Newark

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Mr. Richard Winfield, Remedial Project Manager
E&R. R. Division Region II, USEPA
290 Broadway, 19th Floor
New York, NY 10007-1866

October 18, 2002

Ref: Diamond Alkali Superfund Site; Request for Information

Dear Mr. Winfield:

Please refer to your request for information regarding the above referenced project.

Enclosed here with are the following:

1. CSO Monitoring and Modeling Work Plan submitted to the NJDEP
2. As we have indicated to you during the previous discussions, the City has not completed its CSO Discharge Characterization Study required by the NJDEP Permit. At this time the modeling program is being reviewed by the NJDEP and will be provided to you upon their approval. You may want to contact Mr. Dan Zeppenfeld at the NJDEP to further discuss the status.
3. Copies of flow data for various CSO points throughout the system for the period from July 1998 to January 1999.

Further data and/or information will be sent to you as it becomes available and/or approved by the NJDEP. Please be informed that all the information provided to you is **confidential** in nature and shall not be disclosed to any other individual or agency for any other use. If you require additional information on this project, please contact me at 973-256-4965.

Very truly yours,

CITY OF NEWARK
WATER AND SEWER UTILITIES

Anthony DeBarros
Manager

eparequest for info 1.wpd

cc: Philip LiVecchi, Director, Dept. of Water and Sewer
Sanjeev Varghese, P.E., Supervising Engineer
Flavia Magalhaes, Senior Planner, Environmental
Ray Brown, Legal Counsel

QUALITY ASSURANCE PROJECT PLAN

Study I-G
Monitoring of Loadings from Selected Point Source Discharges

(Version 1.1)

for

New Jersey Department of Environmental Protection (NJDEP)

submitted to

Joel Pecchioli
P.O. Box 418, 401 E. State Street
Trenton, NJ 08625-0418

March 9, 2001
(Version 1.1)

prepared by

Great Lakes Environmental Center
739 Hasting St.
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863690002

QUALITY ASSURANCE PROJECT PLAN

Study I-G
Monitoring of Loadings from Selected Point Source Discharges

(Version 1.1)

APPROVALS

G.M. DeGraeve — Date
GLEC Principal Investigator

Dennis J McCauley — 5/19/01
Dennis McCauley — Date
GLEC Field Coordinator

Robin Silva-Wilkinson — Date
GLEC Analytical QA/QC Manager

Joel Pecchioli — Date
NJDEP Project Manager

Floyd Genicola — Date
NJDEP QA/QC Manager

QUALITY ASSURANCE PROJECT PLAN

1.0 PROJECT NAME

NEW JERSEY TOXICS REDUCTION WORK PLAN

Study I-G
Monitoring of Loadings from Selected Point Source Discharges

(Version 1.1)

2.0 PROJECT REQUEST BY

New Jersey Department of Environmental Protection (NJDEP)
Joel Pecchioli
P.O. Box 418, 401 E. State Street
Trenton, NJ 08625-0418

3.0 ANTICIPATED DATE OF PROJECT INITIATION

September, 2000

4.0 PRINCIPAL INVESTIGATOR/PROJECT MANAGER

G. M. (Mick) DeGraeve
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5.0 PROJECT QUALITY ASSURANCE OFFICERS

5.1 FIELD SAMPLING QA OFFICER

G.M. DeGraeve
Great Lakes Environmental Center

5.2 CHEMICAL ANALYSIS QA OFFICER

Robin A. Silva-Wilkinson
Great Lakes Environmental Center

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LIST OF STANDARD OPERATING PROCEDURES

SOP Number: GLEC CARP-002-01. POTW Wastewater Collection and Shipment

SOP Number: GLEC CARP-007-01. Sub-Sampling and Distribution of Large Wastewater Samples for Chemical Analysis

SOP Number: GLEC CARP-011-01. Field Sampling Plan for the NJDEP NJTRWP POTW/CSO/SWO Sample Collection (Study I-G)

SOP Number: GLEC CARP-012-01. Collection of Equipment Blank Samples

QUALITY ASSURANCE PROJECT PLAN
for
NEW JERSEY TOXICS REDUCTION WORK PLAN

Study I-G
Monitoring of Loadings from Selected Point Source Discharges

6.0 PROJECT DESCRIPTION

6.1 General Overview

Several million cubic yards of sediment are dredged each year from channels and berthing areas in the New York/New Jersey Harbor Estuary. The sediments are subject to contamination from nearly three billion gallons per day of point-source municipal and industrial wastewater dischargers, stormwater outfalls, combined sewer overflows, leakage from hazardous waste sites, and air deposition. Given the high costs of disposal of contaminated dredged material and the environmental concerns about the possible effects (i.e., degraded water and sediment quality), there is broad agreement among federal and state governments, environmental organizations, the Port Authority, scientists and the general public that a comprehensive plan is needed to reduce sediment contamination.

An approach for reducing sediment contamination was incorporated into the New York-New Jersey Harbor Estuary Program's Comprehensive Conservation and Management Plan (HEP CCMP, March 1996). The approach called for: 1) identifying the contaminants of concern, 2) delineating and quantifying the sources of contamination, and 3) implementing strategies to reduce or eliminate those contaminants from entering the estuary. The CCMP identified at least fifteen chemicals (or classes of chemicals) of concern, including polychlorinated biphenyls (PCBs), dioxins/furans, chlorinated pesticides, polycyclic aromatic hydrocarbons (PAHs), and metals.

Although much information is currently available regarding potential sources of the chemicals of concern and the levels of contamination in sediments and biota in NY-NJ Harbor, there are significant gaps in the existing data. For example, most of the current and past monitoring efforts have used analytical procedures with minimum detection limits greater than the concentrations of the contaminants of concern; thus, they are not routinely detected. But, large volume/very low concentration discharges could be significant sources of some of the chemicals of concern. Monitoring the potential point source discharges of municipal wastewater treatment plants (POTWs), combined sewer overflows (CSOs) and stormwater outfalls (SWOs) is the focus of this component (Study I-G) of the New Jersey Toxics Reduction Work Plan.

Funding has been provided to the New York Department of Environmental Conservation (NYDEC) and the New Jersey Department of Environmental Protection Program (NJDEP), for the development and implementation of The Contaminant Assessment and Reduction Program (CARP), of which the New

Jersey Toxics Reduction Work Plan is a component. The information that will be collected through this project is critical, both to a planned modeling effort designed (in part) to develop a sediment contaminant reduction management strategy, and to the identification of any point source reduction measures that could be implemented in the short-term without the modeling results. Without this information, a comprehensive sediment contamination reduction strategy can never be implemented.

The information that is collected in carrying out the CARP will lead to a prioritization of the various alternative management actions that could be implemented to eliminate/reduce the input of toxic chemicals to the NY-NJ Harbor and New York Bight. A phased approach has been developed in the New Jersey Toxics Reduction Work Plan. The first phase includes a series of the studies designed to: 1) identify sources of the chemicals of concern, and prioritize the sources for appropriate action (e.g., management, regulatory, track down or clean-up actions), and 2) identify selected contaminated sediments for future remediation and restoration activities.

This Quality Assurance Project Plan (QAPP) is for Study 1-G, an element of the first phase of the New Jersey Toxics Reduction Work Plan. It is designed to describe how the loadings of the chemicals of concern discharged from selected point sources will be monitored, including POTWs, CSOs and SWOs. The study results will be used to determine the significance of point source discharges of the selected chemicals of concern, will provide baseline information for those discharge areas, and will allow for prioritization of future contaminant track down efforts.

6.2 OBJECTIVES AND SCOPE OF WORK

In response to the needs of the CARP, the New Jersey Harbor Dischargers Group (NJHDG), a consortium of ten sewerage authorities discharging into the New York/New Jersey Harbor complex, has submitted a Work Plan to: (1) perform toxics monitoring to develop toxics loads data, and (2) conduct toxics track down investigations for the POTWs, CSOs and SWOs under the Group's collective jurisdiction. This QAPP addresses contaminant monitoring and development of loading data at NJHDG's POTWs, CSOs, and SWOs, which will provide major progress towards achieving a long-term reduction in the contamination of Harbor sediments.

Upon completion of the point source toxics monitoring studies, toxics loads will be developed based on measured or projected point source flows, and the point source discharges (and/or categories of point source discharges) which are responsible for contributing the largest loadings of contaminants to the Harbor will be identified. This information will be valuable for prioritizing the subsequent toxics track down investigations. The loadings data will be used in model development, which will allow the Port Authority and the states of New Jersey and New York to evaluate how various contaminant abatement strategies will affect future sediment contamination in the Harbor (specifically shipping lanes and berthing areas), and will allow the opportunity for resource managers to select the most cost effective contaminant reduction options.

Specifically, Study I-G will:

- provide measurements of the concentrations of contaminants (and related water quality and flow measurements) discharged from the selected municipal wastewater treatment facilities;

- provide measurements of the concentrations of contaminants (and related water quality and precipitation measurements) associated with discharges from selected CSOs and SWOs;
- provide the necessary contaminant data from point source discharges to allow investigations of the ultimate sources of contaminants of concern to the Harbor to proceed;
- provide baseline information that will be used in an evaluation of the effectiveness of actions taken to eliminate sources of the chemicals of concern within the service areas of the point source discharges;
- provide the basis for a long-term monitoring program for point source discharges to the Harbor.

Using the information collected in Study I-G (and Study II-A, if needed), track down activities within the service areas of identified "significant" point sources will be pursued in Study III-A.

Study I-G will be implemented by the NJHDG, which has jurisdiction over the POTWs and some of the CSOs which discharge to the NY-NJ Harbor estuary. The NJHDG also has working relationships with the municipalities who have responsibility for many of the CSOs and SWOs.

6.2.1 Rationale and Objectives

This QAPP has been prepared to present the approach to be used to conduct the toxics monitoring/loadings investigations for the POTWs, CSOs and SWOs under the collective jurisdiction of the 12 POTWs discharging to the Harbor complex (Passaic Valley Sewerage Commission, North Hudson Sewerage Authority, Edgewater Municipal Utility Authority, Joint Meeting of Essex and Union Counties, Linden Roselle Sewerage Authority, Middlesex County Utility Authority, North Bergen Municipal Utility Authority, Rahway Valley Sewerage Authority, Secaucus Municipal Utility Authority and Bergen County Utility Authority).

6.3 TECHNICAL APPROACH

6.3.1 Sampling Strategy

6.3.1.2 Design of the Sampling Program

This section presents the sampling strategy and the rationale for selecting the sampling locations. To the greatest extent possible (and where appropriate), sample collection activities for Study I-G will be coordinated with the other components of the CARP.

Sample locations for POTW outfalls will be fixed and remain unchanged during the course of the project. As data are gathered and as climatic and/or logistic considerations warrant, the sample locations for the combined sewer overflow and storm water outfall components may be revised. For example, sample locations for CSOs/SWOs will be changed if practical difficulties arise in sampling a selected location, after consultation with the NJDEP Project Manager. Also, as data are collected, the

target analytes and/or sample collection methods may be revised at the discretion of the GLEC Principal Investigator, after consultation with the NJDEP Project Manager. In particular, if a specific class of chemical (for example, dioxins/furans) is consistently absent in a particular POTW, CSO or SWO, future samples from that location(s) may not be analyzed for that class of chemical.

6.3.2 Sampling Locations

6.3.2.1 Sampling Strategy and Site Selection

The discharges from the twelve New Jersey municipal wastewater treatment facilities discharging to the NY-NJ Harbor will be monitored in Study I-G. The CSO and SWO sampling locations have been selected based on their use in earlier Harbor modeling studies and accessability, and as a result of an evaluation of land uses in their service areas; those areas with significant industrial land uses have been given preference.

The CSO/SWO sampling in Study I-G will consist of precipitation sampling events for the selected CSO/SWOs. To the greatest extent possible, these sampling events will be coordinated with the ambient surface water monitoring studies being conducted by the New Jersey Toxics Work Plan Team. The New Jersey office of the United States Geological Survey (USGS; principal investigator for Study I-C) will be responsible for identifying candidate high flow/wet weather sampling events for Study I-G.

To maximize data comparability, this study will utilize analytical protocols and QA/QC procedures consistent with those being used in the other components of the New Jersey and New York CARP investigations.

The toxics monitoring/loadings investigations for POTWs, CSOs and SWOs will be conducted under the collective jurisdiction of the sewerage authorities that are responsible for the POTWs discharging to the Harbor complex. Samples of the discharges from the following POTWs will be collected during the study:

1. Passaic Valley Sewerage Commission
2. North Hudson Sewerage Authority (Hoboken)
3. North Hudson Sewerage Authority (North Hudson)
4. Edgewater Municipal Utility Authority
5. Joint Meeting of Essex and Union Counties
6. Linden Roselle Sewerage Authority
7. Middlesex County Utility Authority
8. North Bergen Municipal Utility Authority (Central)
9. North Bergen Municipal Utility Authority (Woodcliff)
10. Rahway Valley Sewerage Authority
11. Secaucus Municipal Utility Authority
12. Bergen County Utility Authority

The earth coordinates (latitude and longitude), NPDES permit number, facility contacts, sampling locations, and other background information are provided in Tables 1a/b.

The selection of CSO/SWO monitoring sites was made in part by considering the types of industries and land uses in each of the CSO and SWO service areas, and eliminating from further consideration those CSO and SWO sampling locations which are least likely to be responsible for contributing meaningful loads of contaminants of concern. Consideration was also given to selecting CSO/SWO sampling sites that are representative of major drainage areas. The CSOs and SWOs which were sampled in 1997/1998 for the NJHDG's nickel/copper monitoring/modeling program were also included. Those CSOs and SWOs proved to be accessible and reliable sampling locations. The peripheral ditch which collects storm water from the Newark International Airport was also selected, as were four major interceptor points to three POTWs with combined systems. The CSO and SWO sampling sites are presented in Tables 2a/b and 3a/b, respectively. Figure 1 shows the relative location of the POTW, CSO and SWO sampling sites within the New Jersey portion of the watershed.

A summary of the sample collection activities for Study I-G is presented in Table 4. A summary of the quality control samples for study I-G is presented in Table 5.

Figure 1. Relative Location of POTW, CSO and SWO Sampling Sites for The New Jersey Toxics Reduction Program.

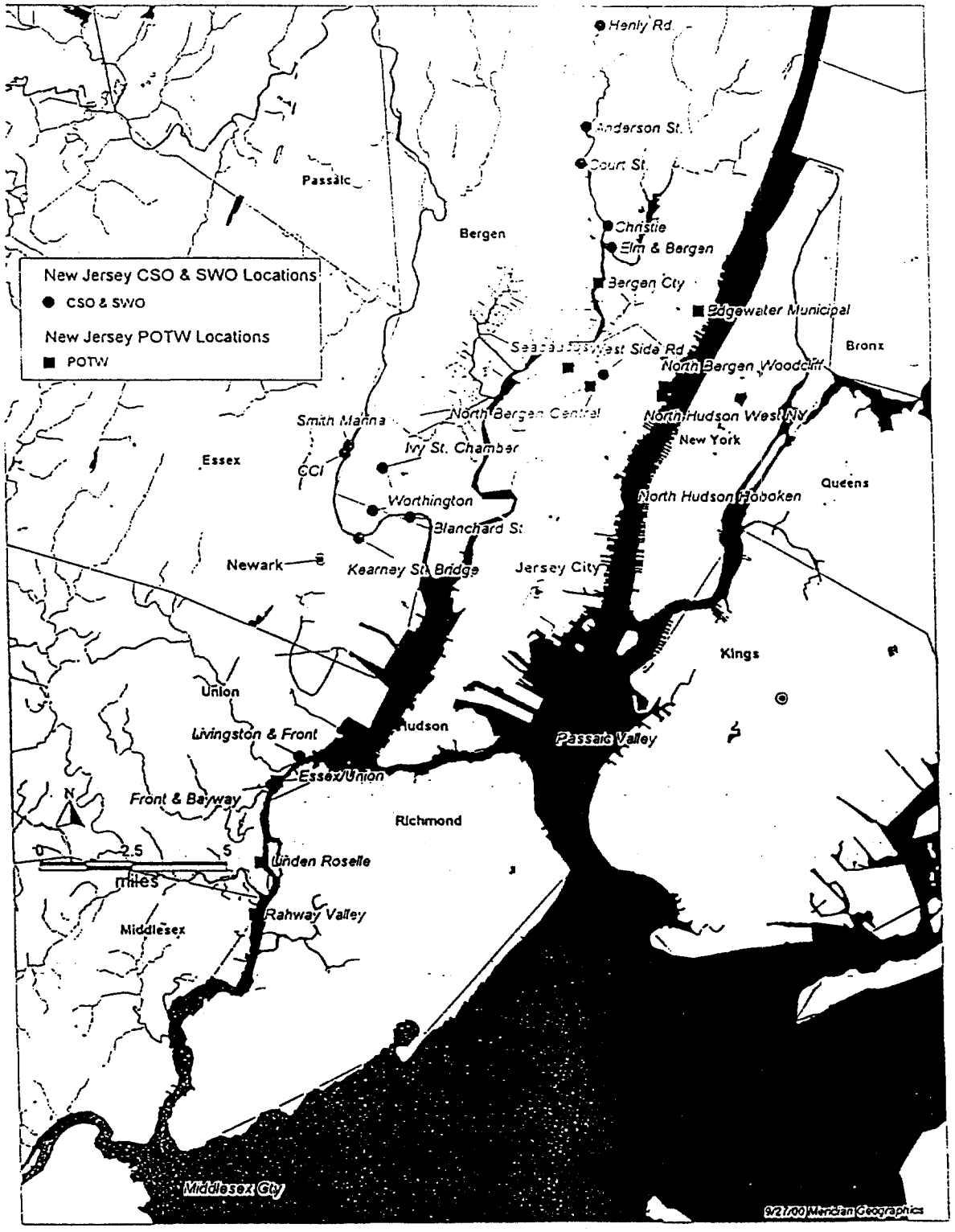

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TABLE 1a. POTWs to be Sampled by the New Jersey Harbor Dischargers Group for the Harbor Estuary Program Contaminant Assessment and Reduction Program

POTW	Number of Samples	Contact	Discharge Location	Approximate Discharge Rate[c]	NJPDES Permit No.
Passaic Valley Sewerage Com.[a]	4	Bridget McKenna	Long. 74° 03' 42" Lat. 40° 39' 16"	283 mgd	NJ0021016
Middlesex County Utility Authority[a]	4	Victor Santamarina	Long. 74° 15' 12" Lat. 40° 28' 51"	115 mgd	NJ0020141
Bergen County Utility Authority[a]	4	Jerome Sheehan	Long. 74° 01' 57" Lat. 40° 49' 54"	69 mgd	NJ0020028
Joint Meeting of Essex/Union[a]	4	Joe Bonocorso	Long. 74° 11' 51" Lat. 40° 38' 17"	59 mgd	NJ0024741
Rahway Valley Sewerage Authority[a]	4	Rich Tokarski	Long. 74° 12' 35" Lat. 40° 35' 13"	26 mgd	NJ0024643
North Hudson S.A. (Hoboken/North Hudson/Tri City)[b]	2	Fredric Pocci	Long. 74° 01' 10" Lat. 40° 45' 11"	21 mgd	NJ0026085
Linden Roselle Sewerage Authority[a]	4	Judy Spadone	Long. 74° 12' 23" Lat. 40° 36' 25"	13 mgd	NJ0024953
North Bergen MUA (Central)[b]	2	Bob Fischer	Long. 74° 02' 15" Lat. 40° 47' 05"	6.8 mgd	NJ0034339
North Bergen MUA (Woodcliff)[b]	2	Bob Fischer	Long. 73° 59' 59" Lat. 40° 47' 28"	2.9 mgd	NJ0029084
Edgewater Municipal Utilities Authority[b]	2	Kevin Billin	Long. 73° 58' 54" Lat. 40° 49' 15"	3 mgd	NJ0020591
North Hudson S.A. (West New York)[b]	2	Frederic Pocci	Long. 74° 00' 03" Lat. 40° 47' 16"	11 mgd	NJ0025321
Secaucus Municipal Utility Authority[b]	2	Brian Bigler	Long. 74° 02' 54" Lat. 40° 47' 55"	3 mgd	NJ0025038

a Four quarterly samples are scheduled for collection. Additional samples may be collected depending on the results of the first sampling event.

b Two seasonal samples are scheduled for collection. Additional samples may be collected depending on the results of the first sampling event.

c Actual rates will be measured and recorded at the time of sampling.

TABLE 1b.POTW Sampling Locations (New Jersey Harbor Dischargers Group) for the Harbor Estuary Program Contaminant Assessment and Reduction Program

POTW	Discharge Location	Sampling Location	NJPDES Permit No.
Passaic Valley Sewerage Com.	Long. 74° 03'.42 Lat. 40° 39'.16	Long. 74° 08'.006 Lat. 40° 42'. 690	NJ0021016
Middlesex County Utility Authority	Long. 74° 15'.12 Lat. 40° 28'.51	Long. 74° 18'.678 Lat. 40° 29'.389	NJ0020141
Bergen County Utility Authority[a]	Long. 74° 01'.57 Lat. 40° 49'.54		NJ0020028
Outfall A		Long. 74° 01'.957 Lat. 40° 49'.934	"
Outfall B		Long. 74° 01'.995 Lat. 40° 49'.945	"
Outfall C		Long. 74° 02'.051 Lat. 40° 49'.971	"
Outfall D		Long. 74° 02'.093 Lat. 40° 49'.984	"
Joint Meeting of Essex/Union	Long. 74° 11'.51 Lat. 40° 38'.17	Long. 74° 12'.086 Lat. 40° 38'.504	NJ0024741
Rahway Valley Sewerage Authority	Long. 74° 12'.35 Lat. 40° 35'.13	Long. 74° 15'.395 Lat. 40° 36'.071	NJ0024643
North Hudson S.A. (Hoboken/North Hudson/Tri City)	Long. 74° 01'.10 Lat. 40° 45'.11	Long. 74° 01'.874 Lat. 40° 45'.477	NJ0026085
Linden Roselle Sewerage Authority	Long. 74° 12'.23 Lat. 40° 36'.25	Long. 74° 13'.076 Lat. 40° 36'.551	NJ0024953
North Bergen MUA (Central)	Long. 74° 02'.15 Lat. 40° 47'.05	Long. 74° 02'.266 Lat. 40° 47'.071	NJ0034339
North Bergen MUA (Woodcliff)	Long. 73° 59'.59 Lat. 40° 47'.28	Long. 73° 59'.924 Lat. 40° 47'.528	NJ0029084
Edgewater Municipal Utilities Authority	Long. 73° 58'.54 Lat. 40° 49'.15	Long. 74° xx'.xx Lat. 40° xx'.xx	NJ0020591
North Hudson S.A. (West New York)	Long. 74° 00'.03 Lat. 40° 47'.16	Long. 74° 00'.139 Lat. 40° 47'.243	NJ0025321
Secaucus Municipal Utility Authority	Long. 74° 02'.54 Lat. 40° 47'.55	Long. 74° 02'.884 Lat. 40° 47'.907	NJ0025038

a There are four outfalls and four sampling locations at BCUA. The four samples are composited together and the sub-samples collected from the composite.

