20	.09	.25	.25	.53	.79	.95	.34	.19	---			
21	.09	.44	.27	.50	14	.74	.32	.19	---			
22	3.1	.58	.36	.46	4.7	.55	.30	.18	---			
23	1.0	.49	.35	.39	1.0	.42	.28	.19	---			
24	~~.60~~ 0.59	.44	.29	1.1	.51	.36	.28	.18	---			
25	.45	.44	.26	.47	.24	.30	.27	.16	---			
26	.39	.41	.26	.34	.45	.26	.26	.16	---			
27	.36	.37	.24	.30	.34	.26	.25	1.0	---			
28	.37	.35	.24	.35	.31	.28	.25	.52	---			
29	.37	.33	.25	.28	.27	.30	.27	12	---			
30	.33	.33	.26	.20	---	.30	.26	5.0	---			
31	.36	---	.25	.25	---	.27	---	2.0	---			
TOTAL	~~9.16~~ 9.15	9.94	10.62	28.34	27.14	31.81	13.89	25.78	---			
MEAN	.30	.33	.34	.91	.94	1.03	.46	.83	---			
MAX	3.1	.58	.98	16	14	5.3	1.3	12	---			
MIN	.06	.25	.23	.10	.20	.24	.25	.16	---			
CFSM	~~.23~~ 0.22	.25	.26	.68	.71	.77	.35	.62	---			
IN.	.26	.28	.30	.79	.76	.89	.39	.72	---			
AC-FT	18	20	21	56	54	63	26	51	---			

APPENDIX F

Precipitation and Weather Measurements

Precipitation, in millimeters, at Four Mile Creek and nearby NOAA Stations

Date	Gage 31	Gage 32	Gage 33	Gage 34	Gage 35	Gage 36	Watershed Average	Traer	Grundy° Center	Marshalltown°	Toledo°
1/1/79			0.3			0.0	0.2	1.3	3.8	3.1	5.6
1/11			0.3			3.3	1.8	4.3	2.0	4.6	5.1
1/13			8.9			9.4	9.2	17.3	7.6	9.7	10.7
1/18			8.1			6.9	7.5	12.2	8.1	9.9	7.9
1/20			0.5			0.8	0.7	0.0	1.0	T*	T
1/23			2.3			7.6	4.9	3.8	4.3	3.3	1.8
1/26			4.1			8.1	6.1	5.1	4.6	6.4	5.1
1/30			1.3			0.0	0.7	0.0	T	T	0.5
Jan. Total	31.1	31.1	25.8	31.1	31.1	36.1	31.1	44.0	31.4	37.0	36.7
2/2			0.0			0.0	0.0	0.0	1.5	T	0.0
2/7			3.8			4.6	4.2	4.1	2.8	4.1	2.8
2/20			3.0			3.6	3.3	3.8	1.5	6.1	4.6
2/23			0.0			0.0	0.0	4.1	1.5	T	2.5
Feb. Total	7.5	7.5	6.8	7.5	7.5	8.2	7.5	12.0	7.3	10.2	9.9
3/3			23.1			25.9	24.5	Ø	10.4	16.8	27.4
3/4			6.6			4.1	5.4		9.7	8.6	5.1
3/6			0.0			0.3	0.1		T	T	0.5
3/18	Opened		10.7			9.7	10.2		14.5	12.2	5.1
3/22	5.1		5.5		Opened	3.6	4.7		0.0	0.0	0.0
3/23	11.2		11.8		11.4	14.2	12.2		10.9	11.4	12.2
3/24	11.7		11.7		11.7	11.7	11.7		22.6	8.9	8.1
3/28	10.7		12.2		15.0	12.2	12.5		10.0	11.0	17.2
3/29	8.9		8.9		8.6	10.2	9.2		8.0	8.3	11.0
3/30	0.0		0.0		0.0	0.0	0.0		1.5	0.0	1.0
March Total	87.8	90.5	90.5	90.5	91.6	91.9	90.5		87.6	77.2	87.6

Date	Gage 31	Gage 32	Gage 33	Gage 34	Gage 35	Gage 36	Watershed Average	Traer	Grundy° Center	Marshalltown°	Toledo°
4/1/79	19.3		15.2		19.3	23.4	19.3		6.1	12.7	15.2
4/5	0.0		0.0		0.0	0.0	0.0		0.3	T	1.5
4/10	5.1		3.0		4.3	5.1	4.4		0.0	0.8	0.3
4/11	4.8	Opened	2.5	Opened	0.0	0.0	1.8		14.7	28.7	4.6
4/16	0.0	0.0	0.0	0.0	0.0	0.0	0.0		T	3.1	1.5
4/19	13.9	17.8	19.9	19.1	20.9	20.3	18.7		17.9	18.7	17.4
4/20	46.8	36.3	36.3	39.9	32.7	38.6	38.4		36.7	38.5	35.7
4/25	15.2	17.5	13.7	14.7	16.3	17.8	15.9		17.3	13.5	16.5
4/29	2.3	2.0	1.8	2.5	2.0	2.0	2.1		1.8	4.6	4.3
April Total	107.4	99.1	92.4	101.7	95.5	107.2	100.6		94.8	123.7	97.0
5/2	23.6	23.9	25.9	27.4	25.7	25.7	25.4		33.0	25.9	22.9
5/8	1.0	0.8	4.1	8.6	5.3	5.6	4.2		2.5	1.8	6.9
5/10	5.1	7.1	5.1	5.1	7.9	9.4	6.6		13.7	8.4	4.3
5/12	1.8	1.3	1.5	1.3	2.0	2.0	1.7		3.3	1.5	6.1
5/13	2.0	0.5	1.5	1.3	1.8	1.3	1.4		2.8	T	1.8
5/18	6.9	7.9	7.0	8.0	8.1	7.3	7.5		18.0	9.7	12.2
5/19	0.0	0.0	1.2	0.6	1.3	2.3	0.9		0.0	0.0	0.0
5/26	6.3	7.6	6.3	6.3	9.7	10.2	7.7		9.4	2.8	18.0
5/29	2.0	6.3	7.6	5.1	14.2	7.6	7.1		2.5	0.0	0.0
5/30	3.8	1.3	0.3	0.3	0.3	0.3	1.1		8.1	T	2.5
May Total	52.5	56.7	60.5	64.0	76.3	71.7	63.6		93.3	50.1	74.7
6/4	11.4	7.4	17.3	19.8	26.9	38.4	20.2		8.4	0.0	1.5
6/7	1.3	0.3	3.8	2.5	0.5	1.3	1.6		3.3	9.9	0.0
6/8	3.8	5.8	6.6	5.6	5.3	5.1	5.4		4.1	5.3	14.0
6/9	21.3	14.5	17.0	18.0	10.4	12.7	15.7		26.2	11.4	14.7
6/12	33.5	40.9	61.5	42.2	38.9	30.5	41.3		10.7	13.5	24.2
6/17	0.8	1.3	0.0	1.3	1.9	1.8	1.2		19.6	3.3	0.0
6/18	6.8	13.5	11.4	11.7	10.8	14.0	11.4		0.3	0.0	0.0
6/19	11.2	11.4	11.2	11.4	10.4	11.4	11.2		13.7	7.9	9.9
6/26	2.6	4.5	1.3	2.5	0.8	2.5	2.4		3.0	2.3	2.4
6/27	33.2	37.7	40.9	26.2	50.0	45.0	38.8		30.0	29.5	23.0
6/28	0.8	0.5	1.3	0.5	4.3	3.0	1.8		1.0	0.0	0.0
June Total	126.7	137.8	172.3	141.7	160.2	165.7	151.0		120.3	83.1	89.7

Date	Gage 31	Gage 32	Gage 33	Gage 34	Gage 35	Gage 36	Watershed Average	Traer	Grundy° Center	Marshalltown°	Toledo°
7/3/79	51.3	46.7	73.7	58.7	97.3	108.2	72.7		36.6	18.2	33.0
7/10	3.6	3.8	6.3	3.0	4.0	2.6	3.9		5.6	4.8	2.5
7/11	0.0	0.0	0.0	0.0	2.6	5.7	1.4		0.0	0.0	0.0
7/13	25.4	17.7	26.0	16.2	17.9	17.7	20.2		20.3	6.6	28.9
7/14	24.4	41.0	36.8	59.5	62.6	63.3	47.9		20.3	6.6	28.8
7/19	3.8	3.8	2.5	0.8	2.5	1.3	2.5		7.6	0.0	0.8
7/24	15.2	2.5	3.8	2.0	2.5	1.0	4.5		5.8	4.1	3.0
7/27	6.3	0.0	0.0	0.0	0.0	0.0	1.1		3.0	0.0	8.4
7/29	2.4	4.8	3.3	3.0	3.8	3.0	3.4		11.5	8.3	8.8
7/30	5.2	1.8	2.0	1.8	7.6	9.1	4.6		11.4	8.2	8.7
July Total	137.6	122.1	154.4	145.0	200.8	211.9	162.2		122.1	56.8	122.9
8/1	3.8	1.0	0.5	0.8	1.3	8.1	2.6		0.0	10.4	1.5
8/8	17.8	20.1	18.3	17.8	28.4	31.2	22.3		1.3	3.3	3.8
8/9	12.7	7.4	5.1	8.6	6.6	7.6	8.0		11.7	23.6	9.9
8/13	0.3	0.8	1.3	0.0	0.8	0.8	0.7		3.0	2.5	2.3
8/19	59.1	69.0	70.7	75.1	62.3	71.5	68.0		51.8	124.9	96.5
8/20	0.9	2.3	1.7	3.9	3.2	2.4	2.4		0.0	0.0	0.0
8/21	28.7	25.4	28.4	31.2	31.5	35.6	30.2		14.7	24.6	31.5
8/22	3.8	3.8	3.8	1.3	5.1	11.4	4.9		34.0	2.8	2.8
8/26	2.5	2.0	3.8	0.5	5.8	6.3	3.5		3.6	17.3	50.8
8/28	5.6	1.0	2.0	1.3	1.3	1.3	2.1		6.9	0.0	0.0
Aug. Total	135.2	132.8	135.6	140.5	146.3	176.2	144.7		127.0	209.4	199.1
9/5	8.6	10.2	10.4	9.4	9.4	9.7	9.6		10.7	7.1	10.1
9/24	18.5	8.4	18.3	9.4	7.4	10.2	12.0		5.5	8.3	6.1
Sept. Total	27.1	18.6	28.7	18.8	16.8	19.9	21.6		16.2	15.4	16.2

Date	Gage 31	Gage 32	Gage 33	Gage 34	Gage 35	Gage 36	Watershed Average	Traer	Grundy Center[o]	Marshalltown[o]	Toledo[o]
10/1/79	5.8	4.1	8.4	5.6	8.1	7.4	6.6		5.6	5.1	10.4
10/3	2.5	2.5	3.1	2.0	2.8	3.3	2.7		3.0	3.0	3.3
10/11	3.8	2.5	2.5	3.8	2.5	2.5	2.9		1.8	0.8	0.5
10/18	35.7	15.9	14.9	10.8	9.4	11.7	16.4		14.2	9.7	10.7
10/19	1.4	1.9	2.1	1.4	1.2	1.6	1.6				
10/21	12.4	12.1	9.4	4.7	20.0	20.0	13.1		50.0	58.9	59.9
10/22	67.6	71.0	64.6	71.5	74.5	68.6	69.6		37.6	22.1	13.0
10/23	1.3	0.5	0.8	0.5	0.6	0.5	0.7		0.0	0.0	0.0
10/31	17.0	12.7	11.2	11.2	11.4	11.4	12.5		15.5	21.3	7.4
Oct. Total	147.5	123.2	117.0	111.5	130.5	127.0	126.1		127.7	120.9	105.2
11/5	14.0	10.7	11.9	11.9	9.9	10.4	11.5		15.7	16.3	6.3
11/9	Closed	Closed	1.5	Closed	0.8	1.0	1.1		0.0	0.0	0.0
11/12			2.5		1.8	2.0	2.1		5.9	4.0	6.1
11/20			0.0		Closed	0.5	0.3		4.3	3.0	4.8
11/21			17.8			14.7	16.2		9.7	10.2	6.1
11/27			Closed			5.3	5.3		0.0	0.0	0.0
11/28						5.6	5.6		1.5	0.0	1.5
Nov. Total	44.6	41.3	44.6	42.5	39.9	39.5	42.1		37.1	33.5	24.8
12/22						8.4	8.4		13.6	6.7	9.8
12/23						8.4	8.4		13.6	6.8	9.8
Dec. Total	16.8	16.8	16.8	16.8	16.8	16.8	16.8		27.2	13.5	19.6
1979 Total	921.8	877.5	945.4	911.6	1013.3	1072.1	957.8		892.0	830.8	883.4

[o] Instruments at this NOAA station were read each day at 7:00 A.M. Daily precipitation data of the station have been adjusted to correspond to the day on which the precipitation actually occurred.

[*] T indicates an immeasurable trace of precipitation.

Ø Precipitation data from this station beyond Feb. 1979 are not yet available.

Weather Data at ISU Weather Station near Four Mile Creek

Date+	Max. Temp. F°	Min. Temp. F°	Solar Radiation Langleys	Total Wind Miles	Relative Humidity 6 P.M.	Evap. from pan Inches	Precip. Inches	Net Eva Inc
12/31/78 - 1/12/79			1535					
1/12-1/31			2550					
1/31-2/13			3414					
2/13-2/22			2095					
2/22-3/1			1926					
3/1/79			109					
3/2			180					
3/3			-					
3/4			143					
3/5			447					
3/6			203					
3/7			173					
3/8			220					
3/9			375					
3/10			420					
3/11			466					
3/12			523					
3/13			371					
3/14			393					
3/15			514					
3/16			500					
3/17			109					
3/18			177					
3/19			226					
3/20			111					
3/21			217					
3/22			138					
3/23			26					
3/24			235					
3/25			591					
3/26			356					
3/27			594					
3/28			144					
3/29			51					
3/30			108					
3/31			120					
4/1/79			90					
4/2			-					
4/3			-					
4/4			-					
4/5			1847				70	

+The instruments were read at approximately 6:00 P.M. each day.

te	Max. Temp. F°	Min. Temp. F°	Solar Radiation Langleys	Total Wind Miles	Relative Humidity 6 P.M.	Evap. from pan Inches	Precip. Inches	Net Evap. Inches
	42	14	616		53			
	54	29	571		70			
	50	31	83		99			
	40	28	477		76			
	42	25	198		70			
	43	33	64		100			
	64	44	417		82			
	55	33	420		59			
	54	32	603	152.4	69	.161		
	60	28	659	49.1	53	.115		
	64	38	522	34.2	48	.113		
	68	38	587	61.7	62	.255		
	67	45	580	145.5	53	.292		
	54	46	85	118.2	97	-1.867	>2.32	>.345*
	60	50	75	112.1	100	-.108		
	62	40	656	66.3	56	.119		
	72	44	699	62.1	87	.129		
	69	45	554	46.1	88	.245		
	62	50	87	60.5	99	.076		
	60	40	66	44.2	99	-.567	.70	.133
	56	36	685	91.5	55	.090		
	48	34	336	115.4	58	.142		
	55	31	563	61.6	49	.110		
	46	35	118	28.3	80	-.075	.08	.005
	49	32	413	204.2	64	.100		
79	62	32	367	82.0	73	.124		
	53	46	136	72.1	99	-.939	1.01	.071
	54	36	681	113.9	55	.124		
	59	33	727	44.4	60	.204		
	68	40	467	170.7	50	.244		
	78	51	576	188.2	52	.342		
	74	57	350	210.7	86	.199		
	80	60	410	113.1	65	-.069	.22	.151
	85	53	590	168.2	83	.352		
	83	46	433	87.9	90	-.059	.37	.311
	48	40	214	195.1	74	.133		
	62	33	669	19.2	56	.084	.08	.164
	69	43	622	106.0	48	.115		
	70	46	537	36.5	53	.090	.05	.140
	69	40	792	50.8	57	.289		
	72	43	473	113.8	48	.261		
	84	59	639	230.9	49	.281		
	78	62	233	147.9	88	.045	.10	.145
	70	49	749	84.0	56	-.077	.28	.203
	68	52	664	36.9	55	.191		

*Large amounts of precipitation may cause inaccurate evaporation measurements.

Date	Max. Temp. F°	Min. Temp. F°	Solar Radiation Langleys	Total Wind Miles	Relative Humidity 6 P.M.	Evap. from pan Inches	Precip. Inches	Net Evap t Inch
5/21	66	40	749	43.4	48	.218		
5/22	76	46	471	110.9	61	.216		
5/23	62	43	553	152.8	53	.178		
5/24	67	40	597	13.8	48	.205		
5/25	71	39	784	45.2	46	.308		
5/26	64	49	380	18.9	68	.037	.15	.18
5/27	74	45	722	39.8	46	-.120	.25	.13
5/28	80	51	731	62.9	46	.306		
5/29	83	58	602	81.0	60	-.127	.30	.17
5/30	84	61	694	112.2	53	.414	.01	.42
5/31	60	46	217	60.3	75	.066		
6/1/79	74	43	665	50.0	50	.273		
6/2	81	53	756	79.6	45	.308		
6/3	84	56	630	61.8	47	.301		
6/4	84	64	507	179.1	68	.275		
6/5	80	58	673	60.8	57	-.827	1.51	.68
6/6	85	62	739	98.4	54	.282		
6/7	84	66	407	175.7	73	.185	.05	.23
6/8	66	57	183	28.1	90	-.093	.20	.107
6/9	74	57	181	57.7	93	-.428	.50	.072
6/10	73	52	601	77.8	56	.136		
6/11	83	53	692	196.4	48	.269		
6/12	86	62	639	55.9	57	.266		
6/13	80	58	-	42.7	72	-.758	1.20	.442
6/14	84	63	649	115.2	61	.253		
6/15	86	68	639	119.3	60	.198		
6/16	85	60	390	191.2	60	.355		
6/17	72	58	418	87.8	66	.225		
6/18	64	56	160	67.6	92	-.441	.62	.179
6/19	86	59	530	120.4	62	.154		
6/20	80	62	666	203.6	60	-.081	.45	.369
6/21	86	60	723	132.2	47	.320		
6/22	78	53	724	63.3	57	.262		
6/23	62	50	184	62.5	78	.126		
6/24	76	48	686	13.7	48	.096		
6/25	80	51	764	49.6	50	.333		
6/26	84	58	687	94.2	53	.183		
6/27	83	60	462	100.6	61	-.904	1.87	.966
6/28	81	64	414	44.2	77	.029	.12	.149
6/29	78	61	458	104.6	56	.193		
6/30	84	58	731	45.5	47	.227		
7/1/79	89	60	653	16.9	46	.220		
7/2	89	62	693	37.7	48	.345		
7/3	85	68	573	100.5	77	-.979	3.81	2.831
7/4	76	64	504	94.0	50	-.126	.45	.324
7/5	65	58	596	18.7	47			
7/6	63	54	506	16.5	49	.386		
7/7	80	57	622	35.4	48	.218		

Date	Max. Temp. F°	Min. Temp. F°	Solar Radiation Langleys	Total Wind Miles	Relative Humidity 6 P.M.	Evap. from pan Inches	Precip. Inches	Net Evap. Inches
8	85	61	639	23.6	50	.218		
9	87	58	661	10.8	49	.192		
10	86	64	598	32.2	62	.259		
11	88	67	632	26.0	60	-.120	.33	.210
12	90	65	656	29.3	55	.257		
13	84	62	378	63.8	74	-.010	.20	.190
14	82	65	606	59.9	54	-2.273	2.99	.717
15	83	70	753	22.2	50	.402		
16	84	60	636	35.3	53	.206		
17	80	61	653	83.1	54	.301		
18	79	55	611	9.6	47	.177		
19	80	57	683	29.5	50	.217		
20	85	62	643	15.3	54	.177	.05	.255
21	86	63	703	50.0	56	.235		
22	88	67	649	12.2	58	.295		
23	86	68	554	167.0	59	.237		
24	84	69	441	7.7	96	.157		
25	84	68	235	7.4	59	.030	.04	.070
26	86	59	619	21.0	54	.158		
27	86	63	572	7.0	78	.190		
28	84	64	507	36.5	70	.143		
29	84	70	325	38.5	84	.092	.13	.222
30	85	64	-	77.3	64	-.264	.35	.086
31	78	63	282	17.0	67	.153		
1 9	81	62	521	16.7	57	-.073	.32	.247
2	83	62	565	64.6	73	.232		
3	89	63	513	45.1	63	.149		
4	92	69	568	81.0	56	.252		
5	91	75	616	78.8	63	.134		
6	93	73	605	51.1	56	.130		
7	93	75	680	25.2	63	.408		
8	92	70	428	131.4	73	.203		
9	91	65	530	7.3	62	-.882	1.23	.348
10	70	58	392	137.5	70	.106	.30	.406
11	75	51	-	30.0	51	.168		
12	74	52	598	62.6	58	.108		
13	68	62	162	85.6	77	.176		
14	67	51	453	64.1	56	.040	.03	.070
15	70	45	621	27.8	61	.131		
16	73	57	452	54.3	59	.195		
17	90	64	439	60.2	62	.100		
18	88	70	538	26.1	59	.157		
19	82	65	453	51.4	81	-1.279	1.73	.451
20	85	67	640	73.2	68	-.733	1.18	.447
21	85	66	203	49.8	86	.186		

Date	Max. Temp. F°	Min. Temp. F°	Solar Radiation Langleys	Total Wind Miles	Relative Humidity 6 P.M.	Evap. from pan Inches	Precip. Inches	Net Evap Inch
8/22	76	63	310	21.3	85	--	1.40	--
8/23	72	53	549	68.9	56	-.094	.45	.35
8/24	74	62	598	47.9	57	.179		
8/25	81	63	461	17.7	71	.135		
8/26	78	67	465	39.8	74	.190		
8/27	73	61	381	19.8	62	-.128	.25	.12
8/28	81	63	547	48.7	64	.219	.05	.26
8/29	81	60	616	58.0	57	.223		
8/30	86	65	571	28.4	57	.206		
8/31	85	69	555	63.1	82	.072		
9/1/79	84	64	352	70.9	72	.236		
9/2	84	75	589	71.1	56	.191		
9/3	84	69	527	59.8	57	.161		
9/4	86	69	571	67.3	65	.243		
9/5	86	63	546	54.6	64	.189		
9/6	86	63	589	57.9	49	-.113	.380	.26
9/7	76	46	588	30.5	53	.184		
9/8	74	50	508	47.1	55	.178		
9/9	84	56	554	123.0	57	.274		
9/10	87	68	517	130.1	52	.341		
9/11	86	74	545	56.9	53	.223		
9/12	86	68	353	26.3	84	.103		
9/13	67	51	391	42.8	50	.107		
9/14	65	44	386	33.8	50	.138		
9/15	72	42	568	41.2	48	.109		
9/16	76	50	547	68.8	47	.166		
9/17	78	50	545	90.5	47	.319		
9/18	78	50	521	29.3	47	.183		
9/19	75	44	524	78.5	49	.172		
9/20	80	51	-	78.4	49	.182		
9/21	78	42	500	69.6	47	.227		
9/22	70	38	530	20.7	47	.134		
9/23	64	43	436	71.6	56	.208		
9/24	74	58	246	50.0	95	-.384	.40	.016
9/25	--	--	492	--	--	--		
9/26°	82	50	484	80.6	65	.432		
9/27	80	57	423	98.0	53	.203		
9/28	84	69	400	44.8	49	.140		
9/29	81	61	314	26.3	56	.125		
9/30	79	44	453	8.1	45	.118		

°Wind and evaporation reading on this date include 9/25 also.

Date	Max. Temp. F°	Min. Temp. F°	Solar Radiation Langleys	Total Wind Miles	Relative Humidity 6 P.M.	Evap. from pan Inches	Precip. Inches	Net Evap. Inches
10/1/79	65	52	148	61.0	67	-.153	.29	.137
10/2	67	56	458	47.2	47	.075		
10/3	69	43	427	78.6	73	.131	.13	.261
10/4	67	37	232	78.5	71	.096		
10/5	62	32	325	62.4	48	.074		
10/6	70	39	447	141.4	69	.159		
10/7	71	34	399	53.4	46	.118		
10/8	70	45	413	50.8	53	.136		
10/9	56	36	437	71.3	48	.184		
10/10	56	32	155	13.3	50	.110		
10/11	62	43	402	96.3	51	.087		
10/12	60	32	392	167.7	51	.067	.10	.167
10/13	51	26	426	74.3	50	.070		
10/14	63	26	388	74.7	47	.097		
10/15	60	50	290	124.0	47	.187		
10/16	73	50	273	8.7	68	.103		
10/17	73	48	333	16.8	51	.076		
10/18	73	50	98	51.9	85	.086		
10/19	70	57	248	116.4	77	-.443	.52	.077
10/20	79	63	207	181.8	61	.117		
10/21	80	59	173	117.7	71	.100		
10/22	36	32	62	137.4	98	-2.827	3.34	.513*
10/23	39	33	85	180.5	76	.029	.17	.199
10/24	54	28	315	47.2	54	.015		
10/25	52	33	364	80.8	63	.063		
10/26	51	32	288	47.3	67	.091		
10/27	63	43	302	159.3	57	.114		
10/28	68	38	333	156.8	54	.119		
10/29	68	42	x	12.9	54	.130		
10/30	68	48		220.4	68	.166		
10/31	57	49		99.4	75	-.290	.45	.160
11/1/79	38	35		257.0	69	.048		
11/2	51	26		139.8	65	.136		
11/3	44	26		16.4	65	.098		
11/4	58	30		167.3	54	.107		
11/5	45	39		29.7	100	-.340	.41	.070
11/6	38	30		104.2	73	-.051		
11/7	37	25		96.5	81	.035		
11/8	38	23		82.8	72	.099		
11/9	32	26		3.40	97			
11/10	32	12		65.0	69			
11/11	44	24		142.3	64			
11/12	36	30		89.2	95			
11/13	38	14		30.3	84			
11/14	42	33		20.5	92			
11/15	52	32		129.0	89			
11/16	Weather Station Closed for season							

Solar recorder damaged

Large amounts of precipitation may cause inaccurate evaporation measurements.

TABLE B1- 1. FOUR MILE CREEK WATERSHED PRECIPITATION DATA FOR 1979 GAGE 31

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	3/22/79			NO DATA	0.0	0.0	0.0
31	3/22/79			NO DATA	5.1	5.1	5.1
31	3/23/79			NO DATA	0.0	0.0	5.1
31	3/23/79			NO DATA	5.1	5.1	10.2
31	3/23/79			NO DATA	0.0	5.1	10.2
31	3/23/79			NO DATA	6.1	11.2	16.3
31	3/24/79			SNOW	0.0	0.0	16.3
31	3/24/79			SNOW	11.7	11.7	27.9
31	3/28/79			NO DATA	0.0	0.0	27.9
31	3/28/79			NO DATA	10.7	10.7	38.6
31	3/29/79			NO DATA	0.0	0.0	38.6
31	3/29/79			NO DATA	8.9	8.9	47.5
31	4/ 1/79			SNOW	0.0	0.0	47.5
31	4/ 1/79			SNOW	19.3	19.3	66.8
31	4/10/79			NO DATA	0.0	0.0	66.8
31	4/10/79			NO DATA	5.1	5.1	71.9
31	4/11/79			NO DATA	0.0	0.0	71.9
31	4/11/79			NO DATA	4.8	4.8	76.7
31	4/19/79	6	14	0.0	0.0	0.0	76.7
31	4/19/79	6	34	5.5	1.8	1.8	78.5
31	4/19/79	6	54	2.4	2.6	2.6	79.3
31	4/19/79	7	54	0.3	2.9	2.9	79.6
31	4/19/79	8	11	0.9	3.1	3.1	79.8
31	4/19/79	8	23	2.6	3.7	3.7	80.4
31	4/19/79	8	38	1.0	3.9	3.9	80.6
31	4/19/79	9	4	1.8	4.7	4.7	81.4
31	4/19/79	9	34	1.0	5.2	5.2	81.9
31	4/19/79	9	44	3.1	5.8	5.8	82.5
31	4/19/79	10	39	0.6	6.3	6.3	83.0
31	4/19/79	10	50	1.4	6.5	6.5	83.2
31	4/19/79	10	52	23.6	7.3	7.3	84.0
31	4/19/79	11	2	6.3	8.4	8.4	85.1
31	4/19/79	12	0	0.3	8.6	8.6	85.3
31	4/19/79	12	20	1.6	9.2	9.2	85.9
31	4/19/79	12	31	1.4	9.4	9.4	86.1
31	4/19/79	12	42	5.7	10.5	10.5	87.2
31	4/19/79	12	44	39.3	11.8	11.8	88.5
31	4/19/79	12	49	9.4	12.6	12.6	89.3
31	4/19/79	12	59	3.1	13.1	13.1	89.8
31	4/19/79	13	20	0.7	13.3	13.3	90.1
31	4/19/79	13	24	3.9	13.6	13.6	90.3
31	4/19/79	16	0	0.1	13.9	13.9	90.6
GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	4/20/79	3	21	0.5	14.4	0.5	91.1
31	4/20/79	3	29	2.0	14.7	0.8	91.4
31	4/20/79	3	34	25.1	16.7	2.9	93.5
31	4/20/79	3	37	5.2	17.0	3.1	93.7
31	4/20/79	3	46	1.7	17.3	3.4	94.0
31	4/20/79	3	48	62.8	19.4	5.5	96.1
31	4/20/79	3	54	2.6	19.6	5.8	96.3
31	4/20/79	4	2	2.0	19.9	6.0	96.6
31	4/20/79	4	5	47.1	22.2	8.4	98.9
31	4/20/79	4	12	9.0	23.3	9.4	100.0
31	4/20/79	4	14	7.8	23.5	9.7	100.3
31	4/20/79	4	29	1.0	23.8	9.9	100.5
31	4/20/79	4	31	86.3	26.7	12.8	103.4
31	4/20/79	4	33	70.7	29.0	15.2	105.8
31	4/20/79	4	39	5.2	29.6	15.7	106.3
31	4/20/79	5	37	0.3	29.8	16.0	106.5
31	4/20/79	5	41	15.7	30.9	17.0	107.6
31	4/20/79	5	59	1.7	31.4	17.5	108.1
31	4/20/79	6	4	6.3	31.9	18.1	108.6
31	4/20/79	6	9	9.4	32.7	18.8	109.4
31	4/20/79	6	16	2.2	33.0	19.1	109.7
31	4/20/79	6	23	6.7	33.8	19.9	110.5
31	4/20/79	6	26	15.7	34.5	20.7	111.2
31	4/20/79	6	44	1.7	35.1	21.2	111.8
31	4/20/79	7	32	0.3	35.3	21.5	112.0
31	4/20/79	7	34	47.1	36.9	23.0	113.6
31	4/20/79	7	37	47.1	39.2	25.4	116.0
31	4/20/79	7	42	3.1	39.5	25.6	116.2
31	4/20/79	8	40	0.3	39.8	25.9	116.5
31	4/20/79	8	46	5.2	40.3	26.4	117.0
31	4/20/79	8	49	41.9	42.4	28.5	119.1
31	4/20/79	8	54	12.6	43.4	29.6	120.1
31	4/20/79	9	1	6.7	44.2	30.4	120.9
31	4/20/79	9	8	2.2	44.5	30.6	121.2
31	4/20/79	9	26	4.4	45.8	31.9	122.5
31	4/20/79	9	45	2.5	46.6	32.7	123.3
31	4/20/79	10	0	5.2	47.9	34.0	124.6
31	4/20/79	10	47	1.7	49.2	35.3	125.9
31	4/20/79	10	50	20.9	50.2	36.4	126.9
31	4/20/79	10	53	15.7	51.0	37.2	127.7
31	4/20/79	11	8	2.1	51.5	37.7	128.3
31	4/20/79	11	34	1.2	52.1	38.2	128.8
31	4/20/79	12	22	0.3	52.3	38.5	129.0
31	4/20/79	12	33	10.0	54.2	40.3	130.9
31	4/20/79	12	42	14.0	56.3	42.4	133.0
31	4/20/79	13	13	7.1	59.9	46.1	136.6
31	4/20/79	13	34	2.2	60.7	46.8	137.4
31	4/25/79	9	44	0.0	0.0	0.0	137.4
31	4/25/79	9	47	21.0	1.1	1.1	138.5
31	4/25/79	10	21	[illegible]	[illegible]	[illegible]	[illegible]
GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM

GAGE	DATE	HOUR	MIN	PRECIP MM/HR	ACCUMULATED PRECIPITATION MM	MM	MM
31	4/25/79	11	5	4.2	7.6	7.6	145.0
31	4/25/79	12	5	0.8	8.4	8.4	145.8
31	4/25/79	14	45	0.1	8.7	8.7	146.1
31	4/25/79	15	1	2.0	9.2	9.2	146.6
31	4/25/79	15	14	2.4	9.7	9.7	147.1
31	4/25/79	15	25	7.2	11.0	11.0	148.4
31	4/25/79	15	40	2.1	11.6	11.6	149.0
31	4/25/79	16	28	1.3	12.6	12.6	150.0
31	4/25/79	16	33	9.5	13.4	13.4	150.8
31	4/25/79	16	40	2.3	13.7	13.7	151.1
31	4/25/79	17	0	4.7	15.2	15.2	152.7
31	4/29/79			NO DATA	0.0	0.0	152.7
31	4/29/79			NO DATA	2.3	2.3	154.9
31	5/ 2/79	8	15	0.0	0.0	0.0	154.9
31	5/ 2/79	8	50	1.3	0.8	0.8	155.7
31	5/ 2/79	9	24	0.5	1.0	1.0	156.0
31	5/ 2/79	9	51	1.7	1.8	1.8	156.8
31	5/ 2/79	10	0	3.5	2.4	2.4	157.3
31	5/ 2/79	10	13	3.6	3.1	3.1	158.1
31	5/ 2/79	10	20	4.5	3.7	3.7	158.6
31	5/ 2/79	10	45	0.6	3.9	3.9	158.9
31	5/ 2/79	11	30	1.7	5.2	5.2	160.2
31	5/ 2/79	11	45	3.1	6.0	6.0	161.0
31	5/ 2/79	12	22	3.4	8.1	8.1	163.1
31	5/ 2/79	12	40	5.2	9.7	9.7	164.6
31	5/ 2/79	13	10	3.1	11.3	11.3	166.2
31	5/ 2/79	13	24	2.2	11.8	11.8	166.7
31	5/ 2/79	14	10	5.1	15.7	15.7	170.7
31	5/ 2/79	14	30	2.4	16.5	16.5	171.5
31	5/ 2/79	14	50	3.1	17.6	17.6	172.5
31	5/ 2/79	15	23	1.9	18.6	18.6	173.6
31	5/ 2/79	15	44	0.7	18.9	18.9	173.8
31	5/ 2/79	16	18	2.3	20.2	20.2	175.1
31	5/ 2/79	17	0	1.1	21.0	21.0	175.9
31	5/ 2/79	17	30	1.6	21.8	21.8	176.7
31	5/ 2/79	18	0	1.0	22.3	22.3	177.2
31	5/ 2/79	18	20	0.8	22.6	22.6	177.5
31	5/ 2/79	19	30	0.9	23.6	23.6	178.6
31	5/ 8/79			NO DATA	0.0	0.0	178.6
31	5/ 8/79			NO DATA	1.0	1.0	179.6
31	5/10/79			NO DATA	0.0	0.0	179.6
31	5/10/79			NO DATA	5.1	5.1	184.7
31	5/12/79			NO DATA	0.0	0.0	184.7
31	5/12/79			NO DATA	1.8	1.8	186.4
31	5/13/79			NO DATA	0.0	0.0	186.4
31	5/13/79			NO DATA	2.0	2.0	188.5

GAGE	DATE	HOUR	MIN	PRECIP MM/HR	ACCUMULATED PRECIPITATION MM	MM	MM
31	5/18/79	18	0	0.0	0.0	0.0	188.5
31	5/18/79	18	31	1.2	0.6	0.6	189.1
31	5/18/79	18	34	6.0	0.9	0.9	189.4
31	5/18/79	18	44	3.6	1.5	1.5	190.0
31	5/18/79	19	11	2.0	2.4	2.4	190.9
31	5/18/79	20	57	0.2	2.7	2.7	191.1
31	5/18/79	21	32	0.5	3.0	3.0	191.4
31	5/18/79	21	39	2.6	3.3	3.3	191.7
31	5/18/79	22	17	0.9	3.9	3.9	192.3
31	5/18/79	22	41	1.5	4.5	4.5	192.9
31	5/18/79	23	31	0.4	4.8	4.8	193.2
31	5/18/79	23	37	11.9	6.0	6.0	194.4
31	5/18/79	23	47	5.4	6.9	6.9	195.3
31	5/26/79	7	0	0.0	0.0	0.0	195.3
31	5/26/79	9	7	0.3	0.7	0.7	196.1
31	5/26/79	9	55	0.6	1.2	1.2	196.5
31	5/26/79	10	0	2.9	1.5	1.5	196.8
31	5/26/79	17	48	0.0	1.5	1.5	196.8
31	5/26/79	17	52	25.6	3.2	3.2	198.5
31	5/26/79	18	5	9.0	5.1	5.1	200.5
31	5/26/79	18	20	4.9	6.3	6.3	201.7
31	5/29/79			NO DATA	0.0	0.0	201.7
31	5/29/79			NO DATA	2.0	2.0	203.7
31	5/30/79			NO DATA	0.0	0.0	203.7
31	5/30/79			NO DATA	3.8	3.8	207.5
31	6/ 4/79	10	25	0.0	0.0	0.0	207.5
31	6/ 4/79	11	25	1.3	1.3	1.3	208.8
31	6/ 4/79	18	42	0.0	1.3	1.3	208.8
31	6/ 4/79	18	43	76.2	2.5	2.5	210.1
31	6/ 4/79	18	44	152.4	5.1	5.1	212.6
31	6/ 4/79	18	45	30.5	5.6	5.6	213.1
31	6/ 4/79	18	46	45.7	6.3	6.3	213.9
31	6/ 4/79	18	50	64.8	10.7	10.7	218.2
31	6/ 4/79	19	0	4.6	11.4	11.4	218.9
31	6/ 7/79			NO DATA	0.0	0.0	218.9
31	6/ 7/79			NO DATA	1.3	1.3	220.2
31	6/ 8/79			NO DATA	0.0	0.0	220.2
31	6/ 8/79			NO DATA	3.8	3.8	224.0
31	6/ 9/79	6	51	0.0	0.0	0.0	224.0
31	6/ 9/79	6	54	17.2	0.9	0.9	224.9
31	6/ 9/79	8	5	0.0	0.9	0.9	224.9
31	6/ 9/79	8	7	17.2	1.4	1.4	225.5
31	6/ 9/79	8	10	63.1	4.6	4.6	228.6
31	6/ 9/79	8	14	12.9	5.4	5.4	229.5
31	6/ 9/79	8	38	0.7	5.7	5.7	229.8

TABLE B1- 1. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	6/ 9/79	9	5	1.3	6.3	6.3	230.3
31	6/ 9/79	9	13	12.9	8.0	8.0	232.0
31	6/ 9/79	10	15	0.6	8.6	8.6	232.6
31	6/ 9/79	10	40	3.4	10.0	10.0	234.1
31	6/ 9/79	10	48	4.3	10.6	10.6	234.6
31	6/ 9/79	11	1	6.6	12.0	12.0	236.1
31	6/ 9/79	11	9	21.5	14.9	14.9	238.9
31	6/ 9/79	11	12	34.4	16.6	16.6	240.6
31	6/ 9/79	11	24	4.3	17.5	17.5	241.5
31	6/ 9/79	11	28	21.5	18.9	18.9	242.9
31	6/ 9/79	12	8	1.7	20.1	20.1	244.1
31	6/ 9/79			NO DATA	0.0	20.1	244.1
31	6/ 9/79			NO DATA	1.3	21.3	245.4
31	6/12/79	17	33	0.0	0.0	0.0	245.4
31	6/12/79	17	40	8.9	1.0	1.0	246.4
31	6/12/79	17	51	1.4	1.3	1.3	246.7
31	6/12/79	17	58	15.6	3.1	3.1	248.5
31	6/12/79	18	0	187.1	9.4	9.4	254.7
31	6/12/79	18	2	117.0	13.3	13.3	258.6
31	6/12/79	18	8	111.8	24.4	24.4	269.8
31	6/12/79	18	14	23.4	26.8	26.8	272.1
31	6/12/79	18	23	10.4	28.3	28.3	273.7
31	6/12/79	18	40	1.8	28.8	28.8	274.2
31	6/12/79	19	14	0.9	29.4	29.4	274.7
31	6/12/79	20	40	0.5	30.1	30.1	275.5
31	6/12/79	21	0	1.6	30.7	30.7	276.0
31	6/12/79	21	20	1.6	31.2	31.2	276.5
31	6/12/79	22	18	0.5	31.7	31.7	277.1
31	6/12/79	22	23	12.5	32.7	32.7	278.1
31	6/12/79	22	35	3.9	33.5	33.5	278.9
31	6/17/79	20	35	0.0	0.0	0.0	278.9
31	6/17/79	21	40	0.8	0.8	0.8	279.7
31	6/18/79	2	28	0.1	1.1	0.3	280.0
31	6/18/79	2	32	4.1	1.4	0.5	280.2
31	6/18/79	6	0	0.1	1.6	0.8	280.5
31	6/18/79	6	13	3.8	2.4	1.6	281.3
31	6/18/79	6	24	7.4	3.8	3.0	282.7
31	6/18/79	6	30	16.3	5.4	4.6	284.3
31	6/18/79	6	33	0.0	5.4	4.6	284.3
31	6/18/79	6	37	16.3	6.5	5.7	285.4
31	6/18/79	7	10	2.0	7.6	6.8	286.5
31	6/19/79	21	42	0.0	0.0	0.0	286.5
31	6/19/79	21	48	2.7	0.3	0.3	286.8
31	6/19/79	21	50	31.9	1.3	1.3	287.8
31	6/19/79	21	54	8.0	1.9	1.9	288.4
31	6/19/79	21	58	35.9	4.3	4.3	290.8
31	6/19/79	22	3	6.4	4.8	4.8	291.3
31	6/19/79	22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	6/19/79	22	10	10.6	9.3	9.3	295.8
31	6/19/79	22	20	1.6	9.6	9.6	296.1
31	6/19/79	22	24	4.0	9.8	9.8	296.3
31	6/19/79	22	29	3.2	10.1	10.1	296.6
31	6/19/79	22	32	16.0	10.9	10.9	297.4
31	6/19/79	22	52	0.8	11.2	11.2	297.7
31	6/26/79	23	52	0.0	0.0	0.0	297.7
31	6/26/79	23	59	22.1	2.6	2.6	300.3
31	6/27/79	0	1	115.9	6.4	3.9	304.1
31	6/27/79	0	7	85.0	14.9	12.4	312.6
31	6/27/79	0	14	59.6	21.9	19.3	319.6
31	6/27/79	0	20	18.0	23.7	21.1	321.4
31	6/27/79	0	24	50.2	27.1	24.5	324.7
31	6/27/79	0	29	21.6	28.9	26.3	326.5
31	6/27/79	0	35	46.4	33.5	30.9	331.2
31	6/27/79	0	40	9.3	34.3	31.7	331.9
31	6/27/79	0	49	1.7	34.5	31.9	332.2
31	6/27/79	1	0	4.2	35.3	32.7	333.0
31	6/27/79	1	17	1.8	35.8	33.2	333.5
31	6/28/79			NO DATA	0.0	0.0	333.5
31	6/28/79			NO DATA	0.8	0.8	334.3
31	7/ 3/79	7	31	0.0	0.0	0.0	334.3
31	7/ 3/79	7	32	77.0	1.3	1.3	335.5
31	7/ 3/79	7	38	25.7	3.9	3.9	338.1
31	7/ 3/79	7	45	77.0	12.8	12.8	347.1
31	7/ 3/79	7	51	64.2	19.3	19.3	353.5
31	7/ 3/79	7	57	25.7	21.8	21.8	356.1
31	7/ 3/79	8	2	15.4	23.1	23.1	357.4
31	7/ 3/79	8	26	1.3	23.6	23.6	357.9
31	7/ 3/79	8	32	5.1	24.1	24.1	358.4
31	7/ 3/79	8	38	15.4	25.7	25.7	359.9
31	7/ 3/79	8	39	77.0	27.0	27.0	361.2
31	7/ 3/79	8	44	15.4	28.3	28.3	362.5
31	7/ 3/79	8	48	3.9	28.5	28.5	362.8
31	7/ 3/79	8	53	9.2	29.3	29.3	363.5
31	7/ 3/79	8	58	3.1	29.5	29.5	363.8
31	7/ 3/79	9	3	12.3	30.6	30.6	364.8
31	7/ 3/79	9	9	2.6	30.8	30.8	365.1
31	7/ 3/79	9	15	20.5	32.9	32.9	367.1
31	7/ 3/79	9	19	46.2	36.0	36.0	370.2
31	7/ 3/79	9	25	38.5	39.8	39.8	374.1
31	7/ 3/79	9	31	51.4	44.9	44.9	379.2
31	7/ 3/79	9	35	7.7	45.5	45.5	379.7
31	7/ 3/79	10	10	1.3	46.2	46.2	380.5
31	7/ 3/79			NO DATA	0.0	46.2	380.5
31	7/ 3/79			NO DATA	5.1	51.3	385.6

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
31	7/10/79			NO DATA	3.6	3.6	389.1
31	7/13/79	9	36	0.0	0.0	0.0	389.1
31	7/13/79	9	40	59.0	3.9	3.9	393.0
31	7/13/79	9	42	78.6	6.6	6.6	395.7
31	7/13/79	9	48	15.7	8.1	8.1	397.2
31	7/13/79	9	57	29.7	12.6	12.6	401.7
31	7/13/79	10	4	27.0	15.7	15.7	404.8
31	7/13/79	10	12	13.8	17.6	17.6	406.7
31	7/13/79	10	16	7.9	18.1	18.1	407.2
31	7/13/79	19	50	0.0	18.3	18.3	407.5
31	7/13/79	19	53	52.4	21.0	21.0	410.1
31	7/13/79	20	4	17.2	24.1	24.1	413.2
31	7/13/79	22	55	0.1	24.4	24.4	413.5
31	7/13/79	23	1	7.9	25.2	25.2	414.3
31	7/13/79	23	43	0.4	25.4	25.4	414.5
31	7/14/79	0	1	0.9	25.7	0.3	414.8
31	7/14/79	0	38	0.4	25.9	0.5	415.1
31	7/14/79	0	44	41.9	30.1	4.7	419.2
31	7/14/79	0	52	19.7	32.8	7.3	421.9
31	7/14/79	0	53	94.3	34.3	8.9	423.4
31	7/14/79	0	58	6.3	34.8	9.4	424.0
31	7/14/79	1	2	27.5	36.7	11.3	425.8
31	7/14/79	1	5	104.8	41.9	16.5	431.0
31	7/14/79	1	10	9.4	42.7	17.3	431.8
31	7/14/79	1	20	3.1	43.2	17.8	432.3
31	7/14/79	1	26	18.3	45.1	19.7	434.2
31	7/14/79	1	35	5.2	45.9	20.4	435.0
31	7/14/79	1	42	15.7	47.7	22.3	436.8
31	7/14/79	2	36	0.9	48.5	23.1	437.6
31	7/14/79	2	44	5.9	49.3	23.8	438.4
31	7/14/79	3	20	0.4	49.5	24.1	438.6
31	7/14/79	4	15	0.3	49.8	24.4	438.9
31	7/19/79			NO DATA	0.0	0.0	438.9
31	7/19/79			NO DATA	3.8	3.8	442.7
31	7/24/79	5	18	0.0	0.0	0.0	442.7
31	7/24/79	5	21	5.1	0.3	0.3	443.0
31	7/24/79	5	24	55.9	3.0	3.0	445.8
31	7/24/79	5	30	55.9	8.6	8.6	451.3
31	7/24/79	8	40	0.1	8.9	8.9	451.6
31	7/24/79	8	52	24.1	13.7	13.7	456.4
31	7/24/79	8	59	4.4	14.2	14.2	456.9
31	7/24/79	9	32	0.5	14.5	14.5	457.2
31	7/24/79	9	37	9.1	15.2	15.2	457.9
31	7/27/79			NO DATA	0.0	0.0	457.9
31	7/27/79			NO DATA	6.3	6.3	464.3
31	7/29/79	18	10	0.0	0.0	0.0	464.3
31	7/29/79	18	24	3.9	0.9	0.9	465.2
31	7/29/79	20	4	0.2	1.2	1.2	465.5
31	7/29/79	20	9	3.7	1.5	1.5	465.8
31	7/29/79	20	39	1.8	2.4	2.4	466.7
31	7/30/79	1	36	0.1	3.0	0.6	467.3
31	7/30/79	1	44	2.3	3.4	0.9	467.6
31	7/30/79	2	20	0.5	3.7	1.2	467.9
31	7/30/79	2	24	27.4	5.5	3.0	469.8
31	7/30/79	3	59	0.2	5.8	3.4	470.1
31	7/30/79	4	4	11.0	6.7	4.3	471.0
31	7/30/79	4	24	0.0	6.7	4.3	471.0
31	7/30/79	4	28	9.1	7.3	4.9	471.6
31	7/30/79	4	34	3.0	7.6	5.2	471.9
31	8/ 1/79			NO DATA	0.0	0.0	471.9
31	8/ 1/79			NO DATA	3.8	3.8	475.7
31	8/ 8/79	19	57	0.0	0.0	0.0	475.7
31	8/ 8/79	20	7	22.9	3.8	3.8	479.5
31	8/ 8/79	20	14	54.4	10.2	10.2	485.9
31	8/ 8/79	20	16	129.5	14.5	14.5	490.2
31	8/ 8/79	20	44	1.6	15.2	15.2	491.0
31	8/ 8/79	21	25	0.4	15.5	15.5	491.2
31	8/ 8/79	21	29	26.7	17.3	17.3	493.0
31	8/ 8/79	21	40	2.8	17.8	17.8	493.5
31	8/ 9/79	20	6	0.0	0.0	0.0	493.5
31	8/ 9/79	20	10	24.8	1.7	1.7	495.2
31	8/ 9/79	20	12	99.4	5.0	5.0	498.5
31	8/ 9/79	20	18	44.2	9.4	9.4	502.9
31	8/ 9/79	20	22	37.3	11.9	11.9	505.4
31	8/ 9/79	20	30	6.2	12.7	12.7	506.2
31	8/13/79			NO DATA	0.0	0.0	506.2
31	8/13/79			NO DATA	0.3	0.3	506.5
31	8/19/79	2	24	0.0	0.0	0.0	506.5
31	8/19/79	2	25	34.4	0.6	0.6	507.0
31	8/19/79	2	28	23.0	1.7	1.7	508.2
31	8/19/79	2	33	27.6	4.0	4.0	510.5
31	8/19/79	2	36	11.5	4.6	4.6	511.0
31	8/19/79	2	46	6.9	5.7	5.7	512.2
31	8/19/79	2	53	2.5	6.0	6.0	512.5
31	8/19/79	3	3	5.2	6.9	6.9	513.3
31	8/19/79	3	13	5.2	7.7	7.7	514.2
31	8/19/79	3	31	3.8	8.9	8.9	515.3
31	8/19/79	3	37	5.7	9.5	9.5	515.9
31	8/19/79	3	53	5.4	10.9	10.9	517.4
31	8/19/79	4	3	3.4	11.5	11.5	517.9
31	8/19/79	5	13	0.5	12.1	12.1	518.5
31	8/19/79	5	17	60.3	16.1	16.1	522.5
31	8/19/79	5	20	28.7	17.5	17.5	524.0
31	8/19/79	5	32	4.3	18.4	18.4	524.8

TABLE B1- 1. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	8/19/79	5	40	90.4	30.4	30.4	536.9
31	8/19/79	5	50	8.6	31.9	31.9	538.3
31	8/19/79	5	52	25.8	32.7	32.7	539.2
31	8/19/79	5	54	60.3	34.7	34.7	541.2
31	8/19/79	5	59	20.7	36.4	36.4	542.9
31	8/19/79	6	11	12.9	39.0	39.0	545.5
31	8/19/79	6	18	12.3	40.5	40.5	546.9
31	8/19/79	6	23	6.9	41.0	41.0	547.5
31	8/19/79	6	28	13.8	42.2	42.2	548.6
31	8/19/79	6	44	2.2	42.8	42.8	549.2
31	8/19/79	6	52	8.6	43.9	43.9	550.4
31	8/19/79	7	3	1.6	44.2	44.2	550.6
31	8/19/79	20	22	0.0	0.0	44.2	550.6
31	8/19/79	20	43	4.9	1.7	45.9	552.4
31	8/19/79	21	1	5.7	3.4	47.6	554.1
31	8/19/79	21	23	1.6	4.0	48.2	554.7
31	8/19/79	21	34	1.6	4.3	48.5	554.9
31	8/19/79	21	39	10.3	5.2	49.3	555.8
31	8/19/79	21	53	3.7	6.0	50.2	556.7
31	8/19/79	22	8	1.1	6.3	50.5	556.9
31	8/19/79	22	15	4.9	6.9	51.1	557.5
31	8/19/79	22	19	47.2	10.0	54.2	560.7
31	8/19/79	22	26	7.4	10.9	55.1	561.5
31	8/19/79	22	33	4.9	11.5	55.6	562.1
31	8/19/79	22	43	5.2	12.3	56.5	563.0
31	8/19/79	22	48	13.7	13.5	57.7	564.1
31	8/19/79	22	57	5.7	14.3	58.5	565.0
31	8/19/79	23	17	1.7	14.9	59.1	565.5
31	8/20/79	0	34	0.0	14.9	0.0	565.5
31	8/20/79	1	4	1.7	15.7	0.9	566.4
31	8/21/79	18	26	0.0	0.0	0.0	566.4
31	8/21/79	18	38	74.6	14.9	14.9	581.3
31	8/21/79	18	40	33.8	16.0	16.0	582.4
31	8/21/79	18	47	43.4	21.1	21.1	587.5
31	8/21/79	18	50	11.3	21.7	21.7	588.1
31	8/21/79	18	58	14.8	23.6	23.6	590.0
31	8/21/79	19	8	23.6	27.6	27.6	594.0
31	8/21/79	19	11	11.3	28.1	28.1	594.5
31	8/21/79	20	10	0.6	28.7	28.7	595.1
31	8/22/79			NO DATA	0.0	0.0	595.1
31	8/22/79			NO DATA	3.8	3.8	598.9
31	8/26/79			NO DATA	0.0	0.0	598.9
31	8/26/79			NO DATA	2.5	2.5	601.4
31	8/28/79	20	57	0.0	0.0	0.0	601.4
31	8/28/79	21	0	44.7	2.2	2.2	603.7
31	8/28/79	21	2	75.5	4.7	4.7	606.2
				INTENSITY	STORM	DAY	YEAR

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	8/28/79	23	50	0.1	5.3	5.3	606.7
31	8/28/79	23	54	4.2	5.6	5.6	607.0
31	9/ 5/79	19	39	0.0	0.0	0.0	607.0
31	9/ 5/79	19	55	2.0	0.5	0.5	607.6
31	9/ 5/79	20	2	6.7	1.3	1.3	608.3
31	9/ 5/79	20	8	7.9	2.1	2.1	609.1
31	9/ 5/79	20	24	1.0	2.4	2.4	609.4
31	9/ 5/79	21	2	4.1	5.0	5.0	612.0
31	9/ 5/79	21	12	3.1	5.5	5.5	612.5
31	9/ 5/79	21	42	4.7	7.9	7.9	614.9
31	9/ 5/79	22	2	1.6	8.4	8.4	615.4
31	9/ 5/79	22	22	0.8	8.6	8.6	615.7
31	9/24/79	5	9	0.0	0.0	0.0	615.7
31	9/24/79	5	13	28.2	1.9	1.9	617.5
31	9/24/79	5	16	43.0	4.0	4.0	619.7
31	9/24/79	5	20	12.1	4.8	4.8	620.5
31	9/24/79	5	23	10.7	5.4	5.4	621.0
31	9/24/79	5	25	24.2	6.2	6.2	621.8
31	9/24/79	5	28	10.7	6.7	6.7	622.4
31	9/24/79	5	33	22.6	8.6	8.6	624.3
31	9/24/79	5	38	6.4	9.1	9.1	624.8
31	9/24/79	5	48	3.2	9.7	9.7	625.3
31	9/24/79	5	58	1.6	9.9	9.9	625.6
31	9/24/79	6	18	1.6	10.5	10.5	626.1
31	9/24/79	6	40	5.9	12.6	12.6	628.3
31	9/24/79	6	46	2.7	12.9	12.9	628.6
31	9/24/79	7	8	2.9	14.0	14.0	629.6
31	9/24/79	9	15	0.0	14.0	14.0	629.6
31	9/24/79	9	18	5.4	14.2	14.2	629.9
31	9/24/79	9	58	0.4	14.5	14.5	630.2
31	9/24/79	10	10	4.0	15.3	15.3	631.0
31	9/24/79	10	20	1.6	15.6	15.6	631.2
31	9/24/79	10	38	0.9	15.9	15.9	631.5
31	9/24/79	10	48	4.8	16.7	16.7	632.3
31	9/24/79	10	58	0.0	16.7	16.7	632.3
31	9/24/79	11	2	8.1	17.2	17.2	632.9
31	9/24/79	11	8	5.4	17.7	17.7	633.4
31	9/24/79	11	15	2.3	18.0	18.0	633.7
31	9/24/79	11	30	2.1	18.5	18.5	634.2
31	10/ 1/79	9	40	0.0	0.0	0.0	634.2
31	10/ 1/79	12	0	0.2	0.5	0.5	634.7
31	10/ 1/79	12	7	2.2	0.8	0.8	635.0
31	10/ 1/79	12	8	30.5	1.3	1.3	635.5
31	10/ 1/79	12	30	1.4	1.8	1.8	636.0
31	10/ 1/79	12	40	10.7	3.6	3.6	637.8
31	10/ 1/79	12	50	4.6	4.3	4.3	638.5
31	10/ 1/79	13	10	2.3	5.1	5.1	639.3
				INTENSITY	STORM	DAY	YEAR

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
31	10/ 3/79			NO DATA	2.5	2.5	642.6
31	10/11/79			NO DATA	0.0	0.0	642.6
31	10/11/79			NO DATA	3.8	3.8	646.4
31	10/18/79	22	23	0.0	0.0	0.0	646.4
31	10/18/79	22	35	5.4	1.1	1.1	647.5
31	10/18/79	22	45	13.0	3.2	3.2	649.6
31	10/18/79	22	52	7.0	4.1	4.1	650.5
31	10/18/79	22	54	40.6	5.4	5.4	651.8
31	10/18/79	22	59	6.5	6.0	6.0	652.3
31	10/18/79	23	5	59.5	11.9	11.9	658.3
31	10/18/79	23	9	28.4	13.8	13.8	660.2
31	10/18/79	23	12	32.5	15.4	15.4	661.8
31	10/18/79	23	14	48.7	17.1	17.1	663.4
31	10/18/79	23	19	13.0	18.1	18.1	664.5
31	10/18/79	23	23	60.9	22.2	22.2	668.6
31	10/18/79	23	24	81.2	23.5	23.5	669.9
31	10/18/79	23	26	40.6	24.9	24.9	671.3
31	10/18/79	23	28	32.5	26.0	26.0	672.4
31	10/18/79	23	30	8.1	26.3	26.3	672.6
31	10/18/79	23	32	40.6	27.6	27.6	674.0
31	10/18/79	23	34	40.6	29.0	29.0	675.4
31	10/18/79	23	35	81.2	30.3	30.3	676.7
31	10/18/79	23	38	32.5	31.9	31.9	678.3
31	10/18/79	23	43	16.2	33.3	33.3	679.7
31	10/18/79	23	49	10.8	34.4	34.4	680.8
31	10/18/79	23	52	27.1	35.7	35.7	682.1
31	10/19/79	0	4	0.0	35.7	0.0	682.1
31	10/19/79	0	14	8.1	37.1	1.4	683.5
31	10/21/79	22	29	0.0	0.0	0.0	683.5
31	10/21/79	22	33	24.2	1.6	1.6	685.1
31	10/21/79	22	36	96.9	6.5	6.5	689.9
31	10/21/79	22	44	6.1	7.3	7.3	690.7
31	10/21/79	22	53	21.5	10.5	10.5	694.0
31	10/21/79	23	11	1.8	11.0	11.0	694.5
31	10/21/79	23	28	4.7	12.4	12.4	695.9
31	10/22/79	0	13	1.8	13.7	1.3	697.2
31	10/22/79	0	40	1.2	14.3	1.9	697.7
31	10/22/79	1	3	2.8	15.3	3.0	698.8
31	10/22/79	1	18	1.1	15.6	3.2	699.1
31	10/22/79	2	6	1.3	16.7	4.3	700.2
31	10/22/79	2	18	2.7	17.2	4.8	700.7
31	10/22/79	2	30	6.7	18.6	6.2	702.0
31	10/22/79	3	13	1.1	19.4	7.0	702.8
31	10/22/79	3	38	1.9	20.2	7.8	703.7
31	10/22/79	4	23	5.4	24.2	11.8	707.7
31	10/22/79	4	43	5.7	26.1	13.7	709.6
31	10/22/79	5	13	7.5	29.9	17.5	713.3
31	10/22/79	5	25	14.8	32.8	20.5	716.3
31	10/22/79	5	43	11.7	36.3	24.0	719.8

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
31	10/22/79	6	5	8.1	39.3	26.9	722.8
31	10/22/79	6	19	11.5	42.0	29.6	725.5
31	10/22/79	6	28	7.2	43.1	30.7	726.5
31	10/22/79	6	34	2.7	43.3	31.0	726.8
31	10/22/79	6	38	16.1	44.4	32.0	727.9
31	10/22/79	6	49	7.3	45.8	33.4	729.2
31	10/22/79	7	5	8.1	47.9	35.5	731.4
31	10/22/79	7	28	4.9	49.8	37.4	733.3
31	10/22/79	7	49	3.8	51.1	38.8	734.6
31	10/22/79	8	18	5.6	53.8	41.4	737.3
31	10/22/79	8	30	6.7	55.2	42.8	738.6
31	10/22/79	9	2	1.0	55.7	43.3	739.2
31	10/22/79	9	14	2.7	56.3	43.9	739.7
31	10/22/79	9	38	1.3	56.8	44.4	740.3
31	10/22/79	9	45	6.9	57.6	45.2	741.1
31	10/22/79	9	57	1.3	57.9	45.5	741.3
31	10/22/79	10	8	7.3	59.2	46.8	742.7
31	10/22/79	10	14	5.4	59.7	47.4	743.2
31	10/22/79	10	28	11.5	62.4	50.1	745.9
31	10/22/79	10	47	10.2	65.7	53.3	749.1
31	10/22/79	11	4	2.8	66.5	54.1	749.9
31	10/22/79	11	15	4.4	67.3	54.9	750.8
31	10/22/79	11	28	5.0	68.4	56.0	751.8
31	10/22/79	11	33	9.7	69.2	56.8	752.6
31	10/22/79	11	41	4.0	69.7	57.3	753.2
31	10/22/79	11	50	9.0	71.1	58.7	754.5
31	10/22/79	11	58	22.2	74.0	61.6	757.5
31	10/22/79	12	15	3.8	75.1	62.7	758.6
31	10/22/79	18	8	0.1	75.6	63.2	759.1
31	10/22/79	20	8	0.5	76.7	64.3	760.2
31	10/22/79	20	48	1.2	77.5	65.1	761.0
31	10/22/79	21	8	1.6	78.1	65.7	761.5
31	10/22/79	21	51	1.5	79.1	66.7	762.6
31	10/22/79	22	39	1.0	79.9	67.6	763.4
31	10/23/79	0	8	0.2	80.2	0.3	763.7
31	10/23/79	0	38	1.1	80.7	0.8	764.2
31	10/23/79	1	38	0.5	81.3	1.3	764.7
31	10/31/79	5	32	0.0	0.0	0.0	764.7
31	10/31/79	6	42	1.2	1.4	1.4	766.1
31	10/31/79	8	9	0.4	1.9	1.9	766.7
31	10/31/79	8	30	6.3	4.1	4.1	768.9
31	10/31/79	8	32	74.1	6.6	6.6	771.3
31	10/31/79	8	37	23.1	8.5	8.5	773.3
31	10/31/79	8	45	8.2	9.6	9.6	774.4
31	10/31/79	8	56	3.0	10.2	10.2	774.9
31	10/31/79	9	11	3.3	11.0	11.0	775.7
31	10/31/79	9	25	7.1	12.6	12.6	777.4
31	10/31/79	9	36	3.0	13.2	13.2	777.9
31	10/31/79	9	57	4.7	14.8	14.8	779.6
31	10/31/79	10	12	1.1	15.1	15.1	779.8
31	10/31/79	10	30	2.7	15.9	15.9	780.7

TABLE B1- 1. CONCLUDED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
31	10/31/79	10	42	1.4	16.2	16.2	780.9
31	10/31/79	11	2	2.5	17.0	17.0	781.8
31	11/ 5/79	5	40	0.0	0.0	0.0	781.8
31	11/ 5/79	6	40	1.5	1.5	1.5	783.2
31	11/ 5/79	9	13	0.6	2.9	2.9	784.7
31	11/ 5/79	11	28	0.4	3.8	3.8	785.5
31	11/ 5/79	11	34	5.8	4.4	4.4	786.1
31	11/ 5/79	11	37	11.6	4.9	4.9	786.7
31	11/ 5/79	11	58	2.5	5.8	5.8	787.6
31	11/ 5/79	12	32	1.0	6.4	6.4	788.2
31	11/ 5/79	14	50	0.4	7.3	7.3	789.0
31	11/ 5/79	15	20	1.2	7.9	7.9	789.6
31	11/ 5/79	15	30	3.5	8.4	8.4	790.2
31	11/ 5/79	15	50	0.9	8.7	8.7	790.5
31	11/ 5/79	16	5	1.2	9.0	9.0	790.8
31	11/ 5/79	16	15	3.5	9.6	9.6	791.4
31	11/ 5/79	16	59	0.8	10.2	10.2	791.9
31	11/ 5/79	17	40	0.9	10.8	10.8	792.5
31	11/ 5/79	18	2	2.4	11.6	11.6	793.4
31	11/ 5/79	18	40	3.7	14.0	14.0	795.7