TABLE 2a. CSOs for which Sampling is Planned by the New Jersey Harbor Dischargers Group for the Harbor Estuary Program Contaminant Assessment and Reduction Program

CSOs	Location	Historical Sample Sites[a]	Number of Samples to Be Collected
Jersey City Intersection (PVSC)			2
Bayonne Intersection (PVSC)			2
MCUA/Thramboy			2
Joint Meetings/Elizabeth			2
Rahway Outfall 003 (CSO)	1050 E. Hazelwood Ave. Rahway, NJ		2
Ivy Street (Passaic River, PVSC)	N40° 45'.590 W074° 08'.454		2
Christie Street (Hackensack River, BCUA)	N40° 51'.225 W074° 01'.623	X	2
Court Street (Hackensack River, BCUA)	N40° 52'.665 W074° 02'.406	X	2
Livingston and Front streets (Arthur Kill, Joint Meetings)	N40° 38'.856 W074° 11'.164	X	2
Worthington Ave.	N40° 44'.599 W074° 08'.778	X	2
Front Street and Bay Way (Arthur Kill, Joint Meeting)	N40° 38'.201 W074° 12'.020	X	2
Elm Street	N40° 50'.718 W074° 01'.514	X	2
Anderson Street	N40° 53'.503 W074° 02'.231	X	2
West Side Road	N40° 47'.757 W074° 01'.842	X	2
TOTAL			28
Alternates			
CAMPBELL FOUNDARY (PASSAIC			
JACKSON STREET (PASSAIC RIVER,			
JOHNSTON ROAD (PASSAIC RIVER,			
HERBERT PLACE (PASSAIC RIVER,			
91ST STREET BELLMAN'S CREEK			

FOURTH AND HACKENSACK STREETS			
OVERPECK CREEK (HACKENSACK			
ELIZABETH AVENUE AT MEMORIAL PARK (ARTHUR KILL JOINT MEETING)			

a Sample sites that were used in the NJHDG 1997/98 Nickel/Copper Study

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TABLE 2b.CSO Sampling Location Descriptions for the Harbor Estuary Program Contaminant Assessment and Reduction Program

CSOs	Location	County	Township	Description
Jersey City Intersection (PVSC)	TBD	Hudson	Jersey City	TBD
Bayonne Intersection (PVSC)	TBD		Bayonne	TBD
MCUA/Thramboy	TBD	Middlesex	Thramboy	TBD
Joint Meetings/Elizabeth	TBD	Middlesex	Elizabeth	TBD
Rahway Outfall 003 (CSO)	1050 E. Hazelwood Ave. Rahway, NJ	Middlesex	Cateret	At the Rahway POTW
Ivy Street (Passaic River, PVSC)	N40° 45.590 W074° 08.454	Essex	Kearny	CSO off John Hay Ave. Concrete channel near unpaved off street parking lot on right
Christie Street (Hackensack River, BCUA)	N40° 51.225 W074° 01.623	Bergen	Ridgefield Park	New construction (1999) Pipe railing at end of street over looking rail road tracks
Court Street (Hackensack River, BCUA)	N40° 52.665 W074° 02.406	Bergen	Hackensack / Bogota	Flap gate along river walkway, behind Cost Co. and Pep Boys parking lot, chain link fence
Livingston and Front streets (Arthur Kill, Joint Meetings)	N40° 38.856 W074° 11.164	Union	Elizabeth	CSO, manhole closest to intersection of Livingston and Front Streets
Worthington Ave.	N40° 44.599 W074° 08.778	Essex	Newark	Last manhole in center of street (Worthington Avenue) (Street dead-ends)
Front Street and Bay Way (Arthur Kill, Joint Meeting)	N40° 38.201 W074° 12.020	Union	Elizabeth	CSO, 2nd manhole in middle of street closest to river (dividing wall beneath manhole cover)
Elm Street	N40° 50.718 W074° 01.514	Bergen	Ridgefield Park	CSO near the intersection of Elm Street and Bergen Pike new construction (1999) BCUA Regulator #1, left manhole
Anderson Street	N40° 53.503 W074° 02.231	Bergen	Hackensack	CSO, pipe into river behind car wash
West Side Road	N40° 47.757 W074° 01.842	Hudson	N. Bergen	CSO, adjacent to Cardisco Co. on the right

TBD = To be determined

TABLE 3a. Candidate SWOs for which Sampling is Planned by the New Jersey Harbor Dischargers Group for the Harbor Estuary Program Contaminant Assessment and Reduction Program

SWOs	Location	Historical Sample Sites[a]	Number of Samples to Be Collected
Peripheral Ditch (Newark Airport)	TBD		2
Blanchard Street (Passaic River)	N40° 44'.449 W074° 07'.658		2
CCI	N40° 45'.936 W074° 09'.600		2
Smith Marina	N40° 46'.118 W074° 09'.458		2
ELM STREET (HACKENSACK RIVER, BCUA)	N40° 50'.718 W074° 01'.514	X	2
Henley Road (Hackensack River, BCUA)	N40° 55'.883 W074° 01'.742	X	2
Total			12
Alternates			
ANDERSON STREET (HACKENSACK RIVER, BCUA)		X	
WEST SIDE ROAD/CROMAKILL CREEK (HACKENSACK RIVER, NORTH BERGEN)		X	
NAPP-GRECO		X	
THIRD STREET DRAINAGE DITCH (HACKENSACK RIVER, BCUA)			
EAST JERSEY AND FRONT STREETS (ARTHUR KILL, JOINT MEETING)			

a Sample sites that were used in the NJHDG 1997/98 Nickel/Copper Study

TABLE 3b.Candidate SWOs Location Descriptions for the Harbor Estuary Program Contaminant Assessment and Reduction Program

SWOs	Location	County	Township	Description
Peripheral Ditch (Newark Airport)	TBD	Essex	Newark	TBD
Blanchard Street (Passaic River)	N40° 44'.449 W074° 07'.658	Bergen	Newark	Manhole in middle of street near Rose Glor Company
CCI	N40° 45'.936 W074° 09'.600	Essex	Kearny	Manhole near CCI parking area
Smith Marina	N40° 46'.118 W074° 09'.458	Essex	Kearny	Manhole in the street immediately outside the marina gate
Elm Street (Hackensack River, BCUA)	N40° 50'.718 W074° 01'.514	Bergen	Ridgefield	SWO near the intersection of Elm St. and Bergen Pike. New construction (1999) adjacent to CSO (right side manhole)
Henley Road (Hackensack River, BCUA)	N40° 55'.883 W074° 01'.742	Bergen	New Milford	24" pipe into river at an abandoned turn around with galvanized guardrail

TBD = To be determined

Table 4. Summary of Sample Collection Activities for Study I-G

Study	Number of Sites	Number of Events or Reps	Total Samples[a]	Quality Control Samples[b]
Study I-G (POTWs)	12	2 or 4	36[c]	28-32
Study I-G (CSO/SWOs)	20	2	40[c]	22-26
Contingency[c]	-	-	-	
Total			76	50-58

a Each 20 liter composite sample will be split into four 2.5 liter sub-samples for dioxin/furans, PCBs, pesticides, and PAHs. In addition, three 500 mL sub-samples for metals, one 500 mL sample for POC/DOC and one 1.0 liter sub-sample for TSS will be collected.

b Includes field blanks, field duplicates, matrix spike/duplicates, and CSO/SWO equipment blanks (see Table 5)

c Additional samples may be collected and analyzed for all or a subset of the analytes, based upon the results obtained in the first one or two groups of samples.

Table 5. Summary of Quality Control Samples for Study I-G

Sample Type	Number of Events	Number of Field Samples				
		Effluent	Field Blank[a]	Field Duplicate[b]	Matrix Spike/dup.[c]	Equip. Blank
POTWs	4	36[d]	8	4	8	-
CSO/SWOs	2	40	2	4	4	4[e]
Total	6	76	10	8	12	4

a Two collected for each event for organics and metals analysis. DOC and POC field blanks will be collected once each day.
b One collected per event.
c For one site (different than the sites where the field duplicates are collected) during each event, 3X the sample volume will be collected. Two sample volumes will be spiked in the laboratory prior to the extraction/digestion.
d Two sets of 12 and two sets of 6.
e One equipment blank per sampling device per event (CSO/SWOs only)

6.3.3 Parameters to be Measured

Table 6 lists the analytes that will be measured in the collected samples. Sample collection, storage and transport methods that are appropriate for the parameters to be measured will be utilized. The list of analytes to be measured has been coordinated with NYSDEC and the CARP. As the results are obtained and potential sources of these chemicals are identified, additional focused monitoring efforts could include analyses for a subset of the analytes in Table 6.

Table 6. Target Analytes for the NJHDG CARP Program

Dioxins/Furans
2,3,7,8-TCDD
1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD
1,2,3,4,6,7,8-HpCDD
OCDD
2,3,7,8-TCDF
1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF
1,2,3,4,7,8-HxCDF
1,2,3,6,7,8-HxCDF
1,2,3,7,8,9-HxCDF
2,3,4,6,7,8-HxCDF
1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF
OCDF
17 Dioxin/Furans

PCBs (Congener #)	PCBs (IUPAC #)	PCBs (Congener #)
3	66	153
4	70	154
5	74	156
8	75	157
10	77	158
11	81	166
15	82	167
16	84	168
17	85	169
18	86	170
19	87	171
22	91	172
25	92	174
26	95	177
27	97	178
28	99	179
31	101	180
33	104	183
37	105	185
40	110	187
42	114	189
43	118	190
44	119	191
45		194
46	123	195
47	126	196
48	128	198
49	132	200
50	134	201
52	135	203
53	136	205
56	137	206
59	138	207
60	141	208
62	146	209
63	149	
64	151	
		108 Congeners

Table 6. Target Analytes for the NJHDG CARP Program (continued)

Chlorinated Pesticides
Aldrin
BHC-alpha
BHC-beta
BHC-gamma (Lindane)
Chlordane-alpha (cis)
Chlordane-gamma (trans)
Chlordane-oxy
Dieldrin
2,4'-DDD
4,4'-DDD
2,4'-DDE
4,4'-DDE
2,4'-DDT
4,4'-DDT
Endosulfan-alpha
Endosulfan-beta
Endosulfan sulfate
Endrin
Endrin aldehyde
Endrin ketone
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Methoxychlor
Mirex
Nonachlor-cis
Nonachlor-trans
27 Pesticides

Metals
Mercury (dissolved)
Methyl Mercury (dissolved)
Total Mercury
Total Cadmium
Cadmium (dissolved)
Lead (dissolved)
Total Lead

PAHs
Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzo[e]pyrene
Biphenyl
Chrysene
Dibenz[a,h]anthracene
Fluoranthene
Fluorene
Indeno[1,2,3-c,d]pyrene
Naphthalene
Phenanthrene
Perylene
Pyrene
1-Methylnaphthalene
2-Methlynaphthalene
2,6-Dimethylnaphthalene
2,3,5-Trimethylnaphthalene
1-Methylphenanthrene
3-Naphthalenes
C2-Naphthalenes
3-Phenanthrenes/anthracenes
C2-Phenanthrenes/anthracenes
28 PAH Compounds/Isomer Group

6.3.4 Sample Collection Techniques

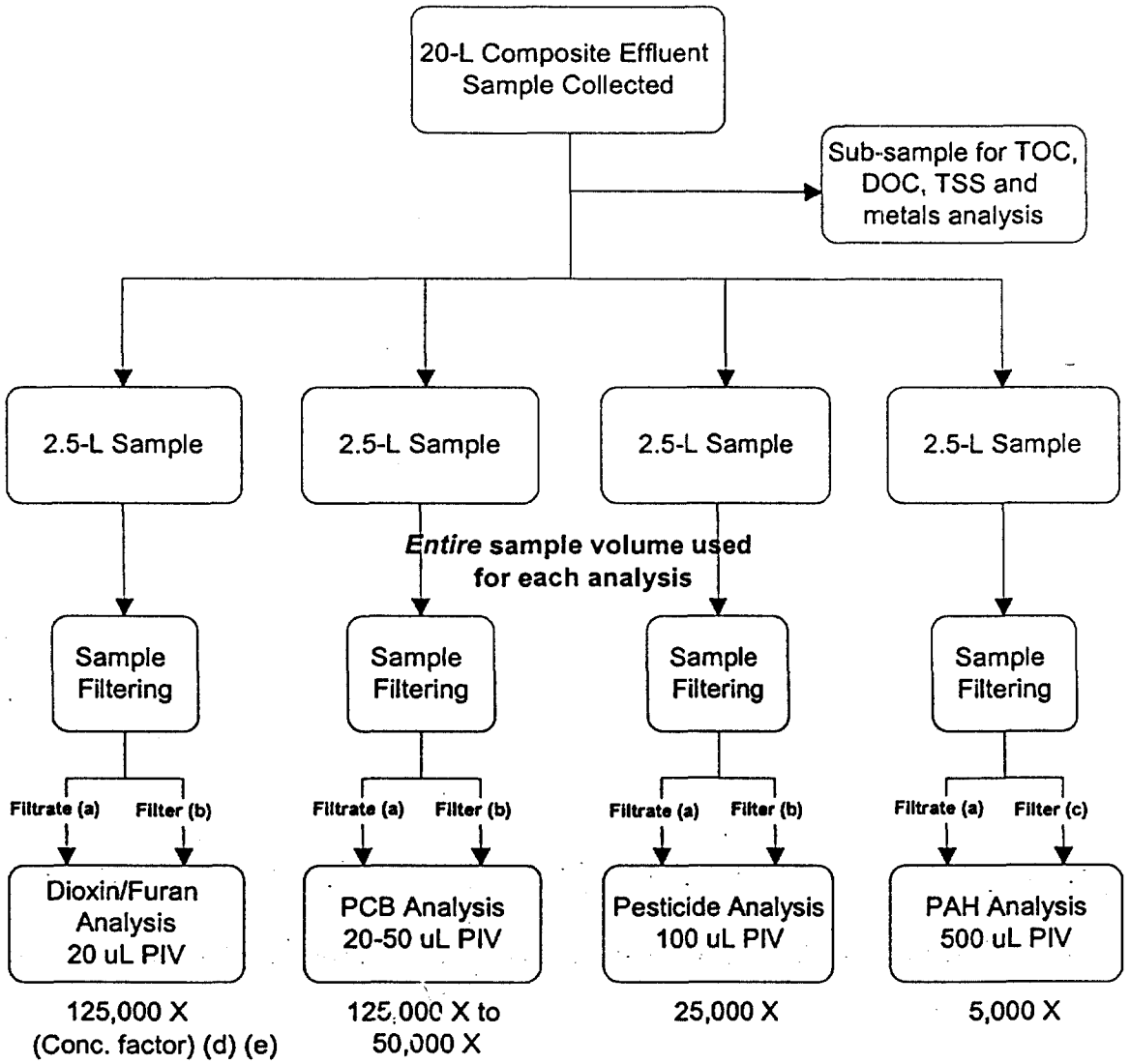
Both procedural and technical issues have been raised regarding the most appropriate sampling approach to be used to collect POTW, CSO and SWO effluents for the CARP. The options which were considered for collecting point source samples included whole effluent grab/composite sampling, and sampling using the trace organics platform sampler (TOPS). Earlier work involving the collection of both ambient and POTW effluent samples has demonstrated that suspended solids can pass through the filtration device in the TOPS sampler and collect on the XAD resin, and that collecting POTW effluent samples with the TOPS sampler is logistically difficult and cumbersome. These issues were investigated by Great Lakes Environmental Center (GLEC) and Passaic Valley Sewerage Commissioners (PVSC). GLEC and PVSC collaborated to conduct a sample collection/sample analysis investigation to provide the necessary data to allow NJHDG to finalize the sample collection approach for the New Jersey point sources [PVSC Performance Report, August 2000; New Jersey Toxics Reduction program: Toxics Monitoring/Loading Investigations for the Sanitary Sewage Outfalls (POTWs), Combined Sewer Overflows (CSOs) and Storm Water Outfalls (SWOs)].

Based upon the results of the GLEC/PVSC investigation, a plan was developed to collect a 20 L composite sample of effluent (POTW, CSO or SWO), which will be split at the PVSC laboratory into four 2.5 L samples for organic contaminant analyses, one 1000 mL subsample for TSS analyses, one 500 mL subsample for TOC (POC/DOC) analyses and three 500 mL subsamples in 500 mL Teflon® bottles for metals analysis. All the sample containers will be pre-cleaned and provided by the analytical laboratories. At the PVSC laboratory, the 20 L sample will be carefully homogenized, and subsampled while it is continually mixed (see Appendix A, Standard Operating Procedure (SOP)# GLEC-CARP-007-01). x*

The POTW samples will be collected as 24-hour composite samples, whereas the CSO and SWO samples will be collected as grab composites over the duration of the sampling event (see Appendix A, SOP # GLEC-CARP-002-01 and #GLEC-CARP-008-001). After the sub-sampling is complete, the 20-liter glass carboy field sample bottle will be cleaned and stored following SOP # GLEC-CARP-010-01 (field glassware cleaning). The 20-liter carboy containers are stored clean at the PVSC chemistry laboratory; chain of custody for those containers will follow the NJDEP-NJTRWP SOP # 1. Wherever possible, the 20-liter carboys used to collect the composite samples in the field should be held in coolers with wet ice to lower sample temperatures during the 24-hour collection period. Samples should be transported to the PVSC laboratory in coolers with wet ice, and held in the coolers while subsampling in the laboratory.

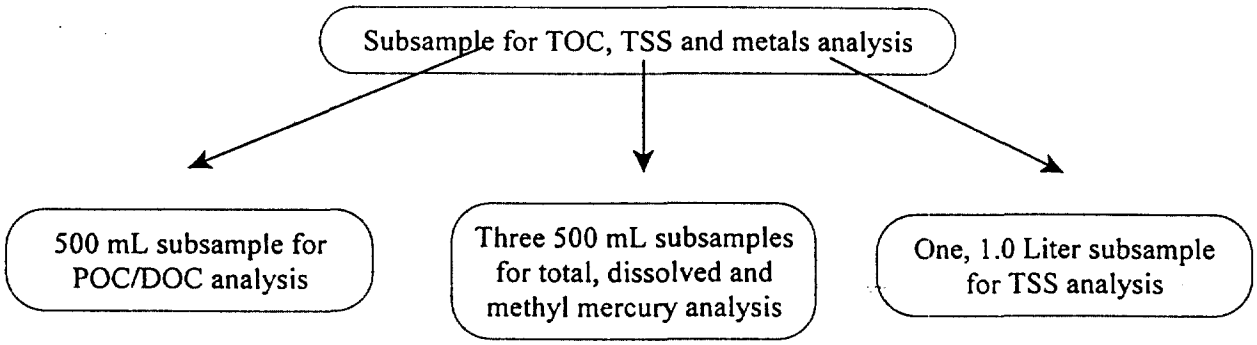
The 2.5 L sub-samples will be shipped directly to Battelle for organic contaminant analysis (Columbus, Ohio for dioxin/furans, PCBs, and pesticides, and Duxbury, Massachusetts for PAHs), where they will be filtered separately. The filters will be extracted using either sonication and mechanical agitation (PAHs), or Soxhlet extraction (dioxin/furans, pesticides, and PCBs). The filtrates (2.5 L each) will be extracted separately using liquid/liquid extraction, and the extracts will then be concentrated to the pre-injection volumes specified in the analytical portion of this QAPP (Appendix B). A schematic diagram which outlines the sample splitting and analysis plan in shown in Figure 2.

Figure 2a. Whole Water (Effluent) Sample Collection and Analysis Plan



(a) Filtrate samples for all parameters will be extracted using a separatory funnel technique.
(b) Filter samples for Dioxin/Furan, PCB, and Pesticide analyses will be extracted using a soxhlet technique.
(c) Filter samples for PAH analysis will be extracted using a combined shaker abd sonication technique.
(d) Concentration factor for combined filter/filtrate analyses will be approximately 25% smaller because the samples will be split 75:25.
(e) Concentration factors may vary with different sample volumes, final extract volumes, and other splitting or dilutions that could occur.

Figure 2b. GLEC's Sub-sampling Plan for TOC, TSS and Metals



Samples for the analysis of metals (Hg, Pb and Cd) will be shipped directly to Frontier GeoSciences Laboratory (Seattle, WA). The sample collection for metals will be conducted using "Clean Techniques" (Appendix A, GLEC SOP # GLEC-CARP-009-01) A summary of the sample and laboratory analysis requirements for Study I-G is provided in Table 7. Samples for the analysis of Total Organic Carbon (TOC), and Dissolved Organic Carbon (DOC) will be shipped directly to the USGS laboratory in Denver, CO and those for Suspended Solids (SS) will be shipped directly to the USGS laboratory in Louisville, KY.

Table 7. Summary of Requirements for Study I-G Analytes

Sampling Technique	Sample Type (POTW, CSO, and SWO)	Sample Matrix	Analysis Parameter	Container Size@	Required Sample for Analysis Volume
Grab/ Composite	Wastewater/ Stormwater	Whole water	Dioxins and Furans	2.5 L	2.5 L
Grab/ Composite	Wastewater/ Stormwater	Whole water	PCBs	2.5 L	2.5 L
Grab/ Composite	Wastewater/ Stormwater	Whole water	Pesticides	2.5 L	2.5 L
Grab/ Composite	Wastewater/ Stormwater	Whole water	PAHs	2.5 L	2.5 L
Grab/ Composite	Wastewater/ Stormwater	Whole water	Metals	500 mL	500 mL
Grab/ Composite	Wastewater/ Stormwater	Whole water	TSS	1.0 L	500 mL
Grab/ Composite	Wastewater/ Stormwater	Whole water	POC*	500mL	filter
Grab/ Composite	Wastewater/ Stormwater	Whole water	DOC*	500mL	125 mL

@ 2.5 liter samples are collected in 2.5 liter brown amber glass bottles with Teflon® lined caps; 500 mL metals samples are collected in the same size Teflon® bottles.

* POC and DOC samples are collected from the same 500 mL bottle.

6.3.5 Uses of the Data

Given the objectives of the New Jersey Toxics Reduction Work Plan, and the CARP, there are four general uses for the data which will be collected:

(1) to identify sources of the chemicals of concern, which will serve as the basis of a subsequent track down program;
(2) to provide the data needed to develop a sediment contaminant fate and transport model(s) of the NY/NJ Harbor Estuary system;
(3) to serve as a baseline of existing conditions in the Harbor for use in a long-term monitoring program, and;
(4) to evaluate the effectiveness of actions taken to reduce/eliminate sources of the chemicals of concern.

Study I-G will provide data on the discharge of the chemicals of concern from POTWs, CSOs and SWOs. These data will be used to calculate loadings from these facilities to the Harbor, and to guide subsequent Phase II and III track down studies (See New Jersey Toxics Reduction Work Plan). Study II-A will be a more focused continuation of Study I-G, targeting specific point discharges and/or chemicals of concern.

6.3.6 Sampling Schedule

Study I-G will consist of quarterly sampling of the six largest POTWs, and seasonal (summer, winter) sampling events for the six smaller New Jersey POTWs discharging to the Harbor complex (see Table 1). To the greatest extent possible, the CSO/SWO sampling events will be coordinated with the high flow event ambient monitoring studies (Studies I-C, D, and E). A conceptual schedule for the sampling events is given below.

Task Description	Sample Type	Proposed Date(s)
POTW Sampling (6)	POTW Composite	Spring, Summer and Fall 2001
POTW Sampling (12)	POTW Composite	Spring, Summer and Fall 2001
CSO/SWO Sampling (20)	CSO/SWO Grab	Fall and Spring 2001

6.3.7 Report

The field and laboratory activities associated with the project will be reported, in interim and final reports, including a description of the analyses and a presentation of the results. The interim reports will be prepared quarterly and will consists of brief descriptions of the previous quarter's sampling and analysis activities. The following information will be included in the draft final report:

- A description of the study in scientific format (i.e., Introduction, Methods and Materials, Results, Discussion and Recommendations);

- The names of the Principal, the Investigator, the name and location of the laboratories and the dates of the analyses;
- The methods used for the sample collection and chemical analyses;
- A summary table of the chemical analyses and field data in sufficient detail so that an independent analysis can be made of the data;
- Anything unusual about the sampling or analysis, including deviations from specific protocols and any other relevant information;
- A Data Quality Assessment;
- Performance Audit Results (if performed by the NJDEP);
- Corrective Actions.

6.3.8 Survey (Event) Identification

Each distinct sampling event (the four POTW rounds, the CSO/SWO events) will be identified as follows:

YEAR-IG(x), Where: YEAR = 2000 or 2001
And X = A, B, C, etc.

Thus, the October 2000 POTW sampling event (6 POTWs) is designated as 2000-IGA, and the December 2000 POTW sampling (12 sites) was designated as 2000-IGB. The first sampling in 2001 (POTW or CSO/SWO) will be designated 2001-IGA. Each CARP STS sample identification number will be a unique number beginning with 1GLEC0013. The sample identification numbers have the format 1GLC####.

6.4 Analytical Chemistry Tasks

A separate QAPP is attached as Appendix B addressing the organic contaminant analysis for the point source discharges. The QAPPs for the metals and for the TOC, DOC and TSS analyses are found in Volume III of the New Jersey Toxics Reduction Work Plan.

Battelle Memorial Institute (BMI) is the analytical laboratory that will perform the dioxin/furan, PCBs, pesticides and PAH analyses. Frontier Geosciences will be the analytical laboratory for the metals, the USGS Laboratory in Denver, CO will conduct the TOC, DOC analyses, and the USGS laboratory in Kentucky will be performing the TSS analyses. A listing of contact persons and addresses for the analytical laboratories is given below.