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
32	4/19/79			NO DATA	0.0	0.0	0.0
32	4/19/79			NO DATA	17.8	17.8	17.8
32	4/20/79			NO DATA	0.0	0.0	17.8
32	4/20/79			NO DATA	36.3	36.3	54.1
32	4/25/79	10	5	0.0	0.0	0.0	54.1
32	4/25/79	10	15	3.1	0.5	0.5	54.6
32	4/25/79	10	21	39.2	4.4	4.4	58.5
32	4/25/79	10	41	11.0	8.1	8.1	62.2
32	4/25/79	11	0	3.3	9.2	9.2	63.3
32	4/25/79	11	41	1.1	9.9	9.9	64.0
32	4/25/79	12	5	0.7	10.2	10.2	64.3
32	4/25/79	14	45	0.1	10.5	10.5	64.6
32	4/25/79	15	5	1.6	11.0	11.0	65.1
32	4/25/79	15	20	5.2	12.3	12.3	66.4
32	4/25/79	15	43	2.0	13.1	13.1	67.2
32	4/25/79	15	52	3.5	13.6	13.6	67.7
32	4/25/79	16	24	1.0	14.1	14.1	68.2
32	4/25/79	16	34	4.7	14.9	14.9	69.0
32	4/25/79	16	43	1.7	15.2	15.2	69.3
32	4/25/79	16	52	7.0	16.2	16.2	70.3
32	4/25/79	17	15	2.7	17.3	17.3	71.4
32	4/25/79	17	35	0.8	17.5	17.5	71.6
32	4/29/79			NO DATA	0.0	0.0	71.6
32	4/29/79			NO DATA	2.0	2.0	73.7
32	5/ 2/79	8	58	0.0	0.0	0.0	73.7
32	5/ 2/79	9	0	15.7	0.5	0.5	74.2
32	5/ 2/79	9	48	0.7	1.0	1.0	74.7
32	5/ 2/79	9	57	5.2	1.8	1.8	75.5
32	5/ 2/79	10	30	1.4	2.6	2.6	76.3
32	5/ 2/79	10	48	1.7	3.1	3.1	76.8
32	5/ 2/79	11	33	1.7	4.5	4.5	78.1
32	5/ 2/79	11	46	6.1	5.8	5.8	79.4
32	5/ 2/79	12	4	2.6	6.6	6.6	80.2
32	5/ 2/79	12	10	10.5	7.6	7.6	81.3
32	5/ 2/79	12	20	4.7	8.4	8.4	82.1
32	5/ 2/79	12	40	3.9	9.7	9.7	83.4
32	5/ 2/79	13	12	3.0	11.3	11.3	84.9
32	5/ 2/79	13	31	5.8	13.1	13.1	86.8
32	5/ 2/79	13	50	4.1	14.4	14.4	88.1
32	5/ 2/79	14	10	4.7	16.0	16.0	89.7
32	5/ 2/79	14	40	2.1	17.1	17.1	90.7
32	5/ 2/79	14	50	3.1	17.6	17.6	91.2
32	5/ 2/79	15	10	3.1	18.6	18.6	92.3
32	5/ 2/79	15	24	2.2	19.2	19.2	92.8
32	5/ 2/79	16	22	1.4	20.5	20.5	94.1
32	5/ 2/79	16	46	0.7	20.7	20.7	94.4
32	5/ 2/79	17	25	2.0	22.0	22.0	95.7
32	5/ 2/79	17	50	0.6	22.3	22.3	96.0

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
32	5/ 2/79	18	0	3.1	22.8	22.8	96.5
32	5/ 2/79	18	20	0.8	23.1	23.1	96.7
32	5/ 2/79	19	0	1.2	23.9	23.9	97.5
32	5/ 8/79			NO DATA	0.0	0.0	97.5
32	5/ 8/79			NO DATA	0.8	0.8	98.3
32	5/10/79	16	2	0.0	0.0	0.0	98.3
32	5/10/79	16	8	4.9	0.5	0.5	98.8
32	5/10/79	16	10	14.7	1.0	1.0	99.3
32	5/10/79	16	18	18.4	3.4	3.4	101.7
32	5/10/79	16	24	2.5	3.7	3.7	102.0
32	5/10/79	17	57	0.3	4.2	4.2	102.5
32	5/10/79	18	15	1.6	4.7	4.7	103.0
32	5/10/79	18	38	0.0	4.7	4.7	103.0
32	5/10/79	18	40	44.2	6.1	6.1	104.4
32	5/10/79	18	50	5.9	7.1	7.1	105.4
32	5/12/79			NO DATA	0.0	0.0	105.4
32	5/12/79			NO DATA	1.3	1.3	106.7
32	5/13/79			NO DATA	0.0	0.0	106.7
32	5/13/79			NO DATA	0.5	0.5	107.2
32	5/18/79			NO DATA	0.0	0.0	107.2
32	5/18/79			NO DATA	7.9	7.9	115.1
32	5/26/79	7	30	0.0	0.0	0.0	115.1
32	5/26/79	17	54	0.0	0.5	0.5	115.6
32	5/26/79	17	57	61.0	3.6	3.6	118.6
32	5/26/79	18	2	15.2	4.8	4.8	119.9
32	5/26/79	18	8	5.1	5.3	5.3	120.4
32	5/26/79	18	20	8.9	7.1	7.1	122.2
32	5/26/79	18	30	3.0	7.6	7.6	122.7
32	5/29/79	3	55	0.0	0.0	0.0	122.7
32	5/29/79	4	5	4.2	0.7	0.7	123.4
32	5/29/79	4	15	1.4	0.9	0.9	123.6
32	5/29/79	4	17	21.2	1.6	1.6	124.3
32	5/29/79	4	21	17.6	2.8	2.8	125.5
32	5/29/79	4	30	4.7	3.5	3.5	126.2
32	5/29/79	8	3	0.1	4.0	4.0	126.7
32	5/29/79	8	8	11.3	4.9	4.9	127.6
32	5/29/79	8	13	11.3	5.9	5.9	128.6
32	5/29/79	8	30	1.7	6.3	6.3	129.0
32	5/30/79			NO DATA	0.0	0.0	129.0
32	5/30/79			NO DATA	1.3	1.3	130.3
32	6/ 4/79	18	50	0.0	0.0	0.0	130.3
32	6/ 4/79	18	53	65.5	3.3	3.3	133.6
32	6/ 4/79	18	57	45.0	6.3	6.3	136.6

TABLE B1- 2. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
32	6/ 4/79	19	0	21.8	7.4	7.4	137.7
32	6/ 7/79			NO DATA	0.0	0.0	137.7
32	6/ 7/79			NO DATA	0.3	0.3	137.9
32	6/ 8/79	7	50	0.0	0.0	0.0	137.9
32	6/ 8/79	7	55	7.4	0.6	0.6	138.5
32	6/ 8/79	8	2	10.5	1.8	1.8	139.8
32	6/ 8/79	8	15	2.8	2.5	2.5	140.4
32	6/ 8/79	8	20	7.4	3.1	3.1	141.0
32	6/ 8/79	8	33	2.8	3.7	3.7	141.6
32	6/ 8/79	9	15	1.3	4.6	4.6	142.5
32	6/ 8/79	9	50	2.1	5.8	5.8	143.8
32	6/ 9/79	6	53	0.0	0.0	0.0	143.8
32	6/ 9/79	6	57	19.8	1.3	1.3	145.1
32	6/ 9/79	7	3	15.8	2.9	2.9	146.7
32	6/ 9/79	8	23	0.0	2.9	2.9	146.7
32	6/ 9/79	8	28	3.2	3.2	3.2	146.9
32	6/ 9/79	9	5	0.0	3.2	3.2	146.9
32	6/ 9/79	9	18	2.4	3.7	3.7	147.5
32	6/ 9/79	10	14	0.6	4.2	4.2	148.0
32	6/ 9/79	10	29	6.3	5.8	5.8	149.6
32	6/ 9/79	10	35	2.6	6.1	6.1	149.8
32	6/ 9/79	10	40	9.5	6.9	6.9	150.6
32	6/ 9/79	10	50	3.2	7.4	7.4	151.1
32	6/ 9/79	11	1	8.6	9.0	9.0	152.7
32	6/ 9/79	11	8	13.6	10.6	10.6	154.3
32	6/ 9/79	11	13	15.8	11.9	11.9	155.6
32	6/ 9/79	11	19	2.6	12.1	12.1	155.9
32	6/ 9/79	11	24	3.2	12.4	12.4	156.2
32	6/ 9/79	11	41	2.8	13.2	13.2	156.9
32	6/ 9/79	12	10	1.1	13.7	13.7	157.5
32	6/ 9/79			NO DATA	0.0	13.7	157.5
32	6/ 9/79			NO DATA	0.8	14.5	158.2
32	6/12/79	17	36	0.0	0.0	0.0	158.2
32	6/12/79	17	40	26.5	1.8	1.8	160.0
32	6/12/79	17	42	15.1	2.3	2.3	160.5
32	6/12/79	17	49	4.3	2.8	2.8	161.0
32	6/12/79	17	52	55.5	5.6	5.6	163.8
32	6/12/79	17	57	24.2	7.6	7.6	165.8
32	6/12/79	18	0	111.1	13.1	13.1	171.4
32	6/12/79	18	1	151.5	15.7	15.7	173.9
32	6/12/79	18	2	227.2	19.4	19.4	177.7
32	6/12/79	18	3	227.2	23.2	23.2	181.5
32	6/12/79	18	7	113.6	30.8	30.8	189.0
32	6/12/79	18	10	25.2	32.1	32.1	190.3
32	6/12/79	18	18	13.3	33.8	33.8	192.1
32	6/12/79	18	22	30.3	35.8	35.8	194.1

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
32	6/12/79	18	42	7.6	38.1	38.1	196.4
32	6/12/79	20	54	0.2	38.6	38.6	196.9
32	6/12/79	21	22	1.6	39.4	39.4	197.6
32	6/12/79	22	17	0.3	39.6	39.6	197.9
32	6/12/79	22	22	9.1	40.4	40.4	198.6
32	6/12/79	22	31	1.7	40.6	40.6	198.9
32	6/12/79	22	37	2.5	40.9	40.9	199.1
32	6/17/79			NO DATA	0.0	0.0	199.1
32	6/17/79			NO DATA	1.3	1.3	200.4
32	6/18/79			NO DATA	0.0	0.0	200.4
32	6/18/79			NO DATA	13.5	13.5	213.9
32	6/19/79			NO DATA	0.0	0.0	213.9
32	6/19/79			NO DATA	11.4	11.4	225.3
32	6/26/79	23	52	0.0	0.0	0.0	225.3
32	6/26/79	23	59	38.2	4.5	4.5	229.7
32	6/27/79	0	3	44.5	7.4	3.0	232.7
32	6/27/79	0	15	62.4	19.9	15.4	245.2
32	6/27/79	0	28	58.9	32.7	28.2	258.0
32	6/27/79	0	30	44.5	34.1	29.7	259.4
32	6/27/79	0	37	15.3	35.9	31.5	261.2
32	6/27/79	0	40	53.4	38.6	34.1	263.9
32	6/27/79	0	45	21.4	40.4	35.9	265.7
32	6/27/79	1	0	3.6	41.3	36.8	266.6
32	6/27/79	1	14	3.8	42.2	37.7	267.5
32	6/28/79			NO DATA	0.0	0.0	267.5
32	6/28/79			NO DATA	0.5	0.5	268.0
32	7/ 3/79	8	55	0.0	0.0	0.0	268.0
32	7/ 3/79	9	17	52.2	19.1	19.1	287.1
32	7/ 3/79	9	20	58.8	22.1	22.1	290.0
32	7/ 3/79	9	23	88.3	26.5	26.5	294.4
32	7/ 3/79	9	32	29.4	30.9	30.9	298.9
32	7/ 3/79	9	38	64.7	37.4	37.4	305.3
32	7/ 3/79	9	42	35.3	39.7	39.7	307.7
32	7/ 3/79	9	50	4.4	40.3	40.3	308.3
32	7/ 3/79	11	3	0.5	40.9	40.9	308.9
32	7/ 3/79	20	51	0.0	0.0	40.9	308.9
32	7/ 3/79	20	57	11.1	1.1	42.0	310.0
32	7/ 3/79	20	58	66.8	2.2	43.1	311.1
32	7/ 3/79	21	0	8.3	2.5	43.4	311.4
32	7/ 3/79	21	3	5.6	2.8	43.7	311.6
32	7/ 3/79	21	10	9.5	3.9	44.8	312.8
32	7/ 3/79	21	30	4.2	5.3	46.2	314.1
32	7/ 3/79	21	42	2.8	5.8	46.7	314.7

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
32	7/10/79			NO DATA	3.8	3.8	318.5
32	7/13/79	9	8	0.0	0.0	0.0	318.5
32	7/13/79	9	14	33.3	3.3	3.3	321.8
32	7/13/79	9	18	15.4	4.4	4.4	322.9
32	7/13/79	9	20	61.5	6.4	6.4	324.9
32	7/13/79	9	24	11.5	7.2	7.2	325.7
32	7/13/79	9	28	34.6	9.5	9.5	328.0
32	7/13/79	10	1	3.3	11.3	11.3	329.8
32	7/13/79	10	12	4.2	12.0	12.0	330.6
32	7/13/79	19	55	0.0	12.0	12.0	330.6
32	7/13/79	20	0	67.6	17.7	17.7	336.2
32	7/14/79	0	40	0.2	18.4	0.8	337.0
32	7/14/79	0	42	38.4	19.7	2.0	338.2
32	7/14/79	0	44	115.3	23.6	5.9	342.1
32	7/14/79	0	47	46.1	25.9	8.2	344.4
32	7/14/79	0	56	5.1	26.6	9.0	345.2
32	7/14/79	0	59	76.9	30.5	12.8	349.0
32	7/14/79	1	4	27.7	32.8	15.1	351.3
32	7/14/79	1	8	92.2	38.9	21.3	357.5
32	7/14/79	1	10	15.4	39.5	21.8	358.0
32	7/14/79	1	20	4.6	40.2	22.5	358.7
32	7/14/79	1	23	35.9	42.0	24.3	360.5
32	7/14/79	1	26	25.6	43.3	25.6	361.8
32	7/14/79	1	30	23.1	44.8	27.2	363.3
32	7/14/79	1	34	7.7	45.4	27.7	363.9
32	7/14/79	1	40	69.2	52.3	34.6	370.8
32	7/14/79	1	45	9.2	53.0	35.4	371.5
32	7/14/79	2	6	0.7	53.3	35.6	371.8
32	7/14/79	2	31	1.2	53.8	36.1	372.3
32	7/14/79	2	33	15.4	54.3	36.6	372.8
32	7/14/79	2	35	46.1	55.9	38.2	374.4
32	7/14/79	3	50	0.8	56.9	39.2	375.4
32	7/14/79	4	0	4.6	57.6	40.0	376.2
32	7/14/79	4	5	6.1	58.2	40.5	376.7
32	7/14/79	4	15	3.1	58.7	41.0	377.2
32	7/19/79			NO DATA	0.0	0.0	377.2
32	7/19/79			NO DATA	3.8	3.8	381.0
32	7/24/79			NO DATA	0.0	0.0	381.0
32	7/24/79			NO DATA	2.5	2.5	383.5
32	7/29/79			NO DATA	0.0	0.0	383.5
32	7/29/79			NO DATA	4.8	4.8	388.4
32	7/30/79			NO DATA	0.0	0.0	388.4
32	7/30/79			NO DATA	1.8	1.8	390.1
32	8/ 1/79			NO DATA	0.0	0.0	390.1
32	8/ 1/79			NO DATA	1.0	1.0	391.1

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
32	8/ 8/79	19	51	0.0	0.0	0.0	391.1
32	8/ 8/79	20	0	76.0	11.4	11.4	402.5
32	8/ 8/79	20	3	34.7	13.1	13.1	404.3
32	8/ 8/79	20	7	18.6	14.4	14.4	405.5
32	8/ 8/79	20	12	5.9	14.9	14.9	406.0
32	8/ 8/79	20	14	22.3	15.6	15.6	406.8
32	8/ 8/79	20	18	3.7	15.9	15.9	407.0
32	8/ 8/79	20	23	11.9	16.8	16.8	408.0
32	8/ 8/79	20	25	29.7	17.8	17.8	409.0
32	8/ 8/79	20	52	0.6	18.1	18.1	409.2
32	8/ 8/79	21	33	0.4	18.3	18.3	409.5
32	8/ 8/79	21	35	29.7	19.3	19.3	410.5
32	8/ 8/79	21	48	1.1	19.6	19.6	410.7
32	8/ 8/79	21	50	14.9	20.1	20.1	411.2
32	8/ 9/79	20	11	0.0	0.0	0.0	411.2
32	8/ 9/79	20	16	14.7	1.2	1.2	412.4
32	8/ 9/79	20	19	9.8	1.7	1.7	412.9
32	8/ 9/79	20	23	29.5	3.7	3.7	414.9
32	8/ 9/79	20	28	29.5	6.1	6.1	417.4
32	8/ 9/79	20	31	24.6	7.4	7.4	418.6
32	8/13/79			NO DATA	0.0	0.0	418.6
32	8/13/79			NO DATA	0.8	0.8	419.3
32	8/19/79	2	18	0.0	0.0	0.0	419.3
32	8/19/79	2	21	51.8	2.6	2.6	421.9
32	8/19/79	2	22	124.3	4.7	4.7	424.0
32	8/19/79	2	30	48.6	11.1	11.1	430.5
32	8/19/79	2	36	10.4	12.2	12.2	431.5
32	8/19/79	2	42	2.6	12.4	12.4	431.8
32	8/19/79	2	50	7.8	13.5	13.5	432.8
32	8/19/79	2	51	62.2	14.5	14.5	433.8
32	8/19/79	2	57	18.1	16.3	16.3	435.7
32	8/19/79	3	0	5.2	16.6	16.6	435.9
32	8/19/79	3	4	7.8	17.1	17.1	436.4
32	8/19/79	3	10	2.6	17.4	17.4	436.7
32	8/19/79	3	31	3.7	18.6	18.6	438.0
32	8/19/79	3	32	15.5	18.9	18.9	438.2
32	8/19/79	3	37	9.3	19.7	19.7	439.0
32	8/19/79	4	1	1.3	20.2	20.2	439.5
32	8/19/79	5	17	0.2	20.5	20.5	439.8
32	8/19/79	5	20	31.1	22.0	22.0	441.4
32	8/19/79	5	24	7.8	22.5	22.5	441.9
32	8/19/79	5	28	3.9	22.8	22.8	442.1
32	8/19/79	5	31	10.4	23.3	23.3	442.6
32	8/19/79	5	38	40.0	28.0	28.0	447.3
32	8/19/79	5	40	15.5	28.5	28.5	447.8
32	8/19/79	5	45	12.4	29.5	29.5	448.9
32	8/19/79	5	53	1.9	29.8	29.8	449.1
32	8/19/79	5	56	41.4	31.9	31.9	451.2
32	8/19/79	6	1	21.8	33.7	33.7	453.0

TABLE B1- 2. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
32	8/19/79	6	10	6.9	34.7	34.7	454.0
32	8/19/79	6	11	15.5	35.0	35.0	454.3
32	8/19/79	6	14	20.7	36.0	36.0	455.3
32	8/19/79	6	17	5.2	36.3	36.3	455.6
32	8/19/79	6	20	25.9	37.6	37.6	456.9
32	8/19/79	6	24	3.9	37.8	37.8	457.1
32	8/19/79	6	31	8.9	38.8	38.8	458.2
32	8/19/79	6	44	1.2	39.1	39.1	458.4
32	8/19/79	6	59	2.1	39.6	39.6	459.0
32	8/19/79	20	22	0.0	0.0	39.6	459.0
32	8/19/79	20	25	10.4	0.5	40.1	459.5
32	8/19/79	20	32	4.5	1.0	40.7	460.0
32	8/19/79	20	34	31.2	2.1	41.7	461.0
32	8/19/79	20	48	4.5	3.1	42.7	462.1
32	8/19/79	20	51	72.9	6.8	46.4	465.7
32	8/19/79	21	5	13.4	9.9	49.5	468.8
32	8/19/79	21	10	9.4	10.7	50.3	469.6
32	8/19/79	21	14	23.4	12.2	51.9	471.2
32	8/19/79	21	25	31.2	18.0	57.6	476.9
32	8/19/79	21	29	11.7	18.7	58.4	477.7
32	8/19/79	21	40	7.1	20.0	59.7	479.0
32	8/19/79	22	8	1.1	20.6	60.2	479.5
32	8/19/79	22	10	23.4	21.3	61.0	480.3
32	8/19/79	22	16	33.8	24.7	64.3	483.7
32	8/19/79	22	23	6.7	25.5	65.1	484.5
32	8/19/79	22	40	0.9	25.8	65.4	484.7
32	8/19/79	22	54	15.6	29.4	69.0	488.4
32	8/20/79	0	35	0.2	29.7	0.3	488.6
32	8/20/79	1	5	4.2	31.7	2.3	490.7
32	8/21/79	18	27	0.0	0.0	0.0	490.7
32	8/21/79	18	31	27.8	1.9	1.9	492.6
32	8/21/79	18	38	56.7	8.5	8.5	499.2
32	8/21/79	18	40	79.4	11.1	11.1	501.8
32	8/21/79	18	45	50.8	15.3	15.3	506.1
32	8/21/79	18	50	22.2	17.2	17.2	507.9
32	8/21/79	19	0	34.9	23.0	23.0	513.7
32	8/21/79	19	14	6.8	24.6	24.6	515.3
32	8/21/79	19	25	1.4	24.9	24.9	515.6
32	8/21/79	19	40	1.1	25.1	25.1	515.8
32	8/21/79	19	50	1.6	25.4	25.4	516.1
32	8/22/79			NO DATA	0.0	0.0	516.1
32	8/22/79			NO DATA	3.8	3.8	519.9
32	8/26/79			NO DATA	0.0	0.0	519.9
32	8/26/79			NO DATA	2.0	2.0	521.9
32	8/28/79			NO DATA	0.0	0.0	521.9
32	8/28/79			NO DATA	1.0	1.0	523.0

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
32	9/ 5/79	19	44	0.0	0.0	0.0	523.0
32	9/ 5/79	19	48	11.7	0.8	0.8	523.7
32	9/ 5/79	19	52	19.5	2.1	2.1	525.0
32	9/ 5/79	20	2	0.0	2.1	2.1	525.0
32	9/ 5/79	20	4	15.6	2.6	2.6	525.6
32	9/ 5/79	20	30	1.8	3.4	3.4	526.3
32	9/ 5/79	20	40	4.7	4.2	4.2	527.1
32	9/ 5/79	20	50	3.1	4.7	4.7	527.7
32	9/ 5/79	21	0	6.3	5.7	5.7	528.7
32	9/ 5/79	21	10	4.7	6.5	6.5	529.5
32	9/ 5/79	21	26	5.9	8.1	8.1	531.0
32	9/ 5/79	21	45	4.1	9.4	9.4	532.3
32	9/ 5/79	22	25	1.2	10.2	10.2	533.1
32	9/24/79			NO DATA	0.0	0.0	533.1
32	9/24/79			NO DATA	8.4	8.4	541.5
32	10/ 1/79			NO DATA	0.0	0.0	541.5
32	10/ 1/79			NO DATA	4.1	4.1	545.6
32	10/ 3/79			NO DATA	0.0	0.0	545.6
32	10/ 3/79			NO DATA	2.5	2.5	548.1
32	10/11/79			NO DATA	0.0	0.0	548.1
32	10/11/79			NO DATA	2.5	2.5	550.6
32	10/18/79	22	20	0.0	0.0	0.0	550.6
32	10/18/79	22	46	5.5	2.4	2.4	553.0
32	10/18/79	22	50	15.9	3.4	3.4	554.1
32	10/18/79	22	55	22.3	5.3	5.3	556.0
32	10/18/79	23	8	6.1	6.6	6.6	557.3
32	10/18/79	23	18	3.2	7.2	7.2	557.8
32	10/18/79	23	25	4.5	7.7	7.7	558.3
32	10/18/79	23	28	63.7	10.9	10.9	561.5
32	10/18/79	23	34	15.9	12.5	12.5	563.1
32	10/18/79	23	38	4.0	12.7	12.7	563.4
32	10/18/79	23	42	47.8	15.9	15.9	566.6
32	10/19/79	0	10	4.0	17.8	1.9	568.4
32	10/21/79	22	33	0.0	0.0	0.0	568.4
32	10/21/79	22	35	115.7	3.9	3.9	572.3
32	10/21/79	22	43	3.9	4.4	4.4	572.8
32	10/21/79	22	46	20.6	5.4	5.4	573.8
32	10/21/79	23	0	4.4	6.4	6.4	574.9
32	10/21/79	23	13	5.9	7.7	7.7	576.1
32	10/21/79	23	19	12.9	9.0	9.0	577.4
32	10/21/79	23	24	18.5	10.5	10.5	579.0
32	10/21/79	23	59	2.6	12.1	12.1	580.5
32	10/22/79	0	20	1.5	12.6	0.5	581.0
32	10/22/79	0	40	0.8	12.9	0.8	581.3

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
32	10/22/79	1	45	1.2	14.9	2.8	583.3
32	10/22/79	2	14	2.7	16.2	4.1	584.6
32	10/22/79	2	28	7.7	18.0	5.9	586.4
32	10/22/79	3	15	0.7	18.5	6.4	586.9
32	10/22/79	3	40	1.9	19.3	7.2	587.7
32	10/22/79	4	2	7.0	21.9	9.8	590.3
32	10/22/79	5	5	7.3	29.6	17.5	598.0
32	10/22/79	5	40	11.0	36.0	23.9	604.4
32	10/22/79	6	20	8.5	41.7	29.6	610.1
32	10/22/79	6	46	4.7	43.7	31.6	612.1
32	10/22/79	7	4	10.3	46.8	34.7	615.2
32	10/22/79	7	15	4.2	47.6	35.5	616.0
32	10/22/79	7	23	3.9	48.1	36.0	616.5
32	10/22/79	7	32	6.9	49.1	37.0	617.5
32	10/22/79	7	50	6.0	50.9	38.8	619.3
32	10/22/79	8	10	9.3	54.0	41.9	622.4
32	10/22/79	8	40	4.1	56.1	44.0	624.5
32	10/22/79	9	0	1.5	56.6	44.5	625.0
32	10/22/79	9	20	3.9	57.9	45.8	626.3
32	10/22/79	9	34	2.2	58.4	46.3	626.8
32	10/22/79	9	50	2.9	59.1	47.1	627.6
32	10/22/79	9	57	11.0	60.4	48.3	628.8
32	10/22/79	10	0	15.4	61.2	49.1	629.6
32	10/22/79	10	11	2.8	61.7	49.6	630.1
32	10/22/79	10	20	20.6	64.8	52.7	633.2
32	10/22/79	10	40	6.2	66.9	54.8	635.3
32	10/22/79	11	0	3.9	68.1	56.1	636.6
32	10/22/79	11	15	5.1	69.4	57.3	637.8
32	10/22/79	11	30	5.1	70.7	58.6	639.1
32	10/22/79	11	39	10.3	72.3	60.2	640.7
32	10/22/79	11	50	12.6	74.6	62.5	643.0
32	10/22/79	11	55	15.4	75.9	63.8	644.3
32	10/22/79	12	0	9.3	76.6	64.5	645.0
32	10/22/79	12	40	1.5	77.7	65.6	646.1
32	10/22/79	18	0	0.0	77.7	65.6	646.1
32	10/22/79	19	0	0.8	78.4	66.3	646.8
32	10/22/79	21	0	0.9	80.2	68.1	648.6
32	10/22/79	22	0	1.0	81.3	69.2	649.7
32	10/22/79	23	0	1.0	82.3	70.2	650.7
32	10/22/79	23	59	0.8	83.1	71.0	651.5
32	10/23/79	1	0	0.5	83.6	0.5	652.0
32	10/31/79	5	0	0.0	0.0	0.0	652.0
32	10/31/79	6	40	0.6	1.0	1.0	653.0
32	10/31/79	8	0	0.4	1.5	1.5	653.5
32	10/31/79	8	9	1.7	1.8	1.8	653.8
32	10/31/79	8	15	7.6	2.5	2.5	654.5
32	10/31/79	8	33	0.8	2.8	2.8	654.8
32	10/31/79	8	39	7.6	3.6	3.6	655.5
32	10/31/79	8	42	35.6	5.3	5.3	657.3
32	10/31/79	8	45	15.2	6.1	6.1	658.1
32	10/31/79	9	13	2.7	7.4	7.4	659.3
32	10/31/79	9	17	11.4	8.1	8.1	660.1
32	10/31/79	9	50	4.2	10.4	10.4	662.4
32	10/31/79	10	0	1.5	10.7	10.7	662.7
32	10/31/79	10	30	2.0	11.7	11.7	663.7
32	10/31/79	10	46	1.0	11.9	11.9	663.9
32	10/31/79	11	1	3.0	12.7	12.7	664.7
32	11/ 5/79			NO DATA	0.0	0.0	664.7
32	11/ 5/79			NO DATA	10.7	10.7	675.4

TABLE B1- 3. FOUR MILE CREEK WATERSHED PRECIPITATION DATA FOR 1979 GAGE 33

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
33	1/ 1/79			SNOW	0.0	0.0	0.0
33	1/ 1/79			SNOW	0.3	0.3	0.3
33	1/11/79			SNOW	0.0	0.0	0.3
33	1/11/79			SNOW	0.3	0.3	0.5
33	1/13/79			SNOW	0.0	0.0	0.5
33	1/13/79			SNOW	8.9	8.9	9.4
33	1/18/79			SNOW	0.0	0.0	9.4
33	1/18/79			SNOW	8.1	8.1	17.5
33	1/20/79			SNOW	0.0	0.0	17.5
33	1/20/79			SNOW	0.5	0.5	18.0
33	1/23/79			SNOW	0.0	0.0	18.0
33	1/23/79			SNOW	2.3	2.3	20.3
33	1/26/79			SNOW	0.0	0.0	20.3
33	1/26/79			SNOW	4.1	4.1	24.4
33	1/30/79			SNOW	0.0	0.0	24.4
33	1/30/79			SNOW	1.3	1.3	25.7
33	2/ 7/79			SNOW	0.0	0.0	25.7
33	2/ 7/79			SNOW	3.8	3.8	29.5
33	2/20/79			SNOW	0.0	0.0	29.5
33	2/20/79			SNOW	3.0	3.0	32.5
33	3/ 3/79			SNOW	0.0	0.0	32.5
33	3/ 3/79			SNOW	23.1	23.1	55.6
33	3/ 4/79			SNOW	0.0	0.0	55.6
33	3/ 4/79			SNOW	6.6	6.6	62.2
33	3/18/79			SNOW	0.0	0.0	62.2
33	3/18/79			SNOW	10.7	10.7	72.9
33	3/22/79	22	35	0.0	0.0	0.0	72.9
33	3/22/79	22	36	49.4	0.8	0.8	73.7
33	3/22/79	23	10	0.5	1.1	1.1	74.0
33	3/22/79	23	28	3.7	2.2	2.2	75.1
33	3/22/79	23	30	8.2	2.5	2.5	75.4
33	3/22/79	23	42	5.5	3.6	3.6	76.5
33	3/22/79	23	46	12.3	4.4	4.4	77.3
33	3/22/79	24	0	4.7	5.5	5.5	78.4
33	3/23/79	1	10	0.7	6.3	0.8	79.2
33	3/23/79	2	0	0.7	6.9	1.4	79.8
33	3/23/79	2	22	1.5	7.4	1.9	80.3
33	3/23/79	3	24	0.3	7.7	2.2	80.6

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
33	3/23/79	3	40	4.1	9.0	3.6	81.9
33	3/23/79	5	35	0.7	10.4	4.9	83.3
33	3/23/79	8	6	0.5	11.8	6.3	84.7
33	3/23/79	9	35	0.6	12.6	7.1	85.5
33	3/23/79	11	0	0.8	13.7	8.2	86.6
33	3/23/79	13	0	0.1	14.0	8.5	86.9
33	3/23/79	14	0	0.5	14.5	9.0	87.4
33	3/23/79	14	40	2.1	15.9	10.4	88.8
33	3/23/79	16	30	0.7	17.3	11.8	90.2
33	3/24/79			SNOW	0.0	0.0	90.2
33	3/24/79			SNOW	11.7	11.7	101.9
33	3/28/79	17	35	0.0	0.0	0.0	101.9
33	3/28/79	17	50	3.2	0.8	0.8	102.7
33	3/28/79	18	0	6.5	1.9	1.9	103.7
33	3/28/79	18	10	9.7	3.5	3.5	105.4
33	3/28/79	18	36	5.6	5.9	5.9	107.8
33	3/28/79	18	50	3.5	6.8	6.8	108.6
33	3/28/79	20	0	0.5	7.3	7.3	109.1
33	3/28/79	20	20	4.9	8.9	8.9	110.8
33	3/28/79	20	42	3.7	10.3	10.3	112.1
33	3/28/79	22	2	0.4	10.8	10.8	112.7
33	3/28/79	22	30	1.7	11.6	11.6	113.5
33	3/28/79	23	35	0.0	11.6	11.6	113.5
33	3/28/79	24	0	1.3	12.2	12.2	114.0
33	3/29/79	0	45	1.1	13.0	0.8	114.8
33	3/29/79	0	51	13.5	14.3	2.2	116.2
33	3/29/79	1	0	3.6	14.9	2.7	116.7
33	3/29/79	1	46	1.1	15.7	3.5	117.5
33	3/29/79	5	53	0.1	16.2	4.1	118.1
33	3/29/79	6	13	2.4	17.0	4.9	118.9
33	3/29/79	7	43	0.0	17.0	4.9	118.9
33	3/29/79	7	49	32.4	20.3	8.1	122.1
33	3/29/79	8	20	1.6	21.1	8.9	122.9
33	4/ 1/79			SNOW	0.0	0.0	122.9
33	4/ 1/79			SNOW	15.2	15.2	138.2
33	4/10/79			NO DATA	0.0	0.0	138.2
33	4/10/79			NO DATA	3.0	3.0	141.2
33	4/11/79			NO DATA	0.0	0.0	141.2
33	4/11/79			NO DATA	2.5	2.5	143.8
33	4/19/79	6	15	0.0	0.0	0.0	143.8
33	4/19/79	6	55	2.0	1.3	1.3	145.1
33	4/19/79	8	15	0.6	2.1	2.1	145.9
33	4/19/79	8	45	1.6	2.9	2.9	146.7
33	4/19/79	8	56	1.4	3.2	3.2	146.9

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
33	3/23/79	2	22	1.5	7.4	1.9	80.3

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
33	4/19/79	9	57	3.4	5.0	5.0	148.8
33	4/19/79	10	49	0.3	5.3	5.3	149.1
33	4/19/79	10	57	6.0	6.1	6.1	149.9
33	4/19/79	11	6	7.1	7.1	7.1	150.9
33	4/19/79	11	19	3.7	7.9	7.9	151.7
33	4/19/79	12	2	0.4	8.2	8.2	152.0
33	4/19/79	12	5	21.2	9.3	9.3	153.0
33	4/19/79	12	25	1.6	9.8	9.8	153.6
33	4/19/79	12	45	2.4	10.6	10.6	154.4
33	4/19/79	12	55	23.8	14.6	14.6	158.3
33	4/19/79	12	59	27.8	16.4	16.4	160.2
33	4/19/79	13	14	2.1	16.9	16.9	160.7
33	4/19/79	13	16	47.7	18.5	18.5	162.3
33	4/19/79	13	24	9.9	19.9	19.9	163.6
33	4/20/79	3	33	0.1	20.7	0.8	164.4
33	4/20/79	3	34	143.0	23.0	3.2	166.8
33	4/20/79	3	45	7.2	24.4	4.5	168.1
33	4/20/79	4	7	2.2	25.2	5.3	168.9
33	4/20/79	4	15	4.0	25.7	5.8	169.4
33	4/20/79	4	20	54.0	30.2	10.3	173.9
33	4/20/79	4	35	2.1	30.7	10.9	174.5
33	4/20/79	5	33	0.3	31.0	11.1	174.7
33	4/20/79	5	40	2.3	31.2	11.4	175.0
33	4/20/79	5	56	1.0	31.5	11.7	175.3
33	4/20/79	6	5	1.8	31.8	11.9	175.5
33	4/20/79	6	15	1.6	32.0	12.2	175.8
33	4/20/79	6	26	2.9	32.6	12.7	176.3
33	4/20/79	6	30	7.9	33.1	13.2	176.9
33	4/20/79	6	48	1.8	33.6	13.8	177.4
33	4/20/79	6	53	9.5	34.4	14.6	178.2
33	4/20/79	7	1	4.0	35.0	15.1	178.7
33	4/20/79	7	5	11.9	35.7	15.9	179.5
33	4/20/79	8	55	0.3	36.3	16.4	180.0
33	4/20/79	9	0	12.7	37.3	17.5	181.1
33	4/20/79	9	35	4.1	39.7	19.9	183.5
33	4/20/79	9	53	4.4	41.0	21.2	184.8
33	4/20/79	10	15	2.2	41.8	22.0	185.6
33	4/20/79	10	20	6.4	42.4	22.5	186.1
33	4/20/79	10	41	0.8	42.6	22.8	186.4
33	4/20/79	11	9	4.5	44.7	24.9	188.5
33	4/20/79	11	15	15.9	46.3	26.5	190.1
33	4/20/79	11	26	2.9	46.9	27.0	190.6
33	4/20/79	12	17	0.6	47.4	27.5	191.2
33	4/20/79	12	54	8.2	52.4	32.6	196.2
33	4/20/79	13	10	6.0	54.0	34.2	197.8
33	4/20/79	13	15	3.2	54.3	34.4	198.0
33	4/20/79	13	25	4.8	55.1	35.2	198.8
33	4/20/79	13	26	47.7	55.9	36.0	199.6
33	4/20/79	13	35	1.8	56.1	36.3	199.9
33	4/25/79	10	17	0.0	0.0	0.0	199.9
33	4/25/79	10	21	11.6	0.8	0.8	200.7

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
33	4/19/79	8	56	1.4	3.2	3.2	146.9
33	4/25/79	10	26	15.5	2.1	2.1	202.0
33	4/25/79	10	40	10.0	4.4	4.4	204.3
33	4/25/79	10	41	31.1	4.9	4.9	204.8
33	4/25/79	11	0	3.3	6.0	6.0	205.8
33	4/25/79	11	30	1.0	6.5	6.5	206.4
33	4/25/79	12	0	0.5	6.7	6.7	206.6
33	4/25/79	14	57	0.3	7.5	7.5	207.4
33	4/25/79	15	18	5.2	9.3	9.3	209.2
33	4/25/79	15	40	1.4	9.8	9.8	209.7
33	4/25/79	15	50	3.1	10.4	10.4	210.2
33	4/25/79	16	20	0.0	10.4	10.4	210.2
33	4/25/79	16	36	2.9	11.1	11.1	211.0
33	4/25/79	16	45	5.2	11.9	11.9	211.8
33	4/25/79	17	0	4.1	12.9	12.9	212.8
33	4/25/79	17	20	2.3	13.7	13.7	213.6
33	4/29/79			NO DATA	0.0	0.0	213.6
33	4/29/79			NO DATA	1.8	1.8	215.4
33	5/ 2/79	9	0	0.0	0.0	0.0	215.4
33	5/ 2/79	9	2	15.1	0.5	0.5	215.9
33	5/ 2/79	9	45	0.7	1.0	1.0	216.4
33	5/ 2/79	10	3	2.5	1.8	1.8	217.1
33	5/ 2/79	10	30	0.6	2.0	2.0	217.4
33	5/ 2/79	10	45	3.0	2.8	2.8	218.2
33	5/ 2/79	11	30	1.7	4.0	4.0	219.4
33	5/ 2/79	11	59	4.2	6.0	6.0	221.4
33	5/ 2/79	12	14	5.0	7.3	7.3	222.7
33	5/ 2/79	12	19	15.1	8.6	8.6	223.9
33	5/ 2/79	13	10	3.8	11.8	11.8	227.2
33	5/ 2/79	13	25	7.0	13.6	13.6	229.0
33	5/ 2/79	13	40	7.0	15.3	15.3	230.7
33	5/ 2/79	14	8	5.4	17.9	17.9	233.2
33	5/ 2/79	14	45	2.9	19.6	19.6	235.0
33	5/ 2/79	15	25	2.6	21.4	21.4	236.8
33	5/ 2/79	16	30	1.2	22.6	22.6	238.0
33	5/ 2/79	16	50	0.8	22.9	22.9	238.3
33	5/ 2/79	17	24	1.8	23.9	23.9	239.3
33	5/ 2/79	18	7	1.1	24.7	24.7	240.0
33	5/ 2/79	19	30	0.9	25.9	25.9	241.3
33	5/ 8/79			NO DATA	0.0	0.0	241.3
33	5/ 8/79			NO DATA	4.1	4.1	245.4
33	5/10/79			NO DATA	0.0	0.0	245.4
33	5/10/79			NO DATA	5.1	5.1	250.4
33	5/12/79			NO DATA	0.0	0.0	250.4
33	5/12/79			NO DATA	1.5	1.5	252.0
33	5/13/79			NO DATA	0.0	0.0	252.0
33	5/13/79			NO DATA	1.5	1.5	253.5

TABLE B1- 3. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED STORM MM	PRECIPITATION DAY MM	YEAR MM
33	5/18/79	18	0	0.0	0.0	0.0	253.5
33	5/18/79	21	3	0.5	1.5	1.5	254.9
33	5/18/79	21	13	1.7	1.7	1.7	255.2
33	5/18/79	21	38	0.7	2.0	2.0	255.5
33	5/18/79	21	43	3.5	2.3	2.3	255.8
33	5/18/79	22	0	2.0	2.9	2.9	256.4
33	5/18/79	22	43	1.6	4.1	4.1	257.6
33	5/18/79	23	36	0.3	4.4	4.4	257.8
33	5/18/79	23	42	5.8	4.9	4.9	258.4
33	5/18/79	23	47	17.4	6.4	6.4	259.9
33	5/18/79	23	53	5.8	7.0	7.0	260.5
33	5/19/79	0	3	7.0	8.1	1.2	261.6
33	5/26/79	8	30	0.0	0.0	0.0	261.6
33	5/26/79	9	31	0.9	0.9	0.9	262.5
33	5/26/79	9	50	0.7	1.1	1.1	262.7
33	5/26/79	10	0	2.7	1.6	1.6	263.2
33	5/26/79	10	6	13.6	2.9	2.9	264.6
33	5/26/79	12	0	0.2	3.4	3.4	265.0
33	5/26/79	17	52	0.0	3.4	3.4	265.0
33	5/26/79	17	55	9.1	3.9	3.9	265.5
33	5/26/79	18	3	6.8	4.8	4.8	266.4
33	5/26/79	18	13	2.7	5.2	5.2	266.8
33	5/26/79	18	20	9.7	6.3	6.3	268.0
33	5/29/79	7	25	0.0	0.0	0.0	268.0
33	5/29/79	7	30	14.1	1.2	1.2	269.1
33	5/29/79	7	36	5.9	1.8	1.8	269.7
33	5/29/79	7	40	26.4	3.5	3.5	271.5
33	5/29/79	7	48	4.4	4.1	4.1	272.1
33	5/29/79	7	53	10.6	5.0	5.0	272.9
33	5/29/79	8	25	1.1	5.6	5.6	273.5
33	5/29/79	8	40	2.3	6.2	6.2	274.1
33	5/29/79	9	30	0.4	6.4	6.4	274.4
33	5/29/79	11	0	0.8	7.6	7.6	275.6
33	5/30/79			NO DATA	0.0	0.0	275.6
33	5/30/79			NO DATA	0.3	0.3	275.8
33	6/ 4/79	10	10	0.0	0.0	0.0	275.8
33	6/ 4/79	10	35	3.2	1.3	1.3	277.2
33	6/ 4/79	18	5	0.0	1.3	1.3	277.2
33	6/ 4/79	18	20	4.3	2.4	2.4	278.3
33	6/ 4/79	18	46	3.1	3.8	3.8	279.6
33	6/ 4/79	18	49	81.0	7.8	7.8	283.7
33	6/ 4/79	18	52	97.2	12.7	12.7	288.5
33	6/ 4/79	18	58	40.5	16.7	16.7	292.6
33	6/ 4/79	19	12	2.3	17.3	17.3	293.1
33	6/ 7/79			NO DATA	0.0	0.0	293.1
33	6/ 7/79			NO DATA	3.8	3.8	296.9

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED STORM MM	PRECIPITATION DAY MM	YEAR MM
33	6/ 8/79	8	6	0.0	0.0	0.0	296.9
33	6/ 8/79	8	14	4.7	0.6	0.6	297.5
33	6/ 8/79	8	19	15.1	1.9	1.9	298.8
33	6/ 8/79	8	35	5.9	3.5	3.5	300.4
33	6/ 8/79	9	5	1.3	4.1	4.1	301.0
33	6/ 8/79	9	50	3.4	6.6	6.6	303.5
33	6/ 9/79	6	47	0.0	0.0	0.0	303.5
33	6/ 9/79	6	49	51.5	1.7	1.7	305.2
33	6/ 9/79	6	55	14.3	3.1	3.1	306.7
33	6/ 9/79	9	0	0.0	3.1	3.1	306.7
33	6/ 9/79	9	8	8.6	4.3	4.3	307.8
33	6/ 9/79	10	2	1.9	6.0	6.0	309.5
33	6/ 9/79	10	7	3.4	6.3	6.3	309.8
33	6/ 9/79	10	22	2.3	6.9	6.9	310.4
33	6/ 9/79	10	28	11.5	8.0	8.0	311.5
33	6/ 9/79	10	36	15.0	10.0	10.0	313.5
33	6/ 9/79	10	45	1.9	10.3	10.3	313.8
33	6/ 9/79	10	58	7.9	12.0	12.0	315.5
33	6/ 9/79	11	1	17.2	12.9	12.9	316.4
33	6/ 9/79	11	7	8.6	13.7	13.7	317.3
33	6/ 9/79	11	34	2.5	14.9	14.9	318.4
33	6/ 9/79	12	5	1.7	15.7	15.7	319.3
33	6/ 9/79			NO DATA	0.0	15.7	319.3
33	6/ 9/79			NO DATA	1.3	17.0	320.5
33	6/12/79	17	38	0.0	0.0	0.0	320.5
33	6/12/79	17	40	79.5	2.6	2.6	323.2
33	6/12/79	17	42	119.2	6.6	6.6	327.2
33	6/12/79	17	44	79.5	9.3	9.3	329.8
33	6/12/79	17	57	3.7	10.1	10.1	330.6
33	6/12/79	18	2	149.4	22.5	22.5	343.1
33	6/12/79	18	8	180.2	40.5	40.5	361.1
33	6/12/79	18	10	135.2	45.0	45.0	365.6
33	6/12/79	18	16	113.9	56.4	56.4	377.0
33	6/12/79	18	22	13.2	57.8	57.8	378.3
33	6/12/79	18	31	5.3	58.6	58.6	379.1
33	6/12/79	18	43	2.6	59.1	59.1	379.6
33	6/12/79	19	9	1.2	59.6	59.6	380.1
33	6/12/79	20	50	0.6	60.7	60.7	381.2
33	6/12/79	21	0	1.6	60.9	60.9	381.5
33	6/12/79	22	30	0.4	61.5	61.5	382.0
33	6/17/79	21	0	0.0	0.0	0.0	382.0
33	6/18/79	6	10	0.2	1.4	1.4	383.4
33	6/18/79	6	27	2.0	2.0	2.0	384.0
33	6/18/79	6	30	17.1	2.9	2.9	384.9
33	6/18/79	6	37	4.9	3.4	3.4	385.4
33	6/18/79	6	40	28.6	4.9	4.9	386.9
33	6/18/79	6	44	34.3	7.1	7.1	[illegible]

GAGE DATE HOUR MIN INTENSITY MM/HR STORM MM DAY MM YEAR MM

GAGE DATE HOUR MIN INTENSITY MM/HR STORM MM DAY MM YEAR MM

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
33	6/18/79	6	58	2.6	9.4	9.4	391.4
33	6/18/79	7	0	34.3	10.6	10.6	392.6
33	6/18/79	7	10	5.1	11.4	11.4	393.4
33	6/19/79	21	52	0.0	0.0	0.0	393.4
33	6/19/79	21	58	17.4	1.7	1.7	395.2
33	6/19/79	22	7	5.0	2.5	2.5	395.9
33	6/19/79	22	14	12.8	4.0	4.0	397.4
33	6/19/79	22	16	37.2	5.2	5.2	398.6
33	6/19/79	22	26	14.9	7.7	7.7	401.1
33	6/19/79	22	27	59.6	8.7	8.7	402.1
33	6/19/79	22	36	9.9	10.2	10.2	403.6
33	6/19/79	22	47	4.1	10.9	10.9	404.4
33	6/19/79	23	3	0.9	11.2	11.2	404.6
33	6/26/79	23	52	0.0	0.0	0.0	404.6
33	6/26/79	23	57	15.4	1.3	1.3	405.9
33	6/27/79	0	2	49.4	5.4	4.1	410.0
33	6/27/79	0	6	46.3	8.5	7.2	413.1
33	6/27/79	0	14	115.7	23.9	22.6	428.5
33	6/27/79	0	15	92.6	25.5	24.2	430.1
33	6/27/79	0	22	35.3	29.6	28.3	434.2
33	6/27/79	0	26	11.6	30.3	29.1	434.9
33	6/27/79	0	29	51.4	32.9	31.6	437.5
33	6/27/79	0	36	13.2	34.5	33.2	439.1
33	6/27/79	0	47	29.4	39.9	38.6	444.5
33	6/27/79	0	52	9.3	40.6	39.3	445.2
33	6/27/79	1	0	1.9	40.9	39.6	445.5
33	6/27/79	1	8	7.7	41.9	40.6	446.5
33	6/27/79	1	20	1.3	42.2	40.9	446.8
33	6/28/79			NO DATA	0.0	0.0	446.8
33	6/28/79			NO DATA	1.3	1.3	448.0
33	7/ 3/79	7	42	0.0	0.0	0.0	448.0
33	7/ 3/79	7	47	56.8	4.7	4.7	452.8
33	7/ 3/79	7	51	27.6	6.6	6.6	454.6
33	7/ 3/79	7	55	59.2	10.5	10.5	458.6
33	7/ 3/79	8	1	34.2	13.9	13.9	462.0
33	7/ 3/79	8	6	22.1	15.8	15.8	463.8
33	7/ 3/79	8	10	31.6	17.9	17.9	465.9
33	7/ 3/79	8	15	15.8	19.2	19.2	467.2
33	7/ 3/79	8	41	0.6	19.5	19.5	467.5
33	7/ 3/79	8	43	110.5	23.2	23.2	471.2
33	7/ 3/79	8	49	44.7	27.6	27.6	475.7
33	7/ 3/79	8	59	20.5	31.0	31.0	479.1
33	7/ 3/79	9	20	11.3	35.0	35.0	483.0
33	7/ 3/79	9	23	78.9	38.9	38.9	487.0
33	7/ 3/79	9	31	59.2	46.8	46.8	494.9
33	7/ 3/79	9	35	138.1	56.0	56.0	504.1
33	7/ 3/79	9	36	78.9	57.3	57.3	505.4
33	7/ 3/79	9	40	98.7	63.9	63.9	512.0
33	7/ 3/79	9	42	157.8	69.2	69.2	517.2
33	7/ 3/79	9	45	52.6	71.8	71.8	519.9
33	7/ 3/79	9	54	8.8	73.1	73.1	521.2
33	7/ 3/79	11	2	0.5	73.7	73.7	521.7
33	7/10/79	20	40	0.0	0.0	0.0	521.7
33	7/10/79	20	45	16.7	1.4	1.4	523.1
33	7/10/79	20	50	40.5	4.8	4.8	526.5
33	7/10/79	21	0	9.5	6.3	6.3	528.0
33	7/13/79	9	38	0.0	0.0	0.0	528.0
33	7/13/79	9	44	41.1	4.1	4.1	532.2
33	7/13/79	9	47	36.0	5.9	5.9	534.0
33	7/13/79	9	52	55.5	10.5	10.5	538.6
33	7/13/79	10	3	14.0	13.1	13.1	541.2
33	7/13/79	10	10	4.4	13.6	13.6	541.7
33	7/13/79	10	20	7.7	14.9	14.9	543.0
33	7/13/79	11	35	0.6	15.7	15.7	543.7
33	7/13/79	19	58	0.0	15.7	15.7	543.7
33	7/13/79	20	6	67.5	24.7	24.7	552.7
33	7/13/79	20	20	5.5	26.0	26.0	554.0
33	7/14/79	0	43	0.3	27.3	1.3	555.3
33	7/14/79	0	50	97.0	38.6	12.6	566.6
33	7/14/79	1	0	20.1	41.9	15.9	570.0
33	7/14/79	1	4	50.1	45.3	19.3	573.3
33	7/14/79	1	9	46.3	49.1	23.1	577.2
33	7/14/79	1	10	154.3	51.7	25.7	579.7
33	7/14/79	1	13	46.3	54.0	28.0	582.0
33	7/14/79	1	25	1.3	54.3	28.3	582.3
33	7/14/79	1	31	36.0	57.9	31.9	585.9
33	7/14/79	2	30	1.0	58.9	32.9	586.9
33	7/14/79	2	35	9.3	59.7	33.7	587.7
33	7/14/79	3	30	1.1	60.7	34.7	588.7
33	7/14/79	4	0	1.5	61.5	35.5	589.5
33	7/14/79	4	20	1.5	62.0	36.0	590.0
33	7/14/79	4	52	1.0	62.5	36.5	590.5
33	7/14/79	5	30	0.4	62.7	36.8	590.8
33	7/19/79			NO DATA	0.0	0.0	590.8
33	7/19/79			NO DATA	2.5	2.5	593.3
33	7/24/79			NO DATA	0.0	0.0	593.3
33	7/24/79			NO DATA	3.8	3.8	597.1
33	7/29/79			NO DATA	0.0	0.0	597.1
33	7/29/79			NO DATA	3.3	3.3	600.4
33	7/30/79			NO DATA	0.0	0.0	600.4
33	7/30/79			NO DATA	2.0	2.0	602.5
33	8/ 1/79			NO DATA	0.0	0.0	602.5
33	8/ 1/79			NO DATA	0.5	0.5	603.0

TABLE B1- 3. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
33	8/ 8/79	19	51	0.0	0.0	0.0	603.0
33	8/ 8/79	19	57	13.1	1.3	1.3	604.3
33	8/ 8/79	19	59	70.6	3.7	3.7	606.6
33	8/ 8/79	20	8	34.8	8.9	8.9	611.9
33	8/ 8/79	20	10	7.8	9.1	9.1	612.1
33	8/ 8/79	20	13	15.7	9.9	9.9	612.9
33	8/ 8/79	20	15	78.4	12.5	12.5	615.5
33	8/ 8/79	20	20	21.9	14.4	14.4	617.3
33	8/ 8/79	20	25	9.4	15.2	15.2	618.1
33	8/ 8/79	20	40	2.1	15.7	15.7	618.6
33	8/ 8/79	21	38	0.3	15.9	15.9	618.9
33	8/ 8/79	21	40	15.7	16.5	16.5	619.4
33	8/ 8/79	21	54	2.2	17.0	17.0	620.0
33	8/ 8/79	22	5	1.4	17.2	17.2	620.2
33	8/ 8/79	22	28	2.7	18.3	18.3	621.3
33	8/ 9/79			NO DATA	0.0	0.0	621.3
33	8/ 9/79			NO DATA	5.1	5.1	626.3
33	8/13/79			NO DATA	0.0	0.0	626.3
33	8/13/79			NO DATA	1.3	1.3	627.6
33	8/19/79	2	20	0.0	0.0	0.0	627.6
33	8/19/79	2	23	25.0	1.3	1.3	628.9
33	8/19/79	2	30	113.6	14.5	14.5	642.1
33	8/19/79	2	34	63.8	18.8	18.8	646.4
33	8/19/79	2	38	26.3	20.5	20.5	648.1
33	8/19/79	2	42	11.3	21.3	21.3	648.9
33	8/19/79	2	57	4.0	22.3	22.3	649.9
33	8/19/79	2	58	30.0	22.8	22.8	650.4
33	8/19/79	3	22	5.6	25.0	25.0	652.6
33	8/19/79	3	37	3.0	25.8	25.8	653.4
33	8/19/79	3	49	3.8	26.5	26.5	654.1
33	8/19/79	4	8	2.4	27.3	27.3	654.9
33	8/19/79	5	22	0.2	27.5	27.5	655.1
33	8/19/79	5	27	45.0	31.3	31.3	658.9
33	8/19/79	5	32	15.0	32.5	32.5	660.1
33	8/19/79	5	35	25.0	33.8	33.8	661.4
33	8/19/79	5	37	15.0	34.3	34.3	661.9
33	8/19/79	5	38	45.0	35.0	35.0	662.6
33	8/19/79	5	44	25.0	37.5	37.5	665.1
33	8/19/79	5	53	3.3	38.0	38.0	665.6
33	8/19/79	5	59	32.5	41.3	41.3	668.9
33	8/19/79	6	2	30.0	42.8	42.8	670.4
33	8/19/79	6	8	10.0	43.8	43.8	671.4
33	8/19/79	6	12	3.8	44.0	44.0	671.6
33	8/19/79	6	17	12.0	45.0	45.0	672.6
33	8/19/79	6	23	10.0	46.0	46.0	673.6
33	8/19/79	6	27	15.0	47.0	47.0	674.6
33	8/19/79	6	31	3.8	47.3	47.3	674.9
33	8/19/79	6	37	2.5	47.5	47.5	675.1

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
33	8/19/79	6	54	6.0	48.5	48.5	676.1
33	8/19/79	6	57	15.0	49.3	49.3	676.9
33	8/19/79	20	25	0.0	0.0	49.3	676.9
33	8/19/79	20	30	14.9	1.2	50.5	678.1
33	8/19/79	20	42	3.7	2.0	51.3	678.9
33	8/19/79	20	54	1.2	2.2	51.5	679.1
33	8/19/79	21	0	9.9	3.2	52.5	680.1
33	8/19/79	21	3	14.9	4.0	53.3	680.9
33	8/19/79	21	5	44.7	5.5	54.7	682.3
33	8/19/79	21	15	6.0	6.5	55.7	683.3
33	8/19/79	21	20	14.9	7.7	57.0	684.6
33	8/19/79	21	32	22.4	12.2	61.5	689.1
33	8/19/79	21	36	11.2	12.9	62.2	689.8
33	8/19/79	21	41	3.0	13.2	62.4	690.1
33	8/19/79	21	46	17.9	14.7	63.9	691.5
33	8/19/79	21	59	2.3	15.2	64.4	692.0
33	8/19/79	22	18	0.8	15.4	64.7	692.3
33	8/19/79	22	21	29.8	16.9	66.2	693.8
33	8/19/79	22	27	14.9	18.4	67.7	695.3
33	8/19/79	22	50	1.3	18.9	68.2	695.8
33	8/19/79	22	57	12.8	20.4	69.7	697.3
33	8/19/79	23	7	3.0	20.9	70.2	697.8
33	8/19/79	23	39	0.9	21.4	70.7	698.3
33	8/20/79	0	52	0.6	22.1	0.7	699.0
33	8/20/79	1	14	2.7	23.1	1.7	700.0
33	8/21/79	18	31	0.0	0.0	0.0	700.0
33	8/21/79	18	34	9.9	0.5	0.5	700.5
33	8/21/79	18	38	3.7	0.7	0.7	700.7
33	8/21/79	18	42	33.4	3.0	3.0	703.0
33	8/21/79	18	50	74.2	12.9	12.9	712.9
33	8/21/79	18	52	37.1	14.1	14.1	714.1
33	8/21/79	18	59	55.1	20.5	20.5	720.5
33	8/21/79	19	1	22.3	21.3	21.3	721.3
33	8/21/79	19	4	24.7	22.5	22.5	722.5
33	8/21/79	19	12	11.1	24.0	24.0	724.0
33	8/21/79	19	17	14.8	25.2	25.2	725.2
33	8/21/79	19	23	2.5	25.5	25.5	725.5
33	8/21/79	19	33	5.9	26.5	26.5	726.5
33	8/21/79	19	57	3.1	27.7	27.7	727.7
33	8/21/79	20	5	5.6	28.4	28.4	728.4
33	8/22/79			NO DATA	0.0	0.0	728.4
33	8/22/79			NO DATA	3.8	3.8	732.3
33	8/26/79			NO DATA	0.0	0.0	732.3
33	8/26/79			NO DATA	3.8	3.8	736.1
33	8/28/79			NO DATA	0.0	0.0	736.1

GAGE	DATE	HOUR	MIN	INTENSITY MM/HR	STORM MM	DAY MM	YEAR MM
33	9/ 5/79	19	50	14.2	0.9	0.9	739.0
33	9/ 5/79	19	53	28.4	2.4	2.4	740.5
33	9/ 5/79	20	4	1.3	2.6	2.6	740.7
33	9/ 5/79	20	8	10.7	3.3	3.3	741.4
33	9/ 5/79	20	35	1.1	3.8	3.8	741.9
33	9/ 5/79	21	0	4.5	5.7	5.7	743.8
33	9/ 5/79	21	10	5.7	6.6	6.6	744.7
33	9/ 5/79	21	20	4.3	7.3	7.3	745.4
33	9/ 5/79	21	33	6.6	8.8	8.8	746.8
33	9/ 5/79	21	50	3.3	9.7	9.7	747.8
33	9/ 5/79	22	10	2.1	10.4	10.4	748.5
33	9/24/79			NO DATA	0.0	0.0	748.5
33	9/24/79			NO DATA	18.3	18.3	766.8
33	10/ 1/79	9	40	0.0	0.0	0.0	766.8
33	10/ 1/79	9	50	2.8	0.5	0.5	767.3
33	10/ 1/79	11	36	0.1	0.7	0.7	767.5
33	10/ 1/79	11	47	3.8	1.4	1.4	768.2
33	10/ 1/79	11	51	7.0	1.9	1.9	768.7
33	10/ 1/79	12	5	1.0	2.1	2.1	768.9
33	10/ 1/79	12	10	16.8	3.5	3.5	770.3
33	10/ 1/79	12	41	0.9	4.0	4.0	770.7
33	10/ 1/79	12	49	1.7	4.2	4.2	771.0
33	10/ 1/79	13	7	7.8	6.5	6.5	773.3
33	10/ 1/79	13	25	3.1	7.5	7.5	774.2
33	10/ 1/79	13	46	0.7	7.7	7.7	774.5
33	10/ 1/79	14	35	0.9	8.4	8.4	775.2
33	10/ 3/79			NO DATA	0.0	0.0	775.2
33	10/ 3/79			NO DATA	3.0	3.0	778.2
33	10/11/79			NO DATA	0.0	0.0	778.2
33	10/11/79			NO DATA	2.5	2.5	780.8
33	10/18/79	22	20	0.0	0.0	0.0	780.8
33	10/18/79	22	27	6.7	0.8	0.8	781.5
33	10/18/79	22	40	6.0	2.1	2.1	782.9
33	10/18/79	22	47	2.2	2.4	2.4	783.1
33	10/18/79	22	55	15.7	4.5	4.5	785.2
33	10/18/79	23	3	3.9	5.0	5.0	785.7
33	10/18/79	23	7	15.7	6.0	6.0	786.8
33	10/18/79	23	20	3.6	6.8	6.8	787.6
33	10/18/79	23	26	5.2	7.3	7.3	788.1
33	10/18/79	23	35	22.7	10.7	10.7	791.5
33	10/18/79	23	40	6.3	11.3	11.3	792.0
33	10/18/79	23	44	55.0	14.9	14.9	795.7
33	10/19/79	0	10	4.8	17.0	2.1	797.8
33	10/21/79	22	34	0.0	0.0	0.0	797.8
33	10/21/79	22	35	76.0	1.3	1.3	799.0
33	10/21/79	22	36	76.0	2.5	2.5	800.3
33	10/21/79	22	38	38.0	3.8	3.8	801.6
33	10/21/79	22	46	3.8	4.3	4.3	802.1
33	10/21/79	22	49	15.2	5.1	5.1	802.8
33	10/21/79	23	1	2.5	5.6	5.6	803.3
33	10/21/79	23	13	8.9	7.3	7.3	805.1
33	10/21/79	23	21	7.6	8.4	8.4	806.1
33	10/21/79	23	23	30.4	9.4	9.4	807.1
33	10/22/79	0	3	2.7	11.1	1.8	808.9
33	10/22/79	0	48	1.0	11.9	2.5	809.7
33	10/22/79	1	3	3.0	12.7	3.3	810.4
33	10/22/79	1	43	1.5	13.7	4.3	811.4
33	10/22/79	1	51	3.8	14.2	4.8	812.0
33	10/22/79	2	7	2.8	14.9	5.6	812.7
33	10/22/79	2	14	2.2	15.2	5.8	813.0
33	10/22/79	2	25	4.1	15.9	6.6	813.7
33	10/22/79	3	13	0.6	16.5	7.1	814.2
33	10/22/79	3	42	2.6	17.7	8.4	815.5
33	10/22/79	4	5	4.6	19.5	10.1	817.3
33	10/22/79	4	33	7.1	22.8	13.4	820.6
33	10/22/79	4	53	6.8	25.1	15.7	822.8
33	10/22/79	5	18	9.7	29.1	19.7	826.9
33	10/22/79	5	33	10.1	31.6	22.3	829.4
33	10/22/79	5	50	8.9	34.2	24.8	831.9
33	10/22/79	6	3	7.0	35.7	26.3	833.5
33	10/22/79	6	16	10.5	38.0	28.6	835.7
33	10/22/79	6	33	6.3	39.7	30.4	837.5
33	10/22/79	6	54	5.8	41.8	32.4	839.5
33	10/22/79	7	13	4.0	43.0	33.7	840.8
33	10/22/79	7	30	13.4	46.8	37.5	844.6
33	10/22/79	7	43	3.5	47.6	38.2	845.4
33	10/22/79	8	8	7.3	50.6	41.3	848.4
33	10/22/79	8	25	3.6	51.6	42.3	849.4
33	10/22/79	8	59	1.3	52.4	43.0	850.2
33	10/22/79	9	8	3.4	52.9	43.5	850.7
33	10/22/79	9	17	1.7	53.2	43.8	850.9
33	10/22/79	9	21	7.6	53.7	44.3	851.4
33	10/22/79	9	38	0.9	53.9	44.6	851.7
33	10/22/79	9	53	4.1	54.9	45.6	852.7
33	10/22/79	10	3	4.6	55.7	46.3	853.5
33	10/22/79	10	13	3.0	56.2	46.8	854.0
33	10/22/79	10	28	13.2	59.5	50.1	857.3
33	10/22/79	10	58	2.5	60.8	51.4	858.5
33	10/22/79	11	3	15.2	62.0	52.7	859.8
33	10/22/79	11	18	3.0	62.8	53.4	860.5
33	10/22/79	11	33	4.1	63.8	54.4	861.6
33	10/22/79	11	40	10.8	65.1	55.7	862.8
33	10/22/79	11	53	15.2	68.3	59.0	866.1
33	10/22/79	12	3	6.1	69.4	60.0	867.1
33	10/22/79	12	17	3.3	70.1	60.8	867.9
33	10/22/79	12	23	2.5	70.4	61.0	868.1
33	10/22/79	13	23	0.5	70.9	61.5	868.6
33	10/22/79	18	23	0.0	70.9	61.5	868.6

TABLE B1- 3. CONCLUDED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
33	10/22/79	21	33	0.6	72.9	63.5	870.7
33	10/22/79	22	3	1.0	73.4	64.0	871.2
33	10/22/79	22	26	1.3	73.9	64.6	871.7
33	10/23/79	0	43	0.3	74.7	0.8	872.4
33	10/31/79	5	30	0.0	0.0	0.0	872.4
33	10/31/79	6	40	0.9	1.1	1.1	873.5
33	10/31/79	8	7	0.4	1.6	1.6	874.0
33	10/31/79	8	10	16.0	2.4	2.4	874.8
33	10/31/79	8	42	1.0	2.9	2.9	875.4
33	10/31/79	8	49	6.8	3.7	3.7	876.2
33	10/31/79	8	55	2.7	4.0	4.0	876.4
33	10/31/79	9	0	6.4	4.5	4.5	877.0
33	10/31/79	9	10	3.2	5.1	5.1	877.5
33	10/31/79	9	17	9.1	6.1	6.1	878.6
33	10/31/79	9	36	5.0	7.7	7.7	880.2
33	10/31/79	9	50	5.7	9.0	9.0	881.5
33	10/31/79	10	0	3.2	9.6	9.6	882.0
33	10/31/79	10	30	1.1	10.1	10.1	882.6
33	10/31/79	11	0	2.1	11.2	11.2	883.6
33	11/ 5/79	7	30	0.0	0.0	0.0	883.6
33	11/ 5/79	9	10	0.7	1.1	1.1	884.8
33	11/ 5/79	9	50	0.9	1.7	1.7	885.3
33	11/ 5/79	11	34	0.2	2.0	2.0	885.6
33	11/ 5/79	11	45	4.7	2.8	2.8	886.5
33	11/ 5/79	12	6	2.4	3.7	3.7	887.3
33	11/ 5/79	12	30	1.4	4.3	4.3	887.9
33	11/ 5/79	14	0	0.6	5.1	5.1	888.7
33	11/ 5/79	15	20	0.4	5.7	5.7	889.3
33	11/ 5/79	15	30	3.4	6.3	6.3	889.9
33	11/ 5/79	15	51	0.8	6.5	6.5	890.2
33	11/ 5/79	16	10	0.9	6.8	6.8	890.4
33	11/ 5/79	16	22	4.3	7.7	7.7	891.3
33	11/ 5/79	17	0	0.4	8.0	8.0	891.6
33	11/ 5/79	17	30	1.1	8.5	8.5	892.1
33	11/ 5/79	18	0	1.1	9.1	9.1	892.7
33	11/ 5/79	18	19	1.8	9.7	9.7	893.3
33	11/ 5/79	18	33	4.9	10.8	10.8	894.4
33	11/ 5/79	20	20	0.6	11.9	11.9	895.6
33	11/ 9/79			SNOW	0.0	0.0	895.6
33	11/ 9/79			SNOW	1.5	1.5	897.1
33	11/12/79			SNOW	0.0	0.0	897.1
33	11/12/79			SNOW	2.5	2.5	899.6
33	11/20/79	20	40	0.0	0.0	0.0	899.6
33	11/21/79	0	5	0.2	0.7	0.7	900.3
33	11/21/79	0	48	4.8	4.1	4.1	903.8
33	11/21/79	[illegible]	[illegible]	[illegible]	[illegible]	5.4	905.0
33	11/21/79	13	30	0.1	6.1	6.1	905.7
33	11/21/79	15	15	0.4	6.8	6.8	906.4
33	11/21/79	15	20	5.8	7.3	7.3	906.9
33	11/21/79	15	30	17.5	10.2	10.2	909.8
33	11/21/79	15	36	4.9	10.7	10.7	910.3
33	11/21/79	15	40	7.3	11.2	11.2	910.8
33	11/21/79	16	7	0.5	11.4	11.4	911.1
33	11/21/79	16	10	14.6	12.2	12.2	911.8
33	11/21/79	16	25	1.9	12.7	12.7	912.3
33	11/21/79	16	56	0.9	13.2	13.2	912.8
33	11/21/79	17	13	0.9	13.4	13.4	913.0
33	11/21/79	17	23	1.5	13.6	13.6	913.3
33	11/21/79	17	37	5.2	14.9	14.9	914.5
33	11/21/79	18	16	1.5	15.8	15.8	915.4
33	11/21/79	18	24	11.0	17.3	17.3	916.9
33	11/21/79	20	0	0.3	17.8	17.8	917.4

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
33	11/21/79	0	5	0.2	0.7	0.7	900.3
33	11/21/79	0	48	4.8	4.1	4.1	903.8
33	11/21/79	1	0	2.8	4.6	4.6	904.9
34	4/19/79			NO DATA	0.0	0.0	0.0
34	4/19/79			NO DATA	19.1	19.1	19.1
34	4/20/79			NO DATA	0.0	0.0	19.1
34	4/20/79			NO DATA	39.9	39.9	58.9
34	4/25/79	10	35	0.0	0.0	0.0	58.9
34	4/25/79	10	45	5.4	0.9	0.9	59.8
34	4/25/79	11	5	5.4	2.7	2.7	61.6
34	4/25/79	11	35	0.9	3.1	3.1	62.1
34	4/25/79	12	5	1.8	4.0	4.0	62.9
34	4/25/79	15	2	0.5	5.4	5.4	64.3
34	4/25/79	15	15	10.3	7.6	7.6	66.5
34	4/25/79	15	36	3.8	8.9	8.9	67.9
34	4/25/79	15	52	5.0	10.3	10.3	69.2
34	4/25/79	16	28	0.7	10.7	10.7	69.6
34	4/25/79	16	33	10.7	11.6	11.6	70.5
34	4/25/79	16	40	3.8	12.1	12.1	71.0
34	4/25/79	16	55	7.1	13.8	13.8	72.8
34	4/25/79	17	15	2.7	14.7	14.7	73.7
34	4/29/79			NO DATA	0.0	0.0	73.7
34	4/29/79			NO DATA	2.5	2.5	76.2
34	5/ 2/79	9	0	0.0	0.0	0.0	76.2
34	5/ 2/79	9	50	0.3	0.3	0.3	76.5
34	5/ 2/79	10	3	2.5	0.8	0.8	77.0
34	5/ 2/79	10	30	1.2	1.3	1.3	77.5
34	5/ 2/79	10	49	3.4	2.4	2.4	78.6
34	5/ 2/79	11	2	2.5	2.9	2.9	79.1
34	5/ 2/79	11	28	2.5	4.0	4.0	80.2
34	5/ 2/79	12	8	4.4	6.9	6.9	83.1
34	5/ 2/79	12	13	12.8	8.0	8.0	84.2
34	5/ 2/79	12	42	3.3	9.6	9.6	85.8
34	5/ 2/79	13	10	4.6	11.7	11.7	87.9
34	5/ 2/79	13	18	12.0	13.3	13.3	89.5
34	5/ 2/79	13	25	4.6	13.8	13.8	90.0
34	5/ 2/79	13	28	26.6	15.2	15.2	91.4
34	5/ 2/79	13	38	9.6	16.8	16.8	93.0
34	5/ 2/79	13	50	5.3	17.8	17.8	94.0
34	5/ 2/79	13	56	10.7	18.9	18.9	95.1
34	5/ 2/79	14	30	3.8	21.0	21.0	97.2
34	5/ 2/79	15	0	2.7	22.4	22.4	98.6
34	5/ 2/79	15	30	2.1	23.4	23.4	99.6
34	5/ 2/79	16	10	1.2	24.2	24.2	100.4
34	5/ 2/79	17	9	0.8	25.0	25.0	101.2
34	5/ 2/79	17	50	1.2	25.8	25.8	102.0
34	5/ 2/79	18	30	1.2	26.6	26.6	102.8
34	5/ 2/79	19	5	0.5	26.9	26.9	103.1
34	5/ 2/79	20	0	0.6	27.4	27.4	103.6
34	5/ 8/79	0	55	0.0	0.0	0.0	103.6
34	5/ 8/79	1	2	8.2	1.0	1.0	104.6
34	5/ 8/79	1	10	2.4	1.3	1.3	104.9
34	5/ 8/79	1	13	38.4	3.2	3.2	106.8
34	5/ 8/79	1	30	5.6	4.8	4.8	108.4
34	5/ 8/79	1	44	1.4	5.1	5.1	108.7
34	5/ 8/79	1	53	23.5	8.6	8.6	112.3
34	5/10/79			NO DATA	0.0	0.0	112.3
34	5/10/79			NO DATA	5.1	5.1	117.3
34	5/12/79			NO DATA	0.0	0.0	117.3
34	5/12/79			NO DATA	1.3	1.3	118.6
34	5/13/79			NO DATA	0.0	0.0	118.6
34	5/13/79			NO DATA	1.3	1.3	119.9
34	5/18/79	18	0	0.0	0.0	0.0	119.9
34	5/18/79	21	0	0.4	1.3	1.3	121.2
34	5/18/79	21	30	0.6	1.6	1.6	121.5
34	5/18/79	21	50	1.9	2.2	2.2	122.1
34	5/18/79	22	8	5.3	3.8	3.8	123.7
34	5/18/79	22	25	2.3	4.5	4.5	124.4
34	5/18/79	23	32	0.6	5.1	5.1	125.0
34	5/18/79	23	44	9.6	7.0	7.0	126.9
34	5/18/79	23	54	1.9	7.4	7.4	127.2
34	5/18/79	24	0	6.4	8.0	8.0	127.9
34	5/19/79	1	3	0.6	8.6	0.6	128.5
34	5/26/79	9	0	0.0	0.0	0.0	128.5
34	5/26/79	18	1	0.0	0.3	0.3	128.8
34	5/26/79	18	3	45.7	1.8	1.8	130.3
34	5/26/79	18	20	10.8	4.8	4.8	133.3
34	5/26/79	18	45	2.4	5.8	5.8	134.4
34	5/26/79	19	5	1.5	6.3	6.3	134.9
34	5/29/79			NO DATA	0.0	0.0	134.9
34	5/29/79			NO DATA	5.1	5.1	140.0
34	5/30/79			NO DATA	0.0	0.0	140.0
34	5/30/79			NO DATA	0.3	0.3	140.2
34	6/ 4/79			NO DATA	0.0	0.0	140.2
34	6/ 4/79			NO DATA	19.8	19.8	160.0
34	6/ 7/79			NO DATA	0.0	0.0	160.0
34	6/ 7/79			NO DATA	2.5	2.5	162.6
34	6/ 8/79	7	27	0.0	0.0	0.0	162.6
34	6/ 8/79	8	0	2.8	1.5	1.5	164.1
34	6/ 8/79	8	11	8.3	3.0	3.0	165.6
34	6/ 8/79	8	54	1.1	3.8	3.8	166.4
34	6/ 8/79	9	45	2.1	5.6	5.6	168.1

TABLE B1- 4. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
34	6/ 9/79			NO DATA	0.0	0.0	168.1
34	6/ 9/79			NO DATA	16.8	16.8	184.9
34	6/ 9/79			NO DATA	0.0	16.8	184.9
34	6/ 9/79			NO DATA	1.3	18.0	186.2
34	6/12/79	17	50	0.0	0.0	0.0	186.2
34	6/12/79	17	55	9.7	0.8	0.8	187.0
34	6/12/79	18	1	2.7	1.1	1.1	187.3
34	6/12/79	18	5	24.2	2.7	2.7	188.9
34	6/12/79	18	11	61.8	8.9	8.9	195.0
34	6/12/79	18	15	28.2	10.7	10.7	196.9
34	6/12/79	18	18	80.6	14.8	14.8	200.9
34	6/12/79	18	20	177.2	20.7	20.7	206.9
34	6/12/79	18	25	154.7	33.6	33.6	219.7
34	6/12/79	18	27	56.4	35.4	35.4	221.6
34	6/12/79	18	31	20.1	36.8	36.8	223.0
34	6/12/79	18	32	64.5	37.9	37.9	224.0
34	6/12/79	18	45	5.0	38.9	38.9	225.1
34	6/12/79	19	20	0.5	39.2	39.2	225.4
34	6/12/79	20	50	0.7	40.3	40.3	226.5
34	6/12/79	20	57	4.6	40.8	40.8	227.0
34	6/12/79	21	15	1.8	41.4	41.4	227.5
34	6/12/79	21	30	2.1	41.9	41.9	228.1
34	6/12/79	22	37	0.2	42.2	42.2	228.3
34	6/17/79			NO DATA	0.0	0.0	228.3
34	6/17/79			NO DATA	1.3	1.3	229.6
34	6/18/79			NO DATA	0.0	0.0	229.6
34	6/18/79			NO DATA	11.7	11.7	241.3
34	6/19/79			NO DATA	0.0	0.0	241.3
34	6/19/79			NO DATA	11.4	11.4	252.7
34	6/26/79			NO DATA	0.0	0.0	252.7
34	6/26/79			NO DATA	2.5	2.5	255.3
34	6/27/79			NO DATA	0.0	0.0	255.3
34	6/27/79			NO DATA	26.2	26.2	281.4
34	6/28/79			NO DATA	0.0	0.0	281.4
34	6/28/79			NO DATA	0.5	0.5	281.9
34	7/ 3/79	7	40	0.0	0.0	0.0	281.9
34	7/ 3/79	7	54	100.3	23.4	23.4	305.3
34	7/ 3/79	8	0	35.2	26.9	26.9	308.9
34	7/ 3/79	8	8	1.9	27.2	27.2	309.1
34	7/ 3/79	8	20	1.3	27.4	27.4	309.4
34	7/ 3/79	8	24	22.7	28.9	28.9	310.9
34	7/ 3/79	8	32	8.4	30.5	30.5	312.4
34	7/ 3/79	8	57	6.0	31.0	31.0	312.9
34	7/ 3/79	9	2	12.1	32.0	32.0	313.9
34	7/ 3/79	9	4	45.3	33.5	33.5	315.4
34	7/ 3/79	9	17	1.2	33.7	33.7	315.7
34	7/ 3/79	9	23	30.2	36.7	36.7	318.7
34	7/ 3/79	9	30	58.2	43.5	43.5	325.5
34	7/ 3/79	9	32	15.1	44.0	44.0	326.0
34	7/ 3/79	9	37	24.2	46.1	46.1	328.0
34	7/ 3/79	9	41	64.2	50.3	50.3	332.3
34	7/ 3/79	9	47	35.2	53.9	53.9	335.8
34	7/ 3/79	9	55	7.6	54.9	54.9	336.8
34	7/ 3/79	10	7	2.5	55.4	55.4	337.3
34	7/ 3/79			NO DATA	0.0	55.4	337.3
34	7/ 3/79			NO DATA	3.3	58.7	340.6
34	7/10/79			NO DATA	0.0	0.0	340.6
34	7/10/79			NO DATA	3.0	3.0	343.7
34	7/13/79	9	40	0.0	0.0	0.0	343.7
34	7/13/79	9	47	11.6	1.4	1.4	345.0
34	7/13/79	9	50	43.3	3.5	3.5	347.2
34	7/13/79	9	55	32.4	6.2	6.2	349.9
34	7/13/79	10	5	16.2	8.9	8.9	352.6
34	7/13/79	10	11	8.1	9.7	9.7	353.4
34	7/13/79	10	23	1.4	10.0	10.0	353.7
34	7/13/79	20	1	0.0	10.0	10.0	353.7
34	7/13/79	20	7	56.8	15.7	15.7	359.3
34	7/13/79	20	15	4.1	16.2	16.2	359.9
34	7/14/79	0	43	0.2	17.0	0.8	360.7
34	7/14/79	0	50	46.3	22.4	6.2	366.1
34	7/14/79	0	55	6.5	23.0	6.8	366.6
34	7/14/79	1	2	46.3	28.4	12.2	372.0
34	7/14/79	1	9	13.9	30.0	13.8	373.7
34	7/14/79	1	13	109.5	37.3	21.1	381.0
34	7/14/79	1	17	105.4	44.3	28.1	388.0
34	7/14/79	1	23	10.8	45.4	29.2	389.1
34	7/14/79	1	27	20.3	46.8	30.5	390.4
34	7/14/79	1	32	81.1	53.5	37.3	397.2
34	7/14/79	1	40	34.5	58.1	41.9	401.8
34	7/14/79	1	43	70.3	61.6	45.4	405.3
34	7/14/79	1	47	44.6	64.6	48.4	408.3
34	7/14/79	2	13	2.5	65.7	49.5	409.3
34	7/14/79	2	39	1.2	66.2	50.0	409.9
34	7/14/79	2	42	16.2	67.0	50.8	410.7
34	7/14/79	3	52	0.7	67.9	51.6	411.5
34	7/14/79	4	3	17.7	71.1	54.9	414.7
34	7/14/79	4	7	40.5	73.8	57.6	417.4
34	7/14/79	4	11	4.1	74.1	57.9	417.7
34	7/14/79	4	13	32.4	75.2	58.9	418.8

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
34	7/ 3/79	8	20	1.3	27.4	27.4	309.6
34	7/ 3/79	8	24	22.7	28.9	28.9	310.9
34	7/ 3/79	8	43	0.8	29.2	29.2	311.1
34	7/19/79			NO DATA	0.8	0.8	420.1
34	7/24/79			NO DATA	0.0	0.0	420.1
34	7/24/79			NO DATA	2.0	2.0	422.1
34	7/29/79			NO DATA	0.0	0.0	422.1
34	7/29/79			NO DATA	3.0	3.0	425.2
34	7/30/79			NO DATA	0.0	0.0	425.2
34	7/30/79			NO DATA	1.8	1.8	427.0
34	8/ 1/79			NO DATA	0.0	0.0	427.0
34	8/ 1/79			NO DATA	0.8	0.8	427.7
34	8/ 8/79	19	56	0.0	0.0	0.0	427.7
34	8/ 8/79	19	57	87.4	1.5	1.5	429.2
34	8/ 8/79	20	2	35.0	4.4	4.4	432.1
34	8/ 8/79	20	5	69.9	7.9	7.9	435.6
34	8/ 8/79	20	8	17.5	8.7	8.7	436.5
34	8/ 8/79	20	12	8.7	9.3	9.3	437.0
34	8/ 8/79	20	22	3.5	9.9	9.9	437.6
34	8/ 8/79	20	30	21.9	12.8	12.8	440.5
34	8/ 8/79	21	35	0.5	13.4	13.4	441.1
34	8/ 8/79	21	40	3.5	13.7	13.7	441.4
34	8/ 8/79	21	42	17.5	14.3	14.3	442.0
34	8/ 8/79	21	52	3.5	14.9	14.9	442.6
34	8/ 8/79	21	56	35.0	17.2	17.2	444.9
34	8/ 8/79	22	12	2.2	17.8	17.8	445.5
34	8/ 9/79	20	25	0.0	0.0	0.0	445.5
34	8/ 9/79	20	29	98.5	6.6	6.6	452.1
34	8/ 9/79	20	33	31.1	8.6	8.6	454.1
34	8/19/79	2	22	0.0	0.0	0.0	454.1
34	8/19/79	2	24	118.4	3.9	3.9	458.1
34	8/19/79	2	25	50.7	4.8	4.8	458.9
34	8/19/79	2	30	87.9	12.1	12.1	466.3
34	8/19/79	2	37	21.7	14.7	14.7	468.8
34	8/19/79	2	49	7.0	16.1	16.1	470.2
34	8/19/79	2	52	45.1	18.3	18.3	472.5
34	8/19/79	2	59	4.8	18.9	18.9	473.0
34	8/19/79	3	11	4.2	19.7	19.7	473.9
34	8/19/79	3	14	11.3	20.3	20.3	474.4
34	8/19/79	3	44	5.1	22.8	22.8	477.0
34	8/19/79	5	18	0.2	23.1	23.1	477.2
34	8/19/79	5	21	33.8	24.8	24.8	478.9
34	8/19/79	5	28	9.7	25.9	25.9	480.1
34	8/19/79	5	31	33.8	27.6	27.6	481.8
34	8/19/79	5	40	7.5	28.7	28.7	482.9
34	8/19/79	5	47	24.2	31.6	31.6	485.7
34	8/19/79	5	50	56.4	34.4	34.4	488.5
34	8/19/79	5	57	2.4	34.7	34.7	488.8
34	7/14/79	4	13	32.4	75.2	58.9	418.8
34	7/14/79	4	33	1.6	75.7	59.5	419.3
34	8/19/79	6	2	40.6	38.1	38.1	492.2
34	8/19/79	6	4	16.9	38.6	38.6	492.7
34	8/19/79	6	8	21.1	40.0	40.0	494.2
34	8/19/79	6	28	4.2	41.4	41.4	495.6
34	8/19/79	6	37	3.8	42.0	42.0	496.1
34	8/19/79	7	44	1.5	43.7	43.7	497.8
34	8/19/79	20	49	0.0	0.0	43.7	497.8
34	8/19/79	20	55	16.8	1.7	45.4	499.5
34	8/19/79	20	56	50.4	2.5	46.2	500.3
34	8/19/79	21	0	12.6	3.4	47.1	501.2
34	8/19/79	21	2	50.4	5.0	48.7	502.9
34	8/19/79	21	12	13.4	7.3	51.0	505.1
34	8/19/79	21	24	15.4	10.4	54.1	508.2
34	8/19/79	21	27	28.0	11.8	55.5	509.6
34	8/19/79	21	37	5.0	12.6	56.3	510.4
34	8/19/79	21	41	29.4	14.6	58.3	512.4
34	8/19/79	21	47	39.2	18.5	62.2	516.3
34	8/19/79	21	59	1.4	18.8	62.5	516.6
34	8/19/79	22	4	16.8	20.2	63.9	518.0
34	8/19/79	22	9	3.4	20.5	64.1	518.3
34	8/19/79	22	19	6.7	21.6	65.3	519.4
34	8/19/79	22	23	4.2	21.9	65.5	519.7
34	8/19/79	22	28	10.1	22.7	66.4	520.5
34	8/19/79	22	32	67.3	27.2	70.9	525.0
34	8/19/79	22	50	1.9	27.7	71.4	525.6
34	8/19/79	22	53	22.4	28.9	72.5	526.7
34	8/19/79	22	54	84.1	30.3	74.0	528.1
34	8/19/79	22	59	13.5	31.4	75.1	529.2
34	8/20/79	0	36	0.3	31.9	0.6	529.8
34	8/20/79	1	4	6.6	35.0	3.6	532.8
34	8/20/79	1	24	0.8	35.3	3.9	533.1
34	8/21/79	18	39	0.0	0.0	0.0	533.1
34	8/21/79	18	43	57.4	3.8	3.8	536.9
34	8/21/79	18	48	42.1	7.3	7.3	540.5
34	8/21/79	18	51	146.6	14.7	14.7	547.8
34	8/21/79	18	54	63.8	17.9	17.9	551.0
34	8/21/79	18	58	47.8	21.0	21.0	554.2
34	8/21/79	19	0	47.8	22.6	22.6	555.8
34	8/21/79	19	12	23.9	27.4	27.4	560.5
34	8/21/79	19	20	12.0	29.0	29.0	562.1
34	8/21/79	19	53	2.9	30.6	30.6	563.7
34	8/21/79	20	20	1.4	31.2	31.2	564.4
34	8/22/79			NO DATA	0.0	0.0	564.4
34	8/22/79			NO DATA	1.3	1.3	565.6
34	8/26/79			NO DATA	0.0	0.0	565.6
34	8/26/79			NO DATA	0.5	0.5	566.1
34	8/28/79			NO DATA	0.0	0.0	566.1

TABLE B1- 4. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
34	8/28/79			NO DATA	1.3	1.3	567.4
34	9/ 5/79	21	0	0.0	0.0	0.0	567.4
34	9/ 5/79	21	40	10.3	6.9	6.9	574.3
34	9/ 5/79	21	55	5.0	8.1	8.1	575.6
34	9/ 5/79	22	38	1.7	9.4	9.4	576.8
34	9/24/79	5	10	0.0	0.0	0.0	576.8
34	9/24/79	5	18	15.2	2.0	2.0	578.8
34	9/24/79	6	10	1.2	3.0	3.0	579.9
34	9/24/79	6	30	1.5	3.6	3.6	580.4
34	9/24/79	6	40	4.6	4.3	4.3	581.1
34	9/24/79	6	52	2.5	4.8	4.8	581.6
34	9/24/79	7	10	3.4	5.8	5.8	582.7
34	9/24/79	9	23	0.1	6.1	6.1	582.9
34	9/24/79	9	37	1.1	6.3	6.3	583.2
34	9/24/79	10	15	1.2	7.1	7.1	583.9
34	9/24/79	10	43	0.5	7.4	7.4	584.2
34	9/24/79	10	55	2.5	7.9	7.9	584.7
34	9/24/79	11	5	1.5	8.1	8.1	584.9
34	9/24/79	11	28	3.3	9.4	9.4	586.2
34	10/ 1/79	9	15	0.0	0.0	0.0	586.2
34	10/ 1/79	9	40	2.0	0.8	0.8	587.0
34	10/ 1/79	9	45	6.7	1.4	1.4	587.6
34	10/ 1/79	11	38	0.1	1.7	1.7	587.9
34	10/ 1/79	11	42	4.2	2.0	2.0	588.2
34	10/ 1/79	12	15	0.5	2.2	2.2	588.4
34	10/ 1/79	12	25	1.7	2.5	2.5	588.7
34	10/ 1/79	12	45	0.8	2.8	2.8	589.0
34	10/ 1/79	12	50	3.4	3.1	3.1	589.3
34	10/ 1/79	12	59	1.9	3.4	3.4	589.6
34	10/ 1/79	13	14	4.5	4.5	4.5	590.7
34	10/ 1/79	13	20	2.8	4.7	4.7	591.0
34	10/ 1/79	13	35	3.4	5.6	5.6	591.8
34	10/ 3/79			NO DATA	0.0	0.0	591.8
34	10/ 3/79			NO DATA	2.0	2.0	593.8
34	10/11/79			NO DATA	0.0	0.0	593.8
34	10/11/79			NO DATA	3.8	3.8	597.6
34	10/18/79	22	35	0.0	0.0	0.0	597.6
34	10/18/79	22	52	3.9	1.1	1.1	598.7
34	10/18/79	22	55	11.1	1.7	1.7	599.3
34	10/18/79	23	3	4.2	2.2	2.2	599.8
34	10/18/79	23	7	20.8	3.6	3.6	601.2
34	10/18/79	23	20	1.3	3.9	3.9	601.5
34	10/18/79	23	30	3.3	4.4	4.4	602.1
34	10/18/79	23	35	33.3	7.2	7.2	604.8

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
34	10/19/79	0	10	3.3	12.2	1.4	609.8
34	10/21/79	22	28	0.0	0.0	0.0	609.8
34	10/21/79	22	40	2.7	0.5	0.5	610.4
34	10/21/79	22	50	4.9	1.4	1.4	611.2
34	10/21/79	22	58	6.2	2.2	2.2	612.0
34	10/21/79	23	1	11.0	2.7	2.7	612.6
34	10/21/79	23	11	4.9	3.6	3.6	613.4
34	10/21/79	23	14	21.9	4.7	4.7	614.5
34	10/22/79	0	9	2.7	7.1	2.5	616.9
34	10/22/79	0	40	0.5	7.4	2.7	617.2
34	10/22/79	0	54	4.7	8.5	3.8	618.3
34	10/22/79	1	40	1.4	9.6	4.9	619.4
34	10/22/79	1	50	3.3	10.1	5.5	620.0
34	10/22/79	2	0	3.3	10.7	6.0	620.5
34	10/22/79	2	7	2.3	11.0	6.3	620.8
34	10/22/79	2	18	6.0	12.1	7.4	621.9
34	10/22/79	3	4	0.4	12.3	7.7	622.2
34	10/22/79	3	32	2.3	13.4	8.8	623.2
34	10/22/79	3	50	5.5	15.1	10.4	624.9
34	10/22/79	4	0	3.3	15.6	11.0	625.4
34	10/22/79	4	38	7.4	20.3	15.6	630.1
34	10/22/79	5	0	9.0	23.6	18.9	633.4
34	10/22/79	5	10	9.9	25.2	20.5	635.0
34	10/22/79	5	30	11.5	29.0	24.4	638.9
34	10/22/79	5	40	11.5	31.0	26.3	640.8
34	10/22/79	6	5	7.9	34.2	29.6	644.1
34	10/22/79	6	30	6.6	37.0	32.3	646.8
34	10/22/79	6	48	4.6	38.4	33.7	648.2
34	10/22/79	6	54	11.0	39.4	34.8	649.3
34	10/22/79	6	57	16.4	40.3	35.6	650.1
34	10/22/79	7	5	6.2	41.1	36.4	650.9
34	10/22/79	7	15	11.5	43.0	38.4	652.8
34	10/22/79	7	28	8.9	44.9	40.3	654.7
34	10/22/79	7	37	5.5	45.8	41.1	655.6
34	10/22/79	7	47	6.6	46.8	42.2	656.7
34	10/22/79	8	0	11.4	49.3	44.7	659.1
34	10/22/79	8	11	7.5	50.7	46.0	660.5
34	10/22/79	8	30	1.7	51.2	46.6	661.0
34	10/22/79	8	55	2.0	52.1	47.4	661.9
34	10/22/79	9	2	4.7	52.6	47.9	662.4
34	10/22/79	9	11	5.5	53.4	48.8	663.2
34	10/22/79	9	30	0.9	53.7	49.0	663.5
34	10/22/79	9	41	6.0	54.8	50.1	664.6
34	10/22/79	9	50	3.7	55.3	50.7	665.2
34	10/22/79	10	0	1.6	55.6	51.0	665.4
34	10/22/79	10	8	4.1	56.2	51.5	666.0
34	10/22/79	10	16	20.5	58.9	54.2	668.7
34	10/22/79	10	28	6.8	60.3	55.6	670.1
34	10/22/79	10	52	3.4	61.6	57.0	671.5

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
34	10/18/79	23	20	1.3	3.9	3.9	601.5
34	10/18/79	23	30	3.3	4.4	4.4	602.1
34	10/18/79	23	35	33.3	7.2	7.2	604.8
34	10/18/79	23	42	4.8	7.8	7.8	[illegible]
34	10/22/79	10	16	20.5	58.9	54.2	668.7
34	10/22/79	10	28	6.8	60.3	55.6	670.1
34	10/22/79	10	52	3.4	61.6	57.0	671.5
34	10/22/79	11	20	7.0	64.1	59.4	673.9
34	10/22/79	11	28	4.1	64.7	60.0	674.5
34	10/22/79	11	44	14.4	68.5	63.8	678.3
34	10/22/79	11	50	13.7	69.9	65.2	679.7
34	10/22/79	11	57	7.0	70.7	66.0	680.5
34	10/22/79	12	20	2.1	71.5	66.8	681.3
34	10/22/79	15	35	0.3	72.3	67.7	682.1
34	10/22/79	18	30	0.2	72.9	68.2	682.7
34	10/22/79	20	30	0.5	74.0	69.3	683.8
34	10/22/79	21	0	1.1	74.5	69.9	684.3
34	10/22/79	22	0	0.8	75.3	70.7	685.2
34	10/22/79	22	15	1.1	75.6	71.0	685.4
34	10/22/79	23	30	0.4	76.2	71.5	686.0
34	10/23/79	0	30	0.5	76.7	0.5	686.5
34	10/31/79	5	30	0.0	0.0	0.0	686.5
34	10/31/79	6	0	1.7	0.9	0.9	687.4
34	10/31/79	6	34	0.5	1.1	1.1	687.7
34	10/31/79	6	40	2.9	1.4	1.4	688.0
34	10/31/79	8	4	0.2	1.7	1.7	688.2
34	10/31/79	8	10	8.6	2.6	2.6	689.1
34	10/31/79	8	36	1.3	3.2	3.2	689.7
34	10/31/79	8	46	5.2	4.0	4.0	690.5
34	10/31/79	8	50	0.0	4.0	4.0	690.5
34	10/31/79	8	58	6.4	4.9	4.9	691.4
34	10/31/79	9	5	2.5	5.2	5.2	691.7
34	10/31/79	9	13	6.4	6.0	6.0	692.5
34	10/31/79	9	23	6.9	7.2	7.2	693.7
34	10/31/79	9	50	4.5	9.2	9.2	695.7
34	10/31/79	10	0	1.7	9.5	9.5	696.0
34	10/31/79	10	24	1.4	10.0	10.0	696.6
34	10/31/79	11	0	1.9	11.2	11.2	697.7
34	11/ 5/79	7	30	0.0	0.0	0.0	697.7
34	11/ 5/79	8	51	1.0	1.3	1.3	699.0
34	11/ 5/79	9	30	0.5	1.6	1.6	699.3
34	11/ 5/79	11	20	0.2	1.9	1.9	699.6
34	11/ 5/79	11	30	3.9	2.6	2.6	700.3
34	11/ 5/79	11	34	9.7	3.2	3.2	700.9
34	11/ 5/79	11	54	1.9	3.9	3.9	701.6
34	11/ 5/79	12	8	1.4	4.2	4.2	701.9
34	11/ 5/79	12	18	3.9	4.8	4.8	702.5
34	11/ 5/79	13	30	0.3	5.2	5.2	702.9
34	11/ 5/79	13	46	1.2	5.5	5.5	703.2
34	11/ 5/79	15	6	0.2	5.8	5.8	703.5
34	11/ 5/79	15	15	4.3	6.5	6.5	704.2
34	11/ 5/79	15	39	0.8	6.8	6.8	704.5
34	11/ 5/79	15	45	3.2	7.1	7.1	704.8
34	11/ 5/79	16	3	3.2	8.1	8.1	705.8
34	11/ 5/79	16	50	0.8	8.7	8.7	706.4
34	11/ 5/79	17	15	0.8	9.0	9.0	706.7
34	11/ 5/79	17	50	1.1	9.7	9.7	707.4
34	11/ 5/79	18	10	1.9	10.3	10.3	708.0
34	11/ 5/79	18	37	2.2	11.3	11.3	709.0
34	11/ 5/79	20	20	0.4	11.9	11.9	709.6

TABLE B1- 5. FOUR MILE CREEK WATERSHED PRECIPITATION DATA FOR 1979 GAGE 35

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	3/23/79			NO DATA	0.0	0.0	0.0
35	3/23/79			NO DATA	11.4	11.4	11.4
35	3/24/79			SNOW	0.0	0.0	11.4
35	3/24/79			SNOW	11.7	11.7	23.1
35	3/28/79	17	20	0.0	0.0	0.0	23.1
35	3/28/79	17	30	3.5	0.6	0.6	23.7
35	3/28/79	17	42	4.3	1.4	1.4	24.6
35	3/28/79	17	50	15.1	3.5	3.5	26.6
35	3/28/79	17	56	8.6	4.3	4.3	27.4
35	3/28/79	18	35	6.6	8.6	8.6	31.8
35	3/28/79	18	46	4.7	9.5	9.5	32.6
35	3/28/79	19	0	2.5	10.1	10.1	33.2
35	3/28/79	20	0	0.3	10.4	10.4	33.5
35	3/28/79	20	10	1.7	10.7	10.7	33.8
35	3/28/79	20	27	4.1	11.8	11.8	34.9
35	3/28/79	20	43	2.2	12.4	12.4	35.5
35	3/28/79	22	7	0.0	12.4	12.4	35.5
35	3/28/79	22	20	2.7	13.0	13.0	36.1
35	3/28/79	23	45	0.8	14.1	14.1	37.2
35	3/28/79	24	0	3.5	15.0	15.0	38.1
35	3/29/79	0	20	1.7	15.6	0.6	38.7
35	3/29/79	0	24	13.0	16.4	1.4	39.5
35	3/29/79	0	35	3.1	17.0	2.0	40.1
35	3/29/79	0	51	2.2	17.6	2.6	40.7
35	3/29/79	0	57	2.9	17.9	2.9	41.0
35	3/29/79	3	20	0.5	19.0	4.0	42.1
35	3/29/79	5	33	0.0	19.0	4.0	42.1
35	3/29/79	5	39	8.6	19.9	4.9	43.0
35	3/29/79	6	0	0.8	20.2	5.2	43.3
35	3/29/79	6	24	2.9	21.3	6.3	44.4
35	3/29/79	7	44	0.0	21.3	6.3	44.4
35	3/29/79	7	46	69.1	23.6	8.6	46.7
35	4/ 1/79			SNOW	0.0	0.0	46.7
35	4/ 1/79			SNOW	19.3	19.3	66.0
35	4/10/79			NO DATA	0.0	0.0	66.0
35	4/10/79			NO DATA	4.3	4.3	70.4
35	4/19/79	6	5	0.0	0.0	0.0	70.4
35	4/19/79	6	35	1.6	0.8	0.8	71.2
35	4/19/79	6	55	2.5	1.6	1.6	72.0
35	4/19/79	8	20	0.8	2.7	2.7	73.1
35	4/19/79	9	20	1.9	4.7	4.7	75.0
35	4/19/79	10	3	1.2	5.5	5.5	75.9
35	4/19/79	10	49	0.4	5.8	5.8	76.1
35	4/19/79	10	55	13.7	7.1	7.1	77.5
35	4/19/79	11	1	2.7	7.4	7.4	77.8
35	4/19/79	11	10	12.8	9.3	9.3	79.7

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	4/19/79	12	11	5.5	10.2	10.2	80.5
35	4/19/79	12	25	1.2	10.4	10.4	80.8
35	4/19/79	12	40	5.5	11.8	11.8	82.2
35	4/19/79	12	54	3.5	12.6	12.6	83.0
35	4/19/79	12	59	23.1	14.6	14.6	84.9
35	4/19/79	13	7	6.2	15.4	15.4	85.7
35	4/19/79	13	17	4.9	16.2	16.2	86.6
35	4/19/79	13	23	13.7	17.6	17.6	87.9
35	4/19/79	13	28	39.6	20.9	20.9	91.2
35	4/20/79	1	15	0.0	21.4	0.5	91.8
35	4/20/79	1	24	5.5	22.3	1.4	92.6
35	4/20/79	4	3	0.1	22.5	1.6	92.9
35	4/20/79	4	10	7.1	23.4	2.5	93.7
35	4/20/79	4	18	20.6	26.1	5.2	96.5
35	4/20/79	4	23	6.6	26.7	5.8	97.0
35	4/20/79	4	25	24.7	27.5	6.6	97.8
35	4/20/79	5	48	0.6	28.3	7.4	98.7
35	4/20/79	5	55	4.7	28.9	8.0	99.2
35	4/20/79	6	15	0.8	29.1	8.2	99.5
35	4/20/79	6	54	0.8	29.7	8.8	100.0
35	4/20/79	8	48	0.4	30.5	9.6	100.9
35	4/20/79	8	50	66.0	32.7	11.8	103.1
35	4/20/79	9	13	9.3	36.3	15.4	106.6
35	4/20/79	9	36	2.2	37.1	16.2	107.5
35	4/20/79	10	4	5.9	39.9	19.0	110.2
35	4/20/79	10	53	0.3	40.1	19.2	110.5
35	4/20/79	10	55	33.0	41.2	20.3	111.6
35	4/20/79	11	9	4.7	42.3	21.4	112.7
35	4/20/79	11	14	9.9	43.1	22.3	113.5
35	4/20/79	11	30	2.1	43.7	22.8	114.1
35	4/20/79	12	12	1.2	44.5	23.6	114.9
35	4/20/79	12	15	16.5	45.3	24.5	115.7
35	4/20/79	12	55	7.4	50.3	29.4	120.7
35	4/20/79	13	10	7.7	52.2	31.3	122.6
35	4/20/79	13	25	3.3	53.0	32.2	123.4
35	4/20/79	13	55	1.1	53.6	32.7	124.0
35	4/25/79	10	15	0.0	0.0	0.0	124.0
35	4/25/79	10	25	7.5	1.3	1.3	125.2
35	4/25/79	10	30	21.0	3.0	3.0	127.0
35	4/25/79	10	42	10.0	5.0	5.0	129.0
35	4/25/79	10	56	4.3	6.0	6.0	130.0
35	4/25/79	12	0	1.2	7.3	7.3	131.2
35	4/25/79	14	57	0.3	8.0	8.0	132.0
35	4/25/79	15	12	4.0	9.0	9.0	133.0
35	4/25/79	15	24	6.3	10.3	10.3	134.2
35	4/25/79	15	37	1.2	10.5	10.5	134.5
35	4/25/79	15	45	5.6	11.3	11.3	135.2
35	4/25/79	16	25	1.1	12.0	12.0	136.0
35	4/25/79	16	35	4.5	12.8	12.8	136.7

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	4/19/79	10	49	0.4	3.8	3.8	77.4
35	4/19/79	10	55	13.7	7.1	7.1	77.5
35	4/19/79	11	1	2.7	7.4	7.4	77.8
35	4/19/79	11	10	12.8	9.3	9.3	79.7
35	4/25/79	16	25	1.1	12.0	12.0	136.0
35	4/25/79	16	35	4.5	12.8	12.8	136.7
35	4/25/79	16	45	4.5	13.5	13.5	137.5
35	4/25/79	17	20	0.8	15.0	15.0	139.0
35	4/25/79	18	50	0.8	16.3	16.3	140.2
35	4/29/79			NO DATA	0.0	0.0	140.2
35	4/29/79			NO DATA	2.0	2.0	142.2
35	5/ 2/79	9	5	0.0	0.0	0.0	142.2
35	5/ 2/79	10	6	1.0	1.0	1.0	143.3
35	5/ 2/79	10	20	9.0	3.1	3.1	145.4
35	5/ 2/79	10	38	3.5	4.2	4.2	146.4
35	5/ 2/79	10	52	2.2	4.7	4.7	147.0
35	5/ 2/79	11	0	5.9	5.5	5.5	147.7
35	5/ 2/79	11	16	2.0	6.0	6.0	148.3
35	5/ 2/79	11	36	3.9	7.3	7.3	149.6
35	5/ 2/79	11	46	7.9	8.6	8.6	150.9
35	5/ 2/79	12	0	2.2	9.2	9.2	151.4
35	5/ 2/79	12	45	3.8	12.0	12.0	154.3
35	5/ 2/79	13	0	3.1	12.8	12.8	155.1
35	5/ 2/79	13	29	4.9	15.2	15.2	157.4
35	5/ 2/79	13	45	2.9	16.0	16.0	158.2
35	5/ 2/79	13	57	5.2	17.0	17.0	159.3
35	5/ 2/79	14	53	3.6	20.4	20.4	162.7
35	5/ 2/79	15	20	2.3	21.5	21.5	163.7
35	5/ 2/79	16	20	0.8	22.3	22.3	164.5
35	5/ 2/79	17	0	0.4	22.5	22.5	164.8
35	5/ 2/79	17	50	1.3	23.6	23.6	165.8
35	5/ 2/79	18	2	1.3	23.8	23.8	166.1
35	5/ 2/79	18	12	3.1	24.3	24.3	166.6
35	5/ 2/79	18	50	1.2	25.1	25.1	167.4
35	5/ 2/79	19	30	0.8	25.7	25.7	167.9
35	5/ 8/79	0	58	0.0	0.0	0.0	167.9
35	5/ 8/79	1	0	33.7	1.1	1.1	169.0
35	5/ 8/79	1	4	8.4	1.7	1.7	169.6
35	5/ 8/79	1	46	3.2	3.9	3.9	171.8
35	5/ 8/79	1	49	16.8	4.8	4.8	172.7
35	5/ 8/79	1	54	6.7	5.3	5.3	173.2
35	5/10/79	16	7	0.0	0.0	0.0	173.2
35	5/10/79	16	9	145.3	4.8	4.8	178.1
35	5/10/79	16	13	22.7	6.4	6.4	179.6
35	5/10/79	16	17	4.5	6.7	6.7	179.9
35	5/10/79	16	27	7.3	7.9	7.9	181.1
35	5/12/79			NO DATA	0.0	0.0	181.1
35	5/12/79			NO DATA	2.0	2.0	183.1
35	5/13/79			NO DATA	0.0	0.0	183.1
35	5/13/79			NO DATA	1.8	1.8	184.9
35	5/18/79	6	33	0.0	0.0	0.0	184.9
35	5/18/79	14	50	0.1	0.8	0.8	185.7
35	5/18/79	15	0	4.7	1.6	1.6	186.5
35	5/18/79	16	7	0.2	1.8	1.8	186.7
35	5/18/79	16	17	1.6	2.1	2.1	187.0
35	5/18/79	17	56	0.2	2.3	2.3	187.3
35	5/18/79	18	27	1.0	2.9	2.9	187.8
35	5/18/79	18	34	6.7	3.7	3.7	188.6
35	5/18/79	18	49	2.1	4.2	4.2	189.1
35	5/18/79	21	54	0.1	4.4	4.4	189.3
35	5/18/79	22	4	1.6	4.7	4.7	189.6
35	5/18/79	22	16	3.9	5.5	5.5	190.4
35	5/18/79	22	27	2.8	6.0	6.0	190.9
35	5/18/79	23	35	0.7	6.8	6.8	191.7
35	5/18/79	23	45	3.1	7.3	7.3	192.2
35	5/18/79	23	54	5.2	8.1	8.1	193.0
35	5/19/79	0	9	1.0	8.4	0.3	193.3
35	5/19/79	0	56	1.3	9.4	1.3	194.3
35	5/26/79	9	5	0.0	0.0	0.0	194.3
35	5/26/79	9	45	0.8	0.6	0.6	194.9
35	5/26/79	10	11	1.9	1.4	1.4	195.7
35	5/26/79	10	19	8.3	2.5	2.5	196.8
35	5/26/79	18	0	0.0	2.5	2.5	196.8
35	5/26/79	18	1	82.8	3.9	3.9	198.2
35	5/26/79	18	3	57.9	5.8	5.8	200.1
35	5/26/79	18	15	4.1	6.6	6.6	200.9
35	5/26/79	18	29	2.4	7.2	7.2	201.5
35	5/26/79	19	5	4.1	9.7	9.7	204.0
35	5/29/79	6	28	0.0	0.0	0.0	204.0
35	5/29/79	6	30	17.1	0.6	0.6	204.5
35	5/29/79	6	34	123.7	8.8	8.8	212.8
35	5/29/79	6	44	8.5	10.2	10.2	214.2
35	5/29/79	7	35	0.0	10.2	10.2	214.2
35	5/29/79	7	47	7.1	11.7	11.7	215.6
35	5/29/79	8	9	2.3	12.5	12.5	216.5
35	5/29/79	8	15	8.5	13.4	13.4	217.3
35	5/29/79	8	40	1.4	13.9	13.9	217.9
35	5/29/79	9	5	0.7	14.2	14.2	218.2
35	5/30/79			NO DATA	0.0	0.0	218.2
35	5/30/79			NO DATA	0.3	0.3	218.4
35	6/ 4/79	10	18	0.0	0.0	0.0	218.4
35	6/ 4/79	10	28	4.8	0.8	0.8	219.2
35	6/ 4/79	11	38	0.5	1.3	1.3	219.8
35	6/ 4/79	18	20	0.0	1.3	1.3	219.8
35	6/ 4/79	18	28	9.9	2.6	2.6	221.1
35	6/ 4/79	18	31	26.4	4.0	4.0	222.4
35	6/ 4/79	18	34	26.4	5.3	5.3	223.7
35	6/ 4/79	18	43	3.5	5.8	5.8	224.2
35	6/ 4/79	18	45	23.8	6.6	6.6	225.0
35	6/ 4/79	18	50	31.7	9.2	9.2	227.7

TABLE B1- 5. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	6/ 4/79	18	55	47.5	13.2	13.2	231.6
35	6/ 4/79	18	58	132.0	19.8	19.8	238.2
35	6/ 4/79	19	1	79.2	23.8	23.8	242.2
35	6/ 4/79	19	14	14.6	26.9	26.9	245.4
35	6/ 7/79			NO DATA	0.0	0.0	245.4
35	6/ 7/79			NO DATA	0.5	0.5	245.9
35	6/ 8/79	7	55	0.0	0.0	0.0	245.9
35	6/ 8/79	8	20	3.2	1.3	1.3	247.2
35	6/ 8/79	8	30	4.0	2.0	2.0	247.9
35	6/ 8/79	8	57	2.2	3.0	3.0	248.9
35	6/ 8/79	9	10	4.6	4.0	4.0	249.9
35	6/ 8/79	9	30	3.0	5.0	5.0	250.9
35	6/ 8/79	9	50	1.0	5.3	5.3	251.2
35	6/ 9/79	6	5	0.0	0.0	0.0	251.2
35	6/ 9/79	6	8	10.2	0.5	0.5	251.7
35	6/ 9/79	8	20	0.0	0.5	0.5	251.7
35	6/ 9/79	8	30	3.0	1.0	1.0	252.2
35	6/ 9/79	8	48	0.8	1.3	1.3	252.5
35	6/ 9/79	8	56	5.7	2.0	2.0	253.2
35	6/ 9/79	8	59	10.2	2.5	2.5	253.7
35	6/ 9/79	9	2	45.7	4.8	4.8	256.0
35	6/ 9/79	9	10	3.8	5.3	5.3	256.5
35	6/ 9/79	9	50	0.4	5.6	5.6	256.8
35	6/ 9/79	10	13	0.7	5.8	5.8	257.0
35	6/ 9/79	10	20	4.4	6.3	6.3	257.6
35	6/ 9/79	10	39	1.6	6.9	6.9	258.1
35	6/ 9/79	10	50	4.2	7.6	7.6	258.8
35	6/ 9/79	11	8	1.7	8.1	8.1	259.3
35	6/ 9/79	11	30	1.4	8.6	8.6	259.8
35	6/ 9/79	11	58	1.1	9.1	9.1	260.3
35	6/ 9/79			NO DATA	0.0	9.1	260.3
35	6/ 9/79			NO DATA	1.3	10.4	261.6
35	6/12/79	17	51	0.0	0.0	0.0	261.6
35	6/12/79	18	0	45.6	6.8	6.8	268.5
35	6/12/79	18	7	9.4	7.9	7.9	269.6
35	6/12/79	18	10	32.8	9.6	9.6	271.2
35	6/12/79	18	15	16.4	10.9	10.9	272.6
35	6/12/79	18	21	82.1	19.2	19.2	280.8
35	6/12/79	18	26	115.0	28.7	28.7	290.3
35	6/12/79	18	33	37.5	33.1	33.1	294.7
35	6/12/79	18	38	9.9	33.9	33.9	295.5
35	6/12/79	18	43	19.7	35.6	35.6	297.2
35	6/12/79	18	59	3.1	36.4	36.4	298.0
35	6/12/79	20	56	0.4	37.2	37.2	298.8
35	6/12/79	21	23	3.0	38.6	38.6	300.2
35	6/12/79	21	43	0.8	38.9	38.9	300.5
35	6/17/79	21	10	0.0	0.0	0.0	300.5
35	6/17/79	21	12	15.9	0.5	0.5	301.0
35	6/17/79	22	0	0.3	0.8	0.8	301.3
35	6/17/79	22	2	7.9	1.1	1.1	301.5
35	6/17/79	22	34	0.5	1.3	1.3	301.8
35	6/17/79	22	45	2.9	1.9	1.9	302.3
35	6/18/79	6	5	0.1	2.4	0.5	302.9
35	6/18/79	6	34	0.5	2.6	0.8	303.1
35	6/18/79	6	39	6.4	3.2	1.3	303.6
35	6/18/79	6	45	15.9	4.8	2.9	305.2
35	6/18/79	6	47	39.7	6.1	4.2	306.6
35	6/18/79	6	49	39.7	7.4	5.6	307.9
35	6/18/79	6	52	26.5	8.7	6.9	309.2
35	6/18/79	6	54	23.8	9.5	7.7	310.0
35	6/18/79	7	1	4.5	10.1	8.2	310.5
35	6/18/79	7	5	23.8	11.6	9.8	312.1
35	6/18/79	7	9	11.9	12.4	10.6	312.9
35	6/18/79	7	20	1.4	12.7	10.8	313.2
35	6/19/79	22	4	0.0	0.0	0.0	313.2
35	6/19/79	22	12	9.8	1.3	1.3	314.5
35	6/19/79	22	14	15.6	1.8	1.8	315.0
35	6/19/79	22	18	7.8	2.3	2.3	315.5
35	6/19/79	22	22	11.7	3.1	3.1	316.3
35	6/19/79	22	30	5.9	3.9	3.9	317.1
35	6/19/79	22	33	46.9	6.2	6.2	319.4
35	6/19/79	22	37	3.9	6.5	6.5	319.7
35	6/19/79	22	39	70.3	8.9	8.9	322.0
35	6/19/79	22	41	23.4	9.6	9.6	322.8
35	6/19/79	22	43	15.6	10.2	10.2	323.3
35	6/19/79	23	0	0.9	10.4	10.4	323.6
35	6/26/79	23	10	0.0	0.0	0.0	323.6
35	6/26/79	23	59	1.0	0.8	0.8	324.4
35	6/27/79	0	3	36.5	3.2	2.4	326.8
35	6/27/79	0	9	94.6	12.7	11.9	336.3
35	6/27/79	0	17	91.2	24.9	24.0	348.4
35	6/27/79	0	20	81.1	28.9	28.1	352.5
35	6/27/79	0	22	121.6	33.0	32.2	356.6
35	6/27/79	0	29	57.9	39.7	38.9	363.3
35	6/27/79	0	32	64.9	43.0	42.2	366.5
35	6/27/79	0	38	21.6	45.1	44.3	368.7
35	6/27/79	0	40	40.5	46.5	45.7	370.1
35	6/27/79	0	53	12.5	49.2	48.4	372.8
35	6/27/79	1	10	2.9	50.0	49.2	373.6
35	6/27/79	1	14	4.1	50.3	49.4	373.8
35	6/27/79	1	25	2.9	50.8	50.0	374.4
35	6/28/79			NO DATA	0.0	0.0	374.4
35	6/28/79			NO DATA	4.3	4.3	378.7
35	6/ 3/79	7	31	0.0	0.0	0.0	378.7

35 6/12/79 21 43 0.8 38.9 38.9 388.5

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	7/ 3/79	7	45	69.4	9.2	9.2	388.0
35	7/ 3/79	7	47	38.5	10.5	10.5	389.2
35	7/ 3/79	7	49	77.1	13.1	13.1	391.8
35	7/ 3/79	7	56	30.8	16.7	16.7	395.4
35	7/ 3/79	8	3	57.3	23.4	23.4	402.1
35	7/ 3/79	8	7	46.2	26.5	26.5	405.2
35	7/ 3/79	8	12	24.7	28.5	28.5	407.2
35	7/ 3/79	8	19	48.5	34.2	34.2	412.9
35	7/ 3/79	8	26	15.4	36.0	36.0	414.7
35	7/ 3/79	8	32	25.7	38.5	38.5	417.2
35	7/ 3/79	8	47	2.1	39.1	39.1	417.8
35	7/ 3/79	8	51	3.9	39.3	39.3	418.0
35	7/ 3/79	8	57	46.2	43.9	43.9	422.6
35	7/ 3/79	9	4	11.0	45.2	45.2	423.9
35	7/ 3/79	9	9	15.4	46.5	46.5	425.2
35	7/ 3/79	9	19	3.1	47.0	47.0	425.7
35	7/ 3/79	9	25	46.2	51.6	51.6	430.3
35	7/ 3/79	9	33	61.7	59.9	59.9	438.6
35	7/ 3/79	9	37	115.6	67.6	67.6	446.3
35	7/ 3/79	9	40	41.1	69.6	69.6	448.3
35	7/ 3/79	9	43	102.8	74.8	74.8	453.5
35	7/ 3/79	9	47	115.6	82.5	82.5	461.2
35	7/ 3/79	9	53	51.4	87.6	87.6	466.3
35	7/ 3/79	10	2	8.6	88.9	88.9	467.6
35	7/ 3/79	20	40	0.0	0.0	88.9	467.6
35	7/ 3/79	20	44	6.4	0.4	89.3	468.0
35	7/ 3/79	20	54	37.4	6.7	95.6	474.3
35	7/ 3/79	21	0	4.3	7.1	96.0	474.7
35	7/ 3/79	21	23	1.7	7.7	96.6	475.3
35	7/ 3/79	21	42	2.0	8.4	97.3	476.0
35	7/10/79	20	33	0.0	0.0	0.0	476.0
35	7/10/79	21	58	1.3	1.8	1.8	477.8
35	7/10/79	23	48	0.3	2.4	2.4	478.4
35	7/10/79	23	52	23.8	4.0	4.0	479.9
35	7/11/79	0	10	4.4	5.3	1.3	481.3
35	7/11/79	0	14	11.9	6.1	2.1	482.1
35	7/11/79	0	23	3.5	6.6	2.6	482.6
35	7/13/79	9	50	0.0	0.0	0.0	482.6
35	7/13/79	10	8	12.5	3.7	3.7	486.3
35	7/13/79	10	19	7.3	5.1	5.1	487.7
35	7/13/79	11	23	0.5	5.6	5.6	488.2
35	7/13/79	11	43	0.8	5.9	5.9	488.5
35	7/13/79	20	8	0.0	5.9	5.9	488.5
35	7/13/79	20	13	77.0	12.3	12.3	494.9
35	7/13/79	20	16	42.8	14.4	14.4	497.0
35	7/13/79	20	28	13.4	17.1	17.1	499.7
35	7/13/79	22	44	0.2	17.7	17.7	500.2
35	7/13/79	22	48	4.0	17.9	17.9	500.5
35	7/14/79	0	49	0.3	18.5	0.5	501.0

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	7/14/79	0	53	48.2	21.7	3.7	504.2
35	7/14/79	0	56	80.3	25.7	7.8	508.3
35	7/14/79	1	10	18.3	30.0	12.0	512.5
35	7/14/79	1	15	6.4	30.5	12.6	513.1
35	7/14/79	1	22	89.4	40.9	23.0	523.5
35	7/14/79	1	28	29.4	43.9	25.9	526.5
35	7/14/79	1	34	72.2	51.1	33.2	533.7
35	7/14/79	1	39	80.3	57.8	39.9	540.4
35	7/14/79	1	46	45.9	63.1	45.2	545.7
35	7/14/79	1	52	53.5	68.5	50.6	551.1
35	7/14/79	2	3	8.8	70.1	52.2	552.7
35	7/14/79	2	13	3.2	70.6	52.7	553.2
35	7/14/79	2	23	3.2	71.2	53.2	553.7
35	7/14/79	2	41	2.7	72.0	54.0	554.5
35	7/14/79	2	43	16.1	72.5	54.6	555.1
35	7/14/79	4	3	0.8	73.6	55.6	556.1
35	7/14/79	4	9	10.7	74.6	56.7	557.2
35	7/14/79	4	12	64.2	77.8	59.9	560.4
35	7/14/79	4	16	4.0	78.1	60.2	560.7
35	7/14/79	4	18	32.1	79.2	61.3	561.8
35	7/14/79	4	23	9.6	80.0	62.1	562.6
35	7/14/79	4	25	8.0	80.3	62.3	562.8
35	7/14/79	4	33	2.0	80.5	62.6	563.1
35	7/19/79			NO DATA	0.0	0.0	563.1
35	7/19/79			NO DATA	2.5	2.5	565.6
35	7/24/79			NO DATA	0.0	0.0	565.6
35	7/24/79			NO DATA	2.5	2.5	568.2
35	7/29/79	18	30	0.0	0.0	0.0	568.2
35	7/29/79	20	10	2.3	3.8	3.8	572.0
35	7/30/79	3	55	0.1	4.6	0.8	572.7
35	7/30/79	3	58	50.8	7.1	3.3	575.3
35	7/30/79	4	2	3.8	7.4	3.6	575.5
35	7/30/79	4	5	30.5	8.9	5.1	577.1
35	7/30/79	4	23	0.8	9.1	5.3	577.3
35	7/30/79	4	26	40.6	11.2	7.4	579.4
35	7/30/79	4	30	3.8	11.4	7.6	579.6
35	8/ 1/79			NO DATA	0.0	0.0	579.6
35	8/ 1/79			NO DATA	1.3	1.3	580.9
35	8/ 8/79	19	49	0.0	0.0	0.0	580.9
35	8/ 8/79	19	57	22.9	3.0	3.0	583.9
35	8/ 8/79	20	1	7.6	3.6	3.6	584.4
35	8/ 8/79	20	10	27.1	7.6	7.6	588.5
35	8/ 8/79	20	13	71.1	11.2	11.2	592.1
35	8/ 8/79	20	20	6.5	11.9	11.9	592.8
35	8/ 8/79	20	29	25.4	15.7	15.7	596.6
35	8/ 8/79	20	40	5.5	16.8	16.8	597.6
35	8/ 8/79	20	50	1.5	17.0	17.0	597.9

TABLE B1- 5. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	8/ 8/79	20	51	91.5	18.5	18.5	599.4
35	8/ 8/79	21	39	1.3	19.6	19.6	600.4
35	8/ 8/79	21	48	13.5	21.6	21.6	602.5
35	8/ 8/79	22	0	2.5	22.1	22.1	603.0
35	8/ 8/79	22	2	45.7	23.6	23.6	604.5
35	8/ 8/79	22	8	27.9	26.4	26.4	607.3
35	8/ 8/79	22	11	15.2	27.2	27.2	608.1
35	8/ 8/79	22	22	6.9	28.4	28.4	609.3
35	8/ 9/79	20	15	0.0	0.0	0.0	609.3
35	8/ 9/79	20	20	15.9	1.3	1.3	610.6
35	8/ 9/79	20	25	3.2	1.6	1.6	610.9
35	8/ 9/79	20	30	12.7	2.6	2.6	612.0
35	8/ 9/79	20	33	37.0	4.5	4.5	613.8
35	8/ 9/79	20	40	13.6	6.1	6.1	615.4
35	8/ 9/79	20	45	6.3	6.6	6.6	615.9
35	8/13/79			NO DATA	0.0	0.0	615.9
35	8/13/79			NO DATA	0.8	0.8	616.7
35	8/19/79	2	23	0.0	0.0	0.0	616.7
35	8/19/79	2	34	35.1	6.4	6.4	623.1
35	8/19/79	2	43	14.3	8.6	8.6	625.3
35	8/19/79	2	47	8.0	9.1	9.1	625.8
35	8/19/79	2	53	18.8	11.0	11.0	627.7
35	8/19/79	3	2	5.4	11.8	11.8	628.5
35	8/19/79	3	5	48.3	14.2	14.2	630.9
35	8/19/79	3	11	26.8	16.9	16.9	633.6
35	8/19/79	3	23	5.4	18.0	18.0	634.7
35	8/19/79	3	34	1.5	18.2	18.2	634.9
35	8/19/79	3	43	3.6	18.8	18.8	635.5
35	8/19/79	3	53	3.2	19.3	19.3	636.0
35	8/19/79	4	3	1.6	19.6	19.6	636.3
35	8/19/79	5	22	0.2	19.8	19.8	636.5
35	8/19/79	5	24	56.3	21.7	21.7	638.4
35	8/19/79	5	35	2.9	22.3	22.3	638.9
35	8/19/79	5	37	32.2	23.3	23.3	640.0
35	8/19/79	5	42	3.2	23.6	23.6	640.3
35	8/19/79	5	51	7.2	24.7	24.7	641.4
35	8/19/79	5	58	23.0	27.4	27.4	644.0
35	8/19/79	6	3	3.2	27.6	27.6	644.3
35	8/19/79	6	9	26.8	30.3	30.3	647.0
35	8/19/79	6	13	4.0	30.6	30.6	647.3
35	8/19/79	6	17	32.2	32.7	32.7	649.4
35	8/19/79	6	26	8.9	34.1	34.1	650.7
35	8/19/79	6	33	6.9	34.9	34.9	651.6
35	8/19/79	6	43	4.8	35.7	35.7	652.4
35	8/19/79	7	11	1.1	36.2	36.2	652.9
35	8/19/79	7	25	2.3	36.7	36.7	653.4
35	8/19/79	7	30	19.3	38.4	38.4	655.0

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	8/19/79	21	1	51.1	5.1	43.5	660.1
35	8/19/79	21	9	6.1	5.9	44.3	661.0
35	8/19/79	21	11	56.5	7.8	46.2	662.8
35	8/19/79	21	21	6.5	8.9	47.2	663.9
35	8/19/79	21	23	48.4	10.5	48.8	665.5
35	8/19/79	21	29	2.7	10.8	49.1	665.8
35	8/19/79	21	31	48.4	12.4	50.7	667.4
35	8/19/79	21	37	8.1	13.2	51.5	668.2
35	8/19/79	21	38	48.4	14.0	52.3	669.0
35	8/19/79	21	43	6.5	14.5	52.9	669.6
35	8/19/79	21	50	11.5	15.9	54.2	670.9
35	8/19/79	22	5	2.2	16.4	54.8	671.4
35	8/19/79	22	8	32.3	18.0	56.4	673.1
35	8/19/79	22	11	5.4	18.3	56.7	673.3
35	8/19/79	22	14	64.6	21.5	59.9	676.6
35	8/19/79	22	38	2.0	22.3	60.7	677.4
35	8/19/79	22	59	0.8	22.6	61.0	677.6
35	8/19/79	23	2	26.9	23.9	62.3	679.0
35	8/20/79	0	45	0.8	25.3	1.3	680.3
35	8/20/79	1	0	4.3	26.4	2.4	681.4
35	8/20/79	1	43	1.1	27.2	3.2	682.2
35	8/21/79	18	39	0.0	0.0	0.0	682.2
35	8/21/79	18	46	4.7	0.5	0.5	682.8
35	8/21/79	18	58	90.4	18.6	18.6	700.8
35	8/21/79	19	0	49.3	20.3	20.3	702.5
35	8/21/79	19	6	13.7	21.6	21.6	703.8
35	8/21/79	19	16	39.4	28.2	28.2	710.4
35	8/21/79	19	20	12.3	29.0	29.0	711.2
35	8/21/79	19	32	2.7	29.6	29.6	711.8
35	8/21/79	19	50	2.7	30.4	30.4	712.6
35	8/21/79	20	35	1.5	31.5	31.5	713.7
35	8/22/79			NO DATA	0.0	0.0	713.7
35	8/22/79			NO DATA	5.1	5.1	718.8
35	8/26/79	19	30	0.0	0.0	0.0	718.8
35	8/26/79	20	0	4.2	2.1	2.1	720.9
35	8/26/79	20	10	10.0	3.8	3.8	722.5
35	8/26/79	20	20	5.0	4.6	4.6	723.4
35	8/26/79	20	38	4.2	5.8	5.8	724.6
35	8/28/79			NO DATA	0.0	0.0	724.6
35	8/28/79			NO DATA	1.3	1.3	725.9
35	9/ 5/79	19	57	0.0	0.0	0.0	725.9
35	9/ 5/79	20	2	10.6	0.9	0.9	726.8
35	9/ 5/79	20	32	1.2	1.5	1.5	727.4
35	9/ 5/79	20	42	5.3	2.3	2.3	728.2
35	9/ 5/79	21	2	4.4	3.8	3.8	729.7
35	9/ 5/79	21	32	[illegible]	[illegible]	[illegible]	[illegible]