Frontier Geosciences
414 Pontius North
Seattle, WA 98109
Contact: Michelle Gauthier
Ph: (206) 622-6960

Battelle - Duxbury
397 Washington Street
Duxbury, MA 02332
Contact: Greg Durell
Ph: (781)-934-0571

Battelle - Columbus
505 King Avenue
Columbus, OH 43210
Contact: Mark Misita
Ph: (614) 424-7884
US Geological Survey
Kentucky District Laboratory
9818 Bluegrass Parkway
Louisville, KY 40299-1906
Contact: Elizabeth Shreve
Ph: (502) 493-1916

National Water Quality Laboratory
USGS, WRD
Box 25046
Denver Federal Center, MS407
Denver, CO 80225-0046
Contact: Pam Puelo-Aitken
Ph: (303) 236-3252
Alt. Contact: Jim Kammer
Ph: (303) 236-3211

7.0 SCHEDULE OF MILESTONES AND DELIVERABLES

Progress reports which describe each quarterly sampling event and present the results will be delivered to the NJDEP as soon as the analytical results are available (after QA/QC by the laboratory and GLEC). After the completion of all field and laboratory work, a draft Final Report will be submitted to the NJDEP. The following is schedule of the deliverables for this work:

Deliverable	Date
Initiation of Study I-G sampling	September 2000
Completion of Study I-G sampling	June 2001
Progress Report	3 months after sample collection
Preparation and submission of Draft Final Report	Within three months of the time that the final analytical results have been obtained
Preparation and submission of Final Report	Within two months of the time that review comments have been received.

8.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

8.1 New Jersey Toxics Reduction Work Plan Organization For Study I-G.

Development and implementation of the studies and investigations which comprise the New Jersey Toxics Reduction Work Plan will be managed by the New Jersey Department of Environmental Protection, Office of Coastal Planning and Program Coordination. Figure 3 identifies the organizational structure for the Study I-G Work Plan activities.

The following are the phone/fax numbers and e-mail addresses for the key personnel for Study I-G.

Name	Phone #	FAX #	E-Mail Address
Joel A. Pecchioli	(609) 292-2662	(609) 292-4608	jpecchio@dep.state.nj.us
Lawrence Schmidt	(609) 292-2662	(609) 292-4608	lschmidt@dep.state.nj.us
Floyd Genicola	(609) 292-2662	(609) 292-4608	fgenicola@dep.state.nj.us
Mick DeGraeve	(231) 941-2230	(231) 941-2240	glec@mich.com
Bridget McKenna	(973) 817-5976	(973) 817-5709	BMcKenna@pvsc.com
Dennis McCauley	(231) 941-2230	(231) 941-2240	dmccauley@glec-tc.com

Robin Silva-Wilkinson (231) 941-2230 (231) 941-2240 rsilva@glec-tc.com

The following are the mailing address for the Study I-G key personnel.

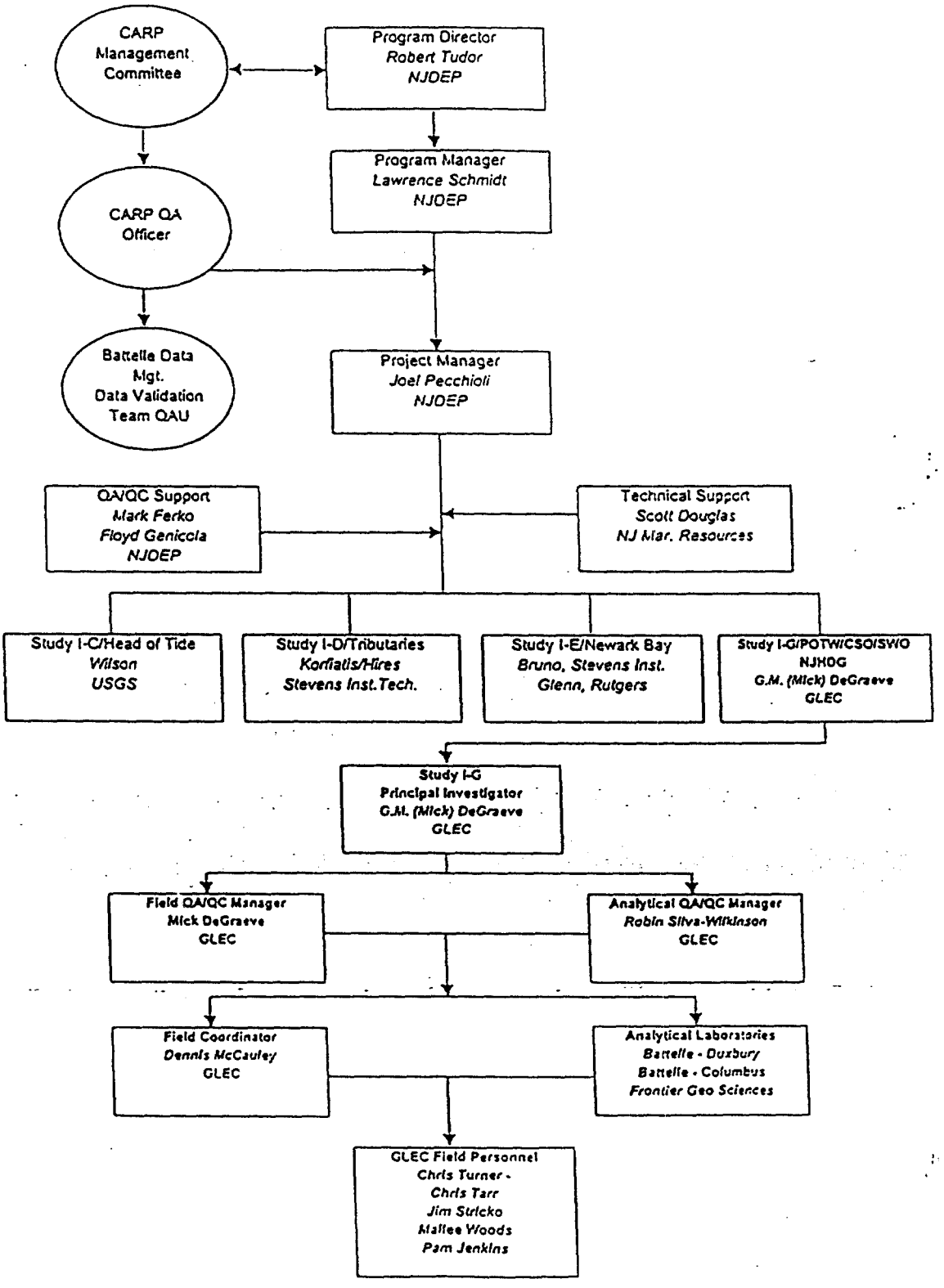
Lawrence Schmidt, Director, Office of Coastal Planning and Program Coordination
Joel Pecchioli and Floyd Genicola, Off ice of Coastal Planning and Program Coordination
New Jersey Department of Environmental Protection
P.O. Box 418
401 East State Street
Trenton, NJ 08625-0418

Bridget McKenna
Passaic Valley Sewerage Commissioners
600 Wilson Avenue
Newark, NJ 07105

Mick DeGraeve
Dennis McCauley
Robin Silva-Wilkinson
Great Lakes Environment Center
739 Hastings Street
Traverse City, MI 49686

GLEC, under contract with the NJDEP, will implement Study I-G. The project organization and work breakdown are depicted in Figure 3.

Figure 3. NJ Toxics Reduction Organizational Structure for Study I-G



8.1.1 Project Manager

The NJDEP Project Manager (Joel A. Pecchioli) is responsible for the development and implementation of the New Jersey Toxics Reduction Work Plan and its associated QAPP. The Project Manager chairs the NJDEP Work Plan Team and the Scientific Advisory Committee. He is also responsible for ensuring that the policies and standards described in the CARP Quality Management Plan (QMP) are implemented. In addition, the NJDEP Project Manager has the following quality assurance related responsibilities:

- to ensure that an adequate QAPP is developed and implemented prior to the initiation of Work Plan technical activities, and that the QAPP has been distributed to all appropriate project personnel;
- to ensure that the requirements of the QAPP and CARP QMP are implemented through effective organizing and planning to meet the Data Quality Objectives;
- to ensure that SOPs which describe current practices are written, approved, distributed to appropriate project personnel, and include adequate training provisions to ensure proficiency;
- to ensure that all deficiencies identified by the CARP Quality Assurance Officer are adequately addressed;
- to ensure that all analytical laboratory data products are reviewed and approved according to the CARP QMP policies and guidelines before being transmitted to the CARP Data Management System, or otherwise released.

As data from the study are collected and analyzed (after consulting with the Scientific Advisory Committee), the NJDEP Project Manager will revise the New Jersey Toxics Reduction Work Plan to modify these studies, if needed. In addition, he will further develop and implement the Phase Two and Three Work Plan studies/activities to target "high priority" areas/potential sources on a "fast track" basis.

8.1.2 Principal Investigator

Dr. G.M. (Mick) DeGraeve is the Principal Investigator for the study and is responsible for the overall technical and financial management of Study I-G. The Principal Investigator for Study I-G is responsible for supervising the day-to-day implementation of the Study I-G Work Plan technical activities. Mick DeGraeve has the following responsibilities:

- to prepare project budgets, schedules, field sampling plans, and organize equipment, staff, and materials accordingly;
- to ensure that all staff are adequately trained consistent with the approved SOPs and this QAPP, and to document such training;
- to resolve day-to-day problems in the implementation of the study;
- to direct study technical activities and monitor performance as directed by approved SOPs and this QAPP, and to ensure adherence to the highest technical standards and

Data Quality Objectives;

- to review records and data associated with the study for accuracy, validity, and completeness;
- to communicate problems, progress, and needs to the NJDEP Project Manager;
- to serve on the NJDEP Work Plan Team and Scientific Advisory Committee.

8.1.3 Field Sampling QA/QC Manager

Mick DeGraeve is also the Field Sampling QA/QC Manager for this study. The field QA/QC manager is responsible for overseeing the field sampling collection activities so that the Data Quality Objectives are met. Specifically, the field QA/QC manager has the following responsibilities:

- to review field sampling activities to ensure adherence to SOPs;
- to review written records in the field log book for accuracy and completeness ;
- to communicate problems to the field coordinator.

8.1.4 Field coordinator

The field coordinator for the sampling activities is Dennis McCauley (GLEC). He is responsible for ensuring that the sample collection and transport activities are conducted in a manner that provides confidence that the samples are representative of the site from which they are collected. Specifically, he will be responsible for the following:

- organizing equipment, staff and materials for POTW, CSO, and SWO sampling;
- ensuring that all staff are adequately trained in the safe operation of the sampling equipment;
- directly managing the day-to-day field sampling activities to ensure that the field procedures and activities conform to the requirements of the applicable SOPs;
- resolving day-to-day problems in the implementation of the study;
- reviewing records and collected data for accuracy, validity and completeness;
- communicating progress and problems to Mick DeGraeve, Principal Investigator.

8.1.5 Analytical QA/QC Manager

Robin Silva-Wilkinson is the Analytical QA/QC manager for this study 1-G. The Analytical QA/QC manager is responsible for reviewing the analytical results to insure that the Data Quality Objectives are met. Specifically, the QA/QC Manager has the following responsibilities:

- to review the internal quality control checks for each analytical laboratory's analyses;
- to review each laboratory's Quality Assurance Objectives as they are outlined in each QAPP or SOP;
- to review the calculation of data quality indicators as they are outlined in each QAPP or SOP;
- to review the data validation performed by each laboratory;
- to communicate any problems to the Principal Investigator.

8.1.6 Field Personnel

Field personnel for Study I-G, other than the Field Coordinator and Principal Investigator, will be comprised of GLEC and PVSC technical staff. The field personnel are responsible for the day to day field sample collection and field sample sub-sampling and shipping activities. Specifically, the field personnel will have the following responsibilities:

- initiate and complete the field sampling of POTW, CSO and SWO wastewater under the direction of the Field Coordinator,
- assist with the compositing and sub-sampling of the field samples,
- assist with the shipment of the sub-samples to the analytical laboratories,
- maintain field notebooks and logs.

8.2 Personnel Qualifications and Training

All personnel working on the various components of the Study I-G must have the appropriate education/experience and project-specific training required to perform their assigned tasks. Each person conducting work on this project should communicate to either Mick DeGraeve and/or Dennis McCauley any additional training he/she believes is needed to perform assigned tasks.

Inexperienced personnel are not permitted to perform technical procedures, unless they are under the direct supervision of the Principal Investigator or Field Coordinator for the study. The Principal Investigator is responsible for documenting all training activities successfully completed by all personnel who are working on the project. Personnel will be considered qualified upon completion of the following training requirements:

- the staff member has read and understands the SOP that describes the technical procedure of the applicable USEPA or USGS methods, NYSDEC Analytical Services protocols/methods, and/or approved SOPs;
- the staff member assists qualified personnel in the technical procedure on at least three (3) occasions;
- the staff member performs the technical procedure under the supervision of qualified personnel until proficiency is demonstrated and, where appropriate, quality control data

are acceptable.

9.0 DATA QUALITY REQUIREMENTS AND ASSESSMENTS

9.1 Statement of Quality Assurance Policy

A comprehensive and integrated QA program includes planning, control, assessment, reporting, and correction activities to ensure that environmental data of documented quality are obtained. GLEC is committed to collecting scientifically valid data that is of the highest quality. This policy is implemented by ensuring that adequate QA procedures are employed for all data generating activities, including study design, sample collection, sample analysis, data generation, data reduction, and reporting. All field and technical activities (including Quality Assurance and Quality Control protocols) undertaken as part of Study I-G have been described in this QAPP. The overall goal of the CARP "Quality Assurance System" is to ensure that the data collected are complete, representative, comparable, and of a known and documented quality.

9.2 Analytical Services

The analytical laboratories are required to operate their own quality assurance program. The Laboratory Manager for each analytical laboratory has the following responsibilities :

- to ensure that the analytical procedures and QA activities conform with the requirements of the applicable SOPs and/or the NYSDEC Analytical Services Protocols/Methods;
- to manage laboratory resources (staff, facilities, and equipment) to achieve the successful completion of the analytical laboratory services component of the Study I-G;
- to review the work performed by the laboratory personnel who work on the samples, including technicians and analysts;
- to ensure that laboratory personnel are adequately trained to perform their assigned tasks;
- to review the quality of the data products produced in the laboratory;
- to ensure that data deliverables conform in content and format to the requirements of the Work Plan SOPs and the CARP Data Management System.

The data quality objectives associated with the chemistry tasks are summarized in the analytical section of this QAPP (Appendix B). Measurement quality objectives are specified for each method to assess accuracy, precision, sensitivity, representativeness and comparability. Procedures are specified for identifying and documenting any limitations on the use of the data.

9.3 Field Sampling

The field sampling program will operate according to its own quality assurance program. Any physical and spatial information collected during the field sampling will be recorded daily in a field log book

9.3.1 Accuracy

Accuracy is the degree of agreement between a measurement and the amount actually present. Accuracy during sample collection will be assured by adhering to all glassware preparation techniques and all sample handling and preservation techniques, and will be assessed through the collection and analysis of field blank, method blank, equipment blank and trip blank samples. A field blank is collected in the field by handling laboratory-grade water in the same manner as the investigative samples. The field blanks will be processed and analyzed in the laboratory according to the methods used to analyze for the contaminants in the effluent samples. Sample site locations will be verified by GPS coordinates. All of the field sampling will adhere to the written SOPs.

9.3.2 Precision

Precision is a measure of mutual agreement among multiple measurements of the same sample. Field duplicates, field blanks and trip blanks will be used to determine if samples were compromised during collection, shipment and storage. The field duplicates will be used to assess precision for sample collection and to determine if the samples were compromised during storage. The field and trip blanks will be used to assess precision for sample transport and to determine if the samples were compromised during transport from the field and during shipment. The laboratory will receive and process the field duplicate, field blank, and trip blank samples in the same manner as all investigative samples; method blank duplicates will be prepared in the laboratory.

9.3.3 Completeness

Completeness is a measure of the number of samples from which valid data are obtained compared to the number that are needed to meet the data quality objectives. A sampling completeness goal of 100% for the POTW sampling is required to meet the objective of this study. A sampling completeness goal of 100% is also required for the CSO and SWO sampling, unless weather or safety concerns arise that interrupt the sampling. In these instances, every attempt will be made to sample the CSO/SWO sites, or to switch sampling to a viable alternate site.

9.3.4 Critical and Non-critical Measurements

To achieve the objectives of the New Jersey Toxics Reduction Work Plan, and subsequently support agency decision-making, certain critical data must be collected. The following critical data and measurements will be collected for Study I-G.

Data needed to calculate loadings of the chemicals of concern:

- Daily and weekly maximum and minimum average wastewater flows (for POTW discharges)
- Stormwater flow (for SWO discharges) based on the calibrated model for that drainage

pertinent to the analysis of samples (sample identification numbers, date, methods, injection volume, unusual circumstances), as well as a description of troubleshooting procedures which will be implemented. All sampling and analytical information will also be entered in the CARP Sample Tracking System (STS) (Carp SOP No.4). A regular review of these notebooks by the appropriate QA Officer will take place throughout the course of the project.

Data reduction will be performed according to each analytical laboratories Quality Assurance Project Plan for this study. The final reduction of the analytical chemistry data will account for the size of the processed sample and dilution factors. For example, ng/sample data from the laboratory will ultimately be converted into ng/L concentration units and into a discharge/loading mass; these conversions will consider the sample size, final extract volume and extract splitting/archiving.

Interim reports will be provided to the NJDEP Project Manager after each field sampling event. The laboratory activities associated with the project will be reported, including a description of the analyses and a presentation of the results.

The following information will be included in the draft final report:

- A description of the study in scientific format (e.g., Introduction, Methods and Materials, Results, and Discussion);
- The name of the Principal Investigator and name and location of the laboratory and the dates of the analyses;
- The methods used for the chemical analyses of the collected samples;
- A summary table of the chemical analyses and field data in sufficient detail so that an independent analysis can be made of the results;
- Anything unusual about the sampling or analysis, including deviations from specific protocols and any other relevant information;
- A Data Quality Assessment;
- Performance Audit Results (if performed by the NJDEP);
- Corrective Actions.

14.0 DATA REVIEW

The GLEC QA Officer (Robin Silva-Wilkinson), who is independent of both the sampling and analytical activities, will review the sampling and analytical results. As part of the validation, quality control data will be compared to the method acceptance criteria. All the results of the initial and continuing calibrations will be reviewed and evaluated. Battelle SOP 6-027 describes data validation procedures in the analytical laboratory. Data validation for the field collected data is the responsibility of the Field Coordinator. Field data validation will include the following activities:

- Field collected data and related project records will be reviewed by the field personnel at the end of each working day to ensure that the field activities are completely and adequately documented.

- The Field Coordinator will be responsible for reviewing field sampling results and supporting documentation.

- All hand-entered or transcribed data will be 100% validated.

- All calculations performed manually will be checked for accuracy. Calculations performed by software will be checked at a frequency sufficient to verify their accuracy.

In the analytical laboratory, all quality control data that do not meet the data quality objectives will be flagged and brought to the attention of the Task Leader and the Principal Investigator, who will determine the appropriate corrective action.

15.0 PERFORMANCE AND SYSTEM AUDITS

A performance audit is an independent check to evaluate the quality of the data being generated. A system audit is an on-site review and evaluation of the facilities, instrumentation, quality control practices, data validation, and documentation practices.

Robin Silva-Wilkinson will perform an internal laboratory systems audit once, if necessary. That audit will include an examination of laboratory documentation on sample log-in, sample storage, chain-of-custody, sample preparation and analysis, and instrument operating records. An external laboratory audit is the responsibility of NJDEP and/or the CARP QA Officer. The audit may be conducted at the laboratories.

16.0 CORRECTIVE ACTION

Corrective action is the process of identifying, recommending, approving and implementing measures to manage circumstances requiring a deviation from the QAPP. Corrective action can be required during field and laboratory activities and during analyses, data validation, and data assessment. Corrective action will be approved by the Principal Investigator prior to being implemented. Corrective action in the chemistry laboratory may be required if, for instance, sampling containers break, or there are other unusual circumstances before or during sample preparation and analysis.

Analytical chemists at Battelle Duxbury and Columbus and at Frontier GeoSciences will be responsible for identifying and requesting corrective action pertaining to any aspect of the preparation and/or analyses of the test solutions. Mick DeGraeve and/or Robin Silva-Wilkinson will assist in identifying the need for corrective action, and will approve the action.

17.0 REPORTS

Written interim reports will be provided to the NJDEP Project Manager after each field sampling event. The interim reports will summarize the field collection activities. The data deliverables which will be included in the Final Report, are summarized in Section 13.0, Documentation, Data Reduction, and Reporting. The schedule for submittal of the Final Report is presented in Section 7.0, Schedule of Tasks and Deliverables.

Standard Operating Procedure for POTW Wastewater Collection and Shipment

I./II. Scope/Purpose

1.1 This Standard Operating Procedure (SOP) describes the procedure for POTW wastewater collection and shipment.

1.2 The samples are collected at a POTW over a 24-hour period and transported from the field collection site to a clean laboratory area for homogenizing and sub-sampling. The sub-samples are shipped to the appropriate analytical laboratories for analysis using an overnight courier.

III. References

None.

IV. Definitions

POTW: Publically Owned Treatment Works

Sample: The 20 or 40 liter composite sample collected in the field at each POTW. Forty liter composite samples are only collected in those cases where field duplicate or matrix spike and matrix spike duplicate samples are being collected for the organic analyses.

Sub-sample: The 2.5 liter, 1.0 liter or 500 mL samples obtained from the 20 or 40 liter field collected sample for laboratory analysis. These are the samples that are shipped to the laboratories for analysis.

V. Procedure

5.1 Determine the required number of coolers (for shipping the sub-samples to the laboratories) and sub-sample containers (for receiving the sub-samples of the composited POTW effluent samples) to hold and ship POTW wastewater samples for chemical analysis. The POTW samples are collected as 24-hour composite samples in pre-cleaned 20 or 40 Liter glass containers. The 20 or 40 liter composite samples are distributed to individual sub-sample containers for shipment to the analytical laboratories.

5.2 Record the following information on each CARP Sample Tracking System (STS) sub-sample container label using the codes listed in Attachment D (NJDEP SampleTrac Data Dictionary):

5.2.1 Sample Identification (ID #)
5.2.2 Planned analysis
5.2.3 Study ID #
5.2.4 Survey ID #
5.2.5 Sample QC Code
SA = Regular Sample
DU = Sample Duplicate
EB = Equipment Blank
FB = Field Blank
TB = Trip Blank (for metals only)
5.2.6 Date
5.2.7 Time of Collection
5.2.8 Composite Interval (if appropriate)
5.2.9 Collector's Initials
5.2.10 Field Station Identification

5.3 Based upon the results of the GLEC/PVSC investigations, a plan was developed to collect a 20 or 40 L composite sample of POTW effluent, which will be split at the Passaic Valley Sewerage Commissioner's (PVSC) laboratory into four 2.5 L sub-samples for organic contaminant analyses, one 500 mL subsample for POC/DOC analysis, one 1.0 liter subsample for TSS analyses, and three 500 mL subsamples in 500 mL Teflon® bottles for metals analysis (Attachment C). All of the sub-sample containers will be pre-cleaned and provided by the analytical laboratories. The 20 or 40 L sample will be transported on ice from the POTW and carefully homogenized at PVSC's chemistry laboratory. The sample will then be sub-sampled while being continually mixed (see Standard Operating Procedure (SOP)# GLEC-I-007-01). The POTW samples will be collected as 24-hour composite samples.

5.4 Completely fill out the CARP Chain-of-Custody Form (Attachment A), or another appropriate chain of custody form for each sample and sub-sample, with the appropriate information. Separate chain of custody forms will be maintained for each 20 or 40 liter sample and for the sub-samples. The chain of custody for the field collected samples will end when the sample is transported to the PVSC analytical laboratory. Place the sub-sample forms in a clear plastic bag and secure the bag with strapping tape to the inside of the cover of the shipping cooler.

5.5 If field measurements were obtained at the time of sample collection (e.g., temperature or other observations), record the appropriate information on the Chain-of-Custody Form (Attachment A) and the CARP STS Field Station Information module

(Attachment B). At a minimum, the following information will also be recorded in the field notebook:

5.5.1 Date
5.5.2 Time of Collection (start and end)
5.5.3 Field Station and Sampling Location
5.5.4 Collector's Name and Initials
5.5.5 Sample I.D. Number
5.5.6 Temperature

5.6 The POTW samples are collected as 24-hour composite samples from each POTW using an automatic ISCO or equivalent sampler. Each sample will consist of either 20 or 40 liters of wastewater collected in a 20 or 40 liter glass carboy container. Composite samples will be collected at the rate of approximately 850 mLs per hour during a twenty-four hour sampling period for the 20 liter samples. Composite samples will be collected at the rate of approximately 1700 mLs per hour during a twenty-four hour sampling period for the 40 liter samples. The 5-gallon carboys used to collect the composite samples in the field should be held in coolers (or some other appropriate container) with wet ice to lower sample temperatures during the 24-hour collection period. Samples should be transported to the PVSC laboratory in the container with wet ice, and held in these coolers while sub-sampling at the laboratory.