GAGE.	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	9/ 5/79	22	7	2.3	9.4	9.4	735.3
35	9/24/79	5	12	0.0	0.0	0.0	735.3
35	9/24/79	5	29	4.3	1.2	1.2	736.5
35	9/24/79	6	34	1.1	2.5	2.5	737.8
35	9/24/79	6	59	2.9	3.7	3.7	739.0
35	9/24/79	9	21	0.1	3.9	3.9	739.2
35	9/24/79	9	43	2.7	4.9	4.9	740.2
35	9/24/79	10	9	0.6	5.2	5.2	740.5
35	9/24/79	10	19	1.5	5.4	5.4	740.7
35	9/24/79	10	54	1.3	6.1	6.1	741.4
35	9/24/79	11	9	1.0	6.4	6.4	741.7
35	9/24/79	11	19	5.9	7.4	7.4	742.7
35	10/ 1/79	9	15	0.0	0.0	0.0	742.7
35	10/ 1/79	9	25	4.9	0.8	0.8	743.5
35	10/ 1/79	9	40	1.1	1.1	1.1	743.7
35	10/ 1/79	9	50	1.6	1.4	1.4	744.0
35	10/ 1/79	11	44	0.0	1.4	1.4	744.0
35	10/ 1/79	11	47	16.3	2.2	2.2	744.8
35	10/ 1/79	12	20	1.5	3.0	3.0	745.6
35	10/ 1/79	12	53	1.0	3.5	3.5	746.2
35	10/ 1/79	13	3	8.1	4.9	4.9	747.5
35	10/ 1/79	13	11	8.1	6.0	6.0	748.6
35	10/ 1/79	13	20	5.4	6.8	6.8	749.4
35	10/ 1/79	13	30	3.3	7.3	7.3	750.0
35	10/ 1/79	13	50	0.8	7.6	7.6	750.2
35	10/ 1/79	14	0	3.3	8.1	8.1	750.8
35	10/ 3/79			NO DATA	0.0	0.0	750.8
35	10/ 3/79			NO DATA	2.8	2.8	753.6
35	10/11/79			NO DATA	0.0	0.0	753.6
35	10/11/79			NO DATA	2.5	2.5	756.1
35	10/18/79	22	23	0.0	0.0	0.0	756.1
35	10/18/79	22	39	3.7	1.0	1.0	757.1
35	10/18/79	22	58	2.4	1.7	1.7	757.9
35	10/18/79	23	13	3.0	2.5	2.5	758.6
35	10/18/79	23	19	5.0	3.0	3.0	759.1
35	10/18/79	23	27	9.3	4.2	4.2	760.3
35	10/18/79	23	38	5.4	5.2	5.2	761.3
35	10/18/79	23	42	14.9	6.2	6.2	762.3
35	10/18/79	23	49	6.4	6.9	6.9	763.1
35	10/18/79	23	51	37.2	8.2	8.2	764.3
35	10/18/79	23	53	22.3	8.9	8.9	765.0
35	10/18/79	23	57	7.4	9.4	9.4	765.5
35	10/19/79	0	13	4.7	10.7	1.2	766.8
35	10/21/79	21	17	0.0	0.0	0.0	766.8
35	10/21/79	21	27	3.4	0.6	0.6	767.3
35	10/21/79	21	47	2.5	1.4	1.4	768.2

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	10/21/79	22	35	0.4	1.7	1.7	768.5
35	10/21/79	22	39	4.2	2.0	2.0	768.8
35	10/21/79	22	42	11.2	2.5	2.5	769.3
35	10/21/79	22	50	4.2	3.1	3.1	769.9
35	10/21/79	22	55	50.6	7.3	7.3	774.1
35	10/21/79	22	59	12.6	8.2	8.2	774.9
35	10/21/79	23	7	4.2	8.7	8.7	775.5
35	10/21/79	23	11	12.6	9.6	9.6	776.3
35	10/21/79	23	17	45.0	14.1	14.1	780.8
35	10/21/79	23	21	25.3	15.7	15.7	782.5
35	10/21/79	23	31	25.3	20.0	20.0	786.7
35	10/22/79	0	9	4.4	22.8	2.8	789.5
35	10/22/79	0	47	0.9	23.3	3.4	790.1
35	10/22/79	0	57	3.4	23.9	3.9	790.7
35	10/22/79	1	5	6.3	24.7	4.8	791.5
35	10/22/79	1	31	1.3	25.3	5.3	792.1
35	10/22/79	1	37	2.8	25.6	5.6	792.4
35	10/22/79	2	1	1.4	26.1	6.2	792.9
35	10/22/79	2	22	2.4	27.0	7.0	793.8
35	10/22/79	3	11	0.3	27.3	7.3	794.0
35	10/22/79	3	27	4.2	28.4	8.4	795.2
35	10/22/79	3	50	3.7	29.8	9.8	796.6
35	10/22/79	4	38	6.7	35.1	15.2	801.9
35	10/22/79	4	54	7.4	37.1	17.1	803.9
35	10/22/79	5	27	9.7	42.4	22.5	809.2
35	10/22/79	5	42	16.9	46.7	26.7	813.4
35	10/22/79	6	14	10.0	52.0	32.0	818.8
35	10/22/79	6	37	5.9	54.2	34.3	821.0
35	10/22/79	6	42	10.1	55.1	35.1	821.9
35	10/22/79	7	17	5.3	58.2	38.2	825.0
35	10/22/79	7	37	6.7	60.4	40.5	827.2
35	10/22/79	7	49	5.6	61.6	41.6	828.3
35	10/22/79	8	17	7.2	64.9	45.0	831.7
35	10/22/79	8	37	4.2	66.3	46.4	833.1
35	10/22/79	9	25	2.1	68.0	48.1	834.8
35	10/22/79	9	28	22.5	69.1	49.2	835.9
35	10/22/79	9	37	1.9	69.4	49.5	836.2
35	10/22/79	9	57	5.1	71.1	51.2	837.9
35	10/22/79	10	7	1.7	71.4	51.4	838.2
35	10/22/79	10	12	3.4	71.7	51.7	838.4
35	10/22/79	10	19	2.4	71.9	52.0	838.7
35	10/22/79	10	23	21.1	73.4	53.4	840.1
35	10/22/79	10	32	9.4	74.8	54.8	841.5
35	10/22/79	10	42	1.7	75.0	55.1	841.8
35	10/22/79	10	53	6.1	76.2	56.2	842.9
35	10/22/79	11	2	7.5	77.3	57.3	844.1
35	10/22/79	11	13	3.1	77.9	57.9	844.6
35	10/22/79	11	17	12.6	78.7	58.7	845.5
35	10/22/79	11	28	3.1	79.3	59.3	846.0
35	10/22/79	11	42	16.9	83.2	63.2	850.0
35	10/22/79	11	49	4.8	83.8	63.8	850.5
35	10/22/79	11	52	45.0	86.0	66.0	852.8

TABLE B1- 5. CONCLUDED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	10/22/79	11	59	12.0	87.4	67.5	854.2
35	10/22/79	12	7	6.3	88.3	68.3	855.0
35	10/22/79	12	17	3.4	88.8	68.9	855.6
35	10/22/79	12	59	0.8	89.4	69.4	856.2
35	10/22/79	15	17	0.2	89.9	70.0	856.7
35	10/22/79	18	37	0.1	90.2	70.3	857.0
35	10/22/79	21	7	0.8	92.2	72.2	859.0
35	10/22/79	21	27	1.7	92.7	72.8	859.5
35	10/22/79	21	43	1.1	93.0	73.1	859.8
35	10/22/79	22	7	1.4	93.6	73.6	860.4
35	10/22/79	22	37	1.1	94.2	74.2	860.9
35	10/22/79	23	6	0.6	94.4	74.5	861.2
35	10/23/79	1	7	0.3	95.0	0.6	861.8
35	10/31/79	5	35	0.0	0.0	0.0	861.8
35	10/31/79	6	34	1.1	1.1	1.1	862.8
35	10/31/79	8	9	0.3	1.6	1.6	863.4
35	10/31/79	8	47	0.8	2.1	2.1	863.9
35	10/31/79	8	48	47.8	2.9	2.9	864.7
35	10/31/79	8	50	8.0	3.2	3.2	865.0
35	10/31/79	8	58	2.0	3.5	3.5	865.2
35	10/31/79	9	1	10.6	4.0	4.0	865.8
35	10/31/79	9	13	1.3	4.3	4.3	866.0
35	10/31/79	9	17	8.0	4.8	4.8	866.6
35	10/31/79	9	44	4.1	6.6	6.6	868.4
35	10/31/79	10	4	2.4	7.4	7.4	869.2
35	10/31/79	10	18	2.3	8.0	8.0	869.7
35	10/31/79	10	34	2.0	8.5	8.5	870.3
35	10/31/79	10	54	2.4	9.3	9.3	871.1
35	10/31/79	10	58	8.0	9.8	9.8	871.6
35	10/31/79	11	5	2.3	10.1	10.1	871.9
35	10/31/79	11	14	8.9	11.4	11.4	873.2
35	11/ 5/79	8	4	0.0	0.0	0.0	873.2
35	11/ 5/79	10	4	0.7	1.5	1.5	874.7
35	11/ 5/79	11	32	0.2	1.7	1.7	874.9
35	11/ 5/79	11	44	2.9	2.3	2.3	875.5
35	11/ 5/79	12	3	1.8	2.9	2.9	876.1
35	11/ 5/79	12	14	1.6	3.2	3.2	876.4
35	11/ 5/79	13	44	0.2	3.5	3.5	876.7
35	11/ 5/79	13	54	3.5	4.1	4.1	877.3
35	11/ 5/79	15	19	0.2	4.4	4.4	877.6
35	11/ 5/79	15	24	3.5	4.7	4.7	877.9
35	11/ 5/79	15	41	1.0	5.0	5.0	878.2
35	11/ 5/79	16	14	1.1	5.5	5.5	878.7
35	11/ 5/79	16	44	0.6	5.8	5.8	879.0
35	11/ 5/79	16	52	2.2	6.1	6.1	879.3
35	11/ 5/79	17	0	2.2	6.4	6.4	879.6
35	11/ 5/79	17	16	2.2	7.0	7.0	880.2
35	11/ 5/79	18	27	0.7	7.9	7.9	881.1
35	11/ 5/79	18	37	5.2	8.7	8.7	881.9

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
35	11/ 9/79			SNOW	0.0	0.0	883.1
35	11/ 9/79			SNOW	0.8	0.8	883.9
35	11/12/79			SNOW	0.0	0.0	883.9
35	11/12/79			SNOW	1.8	1.8	885.6

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	1/11/79			SNOW	0.0	0.0	0.0
36	1/11/79			SNOW	3.3	3.3	3.3
36	1/13/79			SNOW	0.0	0.0	3.3
36	1/13/79			SNOW	9.4	9.4	12.7
36	1/18/79			SNOW	0.0	0.0	12.7
36	1/18/79			SNOW	6.9	6.9	19.6
36	1/20/79			SNOW	0.0	0.0	19.6
36	1/20/79			SNOW	0.8	0.8	20.3
36	1/23/79			SNOW	0.0	0.0	20.3
36	1/23/79			SNOW	7.6	7.6	27.9
36	1/26/79			SNOW	0.0	0.0	27.9
36	1/26/79			SNOW	8.1	8.1	36.1
36	2/ 7/79			SNOW	0.0	0.0	36.1
36	2/ 7/79			SNOW	4.6	4.6	40.6
36	2/20/79			SNOW	0.0	0.0	40.6
36	2/20/79			SNOW	3.6	3.6	44.2
36	3/ 3/79			SNOW	0.0	0.0	44.2
36	3/ 3/79			SNOW	25.9	25.9	70.1
36	3/ 4/79			SNOW	0.0	0.0	70.1
36	3/ 4/79			SNOW	4.1	4.1	74.2
36	3/ 6/79			SNOW	0.0	0.0	74.2
36	3/ 6/79			SNOW	0.3	0.3	74.4
36	3/18/79			SNOW	0.0	0.0	74.4
36	3/18/79			SNOW	9.7	9.7	84.1
36	3/22/79	22	50	0.0	0.0	0.0	84.1
36	3/22/79	23	40	1.5	1.3	1.3	85.3
36	3/22/79	23	45	15.2	2.5	2.5	86.6
36	3/22/79	23	56	5.5	3.6	3.6	87.6
36	3/23/79	1	10	0.8	4.6	1.0	88.6
36	3/23/79	1	55	0.7	5.1	1.5	89.2
36	3/23/79	2	40	1.4	6.1	2.5	90.2
36	3/23/79	3	10	0.5	6.3	2.8	90.4
36	3/23/79	3	39	0.5	6.6	3.0	90.7
36	3/23/79	4	30	0.3	6.9	3.3	90.9
36	3/23/79	5	40	0.7	7.6	4.1	91.7
36	3/23/79			NO DATA	0.0	4.1	91.7
36	3/23/79			NO DATA	10.2	14.2	101.9
36	3/24/79			SNOW	0.0	0.0	101.9

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	3/24/79			SNOW	11.7	11.7	113.5
36	3/28/79			NO DATA	0.0	0.0	113.5
36	3/28/79			NO DATA	12.2	12.2	125.7
36	3/29/79			NO DATA	0.0	0.0	125.7
36	3/29/79			NO DATA	10.2	10.2	135.9
36	4/ 1/79			SNOW	0.0	0.0	135.9
36	4/ 1/79			SNOW	23.4	23.4	159.3
36	4/10/79			NO DATA	0.0	0.0	159.3
36	4/10/79			NO DATA	5.1	5.1	164.3
36	4/19/79			NO DATA	0.0	0.0	164.3
36	4/19/79			NO DATA	20.3	20.3	184.7
36	4/20/79			NO DATA	0.0	0.0	184.7
36	4/20/79			NO DATA	38.6	38.6	223.3
36	4/25/79	9	13	0.0	0.0	0.0	223.3
36	4/25/79	9	15	41.0	1.4	1.4	224.6
36	4/25/79	10	0	0.7	1.9	1.9	225.2
36	4/25/79	10	19	1.7	2.5	2.5	225.7
36	4/25/79	10	28	7.3	3.6	3.6	226.8
36	4/25/79	10	34	19.1	5.5	5.5	228.7
36	4/25/79	10	50	10.3	8.2	8.2	231.5
36	4/25/79	11	0	3.3	8.8	8.8	232.0
36	4/25/79	11	20	2.5	9.6	9.6	232.8
36	4/25/79	12	0	0.8	10.1	10.1	233.4
36	4/25/79	14	58	0.3	10.9	10.9	234.2
36	4/25/79	15	16	6.4	12.9	12.9	236.1
36	4/25/79	15	34	1.8	13.4	13.4	236.7
36	4/25/79	15	40	2.7	13.7	13.7	236.9
36	4/25/79	15	50	3.3	14.2	14.2	237.5
36	4/25/79	16	25	0.9	14.8	14.8	238.0
36	4/25/79	16	40	4.4	15.9	15.9	239.1
36	4/25/79	16	53	5.0	17.0	17.0	240.2
36	4/25/79	17	20	1.8	17.8	17.8	241.0
36	4/29/79			NO DATA	0.0	0.0	241.0
36	4/29/79			NO DATA	2.0	2.0	243.1
36	5/ 2/79	9	10	0.0	0.0	0.0	243.1
36	5/ 2/79	9	54	0.3	0.2	0.2	243.3
36	5/ 2/79	10	8	3.2	1.0	1.0	244.1
36	5/ 2/79	10	16	7.5	2.0	2.0	245.1
36	5/ 2/79	10	24	7.5	3.0	3.0	246.1
36	5/ 2/79	10	32	3.7	3.5	3.5	246.6
36	5/ 2/79	10	45	2.3	4.0	4.0	247.1
36	5/ 2/79	10	56	2.7	4.5	4.5	247.6
36	5/ 2/79	11	7	5.4	5.5	5.5	248.6

TABLE B1- 6. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	5/ 2/79	11	20	1.1	5.7	5.7	248.8
36	5/ 2/79	11	40	3.7	7.0	7.0	250.0
36	5/ 2/79	11	50	6.0	8.0	8.0	251.0
36	5/ 2/79	13	0	3.8	12.5	12.5	255.5
36	5/ 2/79	13	47	4.1	15.7	15.7	258.8
36	5/ 2/79	13	55	3.7	16.2	16.2	259.3
36	5/ 2/79	14	30	3.8	18.4	18.4	261.5
36	5/ 2/79	14	56	5.2	20.7	20.7	263.7
36	5/ 2/79	15	25	2.1	21.7	21.7	264.7
36	5/ 2/79	15	40	1.0	21.9	21.9	265.0
36	5/ 2/79	16	14	0.9	22.4	22.4	265.5
36	5/ 2/79	17	10	0.8	23.2	23.2	266.2
36	5/ 2/79	17	44	1.3	23.9	23.9	267.0
36	5/ 2/79	18	13	1.5	24.7	24.7	267.7
36	5/ 2/79	19	30	0.8	25.7	25.7	268.7
36	5/ 8/79	0	53	0.0	0.0	0.0	268.7
36	5/ 8/79	1	0	10.9	1.3	1.3	270.0
36	5/ 8/79	1	2	15.2	1.8	1.8	270.5
36	5/ 8/79	1	12	4.6	2.5	2.5	271.3
36	5/ 8/79	1	25	2.3	3.0	3.0	271.8
36	5/ 8/79	1	34	5.1	3.8	3.8	272.5
36	5/ 8/79	1	44	3.0	4.3	4.3	273.0
36	5/ 8/79	1	53	8.5	5.6	5.6	274.3
36	5/10/79	16	6	0.0	0.0	0.0	274.3
36	5/10/79	16	10	8.3	0.6	0.6	274.9
36	5/10/79	16	12	140.9	5.3	5.3	279.6
36	5/10/79	16	13	82.9	6.6	6.6	280.9
36	5/10/79	16	17	20.7	8.0	8.0	282.3
36	5/10/79	16	22	3.3	8.3	8.3	282.6
36	5/10/79	16	32	6.6	9.4	9.4	283.7
36	5/12/79			NO DATA	0.0	0.0	283.7
36	5/12/79			NO DATA	2.0	2.0	285.7
36	5/13/79			NO DATA	0.0	0.0	285.7
36	5/13/79			NO DATA	1.3	1.3	287.0
36	5/18/79	6	34	0.0	0.0	0.0	287.0
36	5/18/79	14	55	0.1	0.5	0.5	287.5
36	5/18/79	15	6	2.8	1.0	1.0	288.1
36	5/18/79	17	59	0.1	1.3	1.3	288.3
36	5/18/79	18	25	1.2	1.8	1.8	288.8
36	5/18/79	18	40	5.2	3.1	3.1	290.1
36	5/18/79	22	0	0.2	3.7	3.7	290.7
36	5/18/79	22	18	3.5	4.7	4.7	291.7
36	5/18/79	22	40	2.1	5.5	5.5	292.5
36	5/18/79	23	35	0.6	6.0	6.0	293.0
36	5/18/79	23	53	4.3	7.3	7.3	294.3
36	5/19/79	0	6	2.4	7.8	0.5	294.8

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	5/19/79	1	19	0.5	8.9	1.6	295.9
36	5/19/79	1	25	7.8	9.7	2.3	296.7
36	5/26/79	9	0	0.0	0.0	0.0	296.7
36	5/26/79	10	35	2.4	3.8	3.8	300.5
36	5/26/79	17	57	0.0	3.8	3.8	300.5
36	5/26/79	18	0	54.9	6.6	6.6	303.3
36	5/26/79	18	30	3.8	8.5	8.5	305.2
36	5/26/79	19	0	3.3	10.2	10.2	306.8
36	5/29/79	6	28	0.0	0.0	0.0	306.8
36	5/29/79	6	29	157.7	2.6	2.6	309.4
36	5/29/79	6	31	15.8	3.2	3.2	310.0
36	5/29/79	7	46	0.8	4.2	4.2	311.0
36	5/29/79	8	0	9.0	6.3	6.3	313.1
36	5/29/79	8	30	2.1	7.4	7.4	314.2
36	5/29/79	9	0	0.5	7.6	7.6	314.4
36	5/30/79			NO DATA	0.0	0.0	314.4
36	5/30/79			NO DATA	0.3	0.3	314.7
36	6/ 4/79	10	20	0.0	0.0	0.0	314.7
36	6/ 4/79	15	0	0.1	0.3	0.3	314.9
36	6/ 4/79	18	8	0.2	0.8	0.8	315.4
36	6/ 4/79	18	13	6.0	1.3	1.3	315.9
36	6/ 4/79	18	18	15.0	2.5	2.5	317.2
36	6/ 4/79	18	25	17.2	4.5	4.5	319.2
36	6/ 4/79	18	28	60.2	7.5	7.5	322.2
36	6/ 4/79	18	31	25.1	8.8	8.8	323.5
36	6/ 4/79	18	33	75.2	11.3	11.3	326.0
36	6/ 4/79	18	37	75.2	16.3	16.3	331.0
36	6/ 4/79	18	40	25.1	17.5	17.5	332.2
36	6/ 4/79	18	48	56.4	25.1	25.1	339.8
36	6/ 4/79	18	53	75.2	31.3	31.3	346.0
36	6/ 4/79	18	56	75.2	35.1	35.1	349.8
36	6/ 4/79	18	59	25.1	36.3	36.3	351.0
36	6/ 4/79	19	3	18.8	37.6	37.6	352.3
36	6/ 4/79	19	10	2.1	37.9	37.9	352.5
36	6/ 4/79	19	13	10.0	38.4	38.4	353.0
36	6/ 7/79			NO DATA	0.0	0.0	353.0
36	6/ 7/79			NO DATA	1.3	1.3	354.3
36	6/ 8/79			NO DATA	0.0	0.0	354.3
36	6/ 8/79			NO DATA	5.1	5.1	359.4
36	6/ 9/79	6	48	0.0	0.0	0.0	359.4
36	6/ 9/79	8	25	0.2	0.3	0.3	359.6
36	6/ 9/79	8	34	1.7	0.5	0.5	359.9
36	6/ 9/79	8	54	1.5	1.0	1.0	360.4
36	6/ 9/79	9	[illegible]	12.7	2.8	2.8	362.2

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	6/ 9/79	9	8	34.3	5.1	5.1	364.5
36	6/ 9/79	9	16	3.8	5.6	5.6	365.0
36	6/ 9/79	10	4	1.0	6.4	6.4	365.7
36	6/ 9/79	10	24	0.8	6.6	6.6	366.0
36	6/ 9/79	10	44	2.3	7.4	7.4	366.8
36	6/ 9/79	10	54	4.6	8.1	8.1	367.5
36	6/ 9/79	11	4	1.5	8.4	8.4	367.8
36	6/ 9/79	11	14	3.0	8.9	8.9	368.3
36	6/ 9/79	11	34	1.5	9.4	9.4	368.8
36	6/ 9/79	11	54	0.8	9.7	9.7	369.0
36	6/ 9/79	12	6	2.5	10.2	10.2	369.6
36	6/ 9/79			NO DATA	0.0	10.2	369.6
36	6/ 9/79			NO DATA	2.5	12.7	372.1
36	6/12/79	17	55	0.0	0.0	0.0	372.1
36	6/12/79	17	59	70.3	4.7	4.7	376.8
36	6/12/79	18	6	2.2	4.9	4.9	377.0
36	6/12/79	18	9	26.0	6.3	6.3	378.3
36	6/12/79	18	12	15.6	7.0	7.0	379.1
36	6/12/79	18	16	43.0	9.9	9.9	382.0
36	6/12/79	18	25	78.2	21.6	21.6	393.7
36	6/12/79	18	27	62.5	23.7	23.7	395.8
36	6/12/79	18	31	27.4	25.5	25.5	397.6
36	6/12/79	18	38	11.2	26.8	26.8	398.9
36	6/12/79	18	45	4.5	27.4	27.4	399.4
36	6/12/79	18	51	5.2	27.9	27.9	400.0
36	6/12/79	19	25	0.9	28.4	28.4	400.5
36	6/12/79	20	25	0.8	29.2	29.2	401.3
36	6/12/79	20	57	0.5	29.4	29.4	401.5
36	6/12/79	21	8	2.8	30.0	30.0	402.1
36	6/12/79	21	31	1.4	30.5	30.5	402.6
36	6/17/79	21	12	0.0	0.0	0.0	402.6
36	6/17/79	21	15	10.2	0.5	0.5	403.1
36	6/17/79	22	10	0.3	0.8	0.8	403.3
36	6/17/79	22	50	1.5	1.8	1.8	404.4
36	6/18/79	6	34	0.1	2.5	0.8	405.1
36	6/18/79	6	37	10.2	3.0	1.3	405.6
36	6/18/79	6	43	12.7	4.3	2.5	406.9
36	6/18/79	6	51	28.6	8.1	6.3	410.7
36	6/18/79	6	52	76.2	9.4	7.6	412.0
36	6/18/79	6	56	38.1	11.9	10.2	414.5
36	6/18/79	6	58	38.1	13.2	11.4	415.8
36	6/18/79	7	3	6.1	13.7	11.9	416.3
36	6/18/79	7	6	20.3	14.7	13.0	417.3
36	6/18/79	7	20	4.4	15.7	14.0	418.3
36	6/19/79	22	4	0.0	0.0	0.0	418.3
36	6/19/79	22	7	9.7	0.5	0.5	418.8
36	6/19/79	22	12	5.8	1.0	1.0	419.3
36	6/19/79	22	14	21.9	1.7	1.7	420.0

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	6/19/79	22	20	12.2	2.9	2.9	421.2
36	6/19/79	22	30	1.5	3.2	3.2	421.5
36	6/19/79	22	34	47.4	6.3	6.3	424.6
36	6/19/79	22	37	53.5	9.0	9.0	427.3
36	6/19/79	22	40	19.5	10.0	10.0	428.3
36	6/19/79	22	46	9.7	10.9	10.9	429.3
36	6/19/79	23	3	1.7	11.4	11.4	429.7
36	6/26/79	23	55	0.0	0.0	0.0	429.7
36	6/26/79	23	59	38.1	2.5	2.5	432.3
36	6/27/79	0	5	12.7	3.8	1.3	433.6
36	6/27/79	0	10	140.2	15.5	13.0	445.2
36	6/27/79	0	13	71.1	19.0	16.5	448.8
36	6/27/79	0	16	101.6	24.1	21.6	453.9
36	6/27/79	0	21	30.5	26.7	24.1	456.4
36	6/27/79	0	23	152.4	31.7	29.2	461.5
36	6/27/79	0	28	61.0	36.8	34.3	466.6
36	6/27/79	0	31	66.0	40.1	37.6	469.9
36	6/27/79	0	35	26.7	41.9	39.4	471.7
36	6/27/79	0	44	16.9	44.4	41.9	474.2
36	6/27/79	0	51	8.7	45.5	42.9	475.2
36	6/27/79	0	57	5.1	46.0	43.4	475.7
36	6/27/79	1	9	3.8	46.7	44.2	476.5
36	6/27/79	1	22	3.5	47.5	45.0	477.2
36	6/28/79			NO DATA	0.0	0.0	477.2
36	6/28/79			NO DATA	3.0	3.0	480.3
36	7/ 3/79	7	43	0.0	0.0	0.0	480.3
36	7/ 3/79	7	55	65.6	13.1	13.1	493.4
36	7/ 3/79	7	57	92.7	16.2	16.2	496.5
36	7/ 3/79	8	3	59.2	22.1	22.1	502.4
36	7/ 3/79	8	7	96.5	28.6	28.6	508.9
36	7/ 3/79	8	9	46.3	30.1	30.1	510.4
36	7/ 3/79	8	14	27.8	32.4	32.4	512.7
36	7/ 3/79	8	19	30.9	35.0	35.0	515.3
36	7/ 3/79	8	22	61.8	38.1	38.1	518.4
36	7/ 3/79	8	32	17.0	40.9	40.9	521.2
36	7/ 3/79	8	47	3.1	41.7	41.7	522.0
36	7/ 3/79	8	50	20.6	42.7	42.7	523.0
36	7/ 3/79	8	52	54.0	44.5	44.5	524.8
36	7/ 3/79	8	58	25.7	47.1	47.1	527.4
36	7/ 3/79	9	1	61.8	50.2	50.2	530.5
36	7/ 3/79	9	7	12.9	51.5	51.5	531.8
36	7/ 3/79	9	13	15.4	53.0	53.0	533.3
36	7/ 3/79	9	18	6.2	53.5	53.5	533.8
36	7/ 3/79	9	23	15.4	54.8	54.8	535.1
36	7/ 3/79	9	30	61.8	62.0	62.0	542.3
36	7/ 3/79	9	35	61.8	67.2	67.2	547.5
36	7/ 3/79	9	43	67.6	76.2	76.2	556.5
36	7/ 3/79	9	49	90.1	85.2	85.2	565.5
36	7/ 3/79	9	53	61.8	89.3	89.3	569.6

TABLE B1- 6. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	7/ 3/79	9	57	15.4	90.3	90.3	570.6
36	7/ 3/79	9	59	46.3	91.9	91.9	572.2
36	7/ 3/79	10	6	37.5	96.3	96.3	576.5
36	7/ 3/79	10	18	2.6	96.8	96.8	577.1
36	7/ 3/79	20	40	0.0	0.0	96.8	577.1
36	7/ 3/79	20	44	14.6	1.0	97.7	578.0
36	7/ 3/79	20	50	36.5	4.6	101.4	581.7
36	7/ 3/79	20	53	73.0	8.3	105.0	585.3
36	7/ 3/79	20	55	43.8	9.7	106.5	586.8
36	7/ 3/79	21	1	17.0	11.4	108.2	588.5
36	7/10/79	20	30	0.0	0.0	0.0	588.5
36	7/10/79	22	0	1.0	1.4	1.4	589.9
36	7/10/79	23	48	0.3	1.9	1.9	590.4
36	7/10/79	23	53	5.7	2.4	2.4	590.9
36	7/10/79	24	0	2.1	2.6	2.6	591.1
36	7/11/79	0	5	20.1	4.3	1.7	592.8
36	7/11/79	0	20	6.7	6.0	3.4	594.5
36	7/11/79	0	35	1.9	6.5	3.8	595.0
36	7/11/79	3	0	0.3	7.2	4.6	595.7
36	7/11/79	4	0	1.2	8.4	5.7	596.9
36	7/13/79	9	50	0.0	0.0	0.0	596.9
36	7/13/79	10	0	10.9	1.8	1.8	598.7
36	7/13/79	10	25	5.6	4.2	4.2	601.0
36	7/13/79	11	40	0.6	5.0	5.0	601.8
36	7/13/79	20	8	0.0	5.0	5.0	601.8
36	7/13/79	20	12	46.9	8.1	8.1	604.9
36	7/13/79	20	14	101.6	11.5	11.5	608.3
36	7/13/79	20	16	39.1	12.8	12.8	609.6
36	7/13/79	20	32	18.6	17.7	17.7	614.6
36	7/14/79	0	50	0.3	19.0	1.3	615.9
36	7/14/79	0	56	70.3	26.1	8.3	622.9
36	7/14/79	1	3	42.4	31.0	13.3	627.9
36	7/14/79	1	13	12.5	33.1	15.4	630.0
36	7/14/79	1	16	46.9	35.4	17.7	632.3
36	7/14/79	1	20	136.8	44.6	26.8	641.4
36	7/14/79	1	27	17.9	46.6	28.9	643.5
36	7/14/79	1	32	78.2	53.1	35.4	650.0
36	7/14/79	1	37	78.2	59.7	41.9	656.5
36	7/14/79	1	42	62.5	64.9	47.2	661.7
36	7/14/79	1	50	46.9	71.1	53.4	668.0
36	7/14/79	2	12	2.1	71.9	54.2	668.8
36	7/14/79	2	40	2.2	72.9	55.2	669.8
36	7/14/79	2	42	31.3	74.0	56.3	670.9
36	7/14/79	2	48	10.4	75.0	57.3	671.9
36	7/14/79	3	58	0.2	75.3	57.6	672.2
36	7/14/79	4	3	6.3	75.8	58.1	672.7
36	7/14/79	4	4	46.9	76.6	58.9	673.5
36	7/14/79	4	8	11.7	77.4	59.7	674.2

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	7/14/79	4	14	3.9	79.5	61.7	676.3
36	7/14/79	4	16	31.3	80.5	62.8	677.4
36	7/14/79	4	20	7.8	81.0	63.3	677.9
36	7/19/79			NO DATA	0.0	0.0	677.9
36	7/19/79			NO DATA	1.3	1.3	679.2
36	7/24/79			NO DATA	0.0	0.0	679.2
36	7/24/79			NO DATA	1.0	1.0	680.2
36	7/29/79	18	30	0.0	0.0	0.0	680.2
36	7/29/79	20	0	0.9	1.4	1.4	681.6
36	7/29/79	20	20	4.2	2.8	2.8	683.0
36	7/29/79	20	50	0.6	3.0	3.0	683.2
36	7/30/79	3	58	0.1	3.9	0.8	684.1
36	7/30/79	4	1	66.5	7.2	4.2	687.4
36	7/30/79	4	4	5.5	7.5	4.4	687.7
36	7/30/79	4	8	33.3	9.7	6.7	689.9
36	7/30/79	4	25	1.0	10.0	6.9	690.2
36	7/30/79	4	29	29.1	11.9	8.9	692.1
36	7/30/79	4	40	1.5	12.2	9.1	692.4
36	8/ 1/79			NO DATA	0.0	0.0	692.4
36	8/ 1/79			NO DATA	8.1	8.1	700.5
36	8/ 8/79	20	0	0.0	0.0	0.0	700.5
36	8/ 8/79	20	9	33.9	5.1	5.1	705.6
36	8/ 8/79	20	13	30.5	7.1	7.1	707.6
36	8/ 8/79	20	15	129.5	11.4	11.4	711.9
36	8/ 8/79	20	22	28.3	14.7	14.7	715.2
36	8/ 8/79	20	25	15.2	15.5	15.5	716.0
36	8/ 8/79	20	31	30.5	18.5	18.5	719.0
36	8/ 8/79	20	43	5.1	19.6	19.6	720.1
36	8/ 8/79	21	3	0.8	19.8	19.8	720.3
36	8/ 8/79	21	43	0.4	20.1	20.1	720.6
36	8/ 8/79	21	48	3.0	20.3	20.3	720.8
36	8/ 8/79	21	58	9.1	21.8	21.8	722.3
36	8/ 8/79	22	8	3.0	22.4	22.4	722.8
36	8/ 8/79	22	14	43.2	26.7	26.7	727.2
36	8/ 8/79	22	20	35.6	30.2	30.2	730.7
36	8/ 8/79	22	28	7.6	31.2	31.2	731.7
36	8/ 9/79	20	18	0.0	0.0	0.0	731.7
36	8/ 9/79	20	21	38.1	1.9	1.9	733.6
36	8/ 9/79	20	32	13.4	4.4	4.4	736.1
36	8/ 9/79	20	34	49.0	6.0	6.0	737.7
36	8/ 9/79	20	40	16.3	7.6	7.6	739.4
36	8/13/79			NO DATA	0.0	0.0	739.4
36	8/13/79			NO DATA	0.8	0.8	740.1
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.0	0.0	740.1

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	7/14/79	4	8	11.7	77.4	59.7	674.2
36	7/14/79	4	10	54.7	79.3	[illegible]	[illegible]
36	8/19/79	1	42	15.7	0.5	0.5	740.6
36	8/19/79	2	20	0.4	0.8	0.8	740.9
36	8/19/79	2	27	13.5	2.4	2.4	742.5
36	8/19/79	2	34	56.0	8.9	8.9	749.0
36	8/19/79	2	39	22.0	10.7	10.7	750.8
36	8/19/79	2	44	18.8	12.3	12.3	752.4
36	8/19/79	2	48	3.9	12.6	12.6	752.7
36	8/19/79	2	52	15.7	13.6	13.6	753.7
36	8/19/79	2	57	12.6	14.6	14.6	754.8
36	8/19/79	3	1	3.9	14.9	14.9	755.0
36	8/19/79	3	4	47.1	17.3	17.3	757.4
36	8/19/79	3	11	22.4	19.9	19.9	760.0
36	8/19/79	3	24	4.8	20.9	20.9	761.0
36	8/19/79	3	49	3.1	22.2	22.2	762.4
36	8/19/79	3	59	3.1	22.8	22.8	762.9
36	8/19/79	4	24	1.3	23.3	23.3	763.4
36	8/19/79	5	20	0.3	23.5	23.5	763.7
36	8/19/79	5	24	39.2	26.2	26.2	766.3
36	8/19/79	5	30	5.2	26.7	26.7	766.8
36	8/19/79	5	31	47.1	27.5	27.5	767.6
36	8/19/79	5	34	5.2	27.7	27.7	767.8
36	8/19/79	5	35	62.8	28.8	28.8	768.9
36	8/19/79	5	42	17.9	30.9	30.9	771.0
36	8/19/79	5	45	5.2	31.1	31.1	771.2
36	8/19/79	5	54	10.5	32.7	32.7	772.8
36	8/19/79	5	56	39.2	34.0	34.0	774.1
36	8/19/79	6	1	6.3	34.5	34.5	774.6
36	8/19/79	6	2	47.1	35.3	35.3	775.4
36	8/19/79	6	4	23.5	36.1	36.1	776.2
36	8/19/79	6	7	36.6	37.9	37.9	778.0
36	8/19/79	6	11	19.6	39.2	39.2	779.4
36	8/19/79	6	18	9.0	40.3	40.3	780.4
36	8/19/79	6	24	5.2	40.8	40.8	780.9
36	8/19/79	6	29	3.1	41.1	41.1	781.2
36	8/19/79	6	31	15.7	41.6	41.6	781.7
36	8/19/79	6	38	4.5	42.1	42.1	782.2
36	8/19/79	6	54	1.0	42.4	42.4	782.5
36	8/19/79	7	39	0.7	42.9	42.9	783.0
36	8/19/79	7	46	4.5	43.4	43.4	783.5
36	8/19/79	7	49	10.5	43.9	43.9	784.1
36	8/19/79	20	57	0.0	0.0	43.9	784.1
36	8/19/79	21	1	71.0	4.7	48.7	788.8
36	8/19/79	21	4	21.0	5.8	49.7	789.8
36	8/19/79	21	10	2.6	6.0	50.0	790.1
36	8/19/79	21	15	37.9	9.2	53.1	793.3
36	8/19/79	21	21	10.5	10.3	54.2	794.3
36	8/19/79	21	23	63.1	12.4	56.3	796.4
36	8/19/79	21	29	39.4	16.3	60.2	800.4
36	8/19/79	21	32	5.3	16.6	60.5	800.6
36	8/19/79	21	34	47.3	18.1	62.1	802.2
36	8/19/79	21	39	9.5	18.9	62.9	803.0

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	8/19/79	21	41	15.8	19.5	63.4	803.5
36	8/19/79	21	46	6.3	20.0	63.9	804.0
36	8/19/79	21	50	7.9	20.5	64.4	804.6
36	8/19/79	21	52	31.6	21.6	65.5	805.6
36	8/19/79	22	4	2.6	22.1	66.0	806.1
36	8/19/79	22	14	7.9	23.4	67.3	807.5
36	8/19/79	22	17	15.8	24.2	68.1	808.2
36	8/19/79	22	27	1.6	24.5	68.4	808.5
36	8/19/79	22	34	6.8	25.2	69.2	809.3
36	8/19/79	22	39	6.3	25.8	69.7	809.8
36	8/19/79	22	59	0.8	26.0	70.0	810.1
36	8/19/79	23	6	11.3	27.3	71.3	811.4
36	8/19/79	23	24	0.9	27.6	71.5	811.7
36	8/20/79	0	14	0.3	27.9	0.3	811.9
36	8/20/79	0	16	7.9	28.1	0.5	812.2
36	8/20/79	0	46	0.0	28.1	0.5	812.2
36	8/20/79	1	2	3.9	29.2	1.6	813.2
36	8/20/79	1	34	1.5	30.0	2.4	814.0
36	8/21/79	18	46	0.0	0.0	0.0	814.0
36	8/21/79	18	50	37.5	2.5	2.5	816.5
36	8/21/79	18	55	100.0	10.8	10.8	824.9
36	8/21/79	18	59	75.0	15.8	15.8	829.9
36	8/21/79	19	1	183.3	21.9	21.9	836.0
36	8/21/79	19	6	33.3	24.7	24.7	838.7
36	8/21/79	19	8	58.3	26.7	26.7	840.7
36	8/21/79	19	14	22.2	28.9	28.9	842.9
36	8/21/79	19	19	33.3	31.7	31.7	845.7
36	8/21/79	19	25	8.3	32.5	32.5	846.5
36	8/21/79	19	37	2.8	33.1	33.1	847.1
36	8/21/79	20	32	1.8	34.7	34.7	848.8
36	8/21/79	21	9	0.5	35.0	35.0	849.0
36	8/21/79	21	42	1.0	35.6	35.6	849.6
36	8/22/79	19	5	0.0	0.0	0.0	849.6
36	8/22/79	19	8	28.6	1.4	1.4	851.0
36	8/22/79	19	13	17.1	2.9	2.9	852.4
36	8/22/79	19	18	54.9	7.4	7.4	857.0
36	8/22/79	19	21	57.1	10.3	10.3	859.9
36	8/22/79	19	25	12.9	11.1	11.1	860.7
36	8/22/79	19	31	2.9	11.4	11.4	861.0
36	8/26/79	19	25	0.0	0.0	0.0	861.0
36	8/26/79	19	46	6.0	2.1	2.1	863.1
36	8/26/79	20	5	3.3	3.2	3.2	864.2
36	8/26/79	20	25	6.4	5.3	5.3	866.3
36	8/26/79	20	45	3.2	6.3	6.3	867.4
36	8/28/79			NO DATA	0.0	0.0	867.4
36	8/28/79			NO DATA	1.3	1.3	868.6
36	9/ 5/79	20	0	0.0	0.0	0.0	868.6

TABLE B1- 6. CONTINUED

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	9/ 5/79	20	2	29.7	1.0	1.0	869.6
36	9/ 5/79	20	8	4.9	1.5	1.5	870.1
36	9/ 5/79	20	41	1.3	2.2	2.2	870.9
36	9/ 5/79	21	15	4.8	4.9	4.9	873.6
36	9/ 5/79	21	23	7.4	5.9	5.9	874.6
36	9/ 5/79	21	35	6.2	7.2	7.2	875.8
36	9/ 5/79	21	53	4.1	8.4	8.4	877.0
36	9/ 5/79	22	3	3.0	8.9	8.9	877.5
36	9/ 5/79	22	13	1.5	9.2	9.2	877.8
36	9/ 5/79	23	3	0.6	9.7	9.7	878.3
36	9/24/79	5	24	0.0	0.0	0.0	878.3
36	9/24/79	5	44	3.8	1.3	1.3	879.6
36	9/24/79	6	14	1.0	1.8	1.8	880.1
36	9/24/79	6	34	2.3	2.5	2.5	880.8
36	9/24/79	6	54	3.8	3.8	3.8	882.1
36	9/24/79	7	0	2.5	4.1	4.1	882.3
36	9/24/79	7	44	0.3	4.3	4.3	882.6
36	9/24/79	9	24	0.2	4.6	4.6	882.9
36	9/24/79	9	42	1.7	5.1	5.1	883.4
36	9/24/79	10	4	0.7	5.3	5.3	883.6
36	9/24/79	10	24	1.5	5.8	5.8	884.1
36	9/24/79	10	44	1.5	6.3	6.3	884.6
36	9/24/79	11	1	2.7	7.1	7.1	885.4
36	9/24/79	11	7	2.5	7.4	7.4	885.6
36	9/24/79	11	22	6.1	8.9	8.9	887.2
36	9/24/79	11	29	2.2	9.1	9.1	887.4
36	9/24/79	11	40	5.5	10.2	10.2	888.4
36	10/ 1/79	9	18	0.0	0.0	0.0	888.4
36	10/ 1/79	9	30	1.2	0.2	0.2	888.7
36	10/ 1/79	9	42	1.2	0.5	0.5	888.9
36	10/ 1/79	9	48	7.1	1.2	1.2	889.6
36	10/ 1/79	12	0	0.2	1.7	1.7	890.1
36	10/ 1/79	12	50	0.3	1.9	1.9	890.3
36	10/ 1/79	13	0	7.1	3.1	3.1	891.5
36	10/ 1/79	13	18	7.1	5.2	5.2	893.7
36	10/ 1/79	13	30	3.6	5.9	5.9	894.4
36	10/ 1/79	14	0	1.9	6.9	6.9	895.3
36	10/ 1/79	14	42	0.7	7.4	7.4	895.8
36	10/ 3/79			NO DATA	0.0	0.0	895.8
36	10/ 3/79			NO DATA	3.3	3.3	899.1
36	10/11/79			NO DATA	0.0	0.0	899.1
36	10/11/79			NO DATA	2.5	2.5	901.6
36	10/18/79	22	32	0.0	0.0	0.0	901.6
36	10/18/79	22	45	6.0	1.3	1.3	902.9
36	10/18/79	23	0	2.1	1.8	1.8	903.5
36	10/18/79	23	3	15.5	2.6	2.6	904.3
36	10/18/79	23	25	15.5	4.1	4.1	905.8
36	10/18/79	23	27	7.8	4.4	4.4	906.0
36	10/18/79	23	29	23.3	5.2	5.2	906.8
36	10/18/79	23	34	6.2	5.7	5.7	907.3
36	10/18/79	23	42	5.8	6.5	6.5	908.1
36	10/18/79	23	46	31.1	8.5	8.5	910.2
36	10/18/79	23	55	6.9	9.6	9.6	911.2
36	10/18/79	24	0	24.9	11.7	11.7	913.3
36	10/19/79	0	9	3.5	12.2	0.5	913.8
36	10/19/79	0	22	4.8	13.2	1.6	914.9
36	10/21/79	21	17	0.0	0.0	0.0	914.9
36	10/21/79	21	20	10.4	0.5	0.5	915.4
36	10/21/79	21	24	7.8	1.0	1.0	915.9
36	10/21/79	22	41	0.6	1.8	1.8	916.7
36	10/21/79	22	46	15.6	3.1	3.1	918.0
36	10/21/79	22	53	2.2	3.4	3.4	918.2
36	10/21/79	22	56	83.2	7.5	7.5	922.4
36	10/21/79	23	1	21.8	9.4	9.4	924.2
36	10/21/79	23	11	3.1	9.9	9.9	924.7
36	10/21/79	23	16	15.6	11.2	11.2	926.0
36	10/21/79	23	20	31.2	13.3	13.3	928.1
36	10/21/79	23	21	109.2	15.1	15.1	929.9
36	10/21/79	23	23	46.8	16.6	16.6	931.5
36	10/21/79	23	28	12.5	17.7	17.7	932.5
36	10/21/79	23	31	46.8	20.0	20.0	934.9
36	10/22/79	0	1	4.7	22.4	2.3	937.2
36	10/22/79	0	10	3.5	22.9	2.9	937.7
36	10/22/79	0	16	2.6	23.1	3.1	938.0
36	10/22/79	1	0	1.1	23.9	3.9	938.8
36	10/22/79	1	9	6.9	25.0	4.9	939.8
36	10/22/79	1	17	3.9	25.5	5.5	940.3
36	10/22/79	1	34	0.9	25.7	5.7	940.6
36	10/22/79	2	6	1.9	26.8	6.8	941.6
36	10/22/79	2	29	2.0	27.6	7.5	942.4
36	10/22/79	3	11	0.4	27.8	7.8	942.7
36	10/22/79	3	46	3.1	29.6	9.6	944.5
36	10/22/79	4	6	5.5	31.5	11.4	946.3
36	10/22/79	4	36	6.8	34.8	14.8	949.7
36	10/22/79	4	55	7.4	37.2	17.2	952.0
36	10/22/79	5	29	9.6	42.6	22.6	957.5
36	10/22/79	5	41	15.6	45.7	25.7	960.6
36	10/22/79	6	1	9.4	48.9	28.9	963.7
36	10/22/79	6	26	7.5	52.0	32.0	966.8
36	10/22/79	6	43	5.5	53.5	33.5	968.4
36	10/22/79	7	6	4.7	55.4	35.3	970.2
36	10/22/79	7	36	4.7	57.7	37.7	972.6
36	10/22/79	8	22	6.4	62.6	42.6	977.5
36	10/22/79	8	46	2.6	63.7	43.7	978.5
36	10/22/79	8	56	1.6	63.9	43.9	978.8
36	10/22/79	9	22	11.7	65.8	45.7	980.6

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	10/16/79	23	0	2.1	1.8	1.8	903.5
36	10/18/79	23	3	15.5	2.6	2.6	904.2
36	10/22/79	8	58	2.8	65.0	45.0	979.8
36	10/22/79	9	43	2.2	66.5	46.5	981.4
36	10/22/79	9	48	6.2	67.1	47.0	981.9
36	10/22/79	10	1	3.6	67.8	47.8	982.7
36	10/22/79	10	18	0.9	68.1	48.1	982.9
36	10/22/79	10	22	15.6	69.1	49.1	984.0
36	10/22/79	10	31	6.9	70.2	50.2	985.0
36	10/22/79	10	39	7.8	71.2	51.2	986.1
36	10/22/79	10	45	2.6	71.5	51.5	986.3
36	10/22/79	10	54	5.2	72.3	52.2	987.1
36	10/22/79	10	57	5.2	72.5	52.5	987.4
36	10/22/79	11	6	6.9	73.6	53.5	988.4
36	10/22/79	11	18	6.5	74.9	54.8	989.7
36	10/22/79	11	24	5.2	75.4	55.4	990.2
36	10/22/79	11	31	2.2	75.6	55.6	990.5
36	10/22/79	11	40	17.3	78.2	58.2	993.1
36	10/22/79	11	46	7.8	79.0	59.0	993.9
36	10/22/79	11	51	6.2	79.5	59.5	994.4
36	10/22/79	11	56	28.1	81.9	61.9	996.7
36	10/22/79	12	11	6.2	83.4	63.4	998.3
36	10/22/79	13	40	0.7	84.5	64.5	999.3
36	10/22/79	15	18	0.2	84.7	64.7	999.6
36	10/22/79	17	42	0.1	85.0	65.0	999.8
36	10/22/79	20	0	0.5	86.0	66.0	1000.9
36	10/22/79	21	54	1.0	87.9	67.8	1002.7
36	10/22/79	22	16	0.7	88.1	68.1	1003.0
36	10/22/79	23	36	0.4	88.6	68.6	1003.5
36	10/23/79	1	40	0.3	89.2	0.5	1004.0
36	10/31/79	5	40	0.0	0.0	0.0	1004.0
36	10/31/79	6	27	0.7	0.5	0.5	1004.5
36	10/31/79	8	5	0.3	1.0	1.0	1005.0
36	10/31/79	8	44	1.2	1.8	1.8	1005.8
36	10/31/79	8	46	15.6	2.3	2.3	1006.3
36	10/31/79	8	52	5.2	2.9	2.9	1006.9
36	10/31/79	9	5	2.4	3.4	3.4	1007.4
36	10/31/79	9	10	3.1	3.6	3.6	1007.6
36	10/31/79	9	17	4.5	4.2	4.2	1008.2
36	10/31/79	9	32	4.2	5.2	5.2	1009.2
36	10/31/79	9	40	7.8	6.2	6.2	1010.2
36	10/31/79	9	52	2.6	6.8	6.8	1010.8
36	10/31/79	10	2	3.1	7.3	7.3	1011.3
36	10/31/79	10	20	1.7	7.8	7.8	1011.8
36	10/31/79	10	30	3.1	8.3	8.3	1012.3
36	10/31/79	10	43	1.2	8.6	8.6	1012.6
36	10/31/79	10	54	4.3	9.4	9.4	1013.3
36	10/31/79	11	2	3.9	9.9	9.9	1013.9
36	10/31/79	11	6	7.8	10.4	10.4	1014.4
36	10/31/79	11	20	4.5	11.4	11.4	1015.4
36	11/ 5/79	8	10	0.0	0.0	0.0	1015.4
36	11/ 5/79	11	36	0.5	1.7	1.7	1017.2
36	11/ 5/79	12	2	2.7	2.9	2.9	1018.3

GAGE	DATE	HOUR	MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	11/ 5/79	12	23	0.8	3.2	3.2	1018.6
36	11/ 5/79	12	30	2.5	3.5	3.5	1018.9
36	11/ 5/79	13	53	0.4	4.0	4.0	1019.5
36	11/ 5/79	13	57	4.3	4.3	4.3	1019.8
36	11/ 5/79	15	22	0.4	4.9	4.9	1020.3
36	11/ 5/79	15	27	3.5	5.2	5.2	1020.6
36	11/ 5/79	16	48	0.9	6.4	6.4	1021.8
36	11/ 5/79	16	55	7.4	7.2	7.2	1022.7
36	11/ 5/79	17	10	1.2	7.5	7.5	1022.9
36	11/ 5/79	17	28	1.0	7.8	7.8	1023.2
36	11/ 5/79	18	10	0.4	8.1	8.1	1023.5
36	11/ 5/79	18	30	1.7	8.7	8.7	1024.1
36	11/ 5/79	18	45	4.6	9.8	9.8	1025.3
36	11/ 5/79	20	40	0.3	10.4	10.4	1025.8
36	11/ 9/79			SNOW	0.0	0.0	1025.8
36	11/ 9/79			SNOW	1.0	1.0	1026.9
36	11/12/79			SNOW	0.0	0.0	1026.9
36	11/12/79			SNOW	2.0	2.0	1028.9
36	11/20/79	19	30	0.0	0.0	0.0	1028.9
36	11/20/79	24	0	0.1	0.5	0.5	1029.4
36	11/21/79	0	25	1.9	1.3	0.8	1030.2
36	11/21/79	0	58	3.8	3.4	2.9	1032.3
36	11/21/79	1	17	1.7	3.9	3.4	1032.8
36	11/21/79	2	0	1.1	4.7	4.2	1033.6
36	11/21/79	6	0	0.1	5.0	4.5	1033.9
36	11/21/79	11	0	0.1	5.3	4.7	1034.1
36	11/21/79	13	0	0.3	5.8	5.3	1034.7
36	11/21/79	15	15	0.2	6.3	5.8	1035.2
36	11/21/79	15	26	5.7	7.4	6.8	1036.2
36	11/21/79	15	40	4.5	8.4	7.9	1037.3
36	11/21/79	15	44	7.9	8.9	8.4	1037.8
36	11/21/79	16	7	0.7	9.2	8.7	1038.1
36	11/21/79	16	12	9.5	10.0	9.5	1038.9
36	11/21/79	16	20	3.9	10.5	10.0	1039.4
36	11/21/79	17	4	0.7	11.0	10.5	1039.9
36	11/21/79	17	15	1.4	11.3	10.8	1040.2
36	11/21/79	17	25	7.9	12.6	12.1	1041.5
36	11/21/79	17	35	4.7	13.4	12.9	1042.3
36	11/21/79	17	50	1.1	13.7	13.1	1042.5
36	11/21/79	18	15	1.9	14.5	13.9	1043.3
36	11/21/79	18	40	1.9	15.2	14.7	1044.1
36	11/27/79			SNOW	0.0	0.0	1044.1
36	11/27/79			SNOW	5.3	5.3	1049.5
36	11/28/79			SNOW	0.0	0.0	1049.5
36	11/28/79			SNOW	5.6	5.6	1055.0
36	12/22/79			NO DATA	0.0	0.0	1055.0

TABLE B1- 6. CONCLUDED

GAGE	DATE	HOUR MIN	PRECIP INTENSITY MM/HR	ACCUMULATED PRECIPITATION STORM MM	DAY MM	YEAR MM
36	12/22/79		NO DATA	8.4	8.4	1063.4
36	12/23/79		NO DATA	0.0	0.0	1063.4
36	12/23/79		NO DATA	8.4	8.4	1071.8

APPENDIX G

Sediment, Dissolved Solids, and Nutrient Data

TABLE F1- 1. FOUR MILE CREEK WATERSHED SOIL CORE NUTRIENT DATA FOR 1979

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
1-1	6/ 7/79	0-1	2.80	90.3	0.35	60.3	1.65	23.0	18.6
1-1	6/ 7/79	1-7.5	0.40	63.8	0.26	28.4	3.75	18.2	24.2
1-1	6/ 7/79	7.5-15	0.40	20.7	0.11	14.1	2.85	8.8	24.4
1-1	6/ 7/79	15-30	0.40	5.2	0.12	14.0	1.90	9.4	26.5
1-1	6/ 7/79	30-45	0.45	4.1	0.09	8.9	1.80	9.2	26.8
1-1	6/ 7/79	45-60	0.35	3.3	0.11	7.4	2.45	5.4	27.4
1-1	6/ 7/79	60-90	0.25	3.0	0.33	11.4	0.90	3.1	28.3
1-1	6/ 7/79	90-120	0.30	2.7	0.12	4.5	1.80	0.9	27.7
1-1	6/ 7/79	120-150	0.25	2.0	0.04	6.6	0.40	0.8	26.8
1-2	6/ 7/79	0-1	12.05	50.1	0.13	206.8	42.85	12.8	22.8
1-2	6/ 7/79	1-7.5	4.45	56.5	0.56	22.6	7.55	7.3	27.5
1-2	6/ 7/79	7.5-15	0.45	14.2	0.36	7.3	7.30	5.9	28.8
1-2	6/ 7/79	15-30	0.80	6.8	0.28	9.5	4.05	4.9	22.5
1-2	6/ 7/79	30-45	0.40	4.7	0.37	4.0	3.95	1.6	30.5
1-2	6/ 7/79	45-60	0.20	3.3	0.38	18.1	3.50	0.6	27.7
1-2	6/ 7/79	60-90	0.20	2.0	0.17	12.3	2.85	0.3	26.8
1-2	6/ 7/79	90-120	0.20	1.9	0.16	8.3	2.60	0.5	30.5
1-2	6/ 7/79	120-150	0.35	1.8	0.16	15.7	1.35	1.0	29.7
1-3	6/ 7/79	0-1	22.30	60.0	0.12	201.0	74.60	22.3	21.2
1-3	6/ 7/79	1-7.5	1.70	67.0	0.60	78.6	0.75	26.5	25.1
1-3	6/ 7/79	7.5-15	2.50	20.4	0.40	18.7	1.20	30.4	27.3
1-3	6/ 7/79	15-30	0.30	0.5	0.40	22.3	6.10	2.0	27.9
1-3	6/ 7/79	30-45	0.80	2.9	0.17	6.5	6.85	1.4	27.5
1-3	6/ 7/79	45-60	0.15	2.7	0.30	6.0	2.70	5.9	27.0
1-3	6/ 7/79	60-90	0.25	2.9	0.05	7.3	2.15	22.7	27.4
1-3	6/ 7/79	90-120	0.35	2.8	0.15	11.3	1.50	22.8	28.2
1-3	6/ 7/79	120-150	0.20	2.5	0.35	23.0	1.05	19.4	29.9
1-4	6/ 7/79	0-1	13.95	184.7	0.34	75.8	33.85	28.5	24.0
1-4	6/ 7/79	1-7.5	0.75	61.5	0.99	16.7	0.55	20.6	26.0
1-4	6/ 7/79	7.5-15	0.65	9.8	0.32	17.2	9.80	8.1	27.8
1-4	6/ 7/79	15-30	0.60	3.9	0.21	9.6	3.15	3.1	27.6
1-4	6/ 7/79	30-45	0.40	5.4	0.12	4.9	6.25	2.2	26.9
1-4	6/ 7/79	45-60	0.25	8.1	0.66	6.7	4.05	9.6	26.7
1-4	6/ 7/79	60-90	0.20	3.4	0.76	8.0	2.20	34.0	27.2
1-4	6/ 7/79	90-120	0.20	4.2	0.54	9.5	0.80	32.2	31.1
1-4	6/ 7/79	120-150	0.30	3.0	0.29	15.5	2.35	20.7	30.2
1-5	6/ 7/79	0-1	25.55	23.5	0.10	116.9	49.70	27.0	20.2
1-5	6/ 7/79	1-7.5	0.80	32.5	0.12	18.0	0.55	17.2	25.4
1-5	6/ 7/79	7.5-15	0.80	30.0	0.23	7.8	7.90	11.8	26.3
1-5	6/ 7/79	15-30	0.40	3.2	0.60	15.7	2.75	2.4	27.7
1-5	6/ 7/79	30-45	0.80	1.1	0.15	4.9	2.65	1.2	27.6
1-5	6/ 7/79	45-60	0.15	3.7	0.07	4.4	1.30	11.0	27.2
1-5	6/ 7/79	60-90	0.30	3.5	0.09	2.2	1.35	22.9	26.1
1-5	6/ 7/79	90-120	0.25	3.7	0.19	5.8	5.80	19.2	28.8
1-5	6/ 7/79	120-150	0.35	2.0	0.41	22.1	2.10	12.7	30.6
1-6	6/ 7/79	0-1	8.50	164.5	0.12	72.3	1.75	14.2	21.3
1-6	6/ 7/79	1-7.5	0.50	11.0	0.22	6.7	8.80	6.4	27.5
1-6	6/ 7/79	7.5-15	1.20	40.1	0.08	16.8	0.60	10.2	27.0
1-6	6/ 7/79	15-30	0.35	8.8	0.10	4.0	3.90	10.2	27.4
1-6	6/ 7/79	30-45	0.65	13.1	0.14	16.8	2.20	10.1	26.9
1-6	6/ 7/79	45-60	0.20	3.0	0.20	2.8	2.15	12.7	26.8
1-6	6/ 7/79	60-90	0.35	2.7	0.42	7.8	0.60	7.1	26.8
1-6	6/ 7/79	90-120	0.35	2.3	0.12	7.6	0.35	2.5	26.8
1-6	6/ 7/79	120-150	0.25	1.7	0.12	16.0	0.30	1.4	27.9
1-7	6/ 7/79	0-1	15.55	17.8	0.15	111.4	64.85	9.3	18.8
1-7	6/ 7/79	1-7.5	3.45	70.6	0.44	39.3	1.50	12.2	24.0
1-7	6/ 7/79	7.5-15	0.75	21.2	0.33	13.2	0.70	19.7	26.4
1-7	6/ 7/79	15-30	0.35	8.5	0.08	9.0	7.55	7.6	28.0
1-7	6/ 7/79	30-45	0.45	5.0	0.03	6.2	3.70	10.2	26.9
1-7	6/ 7/79	45-60	0.30	3.8	0.04	9.0	4.40	17.2	27.2
1-7	6/ 7/79	60-90	0.40	2.9	0.11	14.7	3.30	24.5	28.2
1-7	6/ 7/79	90-120	0.70	2.9	0.46	20.1	1.20	24.2	30.3
1-7	6/ 7/79	120-150	0.35	2.6	0.70	18.0	0.40	19.6	30.8
1-8	6/ 7/79	0-1	9.00	122.7	0.82	44.0	38.95	37.8	24.8
1-8	6/ 7/79	1-7.5	1.45	99.2	1.19	36.0	0.60	21.0	28.2
1-8	6/ 7/79	7.5-15	0.80	24.4	0.80	11.0	0.60	36.9	28.5
1-8	6/ 7/79	15-30	0.75	8.1	0.43	39.0	1.60	4.9	29.0
1-8	6/ 7/79	30-45	1.05	11.9	0.52	29.5	4.10	3.4	40.0
1-8	6/ 7/79	45-60	1.70	7.6	1.18	4.7	2.20	2.5	34.6
1-8	6/ 7/79	60-90	1.65	5.1	0.96	6.4	1.40	2.0	31.6
1-8	6/ 7/79	90-120	0.80	3.1	0.41	12.3	3.30	4.9	33.3
1-8	6/ 7/79	120-150	0.40	2.7	0.48	19.1	1.60	5.4	33.4

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
2-1	6/ 7/79	0-1	0.85	23.6	0.52	5.8	7.95	18.0	9.8
2-1	6/ 7/79	1-7.5	0.75	9.0	0.73	7.2	6.55	15.5	26.4
2-1	6/ 7/79	7.5-15	0.85	4.4	0.68	3.4	11.20	11.9	32.0
2-1	6/ 7/79	15-30	0.75	5.1	0.25	17.8	3.80	4.9	34.1
2-1	6/ 7/79	30-45	1.15	3.9	0.39	5.8	3.05	2.3	34.7
2-1	6/ 7/79	45-60	1.15	3.0	0.43	2.7	1.45	2.8	28.3
2-1	6/ 7/79	60-90	0.80	2.3	0.28	5.1	1.65	1.6	27.3
2-1	6/ 7/79	90-120	0.75	1.6	0.21	7.2	1.25	2.3	31.6
2-1	6/ 7/79	120-150	0.60	1.4	0.25	7.9	1.00	2.9	33.0
2-2	6/ 7/79	0-1	0.55	17.2	0.30	26.3	2.40	19.2	10.0
2-2	6/ 7/79	1-7.5	0.55	6.7	0.49	14.7	4.60	14.5	23.3
2-2	6/ 7/79	7.5-15	0.60	4.4	0.51	20.7	4.65	12.6	28.6
2-2	6/ 7/79	15-30	0.55	3.6	0.19	14.7	3.05	8.0	28.9
2-2	6/ 7/79	30-45	0.40	1.8	0.05	5.7	1.80	17.0	26.7
2-2	6/ 7/79	45-60	0.40	1.2	0.09	6.7	1.65	18.5	26.9
2-2	6/ 7/79	60-90	0.50	0.5	0.18	3.8	0.75	19.5	28.6
2-2	6/ 7/79	90-120	0.55	0.6	0.37	11.3	0.50	14.5	26.9
2-2	6/ 7/79	120-150	0.50	0.4	0.61	11.7	0.40	11.3	28.5
2-3	6/ 7/79	0-1	0.55	41.3	0.42	13.8	2.65	17.4	14.5
2-3	6/ 7/79	1-7.5	0.80	8.5	0.71	2.0	3.85	16.0	30.5
2-3	6/ 7/79	7.5-15	0.90	4.1	0.67	14.7	1.70	14.0	34.8
2-3	6/ 7/79	15-30	1.70	2.8	0.62	7.2	0.95	3.7	30.6
2-3	6/ 7/79	30-45	1.50	3.2	0.42	15.1	1.00	2.5	32.6
2-3	6/ 7/79	45-60	1.05	3.0	0.37	16.3	1.25	2.0	31.8
2-3	6/ 7/79	60-90	0.65	2.8	0.30	7.3	0.80	3.2	33.8
2-3	6/ 7/79	90-120	0.55	2.5	0.26	9.1	0.55	3.1	30.5
2-3	6/ 7/79	120-150	0.55	1.6	0.25	5.4	0.40	3.7	30.8
2-4	6/ 7/79	0-1	0.60	34.4	0.52	18.7	4.65	27.9	11.8
2-4	6/ 7/79	1-7.5	0.65	9.6	1.27	16.8	8.00	31.4	26.1
2-4	6/ 7/79	7.5-15	0.60	2.6	1.21	14.9	5.90	19.5	28.4
2-4	6/ 7/79	15-30	0.55	3.6	0.16	18.3	2.90	4.1	27.0
2-4	6/ 7/79	30-45	0.45	3.3	0.10	10.4	1.50	14.8	26.3
2-4	6/ 7/79	45-60	0.40	4.6	0.07	10.9	1.00	16.8	26.2
2-4	6/ 7/79	60-90	0.45	2.9	0.10	6.6	0.75	11.8	28.3
2-4	6/ 7/79	90-120	0.50	1.7	0.30	5.7	0.50	12.6	26.0
2-4	6/ 7/79	120-150	0.45	1.4	0.57	9.2	0.50	5.5	29.1