5.7 Duplicate field samples will be collected in a 40 liter glass carboy container at one POTW during each sampling event. Both the investigative and field duplicate sub-samples will be obtained from that 40 liter sample.

5.8 Matrix spike and matrix spike duplicate samples will also be collected in a 40 liter glass carboy container during each sampling event. These samples are collected from a different POTW than the field duplicate sample described above. For that sample, the investigative, matrix spike and matrix spike duplicate sub-samples will be collected from that 40 liter sample.

5.9 Field blanks will be collected at the PVSC laboratory by filling sub-sample containers with laboratory de-ionized water, using the same techniques (i.e., peristaltic pump) that were used to fill the investigative sub-sample containers. Blanks should consist of 2.5 liters of reagent grade water (500 mL for the metals samples) provided by the analytical laboratories. These bottles should be handled in a manner as similar as possible to investigative samples.

5.10 Trip blanks will be collected by filling sub-sample containers (pre-designated as trip blanks) with de-ionized water and transporting those containers with the investigative samples, including the trip to the POTW to collect the wastewater sample.

5.11 After all the samples are collected on any given sampling day, they will be cooled on wet ice as they are transported to the PVSC analytical laboratory.

5.12 At the PVSC laboratory, each sample will be continually mixed (see Standard Operating Procedure (SOP)# GLEC-I-007-01) while being distributed to the appropriate sub-sample container, and placed into an appropriate cooler for shipping. An adequate number of plastic 1-liter temperature control-bottles should be cooled in a refrigerator/freezer to 0-4 C prior to packing in wet ice for shipment to the analytical laboratories. The temperature of the temperature control bottle in each cooler should be measured and recorded on the chain-of-custody form before sealing the shipping container. If this temperature is not between 0-4 C, do not ship the samples. Temperature control bottles should be 1-liter plastic bottles filled with water and labeled as such. Completely pack each cooler with wet ice and secure the top of each cooler with strapping tape.

5.13 Ship the coolers overnight to the appropriate laboratory by courier using the pre-prepared address labels. The 2.5 L sub-samples will be shipped directly to Battelle for organic contaminant analysis (Columbus, Ohio for dioxin/furans, PCBs and pesticides, and Duxbury, Massachusetts for PAHs), where they will be filtered separately. Samples for metals analysis will be shipped to Frontier GeoSciences, and samples for TSS, TOC, and DOC analysis will be shipped to USGS in Denver, CO. A schematic diagram which outlines the sample splitting and analysis plan is shown in Attachment C.

VI. Quality Control

6.1 Records will be kept as indicated in this SOP and in the CARP STS. These are reviewed by the Principal Investigator and/or supervisory personnel.

6.2 Personnel must have prior written training documentation and be checked-off by designated training/supervisory personnel.

Originated by: Dennis J McCauley Date 3/19/01
Dennis J. McCauley

Approved by: _____ Date _____
Project Manager

ATTACHMENT A

NJDEP
New Jersey Toxics Reduction Work Plan
Contaminant Assessment Reduction Program (CARP)
Office of Coastal Planning & Program Coordination
PO Box 418 Trenton, NJ 08625
609-292-2662 (T) jpecchio@dep.state.nj.us

External Chain-of-Custody NJTRWP-2a for Study I-C, I-D, I-E, and I-G Metals: Frontier Geosciences (WA) to Research Groups

Laboratory-Prepared Sample Bottles/Field and Trip Blanks

Laboratory: Frontier Geosciences, Seattle, WA Research Group: __ USGS-NJ ___ SIT __SIT-Rutgers ___ GLEC

Sample Bottle Package: 3 x 500 mL Teflon Bottles with Closures
Prepared for Subsequent Trace Metals Analysis of Hg, Cd, Pb and Methyl-Hg at Frontier, Seattle, WA

SOP for Prep of Bottles/Field Blanks _____ SOP Revision (Date) ___-___-___

Individual Responsible for Preparing Sample Bottles (print and sign)

Name: _____ Signature: _____

Sample Bottles Prep (date) ___-___-___

Number of 500 mL Telfon Sample Bottle Sets: _____

Number of Lab Reagent-Water Field Blank Sets in 500 mL Teflon Sample Bottles: _____

Shipping Container Number: _____

Shipping Container Sealed (date) ___-___-___ Shipped: ___-___-___ (date), ___:___ (time)

Carrier_____ Shipping Bill Number:_____

Principal Investigator Sample Bottle/Field and Trip Blank Receipt

Shipping Container of Prepared Bottles Received: ___-___-___ (date) ___:___ (time)

Custody Seal Intact: _____Acceptable____ No Shipping Container Opened: ___-___-___ (date)

Individual Responsible for Custody of Sample Bottles (print and sign)

Name:_____ Signature:_____

Secure Storage of Bottles: ___ Acceptable ___ No Location: _____

Principal Investigator Sample Bottle Planned Use

Lead Sampler: _____ Survey ID: _____

Site IDs : _____

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External Chain-of-Custody NJTRWP-3 for Study 1-C, I-D, I-E or I-G SS, DOC and POC Sample Bottles

Laboratory-Receipt of Sample Bottles/Field Blanks

Laboratory: _____USGS-NJ (West Trenton) _____ SIT (Hoboken) _____ PVSC (Newark)

Sample Bottle Type: ____1 L Plastic with Plastic Closure ___ 1 L Amber-glass bottles, Teflon– lined closure
____ 125 mL Amber-glass Bottles for DOC/ POC samples.

Prepared for Subsequent Analysis of SS, DOC, and POC Samples at USGS Labs (KY/CO).

Sample 1 L Plastic Bottle Lot Number: _____ Sample 1 L Glass Bottle Lot Number: _____

Sample 125 mL Glass Bottle (DOC) Lot Number: _____

Number of Sample Bottles: ____ 1L Plastic _____1L Glass ____ 125 mL Amber-glass

Number of Field Blanks with Laboratory Reagent Water: ____125 mL Amber-glass

Source of Laboratory Reagent Water: _____

Individual Responsible for Custody of Sample Bottles (print and sign)

Name:_____ Signature:_____

Secure Storage of Bottles: _____Acceptable ___No Location: _____

Principal Investigator Sample Bottle Planned Use

Lead Sampler: _____ Survey ID_____

Site IDs: _____
_____
_____

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External Chain-of-Custody NJTRWP-5 Sample Bottles for Study I-G Samples: Battelle (OH) to GLEC Sampler

Laboratory-Prepared Sample Bottles/Field Blanks

Laboratory: Battelle, Columbus, OH
Sample Bottle Type: 2.5 L Amber-Glass Bottles with Telfon-lined Closure
Prepared for Subsequent HRMS Analysis of PCBs, PCDDs/Fs, Pesticides at Battelle, Columbus, OH

SOP for Prep of Bottles/ Field Blanks _____ SOP Revision (Date) ___-___-___

Individual Responsible for Preparing Sample Bottles (print and sign)

Name: _____ Signature: _____

Sample Bottles Prep (date) ___-___-___

Preservative chemical: ____ NaS_2O_3 ____ None Amount added (total mg): _____

Number of Sample Bottles: _____ Number of Field Blank Bottles: _____

Shipping Container Number: _____

Shipping Container Sealed (date) ___-___-___ Shipped: ___-___-___ (date) : ___:___ (time)

Carrier_____ Shipping Bill Number: _____

Principal Investigator Sample Bottle/Field Blank Receipt

Shipping Container of Prepared Bottles Received (date) ___-___-___ Time ___:___

Custody Seal Intact: _____Acceptable____ No Shipping Container Opened: ___-___-___ (date)

Individual Responsible for Custody of Sample Bottles (print and sign)

Name: _____ Signature: _____

Secure Storage of Bottles: ___ Acceptable ___ No Location: _____

Principal Investigator Sample Bottle Planned Use

Lead Sampler: _____ Survey ID: _____

Site IDs : _____

A= NJDIOXFUT B= NJPCBC C= NJPESTC

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External Chain-of-Custody NJTRWP-6 Sample Bottles for Study I-G Samples: Battelle (MA) to GLEC Sampler

Laboratory-Prepared Sample Bottles/Field Blanks

Laboratory: Battelle, Duxbury, MA
Sample Bottle Type: 2.5 L Amber-Glass Bottles with Telfon-lined Closure
Prepared for Subsequent LRMS Analysis of PAHs at Battelle, Duxbury, MA

SOP for Prep of Bottles/Field Blanks _____ SOP Revision (Date) ___-___-___

Individual Responsible for Preparing Sample Bottles (print and sign)

Name: _____ Signature: _____

Sample Bottles Prep (date) ___-___-___

Preservative chemical: ____ NaS_2O_3 ____ None Amount added (total mg): _____

Number of Sample Bottles: _____ Number of Field Blank Bottles: _____

Shipping Container Number: _____

Shipping Container Sealed (date) ___-___-___ Shipped: ___-___-___ (date) Time: ___:___

Carrier _____ Shipping Bill Number: _____

Principal Investigator Sample Bottle/Field Blank Receipt

Shipping Container of Prepared Bottles Received (date) ___-___-___ Time ___:___

Custody Seal Intact: _____ Acceptable ____ No Shipping Container Opened: ___-___-___ (date)

Individual Responsible for Custody of Sample Bottles (print and sign)

Name: _____ Signature: _____

Secure Storage of Bottles: ___ Acceptable ___ No Location: _____

Principal Investigator Sample Bottle Planned Use

Lead Sampler: _____ Survey ID: _____

Site IDs : _____

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External Chain-of-Custody NJTRWP-7 Sample Bottles for Study I-G Samples: PVSC to GLEC Sampler

Laboratory-Prepared Sample Bottles/Field Blanks

Laboratory: PVSC, Newark, NJ
Sample Bottle Type: 5 Gallon Glass Bottles with Teflon Closure
Prepared for Subsequent Subdivisions for NJTRWP Testing : Organics, Metals and Aggregate Samples

SOP for Prep of Bottles/Field Blanks _____ SOP Revision (Date) ___-___-___

Individual Responsible for Preparing Sample Bottles (print and sign)

Name: _____ Signature: _____

Sample Bottles Prep (date) ___-___-___

Number of Sample Bottles: _____ Number of Field Blank Bottles: _____

Individual Responsible for Custody of Sample Bottles (print and sign)

Name: _____ Signature: _____

Secure Storage of Bottles: ____ Acceptable ___ No Location: _____

Principal Investigator Sample Bottle Planned Use

Lead Sampler: _____ Survey ID: _____

Site IDs : _____

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External Chain-of-Custody NJTRWP-8 Samples for Study I-G: From PVSC Lab to Analytical Labs

Survey ID: _____ Lead Sampler: _____
Signature : _____

Station ID of Composite	Date	Temp C°	pH	Residual Cl_2 mg/L	CARP Sample IDs
	/ /				
	/ /				
	/ /				
	/ /				

CARP Sample Identification # of Subdivided Samples	Q	V	Date	Time	Organics A, B, C (OH)	Organics NJPACH (MA)	NJ Metals (WA)	NJ Metals B (WA)	SS (KY)	DOC POC (CO)
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						
			/ /	:						

A= NJDIOXFUT B= NJPCBC C= NJPESTC

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Sample Cooler Shipment from PVSC to Analytical Laboratories

COC NJTRWP-8 p 2 of 2

Shipping Container Number: _____
Cooler Temperature Control Bottle _____ C°
Shipping Container Sealed: ___-___-___ (date) Shipped: ___-___-___ (date) ___:___ (time)

Carrier: _____ Shipping Bill Number: _____
Name: _____ Signature: _____

Laboratory Log-In/ Preservation Check-Sheet

Sample Cooler Received by Laboratory _____ (Name/Location)
Sample Custodian

Print _____ Receipt: ___-___-___ (date) ___:___(time)
Sign _____

Laboratory COC Initiated: ___-___-___ (date) ___:___ (time)
Laboratory IDs Assigned: _____

Condition of Cooler/ Sample Bottles upon Laboratory Receipt

Sample Cooler Ice present: _____Yes _____No
Cooler Temperature Control Bottle : _____C°

Note: If the temperature control bottle is >6 C°, then contact the GLEC Project Manager before analysis.

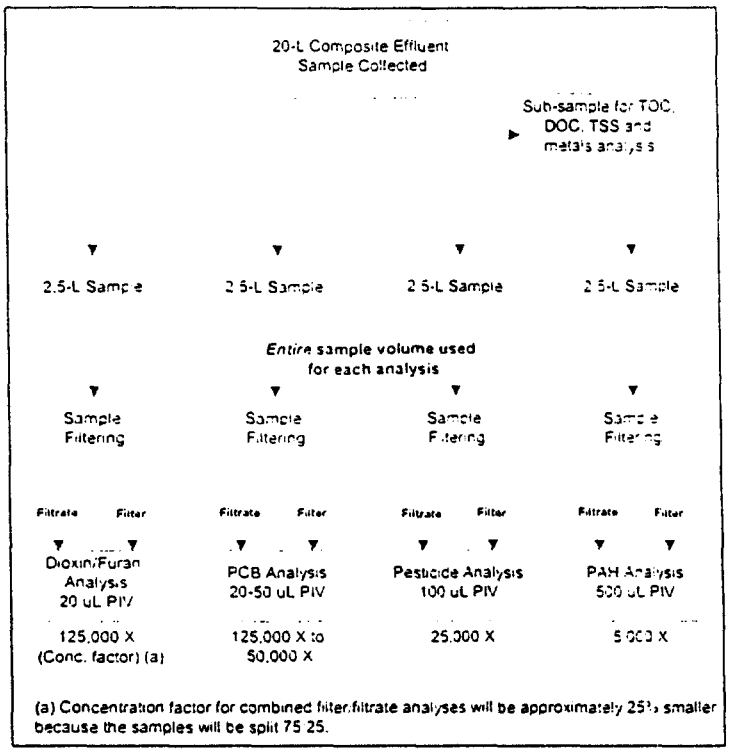
CARP Sample Identification Number and Type SA= Sample DU= Duplicate TB= Trip Blank FB= Field Blank EB= Equipment Blank MS/MSD= Matrix Spike/ MS Duplicate	Bottle Intact on Receipt	Label Intact	Sufficient Volume	pH not	Residual Cl_2 mg/L measured
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		
	_Y_N	_Y_N	_Y_N		

Certification of COC & Preservation

Certification of Acceptable COC and Preservation: _____Yes ____ No
If major exceptions, permission to analyze from Project Manager _____Yes _____No

ATTACHMENT B

ATTACHMENT C



Whole water (effluent) sample collection and analysis plan.

ATTACHMENT D
(NJDEP SAMPLE TRAC DATA DICTIONARY)

NJDEP SAMPLE TRAC DATA DICTIONARY (16 NOV 2000)

FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Analysis Methods		I-C	I-D	I-E	I-G
DOC	DOC	X	X	X	X
POC	POC	X	X	X	X
TOC	TOC	X	X	X	X
TSS	TSS	X	X	X	X
CV-AVS	Hg	X	X	X	X
EPA 1630	Hg	X	X	X	X
EPA 1631	Hg	X	X	X	X
EPA 1638 MOD	Cd, Pb	X	X	X	X
EPA 1613b	Dioxins/Furans	X	X	X	X
EPA 1668A	PCB Congeners				X
EPA 1668 MOD	PCB Congeners	X	X	X	
NYSDEC HRMS2	Pesticides	X	X	X	X
NYSDEC HRMS3	PAHs	X	X	X	X
Associated Methods	Same as *Planned Analysis*				
Batch Number	???????				
Billing References	???????				
Container Sizes	**Study PIs to verify**	I-C	I-D	I-E	I-G
ME	500 mL Teflon for metals	X	X	X	X
25L	2.5 Liter bottles				X
Custodians	?samples? ?data? ?other?				
Field Measurements	**Study PIs to verify**	I-C	I-D	I-E	I-G
CSO Flow					X
Deployment Depth			X	X	
Flowmeter Used		X			
Flowmeter Reading		X			
MGD		X			X
River Mile (RM)		X	X	X	
Salinity			X	X	
Sample Description		X	X	X	X
Streamflow		X			
SWO Flow					X

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FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Field Measurements (cont)	Study PIs to verify	I-C	I-D	I-E	I-G
Temperature		X	X	X	X
Water Depth		X	X	X	
Water Volume					
WWTP Flow					X
XAD Water Volume		X	X	X	
Planned Analysis		I-C	I-D	I-E	I-G
NJ Metals T - Total D - dissolved M - methyl Hg	Cd, Pb, Hg (Total/Dissolved) Methyl-Hg	X	X	X	X
NJ Metals B Blank ->	Cd, Pb, Hg (Total)	X	X	X	X
NJDIOXFUA	Dioxins/Furans – Grab Filter				X*
NJDIOXFUB	Dioxins/Furans – Grab Diss.				X*
NJDIOXFUC	Dioxins/Furans – Grab Total				X
NJDIOXFUR	Dioxins/Furans – TOPS Filter	X*	X*	X*	
DOC	DOC	X	X	X	X
POC	POC	X	X	X	X
TSS	SS	X	X	X	X
NJPCBA	PCB Congeners – Grab Filter				X*
NJPCBB	PCB Congeners – Grab Diss.				X*
NJPCBC	PCB Congeners – Grab Total				X
NJPCB	PCB Congeners – TOPS Filter	X*	X*	X*	
NJPESTA	Pesticides – Grab Filter				X*
NJPESTB	Pesticides – Grab Dissolved				X*
NJPESTC	Pesticides – Grab Total				X
NJPEST	Pesticides – TOPS Filter	X*	X*	X*	
NJPAHA	PAHs – Grab Filter				X*
NJPAHB	PAHs – Grab Dissolved	X	X	X	X*
NJPAHC	PAHs – Grab Total	X*	X*	X*	X
NJXAD	Dissolved pesticides, PCBs	X	X	X	
NJFILTER	TOPS – pesticides, PCBs, PAHs, dioxins/furans	X	X	X	X
		*should not be used after June/Oct 2000 sampling events			

FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Field Observations	Study PIs to verify	I-C	I-D	I-E	I-G
Additional Notes		X	X	X	X
Date		X	X	X	X
Field Crew		X	X	X	X
Latitude		X	X	X	X
Longitude		X	X	X	X
Project		X	X	X	X
River Mile		X	X	X	
Sample Description		X	X	X	X
Site Description		X	X	X	X
Tidal Cycle			X	X	
Time		X	X	X	X
Weather Conditions		X	X	X	X
Field QC Code		I-C	I-D	I-E	I-G
DU	Field Duplicate of Reg Sample				X
EB	Field Equipment Blank	X	X	X	X
FB	Field Blank	X	X	X	X
SA	Regular Field Sample	X	X	X	X
TB	Field Trip Blank	X	X	X	X
MS	Matrix Spike Sample				X
MSD	Matrix Spike Duplicate				X
Field Stations		I-C	I-D	I-E	I-G
ELIH	USGS-Elizabeth River HOT	X			
HACH	USGS-Hacken River HOT	X			
PASH	USGS-Passaic River HOT	X			
RAHH	USGS-Rahway River HOT	X			
RARH	USGS-Raritan River HOT	X			
ELIZ1	NJTRWPI-D Elizabeth River		X		
HAC1/2/3	NJTRWPI-D Hackensack Riv		X		
PAS1/2/3	NJTRWPI-D Passaic River		X		
RWY1	NJTRWPI-D Rahway River		X		
RAR1/2	NJTRWPI-D Raritan River		X		
AK1/2	NJTRWPI-E Arthur Kill			X	
KVK001	NJTRWPI-E Kill Van Kull			X	
NB001S or D/002/003	NJTRWPI-E Newark Bay			X	

FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Field Stations (cont)		I-C	I-D	I-E	I-G
The STO/CSO/SWO locations are identified in the CARP database using NJTRWPI-G					
ST002	PVSC				X
ST008	Middlesex County MUA				X
ST012	Bergen County MUA				X
ST014	Joint Meeting Essex-Union				X
ST021	Rahway Valley MUA				X
ST025	Linden-Roselle MUA				X
ST026	North Hudson – Hoboken, etc.				X
ST027	North Bergen - Central				X
ST028	North Bergen - Woodcliff				X
ST029	Edgewater MUA				X
ST030	North Hudson – West NY				X
ST031	Secaucus MUA				X
CSO010	Jersey City Intersection				X
CSO011	Bayonne Intersection				X
CSO012	MCUA/Thramboy				X
CSO013	Joint Meeting/Elizabeth				X
CSO033	Rahway Outfall 003 (CSO)				X
CSO015	Ivy Street (Passaic River)				X
CSO016	Christie Street (Hackensack R)				X
CSO017	Court Street (Hackensack Riv)				X
CSO018	Livingston & Front Streets				X
CSO019	Worthington Avenue				X
CSO032	Front Street and Bay Way				X
CSO021	Elm Street				X
CSO022	Anderson Street				X
CSO023	West Side Road				X
CSO024	Canpbell Foundry				X
CSO025	Jackson Street				X
CSO026	Johnston Road				X
CSO027	Herbert Place				X
CSO028	91st Street Bellman's Creek				X
CSO029	Fourth & Hackensack Streets				X
CSO030	Overpeck Creek				X
CSO031	Elizabeth Ave/Memorial Park				X
SWO010	Peripheral Ditch (Newark Air)				X
SWO011	Blanchard Street (Passaic Riv)				X
SWO012	CCI				X
SWO013	Smith Marina				X

FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Field Stations (cont)		I-C	I-D	I-E	I-G
SWO017	Elm Street (Hackensack Riv)				X
SWO015	Henley Road (Hackensack R)				X
SWO016	Anderson St. (Hackensack R)				X
SWO018	West Side Rd./Cromakill Cr.				X
SWO019	Napp-Greco				X
SWO020	Third Street Drainage Ditch				X
SWO021	East Jersey & Front Streets				X
Field Units	**Study PIs to verify**				
Gear Types		I-C	I-D	I-E	I-G
Grab		X	X	X	X
ISCO		X			X
Peristaltic Pump		X	X	X	X
TOPS-SIT		X	X	X	
Instructions	**Under Construction**				
Labs		I-C	I-D	I-E	I-G
BATC	Battelle, Columbus OH				X
BATD	Battelle, Duxbury, CT				X
FGS	Frontier Geosciences	X	X	X	X
KDSL	USGS, Kentucky	X	X	X	X
NWQL	USGS, Colorado	X	X	X	X
QTK	Quanterra/STL, Knoxville	X	X	X	
Location Types		I-C	I-D	I-E	I-G
AMB	Ambient			X	
CSO	Combine Sewer Overflow				X
HOT	Head of Tide	X			
STP	Sewage Treatment Plant				X
SWO	Stormwater Outfall				X
TRIB	Tributary		X		
Navigation System	???????				
Preservatives		I-C	I-D	I-E	I-G
Chilled		X	X	X	X
Frozen		X	X	X	X
NA3S2O3	Sodium Thisulfate				X
Acid	2.0 ml H2SO4 for DOC	X	X	X	X

FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Sample Collection SOPs	???????				
Sample Wt/Volume Units	**Study PIs to verify**				
Sample Collectors	**Study PIs to identify and supply info to Pecchioli**				
		I-C	I-D	I-E	I-G
TPW	Timothy Wilson				X
JLB	Jennifer L. Bonin				X
NPS	Nicholas P. Smith				X
PAJ	Pamela A. Jankowski				X
Shipping Vendors	**Study PIs to verify**				
Species List	**Not Applicable**				
Station Types		I-C	I-D	I-E	I-G
CSO	Combined Sew Overflow				X
Point	Point Location	X	X		
POTW	Sewage Treatment Plant				X
SWO	Stormwater Outfall				X
TRAN	Transect			X	X
Study IDs	**NJTRWPI-C/D/E/G as applicable**				
Surveys	**To Be Determined by Pecchioli**				
		I-C	I-D	I-E	I-G
2000-IGA	Oct 2-3, 2000; 6 POTWs				X
2000-IGB	Dec 2000; 12 POTWs				X
2000-ICA	Jun 22-29, 2000; 5 HOT stations	X			
2000-IDEA	Jun 20-22, 2000; Newark Bay, Passaic, Hackensack		X	X	
2000-ICB1	Dec 2000; Hackensack & Passaic	X			
2000-ICB2	Dec 2000; Raritan, Rahway & Elizabeth	X			
2000-IDA1	Dec 2000; Hackensack & Passaic		X		
2000-IDA2	Dec 2000; Raritan, Rahway & Elizabeth		X		

FIELD/CODE	DESCRIPTION	STUDY APPLICABILITY			
Surveys (cont)		I-C	I-D	I-E	I-G
2000-IEA1	Dec 2000; Newark Bay, KVK, Arthur Kill			X	
2000-IEA2	Dec 2000; Arthur Kill, ?			X	
Tidal Stages	**Study PIs to verify – adequate?**				
Turn-Around Time					
Standard					
60-Day					
Users	**Input as part of CARP Database use**				
Version	**Only applicable to Pecchioli**				

Great Lakes Environmental Center
SOP Number: GLEC CARP-006-01
Effective Date: September 19, 2000

Standard Operating Procedure
for the ISCO 3700 Portable Sampler

I/II. Scope/Purpose

1.1 This Standard Operating Procedure (SOP) describes the method used for the maintenance and operation of the ISCO 3700 Portable Sampler used for POTW wastewater sampling. These procedures may also be applied to other automatic samplers and ISCO models with little variation. Some POTWs will provide their own samplers. Users should refer to the specific instruction manual for each type of sampler used.