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
2-5	6/ 7/79	0-1	0.65	14.8	0.35	6.5	13.40	6.8	24.2
2-5	6/ 7/79	1-7.5	0.65	13.2	0.49	3.1	4.55	15.3	24.8
2-5	6/ 7/79	7.5-15	0.70	6.4	1.45	4.5	7.50	52.9	28.2
2-5	6/ 7/79	15-30	0.65	3.5	0.25	11.7	4.85	5.9	29.1
2-5	6/ 7/79	30-45	0.40	3.1	0.05	14.5	2.30	1.7	27.9
2-5	6/ 7/79	45-60	0.40	3.5	0.04	9.5	2.15	13.1	27.2
2-5	6/ 7/79	60-90	0.40	3.1	0.05	6.5	1.20	22.9	27.5
2-5	6/ 7/79	90-120	0.55	2.4	0.22	12.3	0.80	19.8	31.6
2-5	6/ 7/79	120-150	0.65	1.7	0.71	18.4	0.55	18.5	31.6
2-6	6/ 7/79	0-1	0.70	23.3	0.45	6.8	12.05	16.1	24.4
2-6	6/ 7/79	1-7.5	0.70	13.4	0.82	3.4	9.65	42.9	25.0
2-6	6/ 7/79	7.5-15	0.75	6.5	0.74	0.0	9.45	10.2	27.4
2-6	6/ 7/79	15-30	0.65	2.4	0.17	6.8	3.05	2.5	28.0
2-6	6/ 7/79	30-45	0.55	2.1	0.10	7.0	2.15	1.9	27.2
2-6	6/ 7/79	45-60	0.0	2.0	0.03	7.8	2.10	4.1	26.9
2-6	6/ 7/79	60-90	0.45	3.1	0.05	6.1	1.75	24.2	26.8
2-6	6/ 7/79	90-120	0.50	2.6	0.19	2.8	0.75	31.2	28.2
2-6	6/ 7/79	120-150	0.65	1.3	0.49	5.7	0.70	22.4	30.2
2-7	6/ 7/79	0-1	0.80	52.6	0.28	4.5	14.05	13.8	12.0
2-7	6/ 7/79	1-7.5	0.75	11.7	0.38	4.4	4.50	10.0	24.4
2-7	6/ 7/79	7.5-15	0.90	8.5	0.60	5.6	9.05	10.9	29.4
2-7	6/ 7/79	15-30	1.05	8.1	0.56	11.6	11.65	13.6	40.9
2-7	6/ 7/79	30-45	1.35	5.7	0.43	0.8	3.35	4.3	35.3
2-7	6/ 7/79	45-60	2.20	4.0	0.59	6.3	0.80	3.0	31.0
2-7	6/ 7/79	60-90	2.10	1.9	0.51	0.3	0.95	2.4	29.2
2-7	6/ 7/79	90-120	1.45	1.3	0.37	9.6	0.80	5.7	28.7
2-7	6/ 7/79	120-150	1.35	1.2	0.47	9.7	0.85	6.2	33.7
2-8	6/ 7/79	0-1	0.85	22.2	0.82	7.6	11.30	17.6	11.5
2-8	6/ 7/79	1-7.5	1.00	6.8	0.32	4.3	5.95	4.7	24.4
2-8	6/ 7/79	7.5-15	0.95	10.1	1.19	9.2	9.75	37.6	29.1
2-8	6/ 7/79	15-30	0.65	2.6	0.08	14.9	3.00	13.4	27.6
2-8	6/ 7/79	30-45	0.40	1.8	0.03	22.3	2.40	5.1	27.9
2-8	6/ 7/79	45-60	0.40	1.6	0.03	9.1	1.90	19.0	27.6
2-8	6/ 7/79	60-90	0.50	1.0	0.07	16.3	1.20	20.5	27.7
2-8	6/ 7/79	90-120	0.60	0.5	0.42	6.7	0.85	17.8	29.8
2-8	6/ 7/79	120-150	0.60	0.0	0.60	6.0	0.80	11.9	30.4

TABLE F1-1A. FOUR MILE CREEK WATERSHED SOIL CORE NUTRIENT DATA FOR 1979
(DEEPER CORE DATA FROM 150 DOWN TO 300 CM FOR SELECTED SITES)

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
1-1	6/7/79	150-180	0.20	0.9	0.08	14.0	0.45	0.7	27.6
1-1	6/7/79	180-210	0.30	2.1	0.09	6.1	0.55	0.4	21.4
1-1	6/7/79	210-240	0.35	0.3	0.14	5.5	0.70	2.3	15.7
1-1	6/7/79	240-270	0.25	0.2	0.11	2.8	0.40	1.3	15.5
1-1	6/7/79	270-300	0.70	0.3	0.05	11.1	0.30	0.0	15.6
1-4	6/7/79	150-180	0.30	2.4	0.71	14.3	0.55	16.6	32.8
1-4	6/7/79	180-210	4.60	1.5	1.77	14.7	0.85	13.1	32.5
1-4	6/7/79	210-240	0.20	1.1	1.39	15.2	0.50	12.6	31.7
1-4	6/7/79	240-270	0.30	1.0	0.86	4.4	3.85	9.1	31.0
1-4	6/7/79	270-300	0.60	1.1	0.61	17.9	0.50	6.1	29.2
1-8	6/7/79	150-180	0.65	2.2	0.48	10.4	5.65	5.4	34.3
1-8	6/7/79	180-210	0.55	0.0	0.46	17.1	0.20	5.5	36.2
1-8	6/7/79	210-240	0.35	1.1	0.83	18.8	3.15	20.8	35.7
1-8	6/7/79	240-270	0.35	0.4	0.15	9.4	1.15	8.3	34.3
1-8	6/7/79	270-300	0.90	0.1	0.14	1.4	2.80	6.6	30.3

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
2-1	6/7/79	150-180	0.30	1.5	0.25	4.9	0.85	3.8	38.7
2-1	6/7/79	180-210	0.25	1.2	0.24	3.8	0.60	3.4	34.5
2-1	6/7/79	210-240	0.25	1.1	0.22	3.8	0.60	3.2	33.1
2-1	6/7/79	240-270	0.25	0.5	0.20	3.2	0.75	3.5	28.7
2-1	6/7/79	270-300	0.15	0.0	0.05	2.8	2.05	10.0	33.0
2-4	6/7/79	150-180	0.10	1.0	0.25	5.4	0.80	5.2	28.4
2-4	6/7/79	180-210	0.0	0.2	0.18	3.3	0.70	5.9	22.2
2-4	6/7/79	210-240	0.0	0.0	0.15	2.8	0.85	3.7	17.0
2-4	6/7/79	240-270	0.0	1.1	0.16	2.8	1.45	9.2	20.8
2-4	6/7/79	270-300	0.50	0.4	0.19	3.6	1.65	3.7	19.2
2-6	6/7/79	150-180	0.20	0.9	0.63	5.4	0.65	17.7	31.0
2-6	6/7/79	180-210	0.15	0.6	0.69	5.4	0.65	15.2	32.9
2-6	6/7/79	210-240	0.15	0.3	1.03	7.4	0.70	15.0	31.8
2-6	6/7/79	240-270	0.15	0.1	1.00	1.9	0.60	12.4	31.6
2-6	6/7/79	270-300	0.10	0.8	1.86	3.8	0.60	18.4	32.0

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
3-1	6/ 8/79	0-1	0.0	10.6	6.40	17.5	1.90	51.4	18.6
3-1	6/ 8/79	1-7.5	0.0	7.5	0.83	11.8	2.40	14.7	19.0
3-1	6/ 8/79	7.5-15	0.0	2.1	0.52	10.3	4.45	6.0	14.1
3-1	6/ 8/79	15-30	0.0	1.1	0.35	7.1	3.55	4.7	20.0
3-1	6/ 8/79	30-45	0.0	0.3	0.21	2.1	3.70	4.4	22.1
3-1	6/ 8/79	45-60	0.0	0.2	0.16	2.0	2.45	14.1	23.0
3-1	6/ 8/79	60-90	0.0	0.1	0.16	1.7	1.55	32.5	23.0
3-1	6/ 8/79	90-120	0.0	0.0	0.20	0.3	0.95	34.6	25.5
3-1	6/ 8/79	120-150	0.0	0.0	0.45	8.3	0.50	30.0	28.6
3-2	6/ 8/79	0-1	5.50	36.7	8.65	83.3	33.50	55.9	37.5
3-2	6/ 8/79	1-7.5	1.30	6.3	1.26	30.7	10.60	20.9	15.2
3-2	6/ 8/79	7.5-15	0.70	0.7	0.52	51.5	7.85	7.6	15.5
3-2	6/ 8/79	15-30	0.20	0.2	0.26	5.4	5.85	6.8	16.2
3-2	6/ 8/79	30-45	0.30	0.1	0.14	3.2	2.55	19.5	18.2
3-2	6/ 8/79	45-60	0.20	0.1	0.22	1.4	2.05	36.3	23.1
3-2	6/ 8/79	60-90	0.25	0.1	0.43	25.6	1.10	37.2	24.4
3-2	6/ 8/79	90-120	0.15	0.0	0.38	2.6	0.45	33.1	29.2
3-2	6/ 8/79	120-150	0.15	0.0	0.61	4.0	0.25	25.7	28.7
3-3	6/ 8/79	0-1	1.95	6.9	2.01	32.5	18.45	38.0	31.7
3-3	6/ 8/79	1-7.5	0.50	2.6	0.34	6.9	6.65	3.1	24.4
3-3	6/ 8/79	7.5-15	0.25	0.8	0.24	17.5	4.50	2.3	21.1
3-3	6/ 8/79	15-30	0.20	0.2	0.13	1.6	2.40	5.3	21.3
3-3	6/ 8/79	30-45	0.05	0.2	0.17	0.0	1.85	9.5	22.0
3-3	6/ 8/79	45-60	0.10	0.1	0.14	12.3	1.05	18.9	22.6
3-3	6/ 8/79	60-90	0.0	0.1	0.33	0.7	0.50	20.7	24.0
3-3	6/ 8/79	90-120	0.05	0.1	0.19	3.5	0.35	7.5	26.7
3-3	6/ 8/79	120-150	0.05	0.1	0.02	0.0	0.35	4.5	26.0
3-4	6/ 8/79	0-1	1.90	23.6	1.08	47.0	13.85	34.7	38.5
3-4	6/ 8/79	1-7.5	0.20	11.3	1.02	4.9	2.55	35.5	29.0
3-4	6/ 8/79	7.5-15	0.20	5.7	0.60	2.6	1.85	16.9	28.2
3-4	6/ 8/79	15-30	0.20	3.6	0.84	1.2	1.70	18.8	30.2
3-4	6/ 8/79	30-45	0.25	3.5	0.76	3.8	1.40	16.9	28.8
3-4	6/ 8/79	45-60	0.65	3.5	1.03	10.3	1.20	17.8	30.6
3-4	6/ 8/79	60-90	0.55	1.6	0.93	22.9	0.70	12.2	32.0
3-4	6/ 8/79	90-120	0.40	0.5	0.70	9.3	0.50	8.3	34.8
3-4	6/ 8/79	120-150	0.40	0.5	0.84	7.8	0.25	7.8	35.2

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
3-5	6/ 8/79	0-1	0.40	11.1	1.93	15.9	6.20	39.6	18.8
3-5	6/ 8/79	1-7.5	0.25	1.7	0.52	4.5	3.05	8.5	20.0
3-5	6/ 8/79	7.5-15	0.15	0.5	0.31	2.1	1.95	6.2	16.7
3-5	6/ 8/79	15-30	0.10	0.3	0.24	0.7	1.00	5.7	16.2
3-5	6/ 8/79	30-45	0.0	0.2	0.15	17.0	0.65	5.0	18.8
3-5	6/ 8/79	45-60	0.05	0.1	0.18	4.0	0.70	5.9	19.7
3-5	6/ 8/79	60-90	0.0	0.1	0.14	12.3	0.30	6.8	22.1
3-5	6/ 8/79	90-120	0.0	0.1	0.03	0.0	0.05	12.7	23.9
3-5	6/ 8/79	120-150	0.0	0.1	0.10	1.2	0.0	13.7	23.5

SITE	DATE	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
		----------KG/HA----------						CM
1-1	6/ 7/79	7.7	151.1	3.6	223.4	35.3	102.5	64.3
1-2	6/ 7/79	12.3	128.9	5.6	303.2	77.2	38.1	67.4
1-3	6/ 7/79	13.0	139.5	5.8	397.0	66.3	407.4	66.6
1-4	6/ 7/79	9.0	172.6	11.4	256.8	70.3	500.4	68.0
1-5	6/ 7/79	11.5	125.4	5.8	248.2	75.4	338.3	66.6
1-6	6/ 7/79	9.9	155.1	4.6	243.8	32.2	143.2	64.4
1-7	6/ 7/79	15.0	164.2	7.8	381.1	66.1	454.8	68.3
1-8	6/ 7/79	24.7	236.4	15.9	398.1	54.1	146.8	78.1
2-1	6/ 7/79	19.1	67.5	7.5	170.2	55.4	83.4	73.5
2-2	6/ 7/79	11.9	34.3	7.8	234.6	31.2	350.0	65.6
2-3	6/ 7/79	19.7	70.3	8.5	212.8	21.0	98.5	75.2
2-4	6/ 7/79	11.4	69.9	8.2	227.7	33.8	277.7	65.0
2-5	6/ 7/79	12.7	77.7	7.9	278.3	45.7	425.7	69.8
2-6	6/ 7/79	12.2	70.5	6.0	125.2	50.9	463.2	66.4
2-7	6/ 7/79	36.4	84.7	11.3	153.7	61.2	140.0	75.1
2-8	6/ 7/79	13.7	39.5	7.7	257.9	46.4	380.5	68.0
3-1	6/ 8/79	0.0	14.6	7.9	102.2	42.7	571.0	56.8
3-2	6/ 8/79	6.8	12.8	11.4	270.3	52.7	656.3	57.9
3-3	6/ 8/79	2.2	6.7	4.5	81.4	30.1	246.2	58.0
3-4	6/ 8/79	9.9	55.2	19.9	246.8	22.4	309.9	77.3
3-5	6/ 8/79	0.7	7.3	3.7	120.2	12.2	225.6	51.0

TABLE F1- 2. FOUR MILE CREEK WATERSHED SOIL CORE NUTRIENT DATA FOR 1979

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
1-1	8/14/79	0-1	0.30	5.7	0.95	3.2	1.40	32.8	27.9
1-1	8/14/79	1-7.5	0.10	4.1	0.44	1.4	2.10	16.9	25.1
1-1	8/14/79	7.5-15	0.15	1.6	0.20	1.4	1.35	4.4	24.1
1-1	8/14/79	15-30	0.10	0.3	0.14	1.0	1.05	10.0	22.9
1-1	8/14/79	30-45	0.10	0.3	0.13	0.9	0.90	10.7	22.2
1-1	8/14/79	45-60	0.10	0.4	0.12	0.9	0.95	7.7	21.5
1-1	8/14/79	60-90	0.05	1.0	0.12	7.1	1.10	8.8	21.2
1-1	8/14/79	90-120	0.0	1.6	0.16	2.3	0.30	11.4	24.5
1-1	8/14/79	120-150	0.05	1.9	0.68	5.3	0.30	15.6	27.4
1-2	8/14/79	0-1	0.20	9.3	0.26	2.8	6.35	25.3	26.4
1-2	8/14/79	1-7.5	0.15	12.0	0.61	2.5	3.40	12.2	24.0
1-2	8/14/79	7.5-15	0.10	6.3	0.26	2.2	4.65	7.8	22.5
1-2	8/14/79	15-30	0.10	0.9	0.29	2.6	1.85	2.7	23.3
1-2	8/14/79	30-45	0.15	10.3	0.30	2.2	5.40	1.8	19.8
1-2	8/14/79	45-60	0.05	6.9	0.28	4.2	2.60	0.9	18.2
1-2	8/14/79	60-90	0.0	1.3	0.17	1.3	1.80	0.6	20.9
1-2	8/14/79	90-120	0.05	1.3	0.15	1.8	2.05	1.8	26.2
1-2	8/14/79	120-150	0.0	1.3	0.18	3.8	0.70	2.6	30.8
1-3	8/14/79	0-1	0.20	8.6	0.84	2.7	4.80	26.5	25.8
1-3	8/14/79	1-7.5	0.15	8.3	0.83	3.5	4.80	26.2	24.1
1-3	8/14/79	7.5-15	0.15	6.1	0.35	2.0	2.90	13.0	21.7
1-3	8/14/79	15-30	0.25	2.0	0.40	1.9	3.45	24.3	19.7
1-3	8/14/79	30-45	0.05	1.5	0.08	1.3	2.30	2.0	18.4
1-3	8/14/79	45-60	0.05	1.8	0.03	2.2	2.15	2.9	18.2
1-3	8/14/79	60-90	0.15	1.8	0.03	5.8	2.05	18.3	19.1
1-3	8/14/79	90-120	0.20	1.9	0.13	10.6	1.00	22.3	22.9
1-3	8/14/79	120-150	0.10	1.9	0.29	11.4	0.50	16.6	26.8
1-4	8/14/79	0-1	0.10	9.8	1.05	2.4	1.80	32.2	24.4
1-4	8/14/79	1-7.5	0.20	7.4	0.75	1.9	5.50	19.8	22.1
1-4	8/14/79	7.5-15	0.20	5.5	2.06	1.5	5.90	34.4	21.0
1-4	8/14/79	15-30	0.20	1.3	0.26	1.9	3.70	6.2	19.8
1-4	8/14/79	30-45	0.05	1.5	0.19	0.6	3.20	4.3	20.4
1-4	8/14/79	45-60	0.05	2.1	0.23	0.7	2.20	8.8	20.7
1-4	8/14/79	60-90	0.05	2.4	0.07	1.5	1.45	22.9	22.0
1-4	8/14/79	90-120	0.05	2.1	0.08	2.6	0.65	19.1	25.7
1-4	8/14/79	120-150	0.05	2.5	0.13	2.9	0.55	12.2	28.0
1-5	8/14/79	0-1	0.10	8.4	0.32	9.3	2.05	24.2	24.4
1-5	8/14/79	1-7.5	0.15	6.4	0.88	3.3	3.90	12.3	24.2
1-5	8/14/79	7.5-15	0.15	4.0	0.52	2.6	4.60	9.0	22.1
1-5	8/14/79	15-30	0.35	7.0	0.33	1.8	3.85	5.7	20.3
1-5	8/14/79	30-45	0.20	4.6	0.17	1.6	3.40	3.8	20.1
1-5	8/14/79	45-60	0.10	3.0	0.12	1.8	3.20	3.2	20.3
1-5	8/14/79	60-90	0.10	2.4	0.09	4.0	2.40	16.9	26.0
1-5	8/14/79	90-120	0.10	2.2	0.10	4.4	1.30	24.4	25.0
1-5	8/14/79	120-150	0.05	2.5	0.14	6.8	0.50	19.0	28.2
1-6	8/14/79	0-1	0.05	6.2	0.21	2.7	1.85	21.4	25.9
1-6	8/14/79	1-7.5	0.05	4.2'	0.21	3.1	2.45	30.5	25.5
1-6	8/14/79	7.5-15	0.10	1.8	0.27	2.3	2.40	9.2	22.8
1-6	8/14/79	15-30	0.10	0.8	0.15	1.4	1.65	8.5	19.8
1-6	8/14/79	30-45	0.05	0.5	0.07	1.3	1.85	9.3	18.3
1-6	8/14/79	45-60	0.0	0.2	0.06	1.1	1.45	9.0	20.6
1-6	8/14/79	60-90	0.0	0.1	0.07	1.4	0.65	9.2	22.7
1-6	8/14/79	90-120	0.05	0.9	0.37	3.3	0.60	4.0	26.0
1-6	8/14/79	120-150	0.05	0.8	0.10	4.9	0.50	2.5	28.0
1-7	8/14/79	0-1	0.10	9.5	0.02	3.8	2.65	19.9	26.7
1-7	8/14/79	1-7.5	0.20	5.2	0.88	2.8	6.40	16.1	25.3
1-7	8/14/79	7.5-15	0.20	2.2	0.45	1.6	4.55	6.0	24.8
1-7	8/14/79	15-30	0.05	0.5	0.24	1.3	3.10	12.6	23.5
1-7	8/14/79	30-45	0.15	0.1	0.21	1.3	2.45	18.1	22.0
1-7	8/14/79	45-60	0.10	0.2	0.13	1.3	2.00	20.7	20.3
1-7	8/14/79	60-90	0.10	0.5	0.11	2.1	1.25	20.0	21.2
1-7	8/14/79	90-120	0.10	1.4	0.20	3.0	0.55	18.3	25.7
1-7	8/14/79	120-150	0.05	1.2	0.50	2.1	0.35	15.5	20.9
1-8	8/14/79	0-1	0.30	10.6	0.96	4.1	6.40	21.3	27.3
1-8	8/14/79	1-7.5	0.30	11.7	0.65	3.8	4.15	23.8	27.6
1-8	8/14/79	7.5-15	0.20	7.6	0.96	2.3	5.90	19.2	25.2
1-8	8/14/79	15-30	0.10	5.7	0.54	2.1	5.20	10.2	23.8
1-8	8/14/79	30-45	0.05	9.3	0.27	1.6	3.15	4.7	26.5
1-8	8/14/79	45-60	0.15	10.8	0.17	2.3	4.00	3.5	31.1
1-8	8/14/79	60-90	0.10	5.1	0.35	3.0	1.20	3.2	29.3
1-8	8/14/79	90-120	0.10	1.9	0.27	2.8	0.50	5.3	27.9
1-8	8/14/79	120-150	0.15	1.2	0.23	5.8	0.50	8.8	30.6

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
2-1	8/14/79	0-1	0.60	40.8	0.07	4.0	1.60	14.7	19.7
2-1	8/14/79	1-7.5	0.40	15.7	0.20	5.3	1.50	17.2	24.8
2-1	8/14/79	7.5-15	0.60	13.4	0.29	5.0	2.00	15.8	25.6
2-1	8/14/79	15-30	0.55	4.2	0.31	7.7	4.50	10.6	28.9
2-1	8/14/79	30-45	1.15	7.8	0.16	11.3	9.85	7.3	32.0
2-1	8/14/79	45-60	1.00	6.1	0.28	15.3	3.20	3.3	29.0
2-1	8/14/79	60-90	0.60	4.4	0.30	14.6	2.35	3.0	25.7
2-1	8/14/79	90-120	0.60	3.8	0.26	13.7	2.00	1.9	27.3
2-1	8/14/79	120-150	0.35	1.9	0.13	6.0	1.00	2.3	29.6
2-2	8/14/79	0-1	0.50	10.4	0.30	3.8	2.05	17.0	24.4
2-2	8/14/79	1-7.5	0.90	10.4	0.39	6.5	10.20	20.7	23.8
2-2	8/14/79	7.5-15	0.35	4.6	0.18	7.0	2.95	5.8	22.4
2-2	8/14/79	15-30	0.20	2.5	0.03	5.3	1.90	6.6	22.1
2-2	8/14/79	30-45	0.25	2.9	0.03	4.9	1.75	28.8	22.2
2-2	8/14/79	45-60	0.30	3.0	0.03	6.0	1.55	28.8	23.3
2-2	8/14/79	60-90	0.25	2.6	0.05	10.9	1.70	25.0	24.3
2-2	8/14/79	90-120	0.20	1.6	0.20	6.3	0.50	17.6	25.8
2-2	8/14/79	120-150	0.35	0.4	0.69	8.9	0.90	15.7	27.8
2-3	8/14/79	0-1	0.55	9.7	0.43	4.4	3.15	13.6	31.5
2-3	8/14/79	1-7.5	1.25	9.0	1.01	9.4	19.85	34.5	28.8
2-3	8/14/79	7.5-15	0.40	5.6	0.30	16.0	2.05	4.9	25.3
2-3	8/14/79	15-30	0.50	4.0	0.30	22.0	1.85	1.2	30.4
2-3	8/14/79	30-45	0.45	2.6	0.27	15.9	1.90	1.0	32.1
2-3	8/14/79	45-60	0.20	2.4	0.07	7.1	1.05	0.5	31.4
2-3	8/14/79	60-90	0.20	2.2	0.08	9.6	1.05	0.7	31.2
2-3	8/14/79	90-120	0.15	1.9	0.09	5.7	0.45	1.8	27.6
2-3	8/14/79	120-150	0.10	0.5	0.0	5.1	0.30	1.4	27.5
2-4	8/14/79	0-1	0.50	8.1	0.77	3.8	3.95	25.3	27.1
2-4	8/14/79	1-7.5	1.05	8.7	1.65	6.7	3.70	31.8	24.0
2-4	8/14/79	7.5-15	0.90	5.8	1.34	12.1	5.75	32.0	21.0
2-4	8/14/79	15-30	0.40	1.8	0.18	13.4	2.20	14.8	19.6
2-4	8/14/79	30-45	0.30	2.2	0.07	7.8	2.40	21.7	20.4
2-4	8/14/79	45-60	0.30	1.5	0.07	6.3	1.75	20.7	21.8
2-4	8/14/79	60-90	0.30	2.5	0.09	5.2	1.35	17.8	23.6
2-4	8/14/79	90-120	0.30	1.9	0.30	6.0	0.50	12.1	26.6
2-4	8/14/79	120-150	0.20	1.7	0.81	9.6	0.40	12.5	27.8

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
2-5	8/14/79	0-1	0.50	9.0	0.66	3.8	2.65	20.7	26.4
2-5	8/14/79	1-7.5	1.00	6.7	0.66	5.5	2.90	15.6	23.9
2-5	8/14/79	7.5-15	1.15	7.3	0.54	8.3	7.20	40.3	22.1
2-5	8/14/79	15-30	0.65	1.3	0.23	7.1	3.95	5.3	20.9
2-5	8/14/79	30-45	0.60	2.0	0.07	14.4	3.00	6.1	20.8
2-5	8/14/79	45-60	0.45	1.3	0.03	19.9	2.35	18.4	21.0
2-5	8/14/79	60-90	0.40	1.6	0.07	5.8	1.70	25.0	22.0
2-5	8/14/79	90-120	0.20	2.3	0.16	5.8	0.60	20.7	28.0
2-5	8/14/79	120-150	0.25	2.0	0.56	13.2	0.45	11.1	29.3
2-6	8/14/79	0-1	0.50	5.4	0.86	5.1	4.90	19.3	23.3
2-6	8/14/79	1-7.5	0.60	6.7	0.86	6.1	6.70	22.2	21.5
2-6	8/14/79	7.5-15	0.90	9.3	1.31	13.5	11.30	29.1	22.2
2-6	8/14/79	15-30	0.70	2.1	0.20	10.8	4.95	5.0	19.9
2-6	8/14/79	30-45	0.40	1.5	0.13	11.2	3.55	3.6	19.6
2-6	8/14/79	45-60	0.30	1.0	0.05	9.1	3.60	7.4	19.9
2-6	8/14/79	60-90	0.40	1.4	0.09	6.5	2.50	35.3	22.1
2-6	8/14/79	90-120	0.30	2.8	0.20	6.4	1.90	34.2	26.4
2-6	8/14/79	120-150	0.40	5.3	0.33	8.5	0.70	28.4	28.8
2-7	8/14/79	0-1	0.60	6.3	0.40	2.7	3.90	15.7	26.2
2-7	8/14/79	1-7.5	0.60	10.0	0.52	4.1	3.10	14.6	23.6
2-7	8/14/79	7.5-15	1.00	7.4	0.80	4.7	4.00	25.2	23.3
2-7	8/14/79	15-30	0.70	5.7	0.41	11.6	4.70	6.4	22.1
2-7	8/14/79	30-45	1.20	2.8	0.44	26.4	1.65	15.6	21.0
2-7	8/14/79	45-60	0.90	1.4	0.32	28.6	1.00	2.0	24.4
2-7	8/14/79	60-90	0.50	1.1	0.23	14.6	0.80	0.8	26.2
2-7	8/14/79	90-120	0.55	1.2	0.20	15.1	0.65	0.9	30.2
2-7	8/14/79	120-150	0.60	1.1	0.33	19.5	0.60	2.2	31.6
2-8	8/14/79	0-1	0.60	7.7	0.44	13.4	3.65	2.8	23.5
2-8	8/14/79	1-7.5	0.50	6.0	0.53	13.0	3.50	14.5	22.4
2-8	8/14/79	7.5-15	0.60	5.1	0.92	7.0	4.35	22.2	22.3
2-8	8/14/79	15-30	0.45	2.4	0.14	6.2	1.50	2.2	21.1
2-8	8/14/79	30-45	0.50	1.8	0.14	10.3	2.00	10.6	18.1
2-8	8/14/79	45-60	0.55	1.3	0.02	25.8	4.10	21.4	21.9
2-8	8/14/79	60-90	0.30	1.8	0.16	8.8	2.00	21.5	24.0
2-8	8/14/79	90-120	0.25	2.3	0.40	7.4	0.85	16.4	29.2
2-8	8/14/79	120-150	0.40	1.6	0.68	10.0	0.55	15.3	29.8

TABLE F1- 2. CONCLUDED

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
3-1	8/16/79	0-1	2.90	17.7	5.13	37.9	11.85	39.0	14.9
3-1	8/16/79	1-7.5	0.70	7.6	0.54	21.4	5.55	6.0	13.8
3-1	8/16/79	7.5-15	0.50	3.4	0.38	7.8	4.95	4.1	13.6
3-1	8/16/79	15-30	0.40	1.2	0.29	10.5	6.95	3.8	13.9
3-1	8/16/79	30-45	0.25	0.3	0.20	5.8	4.20	4.3	18.2
3-1	8/16/79	45-60	0.15	0.1	0.01	3.3	2.70	13.1	18.2
3-1	8/16/79	60-90	0.10	0.0	0.06	4.5	1.55	22.9	21.4
3-1	8/16/79	90-120	0.10	0.0	0.38	5.1	0.85	20.3	25.1
3-1	8/16/79	120-150	0.20	0.0	0.76	9.7	0.65	15.5	26.6
3-2	8/16/79	0-1	0.75	41.7	3.01	64.0	23.75	41.0	23.3
3-2	8/16/79	1-7.5	2.25	12.4	0.37	42.1	12.50	8.0	21.7
3-2	8/16/79	7.5-15	2.45	3.5	0.48	61.1	14.50	4.3	20.0
3-2	8/16/79	15-30	1.30	1.4	0.36	44.2	9.15	2.8	23.6
3-2	8/16/79	30-45	0.55	0.3	0.23	5.1	5.10	1.5	17.5
3-2	8/16/79	45-60	0.25	0.1	0.20	4.6	4.10	1.9	21.2
3-2	8/16/79	60-90	0.20	0.1	0.34	3.8	2.50	16.5	22.3
3-2	8/16/79	90-120	0.30	0.0	0.40	5.8	1.10	23.8	25.2
3-2	8/16/79	120-150	0.45	0.0	0.43	8.7	0.80	23.1	27.7
3-3	8/16/79	0-1	4.45	8.0	1.17	32.5	21.10	31.5	16.9
3-3	8/16/79	1-7.5	1.25	1.1	0.30	22.4	8.55	4.6	20.2
3-3	8/16/79	7.5-15	0.65	0.5	0.21	12.0	5.05	2.6	22.0
3-3	8/16/79	15-30	0.35	0.2	0.16	7.6	2.50	2.8	22.1
3-3	8/16/79	30-45	0.30	0.1	0.19	5.4	2.70	3.4	20.3
3-3	8/16/79	45-60	0.30	0.1	0.04	1.6	1.60	4.4	21.8
3-3	8/16/79	60-90	0.40	0.2	0.01	1.3	1.60	0.2	21.6
3-3	8/16/79	90-120	0.10	0.0	0.02	1.1	0.45	0.3	22.5
3-3	8/16/79	120-150	6.30	0.0	0.09	3.8	0.40	0.2	25.0
3-4	8/16/79	0-1	0.95	72.6	0.56	12.5	23.25	31.3	51.3
3-4	8/16/79	1-7.5	0.40	29.7	0.61	11.9	11.30	13.3	34.4
3-4	8/16/79	7.5-15	0.55	5.1	0.61	18.3	2.45	4.8	28.4
3-4	8/16/79	15-30	0.55	4.4	0.70	17.7	1.00	3.3	29.3
3-4	8/16/79	30-45	0.50	2.4	0.33	15.3	1.90	3.3	29.7
3-4	8/16/79	45-60	0.05	1.1	0.02	3.3	1.20	3.9	29.7
3-4	8/16/79	60-90	0.95	0.6	0.65	26.8	1.15	2.1	30.5
3-4	8/16/79	90-120	1.25	0.4	1.04	45.0	1.10	2.2	36.7
3-4	8/16/79	120-150	1.20	0.2	1.17	29.3	0.60	2.5	31.9
3-5	8/16/79	0-1	2.70	17.5	3.83	54.9	8.85	45.0	18.1
3-5	8/16/79	1-7.5	1.00	3.9	0.69	17.7	7.90	10.3	16.2
3-5	8/16/79	7.5-15	0.70	0.9	0.45	12.2	5.40	8.8	15.2
3-5	8/16/79	15-30	0.45	0.2	0.37	8.2	3.50	10.7	14.7
3-5	8/16/79	30-45	0.35	0.1	0.52	7.9	3.05	10.1	15.2
3-5	8/16/79	45-60	0.40	0.1	0.41	9.8	2.00	11.1	18.1
3-5	8/16/79	60-90	0.45	0.0	0.67	10.4	1.15	12.2	21.7
3-5	8/16/79	90-120	0.45	0.0	1.29	10.0	0.70	12.6	24.1
3-5	8/16/79	120-150	0.50	0.0	2.35	14.2	0.45	14.8	25.8

SITE	DATE	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
		----------KG/HA----------						CM
1-1	8/14/79	1.4	31.9	6.6	83.9	18.0	268.1	56.7
1-2	8/14/79	1.1	76.9	5.3	60.7	52.3	58.8	57.8
1-3	8/14/79	3.3	54.7	4.6	161.1	42.1	391.2	52.0
1-4	8/14/79	1.8	59.8	5.9	47.3	43.7	371.0	56.2
1-5	8/14/79	2.9	78.4	4.4	96.7	51.6	357.4	58.1
1-6	8/14/79	1.0	19.4	3.9	64.2	24.3	173.8	56.7
1-7	8/14/79	2.3	25.8	6.8	49.5	37.3	405.8	53.7
1-8	8/14/79	2.9	115.7	8.1	79.5	47.9	172.0	67.6
2-1	8/14/79	14.7	122.1	5.6	257.1	67.7	114.3	66.5
2-2	8/14/79	6.9	56.0	5.8	181.2	38.6	459.5	59.0
2-3	8/14/79	6.2	57.4	3.5	224.4	38.4	61.4	69.5
2-4	8/14/79	8.1	57.6	10.0	185.3	34.3	400.8	57.7
2-5	8/14/79	10.0	54.9	6.2	233.3	43.8	408.7	58.7
2-6	8/14/79	10.1	75.9	6.3	196.9	69.4	583.8	56.8
2-7	8/14/79	16.1	55.8	7.8	405.9	33.2	111.6	64.3
2-8	8/14/79	9.2	53.0	8.7	246.6	41.4	379.9	60.1
3-1	8/16/79	5.3	16.2	8.9	173.3	56.2	358.1	51.1
3-2	8/16/79	13.9	24.4	8.9	316.9	90.0	355.3	56.2
3-3	8/16/79	40.8	4.5	2.1	98.8	41.9	37.4	53.4
3-4	8/16/79	20.8	63.2	18.2	624.6	38.3	77.6	76.2
3-5	8/16/79	11.7	8.2	26.8	269.2	43.3	295.7	50.2

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
1-1	11/16/79	0-1	0.50	0.2	0.80	15.2	0.70	22.5	32.6
1-1	11/16/79	1-7.5	0.60	6.5	1.16	14.1	0.75	28.6	28.7
1-1	11/16/79	7.5-15	0.55	4.3	0.30	10.6	0.75	12.7	26.2
1-1	11/16/79	15-30	0.45	1.1	0.16	7.1	0.85	7.5	26.2
1-1	11/16/79	30-45	0.40	1.4	0.13	8.5	1.00	10.8	25.4
1-1	11/16/79	45-60	0.45	1.4	0.16	9.4	0.70	12.6	26.5
1-1	11/16/79	60-90	0.50	0.8	0.30	7.0	0.60	13.3	26.5
1-1	11/16/79	90-120	0.45	0.6	0.78	13.5	0.50	15.5	26.0
1-1	11/16/79	120-150	0.30	0.7	0.71	18.0	0.40	8.5	25.3
1-2	11/16/79	0-1	0.50	1.0	1.64	36.3	1.50	32.6	33.6
1-2	11/16/79	1-7.5	0.45	8.1	0.69	20.2	1.05	20.1	30.8
1-2	11/16/79	7.5-15	0.50	9.7	0.69	19.8	1.30	27.9	28.5
1-2	11/16/79	15-30	0.70	5.4	0.36	22.1	0.60	1.8	30.4
1-2	11/16/79	30-45	0.75	2.9	0.40	23.3	1.20	1.3	28.0
1-2	11/16/79	45-60	0.70	1.8	0.28	16.9	1.35	0.9	26.4
1-2	11/16/79	60-90	0.65	0.6	0.26	14.8	1.55	1.8	27.8
1-2	11/16/79	90-120	0.65	0.5	0.26	13.4	0.90	4.6	28.0
1-2	11/16/79	120-150	0.55	1.3	0.29	13.9	0.70	5.0	32.5
1-3	11/16/79	0-1	0.75	3.1	1.83	11.4	1.15	20.7	32.2
1-3	11/16/79	1-7.5	0.75	5.0	0.71	11.4	1.05	15.4	29.5
1-3	11/16/79	7.5-15	0.75	6.6	0.87	11.8	1.20	19.9	27.0
1-3	11/16/79	15-30	0.65	3.3	0.16	6.7	1.70	3.2	27.8
1-3	11/16/79	30-45	0.50	2.4	0.08	4.0	1.65	8.1	27.5
1-3	11/16/79	45-60	0.50	1.4	0.37	3.1	1.45	28.0	27.1
1-3	11/16/79	60-90	0.50	0.4	0.25	4.4	1.00	29.1	24.8
1-3	11/16/79	90-120	0.60	0.5	0.29	11.1	0.55	24.8	23.4
1-3	11/16/79	120-150	0.65	0.7	0.58	19.6	0.35	20.0	27.3
1-4	11/16/79	0-1	0.70	0.6	0.80	31.0	2.20	20.0	37.7
1-4	11/16/79	1-7.5	0.70	6.6	0.59	21.3	1.20	20.6	30.3
1-4	11/16/79	7.5-15	0.70	3.8	0.52	13.3	1.10	13.1	30.1
1-4	11/16/79	15-30	0.65	2.2	0.17	9.3	2.30	3.4	30.3
1-4	11/16/79	30-45	0.55	1.0	0.11	5.7	1.85	3.9	28.5
1-4	11/16/79	45-60	0.45	0.7	0.08	21.3	2.00	22.8	28.3
1-4	11/16/79	60-90	0.50	1.0	0.24	4.9	1.70	36.3	26.4
1-4	11/16/79	90-120	0.45	1.0	0.31	13.5	0.75	34.0	23.6
1-4	11/16/79	120-150	0.65	1.3	0.46	17.4	0.45	26.4	27.1

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
1-5	11/16/79	0-1	0.65	1.0	1.22	26.8	1.50	30.8	36.4
1-5	11/16/79	1-7.5	0.80	2.9	0.47	22.8	0.80	12.6	32.7
1-5	11/16/79	7.5-15	0.45	5.9	0.56	20.5	1.20	21.7	30.4
1-5	11/16/79	15-30	0.40	2.2	0.32	23.1	1.50	5.9	30.8
1-5	11/16/79	30-45	0.25	1.2	0.26	12.6	1.65	5.1	29.3
1-5	11/16/79	45-60	0.15	1.0	0.15	10.0	1.20	16.2	27.6
1-5	11/16/79	60-90	0.10	1.9	0.19	5.8	1.05	35.3	27.6
1-5	11/16/79	90-120	0.10	1.3	0.38	11.9	0.65	29.6	28.3
1-5	11/16/79	120-150	0.30	1.4	0.75	20.7	0.40	24.5	27.4
1-6	11/16/79	0-1	0.20	1.9	0.49	7.9	0.90	21.6	38.3
1-6	11/16/79	1-7.5	0.30	6.0	0.41	14.3	0.95	8.8	30.6
1-6	11/16/79	7.5-15	0.35	7.9	0.38	9.2	1.20	11.4	32.1
1-6	11/16/79	15-30	0.35	5.0	0.18	7.1	1.40	2.5	28.6
1-6	11/16/79	30-45	0.40	2.2	0.18	7.1	1.75	0.9	29.0
1-6	11/16/79	45-60	0.35	0.8	0.18	4.9	1.25	0.7	27.4
1-6	11/16/79	60-90	0.15	0.3	0.08	4.8	0.50	1.1	25.5
1-6	11/16/79	90-120	0.15	0.5	0.09	4.1	1.05	2.2	25.8
1-6	11/16/79	120-150	0.15	0.7	0.10	4.8	0.45	1.1	26.9
1-7	11/16/79	0-1	0.30	0.1	1.35	15.5	0.60	24.7	31.3
1-7	11/16/79	1-7.5	0.35	7.5	0.72	9.2	0.60	21.0	27.7
1-7	11/16/79	7.5-15	0.35	3.2	0.30	7.5	0.70	7.7	29.2
1-7	11/16/79	15-30	0.35	1.1	0.21	17.7	0.95	7.7	28.0
1-7	11/16/79	30-45	0.30	0.3	0.21	5.9	0.75	11.0	26.9
1-7	11/16/79	45-60	0.35	0.0	0.24	5.2	0.60	14.7	27.1
1-7	11/16/79	60-90	0.50	0.0	0.34	8.8	0.50	13.9	26.0
1-7	11/16/79	90-120	0.55	0.0	0.66	9.6	0.40	14.3	25.8
1-7	11/16/79	120-150	0.45	0.2	1.11	11.0	0.30	23.9	25.8
1-8	11/16/79	0-1	0.25	0.7	0.80	7.6	1.85	26.0	35.1
1-8	11/16/79	1-7.5	0.30	10.6	0.99	8.9	1.25	26.5	32.0
1-8	11/16/79	7.5-15	0.35	10.2	0.56	8.9	1.20	19.9	29.1
1-8	11/16/79	15-30	0.35	11.6	0.32	7.7	0.75	1.2	32.3
1-8	11/16/79	30-45	0.75	12.3	0.47	16.0	0.65	3.2	36.1
1-8	11/16/79	45-60	0.95	10.2	0.49	18.3	1.25	2.1	30.8
1-8	11/16/79	60-90	0.95	4.2	0.50	19.8	0.95	1.8	27.2
1-8	11/16/79	90-120	0.70	1.9	0.29	22.2	0.85	1.4	26.4
1-8	11/16/79	120-150	0.65	1.4	0.40	23.4	0.50	2.6	32.8

TABLE F1- 3. CONTINUED

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
2-1	11/16/79	0-1	0.20	2.7	0.38	4.1	0.80	16.7	36.4
2-1	11/16/79	1-7.5	0.40	5.0	0.63	8.5	1.40	18.2	30.0
2-1	11/16/79	7.5-15	0.40	6.7	1.49	11.8	2.35	34.8	26.7
2-1	11/16/79	15-30	0.40	3.4	0.41	12.8	5.00	8.2	27.3
2-1	11/16/79	30-45	0.40	12.2	0.33	17.5	3.45	14.7	33.0
2-1	11/16/79	45-60	0.55	11.0	0.27	29.2	5.85	3.3	32.9
2-1	11/16/79	60-90	1.15	5.8	0.55	31.0	5.25	1.4	27.8
2-1	11/16/79	90-120	0.90	4.4	0.45	22.3	2.25	1.4	25.6
2-1	11/16/79	120-150	0.40	2.6	0.28	11.6	1.50	2.4	29.0
2-2	11/16/79	0-1	0.30	2.3	0.33	4.6	0.65	11.3	37.5
2-2	11/16/79	1-7.5	0.45	4.1	0.32	9.5	3.10	8.2	27.7
2-2	11/16/79	7.5-15	0.45	3.1	0.51	15.2	6.80	6.7	27.5
2-2	11/16/79	15-30	0.35	1.1	0.31	9.7	3.10	1.5	28.3
2-2	11/16/79	30-45	0.0	0.9	0.12	6.0	3.10	20.9	27.4
2-2	11/16/79	45-60	0.0	0.6	0.12	11.0	2.70	29.1	26.6
2-2	11/16/79	60-90	0.10	0.6	0.23	9.2	1.60	30.2	27.2
2-2	11/16/79	90-120	0.20	0.7	0.41	7.5	1.45	18.8	26.2
2-2	11/16/79	120-150	0.25	0.8	0.82	8.1	0.85	18.8	27.5
2-3	11/16/79	0-1	0.30	2.5	0.41	5.2	5.75	11.2	39.4
2-3	11/16/79	1-7.5	0.35	3.8	0.51	6.1	2.05	11.9	33.0
2-3	11/16/79	7.5-15	0.50	7.7	0.59	7.1	1.75	20.2	30.6
2-3	11/16/79	15-30	0.75	5.7	0.62	15.3	0.50	7.0	31.2
2-3	11/16/79	30-45	1.55	3.4	0.50	22.6	0.15	1.1	29.7
2-3	11/16/79	45-60	0.95	2.4	0.32	19.7	0.25	0.6	31.4
2-3	11/16/79	60-90	0.15	1.5	0.17	15.2	0.10	0.4	30.1
2-3	11/16/79	90-120	0.15	1.5	0.26	11.4	0.10	2.0	27.3
2-3	11/16/79	120-150	0.10	1.3	0.14	10.5	0.0	3.8	28.1
2-4	11/16/79	0-1	0.20	2.0	0.93	6.1	1.25	23.7	32.6
2-4	11/16/79	1-7.5	0.40	6.3	1.30	13.5	0.60	7.1	25.8
2-4	11/16/79	7.5-15	0.35	6.6	0.70	22.0	1.15	20.8	25.5
2-4	11/16/79	15-30	0.30	2.7	0.24	15.9	0.80	7.4	29.1
2-4	11/16/79	30-45	0.05	1.1	0.14	24.8	0.80	14.1	28.0
2-4	11/16/79	45-60	0.0	1.1	0.08	17.2	0.65	18.0	27.5
2-4	11/16/79	60-90	0.15	1.3	0.16	12.6	0.35	17.6	27.8
2-4	11/16/79	90-120	0.20	2.1	0.32	15.4	0.15	15.1	29.9
2-4	11/16/79	120-150	0.50	2.2	0.69	14.0	0.10	16.9	28.2
2-5	11/16/79	0-1	0.40	1.8	0.71	6.9	1.30	20.6	30.9
2-5	11/16/79	1-7.5	0.50	2.4	0.64	9.5	3.75	11.3	27.2
2-5	11/16/79	7.5-15	0.55	4.5	0.63	10.0	2.55	13.0	27.0
2-5	11/16/79	15-30	0.50	4.0	0.99	11.6	2.95	3.5	29.6
2-5	11/16/79	30-45	0.05	1.8	0.27	3.2	1.45	1.5	28.5
2-5	11/16/79	45-60	0.05	1.7	0.21	3.1	0.80	5.5	27.7
2-5	11/16/79	60-90	0.05	1.0	0.24	9.6	0.50	19.9	28.2
2-5	11/16/79	90-120	0.0	0.5	0.43	9.9	0.25	23.2	29.3
2-5	11/16/79	120-150	0.15	0.5	0.91	6.7	0.15	18.2	28.1
2-6	11/16/79	0-1	0.10	2.0	1.14	5.9	4.15	24.9	32.9
2-6	11/16/79	1-7.5	0.05	3.4	1.11	4.4	2.95	20.6	28.6
2-6	11/16/79	7.5-15	0.05	4.3	1.85	4.9	4.40	14.9	27.0
2-6	11/16/79	15-30	0.60	3.1	0.87	18.1	2.00	2.6	35.9
2-6	11/16/79	30-45	0.05	2.7	0.15	12.1	0.95	3.8	27.1
2-6	11/16/79	45-60	0.0	2.1	0.07	20.7	1.20	4.6	27.5
2-6	11/16/79	60-90	0.0	1.9	0.17	11.6	0.85	27.0	27.0
2-6	11/16/79	90-120	0.15	1.3	0.91	8.5	0.50	31.5	28.3
2-6	11/16/79	120-150	0.95	1.3	1.36	50.6	0.15	27.8	27.4
2-7	11/16/79	0-1	0.50	2.3	0.89	8.3	1.30	15.1	33.5
2-7	11/16/79	1-7.5	0.80	4.4	1.16	8.4	0.45	15.1	29.4
2-7	11/16/79	7.5-15	0.50	5.6	1.37	11.1	3.75	5.8	31.2
2-7	11/16/79	15-30	0.60	7.0	0.42	13.3	2.30	5.9	30.5
2-7	11/16/79	30-45	2.15	5.1	0.51	32.1	1.85	3.5	32.6
2-7	11/16/79	45-60	2.75	2.9	0.44	34.4	0.70	2.7	26.6
2-7	11/16/79	60-90	1.70	0.9	0.26	34.4	0.20	1.5	26.6
2-7	11/16/79	90-120	1.15	0.5	0.18	15.6	0.15	3.4	27.2
2-7	11/16/79	120-150	0.80	0.5	0.25	17.3	0.10	5.6	31.3
2-8	11/16/79	0-1	0.15	1.6	0.25	5.5	2.55	12.1	29.7
2-8	11/16/79	1-7.5	0.45	3.2	0.58	14.5	1.00	6.1	25.4
2-8	11/16/79	7.5-15	0.35	4.5	0.73	13.2	1.60	14.2	25.7
2-8	11/16/79	15-30	0.20	2.1	0.22	13.6	1.40	1.4	28.0
2-8	11/16/79	30-45	0.0	1.0	0.04	9.8	1.85	1.6	27.9
2-8	11/16/79	45-60	0.0	0.8	0.03	13.2	0.95	19.1	27.1
2-8	11/16/79	60-90	0.0	0.6	0.06	9.4	0.65	22.5	27.7
2-8	11/16/79	90-120	0.0	0.3	0.42	8.2	0.60	21.0	27.2
2-8	11/16/79	120-150	0.60	0.2	0.71	11.3	0.15	19.2	27.4

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O %
			------SOLUBLE PPM-----				--SOIL PPM--		
3-1	11/16/79	0-1	2.65	9.4	7.31	46.5	92.25	50.9	34.8
3-1	11/16/79	1-7.5	1.20	2.2	1.44	15.8	8.25	12.6	25.9
3-1	11/16/79	7.5-15	0.85	3.6	0.53	13.7	5.80	4.4	25.3
3-1	11/16/79	15-30	0.80	0.4	0.30	14.7	10.35	3.6	25.7
3-1	11/16/79	30-45	0.55	0.1	0.18	6.4	3.20	7.3	21.2
3-1	11/16/79	45-60	0.40	0.0	0.16	18.9	2.30	21.2	15.6
3-1	11/16/79	60-90	0.40	0.0	0.26	4.6	3.60	30.8	17.8
3-1	11/16/79	90-120	0.45	0.0	0.45	5.5	1.60	28.9	21.1
3-1	11/16/79	120-150	0.60	0.0	0.63	12.5	1.00	24.3	25.4
3-2	11/16/79	0-1	1.50	8.5	0.79	50.9	109.60	28.0	48.4
3-2	11/16/79	1-7.5	1.95	6.0	0.68	13.3	21.30	13.7	27.7
3-2	11/16/79	7.5-15	1.60	1.4	0.52	37.9	14.10	4.3	28.0
3-2	11/16/79	15-30	1.15	0.4	0.39	11.2	11.40	3.1	28.6
3-2	11/16/79	30-45	0.65	0.1	0.33	8.7	8.55	2.6	28.3
3-2	11/16/79	45-60	0.50	0.0	0.23	3.5	9.60	8.0	26.6
3-2	11/16/79	60-90	0.45	0.0	0.37	6.8	2.55	29.0	26.3
3-2	11/16/79	90-120	0.45	0.0	0.36	6.8	1.40	29.8	26.3
3-2	11/16/79	120-150	0.55	0.0	0.49	9.5	1.25	24.3	27.3
3-3	11/16/79	0-1	1.65	12.9	1.17	82.1	14.40	32.2	46.4
3-3	11/16/79	1-7.5	1.40	2.2	0.34	22.2	8.40	3.3	25.9
3-3	11/16/79	7.5-15	1.10	1.8	0.28	14.2	6.75	2.0	25.1
3-3	11/16/79	15-30	0.80	0.9	0.23	26.3	6.55	1.7	26.6
3-3	11/16/79	30-45	0.55	0.5	0.17	19.1	4.55	2.2	25.6
3-3	11/16/79	45-60	0.65	0.3	0.05	8.0	3.10	3.6	25.1
3-3	11/16/79	60-90	0.45	0.1	0.02	2.4	2.70	0.8	23.2
3-3	11/16/79	90-120	0.25	0.1	0.04	1.7	1.60	0.6	23.5
3-3	11/16/79	120-150	0.70	0.1	0.03	6.2	1.15	0.5	23.3
3-4	11/16/79	0-1	2.15	16.6	4.29	31.8	15.30	31.1	34.6
3-4	11/16/79	1-7.5	1.70	13.5	1.96	19.7	8.55	20.5	32.1
3-4	11/16/79	7.5-15	1.50	9.1	1.55	15.6	7.50	16.5	28.6
3-4	11/16/79	15-30	1.30	4.1	0.50	11.9	6.00	5.2	30.1
3-4	11/16/79	30-45	0.80	1.5	0.32	13.5	9.15	4.5	33.1
3-4	11/16/79	45-60	0.75	1.3	0.32	11.2	7.70	3.9	31.9
3-4	11/16/79	60-90	1.05	0.2	0.31	9.7	5.65	2.5	26.4
3-4	11/16/79	90-120	1.15	0.2	0.23	7.5	4.85	1.3	26.7
3-4	11/16/79	120-150	0.35	0.2	0.19	6.1	3.80	1.2	28.4

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O %
			------SOLUBLE PPM-----				--SOIL PPM--		
3-5	11/16/79	0-1	8.35	7.6	0.37	43.0	20.70	4.6	37.0
3-5	11/16/79	1-7.5	1.00	1.8	0.38	10.8	8.50	2.0	24.7
3-5	11/16/79	7.5-15	0.75	0.6	0.26	8.9	5.20	1.9	23.4
3-5	11/16/79	15-30	0.25	0.3	0.16	6.5	3.20	1.7	23.4
3-5	11/16/79	30-45	0.25	0.2	0.03	1.8	3.35	1.2	21.2
3-5	11/16/79	45-60	0.25	0.1	0.04	3.6	4.20	0.7	20.6
3-5	11/16/79	60-90	0.25	0.1	0.04	5.4	1.55	0.6	20.6
3-5	11/16/79	90-120	0.35	0.0	0.06	12.8	1.35	0.8	22.2
3-5	11/16/79	120-150	0.25	0.0	0.08	10.6	1.20	1.6	22.6

SITE	DATE	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O CM
		----------KG/HA----------						
1-1	11/16/79	10.2	29.6	11.6	279.1	14.5	295.3	61.9
1-2	11/16/79	15.0	51.3	7.9	389.5	25.0	117.5	69.3
1-3	11/16/79	14.0	35.5	8.9	236.7	22.1	496.9	61.9
1-4	11/16/79	13.1	35.7	7.2	301.2	30.0	590.0	64.2
1-5	11/16/79	5.5	41.5	9.6	341.6	21.9	549.1	67.6
1-6	11/16/79	5.3	39.2	3.4	134.1	21.8	53.1	64.5
1-7	11/16/79	10.5	14.1	13.5	229.1	12.3	369.3	62.9
1-8	11/16/79	16.7	131.0	10.3	443.6	19.8	89.1	71.6
2-1	11/16/79	16.0	134.1	10.8	475.2	79.4	136.1	67.8
2-2	11/16/79	4.5	23.8	9.6	208.7	48.6	470.0	64.6
2-3	11/16/79	9.8	57.8	7.2	325.3	7.1	83.6	69.8
2-4	11/16/79	5.9	52.4	9.1	374.4	9.6	368.5	67.2
2-5	11/16/79	3.4	33.2	12.7	191.2	21.5	360.2	67.5
2-6	11/16/79	7.4	47.6	18.2	492.1	23.9	500.4	67.2
2-7	11/16/79	31.6	52.0	9.1	531.5	17.0	100.9	68.9
2-8	11/16/79	4.4	22.1	8.2	253.7	18.7	389.2	64.9
3-1	11/16/79	13.4	8.6	11.1	239.3	89.5	519.0	51.7
3-2	11/16/79	15.9	9.4	9.6	226.7	136.7	472.2	64.6
3-3	11/16/79	14.1	11.0	2.3	211.5	73.7	34.9	57.7
3-4	11/16/79	22.2	41.4	10.0	234.3	138.6	93.0	68.2
3-5	11/16/79	8.7	5.7	2.2	198.8	59.3	28.0	52.4

TABLE F1- 4. FOUR MILE CREEK WATERSHED SOIL CORE NUTRIENT DATA FOR 1979

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O %
			------SOLUBLE PPM-----				--SOIL PPM--		
1-1	6/29/79	0-1	1.00	24.3	0.62	6.5	7.50	23.5	24.4
1-1	6/29/79	1-7.5	1.60	31.3	1.23	10.5	17.00	27.6	26.9
1-1	6/29/79	7.5-15	1.00	30.4	0.70	11.6	15.00	24.1	26.3
1-1	6/29/79	15-30	0.80	19.1	0.43	10.6	9.50	12.4	27.4
1-2	6/29/79	0-1	0.40	33.4	0.57	14.0	7.00	24.7	23.2
1-2	6/29/79	1-7.5	0.75	31.8	0.80	10.1	13.50	36.4	27.1
1-2	6/29/79	7.5-15	0.30	88.7	0.27	12.7	44.00	17.4	27.1
1-2	6/29/79	15-30	3.95	37.9	0.55	28.2	9.00	9.1	27.0
1-3	6/29/79	0-1	0.20	13.9	0.11	10.4	5.50	30.3	17.2
1-3	6/29/79	1-7.5	1.05	79.3	0.89	22.9	9.50	30.6	22.0
1-3	6/29/79	7.5-15	1.00	55.6	0.49	17.2	13.50	18.5	23.0
1-3	6/29/79	15-30	0.55	16.5	0.38	9.0	11.50	9.0	24.8
2-1	6/29/79	0-1	0.45	24.7	0.59	109.3	8.00	19.8	22.0
2-1	6/29/79	1-7.5	0.95	12.1	0.82	28.5	8.00	18.3	28.3
2-1	6/29/79	7.5-15	1.35	10.6	1.10	17.4	13.00	35.2	30.0
2-1	6/29/79	15-30	1.25	7.3	0.70	21.6	8.00	12.3	31.7
2-2	6/29/79	0-1	1.20	13.5	0.60	31.3	13.50	18.3	13.0
2-2	6/29/79	1-7.5	1.25	9.6	0.91	18.3	8.75	16.1	22.4
2-2	6/29/79	7.5-15	2.05	9.0	1.04	29.8	12.50	24.8	25.8
2-2	6/29/79	15-30	0.55	5.2	0.56	12.9	11.00	11.7	26.7
2-3	6/29/79	0-1	0.85	20.1	0.79	7.7	7.50	20.6	15.9
2-3	6/29/79	1-7.5	1.00	17.2	0.92	9.4	6.50	20.6	24.0
2-3	6/29/79	7.5-15	1.65	16.5	1.24	9.4	7.00	24.6	26.5
2-3	6/29/79	15-30	0.95	8.8	0.63	14.2	7.00	11.9	27.6

SITE	DATE	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O CM
		----------KG/HA----------						
1-1	6/29/79	4.2	101.1	2.7	44.1	50.8	77.0	11.0
1-2	6/29/79	9.3	203.0	2.2	82.6	77.2	70.7	11.0
1-3	6/29/79	3.1	161.5	2.1	57.4	46.9	67.3	9.7
2-1	6/29/79	4.9	39.4	3.4	98.7	38.0	80.3	12.4
2-2	6/29/79	4.5	29.9	3.1	77.0	45.0	66.1	10.3
2-3	6/29/79	4.7	52.5	3.5	48.5	28.3	70.2	10.8

TABLE F1- 5. FOUR MILE CREEK WATERSHED SOIL CORE NUTRIENT DATA FOR 1979

SITE	DATE	DEPTH CM	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
			------SOLUBLE PPM-----				--SOIL PPM--		%
1-1	7/16/79	0-1	0.85	6.5	0.67	7.8	3.10	24.3	27.0
1-1	7/16/79	1-7.5	0.95	9.4	1.22	8.4	5.50	31.4	27.2
1-1	7/16/79	7.5-15	1.75	12.1	0.96	15.2	12.00	20.6	27.6
1-1	7/16/79	15-30	1.70	14.9	0.49	13.1	7.50	13.8	27.7
1-2	7/16/79	0-1	0.95	7.6	0.73	7.7	6.50	26.1	19.2
1-2	7/16/79	1-7.5	1.10	11.6	0.76	22.2	6.50	26.3	24.6
1-2	7/16/79	7.5-15	1.15	14.3	0.85	21.6	6.50	19.2	24.0
1-2	7/16/79	15-30	0.60	15.5	0.10	6.1	8.50	14.7	25.2
1-3	7/16/79	0-1	0.85	7.9	1.02	5.8	6.50	27.5	25.4
1-3	7/16/79	1-7.5	1.00	12.4	1.13	7.1	8.00	29.5	25.9
1-3	7/16/79	7.5-15	1.10	16.3	0.59	8.5	10.00	19.2	25.7
1-3	7/16/79	15-30	1.00	6.8	0.31	8.4	9.00	7.9	26.8
2-1	7/16/79	0-1	0.80	16.3	0.49	5.8	5.00	18.9	13.1
2-1	7/16/79	1-7.5	0.95	10.9	0.83	7.5	8.50	24.6	25.0
2-1	7/16/79	7.5-15	1.15	8.6	0.86	11.8	9.00	24.4	27.8
2-1	7/16/79	15-30	1.20	8.5	0.63	17.6	8.50	14.9	30.1
2-2	7/16/79	0-1	0.60	14.5	0.61	6.3	5.50	19.3	9.8
2-2	7/16/79	1-7.5	0.90	9.2	0.82	117.3	6.50	17.4	23.0
2-2	7/16/79	7.5-15	1.00	7.0	0.87	12.4	9.50	30.3	26.2
2-2	7/16/79	15-30	0.55	5.0	0.28	11.0	5.50	9.5	27.7
2-3	7/16/79	0-1	0.70	21.9	0.55	6.2	4.00	20.6	13.8
2-3	7/16/79	1-7.5	1.00	15.8	0.90	7.2	5.50	22.5	23.7
2-3	7/16/79	7.5-15	1.05	15.0	1.13	11.9	16.75	30.3	26.9
2-3	7/16/79	15-30	1.00	9.9	0.39	14.8	11.00	9.1	28.5

SITE	DATE	NH4-N	NO3-N	PO4-P	CL	EXT N	AVL P	H2O
		----------KG/HA----------						CM
1-1	7/16/79	6.3	52.6	3.2	51.4	33.3	79.6	11.3
1-2	7/16/79	3.5	58.2	1.8	55.2	30.8	76.0	10.1
1-3	7/16/79	4.2	42.9	2.3	33.2	36.8	64.6	10.8
2-1	7/16/79	4.6	37.9	3.0	56.5	35.0	79.7	11.5
2-2	7/16/79	3.0	27.3	2.3	135.9	27.6	68.4	10.6
2-3	7/16/79	4.1	52.2	2.8	50.3	45.7	72.1	11.0