III. References

2.1 Refer to procedures described in "3700 Portable Sampler Instruction Manual" and the "ISCO 3700 Portable Sampler Pocket Guide", or other manuals for different samplers. Due to the number of variations in samplers, it is essential to use the instruction manual provided in Attachment A or the instruction manual provided for any other sampler in conjunction with this SOP.

IV. Definitions

None.

V. Procedures

5.1 Setup procedures.

5.1.1 Sample bottles. Place cleaned 20 liter glass bottles in the base section (refer to Figure 2.1-1 and 2.1-2 in the instruction manual-Attachment A) of the sampler, or in an adjacent bottle holder. Make sure the sampler is on a relatively flat surface. The sampler is used to collect 24-hour composite samples. Different types of sample containers may be used by following the instructions in Chapter 5 of the instruction manual.

5.1.2 Cooling the sample. Pack wet ice around the 20 liter carboy to cool the sample, if necessary. Some samplers may be refrigerated.

5.1.3 Suction line. Attach the suction line (refer to the instruction manual) so that it is continuously sloped downhill.

5.1.4 Power Source. Connect the sampler to a power source, refer to pages 2-6 and 2-7 of the attached instruction manual or other manuals for specific power requirements. Note caution warning on page 2-7 of the attached manual.

5.1.5 Flow meter. Connect the sampler to a flow meter following the guidelines in Chapter 5 of the manual, or if a flow meter is not used, be sure the protective cover is screwed in place.

5.2 Programming the sampler for automatic operation.

5.2.1 Once the above steps have been completed, the sampler is ready to be programmed following the guidelines in chapter 4 of the instruction manual.

5.2.2 The sampler will automatically stop after the bottle has been filled and the display will read "DONE".

5.3 Routine Maintenance Procedures

5.3.1 Clean the sampler case, tubing and bottles following the procedures in Chapter 6 of the instruction manual. Cleaning protocols for priority pollutants are also given in Chapter 6 of the instruction manual.

5.3.2 Replace pump tubing and suction tubing as discussed in section 6.2 and 6.3 of the instruction manual.

5.3.3 Change the internal dessicant as described in section 6.4 of the instruction manual.

5.4 Quality Control

5.4.1 Clean glassware and associated equipment in the prescribed manner and return to the appropriate location.

Originated by: Pamela F. Smith Date 2/19/01
Pamela F. Smith

Approved by: Dennis J McCauley Date 9/19/00
Laboratory Manager

Standard Operating Procedure
for
Sub-Sampling and Distribution of Large Wastewater Samples for Chemical Analysis

I/II. Scope/Purpose

1.1 This Standard Operating Procedure describes the methods used for homogenizing 20 or 40 liter wastewater samples and sub-sampling those samples for chemical analysis.

1.2 The samples are transported on ice from the POTW to the Passaic valley Sewerage Commissioner's (PVSC) analytical laboratory area for mixing and sub-sampling.

1.3 The types of analysis to be performed include, dioxins/furans. PCBs, pesticides, PAHs, metals, TOC, DOC, and TSS.

III. References

None.

IV Definitions

POTW: Publically Owned Treatment Works

Sample: The 20 or 40 liter composite sample collected in the field at each POTW.

Sub-sample: The 2.5 liter, 1.0 liter or 500 mL samples obtained from the 20 or 40 liter field collected sample for laboratory analysis. These are the samples that are shipped to the laboratories for analysis.

V. Procedures

5.1 Methods

5.1.1 Each individual 20 or 40 liter POTW effluent sample is transported to the laboratory on ice and mixed in the field collection container by inserting rotating PVC or Teflon coated blades from the top.

5.2 General Procedure

5.2.1 For the POTW samples, prior to shipment of the aliquot sub-sample containers to GLEC, an amount of sodium thiosulfate will be added by the

analytical laboratory to the aliquot sample containers (intended for organic analysis) to achieve a final sodium thiosulfate concentration of 80 mg.L.

5.2.2 Place labels on the sub-sample containers, and with the rotating blades in continual motion, distribute the composited sample into the appropriate sub-sample containers using a peristaltic pump while the sample is continually mixed.

5.2.3 Laboratory Sub-sampling: in order to minimize possible sample contamination, first collect all three metals sub-samples, and then proceed to collect the other organics sub-samples. When mixing the composite sample, care should be taken to minimize the amount of aeration and cavitation of the sample (i.e. use low rpm).

5.2.4 If possible, include one additional 2.5 liter sample container of effluent from each POTW in each shipping container to be used by the analytical laboratory in the event that a sample bottle breaks during shipment.

5.3 Sub-sample Shipping

5.3.1 All sub-samples to be shipped out for analysis should be shipped on wet ice, priority overnight, and follow federal and state regulations for shipping of wastewater samples to prevent leakage and to preserve sample integrity.

5.4 Sub-sample Label and Log

Each composited sub-sample container is labeled with the following CARP STS information using the codes listed in Attachment D of SOP Number GLEC CARP-002-01:

5.4.1 Sub-Sample Identification (ID #)
5.4.2 Planned analysis
5.4.3 Study ID #
5.4.4 Survey ID #
5.4.5 Sample QC Code
SA = Regular Sample
DU = Sample Duplicate
EB = Equipment Blank
FB = Field Blank
TB = Trip Blank (metals only)

5.4.6 Date
5.4.7 Time of Collection
5.4.8 Composite Interval (if appropriate)
5.4.9 Collector's Initials
5.4.10 Field Station Identification

This information is also recorded in the field log (notebook) along with the intended analysis and any pertinent observations.

VI. Quality Control

6.1 Records will be maintained as indicated in this SOP. These records are reviewed by the Principal Investigator and/or supervisory personnel.

6.2 Personnel must have prior written training documentation and be checked-off by designated training/supervisory personnel.

Originated by: Dennis J McCauley Date 3/19/01

Approved by: _____ Date _____

Standard Operating Procedure
for
CSO/SWO Wastewater Collection (GRAB and GRAB COMPOSITE)

I/II. Scope/Purpose

1.1 This Standard Operating Procedure describes the method for collection of Combined Sewer Outfall (CSO) and Storm Water Outfall (SWO) samples intended for chemical analysis.
1.2 These samples are collected as instantaneous grab samples once, or as grab composite samples at intervals throughout the precipitation event.
1.3 The types of analyses to be performed include dioxins/furans, PCBs, pesticides, PAHs, metals, TOC, DOC and TSS.

III. References

None.

IV. Definitions.

Precipitation Event: Storms that are forecast to produce at least 0.2 inches of rain, and which have average intensities of at least 0.05 inches per hour, with no more than 4 continuous dry hours.

V. Procedures

5.1 Methods

5.1.1 A peristaltic pump will be used to collect samples from pre-determined CSO/SWO sampling sites.
5.1.2 The pump includes a pre-sample and post-sample air purge to eliminate cross contamination and sediment build up between sample collections.
5.1.3 Multiple grab samples (grab composite) may be collected over the course of a precipitation event (if practical); alternately, the sample may be collected as one single collection (instantaneous grab. In those instances when multiple samples are collected from one location, the sub-samples will be composited in one container before aliquots are distributed to sub-sample containers for shipment.

5.2 General Procedure

5.2.1 At the sampling site, the manhole cover is removed and the weighted sampler hose is lowered into the wastewater flow until submerged.

5.2.2 The pump is activated and wastewater is collected directly from the CSO/SWO.

5.2.3 A 20 liter sample will be collected into a glass sample container, and placed on ice until compositing and homogenizing can be completed. The 20 liter sample may consist of multiple sub-samples collected over the course of the precipitation event.

5.2.4 The samples are transported on ice to the Passaic Valley Sewerage Commissioner's (PVSC) laboratory area for mixing and sub-sampling. Each individual 20 or 40 liter CSO/SWO effluent sample is transported to the laboratory on ice and mixed in the field collection container by inserting rotating PVC or Teflon coated blades from the top.

5.2.5 Place labels on the sub-sample containers, and with the rotating blades in continual motion, distribute the composited sample into the appropriate sub-sample containers using a peristaltic pump while the sample is continually mixed.

5.2.6 (add section 6.4 From SOP CARP-011-01) done

5.3 Sub-Sample Label and Log

Each sample container is labeled with the following information:

5.3.1 Sample Identification (ID #)
5.3.2 Planned analysis
5.3.3 Study ID #
5.3.4 Survey ID #
5.3.5 Sample QC Code
- SA = Regular Sample
- DU = Sample Duplicate
- EB = Equipment Blank
- FB = Field Blank

5.3.6 Date

5.3.7 Time of Collection
5.3.8 Composite Interval and volume (if appropriate)
5.3.9 Collector's Initials

This information is also recorded in the field log along with the intended analysis and any pertinent observations.

VI. Quality Control

6.1 Records will be kept as indicated in this SOP. These are reviewed by the Principal Investigator and/or supervisory personnel.

6.2 Personnel must have prior written training documentation and be checked-off by designated training/supervisory personnel.

Originated by: Dennis J McCauley Date 9/19/00

Approved by: [signature] for GM DeGraeve Date 2/20/01

Standard Operating Procedure
for
Collection of Equipment Blank Samples

I/II. Scope/Purpose

1.1 This Standard Operating Procedure describes the method for obtaining Equipment Blank sub-samples for "clean" metals, organics, TSS and organic carbon analyses using a peristaltic pump prior to the collection of CSO and SWO wastewater samples for the CARP program. Reagent grade water, obtained from the analytical laboratories, should be pumped through the sampling equipment after it has been cleaned, but prior to taking the sampling equipment to the field. The equipment blank samples are collected at the Passaic Valley Sewerage Commission's (PVSC) analytical laboratory where the samples are sub-sampled for metals and organics analyses. During the procedure for collecting equipment blank samples for metal analysis, care must be taken by the designated "clean" person to avoid touching any metal surface, as specified in SOP GLEC-CARP-009-01. Equipment blank samples will only be collected during the CSO/SWO field sampling. One equipment blank sample will be collected each day prior to the initiation of the field collection of samples.

III. References

GLEC-CARP-009-01, Standard Operating Procedure for Collection of POTW, CSO and SWO Wastewater Sub-Samples for "Clean" Metals Analysis

New Jersey Toxics Reduction Work Plan, Study I-C, United States Geological Survey (USGS)

IV. Definitions.

CSO:	Combined Sewer Outfall
SWO:	Storm Water Outfall
Sub-sample:	The 2.5 liter, 1.0 liter or 500 mL samples obtained from the reagent grade water source for laboratory analysis. These are the samples that are shipped to the laboratories for analysis.

V. Equipment

5.1 500 mL Teflon® bottles with caps supplied by Frontier Geosciences will be used to obtain the sub-samples for trace metals. These bottles are shipped pre-cleaned from the analytical laboratory to ensure that they are not contaminated.

5.2 2.5 liter amber glass bottles with caps supplied by Battelle will be used to obtain the sub-samples for PAH, pesticides, PCB and Dioxin/Furan analyses. These bottles are shipped pre-cleaned from the analytical laboratory to ensure that they are not contaminated.

5.3 1.0 liter polypropylene bottles with caps will be used to obtain sub-samples for suspended solids and organic carbon analyses. These bottles are shipped pre-cleaned from the GLEC laboratory to ensure that they are not contaminated.

5.4 Wrist length latex gloves (powder free)

5.5 Cooler with ice

5.6 Lab analysis forms (CARP STS or other Chain of Custody and sub-sample bottle labels)

5.7 Federal Express next day shipping documents

5.8 Shipping boxes

5.9 Peristaltic pump and power source

5.10 Teflon® sampling tubing

5.11 Counterweight for sampling tube

5.12 12" section of C-Flex® tubing for pump head

5.13 2% nitric acid for Teflon® tubing rinse

5.14 Acetone and hexane for Teflon® tubing rinse

VI. Procedures

6.1 Collection of equipment blank sub-samples for metals analysis: See USGS Study I-C and GLEC-CARP-009-01 SOPs for detailed procedures for collecting samples for metals analysis. Only 500 mL Teflon® bottles will be used. The first samples collected should be for the dissolved metals fraction; the filter is left in-line to collect the dissolved metal fraction. The filter is removed to collect the "total" metal samples. The equipment blank sub-sample is collected from a four liter bottle containing reagent grade de-ionized water using the peristaltic pump used to collect CSO/SWO samples in the field. Reagent grade water obtained from the analytical laboratories should be pumped through the sampling equipment after it has been cleaned, but prior to taking the sampling equipment to the field. During the procedure, care must be taken by the designated "clean" person to avoid touching any metal surface.

6.2 Collection of equipment blank sub-samples for the analysis of Organics: Only 2.5 liter amber glass bottles will be used. The equipment blank sub-sample is collected from bottles containing reagent grade de-ionized water using the peristaltic pump used to collect CSO/SWO samples in the field. Reagent grade water obtained from the analytical laboratories should be pumped through the sampling equipment after it has been cleaned, but prior to taking the sampling equipment to the field.

6.2 Collection of equipment blank sub-samples for the determination of TSS, POC/DOC: Only 1.0 liter polypropylene bottles will be used. The equipment blank sub-sample is collected from bottles containing reagent grade de-ionized water using the peristaltic pump used to collect CSO/SWO samples in the field. Reagent grade water obtained from the analytical laboratories should be pumped through the sampling equipment after it has been cleaned, but prior to taking the sampling equipment to the field.

6.3 Include the equipment blank samples with the other QA/QC and investigative samples and ship the coolers overnight to the appropriate laboratory by courier using the pre-prepared address labels. The 2.5 L sub-samples will be shipped directly to Battelle for organic contaminant analysis (Columbus, Ohio for dioxin/furans, PCBs and pesticides, and Duxbury, Massachusetts for PAHs), where they will be filtered separately. Samples for metals analysis will be shipped to Frontier GeoSciences; samples for TSS analysis will be shipped to the USGS laboratory in Kentucky; and the sub-samples for TOC, and DOC analysis will be shipped to USGS in Denver, CO.

VII. Quality Control

7.1 Records will be kept as indicated in the Quality Assurance Project Plan (QAPP), in field record books and in the CARP STS. These are reviewed by the Principal Investigator and/or supervisory personnel.

7.2 Personnel must have prior written training documentation and be approved by designated training/supervisory personnel.

Originated by: Dennis J McCauley Date 3/19/01
Dennis J. McCauley

Approved by: _____ Date _____
Project Manager

Standard Operating Procedure
for
Collection of POTW, CSO and SWO Wastewater Sub-Samples for "Clean" Metals Analysis

I/II. Scope/Purpose

1.1 This Standard Operating Procedure describes the method for obtaining wastewater sub-samples for "clean" metals analysis using a peristaltic pump. Samples for metals analysis are obtained from the glass field collection container (20 or 40 liter carboy) used to collect POTW, CSO and SWO samples. The field collected samples are transported to the Passaic Valley Sewerage Commission's (PVSC) analytical laboratory where the samples are sub-sampled for metals analysis. During the procedure, care must be taken to avoid touching any metal surface by the designated "clean" person.

1.2 Included are methods for obtaining sub-samples for total and dissolved trace metals and mercury analyses. Field equipment blank, and transport (trip) blank samples are also included in the procedure.

III. References

None.

IV. Definitions.

POTW:	Public Owned Treatment Works
CSO:	Combined Sewer Outfall
SWO:	Storm Water Outfall
Sample:	The 20 or 40 liter composite sample collected in the field at the POTW, CSO or SWO.
Sub-sample:	The 2.5 liter, 1.0 liter or 500 mL samples obtained from the 20 or 40 liter field collected sample for laboratory analysis. These are the samples that are shipped to the laboratories for analysis.

V. Equipment

5.1 500 mL Teflon bottles with caps supplied by Frontier Geosciences will be used to obtain the sub-samples for trace metals. These bottles are shipped pre-cleaned from the analytical laboratory to ensure that they are not contaminated.

5.2 500ml Teflon bottles with caps are used for mercury. These bottles are shipped pre-cleaned from the analytical laboratory to ensure that they are not contaminated.
5.3 Wrist length latex gloves (powder free)
5.4 Sharpie™ felt tip markers (placed into double Ziploc bags when new and designated clean)
5.5 Low particle KimWipes™
5.6 Cooler with ice
5.7 Ziploc bags
5.8 Lab analysis forms (CARP STS or other Chain of Custody and sub-sample bottle labels)
5.9 Federal Express Next Day shipping documents
5.10 Shipping boxes
5.11 Peristaltic pump and power source
5.12 Teflon sampling tubing
5.13 Counterweight for sampling tube
5.14 12" section of C-Flex tubing for pump head (1 new piece for each POTW, CSO and SWO location)
5.15 2% nitric acid for Teflon tubing rinse
5.16 Filter with filter adapter

VI. Procedures

6.1 See USGS Study I-C SOP for detailed procedures. Only 500 mL Teflon bottles will be used. The first samples collected should be for the dissolved metals fraction; the filter is left in-line to collect the dissolved metal fraction. The filter is removed to collect the "total" metal samples.

Methods for obtaining in the laboratory total and dissolved trace metals and mercury sub-samples from the glass field collection container (20 liter carboy) for POTW, CSO and SWO samples are described in this procedure. The wastewater samples are transported on ice to PVSC's laboratory and sub-sampled for the metals analysis. During the procedure, care must be taken to avoid touching any metal surface by the designated "clean" person.)

6.1.1 Designate clean/dirty person roles for the sampling procedure.
6.1.2 Clean and dirty person puts on wrist length latex gloves.
6.1.3 Dirty person sets up pump and attaches power source.
6.1.4 Dirty person retrieves the C-Flex tubing and opens the outer bag.
6.1.5 Clean person opens inner bag and removes C-Flex tubing.

6.1.6 Dirty person opens pump head, clean person inserts C-Flex tubing (the ends of C-Flex tubing must not touch any surface).
6.1.7 Dirty person closes plump head.
6.1.8 Clean person attaches sampling tubing to C-Flex tubing.
6.1.9 Dirty person starts pump and lets it run for 30 seconds to rinse tubing before sampling.
6.1.10 Dirty person takes the first bottle (Teflon) from the tote.
6.1.11 Dirty person opens the outer bag for the bottle. The clean person reaches into the bag and removes the inner bag, opens it and removes the bottle.
6.1.12 Clean person places CARP STS labels on the bottle.
6.1.13 When the rinse is finished, the first bottle (Teflon) can be filled.

6.1.14 Clean person opens the bottle and fills it from the pump flow.
6.1.15 When bottle is filled to the shoulder, remove from flow and cap.
6.1.16 Sample is rebagged, inner then outer and placed in cooler with ice.
6.1.17 Dirty person retrieves poly bottle from tote and the outer bag is opened.
6.1.18 Clean person opens inner bag and removes bottle.
6.1.19 Clean person opens bottle and collects sample from pump flow.
6.1.20 Bottle is filled to shoulder and then capped.
6.1.21 Dirty person stops pump
6.1.22 Sample is properly bagged and placed in cooler with ice.
6.1.23 Pump is stopped and counterweight is placed in acid rinse container.
6.1.24 Pump is started and allowed to run for 30 seconds with acid going from rinse bottle to waste bottle through the tubing.
6.1.25 At the end of 30 seconds, the counterweight is lifted to allow the tubing to empty then the pump is stopped.
6.1.26 Sampling tubing and counterweight are disconnected by the clean person from the C-Flex tubing. The outside of the weight and tubing are wiped with a Kim wipe to clean and put away.
6.1.27 End clean/dirty roles
6.1.28 Sample tracking form is filled out for each set of samples taken.
6.1.29 Samples are packaged and shipped on wet ice to the analytical laboratory that same day via overnight courier.

6.2 Equipment Blank (CSO/SWO only)

6.2.1 Reagent grade water (500 mL) obtained from Frontier Geosciences should be pumped through the sampling equipment after it has been cleaned, but prior to taking the sampling equipment to the field. Steps 6.1.1 through 6.1.15 of pump collection are performed to obtain equipment blank samples except that the sample is obtained from a container containing "clean" water.

Originated by: Dennis J. McCauley Date 3/19/01
Dennis J. McCauley

Approved by: _____ Date _____
Project Manager

Standard Operating Procedure
for
Field Cleaning of Glassware, Equipment, and Sample Containers
Used for the Collection of Chemical Residue Samples

I/II. Scope/Purpose

1.1 This Standard Operating Procedure (SOP) describes the procedure for the field cleaning of glassware, equipment, and sample containers used for the collection of chemical residue samples. In this instance, the field cleaning will be conducted at the PVSC glassware wash room and analytical chemistry laboratory.

III. References

None

IV. Definitions

None.

V. Procedures

5.1 Remove any marker or tape labels from glassware, equipment, and sample containers. A paper towel wetted with acetone can be used to remove marker ink from glass surfaces.

5.2 Wash all glassware, equipment, sample containers, and any other associated apparatus used for the collection of chemical residues with a phosphate-free detergent and appropriate brushes.

5.3 Rinse thoroughly with hot tap water until sudsing has ceased.

5.4 Rinse with a 10-20% solution of hydrochloric or nitric acid ensuring that all interior surfaces are covered.

5.5 Rinse thoroughly (3 to 5 times) with reverse osmosis or deionized water.

5.6 Rinse twice with HPLC-grade acetone ensuring that all interior surfaces are covered.

5.7 Rinse twice with pesticide-grade hexane ensuring that all interior surfaces are covered.

5.9 Allow to air dry.

5.10 Cover the mouth of the vessel with solvent rinsed foil or Teflon coated stoppers prior to storage.

5.11 Store the cleaned vessels in a secure area inside clean cardboard containers.

5.12 Special Instructions for stainless steel equipment.

Omit step 5.4

VI. Safety

6.1 All cleaning using the above procedures must be conducted in areas of adequate ventilation. Technician will wear appropriate protective clothing, at a minimum a lab coat, safety glasses and gloves.

Originated by: James P. Stricko Date 02/09/2001
James P. Stricko

Approved by: James T. McCauley Date 2/9/01
Laboratory Manager

Standard Operating Procedure
for
Field Sampling Plan for the NJDEP NJTRWP POTW/CSO/SWO Sample Collection (Study I-G)

I./II. Scope/Purpose

1.1 This Standard Operating Procedure (SOP) describes the general field sampling Plan including the materials and procedures necessary for POTW, CSO and SWO wastewater collection for the New Jersey Toxics Reduction Work Plan: Study I-G.

1.2 The samples are collected seasonally from 12 POTWs and approximately 20 CSO/SWO sites located within the Hudson, Passaic and Raritan River watersheds near Newark, New Jersey. POTW samples are collected as composite samples over a 24-hour period and CSO/SWO samples are collected as grab or grab composite samples. All samples are transported from the field collection site to a clean laboratory area for homogenizing and sub-sampling.

III. References

None.

IV. Definitions

POTW: Publically Owned Treatment Works

CSO: Combined Sewer Overflow

SWO: Storm Water Outfall

Sample: The 20 or 40 liter composite sample collected in the field at each POTW. Forty liter composite samples are only collected in those cases where field duplicate or matrix spike and matrix spike duplicate samples are being collected for the organic analyses.

Sub-sample: The 2.5 liter, 1.0 liter or 500 mL samples obtained from the 20 or 40 liter field collected sample for laboratory analysis. These are the samples that are shipped to the laboratories for analysis.