TABLE F2- 1. FOUR MILE CREEK WATERSHED RUNOFF NUTRIENT CONCENTRATION DATA FOR 1979 SITE 1

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
1	3/16/79	17	7	0.76	0.91	0.073	70	83	7.15
1	3/16/79	19	21	2.97	0.93	0.019	58	91	3.12
1	3/17/79	10	40	1.93	1.25	0.017	58	86	6.54
1	3/17/79	11	34	0.42	1.19	0.387	171	193	12.40
1	3/17/79	15	30	0.01	0.69	0.061	49	50	6.21
1	3/18/79	11	30	0.16	1.52	0.149	64	73	2.73
1	3/18/79	11	45	0.85	0.71	0.064	0	75	10.81
1	3/18/79	12	30	0.27	0.84	0.030	0	16	2.23
1	3/18/79	13	30	0.51	1.06	0.081	0	0	17.57
1	3/18/79	14	30	0.59	0.79	0.042	0	0	11.55
1	3/18/79	15	30	0.23	0.80	0.157	0	4	0.09
1	3/18/79	16	30	0.26	0.82	0.016	24	33	18.92
1	3/18/79	17	30	0.44	0.85	0.024	22	23	2.01
1	3/18/79	18	30	0.21	0.85	0.013	49	56	0.88
1	3/18/79	19	30	0.27	0.87	0.051	54	61	4.26
1	3/18/79	20	30	0.68	0.65	0.086	49	68	12.03
1	3/18/79	21	30	0.21	0.80	0.091	39	59	8.74
1	3/18/79	22	30	1.35	0.70	0.090	42	53	18.16
1	3/18/79	23	30	0.19	0.72	0.083	51	70	3.28
1	3/19/79	0	30	0.26	0.86	0.120	50	99	3.91
1	3/19/79	1	30	0.18	0.97	0.101	58	85	0.88
1	3/19/79	2	30	0.20	1.16	0.108	53	60	5.04
1	3/19/79	3	30	0.35	1.23	0.160	65	83	14.39
1	3/19/79	4	30	0.23		0.152	62	81	13.63
1	3/19/79	5	30	0.20		0.137	62	86	2.22
1	3/19/79	6	30	0.22	1.19	0.140	68	72	1.05
1	3/19/79	7	30	0.28	1.36	0.196	64	70	1.60
1	3/19/79	8	30	0.21	1.21	0.196	66	85	0.78
1	3/19/79	9	30	0.16	1.44	0.196	98	99	1.07
1	3/19/79	10	30	0.85		0.205	74	97	2.23
1	3/19/79	13	0	0.30	1.27	0.234	111	185	6.77
1	3/19/79	13	30	0.59	2.35	0.285	75	97	12.16
1	3/19/79	14	30	0.22	2.20	0.294	74	88	5.28
1	3/19/79	15	30	0.43	2.26	0.223	83	94	7.23
1	3/19/79	16	30	0.25	2.88	0.200	76	92	1.73
1	3/19/79	17	30	0.24	2.82	0.200	32	91	0.75
1	3/19/79	18	30	0.37	3.16	0.202	36	113	0.99
1	3/23/79	5	33	0.09	8.77	0.169	66	97	8.06
1	3/23/79	7	35	0.06	9.23	0.137	57	99	2.51
1	3/28/79	18	5	0.13	5.82	0.105	98	17	1.20
1	3/28/79	23	59	0.02	6.81	0.113	108	109	1.45
1	3/29/79	5	7	0.19	6.68	0.134	116	140	0.98
1	3/29/79	7	8	0.27	6.12	0.171	107	585	20.22
1	3/29/79	10	32	0.13	5.90	0.074	109	275	1.74
1	3/29/79	11	43	0.11	5.45	0.113	104	221	3.15
1	3/29/79	12	21	0.16	5.43	0.187	109	165	4.24
1	3/29/79	13	51	0.12	5.31	0.087	97	300	4.46
1	3/29/79	14	51	0.16	5.32	0.165	85	170	15.71
1	3/29/79	15	50	0.15	5.45	0.113	78	143	35.99
1	3/29/79	16	45	0.13	5.27	0.102	81	126	8.39
1	3/29/79	18	45	0.12	5.28	0.098	91	141	4.60
1	3/29/79	20	45	0.07	5.14	0.111	80	274	11.66
1	3/29/79	21	20	0.21	5.26	0.138	82	220	17.51
1	3/29/79	22	0	0.06	5.29	0.101	96	161	1.35
1	3/30/79	0	15	0.19	5.08	0.150	111	125	10.45
1	3/30/79	1	45	0.07	4.80	0.180	111	114	18.53
1	4/20/79	4	22	0.38	0.69	0.161	0	5830	1.62
1	4/20/79	4	30	0.29	0.79	0.340	0	4941	2.90
1	4/20/79	4	40	0.29	0.72	0.411	0	4222	3.68
1	4/20/79	9	46	0.23	0.66	0.290	0	1989	3.15
1	4/20/79	10	4	0.19	0.42	0.353	0	2402	2.60
1	4/20/79	11	13	0.15	0.41	0.406	32	2261	2.98
1	4/20/79	11	25	0.11	0.39	0.368	17	4693	2.58
1	4/20/79	11	39	0.18	0.49	0.650	24	4041	3.60
1	4/20/79	12	43	0.10	0.28	0.350	19	3098	1.95
1	4/20/79	12	54	0.07	0.15	0.365	30	5411	1.85
1	4/20/79	13	11	0.10	0.22	0.393	36	4125	1.67
1	4/20/79	13	29	0.20	0.45	0.506	30	2939	2.04
1	4/20/79	13	45	0.39	0.70	0.630	49	1910	1.80
1	4/20/79	14	11	0.25	0.71	0.491	67	600	1.54
1	6/ 4/79	11	7	1.44	10.65	0.092	559	2222	18.84
1	6/ 4/79	11	12	1.20	8.21	0.123	421	1701	16.87
1	6/ 4/79	11	20	1.18	10.99	0.179	531	1277	17.94
1	6/ 4/79	19	1	0.28	8.06	0.026	180	9057	8.53
1	6/ 4/79	19	1	1.63	3.94	0.140	97	7437	7.74
1	6/ 4/79	19	6	2.63	11.42	0.157	137	9027	11.14
1	6/ 4/79	19	9	1.17	3.63	0.168	43	11280	3.98
1	6/ 4/79	19	9	2.22	8.52	0.101	106	9843	7.59
1	6/ 4/79	19	11	2.67	10.64	0.175	148	11780	7.36
1	6/ 4/79	19	13	1.98	8.91	0.112	119	11320	7.46
1	6/ 4/79	19	15	2.93	11.31	0.215	137	10390	8.55
1	6/ 4/79	19	19	2.12	9.22	0.108	145	8179	6.39
1	6/ 4/79	19	23	3.19	11.70	0.246	150	6064	11.26
1	6/ 4/79	19	29	3.15	12.49	0.325	156	5229	11.74
1	6/ 4/79	19	34	3.22	13.00	0.410	154	4918	9.53
1	6/ 4/79	19	38	2.03	12.67	0.498	171	3402	11.38
1	6/ 4/79	19	43	3.45	11.83	0.563	161	3730	10.21
1	6/ 4/79	19	48	3.48	12.44	0.630	154	3160	9.69
1	6/ 4/79	19	52	3.52	12.68	0.677	179	2829	15.26
1	6/ 4/79	19	57	3.65	11.90	0.795	167	1866	11.74
1	6/ 4/79	20	1	3.62	12.56	0.837	185	2250	11.14
1	6/ 4/79	20	6	3.62	12.73	0.867	180	1767	12.84
1	6/ 4/79	20	13	3.72	12.68	0.895	172	1784	13.34
1	6/12/79	17	48	0.80	6.63	0.089	144	63210	4.31
1	6/12/79	17	51	0.56	5.50	0.072	131	23150	3.48
1	6/12/79	17	52	0.64	7.00	0.058	127	26640	5.93
1	6/12/79	17	54	0.75	4.45	0.076	114	21290	2.64
1	6/12/79	17	56	1.19	6.76	0.121	138	22590	3.36
1	6/12/79	17	58	1.33	8.74	0.104	164	25830	4.31
1	6/12/79	18	0	1.33	8.24	0.110	140	22080	3.77
1	6/12/79	18	2	1.30	7.12	0.099	135	20200	5.25
1	6/12/79	18	4	1.23	6.42	[illegible]	120	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
1	6/12/79	18	6	0.84	3.99	0.100	122	75850	3.70
1	6/12/79	18	8	0.73	4.17	0.082	103	73870	2.64
1	6/12/79	18	10	1.27	11.12	0.093	171	89750	6.72
1	6/12/79	18	12	1.21	8.96	0.103	151	76520	4.97
1	6/12/79	18	14	1.15	8.55	0.125	136	72550	3.84
1	6/12/79	18	16	1.15	8.41	0.124	102	68650	3.41
1	6/12/79	18	18	1.00	6.49	0.146	104	53790	3.01
1	6/12/79	18	20	0.88	4.93	0.138	66	50050	2.30
1	6/12/79	18	22	0.81	4.80	0.169	56	42930	2.06
1	6/12/79	18	24	0.72	3.60	0.147	43	42320	1.73
1	6/12/79	18	26	0.72	3.43	0.148	52	43600	1.98
1	6/12/79	18	28	0.73	3.66	0.159	44	36080	1.73
1	6/12/79	18	30	0.72	4.01	0.155	54	29960	1.94
1	6/12/79	18	32	0.73	4.56	0.144	54	25930	2.17
1	6/12/79	18	34	0.70	5.02	0.141	50	22880	2.40
1	6/12/79	18	36	0.72	4.80	0.128	78	18330	2.94
1	6/12/79	18	43	0.71	6.53	0.158	113	8958	2.91
1	6/12/79	18	48	0.66	6.08	0.162	118	5895	2.89
1	6/12/79	18	53	0.69	8.08	0.145	158	4332	3.77
1	6/12/79	19	1	0.80	9.08	0.149	150	3008	4.48
1	6/19/79	22	31	0.11	1.66	0.124	30	12690	1.18
1	6/19/79	22	55	0.12	2.45	0.137	30	5865	4.86
1	6/19/79	23	2	0.15	2.70	0.147	73	4411	1.61
1	6/27/79	0	10	0.27	1.82	0.064	23	10940	1.18
1	6/27/79	0	13	0.11	2.43	0.094	52	33100	1.10
1	6/27/79	0	15	0.14	2.68	0.086	60	39500	2.13
1	6/27/79	0	17	0.01	2.99	0.080	101	38800	2.30
1	6/27/79	0	19	0.16	2.44	0.097	47	33240	0.91
1	6/27/79	0	21	0.13	2.19	0.109	47	29490	0.78
1	6/27/79	0	23	0.11	1.86	0.108	64	27690	0.80
1	6/27/79	0	25	0.11	1.67	0.122	54	19940	1.62
1	6/27/79	0	27	0.08	1.58	0.112	48	19740	0.80
1	6/27/79	0	29	0.08	1.54	0.106	76	18000	0.86
1	6/27/79	0	31	0.08	1.47	0.107	49	16120	0.93
1	6/27/79	0	33	0.07	1.35	0.117	36	13360	0.96
1	6/27/79	0	35	0.05	1.34	0.096	60	14020	0.82
1	6/27/79	0	37	0.05	1.32	0.112	39	13150	0.82
1	6/27/79	0	39	0.06	1.35	0.116	34	12900	0.97
1	6/27/79	0	41	0.04	1.34	0.107	53	14210	0.82
1	6/27/79	0	43	0.04	1.23	0.108	38	13720	0.78
1	6/27/79	0	45	0.04	1.14	0.100	60	14280	0.72
1	6/27/79	1	5	0.07	1.52	0.137	44	9463	1.20
1	6/27/79	1	10	0.07	2.28	0.129	49	6268	1.42
1	6/27/79	1	16	0.09	2.64	0.118	83	4052	1.65
1	7/ 3/79	8	2	0.04	1.32	0.058	143	8104	1.60
1	7/ 3/79	8	6	0.05	0.99	0.064	140	6221	1.20
1	7/ 3/79	8	15	0.03	0.97	0.061	128	8002	1.16
1	7/ 3/79	8	25	0.03	1.78	0.055	153	4611	1.74
1	7/ 3/79	8	32	0.04	2.04	0.070	148	4871	2.12
1	7/ 3/79	8	46	0.03	1.37	0.064	153	30870	1.32
1	7/ 3/79	8	53	0.07	1.10	0.075	160	29970	1.06
1	7/ 3/79	8	55	0.04	0.95	0.074	155	25440	1.00

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
1	7/ 3/79	8	57	0.03	0.94	0.075	53	24940	0.84
1	7/ 3/79	8	59	0.01	1.22	0.075	58	27630	0.96
1	7/ 3/79	9	0	0.11	1.09	0.071	134	26760	1.16
1	7/ 3/79	9	2	0.01	1.60	0.061	47	25400	1.18
1	7/ 3/79	9	4	0.01	2.35	0.050	165	20730	1.37
1	7/ 3/79	9	6	0.0	2.25	0.048	130	19680	1.26
1	7/ 3/79	9	8	0.01	3.18	0.048	163	21930	1.75
1	7/ 3/79	9	10	0.0	2.93	0.051	204	21420	1.65
1	7/ 3/79	9	12	0.0	3.18	0.051	175	18080	1.67
1	7/ 3/79	9	14	0.0	3.79	0.051	168	17350	2.79
1	7/ 3/79	9	16	0.0	6.16	0.042	212	17460	2.91
1	7/ 3/79	9	18	0.03	4.01	0.039	215	15430	2.75
1	7/ 3/79	9	20	0.0	1.92	0.061	157	9352	1.39
1	7/ 3/79	9	26	0.02	3.19	0.046	158	38310	1.96
1	7/ 3/79	9	28	0.02	1.97	0.059	143	38940	1.33
1	7/ 3/79	9	30	0.02	0.82	0.067	160	33740	0.70
1	7/ 3/79	9	32	0.01	1.12	0.064	71	44220	0.74
1	7/ 3/79	9	34	0.02	0.96	0.092	41	37260	0.97
1	7/ 3/79	9	36	0.02	0.78	0.078	146	40280	0.55
1	7/ 3/79	9	38	0.01	0.96	0.081	148	57000	0.45
1	7/ 3/79	9	40	0.02	0.76	0.078	137	52240	0.45
1	7/ 3/79	9	42	0.01	0.79	0.081	132	43460	0.39
1	7/ 3/79	9	44	0.04	0.79	0.099	67	39140	0.67
1	7/ 3/79	9	46	0.01	0.56	0.071	51	46520	2.91
1	7/ 3/79	9	48	0.01	0.58	0.079	130	43900	0.31
1	7/ 3/79	9	50	0.0	0.83	0.094	149	34480	0.35
1	7/ 3/79	9	52	0.01	0.85	0.085	140	38470	0.55
1	7/ 3/79	9	54	0.01	0.94	0.000	56	28900	0.49
1	7/ 3/79	9	56	0.0	1.57	0.077	17	25000	0.79
1	7/ 3/79	9	58	0.01	1.96	0.061	14	20200	0.84
1	7/ 3/79	10	6	0.04	2.49	0.104	76	8062	1.81
1	7/ 3/79	10	11	0.02	2.38	0.070	28	5023	1.39
1	7/ 3/79	10	17	0.03	3.37	0.072	84	1944	2.43
1	7/ 3/79	20	54	0.01	3.15	0.079	52	50000	2.02
1	7/ 3/79	20	56	0.01	2.28	0.081	30	45770	2.28
1	7/ 3/79	20	58	0.01	1.42	0.095	18	35770	0.81
1	7/ 3/79	21	0	0.0	1.06	0.105	5	29660	3.23
1	7/ 3/79	21	2	0.0	1.07	0.105	3	26320	2.04
1	7/ 3/79	21	4	0.0	2.11	0.106	0	22800	0.78
1	7/ 3/79	21	6	0.0	1.24	0.098	5	20500	0.91
1	7/ 3/79	21	8	0.01	1.28	0.102	3	17860	2.72
1	7/ 3/79	21	15	0.0	1.44	0.108	0	7310	2.15
1	7/ 3/79	21	25	0.0	3.83	0.077	8	5769	5.61
1	7/ 3/79	21	37	0.0	4.96	0.063	36	5493	2.95
1	7/13/79	10	1	0.05	2.32	0.062	83	8155	3.46
1	7/13/79	10	9	0.04	1.95	0.063	77	6863	3.95
1	7/13/79	10	22	0.03	1.67	0.064	64	3683	2.31
1	7/13/79	20	9	0.04	1.60	0.058	95	65570	1.56
1	7/13/79	20	15	0.02	0.45	0.098	37	20540	0.97
1	7/13/79	20	20	0.05	0.59	0.101	46	10660	0.91
1	7/13/79	20	24	0.01	0.90	0.123	34	8344	1.28
1	7/13/79	20	31	0.01	1.14	0.110	42	4354	1.11

TABLE F2- 1. CONCLUDED

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
1	7/14/79	0	50	0.01	0.30	0.075	63	40520	1.02
1	7/14/79	0	53	0.01	0.33	0.081	75	32420	0.64
1	7/14/79	0	58	0.0	0.26	0.094	55	20850	1.09
1	7/14/79	1	4	0.01	0.42	0.087	62	17240	0.71
1	7/14/79	1	9	0.0	0.41	0.087	26	20470	0.49
1	7/14/79	1	16	0.0	0.36	0.090	27	40860	0.64
1	7/14/79	1	21	0.03	0.43	0.084	59	20540	0.55
1	7/14/79	1	26	0.05	0.48	0.080	43	14740	0.84
1	7/14/79	1	35	0.04	0.64	0.081	74	18950	0.75
1	7/14/79	1	42	0.04	0.72	0.073	31	15640	1.10
1	7/14/79	1	51	0.07	0.63	0.080	163	16720	0.82
1	7/14/79	1	59	0.0	0.75	0.118	34	10580	0.55
1	7/14/79	2	7	0.0	0.82	0.130	42	5818	5.24
1	8/19/79	6	2	1.06	0.37	0.142	34	8467	0.24
1	8/19/79	6	6	0.05	0.33	0.092	37	9135	0.24
1	8/19/79	6	43	0.01	0.40	0.121	48	1859	0.26
1	8/19/79	6	48	0.0	0.42	0.119	37	1415	0.24
1	8/19/79	21	6	0.06	0.64	0.075	70	14630	0.0
1	8/19/79	21	11	0.04	0.61	0.082	78	7107	0.40
1	8/19/79	21	17	0.04	0.61	0.106	40	6284	0.26
1	8/19/79	21	27	0.02	0.34	0.093	42	6610	0.24
1	8/19/79	21	36	0.01	0.28	0.101	38	7789	0.33
1	8/19/79	21	41	0.01	0.25	0.107	43	5992	0.17
1	8/19/79	21	50	0.01	0.29	0.116	36	3934	0.33
1	8/19/79	22	3	0.01	0.27	0.127	62	2849	0.31
1	8/19/79	22	9	0.01	0.32	0.128	47	1788	0.02
1	8/19/79	22	23	0.01	0.35	0.094	55	10930	0.52
1	8/19/79	22	31	0.0	0.18	0.127	42	12380	0.17
1	8/19/79	22	37	0.0	0.20	0.116	29	6196	0.28
1	8/19/79	22	42	0.03	0.21	0.118	31	4646	0.15
1	8/19/79	22	47	0.02	0.22	0.124	25	3042	0.17
1	8/19/79	23	7	0.02	0.46	0.101	29	2466	0.15
1	8/19/79	23	14	0.03	0.35	0.105	18	2784	0.71
1	8/21/79	18	49	0.04	0.76	0.051	72	23420	2.22
1	8/21/79	18	52	0.03	0.59	0.051	60	19710	0.99
1	8/21/79	18	55	0.03	0.41	0.063	46	20760	1.57
1	8/21/79	18	58	0.12	0.33	0.075	34	11540	1.09
1	8/21/79	19	1	0.03	0.30	0.086	41	9835	0.99
1	8/21/79	19	3	0.03	0.25	0.084	29	8640	0.91
1	8/21/79	19	5	0.03	0.25	0.091	9	8337	0.89
1	8/21/79	19	8	0.08	0.38	0.049	64	6685	1.09
1	8/21/79	19	10	0.02	0.30	0.067	36	6675	0.83
1	8/21/79	19	12	0.02	0.27	0.075	21	7786	1.38
1	8/21/79	19	14	0.03	0.28	0.079	44	6898	1.18
1	8/21/79	19	17	0.05	0.30	0.090	69	7122	1.22
1	8/21/79	19	20	0.02	0.30	0.075	9	5174	0.92
1	8/21/79	19	24	0.03	0.31	0.076	18	3763	0.99
1	8/21/79	19	25	0.03	0.27	0.096	9	3815	7.90
1	8/21/79	19	30	0.02	0.28	0.054	10	3516	12.14
1	8/21/79	19	39	0.02	0.30	0.099	0	2141	1.44
1	8/21/79	19	51	0.04	0.88	0.069	25	1564	1.51

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
2	3/16/79	16	55	0.11	1.00	0.081	68	81	3.92
2	3/16/79	19	20	0.10	0.70	0.345	105	114	6.72
2	3/17/79	10	35	0.11	1.10	0.329	109	110	6.83
2	3/17/79	11	32	0.23	1.06	0.145	101	94	6.15
2	3/17/79	15	30	0.18		0.227	30	93	7.60
2	3/17/79	16	30	0.15	1.41	0.263	58	102	5.89
2	3/17/79	17	30	0.16		0.211	62	99	5.77
2	3/17/79	18	30	0.14		0.267	53	94	6.37
2	3/17/79	19	30	0.13		0.258	59	93	6.91
2	3/17/79	20	30	0.14	1.31	0.258	46	91	7.44
2	3/17/79	21	30	0.12		0.234	53	94	5.70
2	3/17/79	22	30	0.14		0.234	30	96	5.48
2	3/17/79	23	30	0.13	1.25	0.230	41	87	5.50
2	3/18/79	0	30	0.16		0.229	28	92	7.60
2	3/18/79	1	30	0.16		0.316	33	75	7.66
2	3/18/79	2	30	0.25	1.23	0.245	25	61	7.85
2	3/18/79	3	30	0.24	1.29	0.205	43	61	6.74
2	3/18/79	4	30	0.17	1.31	0.271	40	83	12.90
2	3/18/79	5	30	0.30	1.03	0.178	44	68	5.61
2	3/18/79	6	30	0.20	1.19	0.137	67	86	6.10
2	3/18/79	7	30	0.15		0.132	59	69	5.98
2	3/18/79	8	30	0.14	1.16	0.140	60	79	5.17
2	3/18/79	9	30	0.18		0.133	63	86	5.87
2	3/18/79	10	30	0.37	0.70	0.200	62	94	9.46
2	3/18/79	11	30	0.14	0.93	0.118	64	86	4.43
2	3/18/79	12	31	0.11	1.01	0.103	68	95	4.09
2	3/18/79	13	30	0.16	0.85	0.115	106	114	10.46
2	3/18/79	14	30	0.06		0.087	102	106	5.17
2	3/18/79	15	30	0.18		0.107	100	108	6.54
2	3/18/79	16	30	0.13		0.073	98	114	11.07
2	3/18/79	17	30	0.04		0.083	85	107	6.44
2	3/18/79	18	30	0.16	0.61	0.107	76	105	20.45
2	3/18/79	19	30	0.03	0.55	0.071	70	93	3.20
2	3/18/79	20	30	0.04		0.086	86	122	3.99
2	3/18/79	21	30	0.09		0.097	94	135	8.75
2	3/18/79	22	30	0.12		0.099	98	107	9.57
2	3/18/79	23	30	0.03		0.104	97	115	3.06
2	3/19/79	0	30	1.02		0.312	75	111	6.93
2	3/19/79	1	30	1.97	0.58	0.389	81	128	16.38
2	3/19/79	2	30	1.82	0.66	0.407	88	135	8.16
2	3/19/79	3	30	1.89	0.44	0.396	68	115	14.05
2	3/19/79	4	30	0.53	0.49	0.086	59	113	7.54
2	3/19/79	5	30	1.06	0.59	0.096	88	119	14.18
2	3/19/79	6	30	0.66	0.66	0.096	63	105	6.25
2	3/19/79	7	30	0.68	0.56	0.088	61	83	25.67
2	3/19/79	8	30	0.47		0.211	56	79	7.54
2	3/19/79	9	30	0.44		0.184	58	70	10.84
2	3/19/79	10	30	0.11		0.191	57	86	8.80
2	3/19/79	11	30	0.69		0.248	60	71	12.40
2	3/19/79	12	30	0.45		0.188	68	93	3.61
2	3/19/79	13	30	0.16	0.96	0.214	37	116	3.76
2	3/19/79	14	30	0.24	0.94	0.225	16	91	4.11

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
2	3/19/79	15	30	0.21	1.02	0.214	26	109	7.62
2	3/19/79	16	30	0.32	0.70	0.214	23	96	16.18
2	3/19/79	17	30	0.07	1.11	0.177	16	95	4.96
2	3/19/79	18	30	0.10	1.11	0.150	20	90	4.01
2	3/28/79	18	5	0.28	1.30	0.146	85	106	3.80
2	3/28/79	23	59	0.12	1.25	0.248	93	112	3.69
2	3/29/79	5	7	0.11	1.21	0.243	120	520	6.01
2	3/29/79	8	52	0.02	1.91	0.356	125	292	24.00
2	3/29/79	10	29	0.06	1.63	0.243	120	219	6.20
2	3/29/79	11	40	0.01	1.64	0.277	124	190	7.00
2	3/29/79	12	20	0.06	1.55	0.223	128	192	12.64
2	3/29/79	13	49	0.07	1.94	0.189	108	216	5.46
2	3/29/79	14	29	0.10	1.83	0.207	113	182	5.22
2	3/29/79	15	45	0.06	1.76	0.218	108	199	8.23
2	3/29/79	16	30	0.0	1.62	0.180	125	168	5.51
2	3/29/79	16	40	0.0	1.79	0.239	130	366	4.69
2	3/29/79	18	30	0.0	1.68	0.173	136	176	5.39
2	3/29/79	20	19	0.02	1.81	0.172	121	423	4.46
2	3/29/79	21	16	0.01	1.63	0.205	129	296	4.49
2	3/29/79	21	54	0.07	1.58	0.216	113	257	5.06
2	3/29/79	23	30	0.0		0.234	106	170	21.67
2	3/30/79	1	30	0.0	0.65	0.198	86	135	4.92
2	4/20/79	4	27	0.21	0.50	2.910	90	490	10.58
2	4/20/79	13	6	0.57	1.38	2.970	98	1223	14.22
2	6/12/79	17	55	0.10	1.23	0.084	53	8968	0.80
2	6/12/79	17	58	0.08	1.26	0.081	62	11720	0.70
2	6/12/79	18	1	0.09	1.38	0.082	67	14370	0.79
2	6/12/79	18	2	0.12	1.01	0.107	39	42530	0.94
2	6/12/79	18	4	0.11	1.06	0.091	57	58110	1.03
2	6/12/79	18	6	0.13	1.06	0.097	54	84780	1.05
2	6/12/79	18	7	0.15	1.20	0.102	71	75950	1.42
2	6/12/79	18	8	0.21	1.26	0.106	71	91200	1.56
2	6/12/79	18	10	0.12	1.49	0.167	192	82400	1.26
2	6/12/79	18	14	0.11	1.24	0.126	192	73940	1.03
2	6/12/79	18	18	0.08	1.07	0.121	71	52740	0.80
2	6/12/79	18	24	0.04	1.07	0.118	64	37500	0.94
2	6/12/79	18	28	0.05	0.99	0.110	60	25270	0.82
2	6/12/79	18	40	0.05	1.49	0.175	10	9535	1.57
2	6/12/79	18	45	0.08	1.68	0.124	37	6858	1.80
2	6/12/79	18	50	0.03	1.86	0.138	13	4627	1.89
2	6/12/79	18	55	0.05	2.15	0.148	27	3455	2.22
2	6/12/79	19	3	0.06	2.35	0.169	37	2282	2.41
2	6/12/79	19	8	0.07	2.44	0.165	46	1784	2.55
2	6/27/79	0	11	0.07	1.19	0.063	85	43340	1.02
2	6/27/79	0	12	0.08	1.19	0.070	72	36740	0.74
2	6/27/79	0	14	0.07	3.23	0.109	124	70390	6.36
2	6/27/79	0	16	0.07	2.70	0.146	121	79440	1.79
2	6/27/79	0	20	0.04	2.44	0.118	105	55940	0.97
2	6/27/79	0	23	0.02	1.94	0.117	104	38400	0.83
2	6/27/79	0	25	0.03	1.80	0.171	105	36320	0.96
2	6/27/79	0	27	0.03	1.58	0.149	84	36270	0.82
2	6/27/79	0	30	0.03	1.39	0.116	70	31270	0.75

TABLE F2- 2. CONTINUED

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
2	6/27/79	0	32	0.02	1.31	0.123	80	27490	0.75
2	6/27/79	0	34	0.02	1.17	0.117	131	25860	0.82
2	6/27/79	0	37	0.02	1.07	0.110	57	27310	0.65
2	6/27/79	0	39	0.02	0.94	0.118	66	27320	0.64
2	6/27/79	0	41	0.01	0.89	0.108	87	26970	0.77
2	6/27/79	0	44	0.01	0.76	0.105	54	30840	0.66
2	6/27/79	0	46	0.02	0.76	0.110	65	32670	0.74
2	6/27/79	0	48	0.0	0.70	0.136	62	29700	0.68
2	6/27/79	0	51	0.01	0.67	0.143	28	28150	0.64
2	6/27/79	0	53	0.01	0.69	0.137	180	29220	0.54
2	6/27/79	1	1	0.01	0.89	0.140	69	16600	3.09
2	6/27/79	1	6	0.02	0.99	0.143	57	11520	0.82
2	6/27/79	1	11	0.02	1.38	0.131	69	7430	3.34
2	6/27/79	1	17	0.03	1.80	0.128	73	6233	1.46
2	6/27/79	1	21	0.04	2.13	0.131	60	1449	13.24
2	7/ 3/79	8	0	0.16	0.94	0.061	77	8096	1.89
2	7/ 3/79	8	4	0.16	0.90	0.052	15	3999	1.10
2	7/ 3/79	8	12	0.06	0.56	0.049	13	5139	0.79
2	7/ 3/79	8	23	0.03	1.84	0.075	120	7252	1.91
2	7/ 3/79	8	30	0.04	2.59	0.063	70	7319	2.63
2	7/ 3/79	8	36	0.05	2.38	0.065	99	3806	3.11
2	7/ 3/79	8	41	0.05	2.30	0.058	158	4039	3.01
2	7/ 3/79	8	45	0.08	2.32	0.055	82	6896	2.44
2	7/ 3/79	8	49	0.03	1.35	0.037	138	30520	1.08
2	7/ 3/79	8	50	0.03	1.50	0.039	73	26130	1.38
2	7/ 3/79	8	52	0.05	1.49	0.064	75	45440	1.28
2	7/ 3/79	8	54	0.05	2.00	0.072	133	58500	1.08
2	7/ 3/79	8	56	0.05	2.00	0.096	45	72590	1.25
2	7/ 3/79	8	58	0.04	2.01	0.109	48	57690	1.06
2	7/ 3/79	9	0	0.04	1.75	0.095	80	47600	1.53
2	7/ 3/79	9	2	0.03	1.78	0.080	19	41160	0.91
2	7/ 3/79	9	4	0.03	1.59	0.084	15	40770	0.76
2	7/ 3/79	9	6	0.04	1.52	0.087	8	37720	0.82
2	7/ 3/79	9	8	0.04	1.78	0.113	49	35150	0.94
2	7/ 3/79	9	11	0.05	1.69	0.101	46	35060	3.66
2	7/ 3/79	9	13	0.03	1.90	0.097	6	31990	1.14
2	7/ 3/79	9	15	0.03	2.25	0.101	11	23360	1.63
2	7/ 3/79	9	17	0.04	2.37	0.097	0	19940	1.38
2	7/ 3/79	9	19	0.02	2.62	0.091	12	18220	1.26
2	7/ 3/79	9	21	0.02	2.65	0.075	152	16750	1.38
2	7/ 3/79	9	23	0.03	2.41	0.088	162	15740	1.24
2	7/ 3/79	9	25	0.02	2.13	0.058	164	27070	1.12
2	7/ 3/79	9	27	0.02	1.87	0.069	162	48000	0.86
2	7/ 3/79	9	29	0.02	1.14	0.071	31	84650	0.60
2	7/ 3/79	9	32	0.02	1.46	0.063	143	66870	0.54
2	7/ 3/79	9	34	0.02	1.36	0.074	144	89330	0.47
2	7/ 3/79	9	36	0.03	1.45	0.097	29	101100	0.60
2	7/ 3/79	9	38	0.05	1.08	0.109	181	116700	0.60
2	7/ 3/79	9	40	0.03	1.20	0.087	186	100300	0.41
2	7/ 3/79	9	43	0.03	0.92	0.058	82	81520	0.33
2	7/ 3/79	9	45	0.03	1.25	0.056	59	83660	0.09

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
2	7/ 3/79	9	49	0.01	1.11	0.055	156	62840	0.77
2	7/ 3/79	9	51	0.04	1.15	0.065	145	59230	0.81
2	7/ 3/79	9	53	0.03	1.32	0.074	157	82610	0.90
2	7/ 3/79	9	55	0.02	1.34	0.075	139	62010	1.04
2	7/ 3/79	9	57	0.03	1.70	0.081	146	52560	1.28
2	7/ 3/79	9	59	0.02	1.79	0.095	89	33280	0.69
2	7/ 3/79	10	2	0.04	1.81	0.093	85	21750	0.75
2	7/ 3/79	10	8	0.04	2.07	0.102	72	18480	0.83
2	7/ 3/79	10	14	0.04	2.38	0.085	151	16220	2.53
2	7/ 3/79	10	19	0.05	2.17	0.106	147	8427	1.69
2	7/ 3/79	10	28	0.03	2.13	0.104	168	7054	1.60
2	7/ 3/79	20	48	0.06	1.01	0.092	83	119100	2.19
2	7/ 3/79	20	49	0.05	1.11	0.090	87	108300	1.54
2	7/ 3/79	20	50	0.03	1.16	0.060	27	105000	0.72
2	7/ 3/79	20	51	0.05	1.42	0.096	80	103400	1.35
2	7/ 3/79	20	53	0.03	1.39	0.103	126	87390	1.01
2	7/ 3/79	21	0	0.04	0.89	0.112	77	47220	1.43
2	7/ 3/79	21	4	0.01	0.94	0.105	52	30850	1.20
2	7/ 3/79	21	10	0.01	1.04	0.090	55	22170	0.74
2	7/ 3/79	21	15	0.0	1.31	0.079	54	15880	0.72
2	7/ 3/79	21	20	0.05	1.44	0.087	55	12230	1.39
2	7/ 3/79	21	26	0.0	1.77	0.065	50	12140	1.07
2	7/ 3/79	21	32	0.0	1.99	0.064	55	12600	1.02
2	7/ 3/79	21	39	0.01	2.28	0.075	57	9547	1.30
2	7/ 3/79	21	44	0.02	2.35	0.085	62	7749	1.30
2	7/ 3/79	21	51	0.08	2.31	0.083	61	7061	2.10
2	7/13/79	9	59	0.05	1.28	0.050	67	9869	2.16
2	7/13/79	10	7	0.01	1.20	0.050	54	8485	4.21
2	7/13/79	10	18	0.03	2.36	0.058	61	3084	3.51
2	7/13/79	20	6	0.09	1.25	0.053	65	76820	0.94
2	7/13/79	20	8	0.09	0.92	0.075	82	75700	0.55
2	7/13/79	20	10	0.08	0.73	0.084	89	50220	0.61
2	7/13/79	20	12	0.06	0.67	0.064	66	39930	0.51
2	7/13/79	20	14	0.06	0.63	0.069	68	42030	0.57
2	7/13/79	20	16	0.05	0.67	0.074	79	29220	3.24
2	7/13/79	20	18	0.05	0.67	0.074	74	21930	0.66
2	7/13/79	20	20	0.03	0.70	0.071	70	18040	0.62
2	7/13/79	20	22	0.03	0.73	0.081	71	17580	0.48
2	7/13/79	20	29	0.01	0.90	0.069	17	9703	5.50
2	7/13/79	20	35	0.01	0.98	0.075	38	7027	0.85
2	7/13/79	20	38	0.01	1.06	0.074	69	5132	0.79
2	7/14/79	0	50	0.02	0.72	0.045	54	63080	0.72
2	7/14/79	0	52	0.03	0.63	0.051	82	69610	4.21
2	7/14/79	0	55	0.03	0.51	0.079	55	52130	0.43
2	7/14/79	0	57	0.09	0.39	0.072	50	48780	1.08
2	7/14/79	0	59	0.03	0.36	0.073	41	37180	1.09
2	7/14/79	1	1	0.01	0.48	0.074	50	33060	0.36
2	7/14/79	1	3	0.01	0.48	0.073	31	34250	0.43
2	7/14/79	1	6	0.02	0.48	0.072	35	31870	0.54
2	7/14/79	1	8	0.01	0.49	0.059	87	42290	0.49
2	7/14/79	1	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
2	7/14/79	1	21	0.01	0.39	0.074	82	18850	0.36
2	7/14/79	1	23	0.01	0.70	0.059	111	31250	1.90
2	7/14/79	1	25	0.02	0.51	0.075	104	39590	0.71
2	7/14/79	1	29	0.0	0.71	0.069	92	28240	1.02
2	7/14/79	1	44	0.0	0.71	0.055	77	27320	0.44
2	7/14/79	1	49	0.07	0.57	0.054	72	29350	0.95
2	7/14/79	1	53	0.02	0.64	0.072	67	18760	2.54
2	7/14/79	2	11	0.04	0.70	0.068	60	7288	1.00
2	8/19/79	6	40	0.0	1.31	0.073	46	940	1.09
2	8/19/79	6	46	0.0	1.62	0.083	30	650	1.57
2	8/19/79	21	4	0.06	0.59	0.035	51	13640	0.0
2	8/19/79	21	10	0.03	0.67	0.036	53	7748	0.0
2	8/19/79	21	16	0.02	0.69	0.044	0	3608	0.09
2	8/19/79	21	25	0.03	0.50	0.045	0	6801	0.24
2	8/19/79	21	33	0.01	0.46	0.044	3	5518	0.0
2	8/19/79	21	39	0.01	0.47	0.063	7	3010	0.15
2	8/19/79	21	48	0.01	0.45	0.053	3	4952	0.04
2	8/19/79	22	1	0.02	0.56	0.085	33	1211	0.43
2	8/19/79	22	21	0.01	0.46	0.040	48	16960	0.0
2	8/19/79	22	26	0.01	0.32	0.049	44	7518	0.0
2	8/19/79	22	34	0.01	0.40	0.070	34	2332	0.22
2	8/19/79	22	39	0.03	0.43	0.076	49	1901	0.47
2	8/19/79	23	2	0.0	0.46	0.051	48	2643	0.09
2	8/21/79	18	49	0.05	0.60	0.033	16	16500	0.58
2	8/21/79	18	52	0.05	0.50	0.027	6	12710	0.34
2	8/21/79	18	54	0.06	0.45	0.047	3	9662	0.57
2	8/21/79	18	56	0.04	0.45	0.039	40	7308	0.32
2	8/21/79	19	0	0.04	0.44	0.045	21	7905	0.38
2	8/21/79	19	2	0.08	0.43	0.054	3	7335	0.75
2	8/21/79	19	4	0.06	0.41	0.048	28	6640	0.60
2	8/21/79	19	6	0.06	0.41	0.063	27	6310	0.66
2	8/21/79	19	8	0.06	0.43	0.059	20	5398	0.75
2	8/21/79	19	11	0.06	0.43	0.061	35	5557	8.89
2	8/21/79	19	13	0.04	0.44	0.064	37	5458	0.58
2	8/21/79	19	15	0.05	0.42	0.053	33	5583	0.83
2	8/21/79	19	18	0.05	0.42	0.049	43	4742	0.48
2	8/21/79	19	22	0.05	0.45	0.078	41	3103	0.97
2	8/21/79	19	27	0.04	0.43	0.066	18	2141	0.54
2	8/21/79	19	32	0.04	0.50	0.072	16	2120	0.73
2	8/21/79	19	37	0.05	0.55	0.083	28	1878	1.30
2	8/21/79	19	48	0.05	0.71	0.080	32	4538	1.49
2	8/21/79	19	59	0.07	0.80	0.086	50	1759	1.61
2	11/21/79	20	0	0.01	3.48	0.045	1899	4323	2.08

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					

TABLE F2- 3. FOUR MILE CREEK WATERSHED RUNOFF NUTRIENT CONCENTRATION DATA FOR 1979 SITE 3

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
3	3/16/79	16	45	0.76	2.11	0.376	156	1091	6.25
3	3/16/79	18	1	0.45	0.34	0.862	69	71	1.26
3	3/17/79	13	5	0.51	0.88	0.794	41	63	1.30
3	3/17/79	15	30	0.33	0.0	1.113	47	87	1.00
3	3/17/79	16	30	0.36	0.65	1.191	64	85	1.26
3	3/17/79	17	30	0.43		1.252	77	78	1.14
3	3/17/79	18	30	0.48	0.53	1.252	60	79	1.66
3	3/17/79	19	30	0.51	0.81	1.287	59	88	1.64
3	3/17/79	20	30	0.51		1.292	61	67	1.27
3	3/17/79	21	30	0.43	0.68	1.272	66	76	1.66
3	3/17/79	22	30	0.53	0.05	1.357	37	71	2.96
3	3/17/79	23	30						
3	3/18/79	0	30	0.53	0.0	1.367	79	84	5.24
3	3/18/79	1	30	0.51	0.81	1.372	61	73	1.59
3	3/18/79	2	30	0.58	1.30	1.549	70	109	2.22
3	3/18/79	3	30	0.49	1.29	1.519	72	93	2.39
3	3/18/79	4	30	0.39	1.26	1.543	111	138	2.76
3	3/18/79	5	30	0.53	1.33	1.489	116	125	2.51
3	3/18/79	7	30	0.50	1.19	1.327	127	127	2.19
3	3/18/79	8	30	0.37	1.00	1.252	125	166	6.79
3	3/18/79	9	30	0.33	1.17	1.212	124	128	2.00
3	3/18/79	10	30						
3	3/18/79	11	30						
3	3/18/79	12	30	0.36	0.52	0.851	40	96	2.15
3	3/18/79	13	30	0.39	0.54	1.008	33	88	3.96
3	3/18/79	14	30	0.36	0.49	1.089	23	89	1.54
3	3/18/79	15	30	0.45	1.17	1.146	50	98	4.96
3	3/18/79	16	30	0.81		1.145	56	101	6.52
3	3/18/79	17	30	0.72		1.090	60	78	11.19
3	3/18/79	18	30	1.14	0.91	0.972	80	94	11.91
3	3/18/79	19	30	0.58	1.14	0.842	104	112	1.90
3	3/18/79	20	30	0.30	0.93	0.852	68	82	2.00
3	3/18/79	21	30	0.26	0.83	0.813	48	95	3.06
3	3/18/79	22	30	0.94	0.96	0.755	56	87	2.36
3	3/18/79	23	30	0.43	1.10	0.710	45	91	2.81
3	3/19/79	0	30	0.30	1.19	0.710	39	79	2.86
3	3/19/79	1	30	0.26		0.790	121	134	11.43
3	3/19/79	2	30	0.49	1.30	0.705	132	447	1.93
3	3/19/79	3	30	0.51	1.37	0.689	121	129	4.02
3	3/19/79	4	30	0.82	1.52	0.726	132	135	3.07
3	3/19/79	6	0	0.46	1.43	0.663	139	166	11.43
3	3/19/79	8	0	0.43	1.52	0.657	126	131	3.68
3	3/19/79	10	0	0.13	1.28	0.671	124	151	5.41
3	3/19/79	12	15	0.08	1.40	0.641	18	76	2.20
3	3/19/79	14	15	0.04	1.09	0.663	33	79	2.81
3	3/19/79	16	15	0.18	1.26	0.605	8	81	2.39
3	3/19/79	18	15	0.23	1.50	0.580	8	81	3.92
3	3/19/79	20	15	0.16	2.09	0.625	34	50	6.06
3	3/19/79	22	15	0.68	2.62	0.722	49	73	13.90
3	3/20/79	0	15	0.34	2.58	0.644	66	88	6.72
3	3/22/79	23	56	0.22	2.90	0.443	105	131	6.06

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
3	3/23/79	0	40	0.06	3.95	0.551	111	122	7.83
3	3/23/79	1	11	0.64	3.74	0.595	200	204	8.59
3	3/23/79	1	36	1.02	3.52	0.569	181	183	5.65
3	3/23/79	2	37	0.52	3.39	0.535	174	198	5.06
3	3/23/79	3	28	0.53	3.51	0.546	190	201	5.50
3	3/23/79	4	51	0.31	3.53	0.526	191	205	5.50
3	3/23/79	5	45	0.88	3.19	0.541	205	212	6.56
3	3/28/79	14	45	0.01	1.98	0.322	217	222	9.86
3	3/29/79	6	36	0.13	3.27	0.206	164	229	6.82
3	3/29/79	11	19	0.08	2.22	0.557	111	183	4.92
3	3/29/79	12	30	0.07	1.90	0.638	141	183	5.96
3	3/29/79	14	30	0.09	2.26	0.740	111	206	4.69
3	3/29/79	16	30	0.07	2.28	0.603	167	191	7.93
3	3/29/79	18	30	0.16	2.26	0.614	160	166	5.51
3	3/29/79	20	30	0.07	2.11	0.658	149	161	5.48
3	3/29/79	22	30	0.03	1.97	0.617	155	166	4.13
3	3/30/79	0	30	0.0	1.75	0.570	51	130	4.81
3	3/30/79	2	30	0.02	1.49	0.524	61	105	4.92
3	3/30/79	4	30	0.03	1.23	0.463	50	90	2.66
3	3/30/79	6	30	0.02	1.54	0.476	90	97	2.94
3	3/30/79	8	30	0.28	1.78	0.500	113	129	13.22
3	4/20/79	17	31	0.0		0.102	268	305	
3	7/ 3/79	9	42	0.17	0.37	0.626	0	57	2.98
3	7/ 3/79	9	43	0.42	0.33	0.774	0	85	2.60
3	7/ 3/79	9	43	0.29	0.49	0.769	0	82	2.69
3	7/ 3/79	9	45	0.24	0.25	0.891	0	93	2.17
3	7/ 3/79	9	51	0.11	0.18	0.745	0	89	1.79
3	7/14/79	1	31	0.56	0.38	0.868	234	256	8.51
3	7/14/79	1	32	0.50	0.52	0.897	138	323	3.35
3	7/14/79	1	43	0.29	0.48	0.811	135	156	1.94
3	8/21/79	19	11	0.41	0.54	1.326	79	337	8.62

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	1/ 1/79	17	31	0.05	9.49	0.010	292	458	15.65
4	1/ 2/79	18	12	0.34	10.51	0.013	271	443	19.81
4	1/ 3/79	17	7	0.07	11.44	0.013	310	490	18.04
4	1/ 4/79	17	35	0.10	11.73	0.013	286	456	19.40
4	1/ 5/79	17	27	0.09	12.13	0.013	312	445	19.97
4	1/ 6/79	17	25	0.08	11.63	0.013	294	469	18.93
4	1/ 7/79	17	56	0.31	11.84	0.015	293	455	28.27
4	1/ 8/79	17	43	0.06	11.71	0.013	315	493	26.38
4	1/ 9/79	17	32	0.08	10.80	0.014	310	465	21.81
4	1/10/79	18	0	0.06	10.44	0.014	260	419	18.77
4	1/11/79	17	17	0.01	10.86	0.013	287	482	20.12
4	1/14/79	17	25	0.09		0.011	161	445	7.56
4	1/16/79	17	23	0.08	11.21	0.008	302	496	11.79
4	1/18/79	18	0	0.05	11.34	0.004	206	476	3.48
4	1/20/79	17	52	0.05		0.004	194	459	2.96
4	1/22/79	18	17	0.09		0.004	286	455	5.72
4	1/24/79	17	49	0.10		0.006	282	466	4.85
4	1/26/79	18	14	0.10		0.005	246	429	8.89
4	1/28/79	18	13	0.08	10.84	0.008	334	460	13.26
4	1/30/79	17	33	0.04		0.011	385	479	6.02
4	2/ 1/79	18	22	0.09		0.003	175	430	4.12
4	2/ 3/79	18	1	0.08		0.009	294	438	4.46
4	2/ 5/79	17	13	0.05	10.28	0.003	180	423	2.47
4	2/ 7/79	17	33	0.05	5.91	0.003	155	284	4.60
4	2/ 9/79	17	32	0.05		0.019	269	405	6.35
4	2/11/79	17	28	0.06	10.00	0.008	157	383	6.06
4	2/13/79	17	20	0.05		0.004	242	335	6.91
4	2/15/79	17	17	0.03		0.008	203	427	6.25
4	2/17/79	17	9	0.05		0.008	226	324	5.41
4	2/19/79	17	20	0.06		0.008	179	369	8.06
4	2/21/79	17	59	0.15	9.65	0.010	310	388	8.64
4	2/23/79	17	31	0.45	8.46	0.037	347	420	21.31
4	2/25/79	17	22	0.24	8.63	0.006	331	398	24.69
4	2/27/79	18	4	0.24	9.11	0.016	329	398	18.12
4	3/ 1/79	17	24	0.15	8.40	0.029	322	393	15.78
4	3/ 3/79	10	7	0.67	7.16	0.117	264	412	11.98
4	3/ 3/79	17	45	0.65	6.80	0.111	257	422	11.31
4	3/ 4/79	10	5	1.25	5.37	0.265	231	437	9.33
4	3/ 4/79	17	50	1.19	6.64	0.244	235	518	10.36
4	3/ 5/79	9	3	1.13	6.33	0.329	242	429	11.74
4	3/ 5/79	17	20	1.17	6.76	0.263	231	484	11.86
4	3/ 6/79	9	42	1.32	5.32	0.362	239	375	22.32
4	3/ 6/79	13	56	1.30	7.46	0.298	251	557	13.09
4	3/ 6/79	17	22	1.35	7.48	0.336	250	474	13.55
4	3/ 7/79	9	39	1.48	7.94	0.380	275	384	14.56
4	3/ 7/79	17	47	1.40	6.68	0.353	271	410	13.40
4	3/ 8/79	9	44	1.36	6.73	0.360	273	420	13.86
4	3/ 8/79	17	52	1.49	8.41	0.358	271	423	15.91
4	3/ 9/79	11	0	1.67	8.74	0.344	328	448	16.10
4	3/ 9/79	17	36	1.60	7.93	0.307	323	496	15.00
4	3/10/79	17	44	1.57	8.24	0.292	337	435	16.77
4	3/11/79	17	47	1.16	8.05	0.202	325	436	16.60

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	3/11/79	18	2	1.13	9.30	0.189	335	539	17.17
4	3/12/79	13	17	0.78	7.09	0.164	242	429	9.94
4	3/12/79	17	47	1.05	5.61	0.211	273	464	11.16
4	3/13/79	9	24	1.23	3.91	0.259	183	585	8.66
4	3/13/79	17	34	1.60	3.38	0.268	174	1021	7.38
4	3/14/79	8	52	1.24	3.61	0.368	164	351	7.55
4	3/14/79	13	33	1.07	4.16	0.309	176	788	7.74
4	3/14/79	17	35	1.13	4.01	0.332	174	699	10.02
4	3/15/79	10	20	1.30	4.98	0.528	217	356	12.19
4	3/15/79	17	31	1.15	5.40	0.377	232	604	10.25
4	3/16/79	9	12	0.94	6.05	0.373	265	420	10.64
4	3/16/79	17	40	0.93	5.15	0.268	200	1376	10.02
4	3/17/79	8	34	0.87	3.03	0.245	133	1007	6.60
4	3/17/79	14	28	0.83	2.91	0.275	139	1042	5.74
4	3/17/79	20	37	0.91	2.22	0.234	99	1306	4.53
4	3/18/79	2	31	1.14	2.09	0.359	117	1170	5.74
4	3/18/79	9	4	1.54	2.28	0.441	126	1178	5.84
4	3/18/79	13	33	1.19	2.13	0.200	108	3026	5.62
4	3/18/79	17	48	1.36	2.54	0.314	116	1701	9.80
4	3/18/79	21	45	1.36	2.62	0.291	125	1786	8.58
4	3/19/79	3	13	1.36	2.80	0.320	158	1793	8.02
4	3/19/79	8	29	1.28	4.42	0.295	180	1742	8.54
4	3/19/79	13	19	1.36	4.24	0.305	206	1502	17.74
4	3/19/79	19	46	1.61	5.00	0.377	234	1208	21.53
4	3/20/79	2	23	0.86	7.58	0.219	274	873	12.34
4	3/20/79	8	29	0.45	8.76	0.138	232	650	12.88
4	3/20/79	17	12	0.55	8.88	0.161	288	655	17.27
4	3/21/79	2	17	0.23	9.02	0.068	276	548	15.61
4	3/21/79	10	46	0.09	9.19	0.062	291	504	13.25
4	3/21/79	17	56	0.12	9.14	0.053	282	502	13.93
4	3/22/79	8	31	0.29	9.50	0.109	302	484	21.20
4	3/22/79	13	31	0.48	9.40	0.094	287	445	21.20
4	3/22/79	18	17	0.52	8.71	0.035	262	460	19.54
4	3/23/79	8	49	2.03	8.02	0.518	301	1357	24.81
4	3/23/79	12	15	1.62	7.80	0.451	271	1611	16.84
4	3/23/79	15	24	1.49	8.36	0.333	198	2316	16.37
4	3/23/79	17	48	1.04	8.36	0.241	174	2217	19.07
4	3/23/79	22	25	0.73	8.60	0.231	246	982	14.27
4	3/25/79	12	50	0.26	11.10	0.070	266	698	15.82
4	3/25/79	17	20	0.19	10.19	0.068	261	801	15.41
4	3/26/79	8	43	0.16	10.54	0.048	271	465	16.20
4	3/26/79	17	56	0.06	10.72	0.092	264	423	20.82
4	3/27/79	8	51	0.08	11.03	0.051	263	382	16.06
4	3/27/79	17	43	0.07	10.09	0.068	263	407	19.67
4	3/28/79	9	12	0.11	10.36	0.101	293	372	16.76
4	3/28/79	17	28	0.75	8.21	0.195	300	1034	16.27
4	3/28/79	23	21	1.94	7.09	0.325	234	2635	16.07
4	3/29/79	4	29	1.17	7.61	0.228	256	1029	20.22
4	3/29/79	9	23	0.53	6.90	0.204	235	1250	9.21
4	3/29/79	13	9	1.22	6.44	0.252	197	5343	18.33
4	3/29/79	17	1	1.38	6.21	0.391	196	2735	30.04
4	3/29/79	22	17	0.85	6.66	0.293	186	2957	10.87

TABLE F2- 4. CONTINUED

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	3/30/79	3	31	0.94	6.70	0.350	195	1684	11.45
4	3/30/79	6	25	0.41	9.78	0.177	248	857	12.43
4	3/30/79	8	48	0.75	8.30	0.295	221	1263	11.28
4	3/30/79	13	58	0.58	8.65	0.216	237	915	12.34
4	3/31/79	3	22	0.33	10.73	0.097	232	664	15.19
4	3/31/79	10	59	0.10	10.97	0.075	246	543	16.16
4	3/31/79	18	22	0.07	11.42	0.059	253	514	14.18
4	4/ 1/79	8	45	0.07	11.49	0.090	278	487	22.19
4	4/ 1/79	17	14	0.05	10.98	0.043	279	463	15.61
4	4/ 2/79	15	0	0.03	10.39	0.043	270	440	16.43
4	4/ 2/79	22	8	0.05	10.54	0.057	279	482	14.62
4	4/ 3/79	9	28	0.04	10.77	0.058	296	414	18.12
4	4/ 3/79	17	24	0.02	10.44	0.050	243	405	15.13
4	4/ 4/79	10	7	0.0	11.25	0.044	249	374	15.45
4	4/ 4/79	17	29	0.01	10.98	0.041	219	393	17.78
4	4/ 5/79	17	37	0.02	12.14	0.116	265	452	13.16
4	4/ 6/79	17	43	0.01	11.99	0.048	255	437	13.49
4	4/ 7/79	17	15	0.01	12.61	0.080	248	419	16.81
4	4/ 8/79	17	46	0.54	12.24	0.097	239	390	16.89
4	4/ 9/79	17	33	0.24	11.78	0.036	268	397	13.00
4	4/10/79	17	11	0.07	11.48	0.054	269	383	9.00
4	4/11/79	17	20	0.19	11.48	0.040	271	406	12.26
4	4/13/79	18	23	0.06	11.77	0.108	297	375	19.66
4	4/14/79	18	35	0.0	11.79	0.069	289	371	27.54
4	4/15/79	17	47	0.13	11.74	0.093	285	347	23.92
4	4/16/79	19	1	0.06	11.95	0.142	301	339	18.02
4	4/17/79	19	41	0.0	11.61	0.078	319	332	22.80
4	4/18/79	18	36	0.0	11.71	0.039	289	343	14.24
4	4/19/79	14	27	0.0	10.21	0.050	282	536	11.77
4	4/19/79	15	29	0.03	9.28	0.161	296	787	29.80
4	4/19/79	17	43	0.50	6.83	0.239	277	2381	18.15
4	4/19/79	21	3	0.38	9.31	0.252	338	833	17.65
4	4/20/79	11	42	0.44	6.20	0.036	207	5256	10.06
4	4/20/79	13	17	0.50	6.64	0.204	232	3756	18.07
4	4/20/79	19	23	0.78	6.73	0.209	234	4802	10.67
4	4/20/79	21	5	0.63	8.12	0.312	233	2511	10.95
4	4/21/79	8	10	0.11	12.63	0.153	306	909	17.81
4	4/21/79	17	45	0.08	13.26	0.113	275	698	19.58
4	4/22/79	18	10	0.03	13.58	0.037	300	497	14.78
4	4/23/79	19	30	0.0	13.75	0.106	272	533	21.70
4	4/24/79	17	59	0.02	15.17	0.021	274	440	15.89
4	4/25/79	17	50	0.06	14.68	0.029	276	537	14.21
4	4/26/79	18	17	0.03	15.45	0.042	311	444	15.50
4	4/27/79	17	49	0.02	16.98	0.047	278	407	16.36
4	4/28/79	17	45	0.02	17.08	0.023	270	392	16.14
4	4/29/79	18	3	0.02	15.04	0.019	270	424	15.50
4	4/30/79	17	21	0.02	15.22	0.020	290	385	16.50
4	5/ 1/79	17	55	0.05	14.64	0.145	301	404	16.77
4	5/ 2/79	15	17	0.05	11.82	0.056	302	482	12.79
4	5/ 2/79	17	26	0.12	8.43	0.088	251	1603	10.17
4	5/ 2/79	21	28	0.15	7.22	0.128	285	899	11.88

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	5/ 3/79	17	45	0.05	13.73	0.045	308	424	15.26
4	5/ 4/79	17	45	0.03	13.93	0.025	309	393	15.50
4	5/ 5/79	17	31	0.04	14.26	0.018	296	380	15.63
4	5/ 6/79	18	25	0.05	14.21	0.026	309	371	15.75
4	5/ 7/79	22	25	0.04	13.77	0.021	321	353	15.58
4	5/ 8/79	17	22	0.01	13.40	0.010	249	401	13.41
4	5/ 9/79	22	32	0.23	13.12	0.011	252	400	14.65
4	5/10/79	18	1	0.04	12.48	0.012	243	394	13.25
4	5/11/79	17	52	0.03	12.91	0.007	237	366	13.49
4	5/12/79	17	44	0.02	12.78	0.014	253	363	13.41
4	5/13/79	17	17	0.0	12.57	0.009	270	384	13.41
4	5/14/79	17	40	0.02	12.70	0.008	280	381	15.06
4	5/15/79	17	37	0.05	12.51	0.013	271	372	13.82
4	5/16/79	18	1	0.09	12.92	0.010	269	374	13.49
4	5/17/79	17	51	0.01	13.16	0.008	267	416	13.74
4	5/18/79	17	14	0.0	12.71	0.007	256	353	12.92
4	5/19/79	19	22	0.07	12.28	0.010	270	378	13.82
4	5/20/79	17	28	0.01	12.53	0.011	253	378	13.91
4	5/21/79	17	37	0.01	12.35	0.008	276	350	13.49
4	5/22/79	18	55	0.0	12.16	0.006	291	368	13.82
4	5/23/79	17	37	0.0	11.56	0.008	270	378	14.24
4	5/24/79	20	6	0.0	12.14	0.006	271	552	13.99
4	5/25/79	17	40	0.0	12.68	0.009	303	329	13.78
4	5/26/79	17	2	0.0	11.70	0.007	305	334	13.08
4	5/27/79	17	12	0.02	11.84	0.009	318	334	13.41
4	5/28/79	17	6	0.10	11.84	0.019	357	336	13.82
4	5/29/79	17	3	0.0	11.18	0.012	260	353	12.76
4	5/30/79	18	54	0.0	11.68	0.006	264	360	13.18
4	5/31/79	17	10	0.05	11.60	0.004	243	356	13.35
4	6/ 1/79	18	17	0.0	11.57	0.008	304	375	13.35
4	6/ 2/79	18	30	0.03	10.98	0.008	288	377	13.78
4	6/ 3/79	17	23	0.17	10.84	0.020	260	395	11.10
4	6/ 4/79	17	21	0.0	11.43	0.010	327	369	14.03
4	6/ 4/79	19	52	0.90	11.58	0.026	296	515	9.71
4	6/ 4/79	20	59	0.0	11.27	0.021	283	939	13.69
4	6/ 4/79	21	22	0.08	11.63	0.006	272	2214	13.69
4	6/ 4/79	21	52	0.06	11.60	0.006	230	7258	12.22
4	6/ 5/79	0	25	2.35	11.64	0.140	125	3859	6.70
4	6/ 5/79	5	22	0.0	11.19	0.004	294	1375	13.61
4	6/ 5/79	13	15	0.08	12.12	0.004	241	427	12.26
4	6/ 5/79	17	7	0.07	12.05	0.018	303	458	12.85
4	6/ 6/79	17	20	0.01	12.12	0.020	299	442	12.93
4	6/ 7/79	17	6	0.02	12.00	0.027	302	414	12.76
4	6/ 8/79	16	58	0.04	11.81	0.014	303	418	12.76
4	6/ 9/79	12	12	0.08	11.04	0.026	259	454	11.85
4	6/ 9/79	15	15	0.07	10.62	0.031	280	450	11.89
4	6/ 9/79	18	1	0.16	9.27	0.034	270	642	10.20
4	6/10/79	17	36	0.05	12.68	0.022	297	468	13.61
4	6/11/79	17	50	0.02	12.73	0.026	370	412	12.85
4	6/12/79	17	12	0.04	12.96	0.122	404	417	13.10
4	6/12/79	18	24	0.07	11.74	0.025	286	560	15.21

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	6/12/79	19	25	0.37	8.14	0.035	303	10390	10.11
4	6/12/79	20	0	0.37	4.33	0.031	82	41870	2.62
4	6/12/79	21	3	0.41	4.94	0.078	94	19340	3.11
4	6/12/79	21	52	0.39	4.79	0.083	79	15210	3.20
4	6/12/79	23	6	0.38	5.20	0.084	91	14640	4.25
4	6/13/79	0	33	0.32	4.82	0.129	144	10310	4.02
4	6/13/79	1	56	0.29	4.87	0.116	144	8130	3.95
4	6/13/79	4	53	0.17	10.88	0.078	268	3148	7.24
4	6/13/79	8	14	0.15	13.09	0.062	359	1529	9.47
4	6/13/79	13	18	0.13	14.70	0.062	406	900	16.89
4	6/13/79	17	31	0.10	15.53	0.026	251	751	14.12
4	6/14/79	17	21	0.05	15.02	0.023	302	558	15.34
4	6/15/79	18	16	0.04	15.29	0.022	308	486	15.64
4	6/16/79	17	29	0.04	6.82	0.023	311	414	15.75
4	6/17/79	17	20	0.03	14.03	0.027	304	370	15.53
4	6/18/79	17	26	0.13	9.14	0.056	221	886	9.66
4	6/19/79	17	16	0.04	14.30	0.034	293	441	15.62
4	6/20/79	0	38	0.04	12.96	0.046	260	530	14.73
4	6/20/79	9	41	0.11	8.42	0.071	233	1621	8.88
4	6/20/79	19	27	0.04	14.01	0.027	278	417	15.34
4	6/21/79	17	50	0.03	13.87	0.027	305	373	16.16
4	6/22/79	17	9	0.02	14.03	0.017	276	313	16.14
4	6/23/79	17	53	0.01	14.41	0.025	282	345	15.26
4	6/24/79	17	20	0.01	14.49	0.018	319	369	16.86
4	6/25/79	18	19	0.0	14.25	0.026	316	400	16.00
4	6/26/79	17	16	0.0	14.37	0.034	349	401	16.55
4	6/27/79	4	35	0.21	4.14	0.092	85	17300	3.54
4	6/27/79	5	32	0.19	3.47	0.114	86	12620	3.52
4	6/27/79	7	40	0.27	4.15	0.053	117	4864	3.84
4	6/27/79	9	42	0.33	5.93	0.077	171	2836	7.34
4	6/27/79	11	46	0.29	9.56	0.111	243	1410	10.70
4	6/27/79	17	54	0.18	12.91	0.035	272	701	13.44
4	6/28/79	9	45	0.06	16.66	0.020	298	446	14.62
4	6/28/79	18	50	0.07	15.89	0.023	291	476	14.38
4	6/29/79	17	57	0.05	16.51	0.019	308	406	14.98
4	6/30/79	18	20	0.04	17.44	0.018	310	434	15.88
4	7/ 1/79	17	47	0.07	16.63	0.014	268	364	15.56
4	7/ 2/79	17	47	0.04	17.61	0.032	293	390	16.30
4	7/ 3/79	9	4	0.05	4.87	0.023	236	5292	5.50
4	7/ 3/79	10	4	0.02	2.14	0.030	44	15860	1.09
4	7/ 3/79	11	6	0.03	2.31	0.031	33	8067	0.83
4	7/ 3/79	12	18	0.15	2.37	0.057	36	7144	3.49
4	7/ 3/79	14	41	0.04	2.50	0.106	76	7654	2.08
4	7/ 3/79	18	30	0.17	3.35	0.069	166	4669	4.17
4	7/ 3/79	21	19	0.15	7.48	0.062	260	6196	9.97
4	7/ 3/79	22	11	0.16	7.63	0.030	307	18890	8.17
4	7/ 3/79	23	43	0.16	6.28	0.036	209	7197	6.77
4	7/ 4/79	0	40	0.11	6.31	0.071	199	6566	6.08
4	7/ 4/79	4	49	0.07	11.76	0.062	246	1687	9.95
4	7/ 4/79	11	20	0.0	14.19	0.012	283	785	12.94
4	7/ 4/79	18	52	0.04	15.88	0.050	382	977	14.14
4	7/ 5/79	17	47	0.02	16.52	0.044	408	648	14.43

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	7/ 6/79	17	3	0.0	16.51	0.027	390	525	14.56
4	7/ 7/79	18	27	0.0	16.61	0.021	386	474	14.68
4	7/ 8/79	17	58	0.01	16.61	0.026	393	471	14.85
4	7/ 9/79	18	24	0.0	16.40	0.024	417	459	15.01
4	7/10/79	17	51	0.0	16.12	0.009	309	426	14.85
4	7/11/79	17	34	0.0	15.62	0.014	396	447	15.18
4	7/12/79	18	9	0.0	15.44	0.029	359	417	14.89
4	7/13/79	10	51	0.0	14.42	0.035	433	439	14.27
4	7/13/79	17	27	0.03	13.76	0.043	413	436	16.45
4	7/13/79	21	0	0.0	13.55	0.010	420	469	13.94
4	7/13/79	22	0	0.08	13.15	0.087	289	980	13.36
4	7/14/79	1	58	0.07	1.90	0.046	141	14750	2.47
4	7/14/79	2	58	0.07	0.98	0.062	75	8454	0.89
4	7/14/79	3	34	0.04	1.23	0.096	81	5546	1.14
4	7/14/79	4	16	0.03	1.10	0.073	79	4204	0.92
4	7/14/79	5	34	0.03	1.33	0.099	75	5552	1.09
4	7/14/79	5	50	0.10	1.46	0.139	102	7245	1.74
4	7/14/79	9	6	0.06	1.57	0.107	73	3585	1.57
4	7/14/79	17	38	0.16	8.28	0.095	222	1512	8.23
4	7/15/79	18	39	0.05	15.66	0.029	303	574	15.63
4	7/16/79	17	9	0.03	15.81	0.018	291	462	18.74
4	7/17/79	18	30	0.05	15.61	0.015	293	400	13.68
4	7/18/79	17	41	0.03	15.64	0.015	282	430	13.71
4	7/19/79	17	12	0.04	15.61	0.030	290	420	13.60
4	7/20/79	16	49	0.04	15.13	0.011	275	380	16.13
4	7/21/79	17	17	0.04	14.86	0.018	266	403	13.93
4	7/22/79	17	42	0.02	14.15	0.021	314	365	13.69
4	7/23/79	17	52	0.05	12.39	0.035	297	363	13.85
4	7/24/79	18	7	0.05	13.43	0.029	251	327	13.84
4	7/25/79	17	53	0.05	13.43	0.053	260	393	13.93
4	7/26/79	17	2	0.09	13.55	0.095	281	412	15.18
4	7/27/79	17	50	0.06	13.31	0.082	293	403	14.39
4	7/28/79	18	5	0.06	13.06	0.085	277	409	20.94
4	7/29/79	18	11	0.05	12.72	0.107	284	392	14.84
4	7/30/79	18	11	0.03	12.69	0.035	285	430	16.03
4	7/31/79	17	23	0.02	12.46	0.019	254	369	14.54
4	8/ 1/79	17	58	0.01	12.46	0.016	300	401	14.80
4	8/ 2/79	18	7	0.01	9.34	0.019	231	306	16.13
4	8/ 3/79	17	38	0.07	12.27	0.009	310	425	23.55
4	8/ 4/79	18	20	0.06	12.13	0.012	274	409	24.35
4	8/ 5/79	17	47	0.06	11.73	0.014	301	421	24.35
4	8/ 6/79	18	7	0.04	11.39	0.016	316	427	20.04
4	8/ 7/79	17	38	0.08	10.75	0.017	307	442	21.47
4	8/ 8/79	17	51	0.07	9.73	0.018	303	419	17.13
4	8/ 9/79	17	55	0.12	10.48	0.021	304	406	16.15
4	8/10/79	17	29	0.08	10.93	0.022	311	428	16.00
4	8/11/79	18	7	0.04	10.85	0.014	308	412	18.53
4	8/12/79	17	36	0.03	10.67	0.009	306	420	17.02
4	8/13/79	17	47	0.04	10.93	0.014	316	445	20.43
4	8/14/79	17	28	0.08	10.43	0.009	294	377	15.69
4	8/15/79	17	32	0.03	10.30	0.004	275	371	3.55
4	8/16/79	18	18	0.04	10.10	0.003	316	385	19.22