V. Field Equipment Checklist

(12) 20-liter glass carboy
(1) 40-liter glass carboy
3/8 inch Masterflex™ Tubing (25 ft.)
POTW Contact List
Tool Kit (assorted hand tools)
Tubing connectors (3/8" barbed)
Hose clamps
Acetone
Hexane
Teflon squirt bottles (for hexane and acetone)
CARP STS Labels
CARP Chain of Custody Forms
USGS Chain of Custody Forms (TSS, POC, DOC and metals)
Carboy holding container (e.g., 48 qt. coolers or RubberMaid™ Tubs)
Black felt tipped Sharpie™ Markers
Field Record Book
Duct Tape
Strapping Tape
FEDEX Shipping Labels
Large (one and two gallon) Ziplock™ Bags
Mixing rods
Variable speed drill
Teflon lined stoppers (#12, vented)
Foil
Sub-Sample Bottles (supplied by Battelle and USGS)
In-line filters w/ tubing
Ice
Global Positioning System (GPS)
Savilex filter Apparatus (for POC/DOC samples)
50, 100, and 250 mL graduated cylinders

VI. Procedure

6.1 Develop a list of CARP Sample ID numbers for each "subsample" to be collected and all associated blanks and duplicate samples, and provide to NJDEP Project Manager for review one week prior to sampling. If any changes occur in the Sample ID numbers during the sampling, provide a revised/updated list to the NJDEP Project Manager within one week of the completion of sampling. Use only those "codes" included in the most recent version of the "NJDEP Sample Track Data Dictionary". If additional or revised codes are needed, contact the NJDEP Project Manager ASAP.

6.2 Review the checklist of all required equipment needed for field sampling and laboratory sub-sampling activities. One week prior to the sampling event, the Field Coordinator and/or Project Manager should verify that these lists have been completed for the sampling event, and that all required equipment and supplies are available.

6.3 Temperature Control and Sample Collection: if possible, the 5-gallon carboys used to collect the composite samples in the field should be held in coolers with wet ice to lower sample temperatures during the 24-hour collection period. Samples should also be transported to the PVSC lab in coolers with wet ice, and held in these coolers while sub-sampling at the lab.

6.4 Laboratory Sub-sampling: in order to minimize possible sample contamination, first collect all three metals sub-samples, and then proceed to collect the other organics sub-samples. When mixing the composite sample, care should be taken to minimize the amount of aeration and cavitation of the sample (i.e. use low rpm).

6.5 After all the samples and sub-samples are collected on any given sampling day, they will be cooled on wet ice as they are transported or held at the PVSC analytical laboratory.

6.6 Ship the coolers overnight to the appropriate laboratory by courier using the pre-prepared address labels. The 2.5 L sub-samples will be shipped directly to Battelle for organic contaminant analysis (Columbus, Ohio for dioxin/furans, PCBs and pesticides, and Duxbury, Massachusetts for PAHs), where they will be filtered and extracted separately. Samples for metals analysis will be shipped to Frontier GeoSciences, samples for TSS will be shipped to the USGS laboratory in Kentucky and the samples for POC and DOC analysis will be shipped to USGS laboratory in Denver, CO.

VII. Quality Control

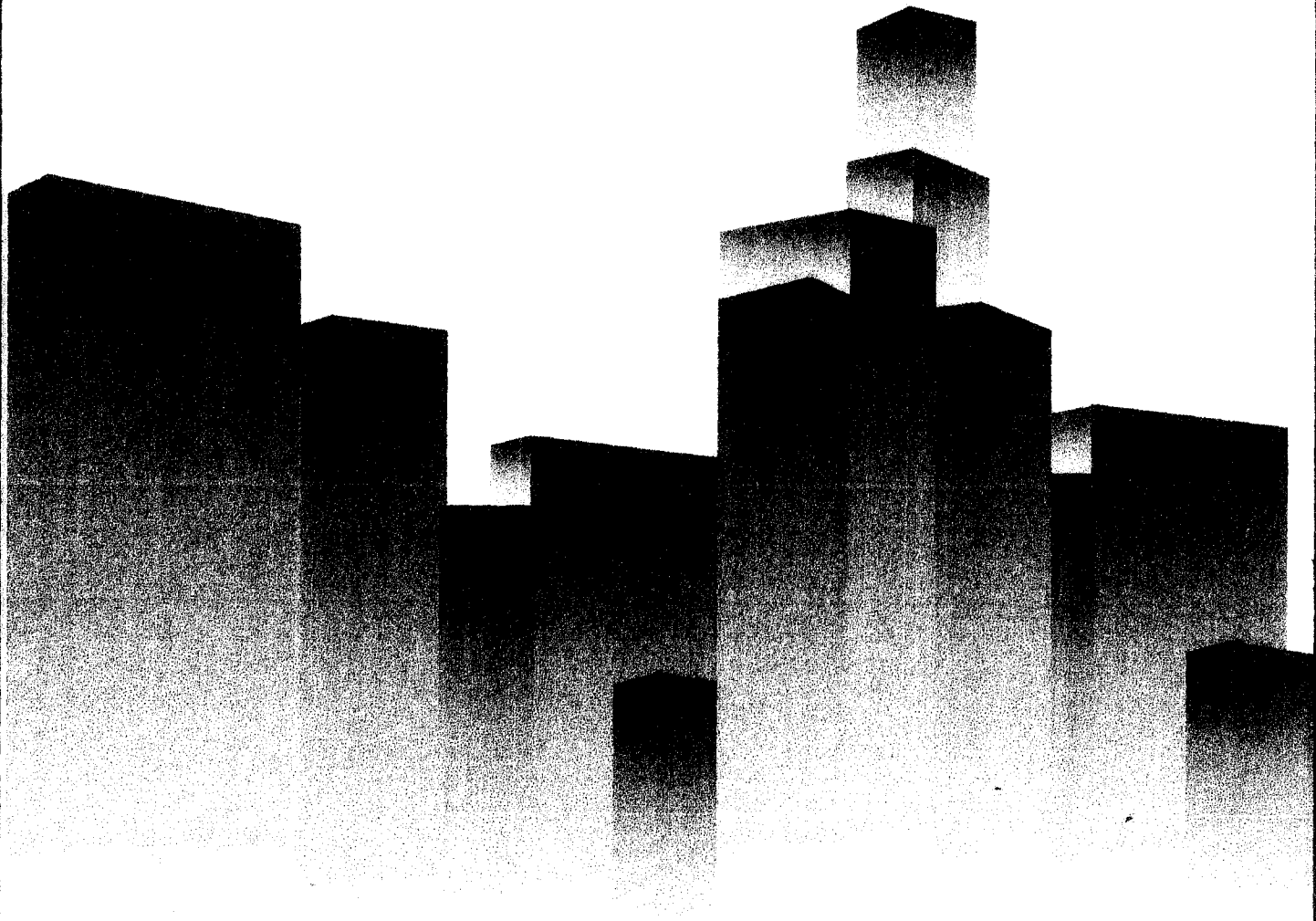
7.1 Records will be kept as indicated in the QAPP and in the CARP STS. Field notes are also recorded in a bound Field Note Book. These are reviewed by the Principal Investigastor and/or supervisory personnel.

7.2 Personnel must have prior written training documentation and be checked-off by designated training/supervisory personnel.

Originated by: Dennis J. McCauley Date 3/19/01
Dennis J. McCauley

Approved by: _____ Date _____
Project Manager

Work Plan
for
Combined Sewer Overflow Discharge Characterization Study Sewer System Modeling



for the
City of Newark
Department of Water and Sewer Utilities
Division of Sewers and Water Supply

July 1998

863690087

URS Greiner

with Lawler, Matusky & Skelly Engineers

newarkco cdr-sy44

URS Greiner, Inc.
Mack Centre II
One Mack Centre Drive
Paramus, New Jersey 07652-3909
Telephone: (201) 262-7000
Facsimile: (201) 262-9199
Offices in Principal Cities Nationwide

URS Greiner

July 31, 1998

Mr. Shadab Ahmad, P.E., Chief
Design Section
Bureau of Engineering and Construction Permitting - North
Municipal Finance and Construction Element
State of New Jersey
Department of Environmental Protection
CN-029
Trenton, New Jersey 08625-0029

Subject: City of Newark CSO Discharge Characterization Study
Task 1.0 - Work Plan: Sewer System Modeling

Dear Mr. Ahmad:

We are pleased to submit for your review and comment the Sewer System Modeling segment of the Work Plan for the City of Newark CSO Discharge Characterization Study. I have enclosed three copies for your use.

If you have any questions or comments regarding the work plan, please call me at 201-262-7000.

Very truly yours,
URS Greiner, Inc.

Michael F. Lorenzo, P.E.
Project Manager

MFL:mfl
Attachments

cc:

NJDEP:	Jenkins
Newark, City Hall:	LiVecchi, Verghese
Newark, Little Falls:	Varghese, Illeyes, DeBarros
URS Greiner:	Konnerth, Moutal, Murray
LMS:	Apicella

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URS GREINER

MODELING WORK PLAN

FOR

NEWARK COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY

July 1998

LMSE-98/0201&450/224

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

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A – Selected Drawings and Figures From the Monitoring Work Plan – 14 November 1997

B – Available Sources of Data

C – Acceptable Ranges of Key Model Parameters

CHAPTER 1

INTRODUCTION

In response to New Jersey Department of Environmental Protection's (NJDEP) General Permit for Combined Sewer Systems, the City of Newark retained URS Greiner, Inc., as prime contractor for a combined sewer overflow (CSO) characterization study. Lawler, Matusky & Skelly Engineers LLP (LMS), subcontractor to URS Greiner, is performing the modeling of the combined sewer system. The characterization of the CSOs entails field measurements and monitoring to evaluate the discharges, and pollutant concentrations of storm-induced CSO as well as the collection of flow and pollutant concentration data during dry weather. The Monitoring Work Plan for the collection of rainfall, discharge and pollutant concentration data was submitted to NJDEP on 14 November 1997. The rainfall and flow measurement aspects of the work plan were approved by NJDEP; the sampling and laboratory analysis aspects are still under the state's review.

The characterization study also entails the application of a computer-based mathematical model to quantify CSO discharges and pollutant loadings as a function of rainfall, stormwater runoff, sanitary sewage, and drainage/collection system attributes. After the model is calibrated and verified using the monitoring data, it will be used to analyze the existing sewer system. For example, the hydraulic capacity of the sewer system to transport a one-year return period storm will be evaluated to identify pipes or structures that cause sewer surcharging (water level above the crown of the pipe but below manhole cover) or flooding. The model will also be used to evaluate alternatives that potentially optimize the sewer system's capacity to transport combined sewage to the Passaic Valley Sanitation Commission's (PVSC) treatment plant and thereby abate CSO. For example, the utilization of oversized sewers to retain combined sewage through fixed or inflatable dams will be evaluated.

1.1 OBJECTIVES

The objectives of the modeling are to:

- Evaluate the existing sewer system in terms of CSO discharges and pollutants loads.

- Evaluate predictively alternatives to abate CSO discharges such as modification of the sewer system, including inline storage, real-time control (RTC), and offline storage

The model produced by the characterization study should also be useful to the City of Newark after the completion of the study. For example, the model can be used to support the design of sewer system improvements and also to track the effect of population changes on PVSC's user charges to the city.

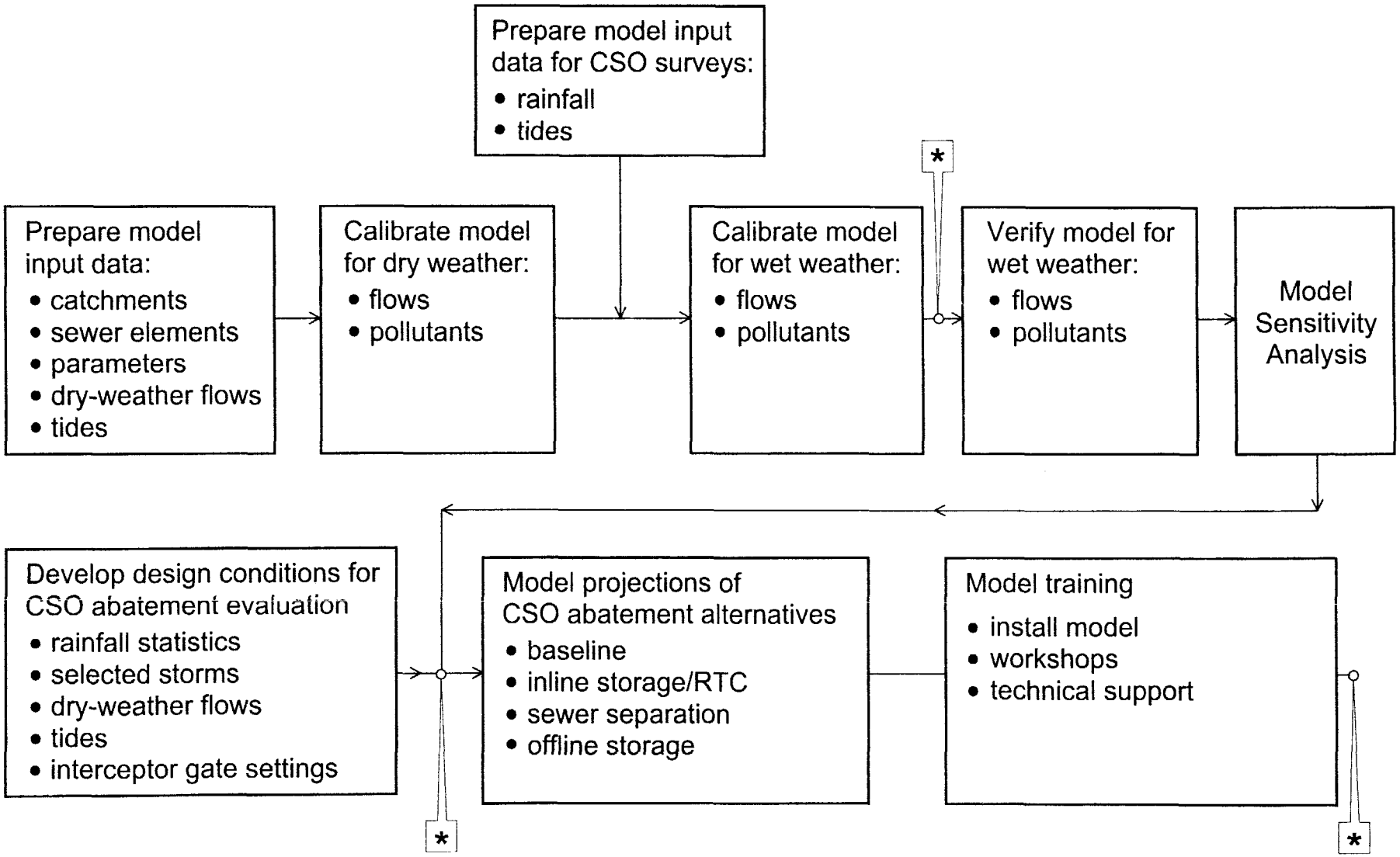
1.2 OVERVIEW OF THE WORK PLAN

This document is a detailed plan for the modeling application that is an integral part of the CSO characterization study. The model software is described in relationship to the specific considerations and requirements of the Newark CSO Characterization Study in Chapter 2. The steps in applying the selected model to Newark's sewer system are performed sequentially as shown in Figure 1-1. The data requirements for applying the model are defined in Chapter 3 and sources of data are identified. Validation of the model is discussed in Chapter 4, and the model projections to evaluate potential CSO abatement measures are summarized in Chapter 5.

The modeling task will be documented completely in two interim reports and a final report that constitute three milestones. The first interim report will be prepared when the model is calibrated for dry- and wet-weather CSO flows and pollutant loadings. Measurements of flows and sampling data collected under the monitoring task that are used in the model calibration will be included in this first interim report. The second interim report will describe the model verification, sensitivity analyses, and the development of design conditions for CSO abatement evaluation. This report will coincide with the final report on the monitoring task, which will contain all the flow and sampling data. The final report will describe the remaining steps, i.e., model projections of CSO abatement alternatives and baseline conditions, as well as the steps described in the two interim reports. Model input files will be transferred to NJDEP with the final report. Presentations will be made to NJDEP around the time of each interim report and the final report.

Figure 1-1

Steps in Modeling Newark CSOs for Characterization Study



* Milestone: report and meeting with NJDEP

CHAPTER 2

MODEL SOFTWARE

2.1 MODELING CONSIDERATIONS

A general axiom for deciding what model to use is that it be the simplest model that is capable of simulating the relevant complexities of the system. The characteristics of Newark's drainage and combined sewer collection system are considered in recognizing the capabilities required of the modeling software. NJDEPs General Permit for combined sewer systems requires a field calibrated and verified CSO model to simulate the system's response to precipitation (NJDEP 1995). The general permit further states that the EPA approved Storm Water Management Model (SWMM) shall be used, unless a substitute model is proposed by the permittee and accepted by NJDEP. The requirements imposed by Newark's CSS and the general permit are described briefly as the rationale for selecting the state approved model software, SWMM.

2.1.1 Nature of Problem

The City of Newark does not own and operate the entire collection system. PVSC controls 19 of the 28 regulators connected to CSO outfalls. The two major interceptors that convey Newark's wastewater are also owned by PVSC. As the PVSC service area generally has combined sewers, the utility is conducting its own CSO characterization study, which includes application of a model encompassing the overall combined sewer system (CSS). Newark intends to collaborate with PVSC by making results of its model available for inclusion in PVSC's model.

The nature of the problems that will be addressed through modeling involve the city's sewer system and its operation as they relate to CSOs.

2.1.2 Complexity of Sewer System

The sewer system in Newark is a network of appurtenances, including pump stations, siphons, moveable gates (knife gates, tide gates), and looped pipes. The tidal variation in the adjacent Passaic River and Newark Bay combined with the variability in precipitation, in particular high-intensity rainfall, generate complicated hydraulic conditions such

as flow reversal, surcharging and street flooding. Therefore, the underlying mathematical basis for the model has to include the equations of flow continuity and momentum (e.g., St. Verant's equation).

2.1.3 User Experience

The model should be one that the modelers have used and are therefore facile in operating it. A related consideration is the user-friendliness of the model and the relative ease in preparing input and graphically displaying model output.

2.1.4 Methodology

The methodology, which is described in this work plan, includes field measurements and sampling to obtain data for model calibration and verification. Continuous flow monitoring data collected at approximately 52 locations within the system during approximately 12 months will be available for calibration. Sampling of eight CSO outfalls for pollutant concentrations during five surveys will provide water quality data for calibration and verification. Model validation will warrant a substantial effort to demonstrate that the model is accurate for an extensive range of conditions.

2.1.5 Water Quality Constituents

The CSO characterization study encompasses sampling and analysis of conventional pollutants as summarized in Table 2-1. The primary water quality constituents for CSO sampling are: BOD_5, TSS, and fecal coliform. Secondary water quality constituents include chemical oxygen demand (COD), settleable solids, total dissolved solids (TSD), nitrogen forms (ammonia, nitrates, nitrites, total Kjeldahal nitrogen [TKN], phosphorus forms (orthophosphate, total), and hardness.

The "first flush" of pollutants is triggered by the wash-off of accumulated solids caused by stormwater runoff and/or the scour-deposited solids in sewers. The model should have at least one of these mechanisms available to simulate any first flush, if sampling data show evidence that it occurs. TSS is the first water quality constituent to be calibrated because it provides a link to the other constituents that have a particulate component, such as BOD_5 and certain nitrogen and phosphorus forms (TKN, total phosphorus). Fecal coliforms can also be associated with solids as fecal material is

Table 2-1

CITY OF NEWARK

COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY

SUMMARY OF ANALYSES

Total Number of Samples

Parameter	CSO Wet-Weather	CSO Dry-Weather	Non-Newark Connections	Connections to Joint Meeting	Total # of Samples
Chemical Oxygen Demand	224	0	0	0	**224**
Five-Day Biological Oxygen Demand	560	384	120	120	**1184**
Fecal Coliform	560	0	0	0	**560**
Total Suspended Solids	560	384	120	120	**1184**
Settable Solids	224	0	0	0	**224**
Total Dissolved Solids	224	0	0	0	**224**
Nitrogen Series:ammonia, nitrates, nitrites Total Kjeldahl Nitrogen	224	0	0	0	**224**
Phosphorous Series: Orthophosphate & Total Phosphorous	224	0	0	0	**224**
Hardness	224	0	0	0	**224**
Total	3024	768	240	240	**4272**

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contained in CSO. Therefore, the model should provide a means of relating pollutant (e.g., BOD, fecal coliform) concentrations in stormwater runoff to TSS concentrations. The biochemical reactions within the collection system are generally unimportant because travel time is generally limited to a few hours during hydraulic conditions when CSO occurs.

2.1.6 **Real-Time Control**

RTC simulation is an effective technique for determining the best location for sewer appurtenances and operating patterns under a wide range of hydraulic and hydrological conditions. Modeling RTC enables the optimization of the existing sewer system through simulations of control structures (e.g., dams, gates) and control rules (e.g., inflate when water surface is greater than a certain elevation) before investing in costly improvements.

The hydraulic capacity of PVSC's interceptor is reportedly exceeded often and is a prime cause of CSOs from Newark. Much of PVSC's Main Interceptor capacity is utilized by the municipalities situated north of Newark such that there is little capacity remaining for Newark. Nevertheless, the flow capacity of Newark's trunk sewers appears to exceed PVSC's interceptor capacity. The storage capacity of Newark's sewers may be utilized by the operation of inflatable dams controlled by a sensor. The control would also deflate the dam when the level rises above the crown of an upstream sewer pipe (i.e., surcharging occurs) so that flooding is averted. Therefore, the selected model should have at least a basic algorithm for simulating RTC.

2.2 **XP-SWMM**

The development of SWMM was spearheaded by EPA during the 1970s and 1980s. SWMM has been applied to major combined sewer systems throughout the United States and reflects the latest technology as described in WEF's Manual of Practice-Prevention and Control of Sewer System Overflows (to be published in 1998). During this decade, XP-Software Inc. developed a SWMM package that includes certain enhancements to EPA's model. As user experience is one of the considerations (see Section 2.1.3), it should be noted that LMS has extensively used EPA's SWMM and more recently XP-SWMM. The latest XP release, XP-SWMM32, has these advantages over EPA's SWMM Version 4.3:

- Graphical user interface with preprocessors to prepare model input and postprocessors to plot model output

- Water quality constituents (e.g., TSS, BOD, total coliforms) can be modeled with EXTRAN, which has the hydraulic solution (i.e., St. Venant's equation) required for Newark's CSS

- Real-time control algorithm that allows a basic control device to operate with a single sensor

- Operation under Windows '95/NT or DOS operating systems

- Technical support to assist model users in solving problems through a telephone hotline

Because of these advantages, XP-SWMM32 will be used to model Newark's drainage and collection system for this CSO characterization study. The EXTRAN module will be applied because of the complexity of Newark's sewer system (Section 2.1.2) and the interconnections with PVSC's interceptor (Section 2.1.1). This approach to the modeling satisfies the site-specific considerations and fulfills the requirements in NJDEP's general permit.

CHAPTER 3

DATA REQUIREMENTS AND SOURCES

3.1 DRAINAGE AND COLLECTION SYSTEM ELEMENTS

The steps in modeling for the CSO characterization study, shown sequentially in Figure 1-1, begin with the preparation of model input data. XP-SWMM requires data that describe the physical attributes of the drainage area and the collection system. The drainage districts and major sewer system elements for the entire system are shown schematically in Drawing D-2 of the Monitoring Work Plan included in Attachment A of this report. All catchments that drain into combined sewers where flow is regulated and potentially discharged through a CSO outfall are included in the model. The modeled collection system contains all combined sewers as well as sanitary sewers that connect by gravity flow to combined sewers such as in the Queen District (see Figure F-3 of the Monitoring Work Plan in Attachment A of this report). Separately sewered areas such as the Industrial River District will not be modeled. The Port Authority sanitary flow from Newark Airport and Port Newark will be modeled as a flow input to Newark's combined sewer system. Although the separately sewered areas that connect to the Joint Meeting of Union and Essex County are covered by the monitoring program, these areas will not be modeled because they do not contribute to Newark's sewer system.

3.1.1 Catchment Areas

The ground surface of the drainage area is divided into catchment areas, where rainfall-runoff is modeled. The primary data required by the model for catchment areas are:

- Surface area (length, width)
- Impervious area
  - ground slope
  - depression storage (puddles)
  - runoff coefficient
  - resistance to flow
- Pervious area
  - groundwater infiltration rate
  - evapotranspiration rate
  - ground slope
  - resistance to flow

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- Linkage to model node of CSS

The delineation of catchment areas will be based on topographical maps, primarily NJDEP's Bureau of Geographic Information and Analysis. CD-ROM Series 1, Volume 3 (March 7, 1996), contains graphical information system (GIS) data on land use/land cover that will be used to delineate impervious and pervious areas. Land use for each CSO outfall has been quantified in terms of residential, commercial, industrial, and open/park in Drawing D-2 of the Monitoring Work Plan dated November 14, 1997. The percent impervious area of the catchment will be related to the land use area breakdown.