TABLE F2- 4. CONTINUED

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	8/17/79	17	59	0.07	9.00	0.006	306	389	17.70
4	8/18/79	17	9	0.07	4.43	0.013	307	430	18.58
4	8/19/79	7	40	0.31	4.50	0.026	221	1373	11.93
4	8/19/79	9	7	0.34	2.54	0.032	150	1596	7.21
4	8/19/79	11	32	0.29	3.84	0.088	188	906	7.31
4	8/19/79	14	30	1.18	4.70	0.147	235	846	16.71
4	8/19/79	17	52	0.39	5.90	0.067	241	622	10.78
4	8/19/79	22	40	0.39	6.33	0.085	232	744	10.90
4	8/19/79	23	50	0.16	6.08	0.064	199	1169	10.10
4	8/20/79	1	28	0.30	4.38	0.050	165	3232	8.26
4	8/20/79	5	40	0.43	4.68	0.133	161	823	8.21
4	8/20/79	11	12	0.30	9.11	0.109	302	581	14.17
4	8/20/79	11	44	0.20	13.09	0.113	352	675	21.78
4	8/20/79	17	52	0.20	11.56	0.064	306	475	16.74
4	8/21/79	18	1	0.14	13.13	0.031	279	403	19.26
4	8/21/79	19	31	0.23	1.84	0.061	137	1637	12.29
4	8/21/79	20	17	0.10	1.36	0.072	84	7236	7.96
4	8/21/79	21	39	0.25	1.50	0.037	85	3555	4.12
4	8/21/79	22	56	0.17	2.13	0.063	109	1973	7.77
4	8/22/79	1	34	0.30	2.38	0.096	119	1064	6.69
4	8/22/79	5	34	0.21	7.15	0.090	225	535	12.28
4	8/22/79	10	55	0.15	10.33	0.064	268	475	15.98
4	8/22/79	17	37	0.12	11.90	0.048	298	506	13.63
4	8/23/79	18	7	0.08	11.70	0.021	282	412	14.81
4	8/24/79	17	50	0.12	11.70	0.026	316	428	14.69
4	8/25/79	18	27	0.07	11.51	0.020	327	425	15.75
4	8/26/79	17	51	0.08	11.13	0.023	324	422	17.36
4	8/27/79	18	27	0.08	10.76	0.023	329	408	19.10
4	8/28/79	17	36	0.04	10.64	0.029	320	420	16.84
4	8/29/79	18	21	0.14	9.34	0.030	256	487	20.51
4	8/30/79	17	27	0.08	6.08	0.037	225	401	21.71
4	8/31/79	19	22	0.07	8.77	0.022	229	413	18.22
4	9/ 1/79	17	48	0.04	8.35	0.027	234	398	16.05
4	9/ 2/79	17	57	0.06	7.91	0.035	250	413	16.42
4	9/ 3/79	17	35	0.14	8.02	0.020	214	433	19.09
4	9/ 4/79	18	52	0.08	7.68	0.028	242	421	18.07
4	9/ 5/79	18	2	0.05	7.34	0.031	279	418	20.18
4	9/ 6/79	18	3	0.22	7.75	0.019	326	393	10.64
4	9/ 7/79	18	15	0.11	7.92	0.012	330	416	15.49
4	9/ 8/79	18	11	0.16	8.25	0.014	326	416	19.04
4	9/ 9/79	18	21	0.11	8.10	0.006	302	433	17.74
4	9/10/79	18	58	0.09	7.87	0.006	280	397	17.25
4	9/11/79	17	39	0.09	7.49	0.009	295	367	16.97
4	9/12/79	18	20	0.12	7.29	0.006	270	387	18.72
4	9/13/79	17	17	0.08	7.06	0.007	301	386	16.28
4	9/14/79	17	18	0.18	7.29	0.006	322	371	17.05
4	9/15/79	17	30	0.14	7.55	0.009	318	379	16.63
4	9/16/79	17	10	0.09	7.50	0.010	331	385	22.15
4	9/17/79	17	29	0.06	7.32	0.010	299	376	17.88
4	9/18/79	17	29	0.11	7.16	0.012	344	392	17.72
4	9/19/79	17	31	0.16	6.93	0.057	309	374	18.37

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	9/21/79	17	34	0.12	6.85	0.006	320	383	18.16
4	9/22/79	17	29	0.13	6.91	0.007	317	357	19.37
4	9/23/79	17	36	0.15	6.91	0.007	325	359	18.73
4	9/24/79	17	58	0.14	6.78	0.014	323	370	18.71
4	9/25/79	18	3	0.15	6.31	0.015	334	393	20.08
4	9/26/79	20	0	0.30	6.70	0.016	357	457	18.44
4	9/27/79	18	0	0.11	6.91	0.015	345	452	19.75
4	9/28/79	17	47	0.22	6.52	0.014	327	452	18.84
4	9/29/79	17	10	0.15	6.39	0.021	351	419	24.30
4	9/30/79	17	18	0.16	6.21	0.029	445	450	18.44
4	10/ 1/79	17	20	0.13	5.82	0.037	457	461	18.04
4	10/ 2/79	17	6	0.07	5.56	0.015	226	352	17.95
4	10/ 3/79	17	30	0.08	5.93	0.039	237	352	19.97
4	10/ 4/79	17	35	0.08	5.99	0.024	216	357	17.87
4	10/ 5/79	17	43	0.07	6.27	0.008	227	378	17.82
4	10/ 6/79	18	0	0.06	6.27	0.010	223	375	18.67
4	10/ 7/79	17	54	0.08	6.54	0.011	241	362	19.66
4	10/ 8/79	18	17	0.07	6.39	0.013	240	375	18.23
4	10/ 9/79	17	41	0.08	6.33	0.013	245	341	18.03
4	10/10/79	18	3	0.07	6.36	0.009	255	361	17.64
4	10/11/79	17	50	0.06	6.68	0.011	292	296	20.54
4	10/12/79	18	7	0.06	6.68	0.016	289	394	18.19
4	10/13/79	17	58	0.06	6.60	0.012	291	388	19.18
4	10/14/79	17	43	0.05	6.83	0.010	261	378	16.67
4	10/15/79	17	16	0.05	0.66	0.014	288	392	18.61
4	10/16/79	18	21	0.09	0.63	0.014	284	385	24.61
4	10/17/79	16	35	0.07	0.61	0.013	278	390	21.06
4	10/18/79	17	8	0.05	5.70	0.009	289	400	19.74
4	10/19/79	17	30	1.78	0.58	0.169	413	598	33.03
4	10/20/79	17	22	0.16	0.79	0.024	288	433	24.61
4	10/21/79	17	31	0.09	0.64	0.046	348	436	18.77
4	10/22/79	7	12	0.14	0.57	0.175	263	579	15.69
4	10/22/79	11	23	1.68	3.67	0.359	251	4165	25.50
4	10/22/79	12	57	0.93	4.25	0.333	175	3867	13.41
4	10/22/79	20	0	0.26	6.06	0.186	185	2134	13.35
4	10/22/79	20	25	0.34	8.91	0.413	246	1515	17.15
4	10/23/79	9	29	0.36	11.54	0.182	315	812	17.71
4	10/23/79	18	2	0.12	13.75	0.030	221	575	19.89
4	10/24/79	9	34	0.09	13.61	0.020	231	578	18.43
4	10/24/79	17	40	0.09	13.66	0.023	224	483	17.36
4	10/25/79	18	16	0.08	13.49	0.005	226	467	19.52
4	10/26/79	18	22	0.08	13.25	0.005	212	463	21.06
4	10/27/79	17	58	0.08	13.25	0.010	178	398	20.96
4	10/28/79	17	43	0.01	12.78	0.012	232	419	17.71
4	10/29/79	18	15	0.10	12.43	0.008	239	427	16.77
4	10/30/79	17	21	0.09	11.67	0.006	286	442	17.19
4	10/31/79	17	45	0.14	10.73	0.038	321	450	16.33
4	11/ 1/79	17	53	0.09	12.38	0.023	308	424	19.63
4	11/ 2/79	18	5	0.10	12.38	0.027	175	468	19.41
4	11/ 3/79	17	32	0.10	12.54	0.018	319	493	17.65
4	11/ 4/79	17	50	0.12	11.55	0.015	311	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
4	11/ 5/79	18	14	0.12	12.22	0.016	313	470	17.98
4	11/ 6/79	17	32	0.17	11.72	0.039	320	442	18.50
4	11/ 7/79	18	31	0.07	12.31	0.022	332	385	16.84
4	11/ 8/79	17	22	0.09	12.64	0.019	324	387	19.41
4	11/ 9/79	17	0	0.11	12.78	0.008	333	398	18.61
4	11/10/79	17	28	0.09	12.31	0.016	303	374	16.88
4	11/11/79	17	34	0.09	12.78	0.012	311	463	18.54
4	11/12/79	18	0	0.09	11.60	0.012	302	443	16.58
4	11/13/79	18	43	0.08	11.84	0.015	308	420	17.19
4	11/14/79	18	15	0.09	11.53	0.019	324	405	17.09
4	11/15/79	18	50	0.09	11.72	0.036	381	407	18.54
4	11/16/79	17	40	0.08	10.30	0.012	271	364	17.38
4	11/17/79	17	45	0.08	11.10	0.010	281	370	17.42
4	11/18/79	17	40	0.03	12.70	0.012	281	392	16.82
4	11/19/79	17	42	0.0	11.30	0.014	280	392	17.16
4	11/20/79	17	23	0.07	10.14	0.013	269	372	16.95
4	11/21/79	18	30	0.05	9.01	0.008	233	357	16.37
4	11/22/79	17	28	0.06	9.96	0.034	253	343	19.08
4	11/23/79	17	26	0.02	11.23	0.010	261	344	17.00
4	11/24/79	17	25	0.01	11.21	0.013	293	382	17.77
4	11/25/79	17	52	0.02	11.12	0.014	289	364	16.75
4	11/26/79	17	49	0.0	11.32	0.014	290	428	17.34
4	11/27/79	17	53	0.05	10.77	0.009	246	339	16.92
4	11/28/79	17	47	0.0	10.96	0.014	284	341	18.05
4	11/29/79	17	32	0.0	11.81	0.009	257	335	18.05
4	11/30/79	17	28	0.04	11.15	0.015	256	333	18.16
4	12/ 1/79	17	33	0.03	11.37	0.012	267	314	17.96
4	12/ 2/79	17	26	0.0	9.18	0.006	276	356	19.06
4	12/ 3/79	17	33	0.0	11.23	0.008	259	306	17.40
4	12/ 4/79	17	53		9.91	0.015	258	300	16.27
4	12/ 5/79	17	22		10.51	0.017	274	315	18.13
4	12/ 6/79	17	23	0.17	10.43	0.023	259	303	16.96
4	12/ 7/79	17	42	0.02	10.67	0.011	274	318	17.51
4	12/ 8/79	17	41	0.03	10.72	0.010	296	322	18.86
4	12/ 9/79	17	32	0.04	10.45	0.012	280	330	18.42
4	12/10/79	17	17	0.01	10.48	0.012	269	371	17.72
4	12/11/79	17	52	0.01	10.88	0.008	274	381	17.72
4	12/12/79	17	43	0.0	11.97	0.014	308	390	20.35
4	12/13/79	17	37	0.03	12.69	0.016	309	418	18.64
4	12/14/79	17	10	0.0	12.24	0.016	276	404	19.03
4	12/15/79	17	49	0.0	10.67	0.011	318	378	19.12
4	12/16/79	18	7	0.0	11.16	0.014	367	432	21.02
4	12/17/79	17	47	0.02	12.79	0.016	356	415	21.34
4	12/18/79	17	7	0.02	11.70	0.006	321	396	22.53
4	12/19/79	17	18	0.03	10.60	0.012	314	389	20.61
4	12/20/79	17	5	0.01	9.83	0.013	289	349	18.86
4	12/21/79	17	29	0.0	9.36	0.011	303	380	18.33
4	12/22/79	17	50	0.01	9.28	0.014	306	373	18.25
4	12/23/79	17	40	0.0	8.07	0.019	297	374	17.71
4	12/24/79	17	42	0.01	7.32	0.015	292	386	18.29
4	12/25/79	17	45	0.0	8.88	0.012	301	377	17.85
4	12/26/79	17	32	0.0	9.31	0.015	309	380	17.98
4	12/27/79	17	21	0.0	9.22	0.014	266	382	17.59
4	12/28/79	17	26	0.0	9.39	0.015	284	379	18.86
4	12/29/79	17	51	0.0	9.42	0.013	256	321	17.43
4	12/30/79	17	22	0.02	9.26	0.020	308	368	19.03
4	12/31/79	17	20	0.0	9.39	0.031	351	387	18.46

TABLE F2- 5. FOUR MILE CREEK WATERSHED RUNOFF NUTRIENT CONCENTRATION DATA FOR 1979 SITE 5

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
5	1/ 4/79	14	10	0.11	13.74	0.016	341	509	21.30
5	2/13/79	14	0	0.10	11.64	0.019	237	473	8.64
5	2/23/79	14	0	0.14	11.79	0.004	192	437	10.03
5	3/ 2/79	16	10	0.06	12.63	0.018	280	462	6.06
5	3/ 5/79	15	20	0.96	6.00	0.169	174	1099	6.83
5	3/ 5/79	17	39	1.52	5.81	0.357	202	679	14.18
5	3/ 6/79	9	57	1.48	6.46	0.482	214	450	16.90
5	3/ 6/79	13	53	1.10	7.00	0.236	213	650	6.06
5	3/ 6/79	17	39	1.49	6.37	0.470	221	290	16.40
5	3/ 7/79	9	22	1.60	6.82	0.475	212	398	22.79
5	3/ 7/79	18	3	1.54	6.99	0.493	221	388	18.88
5	3/ 8/79	10	3	1.67	7.49	0.450	251	465	18.22
5	3/ 8/79	18	9	1.87	7.81	0.461	261	446	18.64
5	3/ 9/79	11	18	1.89	7.79	0.409	256	466	25.92
5	3/ 9/79	17	52	1.95	7.83	0.443	254	435	21.64
5	3/10/79	17	59	1.61	7.89	0.341	282	470	18.99
5	3/12/79	12	57	1.00	6.74	0.280	237	421	10.49
5	3/12/79	13	33	1.20	6.32	0.248	216	561	13.31
5	3/12/79	18	3	1.65	5.39	0.445	190	643	28.28
5	3/13/79	9	42	1.17	4.34	0.380	164	458	11.83
5	3/13/79	17	50	1.87	2.81	0.641	106	736	14.37
5	3/14/79	9	11	1.65	4.55	0.436	141	418	23.73
5	3/14/79	13	48	1.11	4.06	0.416	150	477	10.02
5	3/14/79	17	56	1.09	3.78	0.475	133	409	9.38
5	3/15/79	10	2	1.36	5.22	0.664	191	357	14.81
5	3/15/79	17	50	1.13	4.80	0.489	219	505	12.07
5	3/16/79	9	30	1.04	7.36	0.423	248	612	18.99
5	3/16/79	17	49	0.43	2.64	0.774	51	69	11.35
5	3/16/79	18	5	1.00	3.26	0.302	101	1075	10.36
5	3/17/79	8	58	1.01	2.92	0.475	102	407	11.45
5	3/17/79	14	48	0.84	2.88	0.432	122	629	6.79
5	3/17/79	20	21	1.15	2.12	0.532	72	1053	21.27
5	3/18/79	3	12	1.47	1.95	0.723	66	823	17.10
5	3/18/79	8	41	1.29	1.41	0.573	83	1092	6.15
5	3/18/79	13	58	1.42	2.74	0.586	92	1262	6.90
5	3/18/79	17	26	1.66	2.03	0.648	83	1661	18.09
5	3/18/79	20	3	1.34	2.16	0.585	89	1211	8.00
5	3/19/79	3	27	1.40	3.99	0.779	137	1184	12.40
5	3/19/79	8	45	1.60	4.46	0.564	169	1048	11.74
5	3/19/79	13	35	1.42	5.73	0.507	192	931	11.74
5	3/19/79	20	1	1.36	5.65	0.327	259	946	16.77
5	3/20/79	2	41	0.62	9.05	0.106	298	789	23.73
5	3/20/79	8	47	0.27	9.30	0.169	295	662	17.13
5	3/20/79	17	28	0.31	7.65	0.139	289	584	17.95
5	3/21/79	2	34	0.17	10.63	0.086	289	574	19.76
5	3/21/79	11	1	0.10	10.80	0.157	306	508	20.76
5	3/21/79	18	10	0.25	10.80	0.090	301	500	16.83
5	3/22/79	8	45	0.12	11.18	0.067	311	455	16.80
5	3/22/79	13	46	0.20	11.20	0.059	314	449	17.61
5	3/22/79	18	30	0.25	10.86	0.080	324	477	17.27
5	3/23/79	8	32	2.77	17.20	0.761	330	1311	25.24

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
5	3/23/79	15	41	0.87	9.46	0.302	303	1433	17.47
5	3/23/79	18	0	1.04	9.34	0.410	310	1106	18.19
5	3/23/79	22	48	0.30	11.06	0.255	336	768	21.73
5	3/25/79	13	7	0.09	12.19	0.084	323	513	25.67
5	3/25/79	17	37	0.14	21.32	0.065	345	496	18.79
5	3/26/79	8	57	0.15	13.26	0.017	320	487	23.50
5	3/26/79	18	12	0.13	12.42	0.085	338	605	23.98
5	3/27/79	9	4	0.11	12.39	0.093	327	515	14.82
5	3/27/79	17	56	0.08	11.60	0.047	325	654	19.51
5	3/28/79	8	55	0.24	11.77	0.108	352	541	20.12
5	3/28/79	15	0	3.89	5.96	0.707	402	1692	19.70
5	3/28/79	17	47	5.90	2.01	1.060	309	2881	19.30
5	3/28/79	23	37	1.23	6.37	0.408	227	1213	17.74
5	3/29/79	3	49	0.89	7.75	0.445	246	1109	13.40
5	3/29/79	4	47	0.91	8.95	0.189	296	866	21.20
5	3/29/79	8	57	1.23	7.84	1.803	489	5252	24.61
5	3/29/79	13	32	0.84	5.34	0.285	202	2399	10.96
5	3/29/79	17	20	0.75	5.86	0.343	185	1895	10.30
5	3/29/79	22	40	0.97	6.33	0.605	183	2332	13.25
5	3/30/79	2	17	0.52	10.26	0.273	256	778	15.23
5	3/30/79	6	41	0.36	11.06	0.220	303	668	21.60
5	3/30/79	9	27	0.67	9.02	0.361	256	886	13.03
5	3/31/79	3	38	0.25	12.84	0.109	305	550	20.94
5	3/31/79	11	16	0.05	13.06	0.074	312	504	19.44
5	3/31/79	18	38	0.0	12.73	0.029	322	494	18.74
5	4/ 1/79	8	59	0.19	13.61	0.064	313	499	19.34
5	4/ 1/79	17	29	0.04	13.31	0.049	313	447	20.58
5	4/ 2/79	15	14	0.0	12.63	0.029	313	446	18.22
5	4/ 2/79	22	26	0.51	12.41	0.160	330	523	26.26
5	4/ 3/79	9	46	0.11	13.06	0.056	316	416	18.64
5	4/ 3/79	17	40	0.41	12.25	0.141	325	510	18.12
5	4/ 4/79	10	21	0.21	13.38	0.028	331	410	20.22
5	4/ 4/79	17	44	0.13	13.05	0.086	287	485	18.95
5	4/ 5/79	13	45	0.0	13.47	0.052	325	457	19.48
5	4/13/79	14	25	0.19	12.94	0.072	289	425	16.64
5	4/18/79	18	21	0.0	13.32	0.062	289	407	18.15
5	4/19/79	14	17	0.0	12.01	0.039	272	574	16.14
5	4/19/79	15	47	0.24	11.44	0.098	262	643	19.75
5	4/19/79	18	1	1.22	9.64	0.055	361	1067	25.59
5	4/19/79	21	21	0.37	12.11	0.110	284	603	23.32
5	4/20/79	12	0	0.91	8.91	0.335	222	2509	14.90
5	4/20/79	13	34	0.73	8.00	0.202	202	3469	15.15
5	4/20/79	17	41	0.40	6.78	0.287	132	4114	9.33
5	4/20/79	21	22	0.30	11.51	0.373	248	1351	13.00
5	4/22/79	8	26	0.12	14.83	0.133	275	746	24.77
5	4/24/79	12	50	0.0	15.68	0.037	315	469	18.91
5	5/ 1/79	15	30	0.12	16.12	0.227	271	455	33.08
5	5/ 2/79	12	27	0.02	13.88	0.026	311	418	16.68
5	5/ 2/79	15	9	0.09	12.92	0.098	311	864	14.94
5	5/ 2/79	17	53	0.20	11.95	0.165	331	1008	14.94
5	5/ 2/79	21	47	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
5	5/ 3/79	19	21	0.03	16.23	0.032	331	445	16.87
5	5/ 9/79	13	35	0.02	17.01	0.021	363	382	17.35
5	5/15/79	17	30	0.0	14.53	0.012	362	388	17.14
5	5/22/79	17	45	0.0	14.67	0.009	383	400	18.82
5	5/29/79	14	37	0.01	13.60	0.018	383	400	16.48
5	6/ 4/79	20	42	0.50	12.95	0.048	246	3369	11.93
5	6/ 4/79	21	3	0.27	12.14	0.033	270	5225	14.46
5	6/ 4/79	21	8	0.27	13.36	0.067	301	2202	14.29
5	6/ 4/79	21	38	0.21	13.53	0.054	318	1540	17.15
5	6/ 5/79	0	44	0.13	13.09	0.085	323	967	16.18
5	6/ 5/79	5	37	0.0	14.17	0.033	366	554	17.37
5	6/ 5/79	13	1	0.0	14.48	0.026	371	396	15.23
5	6/ 9/79	12	1	0.12	11.33	0.046	225	1104	12.68
5	6/ 9/79	15	31	0.06	13.07	0.053	245	661	14.54
5	6/ 9/79	18	15	0.07	13.39	0.054	273	542	14.80
5	6/12/79	13	54	0.05	14.94	0.019	494	570	19.00
5	6/12/79	18	37	0.83	7.33	0.150	158	43860	4.87
5	6/12/79	18	53	0.55	6.35	0.155	128	41520	3.49
5	6/12/79	19	40	0.33	4.67	0.255	129	21780	4.78
5	6/12/79	20	36	0.47	5.15	0.143	125	19860	3.14
5	6/12/79	20	42	0.42	5.22	0.143	123	17790	3.99
5	6/12/79	21	36	0.35	4.57	0.113	122	16920	4.18
5	6/12/79	22	57	0.33	4.49	0.120	118	8288	3.52
5	6/13/79	0	8	0.31	5.31	0.244	135	5907	4.70
5	6/13/79	1	7	0.32	7.73	0.235	235	5227	6.31
5	6/13/79	5	14	0.13	15.58	0.095	336	1631	11.93
5	6/13/79	8	32	0.06	17.98	0.078	374	1201	13.61
5	6/13/79	12	5	0.02	17.84	0.068	367	961	14.03
5	6/13/79	13	35	0.04	18.14	0.064	394	917	18.52
5	6/13/79	17	45	0.13	18.90	0.035	370	840	22.79
5	6/18/79	17	56	0.04	17.48	0.027	334	687	18.74
5	6/19/79	12	14	0.07	15.67	0.047	386	655	19.44
5	6/19/79	23	30	0.21	10.03	0.049	291	4328	9.57
5	6/20/79	2	21	0.23	7.57	0.069	214	7554	7.51
5	6/20/79	9	27	0.09	13.95	0.077	284	1016	15.34
5	6/26/79	14	50	0.0	16.15	0.032	383	510	18.65
5	6/27/79	4	22	0.19	3.39	0.104	81	9917	2.91
5	6/27/79	5	19	0.20	3.67	0.114	81	6740	3.16
5	6/27/79	7	59	0.29	10.37	0.150	337	2448	3.99
5	6/27/79	10	0	0.22	14.11	0.101	400	1748	11.57
5	6/27/79	12	3	0.18	18.12	0.080	428	1350	13.49
5	6/27/79	18	12	0.09	20.50	0.036	441	835	15.25
5	6/28/79	9	58	0.05	19.70	0.025	405	770	17.06
5	7/ 3/79	8	47	0.09	8.33	0.079	307	16960	6.54
5	7/ 3/79	10	27	0.07	2.08	0.087	85	14780	1.83
5	7/ 3/79	11	29	0.03	2.42	0.130	78	10900	1.73
5	7/ 3/79	12	46	0.10	1.64	0.110	69	7695	2.49
5	7/ 3/79	15	2	0.02	2.86	0.110	100	4937	3.46
5	7/ 3/79	18	15	0.12	12.01	0.179	328	3106	10.80
5	7/ 3/79	21	44	0.12	10.40	0.109	346	10230	9.08
5	7/ 3/79	22	37	0.09	7.60	0.117	372	7657	6.99
5	7/ 3/79	23	32	0.10	9.03	0.104	578	4714	8.13

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
5	7/ 4/79	0	31	0.12	10.37	0.103	636	5443	11.29
5	7/ 4/79	5	13	0.07	18.74	0.075	430	1259	16.23
5	7/ 4/79	11	43	0.02	19.97	0.039	398	818	15.77
5	7/ 4/79	19	16	0.02	19.78	0.053	412	750	16.97
5	7/13/79	11	4	0.0	17.30	0.044	432	861	16.52
5	7/13/79	21	16	0.15	4.93	0.097	244	10160	14.23
5	7/13/79	21	20	0.30	4.03	0.077	468	7063	7.50
5	7/13/79	22	36	0.11	5.64	0.078	242	9627	6.56
5	7/14/79	2	15	0.0	0.60	0.082	107	3030	1.16
5	7/14/79	3	26	0.07	1.50	0.196	109	6976	1.52
5	7/14/79	4	34	0.14	1.32	0.185	94	7997	2.20
5	7/14/79	5	50	0.06	7.64	0.303	254	2599	8.13
5	7/14/79	9	24	0.05	9.45	0.286	303	2845	18.15
5	7/14/79	14	19	0.13	16.73	0.078	305	1081	14.57
5	8/ 2/79	15	56	0.01	13.78	0.012	350	410	15.10
5	8/ 9/79	23	0	0.19	4.99	0.125	173	1452	13.34
5	8/19/79	7	59	0.83	4.94	0.200	188	630	13.65
5	8/19/79	9	26	0.21	2.97	0.153	188	1849	17.84
5	8/19/79	11	14	0.42	2.66	0.041	105	1150	
5	8/19/79	14	48	0.39	8.17	0.106	271	712	16.46
5	8/19/79	18	9	0.31	2.04	0.142	335	754	18.65
5	8/19/79	23	39	0.35	3.86	0.062	144	2457	
5	8/20/79	1	45	0.62	1.14	0.244	153	1293	9.80
5	8/20/79	5	57	0.28	2.76	0.134	288	678	16.44
5	8/20/79	11	44	0.18	11.99	0.100	351	558	18.48
5	8/20/79	18	9	0.14	12.97	0.051	331	608	20.97
5	8/21/79	19	58	0.16	0.03	0.170	102	3184	7.55
5	8/21/79	20	42	0.15	0.02	0.087	86	2748	7.90
5	8/21/79	21	20	0.30	0.0	0.133	64	2210	4.94
5	8/21/79	23	17	0.29	0.03	0.174	92	3072	9.58
5	8/22/79	1	58	0.26	3.03	0.144	209	650	11.66
5	8/22/79	5	54	0.18	3.80	0.116	292	677	16.34
5	8/22/79	11	24	0.13	13.76	0.047	259	551	17.08
5	8/22/79	17	56	0.12	13.31	0.048	296	471	24.28
5	8/28/79	18	40	0.10	13.13	0.036	336	444	25.29
5	9/12/79	15	59	0.05	9.61	0.029	347	401	25.08
5	9/19/79	15	40	0.18	9.74	0.015	358	410	22.98
5	9/26/79	16	35		9.26	0.021	353	476	27.12
5	10/ 2/79	15	5	0.16	9.42	0.044	390	521	28.68
5	10/ 9/79	14	25	0.11	9.09	0.019	315	566	4.78
5	10/16/79	14	15	0.15	8.98	0.016	310	512	4.35
5	10/22/79	7	31	1.95	5.65	0.491	432	4280	7.98
5	10/22/79	11	45	0.75	4.66	0.465	203	3734	14.08
5	10/22/79	13	25	0.67	4.44	0.428	521	3083	14.79
5	10/22/79	20	25	0.17	8.81	0.422	285	1479	18.54
5	10/23/79	9	12	0.11	14.26	0.188	358	1057	19.55
5	10/23/79	15	45	0.09	15.02	0.119	376	890	19.85
5	10/23/79	18	14	0.11	15.87	0.020	265	906	19.15
5	10/24/79	9	20	0.11	16.22	0.019	251	859	21.16
5	10/30/79	13	0	0.09	15.05	0.017	285	645	20.08
5	11/ 6/79	16	30	0.09	14.70	0.035	311	552	4.33
5	11/16/79	16	55	0.26	14.13	0.045	395	480	4.23

TABLE F2- 5. CONCLUDED

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				---PPM---					
5	11/28/79	17	30	0.0	13.15	0.020	303	417	18.95
5	12/ 4/79	17	30	0.0	12.38	0.023	1830	1858	21.67
5	12/10/79	16	35	0.0	12.74	0.026	1977	2096	19.03
5	12/19/79	16	30	0.0	12.08	0.022	1846	1901	18.30
5	12/26/79	14	35	0.0	12.08	0.023	1755	1816	20.15

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
6	1/12/79	13	35	0.05	10.44	0.006	252	331	14.98
6	1/18/79	13	45	0.07	11.23	0.006	153	330	4.69
6	2/13/79	14	15	0.04		0.003	137	351	3.76
6	2/23/79	14	30	0.04	10.44	0.002	162	327	3.20
6	3/ 2/79	16	15	0.05	9.79	0.040	189	347	4.32
6	3/ 5/79	15	30	0.38		0.289	329	372	5.96
6	3/ 5/79	17	32	0.25	6.49	0.261	282	331	13.25
6	3/ 6/79	9	51	0.28	6.67	0.191	282	330	14.49
6	3/ 6/79	14	0	0.35	8.85	0.132	241	315	5.41
6	3/ 6/79	17	30	0.36	6.66	0.248	295	331	16.27
6	3/ 7/79	9	30	0.57	6.59	0.232	342	406	29.33
6	3/ 7/79	17	55	0.28	6.57	0.216	304	333	15.13
6	3/ 8/79	9	53	0.28	6.64	0.286	290	295	17.44
6	3/ 8/79	18	2	0.17	6.76	0.186	295	312	15.94
6	3/ 9/79	11	11	0.24	7.08	0.182	287	301	14.65
6	3/ 9/79	17	45	0.19	7.15	0.170	287	305	13.55
6	3/10/79	17	52	0.24	7.25	0.211	302	309	16.50
6	3/11/79	17	50	0.31	7.32	0.108	262	291	13.55
6	3/12/79	12	53	0.17	7.06	0.167	308	334	13.51
6	3/12/79	13	27	0.14	6.57	0.141	267	310	15.13
6	3/12/79	17	58	1.02	6.07	0.377	253	334	17.24
6	3/13/79	9	36	0.67	5.83	0.283	236	289	13.55
6	3/13/79	17	43	0.71	2.58	0.378	122	481	11.02
6	3/14/79	9	4	0.56	4.37	0.341	172	329	10.73
6	3/14/79	13	42	0.45	4.30	0.281	181	527	8.92
6	3/14/79	17	49	0.38	4.43	0.378	179	356	11.16
6	3/15/79	10	9	0.37	6.01	0.111	285	303	14.30
6	3/15/79	17	43	0.41	6.02	0.200	293	353	19.69
6	3/16/79	9	22	0.25	6.28	0.117	309	333	11.31
6	3/16/79	17	44	0.69	1.68	0.390	141	735	4.60
6	3/16/79	17	57	0.94	2.49	0.423	153	895	9.39
6	3/17/79	8	46	0.41	3.35	0.429	197	405	9.91
6	3/17/79	17	41	0.48	2.13	0.194	148	1526	6.72
6	3/17/79	20	29	0.54	1.56	0.252	122	1104	5.86
6	3/18/79	2	45	0.58	1.85	0.370	131	818	7.87
6	3/18/79	8	49	0.46	2.11	0.325	124	937	6.84
6	3/18/79	13	49	0.47	1.34	0.256	101	1200	6.35
6	3/18/79	17	33	0.53	2.21	0.229	113	1011	3.72
6	3/18/79	21	57	0.58	2.69	0.325	135	1028	6.51
6	3/19/79	3	22	0.95	3.87	0.401	178	634	6.51
6	3/19/79	8	38	1.11	4.28	0.445	189	613	9.33
6	3/19/79	13	29	1.00	4.85	0.376	160	553	6.91
6	3/19/79	19	55	1.07	6.60	0.045	253	413	14.01
6	3/20/79	2	35	0.41	8.91	0.209	232	371	12.18
6	3/20/79	8	40	0.33	9.14	0.200	244	371	10.46
6	3/20/79	17	21	0.25	9.59	0.071	246	340	10.22
6	3/21/79	2	28	0.19	8.26	0.108	251	336	11.20
6	3/21/79	10	56	0.48	12.56	0.087	264	326	11.77
6	3/21/79	18	5	0.23	11.80	0.108	262	343	12.59
6	3/22/79	8	40	0.18	9.22	0.063	241	374	11.77
6	3/22/79	13	40	0.16	8.77	0.049	250	343	11.16
6	3/22/79	18	22	0.37	7.08	0.107	236	331	10.95

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
6	3/23/79	8	38	1.28	5.87	0.331	283	743	12.18
6	3/23/79	12	21	1.33	7.67	0.442	306	616	13.88
6	3/23/79	15	35	0.87	8.76	0.300	300	442	15.72
6	3/23/79	17	53	0.65	9.17	0.255	305	410	19.40
6	3/23/79	22	40	0.16	9.33	0.062	270	364	10.95
6	3/25/79	12	59	0.09	9.58	0.075	189	358	13.53
6	3/25/79	17	31	0.08	10.01	0.049	187	296	13.07
6	3/26/79	8	52	0.11	10.17	0.033	191	270	13.77
6	3/26/79	18	6	0.12	10.13	0.065	190	290	12.48
6	3/27/79	9	10	0.08	10.33	0.074	179	344	29.45
6	3/27/79	17	51	0.15	9.91	0.072	157	295	12.20
6	3/28/79	9	0	0.17	10.21	0.084	219	326	16.33
6	3/28/79	15	0	0.35	8.43	0.209	191	426	16.01
6	3/28/79	17	39	0.27	7.56	0.165	244	636	11.02
6	3/28/79	23	30	0.29	9.44	0.046	288	386	11.89
6	3/29/79	4	40	0.27	10.02	0.033	301	336	18.12
6	3/29/79	9	2	0.53	6.63	0.230	222	1546	9.61
6	3/29/79	13	24	0.38	6.25	0.176	205	1669	9.97
6	3/29/79	17	13	1.00	5.49	0.367	210	620	8.92
6	3/29/79	22	31	0.91	4.38	0.363	194	958	6.91
6	3/30/79	2	11	0.57	8.51	0.305	266	344	10.38
6	3/30/79	3	43	0.80	2.37	0.378	246	521	8.92
6	3/30/79	6	35	0.48	9.65	0.146	269	338	10.54
6	3/30/79	9	22	0.62	8.10	0.312	228	408	11.69
6	3/31/79	3	33	0.32	11.24	0.089	239	355	15.06
6	3/31/79	11	11	0.14	11.64	0.057	238	336	10.54
6	3/31/79	18	33	0.04	10.88	0.045	218	322	11.03
6	4/ 1/79	8	54	0.03	11.69	0.026	217	317	10.95
6	4/ 1/79	17	23	0.09	11.80	0.066	257	322	12.59
6	4/ 2/79	15	7	0.07	8.32	0.129	230	346	12.59
6	4/ 2/79	22	20	0.05	9.78	0.077	248	312	13.55
6	4/ 3/79	9	39	0.11	11.30	0.034	245	325	11.77
6	4/ 3/79	17	35	0.52	10.42	0.121	276	330	11.85
6	4/ 4/79	10	17	0.20	11.20	0.194	234	314	16.23
6	4/ 4/79	17	38	0.24	10.73	0.057	232	308	11.61
6	4/ 5/79	13	50	0.07	11.09	0.077	215	304	13.08
6	4/13/79	14	26	0.0	12.30	0.044	214	311	13.74
6	4/18/79	18	18	0.0	12.08	0.044	228	330	11.03
6	4/19/79	14	12	0.41	3.76	0.921	62	9552	5.31
6	4/19/79	15	41	1.11	5.67	0.469	188	2532	12.59
6	4/19/79	17	55	0.53	9.63	0.199	239	665	14.98
6	4/19/79	21	15	0.24	10.45	0.453	218	406	14.82
6	4/20/79	11	54	0.50	5.74	0.390	118	2196	8.44
6	4/20/79	13	27	0.41	3.80	0.287	49	3453	4.83
6	4/20/79	17	34	0.17	10.88	0.115	205	491	11.12
6	4/20/79	21	17	0.10	12.16	0.127	149	511	15.06
6	4/21/79	8	23	0.0	13.06	0.073	176	362	19.66
6	4/24/79	12	55	0.19	13.09	0.124	250	274	28.32
6	5/ 1/79	15	33	0.05	14.37	0.025	242	322	13.00
6	5/ 2/79	12	21	0.06	11.89	0.040	266	330	11.92
6	5/ 2/79	15	4	0.58	4.54	0.295	196	2824	8.93
6	5/ 2/79	17	44	0.44	8.20	0.423	276	753	11.77

TABLE F2- 6. CONTINUED

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
6	5/ 2/79	21	40	0.29	10.74	0.231	306	421	12.52
6	5/ 3/79	5	5	0.08	13.49	0.050	303	392	12.77
6	5/ 3/79	19	16	0.01	14.24	0.021	274	355	12.57
6	5/ 9/79	13	30	0.0	13.83	0.015	309	335	12.68
6	5/15/79	17	28	0.0	12.67	0.009	287	312	12.10
6	5/22/79	17	0	0.11	10.91	0.011	281	416	13.00
6	5/29/79	14	33	0.02	11.60	0.020	327	345	13.91
6	6/ 4/79	19	59	0.32	5.91	0.031	126	24600	3.65
6	6/ 4/79	20	48	0.29	5.90	0.049	140	12570	5.85
6	6/ 4/79	21	15	0.19	7.38	0.069	180	5820	7.09
6	6/ 4/79	21	43	0.38	8.38	0.065	224	4761	11.10
6	6/ 5/79	0	37	0.03	12.78	0.081	364	900	12.76
6	6/ 5/79	5	31	0.04	12.25	0.051	345	442	11.35
6	6/ 5/79	13	7	0.03	13.50	0.036	336	386	11.43
6	6/ 9/79	11	56	0.21	7.36	0.069	430	3717	8.03
6	6/ 9/79	15	25	0.26	11.95	0.166	344	631	12.68
6	6/ 9/79	18	11	0.15	12.69	0.111	386	526	15.40
6	6/12/79	13	49	0.05	12.71	0.020	290	381	13.11
6	6/12/79	18	31	0.25	2.26	0.044	92	119300	1.29
6	6/12/79	18	58	0.23	2.65	0.105	97	45840	1.96
6	6/12/79	19	35	0.38	3.64	0.143	124	19470	7.99
6	6/12/79	20	45	0.37	7.48	0.201	233	5794	11.85
6	6/12/79	20	49	0.48	8.16	0.194	243	3455	10.99
6	6/12/79	21	43	0.33	10.09	0.158	293	3402	12.32
6	6/12/79	22	47	0.23	11.71	0.113	360	1792	12.88
6	6/13/79	0	1	0.18	13.09	0.145	370	1057	11.93
6	6/13/79	1	21	0.41	13.09	0.128	358	857	12.68
6	6/13/79	5	2	0.09	13.60	0.088	383	651	18.84
6	6/13/79	8	25	0.09	13.34	0.069	364	554	12.18
6	6/13/79	11	59	0.06	13.55	0.055	376	539	11.85
6	6/13/79	13	29	0.08	13.92	0.059	380	564	11.51
6	6/13/79	17	40	0.07	14.13	0.028	296	489	13.96
6	6/18/79	17	51	0.04	14.37	0.011	301	400	14.01
6	6/19/79	12	8	0.03	14.05	0.022	305	532	13.24
6	6/19/79	23	25	0.33	3.00	0.064	93	20430	2.30
6	6/20/79	0	27	0.25	3.15	0.107	137	9402	3.73
6	6/20/79	9	32	0.04	13.63	0.024	306	1119	19.06
6	6/26/79	14	58	0.02	14.10	0.021	363	369	13.61
6	6/27/79	2	14	0.24	4.67	0.171	168	7136	7.77
6	6/27/79	4	17	0.29	11.41	0.186	372	1752	24.83
6	6/27/79	4	23	0.25	13.33	0.148	452	1185	24.15
6	6/27/79	7	55	0.15	14.82	0.046	363	866	15.42
6	6/27/79	9	54	0.14	14.38	0.032	416	739	13.79
6	6/27/79	11	58	0.11	14.00	0.025	239	597	13.49
6	6/27/79	18	7	0.03	15.50	0.022	285	679	20.78
6	6/28/79	9	54	0.05	15.95	0.036	247	1133	14.14
6	7/ 3/79	8	53	0.10	2.09	0.036	29	34210	1.57
6	7/ 3/79	10	21	0.09	2.41	0.152	72	17260	3.06
6	7/ 3/79	11	22	0.14	6.31	0.150	184	7181	7.33
6	7/ 3/79	12	38	0.14	14.41	0.110	331	2692	13.84
6	7/ 3/79	14	58	0.09	16.24	0.068	354	1388	14.51
6	7/ 3/79	18	20	0.08	16.56	[illegible]	[illegible]	[illegible]	[illegible]

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
6	7/ 3/79	21	37	0.14	6.73	0.014	422	12020	7.01
6	7/ 3/79	21	47	0.07	7.15	0.019	283	7662	6.21
6	7/ 3/79	22	30	0.22	5.93	0.036	525	7824	8.54
6	7/ 3/79	23	36	0.15	9.36	0.088	587	3944	10.17
6	7/ 4/79	5	7	0.0	15.87	0.010	252	846	14.82
6	7/ 4/79	11	37	0.0	16.36	0.023	254	635	15.82
6	7/ 4/79	19	10	0.02	16.24	0.041	333	1040	14.54
6	7/ 5/79	0	25	0.13	13.40	0.098	324	1311	13.57
6	7/13/79	10	58	0.0	5.54	0.010	580	2791	11.76
6	7/13/79	21	12	0.33	3.54	0.025	525	19710	5.85
6	7/13/79	22	31	0.09	6.16	0.052	489	4586	6.09
6	7/14/79	2	10	0.13	1.24	0.111	135	16580	4.90
6	7/14/79	3	14	0.18	5.19	0.239	225	6214	6.46
6	7/14/79	4	28	0.05	4.62	0.043	219	16300	3.95
6	7/14/79	5	45	0.03	3.04	0.187	192	9081	3.53
6	7/14/79	9	18	0.04	14.79	0.095	442	1386	15.48
6	7/14/79	14	15	0.08	15.49	0.033	308	907	12.39
6	8/ 2/79	15	54	0.19	13.39	0.022	308	561	11.99
6	8/19/79	7	53	0.41	3.70	0.099	184	1706	9.28
6	8/19/79	9	20	0.67	5.99	0.527	340	1007	20.96
6	8/19/79	11	20	0.69	8.62	0.272	354	704	20.57
6	8/19/79	14	41	0.34	9.31	0.080	340	648	16.84
6	8/19/79	18	3	0.24	9.65	0.037	307	632	17.21
6	8/19/79	22	53	0.24	1.48	0.038	95	8298	5.68
6	8/19/79	23	32	0.40	1.73	0.122	118	8501	7.31
6	8/20/79	1	39	0.42	7.55	0.197	279	1808	13.68
6	8/20/79	5	51		9.53	0.076	344	610	16.69
6	8/20/79	11	22	0.19	9.97	0.045	337	526	15.25
6	8/20/79	18	3	0.12	10.29	0.029	359	560	15.20
6	8/21/79	19	46	0.20	0.31	0.089	58	7004	3.58
6	8/21/79	20	0	0.25	1.18	0.177	58	5034	3.10
6	8/21/79	20	36	0.46	2.45	0.301	137	4943	7.66
6	8/21/79	21	27	0.59	5.02	0.408	224	1942	10.43
6	8/21/79	23	10	0.30	7.90	0.169	276	958	13.28
6	8/22/79	1	51	0.19	10.21	0.066	344	547	18.08
6	8/22/79	5	48	0.14	10.41	0.038	334	470	25.70
6	8/22/79	11	17	0.16	10.59	0.029	325	416	16.84
6	8/22/79	17	49	0.12	10.13	0.020	304	387	17.58
6	8/28/79	18	35	0.06	10.80	0.014	339	382	14.05
6	9/12/79	15	55	0.06	8.80	0.015	351	398	13.91
6	9/19/79	15	45	0.10	8.89	0.015	279	395	15.49
6	9/26/79	16	40	0.09	8.21	0.015	284	384	19.41
6	10/ 2/79	15	15	0.12	7.99	0.031	385	409	14.69
6	10/ 9/79	14	20	0.06	7.49	0.011	269	379	12.82
6	10/16/79	14	10	0.06	6.58	0.010	292	452	13.91
6	10/22/79	7	25	0.06	1.51	0.140	179	1269	10.78
6	10/22/79	11	37	0.08	4.60	0.649	225	1139	14.22
6	10/22/79	13	17	0.20	5.68	0.916	262	845	15.33
6	10/22/79	20	16	0.09	9.03	0.216	350	520	16.78
6	10/23/79	9	19	0.08	8.27	0.086	400	448	41.22
6	10/23/79	15	50	0.08	8.42	0.059	369	380	14.49

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				ppm					
6	10/24/79	9	25	0.08	8.72	0.012	207	362	15.66
6	10/30/79	13	10	0.09	8.25	0.013	213	469	14.67
6	11/ 6/79	16	35	0.08	7.57	0.014	251	405	15.66
6	11/16/79	16	50	0.07	7.64	0.017	318	369	23.90
6	11/28/79	17	25	0.0	7.13	0.010	245	374	13.61
6	12/ 4/79	17	25	0.0	6.96	0.009	231	391	13.57
6	12/10/79	16	30	0.0	6.01	0.011	255	355	13.61
6	12/19/79	16	35	0.01	7.07	0.009	233	352	12.58
6	12/26/79	14	40	0.01	7.15	0.009	257	348	21.00

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				ppm					

TABLE F2- 7. FOUR MILE CREEK WATERSHED RUNOFF NUTRIENT CONCENTRATION DATA FOR 1979 SITE 7

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
7	3/16/79	19	43	0.60	2.11	0.865	144	152	6.06
7	3/16/79	22	0	0.63	2.39	0.814	124	139	4.24
7	3/17/79	1	0	0.67	2.27	0.828	121	135	3.76
7	3/17/79	4	0	0.63	2.27	0.791	114	121	3.76
7	3/17/79	7	0	0.68	1.95	0.919	129	132	3.97
7	3/17/79	10	0	0.83	2.00	0.973	124	141	4.26
7	3/17/79	13	0	0.73	2.42	0.838	147		4.36
7	3/17/79	16	15	0.34	0.94	0.254	20	74	4.69
7	3/17/79	17	15	0.62	1.52	0.363	24	56	4.60
7	3/17/79	18	15	0.67	1.59	0.258	23	65	2.44
7	3/17/79	19	15	0.57	0.90	0.325	29	31	4.85
7	3/17/79	20	15	0.59	1.43	0.349	16	33	8.62
7	3/17/79	21	15	0.53	0.99	0.329	5	38	9.53
7	3/17/79	22	15	0.66	1.02	0.465	36	78	8.25
7	3/17/79	23	15	0.60	1.29	0.438	26	78	4.52
7	3/18/79	0	15	0.50	1.59	0.383	63	86	4.59
7	3/18/79	1	15	0.64	1.59	0.485	51	83	4.11
7	3/18/79	2	15	0.79	1.60	0.545	54	103	6.54
7	3/18/79	3	15	0.70	1.54	0.490	100	103	4.17
7	3/18/79	4	15	0.36	1.51	0.354	101	151	2.36
7	3/18/79	5	15	0.08	1.43	0.176	106	261	10.95
7	3/18/79	6	15	0.18	1.86	0.200	90	256	10.03
7	3/18/79	7	15	0.10	1.64	0.225	86	219	2.81
7	3/18/79	8	15	0.16	2.01	0.205	115	232	2.23
7	3/18/79	15	10	0.54	1.18	0.534	123	245	3.04
7	3/18/79	16	43	1.24	1.21	1.069	129	418	11.07
7	3/18/79	18	15	0.96	3.45	0.848	173	348	8.35
7	3/18/79	19	15	1.22	3.06	1.019	157	330	5.96
7	3/18/79	20	15	1.25	1.94	1.178	139	239	13.00
7	3/18/79	21	15	1.22	1.98	1.253	150	223	7.83
7	3/18/79	22	15	1.13	3.52	1.226	169	232	10.86
7	3/18/79	23	15	1.28	3.58	1.244	178	227	13.64
7	3/19/79	0	15	1.35	3.34	1.253	171	220	15.06
7	3/19/79	1	15	1.17	3.74	1.185	167	211	20.05
7	3/19/79	2	15	1.30	3.11	1.084	180	215	15.09
7	3/19/79	3	15	1.20	3.13	1.263	190	211	9.33
7	3/19/79	4	15	1.10	2.73	1.276	173	216	9.24
7	3/19/79	5	15	1.19	2.85	1.210	187	219	14.34
7	3/19/79	15	28	1.47	5.38	1.722	235	238	16.76
7	3/19/79	15	40	1.13	5.20	1.281	123	187	13.60
7	3/19/79	18	40	1.36	6.18	1.610	171	190	22.15
7	3/19/79	21	40	1.07	6.77	1.500	201	208	18.55
7	3/20/79	0	40	1.37	7.23	1.457	207	209	20.12
7	3/20/79	3	40	0.76	7.71	1.054	231	235	19.51
7	3/20/79	6	40	0.96	7.50	1.178	238	286	23.67
7	3/20/79	9	40	0.89	7.42	1.250	227	290	23.04
7	3/20/79	13	10	1.24	8.27	1.498	226	287	28.79
7	3/23/79	3	50	0.92	7.49	0.505	232	328	10.67
7	3/23/79	4	50	1.13	7.59	0.406	190	287	10.93
7	3/23/79	5	50	0.41	7.15	0.422	195	286	12.40
7	3/23/79	6	50	0.46	9.68	0.826	217	288	19.07
7	3/23/79	7	50	0.77	7.46	0.601	212	291	14.58

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
7	3/28/79	15	45	0.32	4.07	0.315	117	300	4.67
7	3/28/79	18	22	0.25	3.74	0.274	92	190	4.92
7	3/29/79	0	16	0.57	4.78	0.713	101	142	11.19
7	3/29/79	5	25	0.80	5.49	0.908	136	178	12.49
7	3/29/79	10	18	0.28	4.92	0.301	104	847	5.77
7	3/29/79	11	30	0.55	4.65	0.524	132	509	10.87
7	3/29/79	12	42	0.65	5.00	0.610	138	489	20.01
7	3/29/79	13	36	0.83	5.24	0.951	157	694	26.35
7	3/29/79	14	40	0.81	4.75	0.658	164	606	10.45
7	3/29/79	14	55	1.00	5.73	1.224	162	548	14.02
7	3/29/79	15	40	0.62	5.27	0.857	158	418	22.66
7	3/29/79	16	40	0.94	6.76	0.636	194	274	18.29
7	3/29/79	16	54	0.86	5.73	1.011	185	268	24.61
7	3/29/79	17	40	0.48	7.45	0.439	263	316	11.74
7	3/29/79	18	5	0.97	5.87	0.925	194	346	13.09
7	3/29/79	18	40	0.68	7.44	0.564	268	311	17.10
7	3/29/79	19	40	0.48	6.86	0.573	224	292	11.48
7	3/29/79	20	40	0.62	7.06	0.531	237	280	12.73
7	3/29/79	21	40	0.72	7.29	0.636	230	271	20.37
7	3/29/79	22	40	0.73	7.19	0.656	232	270	16.63
7	3/30/79	0	10	0.79	7.42	0.658	234	283	15.52
7	3/30/79	2	10	0.63	7.53	0.746	241	282	24.58
7	3/30/79	5	40	0.53	8.13	0.573	280	281	17.44
7	3/30/79	8	40	0.37	8.96	0.549	315	336	25.95
7	4/20/79	19	15	0.29	8.17	1.197	231	407	29.11
7	4/24/79	11	41	0.0	7.80	1.134	467	482	32.62
7	6/12/79	19	27	0.52	3.81	0.680	137	5583	3.73
7	6/12/79	20	3	0.43	3.51	0.678	82	2990	9.45
7	6/12/79	21	21	0.41	5.05	0.678	139	1391	5.97
7	6/13/79	0	30	0.43	10.07	0.680	221	636	10.23
7	6/19/79	22	27	0.08	1.87	0.134	48	9063	3.62
7	6/19/79	22	57	0.09	1.14	0.144	28	8159	1.46
7	6/19/79	23	27	0.08	1.35	0.148	30	6382	1.96
7	6/19/79	23	57	0.10	1.60	0.165	33	5080	3.63
7	6/27/79	1	0	0.41	1.68	0.764	54	3159	3.27
7	6/27/79	2	10	0.41	1.56	0.754	69	2389	2.94
7	6/27/79	2	30	0.44	1.51	0.767	68	1996	2.78
7	6/27/79	2	50	0.45	1.56	0.775	83	1657	2.47
7	6/27/79	3	20	0.44	1.69	0.749	63	1228	2.21
7	6/27/79	3	50	0.44	2.25	0.777	74	1196	2.86
7	6/27/79	4	20	0.49	2.84	0.803	107	1088	3.23
7	6/27/79	5	0	0.50	3.21	0.803	133	975	4.64
7	7/ 3/79	9	0	0.09	1.52	0.124	62	9642	0.99
7	7/ 3/79	9	30	0.13	1.81	0.233	35	6509	2.83
7	7/ 3/79	10	0	0.02	0.99	0.085	90	12350	0.75
7	7/ 3/79	10	30	0.05	0.93	0.173	33	7345	1.61
7	7/ 3/79	10	44	0.26	1.26	0.847	0	4037	4.26
7	7/ 3/79	10	53	0.52	1.43	1.049	28	2773	4.47
7	7/ 3/79	11	16	0.18	1.19	0.704	11	3178	1.99
7	7/ 3/79	11	50	0.14	1.20	0.581	6	2524	2.31
7	7/ 3/79	15	1	0.26	5.55	0.742	149	576	5.83

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				ppm					
7	7/ 3/79	21	10	0.24	10.11	0.503	319	791	11.07
7	7/ 3/79	21	50	0.20	8.45	0.423	304	803	10.82
7	7/ 3/79	22	30	0.19	7.47	0.311	237	1057	9.69
7	7/14/79	1	7	0.05	1.18	0.110	66	12460	1.61
7	7/14/79	1	27	0.07	0.97	0.083	37	14610	0.79
7	7/14/79	2	11	0.10	1.17	0.257	48	6573	2.14
7	7/14/79	2	31	0.27	1.16	0.668	48	4286	3.13
7	7/14/79	2	48	0.27	1.11	0.718	50	3046	2.62
7	7/14/79	3	20	0.33	1.33	0.814	68	1692	2.88
7	7/14/79	3	48	0.36	1.54	1.207	84	1451	4.39
7	8/19/79	7	18	0.02	0.60	0.334	25	994	0.84
7	8/19/79	22	56	0.05	2.18	0.364	149	1347	6.15
7	8/21/79	19	13	0.08	0.53	0.287	336	2572	2.03
7	8/21/79	19	43	0.09	0.66	0.242	40	854	1.61
7	8/21/79	20	33	0.03	1.35	0.354	101	599	5.46
7	10/23/79	14	50	0.06	12.95	1.211	396	413	21.31
7	10/23/79	18	50	0.07	13.50	1.238	408	441	22.96

TABLE F2- 8. FOUR MILE CREEK WATERSHED RUNOFF NUTRIENT CONCENTRATION DATA FOR 1979 SITE 8

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
8	3/16/79	14	20	0.30	0.81	0.259	76	151	2.54
8	3/16/79	15	25	0.20	1.02	0.196	89	141	20.67
8	3/16/79	16	20	0.37	0.76	0.180	78	140	5.13
8	3/16/79	17	38	0.15	0.60	0.162	63	128	14.43
8	3/16/79	19	31	0.26	1.47	0.143	94	115	4.43
8	3/17/79	10	20	0.23	1.65	0.252	108	116	6.43
8	3/17/79	11	28	0.13	1.71	0.256	99	125	13.28
8	3/17/79	13	57	0.16	1.02	0.221	87	266	7.62
8	3/17/79	14	15	0.25	1.39	0.271	119	156	4.09
8	3/17/79	15	15	0.22	1.18	0.323	100	132	14.71
8	3/17/79	16	15	0.45	1.12	0.590	110	136	17.32
8	3/17/79	19	15	0.23	1.50	0.441	102	135	10.25
8	3/17/79	20	15	0.32	1.52	0.385	100	131	4.94
8	3/17/79	21	15	0.19	1.76	0.383	92	135	17.15
8	3/17/79	22	15	0.26	1.50	0.372	95	151	5.95
8	3/17/79	23	15	0.25	1.65	0.349	94	130	14.82
8	3/18/79	0	15	0.31	1.56	0.329	75	139	13.67
8	3/18/79	1	15	0.29	1.65	0.334	50	125	7.85
8	3/18/79	2	15	0.20	1.76	0.416	110	132	9.80
8	3/18/79	3	15	0.39	1.69	0.334	112	259	15.25
8	3/18/79	4	15	0.23	1.81	0.377	110	220	6.95
8	3/18/79	5	15	0.28	2.19	0.463	114	223	6.44
8	3/18/79	6	15	0.35	2.20	0.434	123	187	6.64
8	3/18/79	7	15	0.37	0.69	0.414	101	170	8.78
8	3/18/79	8	15	0.33	1.95	0.394	110	175	12.90
8	3/18/79	9	15	0.22	2.10	0.372	59	154	13.92
8	3/18/79	10	15	0.38	1.72	0.427	84	189	12.16
8	3/18/79	11	15	0.48	0.66	0.385	77	260	6.25
8	3/18/79	12	15	0.40	1.70	0.467	63	354	10.95
8	3/18/79	13	15	0.44	1.55	0.487	69	321	5.33
8	3/18/79	15	0	0.31	1.56	0.399	35	286	6.54
8	3/18/79	16	55	0.27	1.55	0.401	69	398	6.64
8	3/18/79	17	20	0.96		0.500	104	353	10.58
8	3/18/79	18	20	0.34	1.37	0.434	97	334	7.17
8	3/18/79	19	20	0.59	0.65	0.425	53	319	11.77
8	3/18/79	20	20	0.33	1.22	0.404	27	292	5.78
8	3/18/79	21	20	0.35	0.92	0.372	25	251	5.50
8	3/18/79	22	20	0.31	1.50	0.347	6	217	4.05
8	3/19/79	1	50	0.50	1.45	0.386	34	214	11.38
8	3/19/79	3	50	0.50	1.62	0.349	41	175	15.52
8	3/19/79	5	50	0.42	1.58	0.386	42	98	8.80
8	3/19/79	8	20	0.40	1.92	0.372	60	100	16.48
8	3/19/79	9	50	0.34	2.21	0.360	57	79	8.25
8	3/19/79	11	50	0.41	2.25	0.352	56	85	18.01
8	3/19/79	13	50	0.36	2.13	0.354	94	97	9.80
8	3/19/79	15	20	0.21	2.90	0.360	85	123	8.48
8	3/19/79	16	50	0.23	2.85	0.344	116	150	10.21
8	3/19/79	18	50	0.22	3.50	0.331	131	162	10.72
8	3/19/79	20	50	0.17	3.89	0.280	157	174	12.65
8	3/19/79	22	50	0.17	4.99	0.246	171	202	13.15
8	3/19/79	23	50	0.32	1.57	0.356	28	125	5.41
8	3/23/79	5	7	0.22	3.89	0.271	91	115	16.69

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
8	3/23/79	7	50	0.40	4.13	0.349	89	127	15.28
8	3/28/79	13	25	0.10	3.33	0.157	135	189	9.55
8	3/28/79	15	4	0.07	3.03	0.207	121	208	8.65
8	3/28/79	15	30	0.07	2.96	0.207	109	232	12.40
8	3/28/79	17	57	0.18	6.49	0.136	195	208	11.57
8	3/28/79	23	46	0.12	8.98	0.011	270	275	14.81
8	3/29/79	4	38	0.05	9.69	0.010	263	298	15.13
8	3/29/79	9	6	0.22	5.01	0.202	141	372	16.57
8	3/29/79	11	36	0.20	5.22	0.230	131	289	10.50
8	3/29/79	12	30	0.24	5.44	0.263	160	260	11.16
8	3/29/79	13	50	0.21	4.46	0.176	119	480	8.18
8	3/29/79	14	42	0.23	5.23	0.265	141	357	16.10
8	3/29/79	16	30	0.23	5.29	0.255	151	247	10.45
8	3/29/79	18	30	0.31	5.95	0.344	172	248	7.80
8	3/29/79	20	37	0.19	4.98	0.272	131	1576	9.20
8	3/29/79	21	0	0.17	5.61	0.393	138	1433	10.39
8	3/29/79	21	40	0.17	5.53	0.410	147	569	11.45
8	3/29/79	22	5	0.18	5.58	0.402	143	400	10.28
8	3/29/79	22	45	0.19	5.25	0.347	149	248	10.16
8	3/30/79	0	0	0.28	5.21	0.344	162	256	11.89
8	3/30/79	8	10	0.12	5.68	0.241	170	206	11.74
8	3/30/79	9	35	0.11	6.04	0.233	188	212	13.25
8	4/20/79	13	17	0.23	2.85	0.476	173	720	22.21
8	4/20/79	13	49	0.31	2.67	0.484	154	696	14.65
8	4/20/79	14	23	0.46	4.07	0.139	199	858	22.21
8	4/20/79	15	4	0.21	4.84	0.738	182	622	29.11
8	4/20/79	18	14	0.17	9.81	0.504	302	366	42.87
8	6/ 4/79	20	57	0.04	4.52	0.493	168	1457	4.78
8	6/ 9/79	11	56	0.04	15.98	0.101	324	407	19.59
8	6/12/79	18	20	0.35	3.93	0.220	140	32740	1.52
8	6/12/79	18	30	0.23	2.39	0.442	165	31660	2.24
8	6/12/79	18	35	0.25	1.60	0.315	150	31700	2.76
8	6/12/79	18	40	0.26	2.36	0.593	126	24360	3.15
8	6/12/79	18	45	0.26	2.48	1.022	117	25750	3.27
8	6/12/79	18	50	0.27	2.68	1.289	159	22040	3.95
8	6/12/79	18	55	0.25	2.83	1.099	80	19410	3.65
8	6/12/79	19	0	0.24	2.98	1.001	158	15960	3.72
8	6/12/79	19	5	0.25	3.10	0.969	126	15130	3.72
8	6/12/79	19	10	0.25	3.22	0.961	141	13630	3.72
8	6/12/79	19	20	0.24	3.39	0.887	147	11800	4.02
8	6/12/79	19	30	0.21	4.21	0.896	158	7463	4.70
8	6/12/79	19	45	0.23	3.80	0.753	142	5692	4.32
8	6/12/79	20	0	0.21	3.90	0.799	69	5350	4.10
8	6/12/79	20	15	0.22	4.52	0.642	90	4531	4.62
8	6/12/79	20	30	0.22	5.92	0.573	67	3719	5.77
8	6/12/79	20	45	0.23	6.55	0.540	106	3009	6.31
8	6/12/79	21	0	0.22	7.11	0.493	126	3593	7.09
8	6/19/79	22	45	0.16	2.85	0.142	35	10120	3.00
8	6/19/79	23	0	0.15	2.76	0.148	22	10820	1.44
8	6/19/79	23	15	0.13	2.32	0.192	10	7704	1.38
8	6/19/79	23	30	0.12	2.27	0.096	27	5380	1.33

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				----------PPM----------					
8	6/20/79	0	0	0.10	2.47	0.102	20	4323	1.70
8	6/20/79	0	15	0.10	2.58	0.108	36	3592	1.79
8	6/27/79	0	30	0.18	3.49	0.125	108	51180	2.13
8	6/27/79	0	40	0.10	2.14	0.153	79	22690	0.99
8	6/27/79	0	50	0.08	3.11	0.192	86	20090	1.46
8	6/27/79	1	0	0.10	3.72	0.154	107	20670	1.86
8	6/27/79	1	10	0.09	3.54	0.210	76	15810	1.87
8	6/27/79	1	20	0.06	3.17	0.401	92	9867	2.47
8	6/27/79	1	30	0.06	2.86	0.424	78	8817	3.06
8	6/27/79	1	40	0.08	2.66	0.439	80	7301	3.09
8	6/27/79	1	50	0.07	2.96	0.421	72	5623	3.38
8	6/27/79	2	5	0.07	3.19	0.399	89	4344	3.52
8	6/27/79	2	20	0.07	3.22	0.375	84	2803	4.16
8	6/27/79	2	35	0.07	3.47	0.366	72	2452	4.64
8	7/ 3/79	0	9	0.09	2.70	0.259	191	756	4.50
8	7/ 3/79	8	15	0.19	2.22	0.166	147	13690	0.93
8	7/ 3/79	8	30	0.13	2.15	0.216	131	10940	0.97
8	7/ 3/79	8	45	0.10	1.86	0.328	132	11300	1.19
8	7/ 3/79	8	55	0.24	1.55	0.173	74	28160	0.93
8	7/ 3/79	9	5	0.17	1.72	0.141	0	26890	0.83
8	7/ 3/79	9	15	0.10	1.90	0.244	54	19580	1.19
8	7/ 3/79	9	25	0.34	0.75	0.220	26	35080	1.21
8	7/ 3/79	9	35	0.09	1.76	0.106	40	34660	0.95
8	7/ 3/79	9	40	0.44	0.0	0.067	253	46160	0.97
8	7/ 3/79	9	45	0.13	1.59	0.084	271	21080	1.02
8	7/ 3/79	9	50	0.12	1.62	0.093	56	13900	2.57
8	7/ 3/79	9	55	0.10	2.16	0.097	58	13870	0.87
8	7/ 3/79	10	0	0.04	1.62	0.184	331	29000	0.71
8	7/ 3/79	10	5	0.02	1.41	0.188	38	15480	0.89
8	7/ 3/79	10	10	0.06	1.74	0.250	16	18440	1.59
8	7/ 3/79	10	15	0.07	0.84	0.417	14	25080	1.11
8	7/ 3/79	10	20	0.10	1.07	0.475	26	18900	1.05
8	7/ 3/79	10	25	0.03	1.32	0.557	33	13990	1.11
8	7/ 3/79	10	35	0.02	1.27	0.583	26	8144	1.47
8	7/ 3/79	10	45	0.05	1.19	0.607	149	6545	1.79
8	7/ 3/79	10	55	0.07	1.44	0.412	168	4690	1.97
8	7/ 3/79	11	5	0.06	2.59	0.367	169	3316	2.89
8	7/ 3/79	12	2	0.08	3.37	0.250	231	1424	6.46
8	7/ 3/79	21	24	0.02	1.29	0.438	31	15930	0.91
8	7/ 3/79	21	54	0.06	2.23	0.313	49	6079	1.69
8	7/ 3/79	22	20	0.08	2.73	0.254	176	3591	2.35
8	7/ 3/79	22	56	0.08	3.19	0.294	268	1911	3.58
8	7/13/79	20	10	0.13	1.19	0.101	71	22480	0.73
8	7/13/79	20	20	0.23	1.01	0.092	115	40150	1.04
8	7/13/79	20	25	0.14	1.20	0.083	84	33070	0.93
8	7/13/79	20	30	0.11	0.93	0.091	72	21750	1.51
8	7/13/79	20	35	0.08	1.13	0.126	74	15210	0.99
8	7/13/79	20	40	0.10	1.26	0.210	71	12420	1.19
8	7/13/79	20	55	0.07	1.29	0.320	68	8459	1.28
8	7/13/79	21	10	0.04	1.08	0.354	73	6804	1.54
8	7/13/79	21	25	0.04	1.47	0.383	71	5467	14.52
8	7/14/79	0	55	0.09	0.38	0.085	76	31540	0.82

SITE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				----------PPM----------					
8	7/14/79	1	0	0.09	0.56	0.116	79	22650	0.56
8	7/14/79	1	5	0.09	0.62	0.152	68	21920	1.13
8	7/14/79	1	15	0.08	0.07	0.124	64	21600	0.71
8	7/14/79	1	20	0.11	0.22	0.125	91	23280	0.60
8	7/14/79	1	25	0.09	0.26	0.134	45	21950	0.67
8	7/14/79	1	30	0.02	0.0	0.128	59	19310	1.12
8	7/14/79	1	35	0.04	0.63	0.196	54	12650	0.59
8	7/14/79	1	40	0.02	0.41	0.192	56	9619	0.70
8	7/14/79	1	45	0.03	0.93	0.180	0	12960	0.63
8	7/14/79	1	50	0.01	0.53	0.140	43	13280	0.63
8	7/14/79	2	0	0.30	0.0	0.208	156	10480	1.69
8	7/14/79	2	5	0.02	0.45	0.415	25	11070	1.23
8	7/14/79	2	10	0.01	0.67	0.496	26	8382	1.13
8	7/14/79	2	15	0.03	0.73	0.460	29	7290	1.23
8	7/14/79	2	20	0.02	0.74	0.485	8	6386	1.26
8	7/14/79	2	25	0.01	0.74	0.485	22	5941	1.35
8	7/14/79	2	35	0.02	0.76	0.440	41	4658	1.84
8	7/14/79	2	45	0.08	1.02	0.196	70	18350	6.12
8	7/14/79	3	0	0.01	1.03	0.262	49	3516	2.43
8	7/14/79	3	15	0.05	1.16	0.271	198	2887	2.68
8	7/14/79	3	30	0.0	1.84	0.291	139	2929	10.85
8	8/19/79	7	6	0.0	0.84	0.122	18	3065	0.43
8	8/19/79	7	32	0.01	0.92	0.127	23	1997	0.43
8	8/19/79	8	4	0.01	0.90	0.186	3	987	0.54
8	8/19/79	21	55	0.05	0.87	0.090	41	4730	0.52
8	8/19/79	22	15	0.01	0.60	0.105	32	3250	0.43
8	8/19/79	22	54	0.01	0.53	0.132	17	3153	0.69
8	8/19/79	23	18	0.01	0.68	0.218	36	2217	1.67
8	8/19/79	23	36	0.02	0.53	0.209	31	2103	1.22
8	8/19/79	23	50	0.01	0.62	0.243	38	1775	1.87
8	8/20/79	0	1	0.03	0.54	0.252	43	1850	1.45
8	8/20/79	0	15	0.02	0.56	0.264	36	1080	1.38
8	8/20/79	0	29	0.03	0.57	0.286	51	809	1.97
8	8/20/79	1	7	0.0	0.59	0.344	65	644	3.06
8	8/20/79	1	27	0.03	0.86	0.411	118	455	4.25
8	8/21/79	19	0	0.18	0.61	0.101	24	4202	2.24
8	8/21/79	19	25	0.11	0.56	0.203	71	2492	1.01
8	8/21/79	19	37	0.08	0.47	0.188	52	3186	1.22
8	8/21/79	19	47	0.09	0.53	0.220	35	2568	1.42
8	8/21/79	20	0	0.08	0.56	0.246	28	1737	2.09
8	8/21/79	20	15	0.08	0.64	0.401	52	1482	2.07
8	8/21/79	20	43	0.12	0.86	0.427	56	843	4.51
8	8/21/79	21	5	0.0	0.69	0.486	69	606	9.10
8	11/21/79	19	20	0.19	2.85	0.240	37	416	5.21

TABLE F3- 1. FOUR MILE CREEK WATERSHED TILE NUTRIENT CONCENTRATION DATA FOR 1979

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
10	1/ 4/79	14	0	0.01	9.68	0.012	273	315	8.91
10	1/12/79	12	10	0.01	9.79	0.035	260	265	7.95
10	3/19/79	16	45	0.37	7.25	0.122	148	155	17.98
10	3/20/79	12	50	0.01	8.87	0.043	248	254	18.92
10	3/23/79	5	20	0.0	10.03	0.032	252	269	21.97
10	3/29/79	12	4	0.02	8.33	0.066	207	272	8.00
10	4/ 5/79	12	35	0.0	10.36	0.185	239	245	7.79
10	4/13/79	14	15	0.0	10.98	0.031	216	243	7.31
10	4/18/79	19	25	0.0	11.32	0.041	247	254	7.31
10	4/20/79	18	8	0.0	11.80	0.035	239	254	6.51
10	4/24/79	12	45	0.0	12.96	0.041	243	248	7.71
10	5/ 1/79	15	25	0.04	13.37	0.025	240	292	9.55
10	5/ 9/79	13	45	0.04	13.11	0.025	287	311	9.48
10	5/15/79	17	40	0.0	12.98	0.049	280	303	8.92
10	5/22/79	16	55	0.0	12.98	0.013	287	303	8.03
10	5/29/79	14	26	0.01	15.79	0.023	379	402	18.40
10	6/ 5/79	15	20	0.01	11.51	0.015	290	320	8.27
10	6/12/79	13	43	0.02	19.71	0.023	358	451	23.27
10	6/13/79	11	55	0.0	13.03	0.014	367	368	8.87
10	6/19/79	12	4	0.0	14.18	0.012	263	309	7.94
10	6/26/79	13	45	0.02	14.79	0.015	329	373	8.52
10	7/ 3/79	18	0	0.0	17.57	0.020	329	376	10.90
10	7/11/79	12	25	0.03	18.70	0.018	319	458	17.81
10	7/19/79	11	52	0.03	34.86	0.059	750	895	56.07
10	7/26/79	10	12	0.04	39.79	0.042	797	959	58.97
10	8/ 2/79	15	50	0.01	15.72	0.013	374	392	9.52
10	8/ 9/79	15	5	0.02	12.86	0.010	342	367	14.14
10	8/15/79	11	30	0.04	12.19	0.011	308	366	12.15
10	8/22/79	12	55	0.02	10.47	0.021	333	354	11.84
10	8/28/79	18	30	0.03	10.40	0.010	333	374	13.45
10	9/ 5/79	19	35	0.05	8.21	0.021	420	598	13.33
10	9/12/79	15	51	0.02	5.88	0.014	323	423	10.38
10	9/26/79	16	30	0.14	5.16	0.009	388	390	8.20
10	10/ 2/79	15	0	0.08	5.50	0.009	357	409	8.91
10	10/ 9/79	14	35	0.05	4.54	0.006	264	321	8.43
10	10/16/79	14	25	0.05	4.39	0.012	262	292	7.90
10	10/23/79	15	30	0.05	7.91	0.015	279	307	13.54
10	10/30/79	12	55	0.04	7.50	0.020	220	293	10.36
10	11/ 6/79	14	45	0.08	6.84	0.006	239	263	12.74
10	11/21/79	19	25	0.0	6.57	0.014	214	243	8.36
10	11/28/79	17	20	0.0	7.46	0.013	232	252	9.64
10	12/ 4/79	17	20	0.02	7.61	0.011	224	239	8.62
10	12/10/79	16	20	0.03	7.58	0.009	234	248	9.58
10	12/19/79	16	40	0.0	7.30	0.014	226	254	8.14
10	12/26/79	14	45	0.02	7.35	0.009	246	253	9.28

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				----------PPM----------					
11	1/ 4/79	13	15	0.05	11.60	0.026	263	274	17.11
11	1/12/79	12	20	0.01	11.47	0.041	264	291	9.06
11	1/18/79	13	15	0.0	11.27	0.002	162	258	12.40
11	1/31/79	13	0	0.0	9.72	0.006	215	264	7.85
11	2/13/79	12	15	0.0	9.81	0.008	92	276	7.64
11	2/23/79	13	30	0.0	9.34	0.003	252	256	10.03
11	3/ 2/79	15	50	0.0	10.16	0.013	269	299	10.03
11	3/ 5/79	14	35	0.0	8.80	0.040	265	348	14.45
11	3/ 6/79	13	35	0.0	7.92	0.022	263	418	9.13
11	3/12/79	12	40	0.0	9.84	0.035	289	309	13.66
11	3/16/79	14	15	0.02	7.54	0.122	239	269	18.18
11	3/18/79	11	20	0.06	6.04	0.060	134	200	10.49
11	3/20/79	11	6	0.08	10.00	0.061	219	230	14.19
11	3/23/79	5	12	0.0	9.66	0.043	226	228	13.03
11	3/28/79	13	15	0.01	10.69	0.026	256	275	10.23
11	4/ 5/79	12	40	0.0	11.86	0.062	258	254	10.95
11	4/13/79	14	0	0.0	11.78	0.040	220	246	10.06
11	4/18/79	19	20	0.0	12.38	0.048	218	253	10.87
11	4/20/79	18	18	0.0	13.62	0.033	246	252	11.36
11	4/24/79	12	33	0.0	13.49	0.028	261	303	12.18
11	5/ 1/79	15	10	0.01	13.46	0.026	261	285	13.03
11	5/ 9/79	13	3	0.0	13.70	0.023	141	304	13.19
11	5/15/79	17	50	0.0	12.49	0.021	276	285	11.77
11	5/22/79	16	15	0.0	12.14	0.022	270	294	11.36
11	5/29/79	14	46	0.02	11.59	0.027	275	311	13.41
11	6/ 5/79	15	40	0.03	11.78	0.026	274	288	11.60
11	6/ 9/79	11	25	0.01	12.32	0.026	235	297	10.03
11	6/12/79	13	17	0.0	12.06	0.020	246	287	9.78
11	6/13/79	11	42	0.0	13.77	0.026	373	384	10.69
11	6/19/79	12	26	0.0	12.95	0.024	274	302	9.99
11	6/26/79	13	35	0.01	12.97	0.023	252	324	10.63
11	7/ 3/79	18	10	0.02	16.15	0.027	356	447	12.16
11	7/11/79	11	6	0.03	12.08	0.019	277	325	20.52
11	7/19/79	11	50	0.02	13.99	0.021	309	365	12.07
11	7/26/79	9	9	0.0	13.08	0.027	358	381	12.05
11	8/ 2/79	15	20	0.0	12.84	0.028	350	366	11.95
11	8/ 9/79	14	15	0.03	11.92	0.030	278	350	16.66
11	8/15/79	11	15	0.02	11.34	0.025	319	352	16.32
11	8/22/79	11	50	0.02	9.65	0.031	309	343	14.57
11	8/28/79	18	30	0.04	10.46	0.031	332	362	13.64
11	9/ 5/79	19	10	0.01	10.44	0.052	334	380	17.84
11	9/12/79	15	0	0.03	10.32	0.028	333	374	18.58
11	9/19/79	15	20	0.08	11.34	0.029	361	410	13.37
11	9/26/79	16	20	0.05	10.49	0.027	359	387	11.36
11	10/ 2/79	13	10	0.06	9.57	0.025	362	366	14.72
11	10/ 9/79	15	45	0.05	9.15	0.019	258	283	12.51
11	10/16/79	16	0	0.05	9.41	0.029	274	284	12.48
11	10/23/79	15	40	0.06	8.40	0.027	252	289	15.12
11	10/30/79	12	45	0.03	9.61	0.020	233	268	14.96
11	11/ 6/79	15	15	0.04	8.87	0.010	234	270	14.44
11	11/21/79	19	20	0.16	6.14	0.044	201	308	15.10
11	11/28/79	17	10	0.03	8.99	0.019	202	239	14.05

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				----------PPM----------					
11	12/10/79	16	10	0.01	8.86	0.023	235	232	13.03
11	12/14/79	16	0	0.15	8.91	0.022	244	253	13.44
11	12/19/79	16	50	0.27	9.27	0.021	232	244	12.83
11	12/26/79	15	0	0.04	9.01	0.027	310	375	13.13

TABLE F3- 3. FOUR MILE CREEK WATERSHED TILE NUTRIENT CONCENTRATION DATA FOR 1979

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				ppm					
12	1/ 4/79	13	15	0.0	11.73	0.018	359	382	17.11
12	1/12/79	12	20	0.0	11.13	0.017	305	376	17.11
12	1/18/79	13	15	0.0	9.91	0.0	70	280	5.87
12	1/31/79	13	0	0.0	12.03	0.001	44	322	4.09
12	2/13/79	12	15	0.0	10.30	0.008	59	271	4.43
12	2/23/79	13	30	0.0	12.91	0.002	62	310	3.43
12	3/ 2/79	15	50	0.0	12.68	0.018	80	324	6.83
12	3/ 5/79	14	35	0.02	7.20	0.343	150	300	20.32
12	3/ 6/79	13	35	0.04	10.89	0.048	102	310	5.87
12	3/12/79	12	40	0.0	8.66	0.134	360	368	14.96
12	3/16/79	14	15	0.01	6.60	0.166	273	309	13.26
12	3/18/79	11	18	0.19	4.18	0.318	199	214	15.65
12	3/20/79	11	8	0.20	8.99	0.075	263	271	17.04
12	3/23/79	5	10	0.52	9.25	0.161	271	281	18.48
12	3/28/79	13	15	0.04	11.11	0.074	323	327	15.20
12	4/ 5/79	12	40	0.0	11.96	0.046	298	334	19.16
12	4/13/79	14	0	0.13	13.21	0.044	269	280	18.82
12	4/18/79	19	20	0.0	13.03	0.045	273	355	18.48
12	4/20/79	18	20	0.0	13.87	0.094	304	356	22.55
12	4/24/79	12	33	0.0	14.38	0.041	319	359	20.51
12	5/ 1/79	15	10	0.0	14.74	0.029	328	349	19.05
12	5/ 9/79	13	5	0.0	15.76	0.028	361	379	19.77
12	5/15/79	17	50	0.0	14.17	0.021	321	332	17.56
12	5/22/79	16	15	0.0	14.75	0.021	293	323	17.65
12	5/29/79	14	47	0.0	13.38	0.030	304	374	17.98
12	6/ 5/79	15	40	0.05	13.84	0.031	345	354	17.50
12	6/ 9/79	11	25	0.07	15.73	0.045	355	402	15.44
12	6/12/79	13	17	0.0	14.72	0.027	351	379	16.79
12	6/13/79	11	41	0.0	15.82	0.040	439	441	19.19
12	6/19/79	12	27	0.0	16.16	0.181	354	391	17.62
12	6/26/79	13	35	0.01	17.24	0.027	392	411	17.98
12	7/ 3/79	18	10	0.0	17.77	0.037	431	479	17.99
12	7/11/79	11	7	0.04	17.97	0.019	344	391	18.42
12	7/19/79	11	59	0.02	19.45	0.023	438	475	17.52
12	7/26/79	9	10	0.04	17.95	0.025	428	471	17.25
12	8/ 2/79	15	18	0.01	16.14	0.024	422	453	16.16
12	8/ 9/79	14	15	0.05	15.58	0.028	337	389	17.70
12	8/15/79	11	15	0.02	14.53	0.019	330	442	16.62
12	8/22/79	11	50	0.03	12.75	0.067	410	413	18.78
12	8/28/79	18	30	0.02	8.29	0.034	330	360	16.96
12	9/ 5/79	19	12	0.03	12.14	0.037	407	442	20.59
12	9/12/79	15	0	0.03	11.73	0.038	401	451	21.12
12	9/19/79	15	20	0.07	11.66	0.041	460	464	24.93
12	9/26/79	16	20	0.07	11.29	0.034	395	443	24.30
12	10/ 2/79	13	10	0.08	10.63	0.044	433	451	21.52
12	10/ 9/79	15	45	0.05	9.95	0.031	342	345	20.93
12	10/16/79	16	0	0.06	9.57	0.037	350	366	21.98
12	10/23/79	15	40	0.06	10.92	0.040	348	349	24.36
12	10/30/79	12	45	0.04	11.07	0.025	310	398	23.55
12	11/ 6/79	15	15	0.04	10.36	0.026	276	388	22.75
12	11/21/79	19	20	1.35	7.03	0.569	242	326	23.17
12	11/28/79	17	10	0.01	7.39	0.023	304	327	21.53
12	12/ 4/79	16	0	0.0	9.58	0.023	299	306	22.06
12	12/10/79	16	10	0.01	9.42	0.027	283	307	21.67
12	12/19/79	16	50	0.0	8.93	0.031	287	297	21.19
12	12/26/79	15	0	0.01	9.06	0.034	278	281	20.98

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
13	1/ 4/79	13	0	0.07	21.25	0.021	470	477	25.33
13	1/12/79	12	5	0.09	22.00	0.089	458	478	27.48
13	1/18/79	12	35	0.08	27.35	0.012	118	494	9.35
13	2/23/79	13	15	0.01		0.002	127	382	8.16
13	3/ 2/79	15	45	0.0	26.61	0.022	98	360	6.64
13	3/ 5/79	14	21	1.70	12.70	0.449	311	349	5.32
13	3/ 6/79	13	22	1.15	9.56	0.725	113	286	5.50
13	3/12/79	11	38	1.14		0.754	296	312	13.92
13	3/16/79	14	5	0.92	4.04	0.457	219	280	9.13
13	3/18/79	11	8	1.01	6.14	0.452	247	266	13.03
13	3/20/79	10	59	0.24	9.45	0.170	301	315	22.33
13	3/23/79	4	57	1.53	10.66	0.580	321	355	21.35
13	3/28/79	13	10	0.42	10.31	0.207	333	380	15.52
13	4/ 5/79	12	30	0.07	11.91	0.330	338	390	17.06
13	4/13/79	13	55	0.0	13.36	0.065	321	350	17.06
13	4/18/79	19	30	0.01	13.92	0.051	360	379	17.23
13	4/20/79	18	30	0.0	17.06	0.143	316	375	13.41
13	4/24/79	12	25	0.11	15.66	0.054	354	377	15.73
13	5/ 1/79	15	0	0.01	16.60	0.035	341	380	16.02
13	5/ 9/79	14	40	0.01	17.38	0.036	387	394	16.12
13	5/15/79	17	55	0.0	17.39	0.027	345	383	14.98
13	5/22/79	16	30	0.0	17.34	0.026	370	393	14.98
13	5/29/79	14	20	0.0	17.64	0.041	416	448	16.64
13	6/ 5/79	15	50	0.0	18.84	0.045	379	401	16.18
13	6/12/79	13	9	0.0	17.40	0.036	362	389	13.66
13	6/13/79	11	32	0.0	17.86	0.073	466	487	13.52
13	6/19/79	11	50	0.0	17.55	0.050	399	426	13.22
13	6/26/79	14	0	0.0	20.83	0.040	434	462	14.90
13	7/ 3/79	18	20	0.04	16.27	0.122	442	450	13.85
13	7/11/79	10	52	0.10	19.09	0.118	387	426	19.18
13	7/19/79	11	41	0.04	19.64	0.055	467	520	24.81
13	7/26/79	8	59	0.0	20.60	0.042	471	505	15.18
13	8/ 2/79	15	10	0.0	22.31	0.050	497	511	16.47
13	8/ 9/79	14	5	0.03	22.61	0.026	397	474	24.27
13	8/15/79	11	0	0.05	21.41	0.022	370	483	21.10
13	8/22/79	11	38	0.04	10.32	0.080	382	398	18.05
13	8/28/79	18	20	0.04	18.99	0.025	372	459	21.27
13	9/ 5/79	19	3	0.04	21.37	0.039	455	576	22.05
13	9/12/79	14	46	0.03	21.16	0.024	435	486	23.07
13	9/19/79	15	0	0.10	19.45	0.026	448	532	20.55
13	9/26/79	16	0	0.07	15.36	0.023	352	438	16.02
13	10/ 2/79	13	0	0.08	13.93	0.023	345	438	16.74
13	10/23/79	15	15	0.05	12.73	0.109	375	376	19.09
13	10/30/79	12	40	0.08	18.02	0.065	355	411	26.32
13	11/ 6/79	14	30	0.06	14.62	0.057	325	436	25.27
13	11/21/79	19	10	0.0	16.15	0.019	285	289	18.01
13	11/28/79	17	5	0.0	17.91	0.015	269	300	18.41
13	12/10/79	16	0	0.0	16.81	0.021	255	267	17.49
13	12/19/79	16	55	0.01	15.83	0.020	275	310	18.90
13	12/26/79	15	10	0.02	15.66	0.009	413	455	17.38

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					

TABLE F3- 5. FOUR MILE CREEK WATERSHED TILE NUTRIENT CONCENTRATION DATA FOR 1979

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
14	1/ 4/79	13	0	0.20	14.00	0.083	390	407	22.04
14	1/12/79	12	5	0.79	14.93	0.253	420	467	26.98
14	1/18/79	12	35	0.13	15.68	0.012	125	388	10.72
14	1/31/79	12	30	0.05		0.013	68	345	5.32
14	2/13/79	12	15	0.11	10.87	0.054	113	315	7.64
14	2/23/79	13	15	0.24	16.05	0.052	75	415	7.85
14	3/ 2/79	15	45	0.28	14.83	0.054	215	470	5.50
14	3/ 5/79	14	20	2.36	13.11	0.640	60	337	7.85
14	3/ 6/79	13	22	1.70	10.17	0.608	268	333	8.06
14	3/12/79	11	43	1.19	6.43	0.868	272	286	14.19
14	3/16/79	14	5	0.96	2.97	0.469	195	268	7.85
14	3/18/79	11	5	1.19	6.39	0.523	231	265	14.32
14	3/20/79	11	0	0.65	9.80	0.225	306	316	22.15
14	3/23/79	4	59	1.86	9.79	0.700	330	361	20.42
14	3/28/79	13	10	0.70	9.67	0.277	326	434	16.34
14	4/ 5/79	12	30	0.16	10.67	0.374	339	396	14.15
14	4/13/79	13	55	1.00	12.09	0.086	355	381	17.06
14	4/18/79	19	30	0.0	12.25	0.064	326	381	17.06
14	4/20/79	18	32	0.0	13.33	0.280	315	376	16.23
14	4/24/79	12	25	0.07	14.29	0.066	312	366	15.64
14	5/ 1/79	15	0	0.02	15.04	0.051	344	375	16.68
14	5/ 9/79	14	40	0.02	15.88	0.038	371	402	16.31
14	5/15/79	17	55	0.0	15.02	0.040	398	427	15.89
14	5/22/79	16	30	0.0	14.84	0.036	367	424	14.65
14	5/29/79	14	19	0.0	15.08	0.052	399	435	15.48
14	6/ 5/79	15	50	0.0	14.92	0.064	381	397	15.75
14	6/12/79	13	9	0.0	14.86	0.057	370	395	12.70
14	6/13/79	11	31	0.0	15.87	0.097	455	456	12.85
14	6/19/79	11	50	0.0	15.85	0.080	404	425	13.48
14	6/26/79	14	0	0.0	16.74	0.059	438	445	14.10
14	7/ 3/79	18	20	0.01	15.30	0.144	446	487	13.34
14	7/11/79	10	52	0.14	15.38	0.066	347	368	16.23
14	7/19/79	11	42	0.0	17.76	0.059	453	484	14.01
14	7/26/79	9	0	0.0	18.03	0.062	451	500	13.82
14	8/ 2/79	15	9	0.01	12.95	0.075	394	407	13.00
14	8/ 9/79	14	5	0.02	16.93	0.068	370	451	88.37
14	8/15/79	11	0	0.14	15.65	0.149	407	450	17.99
14	8/22/79	11	39	0.04	7.10	0.130	434	439	18.55
14	8/28/79	18	20	0.02	11.18	0.061	365	403	17.24
14	9/ 5/79	19	1	0.17	12.87	0.365	459	527	23.88
14	9/12/79	14	46	0.02	13.16	0.189	380	443	18.88
14	9/19/79	15	0	0.06	13.11	0.168	447	485	20.98
14	9/26/79	16	0	0.56	12.26	0.178	433	518	19.98
14	10/ 2/79	13	0	0.08	11.84	0.365	454	512	24.19
14	10/ 9/79	15	55	0.05	11.27	0.255	381	419	22.86
14	10/16/79	15	40	0.15	10.96	0.197	373	384	23.36
14	10/23/79	15	15	0.06	0.65	0.138	366	385	21.45
14	10/30/79	12	40	0.07	12.35	0.099	318	431	21.25
14	11/ 6/79	14	30	0.08	11.06	0.103	305	403	20.08
E14	11/28/79	17	5	0.0	10.84	0.027	338	345	18.76
W14	11/28/79	17	5	0.01	7.77	0.060	369	394	33.35
E14	12/ 4/79	17	0	0.0	6.16	0.035	368	392	19.01
W14	12/ 4/79	17	0	0.03	7.52	0.070	359	371	24.53
E14	12/10/79	16	0	0.01	9.15	0.045	382	423	19.14
W14	12/10/79	16	0	0.03	7.37	0.084	342	374	28.35
E14	12/19/79	16	55	0.23	4.55	0.308	381	393	18.93
W14	12/19/79	16	55	0.01	7.34	0.094	367	417	26.63
E14	12/26/79	15	10	0.54	11.01	0.184	409	426	
W14	12/26/79	15	10	0.60	7.22	0.161	307	518	

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
15	1/ 4/79	13	0	0.24	11.23	0.095	344	423	14.69
15	1/12/79	12	5	0.09	11.20	0.103	364	374	16.57
15	1/18/79	12	35	0.05	11.18	0.015	88	316	8.70
15	1/31/79	12	30	0.08	11.58	0.015	56	435	8.27
15	2/13/79	12	15	0.05	12.54	0.012	34	360	4.26
15	2/23/79	13	15	0.01	9.92	0.061	113	338	18.04
15	3/ 2/79	15	45	0.15	10.51	0.091	373	434	15.25
15	3/ 5/79	14	19	1.08	9.73	0.250	167	283	4.96
15	3/ 6/79	13	22	0.78	9.91	0.495	261	343	4.53
15	3/12/79	11	42	0.59	6.37	0.309	276	294	11.19
15	3/16/79	14	5	0.53	3.62	0.297	195	257	7.85
15	3/18/79	11	6	0.91	4.11	0.385	150	2157	7.34
15	3/20/79	11	0	0.19	8.84	0.123	280	296	16.06
15	3/23/79	4	58	1.51	8.96	0.448	296	337	20.73
15	3/28/79	13	10	1.57	7.12	0.676	370	608	18.62
15	4/ 5/79	12	30	0.27	9.92	0.198	306	363	15.89
15	4/13/79	13	55	0.0	11.15	0.087	287	343	18.91
15	4/18/79	19	30	0.06	11.18	0.083	287	334	19.16
15	4/20/79	18	34	0.0	13.06	0.153	265	340	14.24
15	4/24/79	12	25	0.0	13.22	0.070	281	333	13.49
15	5/ 1/79	15	0	0.05	13.31	0.058	289	341	16.68
15	5/ 9/79	14	40	0.01	14.00	0.040	330	346	14.51
15	5/15/79	17	55	0.0	13.34	0.047	326	354	11.36
15	5/22/79	16	30	0.0	12.00	0.039	318	365	12.51
15	5/29/79	14	19	0.08	12.15	0.067	346	384	15.89
15	6/ 5/79	15	50	0.0	11.76	0.060	310	406	14.54
15	6/12/79	13	9	0.02	9.97	0.051	301	307	11.05
15	6/13/79	11	31	0.0	13.04	0.090	406	413	12.26
15	6/19/79	11	49	0.01	11.82	0.071	334	342	11.23
15	6/26/79	14	0	0.01	12.80	0.057	352	356	9.86
15	7/ 3/79	18	20	0.03	13.62	0.118	360	397	12.18
15	7/11/79	10	51	0.15	13.65	0.102	315	339	16.23
15	7/19/79	11	42	0.02	13.32	0.093	382	426	13.71
15	7/26/79	9	1	0.05	13.36	0.086	387	396	13.41
15	8/ 2/79	15	9	0.19	13.07	0.169	426	434	36.38
15	8/ 9/79	14	5	0.11	12.24	0.120	361	393	24.27
15	8/15/79	11	0	0.06	12.24	0.127	341	373	25.45
15	8/22/79	11	39	0.03	9.09	0.158	382	405	16.57
15	8/28/79	18	20	0.04	8.31	0.105	332	357	18.67
15	9/ 5/79	19	0	0.05	8.64	0.124	398	484	23.88
15	9/12/79	14	46	0.15	8.01	0.251	397	425	39.58
15	9/19/79	15	0	0.20	8.35	0.161	433	478	51.47
15	9/26/79	16	0	0.10	6.58	0.159	350	404	26.71
15	10/ 2/79	13	0	0.18	6.05	0.172	401	405	37.53
15	10/ 9/79	15	55	0.06	5.15	0.125	356	373	37.02
15	10/16/79	15	40	0.06	5.06	0.138	341	382	36.06
15	10/23/79	15	15	0.06	8.90	0.184	309	329	20.14
15	10/30/79	12	40	0.06	10.48	0.078	281	367	32.41
15	11/ 6/79	14	30	0.06	9.08	0.085	269	384	32.41
15	11/21/79	19	10	0.56	10.28	0.411	314	327	20.53
15	11/28/79	17	5	0.0	12.53	0.048	300	312	15.40
15	12/ 4/79	17	0	0.03	12.58	0.053	287	300	15.44

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
15	12/10/79	16	0	0.0	11.43	0.066	279	278	14.47
15	12/19/79	16	55	0.0	10.30	0.058	252	255	14.47
15	12/26/79	15	10	0.0	9.74	0.057	357	363	14.26

TABLE F3- 7. FOUR MILE CREEK WATERSHED TILE NUTRIENT CONCENTRATION DATA FOR 1979

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
16	1/ 4/79	12	30	0.0	23.87	0.006	443	518	30.82
16	1/12/79	11	50	0.0	24.67	0.070	520	532	27.36
16	1/18/79	12	20	0.01	24.46	0.005	310	466	9.80
16	1/31/79	12	20	0.03	18.00	0.001	93	408	8.70
16	2/13/79	12	0	0.03	29.02	0.019	110	562	7.44
16	2/23/79	13	0	0.0	15.63	0.004	373	413	6.83
16	3/ 2/79	15	30	0.0	25.34	0.006	367	472	12.16
16	3/ 5/79	14	3	0.65	16.75	0.554	433	450	6.83
16	3/ 6/79	13	10	0.32	17.59	0.241	189	363	4.78
16	3/12/79	11	24	0.67	17.60	0.280	525	554	21.46
16	3/16/79	13	40	0.66	7.95	0.794	380	395	19.22
16	3/18/79	10	37	0.46	6.58	0.612	257	295	24.48
16	3/20/79	10	44	0.12	13.25	0.191	347	365	23.93
16	3/23/79	4	40	0.33	13.51	0.326	291	363	25.78
16	3/28/79	12	56	1.34	20.00	0.608	518	529	22.67
16	4/ 5/79	12	5	0.0	18.22	0.082	373	485	30.51
16	4/13/79	13	20	0.0	17.91	0.084	339	445	25.72
16	4/18/79	19	40	0.0	19.69	0.077	387	457	26.07
16	4/20/79	19	17	0.0	16.70	0.264	373	403	22.89
16	4/24/79	11	40	0.0	19.22	0.084	394	440	25.20
16	5/ 1/79	14	45	0.0	21.58	0.032	384	424	28.98
16	5/ 9/79	15	5	0.0	22.54	0.047	466	470	26.96
16	5/15/79	19	10	0.0	19.96	0.055	469	534	27.02
16	5/22/79	16	40	0.0	20.27	0.033	417	522	23.92
16	5/29/79	14	0	0.0	20.82	0.055	489	517	26.24
16	6/ 5/79	16	10	0.0	19.52	0.069	437	469	24.35
16	6/12/79	12	56	0.02	20.15	0.032	419	464	21.93
16	6/13/79	11	13	0.0	20.78	0.071	541	688	21.93
16	6/19/79	11	31	0.0	20.52	0.031	431	471	22.41
16	6/26/79	14	20	0.0	23.09	0.031	508	516	23.27
16	7/ 3/79	18	40	0.03	21.81	0.049	401	489	19.09
16	7/11/79	10	11	0.02	25.26	0.015	368	458	24.45
16	7/19/79	11	31	0.0	22.77	0.024	479	514	23.82
16	7/26/79	8	43	0.0	23.00	0.029	468	517	24.41
16	8/ 2/79	14	42	0.07	22.06	0.021	460	620	22.84
16	8/ 9/79	13	50	0.02	25.23	0.026	475	525	29.45
16	8/15/79	10	24	0.02	25.26	0.013	438	564	2.39
16	8/22/79	11	16	0.08	15.32	0.054	439	455	20.65
16	8/28/79	18	10	0.02	24.96	0.024	462	477	24.45
16	9/ 5/79	18	51	0.06	23.33	0.052	497	639	26.41
16	9/12/79	14	20	0.02	22.23	0.010	523	511	30.45
16	9/26/79	14	5	0.09	19.22	0.017	467	520	29.74
16	10/ 2/79	12	30	0.10	19.58	0.035	524	564	33.67
16	10/23/79	15	0	0.07	19.76	0.125	394	404	29.69
16	10/30/79	12	10	0.06	20.77	0.035	366	457	29.72
16	11/ 6/79	13	20	0.04	20.89	0.028	341	460	26.91
16	11/21/79	19	0	1.05	17.35	1.184	347	380	35.45
16	11/28/79	17	0	0.02	17.09	0.015	367	416	24.30
16	12/ 4/79	13	30	0.01	11.86	0.005	419	471	24.07
16	12/10/79	15	30	0.0	18.14	0.009	363	459	24.62
16	12/19/79	17	0	0.0	13.77	0.012	385	464	25.71
16	12/26/79	15	15	0.0	17.18	0.011	480	659	26.19

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
17	1/ 4/79	12	30	0.0	17.87	0.008	401	433	13.89
17	1/12/79	11	50	0.0	16.80	0.020	409	566	13.89
17	1/18/79	12	20	0.0	16.91	0.005	101	239	7.85
17	1/31/79	12	0	0.0	15.86	0.006	242	420	4.96
17	2/13/79	12	0	0.0	15.89	0.006	286	402	4.26
17	2/23/79	13	0	0.0	16.15	0.004	339	356	6.06
17	3/ 2/79	15	30	0.0	15.09	0.017	296	391	4.09
17	3/ 5/79	14	1	0.50	9.01	0.336	200	338	2.51
17	3/ 6/79	13	10	0.59	8.63	0.667	290	302	4.09
17	3/12/79	11	18	0.35	9.87	0.231	344	356	17.75
17	3/16/79	13	40	0.68	4.83	0.770	259	335	10.03
17	3/18/79	10	34	0.27	5.13	0.260	207	563	10.60
17	3/20/79	10	46	0.10	10.70	0.161	316	319	22.14
17	3/23/79	4	36	0.34	10.21	0.280	191	284	21.42
17	3/28/79	12	55	0.29	9.51	0.250	327	362	20.79
17	4/ 5/79	12	5	0.05	13.73	0.178	351	401	17.23
17	4/13/79	13	20	0.01	14.10	0.122	305	390	17.73
17	4/18/79	19	40	0.0	14.67	0.045	293	408	17.90
17	4/20/79	19	19	0.0	13.93	0.107	270	352	13.82
17	4/24/79	11	40	0.0	16.02	0.071	340	375	17.14
17	5/ 1/79	14	45	0.03	16.95	0.049	339	368	18.29
17	5/ 9/79	15	7	0.01	16.75	0.053	386	411	18.17
17	5/15/79	19	10	0.0	15.78	0.032	372	421	17.14
17	5/22/79	16	40	0.0	15.11	0.017	389	393	17.14
17	5/29/79	14	2	0.13	15.41	0.028	410	445	17.90
17	6/ 5/79	16	10	0.0	14.83	0.026	364	376	17.06
17	6/12/79	12	56	0.07	16.18	0.013	362	390	16.25
17	6/13/79	11	8	0.0	16.66	0.052	451	469	14.97
17	6/19/79	11	28	0.0	16.10	0.020	402	407	15.35
17	6/26/79	14	20	0.0	16.74	0.023	431	439	15.89
17	7/ 3/79	18	40	0.03	18.58	0.034	383	423	14.64
17	7/11/79	10	13	0.03	19.84	0.015	336	420	18.16
17	7/19/79	11	32	0.0	19.65	0.026	414	471	15.81
17	7/26/79	8	45	0.0	18.27	0.020	389	469	15.84
17	8/ 2/79	14	43	0.0	17.80	0.029	424	468	16.16
17	8/ 9/79	13	50	0.01	22.80	0.020	370	393	21.85
17	8/15/79	10	23	0.03	16.81	0.017	350	396	20.10
17	8/22/79	11	17	0.04	15.91	0.026	399	469	18.52
17	8/28/79	18	10	0.03	17.93	0.014	353	385	20.87
17	9/ 5/79	18	53	0.04	15.66	0.046	448	487	18.09
17	9/12/79	14	20	0.01	15.00	0.044	428	809	20.97
17	9/26/79	14	5	0.05	13.42	0.041	399	469	24.16
17	10/ 2/79	12	30	0.15	13.00	0.044	415	436	23.31
17	10/23/79	15	0	0.05	16.03	0.182	367	373	19.77
17	10/30/79	12	10	0.04	17.57	0.028	321	386	21.27
17	11/ 6/79	13	20	0.04	17.03	0.030	343	406	20.27
17	11/21/79	19	0	6.12	12.11	2.128	301	414	51.65
17	11/28/79	17	0	0.0	15.61	0.025	318	399	21.23
17	12/ 4/79	13	30	0.0	15.07	0.012	335	388	21.05
17	12/10/79	15	30	0.0	15.21	0.012	293	378	21.05
17	12/19/79	17	0	0.0	15.24	0.009	280	370	20.92
17	12/26/79	15	15	0.0	15.27	0.016	277	357	20.52

TABLE F3- 9. FOUR MILE CREEK WATERSHED TILE NUTRIENT CONCENTRATION DATA FOR 1979

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				PPM					
18	3/16/79	17	15	0.0	2.61	0.029	228	244	5.50
18	3/17/79	15	40	0.0	1.19	0.154	215	212	3.84
18	3/18/79	12	1	0.23	2.47	0.185	175	177	9.46
18	3/19/79	12	20	0.07	3.21	0.193	99	117	19.81
18	3/20/79	11	35	0.23	4.37	0.045	152	223	16.69
18	3/23/79	5	32	0.25	5.03	0.138	109	205	23.90
18	3/29/79	16	15	0.0	5.45	0.041	187	215	4.46
18	4/ 5/79	13	5	0.0	6.34	0.035	219	284	7.31
18	4/13/79	16	30	0.0	6.28	0.029	192	277	7.31
18	4/18/79	19	5	0.0	6.27	0.039	203	332	12.18
18	4/20/79	16	1	0.0	6.00	0.069	256	293	6.19
18	4/24/79	14	40	0.0	6.89	0.035	284	292	7.71
18	5/ 1/79	17	10	0.01	7.55	0.028	210	287	9.60
18	5/ 9/79	12	36	0.0	7.60	0.028	262	285	9.53
18	5/15/79	15	35	0.0	7.55	0.018	284	323	8.52
18	5/22/79	16	0	0.0	7.78	0.026	269	325	9.73
18	5/29/79	15	25	0.0	7.38	0.011	312	330	20.93
18	6/ 5/79	12	10	0.0	7.54	0.025	248	278	9.59
18	6/12/79	13	37	0.0	7.92	0.029	281	316	7.70
18	6/13/79	13	0	0.0	10.64	0.033	340	359	8.67
18	6/19/79	12	48	0.0	8.73	0.023	254	291	7.70
18	6/26/79	11	30	0.0	8.96	0.039	308	316	8.36
18	7/ 3/79	19	30	0.0	12.53	0.020	260	315	9.77
18	7/11/79	11	20	0.02	10.35	0.038	275	281	11.24
18	7/19/79	11	0	0.0	11.08	0.039	295	325	10.48
18	7/26/79	9	35	0.0	8.09	0.038	310	311	9.91
18	8/22/79	12	0	0.03	10.41	0.062	310	332	8.97
18	10/23/79	13	30	0.06	9.11	0.075	276	278	8.08

TILE	DATE	HOUR	MIN	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
				----------PPM----------					
19	3/16/79	16	53	0.0	6.41	0.044	324	328	14.98
19	3/17/79	15	45	0.0	4.09	0.097	271	274	11.67
19	3/18/79	12	15	0.10	4.17	0.350	221	242	9.46
19	3/19/79	12	0	0.02	3.21	0.184	146	149	19.22
19	3/20/79	11	30	0.0	7.42	0.020	291	314	12.78
19	3/23/79	5	28	0.0	7.55	0.032	209	450	11.09
19	3/28/79	13	30	0.0	8.74	0.060	360	353	12.90
19	4/ 5/79	12	56	0.27	9.79	0.074	297	372	17.48
19	4/13/79	16	24	0.0	9.96	0.026	239	353	11.44
19	4/18/79	19	1	0.0	9.84	0.022	234	367	11.57
19	4/20/79	16	7	0.0	9.11	0.073	359	362	11.77
19	4/24/79	14	20	0.0	9.73	0.131	380	386	12.26
19	5/ 1/79	19	0	0.02	9.33	0.069	289	329	14.79
19	5/ 9/79	12	0	0.0	9.35	0.016	330	346	13.59
19	5/15/79	15	30	0.0	8.44	0.011	311	386	13.53
19	5/22/79	14	20	0.0	9.10	0.008	300	360	13.00
19	5/29/79	15	20	0.0	9.13	0.013	337	342	11.77
19	6/ 5/79	12	0	0.0	8.22	0.013	285	340	10.94
19	6/12/79	13	21	0.03	8.18	0.010	269	342	10.63
19	6/13/79	12	56	0.0	9.13	0.055	347	407	11.18
19	6/19/79	12	36	0.0	8.37	0.005	305	354	10.63
19	6/26/79	11	22	0.0	8.96	0.013	376	390	10.71
19	7/ 3/79	19	30	0.0	9.25	0.0	303	399	13.14
19	7/11/79	11	35	0.04	9.66	0.012	323	428	14.84
19	7/19/79	11	10	0.0	9.36	0.011	377	428	13.05
19	7/26/79	9	18	0.0	8.90	0.019	368	434	12.55
19	8/ 2/79	15	30	0.0	8.16	0.011	339	416	12.47
19	8/ 9/79	14	25	0.03	6.84	0.012	294	427	15.84
19	8/15/79	11	30	0.02	7.44	0.016	349	353	17.91
19	8/22/79	10	18	0.02	7.36	0.011	370	462	17.95
19	8/28/79	17	45	0.02	7.47	0.013	343	351	18.24
19	9/ 5/79	19	58	0.05	5.88	0.030	403	464	18.60
19	10/23/79	13	0	0.05	8.22	0.020	397	398	17.25
19	10/30/79	17	35	0.04	8.14	0.026	276	382	17.96
19	11/ 6/79	16	10	0.12	8.61	0.026	302	383	19.49
19	11/28/79	13	50	0.01	8.66	0.007	286	359	17.88
19	12/ 4/79	16	30	0.01	8.41	0.015	277	366	17.88
19	12/10/79	14	0	0.0	8.16	0.015	276	336	17.48
19	12/19/79	16	45	0.0	8.16	0.019	281	330	17.48
19	12/26/79	14	50	0.0	7.97	0.011	270	334	17.48

TABLE F4- 1. FOUR MILE CREEK WATERSHED PRECIPITATION NUTRIENT CONCENTRATION DATA FOR 1979

GAGE	DATE	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
		PPM					
30	1/ 1/79	0.88	2.88				4.48
30	1/11/79	0.69	1.31	0.059			9.40
30	1/13/79	0.17	0.44	0.024	0	0	3.41
30	1/18/79	1.01	2.86				1.39
30	1/19/79	0.72	1.24	0.032	27	32	1.07
30	1/20/79	1.89	3.58				8.59
30	1/23/79	0.47	1.13	0.031	43	51	1.39
30	1/26/79	0.42	1.00	0.030	8	36	0.52
30	2/ 7/79	0.92	1.49	0.062	16	55	0.92
30	2/20/79	2.68	6.42	0.057	68	86	3.72
30	3/ 3/79	1.03	1.09	0.048	6	15	0.54
30	3/ 4/79	0.65	0.79	0.084	20	56	0.57
30	3/17/79	2.05	2.39	0.146			2.76
30	3/18/79	1.22	0.79	0.052	12	58	1.37
30	3/23/79	1.43	1.63	0.043			0.94
30	3/24/79	0.85	0.62	0.025	0	14	0.42
30	3/29/79	1.14	1.02	0.085	4	44	1.56
30	3/30/79	1.01	0.48	0.075	13	31	7.15
30	4/ 1/79	0.36	5.93	0.044			9.24
30	4/ 2/79	0.72	1.43	0.061	0	21	3.26
30	4/12/79	2.72	3.07	0.157			3.01
30	4/19/79	0.45	0.50	0.051			
30	4/20/79	0.44	0.48	0.173	0	16	5.65
30	4/25/79	0.57	0.36	0.077	0	16	2.40
30	5/ 2/79	0.38	0.34	0.016	0	0	0.34
30	5/ 8/79	1.42	1.21	0.035			0.72
30	5/11/79	0.95	0.61	0.026			0.10
30	5/26/79	0.90	0.86	0.025	24	29	0.12
30	5/29/79	1.45	0.90	0.019	27	32	0.10
30	6/ 4/79	1.96	0.94	0.026	0	5	1.65
30	6/12/79	0.61	0.33	0.026			0.32
30	7/ 3/79	0.26	0.16	0.002	7	20	0.07
30	7/14/79	0.50	0.51	0.036			0.36
30	8/19/79	0.32	0.39	0.026	7	50	0.01
30	8/21/79	0.32	0.30	0.016	2	15	4.29
30	8/28/79	0.11	0.46	0.174	23	25	4.35
30	9/ 5/79	0.09	0.03	0.007	3	7	6.83
30	9/24/79	0.20	0.61	0.0	68	70	1.05
30	10/ 1/79	0.09	0.04	0.002	66	93	1.34
30	10/22/79	0.07	0.01	0.013	0	3	
30	11/ 6/79	0.58	0.67	0.008	0	28	1.44
30	11/20/79	1.09	0.99	0.036			0.96
30	12/22/79	0.98	0.55	0.068			0.92

GAGE	DATE	NH4-N	NO3-N	PO4-P	TDS	TDS+SEDT	CL-
		PPM					

APPENDIX H

Pesticide Measurements

TABLE G1- 1. FOUR MILE CREEK WATERSHED HERBICIDE MEASUREMENTS IN VOLUME SOIL SAMPLES FOR 1979 SITE 1 -- CORN

SITE	DATE	LOC	SAMPLE WT. GM	H2O %	PROPACHLOR PPM	PROPACHLOR KG/HA	CYANAZINE PPM	CYANAZINE KG/HA	PARAQUAT PPM	PARAQUAT KG/HA
1	5/ 8/79	1	2060	13.9	5.81	2.83	6.54	3.19	0.0	0.0
1	5/ 8/79	2	2104	12.3	7.99	3.98	9.23	4.59	0.0	0.0
1	5/ 8/79	3	2163	16.3	3.38	1.73	4.54	2.32	0.0	0.0
1	5/ 8/79	3A	2340	15.8	4.34	2.40	5.32	2.94	0.0	0.0
1	5/ 8/79	4	1840	15.6	6.04	2.63	7.04	3.06	0.0	0.0
1	5/ 8/79	5	2238	17.3	3.93	2.08	4.81	2.55	0.0	0.0
1	5/ 8/79	6	2141	19.6	4.87	2.47	5.87	2.97	0.0	0.0
1	5/ 8/79	7	2343	17.9	3.24	1.80	4.13	2.29	0.0	0.0
1	5/ 8/79	8	2081	17.1	5.25	2.58	6.21	3.06	0.0	0.0
1	5/ 8/79	9	2063	19.1	4.91	2.39	5.89	2.87	0.0	0.0
1	5/ 8/79	10	2304	19.3	3.74	2.04	4.69	2.56	0.0	0.0
1	5/ 8/79	11	1976	16.7	7.12	3.33	8.51	3.98	0.0	0.0
	MEAN					2.52		3.03		0.0
	STANDARD DEVIATION					0.64		0.67		0.0
1	5/ 9/79	1	1547	10.8	6.70	2.45	8.08	2.96	0.0	0.0
1	5/ 9/79	2	1822	13.5	8.81	3.79	10.50	4.52	0.0	0.0
1	5/ 9/79	3	2163	12.6	3.64	1.86	4.56	2.33	0.0	0.0
1	5/ 9/79	4	1531	13.8	7.32	2.65	9.46	3.43	0.0	0.0
1	5/ 9/79	5	2123	15.7	3.42	1.72	4.98	2.50	0.0	0.0
1	5/ 9/79	6	1763	16.5	4.87	2.03	6.47	2.70	0.0	0.0
1	5/ 9/79	7	2064	15.9	2.60	1.27	3.61	1.76	0.0	0.0
1	5/ 9/79	8	1282	15.0	7.21	2.19	9.53	2.89	0.0	0.0
1	5/ 9/79	9	1693	15.0	6.60	2.64	8.48	3.39	0.0	0.0
1	5/ 9/79	10	1740	14.3	4.73	1.95	6.24	2.57	0.0	0.0
1	5/ 9/79	11	1670	15.1					0.0	0.0
1	5/ 9/79	11A	1932	15.8	5.83	2.66	7.98	3.65	0.0	0.0
	MEAN					2.29		2.97		0.0
	STANDARD DEVIATION					0.63		0.75		0.0
1	5/10/79	1	2195	17.2	3.06	1.59	3.99	2.07	0.0	0.0
1	5/10/79	2	2280	15.5	6.15	3.32	7.85	4.24	0.0	0.0
1	5/10/79	3	2406	16.1	2.80	1.59	4.12	2.35	0.0	0.0
1	5/10/79	4	2268	15.0	5.76	3.09	7.92	4.25	0.0	0.0
1	5/10/79	5	2995	15.7	2.41	1.70	3.89	2.76	0.0	0.0
1	5/10/79	5A	2885	14.6	3.50	2.39	4.49	3.06	0.0	0.0
1	5/10/79	6	2465	16.9	1.51	0.88	2.27	1.32	0.0	0.0
1	5/10/79	7	2430	17.6	1.34	0.77	2.81	1.61	0.0	0.0
1	5/10/79	8	2584	16.8	2.57	1.57	4.61	2.82	0.0	0.0
1	5/10/79	9	1728	18.2	4.61	1.88	6.37	2.60	0.0	0.0
1	5/10/79	10	2976	14.4	2.23	1.57	3.53	2.48	0.0	0.0
1	5/10/79	11	2939	19.2	3.96	2.75	6.20	4.31	0.0	0.0
	MEAN					1.92		2.82		0.0
	STANDARD DEVIATION					0.81		1.00		0.0

SITE	DATE	LOC	SAMPLE WT. GM	H2O %	PROPACHLOR PPM	PROPACHLOR KG/HA	CYANAZINE PPM	CYANAZINE KG/HA	PARAQUAT PPM	PARAQUAT KG/HA
1	5/11/79	1	3285	16.5	2.75	2.13	3.89	3.02	0.0	0.0
1	5/11/79	2	2922	17.9	3.19	2.20	4.75	3.28	0.0	0.0
1	5/11/79	3	2762	22.0	2.63	1.72	3.93	2.57	0.0	0.0
1	5/11/79	4	1981	22.6	4.90	2.30			0.0	0.0
1	5/11/79	5	2745	22.6	3.37	2.19	5.13	3.33	0.0	0.0
1	5/11/79	6	2803	25.3	2.82	1.87	4.35	2.89	0.0	0.0
1	5/11/79	6A	3090	24.2	2.65	1.94	3.96	2.89	0.0	0.0
1	5/11/79	7	2844	22.3	1.73	1.16	2.74	1.84	0.0	0.0
1	5/11/79	8	2585	23.9	2.32	1.42	3.88	2.37	0.0	0.0
1	5/11/79	9	2313	25.1	3.36	1.84	5.18	2.83	0.0	0.0
1	5/11/79	10	2227	23.5	3.27	1.72	5.05	2.66	0.0	0.0
1	5/11/79	11	2072	23.1	5.36	2.63	8.26	4.05	0.0	0.0
	MEAN					1.93		2.88		0.0
	STANDARD DEVIATION					0.40		0.57		0.0
1	5/13/79	1	2383	12.5	3.61	2.03	5.19	2.93	0.0	0.0
1	5/13/79	2	1932	13.3	4.20	1.92	6.04	2.76	0.0	0.0
1	5/13/79	3	2113	16.1	4.15	2.07	6.14	3.07	0.0	0.0
1	5/13/79	4	2286	17.0	3.98	2.15	5.97	3.23	0.0	0.0
1	5/13/79	5	2213	16.6	3.64	1.91	5.36	2.80	0.0	0.0
1	5/13/79	6	1880	20.2	3.13	1.39	5.44	2.42	0.0	0.0
1	5/13/79	7	2113	17.3	2.45	1.22	4.19	2.09	0.0	0.0
1	5/13/79	7A	1514	16.0	3.09	1.11	5.09	1.82	0.0	0.0
1	5/13/79	8	2079	18.1	3.58	1.76	5.66	2.78	0.0	0.0
1	5/13/79	9	1588	18.9	4.16	1.56	6.83	2.56	0.0	0.0
1	5/13/79	10	1863	14.3	3.18	1.40	5.16	2.27	0.0	0.0
1	5/13/79	11	1750	17.6	5.17	2.14	8.57	3.55	0.0	0.0
	MEAN					1.72		2.69		0.0
	STANDARD DEVIATION					0.37		0.49		0.0
1	5/15/79	1	3213	14.3	2.55	1.94	4.16	3.16	0.0	0.0
1	5/15/79	2	2731	13.2	2.83	1.83	5.35	3.46	0.0	0.0
1	5/15/79	3	2610	16.9	2.36	1.46	4.30	2.65	0.0	0.0
1	5/15/79	4	2324	19.5	3.06	1.68	5.53	3.04	0.0	0.0
1	5/15/79	5	2756	14.7			3.92	2.56	0.0	0.0
1	5/15/79	6	2860	19.5	2.68	1.81	5.21	3.53	0.0	0.0
1	5/15/79	7	2335	19.7		0.0	3.42	1.89	0.0	0.0
1	5/15/79	8	2716	18.7	5.01	3.22	3.24	2.08	0.0	0.0
1	5/15/79	8A	2963	18.6	6.50	4.55	2.97	2.08	0.0	0.0
1	5/15/79	9	2293	19.6			5.05	2.74	0.0	0.0
1	5/15/79	10	2415	18.4			4.34	2.48	0.0	0.0
1	5/15/79	11	2371	19.3			6.74	3.78	0.0	0.0
	MEAN					2.36		2.79		0.0
	STANDARD DEVIATION					1.12		0.61		0.0

SITE	DATE	LOC	SAMPLE WT, GM	H2O %	PROPACHLOR PPM	PROPACHLOR KG/HA	CYANAZINE PPM	CYANAZINE KG/HA	PARAQUAT PPM	PARAQUAT KG/HA
1	5/18/79	1	3259	13.0	2.39	1.84	3.89	2.99	0.0	0.0
1	5/18/79	2	1907	12.4	2.87	1.29	4.57	2.06	0.0	0.0
1	5/18/79	3	2569	18.2	1.91	1.16	3.41	2.07	0.0	0.0
1	5/18/79	4	2697	16.5	3.44	2.19	3.58	2.29	0.0	0.0
1	5/18/79	5	2564	17.6	2.96	1.80	4.98	3.02	0.0	0.0
1	5/18/79	6	2612	17.8	3.06	1.89	4.60	2.84	0.0	0.0
1	5/18/79	7	2553	16.4					0.0	0.0
1	5/18/79	8	2553	15.8	1.77	1.07			0.0	0.0
1	5/18/79	9	2707	18.1	2.24	1.44			0.0	0.0
1	5/18/79	9A	2866	15.6	2.18	1.47	4.42	3.00	0.0	0.0
1	5/18/79	10	2369	15.2	1.95	1.09	4.13	2.31	0.0	0.0
1	5/18/79	11	2523	16.5	2.69	1.60	5.12	3.05	0.0	0.0
	MEAN					1.53		2.63		0.0
	STANDARD DEVIATION					0.37		0.43		0.0

TABLE G1- 2. FOUR MILE CREEK WATERSHED HERBICIDE MEASUREMENTS IN VOLUME SOIL SAMPLES FOR 1979 SITE 2 -- SOYBEANS

SITE	DATE	LOC	SAMPLE WT, GM	H2O %	METRIBUZIN PPM	METRIBUZIN KG/HA	ALACHLOR PPM	ALACHLOR KG/HA	PARAQUAT PPM	PARAQUAT KG/HA
2	5/21/79	1	1721	13.3	1.90	0.77	6.02	2.45	0.0	0.0
2	5/21/79	1A	1599	12.3	1.90	0.72	6.37	2.41	0.0	0.0
2	5/21/79	2	2111	14.4	1.70	0.85	5.61	2.80	0.0	0.0
2	5/21/79	3	1423	15.2	1.43	0.48	6.59	2.22	0.0	0.0
2	5/21/79	4	1947	10.9	1.32	0.61	4.72	2.18	0.0	0.0
2	5/21/79	5	1815	14.5	1.29	0.55	5.12	2.20	0.0	0.0
2	5/21/79	6	2486	12.4	1.31	0.77	4.56	2.68	0.0	0.0
2	5/21/79	7	2125	16.4	1.19	0.60	3.89	1.95	0.0	0.0
2	5/21/79	8	1844	14.1	1.81	0.79	6.64	2.89	0.0	0.0
2	5/21/79	9	2125	11.0	1.22	0.61	4.25	2.14	0.0	0.0
2	5/21/79	10	2189	13.9	1.71	0.88	5.85	3.03	0.0	0.0
2	5/21/79	11	1642	10.6	2.07	0.80	7.46	2.89	0.0	0.0
	MEAN					0.70		2.49		0.0
	STANDARD DEVIATION					0.13		0.36		0.0
2	5/22/79	1	2021	11.5	1.17	0.56	4.19	2.00	0.0	0.0
2	5/22/79	2	1486	8.7	0.48	0.17	3.95	1.39	0.0	0.0
2	5/22/79	3	1367	9.6	1.84	0.60	7.30	2.36	0.0	0.0
2	5/22/79	4	1647	9.0	1.54	0.60	5.94	2.31	0.0	0.0
2	5/22/79	5	1935	13.8	1.63	0.74	6.61	3.02	0.0	0.0
2	5/22/79	6	2151	8.1	1.12	0.57	4.68	2.38	0.0	0.0
2	5/22/79	7	2514	17.6	0.95	0.57	3.46	2.05	0.0	0.0
2	5/22/79	8	1936	13.7	1.30	0.60	5.43	2.49	0.0	0.0
2	5/22/79	9	1608	9.9	1.36	0.52	5.60	2.13	0.0	0.0
2	5/22/79	10	1762	7.9	1.06	0.44	4.36	1.82	0.0	0.0
2	5/22/79	11	2648	12.6	1.06	0.66	4.19	2.62	0.0	0.0
2	5/22/79	11A	2012	9.9	1.21	0.58	5.01	2.38	0.0	0.0
	MEAN					0.55		2.25		0.0
	STANDARD DEVIATION					0.14		0.41		0.0
2	5/23/79	1	2413	11.7	1.11	0.64	3.85	2.20	0.0	0.0
2	5/23/79	2	2384	14.8	1.12	0.63	3.73	2.10	0.0	0.0
2	5/23/79	3	2315	13.1	1.36	0.74	4.75	2.60	0.0	0.0
2	5/23/79	3A	2522	16.1	1.18	0.71	4.35	2.59	0.0	0.0
2	5/23/79	4	2312	13.3	1.30	0.71	4.68	2.56	0.0	0.0
2	5/23/79	5	2577	15.7	1.12	0.68	3.77	2.30	0.0	0.0
2	5/23/79	6	2545	13.4	1.10	0.66	3.75	2.25	0.0	0.0
2	5/23/79	7	2534	16.4	0.87	0.52	3.35	2.01	0.0	0.0
2	5/23/79	8	2344	13.4	1.16	0.64	4.07	2.26	0.0	0.0
2	5/23/79	9	2670	13.1	0.87	0.55	3.52	2.22	0.0	0.0
2	5/23/79	10	2606	15.0	0.97	0.60	3.65	2.25	0.0	0.0
2	5/23/79	11	2748	16.3	0.98	0.64	3.54	2.30	0.0	0.0
	MEAN					0.64		2.30		0.0
	STANDARD DEVIATION					0.06		0.19		0.0

SITE	DATE	LOC	SAMPLE WT, GM	H2O %	METRIBUZIN PPM	METRIBUZIN KG/HA	ALACHLOR PPM	ALACHLOR KG/HA	PARAQUAT PPM	PARAQUAT KG/HA
2	5/25/79	1	1720	9.1					0.0	0.0
2	5/25/79	2	2241	10.1	1.08	0.57	3.52	1.87	0.0	0.0
2	5/25/79	3	2002	10.0	1.40	0.66	4.82	2.28	0.0	0.0
2	5/25/79	4	1606	10.9	1.57	0.60	5.58	2.12	0.0	0.0
2	5/25/79	4A	1807	12.9	1.57	0.67	5.39	2.30	0.0	0.0
2	5/25/79	5	1703	11.3	1.87	0.75			0.0	0.0
2	5/25/79	6	2017	11.9	1.17	0.56	4.00	1.91	0.0	0.0
2	5/25/79	7	1842	13.0	1.24	0.54	5.83	2.54	0.0	0.0
2	5/25/79	8	2119	13.1	1.05	0.53			0.0	0.0
2	5/25/79	9	1793	12.3	1.37	0.58	4.67	1.98	0.0	0.0
2	5/25/79	10	2570	16.7	1.08	0.66	3.17	1.93	0.0	0.0
2	5/25/79	11	1737	13.6	1.48	0.61	5.26	2.16	0.0	0.0
	MEAN					0.61		2.12		0.0
	STANDARD DEVIATION					0.07		0.22		0.0
2	5/27/79	1	2827	18.4	0.75	0.50	2.42	1.62	0.0	0.0
2	5/27/79	2	2494	13.1	0.77	0.46	2.80	1.65	0.0	0.0
2	5/27/79	3	2414	19.3	0.79	0.45	2.60	1.49	0.0	0.0
2	5/27/79	4	2175	16.2	1.17	0.60	4.30	2.21	0.0	0.0
2	5/27/79	5	2753	18.9	1.19	0.77	4.03	2.62	0.0	0.0
2	5/27/79	5A	2733	18.7	0.90	0.58	3.10	2.01	0.0	0.0
2	5/27/79	6	2858	13.1	0.84	0.57	3.06	2.07	0.0	0.0
2	5/27/79	7	2364	19.7	0.74	0.41	2.64	1.48	0.0	0.0
2	5/27/79	8	3042	18.1	0.83	0.59	2.71	1.95	0.0	0.0
2	5/27/79	9	2407	25.3	0.86	0.49	3.05	1.74	0.0	0.0
2	5/27/79	10	2511	14.8	0.68	0.40	2.50	1.48	0.0	0.0
2	5/27/79	11	2544	16.9	0.83	0.50	2.81	1.69	0.0	0.0
	MEAN					0.53		1.83		0.0
	STANDARD DEVIATION					0.10		0.35		0.0
2	5/30/79	1	2600	20.1	1.10	0.68	3.39	2.08	0.0	0.0
2	5/30/79	2	2595	17.3	1.17	0.72	4.03	2.47	0.0	0.0
2	5/30/79	3	2657	21.1	1.21	0.76	3.68	2.31	0.0	0.0
2	5/30/79	4	2417	20.1	1.28	0.73	4.20	2.40	0.0	0.0
2	5/30/79	5	3131	18.3	0.99	0.73	2.89	2.14	0.0	0.0
2	5/30/79	6	3029	17.1	0.88	0.63	3.05	2.19	0.0	0.0
2	5/30/79	6A	1381	15.1	0.83	0.27	2.95	0.97	0.0	0.0
2	5/30/79	7	2860	20.5	0.71	0.48	2.24	1.52	0.0	0.0
2	5/30/79	8	3005	19.9	0.93	0.66	2.87	2.04	0.0	0.0
2	5/30/79	9	2622	16.2	0.84	0.52	2.63	1.63	0.0	0.0
2	5/30/79	10	2266	27.3	0.84	0.45	2.97	1.59	0.0	0.0
2	5/30/79	11	3134	18.4	0.80	0.59	2.49	1.85	0.0	0.0
	MEAN					0.60		1.93		0.0
	STANDARD DEVIATION					0.15		0.44		0.0

SITE	DATE	LOC	SAMPLE WT, GM	H2O %	METRIBUZIN PPM	METRIBUZIN KG/HA	ALACHLOR PPM	ALACHLOR KG/HA	PARAQUAT PPM	PARAQUAT KG/HA
2	6/ 4/79	1	2937	18.4	0.61	0.43	1.96	1.36	0.0	0.0
2	6/ 4/79	2	2836	14.7	0.84	0.56	3.20	2.15	0.0	0.0
2	6/ 4/79	3	2590	15.8	0.58	0.35	1.91	1.17	0.0	0.0
2	6/ 4/79	4	2516	15.1	0.72	0.43	2.60	1.55	0.0	0.0
2	6/ 4/79	5	3114	15.7	0.81	0.60	2.71	1.99	0.0	0.0
2	6/ 4/79	6	2787	14.5	0.67	0.44	2.47	1.63	0.0	0.0
2	6/ 4/79	7	2976	18.8	0.48	0.34	1.64	1.16	0.0	0.0
2	6/ 4/79	7A	3158	16.8	0.40	0.30	1.46	1.09	0.0	0.0
2	6/ 4/79	8	2773	14.2	0.65	0.42	2.28	1.49	0.0	0.0
2	6/ 4/79	9	2688	13.2	0.59	0.37	2.20	1.40	0.0	0.0
2	6/ 4/79	10	3072	10.2	0.41	0.30	1.60	1.16	0.0	0.0
2	6/ 4/79	11	3162	15.5	0.54	0.40	1.86	1.39	0.0	0.0
MEAN						0.41		1.46		0.0
STANDARD DEVIATION						0.09		0.33		0.0

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