XP-SWMM provides several optional formulations of rainfall-runoff volume and rate. The Horton equation for pervious areas will be selected and the parameters will be estimated according to the soils reported in the GIS. The SWMM runoff algorithm will be used because it has been applied extensively in this region. The catchment areas are linked to sewer elements (model nodes and conduits) arranged in a branched or dendritic network.

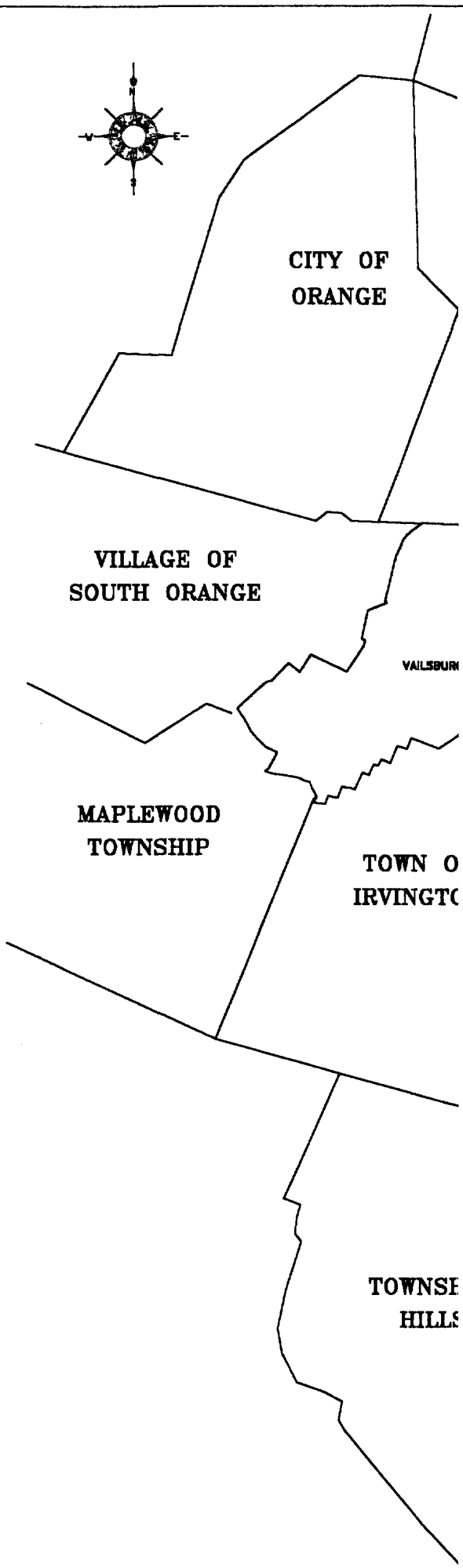
3.1.2 **Combined Sewer System Elements**

URSG is producing digital sewer maps for the City of Newark under a GIS contract. LMS will access this database to obtain data needed for the model. The GIS generally contains the dimensions and shape of the sewers but does not have the invert elevations or slope of the sewer. As built drawings are being reviewed to obtain invert elevations. In addition, surveying of certain sewer inverts and ground elevations will be done to fill data gaps.

The model network of Newark's collection system is specified by defining nodes or junctions that are connected by conduits (Figure 3-1). The hydraulics within the system will be computed at each of the nodes during each model timestep. There are a total of approximately 450 nodes in the Newark CSS model which covers the entire combined sewer system.

The sewer system elements that are in Newark's CSS and therefore will be represented in the model network include:

SHEET OF



LEGEND

MODEL CONDUIT

MODEL JUNCTION

MODEL PVSC INTERCEPTOR

MODEL NEWARK TRUNK SEWER

CITY OF NEWARK
NEW JERSEY

FILE NAME

Figure 3-1

SCALE :

Lawler, Matusky & Skelly Engineers LLP
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, NY 10965
(914) 735 - 8300

DESIGNED	DATE		DATE
DRAWN	DATE		
CHECKED	DATE		DWG. NO.
APPROVED	DATE	DATE	

863690102

- Sewers / Conduits
  - PVSC interceptors
  - Newark trunks
  - Newark combined sewers (≥ diameter of 24 in.)
  - manholes

- Regulators
  - weirs
  - orifices
  - gates

- Outfalls
  - tide gates
  - pipes

- Pump stations
  - wet well dimensions
  - pump capacity

Available sources of data listed in the Monitoring Work Plan (and reprinted herein as Attachment B for convenience) will be used to prepare most of the model input data. Model input data that are not found in the existing data will be obtained by field inspections.

Ten of the orifices at the regulators along the Main Interceptor have knife gates that are controlled by PVSC. Information on the opening and closing of these gates is also needed, as described in Section 3.3.1. The remaining orifices are fixed openings. Certain CSO outfalls (e.g., Adams and Peddie Street) discharge to ditches that are tributary to the peripheral ditch around Newark Airport. CSO discharged to the ditch may be tidally transported back to the regulator and, depending on the tide gate operation and the weir elevation, reenter the CSS. Field monitoring data on the tide elevations in the peripheral ditch and water surface elevation at the weir will be analyzed to ascertain whether this occurs. If tidal inflow of CSO occurs, an appropriate extent of the ditches will be modeled.

3.2 **Dry-Weather Flows**

The domestic and industrial/commercial sewage flows to the collection system are also defined as model input. The sanitary flow within Newark's service area will be

accounted for based on population data and per capita flow data available from the Department of Engineering. The City's data on industrial/commercial sewage flow and pollutants will be used to account for the remainder of the sanitary flow. The dry-weather flow and BOD/TSS concentrations from the surrounding townships will be measured at eight monitoring and sampling points (see Table 3 of the Monitoring Plan). The flows in PVSC's Main Interceptor at the Belleville-Newark border and in PVSC Jackson Street Interceptor from Harrison/Kearny will be measured as part of the monitoring task. Flow measurements and sampling data from CSO stations during dry weather will be used in the model calibration, as described in Section 3.3.

3.3 Data for Model Calibration/Verification

The previously described input data on the drainage and collection system and the dry-weather flows form the fixed and constant data in XP-SWMM. The process of model calibration/verification entails applying the model to a diversity of conditions (e.g., rainfall, tides) that have been monitored and comparing the model output to the monitoring data. The data to be obtained by the monitoring task for model calibration/verification are synoptic in simultaneously covering a large portion of the system. Although the CSO characterization study focuses on wet-weather conditions, the model is first applied to dry-weather conditions to check for accuracy in simulating baseflow quantity and quality.

3.3.1 Model Input

The data needed as input to the model for calibration/verification are: rainfall, tidal elevations, and orifice gate settings.

Rainfall data will be collected at five temporary gaging stations described in the Monitoring Work Plan. Precipitation in increments of 0.01 in. during 10-minute intervals will be recorded at each station. In addition, rainfall data collected at the National Weather Bureau Station at Newark Airport will be accessed, as well as data collected by PVSC at the treatment plant. The locations of the five temporary and two permanent rain gages are well distributed throughout the model area (see Figure F-5 of the Monitoring Work Plan). Rainfall data for each model catchment will be calculated using one or more gages and weightings based on Thiessan polygons (WE&T 1995).

The National Ocean Service (NOS) collects tide elevation data at a number of stations in New York-New Jersey Harbor. The closest station to Newark Bay and the Passaic River is Bergen Point (Staten Island), New York, on the Kill Van Kull. The adjustment of the Bergen Point data for time difference (phase lag) and elevation difference in relation to the Passaic River and Newark Bay are published by the National Oceanic and Atmospheric Administration (NOAA). Water surface elevations are specified as a time series input at the downstream boundary of the CSO outfall. The opening and closing of a tide gate is simulated by XP-SWMM depending on the difference in water surface across the tide gate and a threshold head required to open the gate. The threshold will be estimated in accordance with the design of the tide gate and reported head losses.

The settings of the knife gates at PVSC-controlled interceptors also has to be input to the model. When the flow in the PVSC's interceptors approaches its capacity and there is a threat of the plant's maximum capacity being exceeded, the gates are closed one by one and remain closed until the plant flow stabilizes. Thereafter, the gates are reopened. PVSC's records on the times of opening and closing knife gates have been requested for input to the model.

3.3.2 **Data for Comparison**

Model results will be compared to field measurements to test the accuracy of the model. The base flow within the system will be simulated for a period of dry-weather and the results at nodes where CSO monitoring stations are located will be compared to the measured flow data. The model will then be applied to simulate BOD and TSS concentrations and the results at dry-weather sampling points will be compared to the field data.

The model will be calibrated for flow and pollutant loadings using field and laboratory data collected during four storms and adjusting model parameters as described in Section 4.2. Data collected during a fifth storm will be used for model verification, as described in Section 4.3. Of the 24 flow monitoring points for CSOs, there are eight sampling points for water quality and pollutant analysis.

There are two or more measurement probes at each of the 24 flow monitoring stations as shown in Appendix A of the Monitoring Work Plan. A model node will be assigned to each probe location so there is a direct model counterpart to each flow measurement

point. The CSO flow in the outfall is the primary point for comparison with the model. However, the velocity in the outfall may be too variable at times because of tidal effects (e.g., an overflow during a flood tide may generate eddies), and the flow into the regulator and flow from the regulator to the interceptor may be more suitable for quantifying CSO discharge. The flow monitoring data collected in the vicinity of each CSO regulator will be previewed to select the most appropriate point(s) (outfall, into regulator, between regulator and interceptor) that accurately quantify the CSO discharge.

The primary CSO pollutant analyses are BOD_5, TSS, and fecal coliforms. As stated in the Monitoring Work Plan, samples will be collected in 15-min intervals for the first hour after the onset of rainfall to monitor any "first flush." The modeled and measured TSS concentrations of the CSO will first be plotted and compared. Subsequently, BOD_5 and fecal coliform concentrations computed by the model will be compared to the sampling data. Two of the five storms sampled will also have data for secondary water quality/pollutant constituents (COD, nitrogen, and phosphorus forms). The model will be applied to simulate these constituents for any storm when data are available.

CHAPTER 4

MODEL VALIDATION

4.1 OVERVIEW OF MODEL VALIDATION

Key steps in customizing the selected model, XP-SWMM, to the Newark drainage and collection system are model calibration, model validation, and sensitivity analysis, as shown in Figure 1-1. These three steps comprise the model validation. The previous chapter described the initial step of compiling model input data for the spatial/physical characteristics of the catchment areas and sewer system network as well as the dry-weather flows, rainfall, and tides. Model parameters are then evaluated and included as input data. There are relatively few parameters in landside collection system models as compared to receiving water models. Friction factors (i.e., Manning's coefficient) for overland and pipe flow are initially estimated using the model users manuals (Roesner et al. 1989). Model parameters related to infiltration, evaporation, snowmelt, dust, and dirt buildup/washoff are specific to the formulation in the selected model (SWMM); therefore, the user's manual will also be used to estimate these parameters.

Model parameters are adjusted within acceptable ranges during the calibration process. Acceptable ranges for key model parameters, i.e., depression storage, Manning's roughness coefficients for overland flow and for conduits/channels, are provided as tables in Attachment C. The model calibration section of the task report will refer to these as well as other information published in the scientific literature. (Reports that exemplify this referencing are LMS 1987 and LMS 1993.) The objective is to find a set of model parameters that produces a robust calibration when all storms are viewed collectively.

The survey-specific data that change for each survey in calibration/verification are rainfall, tides, and possibly base flow (e.g., if weekly variation is substantial because of industrial wastewater). The values of other model input data (e.g., friction factors, weir coefficients, buildup/washoff parameters) will be set at the end of the calibration. The calibrated model will then be verified by modeling another storm with conditions dissimilar to those used for calibration. If, without any further model parameter adjustment, the model output compares closely with field survey data, the model is deemed verified. If the comparison is flawed one or more model parameters may be adjusted to attempt to calibrate the model to all the available survey data. If a

discrepancy between the model and survey data cannot be rectified, a sensitivity analysis will be performed to look at the upper and lower bounds associated with model uncertainty.

4.2 MODEL CALIBRATION

The model calibration is expected to commence shortly after all rainfall and flow monitoring equipment is installed and data are released. As the CSO sampling work plan is currently under NJDEP's review, water quality and pollutant concentration data are expected to become available by late summer or early fa'l of 1998. The calibration of XP-SWMM will initially focus on the hydrological and hydraulic aspects of the model. A dry-weather period of the flow monitoring record will be selected, preferably when sampling of the CSO stations was performed. XP-SWMM will be applied using the input data described in Sections 3.1 and 3.2, and the computed flows at nodes where flow is measured by Newark and PVSC will be plotted along with the measurement data. Differences between the model and the flow measurements will prompt our attention to certain model input such as:

- Dry-weather inflow at external model boundaries and within the model network
- Groundwater infiltration/inflow parameters
- Tidal inflow (e.g., leaky tide gates)

Once the base flow is properly simulated, XP-SWMM will be applied to model BOD_5 and TSS. If dry-weather data are available from the monitoring, model results will be compared to the data. In any event, dry-weather flow data for weekday and weekend periods will be analyzed comparatively to evaluate any differences associated with water usage. If there are substantial flow differences within certain drainage districts, one of the two dry-weather surveys at CSO sampling points and one of the five surveys at non-Newark connection sampling stations will be done during a weekend. The unavailability of water quality/pollutant data at this stage of the calibration will not halt the process but will shift the sequence to doing some wet-weather flow calibration prior to completing the dry-weather water quality calibration.

Rainfall and flow monitoring data will be accumulated in a database during the 12 months of data collection. As part of the Rainfall Monitoring Study (Task 4), historical hourly precipitation data for the National Weather Bureau station at Newark Airport will be analyzed statistically (probability distribution) for these rainfall parameters:

- Precipitation per storm event
- Storm duration
- Peak hourly intensity
- Average storm intensity
- Dry period between storm events

For this analysis, a storm will be defined as having a minimum interevent time (MIT), which will be evaluated as follows. The time series of rainfall will be broken up into separate events based on different MIT values (e.g., 3, 6, 9, 12 hrs) and the total number of events will be plotted vs MIT values. A break in the curve will indicate the selected MIT.

The rainfall data collected at the five temporary gages will be compiled as hourly values and summarized according to the five rainfall parameters on a monthly basis. (These summaries of the temporary gage data are for comparison to the permanent historical rainfall statistics; rainfall data in 10 minute intervals will be used for model calibration and verification.) The return period for the monitored storms will be based on Newark Airport rainfall statistics, which are also hourly data. The purpose of this ongoing data analysis and management is to guide the decisions as to which storms should be sampled to obtain representative data for model calibration. As the monitoring work plan states that a minimum of 0.25 in. of rainfall is targeted for a CSO survey, the sampling is aimed primarily at greater than average storm events. Nevertheless, the sampled storms should range from the short, intense thunderstorm to the prolonged, moderate storm (e.g., Nor'easter).

Up to four storm events will be used for model calibration and one storm event will be reserved for model verification. The survey data for the storm period, which begins prior to the onset of rainfall and continues until overflows and CSO sampling are

completed, will be extracted from the rainfall and flow monitoring database. These data will be formatted for either model input (rainfall) or plotting comparatively with model results (flows). Rainfall data at 10-min intervals for the temporary gages will be used to interpolate the rainfall for each model catchment area using Thiessan polygons (WE&T 1995). PVSC and Newark Airport rain gages, which are located in separately sewered areas that are not included in the model, will be used as necessary to supplement the temporary gages.

The XP-SWMM results for flow at all flow monitoring stations will be shown graphically with associated monitoring data. Our calibration criteria for XP-SWMM applications to wet-weather events are taken from Sieger and King (Water Environment and Technology; April 1995):

- General shape of model-generated hydrograph matches flowmeter-produced hydrograph.
- Times of peak-hour flow rates differ by less than 20% of total wet-weather period.
- Flow volumes for two hydrographs over comparison period differ by less than 20%.

The pollutant concentration data collected under Task 5 for the CSO sampling stations will be used to calibrate and verify the model. Buildup and washoff functions will be used to model TSS and capture any "first flush" phenomenon. Other pollutants such as BOD_5, fecal coliforms, nitrogen, and phosphorus series can be modeled as dependent on TSS if the data show such correlations. The model results for BOD, TSS, and other pollutant constituents will be compared graphically. In general, the difference in mass load between the model and the laboratory data for any storm should not exceed 20%. Certain analyses, such as fecal coliforms, are subject to considerable "sampling error" due to the difficulty in obtaining a representative sample of homogenized solids. Therefore, allowances for discrepancies in certain instances (e.g., excessive TSS) may be made.

The project modeler will keep a log of model runs made during the calibration. The changes in model input, reasons for changes, input file name, output file name, and comments will be noted in the log. The log serves as a record of the model parameter

values used and the response in model results. The calibration effort will be tracked by referring to the log and setting direction accordingly. Monthly progress reports will summarize the modeling log.

Changes in model parameters made during the course of calibrating to the second, third, or fourth storm's data will be made to the model for all preceding storms. This process may result in a less than perfect fit for any single storm but will provide a set of model parameters that is acceptable for all four storms.

4.3 MODEL VERIFICATION

The model input data file from the calibration step is modified only for survey-specific data; that is, rainfall, tides, and possibly base flow. The model is exercised again and the results are plotted along with the observed data. The comparison between the model and the field-measured flows will also be judged according to the previously stated calibration criteria. Any flaws in the model comparison may warrant further adjustment of one or more model parameters. If this occurs, the adjustment will be carried through to all model calibration runs and the comparisons will be reviewed.

4.4 SENSITIVITY ANALYSIS

Unresolved discrepancies between the model and field data may arise because of modeling uncertainty. Sensitivity analysis is the process of assessing the model's response to a range of model input values that bracket the uncertainty about certain conditions. For example, the position of knife gates on orifice connections to PVSC's interceptor may not be absolutely known and therefore the model can be run to test possible settings. The model result for the hypothetical condition assumed in the sensitivity analysis will be compared to the survey data to ascertain whether the hypothesis can explain the discrepancy.

The need for additional data in certain areas of the model may be investigated through sensitivity analyses. The steps of model calibration, verification, and sensitivity analysis are integral to assess the model's credibility for evaluating CSO abatement.

CHAPTER 5

MODEL PROJECTONS AND EVALUATION OF CSO ABATEMENT ALTERNATIVES

5.1 OVERVIEW

The Newark Drainage and Collection System Model (NDCSM) will be used predictively to evaluate alternatives for abatement of CSO discharges and pollutant loadings. The effectiveness of the alternatives is assessed by comparison with a baseline condition, which reflects the existing physical system and current operations. As CSO discharges are primarily affected by rainfall, the design conditions for the evaluation should be defined in terms of individual storms with specified return periods (e.g., one-month, six-months, one year, and five year) as well as a continuous period with representative rainfall. Because the seasonal period that is relevant to the water quality constituents that are the focus of the CSO characterization study (i.e., dissolved oxygen, fecal coliforms) is the summer, when DO saturation is low and recreational use of waters is high, the summer months should be selected as the continuous period. In addition, NJDEP will be evaluating Newark's CSOs as part of the Newark Bay-Passaic River Watershed Study. If the watershed study progresses to the point of defining the rainfall conditions for evaluation prior to the modeling projections step of this study, then those conditions can be adopted.

PVSC is developing a SWMM model of their combined sewer collection system including Newark and the other municipalities that convey wastewater to its plant (e.g., Paterson, Kearney and Harrison). To have consistency between these two models, at a minimum, the same conditions should be used for modeling the overall PVSC collection system as used for Newark's system. The SWMM network of the Newark collection system in the PVSC model is a less detailed representation than that in the NDCSM. In addition, the NDCSM will be calibrated and verified to more extensive field data within the Newark area than the PVSC model. The results of the NDCSM at nodes that are common to the PVSC model will be compared to ensure that the models are consistent with each other. Any differences between the models have to be resolved at this juncture in order to attain a comprehensive evaluation of Newark's combined sewer system and its relationship to the total flow and loading at PVSC's plant. Therefore, design conditions will be defined through discussions with PVSC, their consultants, and NJDEP. This chapter suggests a general approach to define design conditions; however, the final

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definition and detailed procedures for the modeling projections will depend on further discussions.

While individual design storms can be modeled with limited effort to screen alternatives, a detailed evaluation of effectiveness of the most promising alternatives such as RTC requires continuous model simulation. Hence, a two-phase approach will be taken to evaluate management alternatives for controlling CSOs: (1) screening by modeling three design storms, and (2) detailed evaluation by modeling a continuous period.

5.2 DESIGN CONDITIONS

The ambient conditions and operational factors that are the driving forces for CSOs in the City of Newark are:

- Rainfall
- Tides
- Dry-weather wastewater flow/quality
- PVSC interceptor flow capacity (knife gate operations)

The model input for these four items has to be specified according to the defined design conditions for the two-phase evaluation (Table 5-1).

5.2.1 Rainfall

As stated in Section 4.2, hourly rainfall data will be statistically analyzed to generate storm values for a range of return periods (7 days to 50 years). Three design storms recommended for screening level evaluation will have peak hourly intensities with return periods of 1 week, 1 month, and 1 year. Each storm will have the same duration, which will be the median duration of all storms. The total storm precipitation will be set according to the statistics for each return period (i.e., 1 week, 1 month, 1 year). Hourly rainfall for each design storm will then be computed to have a triangular shaped hyetograph with the peak rainfall occurring during the middle of each design storm.

The duration of the continuous simulation period will be defined according to the computer run time for the model. Model simulations should not take longer than

TABLE 5-1

DESIGN CONDITIONS FOR SCREENING AND DETAILED EVALUATION OF CSO ABATEMENT ALTERNATIVES

	SCREENING	DETAILED EVALUATION
Rainfall	3 Design storms (e.g., return periods of 1 week, 1 month, 1 year)	Continuous period (1 to 4 months)
Tides	Mean water (average)	Same continuous period as above (time-variable)
Dry-weather wastewater flow/quality	Average annual (last year of data, e.g., 1997)	Average for planning year (e.g., 2005)
PVSC Interceptor Capacity (knife gate settings)	"Normal" setting	Operational rule for closing/opening

approximately 18 hrs so that a model run started at the end of a workday is completed by the start of the next workday. Ideally, the run time will be substantially lower so that the modeler is more efficient in completing the projections while still producing representative model results.

A continuous period with "typical" summer rainfall will be selected from the precipitation data record for Newark Airport. The mean and standard deviation of the following five storm characteristics will be computed for the summer months (June through September) in the Newark Airport record:

- Precipitation per storm event
- Storm duration
- Peak hourly intensity
- Dry period between storm events
- Number of storms in summer months

The mean value of the data for each year of record will be computed and presented. The standard deviation and mean of each of the five storm characteristics for the entire record will also be computed. The years when the mean of all five characteristics falls within one standard deviation of the average will be defined as "typical" summer rainfall years. If there is more than one year that falls within this definition, the year that conforms closest to the mean peak hourly intensity, the mean precipitation per storm event, and the mean number of storms in summer months will be selected as the design continuous period. The continuous period will have overall normal rainfall and will consist of approximately 30 to 40 storms, which have a range of return periods. In addition, tidal elevation data must be available for the selected year as described in Section 5.2.2.

5.2.2 **Tides**

The duration of a design storm simulation will be approximately ten hours to accommodate the storm duration (approximately five hours based on analysis of LaGuardia airport data, LMS 1993) and the time for runoff and sewer flows to travel through the system. Because this duration is shorter than a tidal period (12.4 hours), the assumed phasing of the tide and the rainfall could bias model predictions. That is, the

relative effectiveness of CSO control alternatives could be different for different assumed tidal boundary conditions. Since the screening level analysis is intended to be straightforward, a constant, mean tidal water elevation will be used as a neutral condition for all screening model runs.

The tidal conditions for the continuous period will be the data for the same dates as the rainfall data taken from NOAA historical record (Bergen Point). Tidal elevations will be adjusted for phase lag and high/low water according to NOAA's correction procedure. The combination of rainfall and tide data from the same period will provide synoptic conditions such as a Nor'easter.

5.2.3 **Dry-Weather Wastewater Flow/Quality**

Average annual wastewater flows and pollutant (e.g., BOD, TSS) concentrations will be used for the external model boundaries (PVSC interceptor at Belleville) and within the Newark combined and separate collection system. The screening level model will be based on the latest year of data available.

The CSO evaluations shall be referenced to a planning year to account for anticipated changes in population and industrial/commercial wastewater contributions. Newark Department of City Planning and PVSC will be contacted for appropriate data for the continuous period simulations. Average daily flows will be used in the model because diurnal fluctuations are generally unimportant in evaluating CSO discharges over extended time periods.

5.2.4 **PVSC Interceptor Capacity**

The flows from Newark to the Main and Southside interceptors are controlled by PVSC's knife gates. Through the model calibration and other analysis of up to 12 months of flow data, patterns of knife gate settings should emerge. The "normal" settings for each knife gate, which may be a function of rainfall, will be assumed for the three design storms based on reported settings for similar storms.

The detailed evaluation of Newark's CSO abatement alternatives should be predicated on an operational rule for closing and opening knife gates. PVSC should assist in defining an operational rule that is expected to control flows in the interceptors during the

planning year. As PVSC is addressing CSO controls outside of Newark, there may be other interceptor alternatives that will also be modeled. The evaluation of these alternatives will rely on close coordination with PVSC's CSO control plan.

5.3 CSO ABATEMENT ALTERNATIVES

As part of this CSO characterization study, a limited number of strategies for controlling CSO will be evaluated. The types of alternatives that will be screened are:

- Inline storage
- RTC
- Offline storage
- Local sewer system separation (e.g., Queen District)

The more detailed evaluation by continuous simulation will focus on the most promising alternative. However, engineering, cost estimation and design, which are not included in the characterization study, will be required as future expansion of the work. Hence, the model will be applied to assist in engineering and design.

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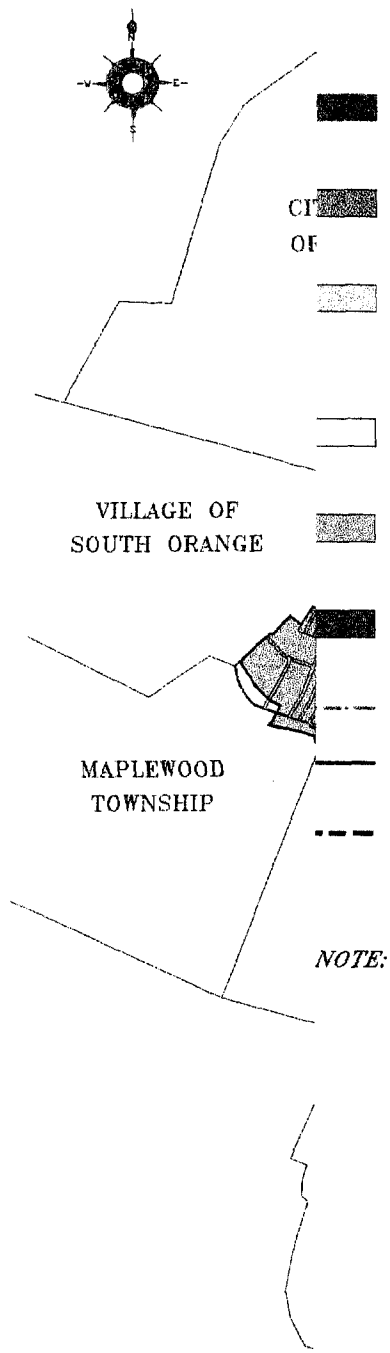
URS Greiner. 1997. Monitoring Work Plan for CSO Characterization Study – City of Newark. Novemeber 14, 1997.

ATTACHMENT A

Selected Drawings and Figures From the Monitoring Work Plan – 14 November 1997



LEGEND

- SANITARY FLOW CONVEYED TO PASSAIC VALLEY TREATMENT PLANT
- PORT AUTHORITY SANITARY FLOW PUMPED TO NEWARK COMBINED SEWER SYSTEM
- DURING HEAVY RAINFALL, SANITARY SEWER BACK-UPS INTO STORM SEWERS WHICH DRAIN TO NEWARK BAY
- SANITARY SEWERS CONNECT TO COMBINED SEWER SYSTEM
- SANITARY SEWERS CONNECT TO JOINT MEETING OF ESSEX AND UNION COUNTIES
- SANITARY SEWERS CONNECT TO SECOND RIVER JOINT MEETING TRUNK SEWER
- PVSC INTERCEPTOR
- NEWARK TRUNK SEWER
- PORT AUTHORITY PUMP STATION AND FORCE MAIN

NOTE: UNSHADED AREA SERVED BY COMBINED SEWERS

SEPARATE SEWER SYSTEM

SOURCE: POLLUTION ABATEMENT PLAN
NEWARK, NEW JERSEY, 1975

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NO.	DATE	DESCRIPTION	APPROVAL

REVISIONS

EWARK
UWATER
LITIES

SCALE
1"=5000'

PLOT DATE:

FIGURE: F-3

ATTACHMENT B

Available Sources of Data

III. EXISTING DATA

The following reports from previous studies are available for the collection of existing information and in determining additional data required:

City of Newark Department of Public Works Sewer Maps

City of Newark Pollution Abatement Plan dated 1975 by Purcell Associates. 11"x17"

City of Newark, New Jersey Feasibility Study - Pollution Abatement Program dated January 1979 by Clinton Bogart Associates.

Phase II-A Interim Report for the PVSC Sewer System Evaluation Study for the City of Newark - North Central Area dated March 1980 by Elson T. Killam Associates.

New Jersey Performing Arts Center Combined Sewer Evaluation - Saybrook Place, Newark, New Jersey dated November 1992 by Paulus, Sokolwski and Sartor, Inc.

Sewer Flow Monitoring Study for the City of Newark, New Jersey - Final Report dated June 1993 by ADS Environmental Services, Inc.

City of Newark Sewer System Inventory and Assessment Report dated February 1996 by Killam Associates.

PVSC Interim Service Area Drainage and Land Use Report for the Towns of Harrison and Kearny, The Borough of East Newark, and the Cities of Newark and Paterson dated February 1996 by Killam Associates.

City of Newark Service Area Drainage and Land Use Report dated April 1996 by Killam Associates.

PVSC Major Interceptor Profiles by Elson T. Killam Associates

In addition, URSG is producing digital sewer maps for the City of Newark under a ~~Global~~ Geographica Information Systems (GIS) contract. Existing sewer maps will be converted into an Intergraph format with an Oracle database. These maps will then be updated to include the detail necessary to develop and calibrate the model of the City's sewer system for use in CSO abatement planning. The necessary detail will be collected ~~form~~ from as-built plans, design plans, subsurface structure plans and field surveys.

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ATTACHMENT C

Acceptable Ranges of Key Model Parameters

Table 4-6 Recent European Depression Storage Data (Kidd, 1978b)

Catchment Name	Country	Area (ac)	Paved Area (ac)	Imperviousness (%)	Slope (%)	Depression Storage (in)	No. of Events	Reference
Lelystad Housing Area	Netherlands	4.94	2.17	44	0.5	0.059	10	Van den Berg, 1978
Lelystad Parking Lot[a]	Netherlands	1.73	1.73	100	0.5	0.035	10	"
Ennerdale Two	U.K.	0.088	0.079	89	3.1	0.020	6	Kidd, 1978a
Ennerdale Three	U.K.	0.022	0.022	100	3.0	0.016	9	"
Bishopdale-Two	U.K.	0.146	0.111	76	2.4	0.018	11	"
Hyde Green One	U.K.	0.120	0.085	71	2.2	0.019	7	"
Hyde Green Two	U.K.	0.209	0.103	49	2.0	0.020	8	"
School Close One	U.K.	0.113	0.070	62	1.7	0.009	11	"
School Close Two	U.K.	0.177	0.097	55	0.9	0.026	11	"
Lund 1:75	Sweden	0.072	0.072	100	2.1	0.005	11	Falk and Niemczynowicz, 1978
Klostergarden 1:76	Sweden	0.081	0.081	100	0.9	0.041	11	"
Klostergarden 1:77	Sweden	0.083	0.083	100	2.3	0.020	13	"
Klostergarden 2:76	Sweden	0.020	0.020	100	3.3	0.019	11	"
Klostergarden 2:77	Sweden	0.019	0.019	100	4.1	0.013	12	"
Klostergarden 3:76	Sweden	0.076	0.076	100	3.1	0.022	11	"
Klostergarden 3:77	Sweden	0.102	0.102	100	2.3	0.022	13	"
Klostergarden 4:76	Sweden	0.068	0.068	100	1.6	0.020	10	"
Klostergarden 4:77	Sweden	0.069	0.069	100	1.9	0.022	13	"

[a]55% brick pavement. Other catchments have primarily asphalt pavement.

Source: Roesner and Dickinson 1989

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Table 4-5. Estimates of Manning's Roughness Coefficients for Overland Flow

Source	Ground Cover	n	Range
Crawford and Linsley (1966)[a]	Smooth Asphalt	0.012	
	Asphalt of concrete paving	0.014	
	Packed clay	0.03	
	Light turf	0.20	
	Dense turf	0.35	
	Dense shrubbery and forest litter	0.4	
Engman (1986)[b]	Concrete or asphalt	0.011	0.01-0.013
	Bare sand	0.01	0.01-0.016
	Graveled surface	0.02	0.012-0.03
	Bare clay-loam (eroded)	0.02	0.012-0.033
	Range (natural)	0.13	0.01-0.32
	Bluegrass sod	0.45	0.39-0.63
	Short grass prairie	0.15	0.10-0.20
	Bermuda grass	0.41	0.30-0.48

[a]Obtained by calibration of Stanford Watershed Model.
[b]Computed by Engman (1986) by kinematic wave and storage analysis of measured rainfall-runoff data.

Source: Roesner and Dickinson 1989.

TYPE OF CHANNEL AND DESCRIPTION	Minimum	Normal	Maximum
A. Closed Conduits Flowing Partly Full			
A-1 Metal			
a. Brass, smooth	0.009	0.010	0.013
b. Steel			
1. Lockbar and welded	0.010	0.012	0.014
2. Riveted and spiral	0.013	0.010	0.017
c. Cast iron			
1. Coated	0.010	0.013	0.014
2. Uncoated	0.011	0.014	0.016
d. Wrought iron			
1. Black	0.012	0.014	0.015
2. Galvanized	0.013	0.016	0.017
e. Corrugated metal			
1. Subdrain	0.017	0.019	0.021
2. Storm drain	0.021	0.024	0.030
A-2 Nonmetal			
a. Lucite	0.008	0.009	0.010
b. Glass	0.009	0.010	0013
c. Cement			
d. Concrete			
1. Culvert, straight and free of debris	0.010	0.011	0.013
2. Culvert with bends, connections, and some debris	0.011	0.013	0.014
3. Finished	0.011	0.012	0.014
4. Sewer with manholes, inlet, etc., straight	0.013	0.015	0.017
5. Unfinished, steel form	0.012	0.013	0.014
6. Unfinished, smooth wood form	0.012	0.014	0.010
7. Unfinished, rough wood form	0.015	0.017	0.020
e. Wood			
1. Stave	0.010	0.012	0.014
2. Laminated, treated	0.015	0.017	0.020
f. Clay			
1. Common drainage tile	0.011	0.013	0.017
2. Vitrified sewer	0.011	0.014	0.017
3. Vitrified sewer with manholes, inlet, etc.	0.013	0.015	0.017
4. Vitrified subdrain with open joint	0.014	0.016	0.018
g. Brickwork			
1. Glazed	0.011	0.013	0.015
2. Lined with cement mortar	0.012	0.015	0.017
h. Sanitary sewers coated with sewage slimes, with bends and connections	0.012	0.013	0.010
i. Paved invert, sewer, smooth bottom	0.016	0.019	0.020
j. Rubble masonry, cemented	0.018	0.025	0.030

Table 5-6
Values of the Roughness Coefficient n

TYPE OF CHANNEL AND DESCRIPTION	Minimum	Normal	Maximum
B. Lined or Built-up Channels			
B-1 Metal			
a. Smooth steel surface			
1. Unpainted	0.011	0.012	0.014
2. Painted	0.012	0.0130	0.017
b. Corrugated	0.021	0.025	0.030
B-2 Nonmetal			
a. Cement			
1. Neat, surface	0.010	0.011	0.013
2. Mortar	0.011	0.013	0.015
b. Wood			
1. Planed, untreated	0.010	0.012	0.014
2. Planed, creosoted	0.011	0.012	0.015
3. Unplaned	0.011	0.013	0.015
4. Plank with battens	0.012	0.015	0.018
5. Lined with roofing paper	0.010	0.014	0.017
c. Concrete			
1. Trowel finish	0.011	0.013	0.015
2. Float finish	0.013	0.015	0.010
3. Finished, with gravel on bottom	0.015	0.017	0.020
4. Unfinished	0.014	0.017	0.020
5. Gunite, good section	0.016	0.019	0.023
6. Gunite, wavy section	0.018	0.022	0.025
7. On good excavated rock	0.017	0.020	
8. On irregular excavated rock	0.022	0.027	
d. Concrete bottom float finished with sides of			
1. Dressed stone in mortar	0.015	0.017	0.020
2. Random stone in mortar	0.017	0.020	0.024
3. Cement rubble masonry, plastered	0.016	0.020	0.024
4. Cement rubble masonry	0.020	0.025	0.030
5. Dry rubble or riprap	0.020	0.030	0.035
e. Gravel bottom with sides of			
1. Formed concrete	0.017	0.020	0.025
2. Random stone in mortar	0.020	0.023	0.026
3. Dry rubble or riprap	0.023	0.033	0.036
f. Brick			
1. Glazed	0.011	0.013	0.015
2. In cement mortar	0.012	0.015	0.018
g. Masonry			
1. Cemented rubble	0.017	0.025	0.030
2. Dry rubble	0.023	0.032	0.035
h. Dressed ashlar	0.013	0.015	0.017
i. Asphalt			
1. Smooth	0.013	0.013	
2. Rough	0.016	0.016	
j. Vegetal lining	0.030	.....	0.500

Table 5-(
(continued

TYPE OF CHANNEL AND DESCRIPTION	Minimum	Normal	Maximum
C. Excavated or Dredged			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.040	0.050
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.035	0.040
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light bursh on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140

Table 5-6
(continued)
Values of the Roughness Coefficient n

TYPE OF CHANNEL AND DESCRIPTION	Minimum	Normal	Maximum
D. Natural Streams			
D-1 Minor Streams (top width @ flood stage < 100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and stones	0.035	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Sames as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150
b. Mountain streams, no vegetation in channel, banks usually steep, trees and bursh along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2 Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees in winter	0.035	0.050	0.060
3. Light brush and trees in summer	0.040	0.060	0.080
4. Medium to dense brush in winter	0.045	0.070	0.110
5. Medium to dense brush in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3 Major streams (top width at flood stage > 100 ft)			
- The n value is less that that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

Table 5-6 (continued)

CDM Camp Dresser & McKee

Values of the Roughness Coefficient n

Source: SWMM Workshop notes. March 6-8, 1995.

863690129

JULY → ALL FM's.

Newark CSO Discharge Characterization Study

July Flow Metering Report

American Sigma flow meters have been installed at 24 CSO locations, 8 incoming sewer lines from East Orange, 4 outgoing sewer lines to surrounding municipalities, 10 internal Newark sewer lines and 4 points of flow on PVSC/Newark Interceptors. The flow meters use Doppler technology and are equipped with one, two or three probes. Each probe is capable of measuring the level and velocity in a single conduit. The level and velocity measurements are then used to calculate the flow rate in each conduit.

At CSO locations, levels and velocities are measured in each sewer line influent to the regulator chamber and at *either* the overflow to the receiving water *or* downstream of the regulator chamber in the sewer line carrying flow to the interceptor. Therefore many CSO locations required the installation of more than one meter with multiple probes.

Each graph/table in this Monthly Flow Metering Report represents the average daily flow rate(s) calculated by a single flow meter. Graphs/tables representing a flow meter with one probe will include one flow rate (Flow1), meters with two probes, two flow rates (Flow1 and Flow2), and meters with three probes, three flow rates (Flow1, Flow2 and Flow3).

The flow rates presented in this report are considered "raw" data, that is it has not yet been adjusted for transient field conditions such as electronic drift, pipe debris, etc. These adjustments will be made during the modeling phase of the project. The size and type of each flow conduit is listed in the attached Flow Meter Report Key.

Total daily rainfall is also included in the graphs/tables. This rainfall is the average of the five rain gauges located throughout the City.

Special notes:

Flow meter equipment has been removed from CSO 010 - Clay Street to prevent damage during ongoing gunite work. Upon completion of this work, the meters will be reinstalled and new pipe dimensions profiled.

Graphs/tables for flow meters installed on the interceptors are not yet available. This equipment is being fine tuned and flow data will be forthcoming.

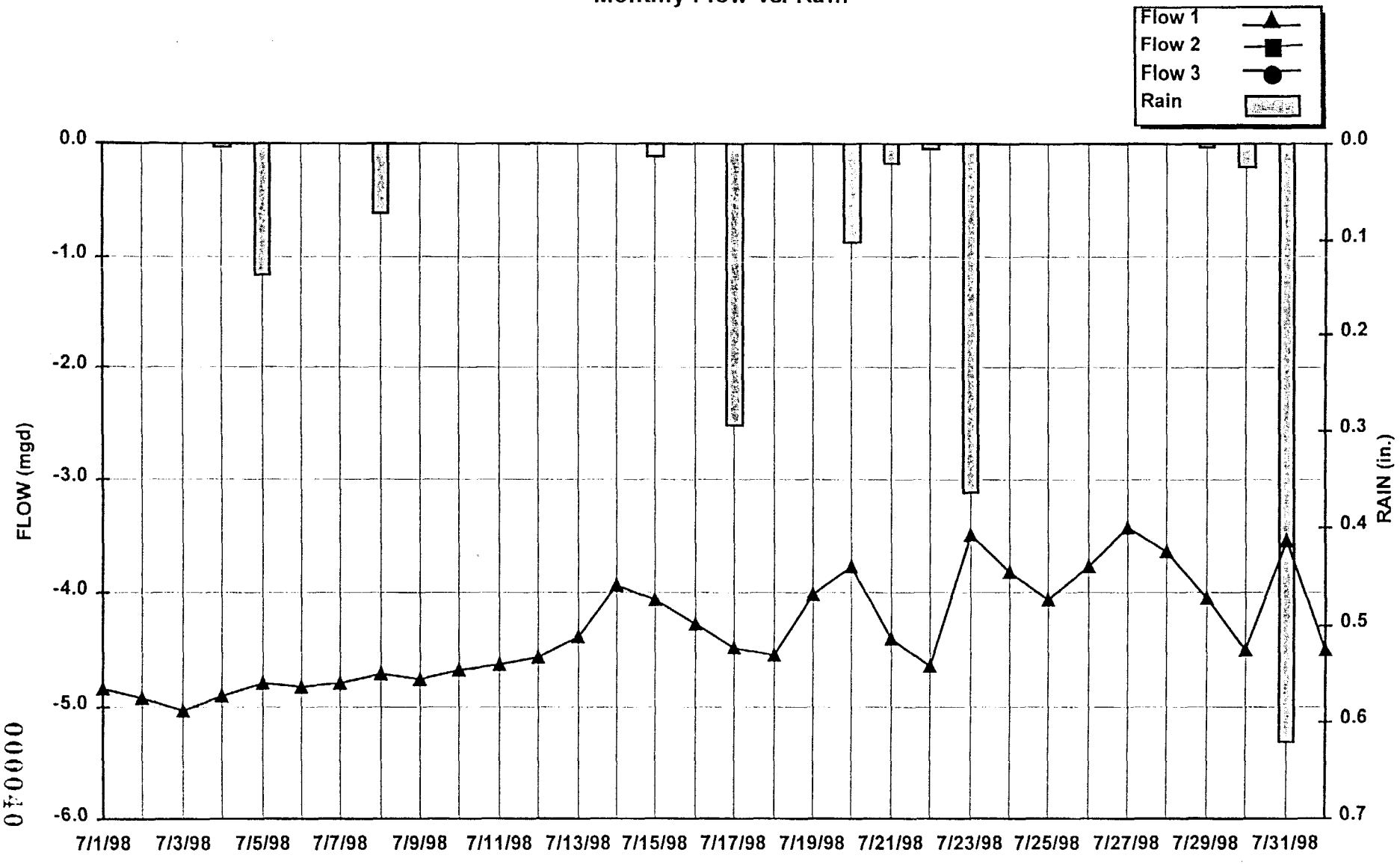
Newark CSO Discharge Characterization Study

Flow Meter Report Key

Region/Location	*Meter Serial Number*	*Flow1*	*Flow2*	*Flow3*
CSO 002 - Verona Ave	QR8	54.75" Influent	72"W x 58.75"H Overflow	
CSO 004/005 - Herbert Pl. - Influent	QTQ	48" Influent	24" Influent	
CSO 004/005 - Herbert Pl. - Overflows	QTP	51" Overflow	48.5"H x 72.4"W Overflow	
CSO 006 - Oriental Ave Influent	QUL	48" Influent		
CSO 006 - Orential Ave Overflow	QUJ	54" Overflow		
CSO 007 - Third Ave	QR6	15" Influent	48"W Overflow Weir	
CSO 008 - Fourth Ave	QQD	45"H x 25.75"W Influent	72"W x 53"H Overflow	
CSO 009B - Clay St Influent	QRG	18" Influent		
CSO 009B - Clay St Overflow	QU3	18" Overflow		
CSO 009C - Clay St	QRW	15.2" Influent	15.1" Overflow	
CSO 010 - Clay St Influents	QTR	To Be Profiled	To be Profiled	
CSO 010 - Clay St Overflow North Pipe	QPS	100"W x75.3"H Overflow		
CSO 010 - Clay St Overflow South Pipe	QUM	100"W x75.3"H Overflow		
CSO 011 - Orange St Influent	QRF	15" Influent		
CSO 011 - Orange St influent and overflow	QRZ	18" Influent	22.5" Overflow	
CSO 012 - Bridge St	QR7	15" Influent	48"W Overflow Weir	
CSO 013 - Rector St	QUY	62" Influent	45"W x 54"H Influent	79.5"W x 66.5"H Overflow
CSO 014 - Saybrook Pl Influent and Overflow	QRV	75.75"H x74"W Influent	102.5"W x 83"H Overflow	
CSO 015 - City Dock Influent1	QQT	12" Influent		
CSO 015 - City Dock Influent2	QU2	18" Influent		
CSO 015 - City Dock Influent3	QPV	36" Influent		
CSO 015 - City Dock Influent4	QPQ	108"W x 88"H Influent (Siphon)		
CSO 015 - City Dock Overflow	QLK	87"H x 108"W Overflow		
CSO 016 - Jackson St	QTO	56.5" Influent	12" Influent	72"W Overflow Weir
CSO 017 - Polk St	QUG	85" Influent	97" Overflow Weir	
CSO 018 - Freeman St Influent	QUF	28.5" Influent	18.25" Influent	
CSO 018 - Freeman St Influent&Overflow	QU0	24.2" Influent	44"W Overflow Weir	
CSO 022 - Roanoke Ave	QUZ	60" Influnet	60" Overflow	
CSO 023a - Adams St	QR4	64"H x 51.5"W Influent	88"W x 12"H Overflow	
CSO 023b - Adams St Influent	QO4	48" Influent		
CSO 023b - Adams St overflow	QPP	42" Overflow		
CSO 025 - Peddie St unregulated	QUE	192"W x 80"H Influent	191"W x 85"H Influent	
CSO 025 - Peddie St regulated	QO7	48"H x 48"W Regulated Flow		
CSO 026 - Queen unregulated	QQU	102.5"W x 61"H Influent		
CSO 026 - Queen regulated	QQV	47.3"H x 48.2"W Regulated Flow		
CSO 027 - Waverly	QRY	96" Influent	96" Overflow	
CSO 030 - Wheeler/Ave A	QUD	56" Influent	66" Influent	51.75"H x 11.6"H Overflow
East Orange No. 1	QRH	49.25"H x 32.75"W		
East Orange No. 2	QRM	48.8"H x 33.4"W		
East Orange No. 3	QQZ	33"		
East Orange No. 4	QRC	12"		
East Orange No. 5/6	QR1	33"	18.75"	
East Orange No. 7	QPT	30"		
East Orange No. 8	QO1	24.25"		
Outgoing No. 1	QQ7	12"		
Outgoing No. 2	QQ2	20"		
Outgoing No. 3	QRD	15"		
Outgoing No. 4	QUI	18.25"		
Newark No. 1	QLL	36"		
Newark No. 2	QUN	18.25"		
Newark No. 3	QTZ	47.1"		
Newark No. 4	QT1	45"W x 48"H		
Newark No. 5	QUO	21.1"		
Newark No. 6	QU1	24.5"		
Newark No. 7	QUK	24.4"		
Newark No. 8	QT3	18"		
Newark No. 9	QLF	102"W x 24"H		
Newark No. 10	QUX	2 - 20.5"		

863690132

Monthly Flow vs. Rain

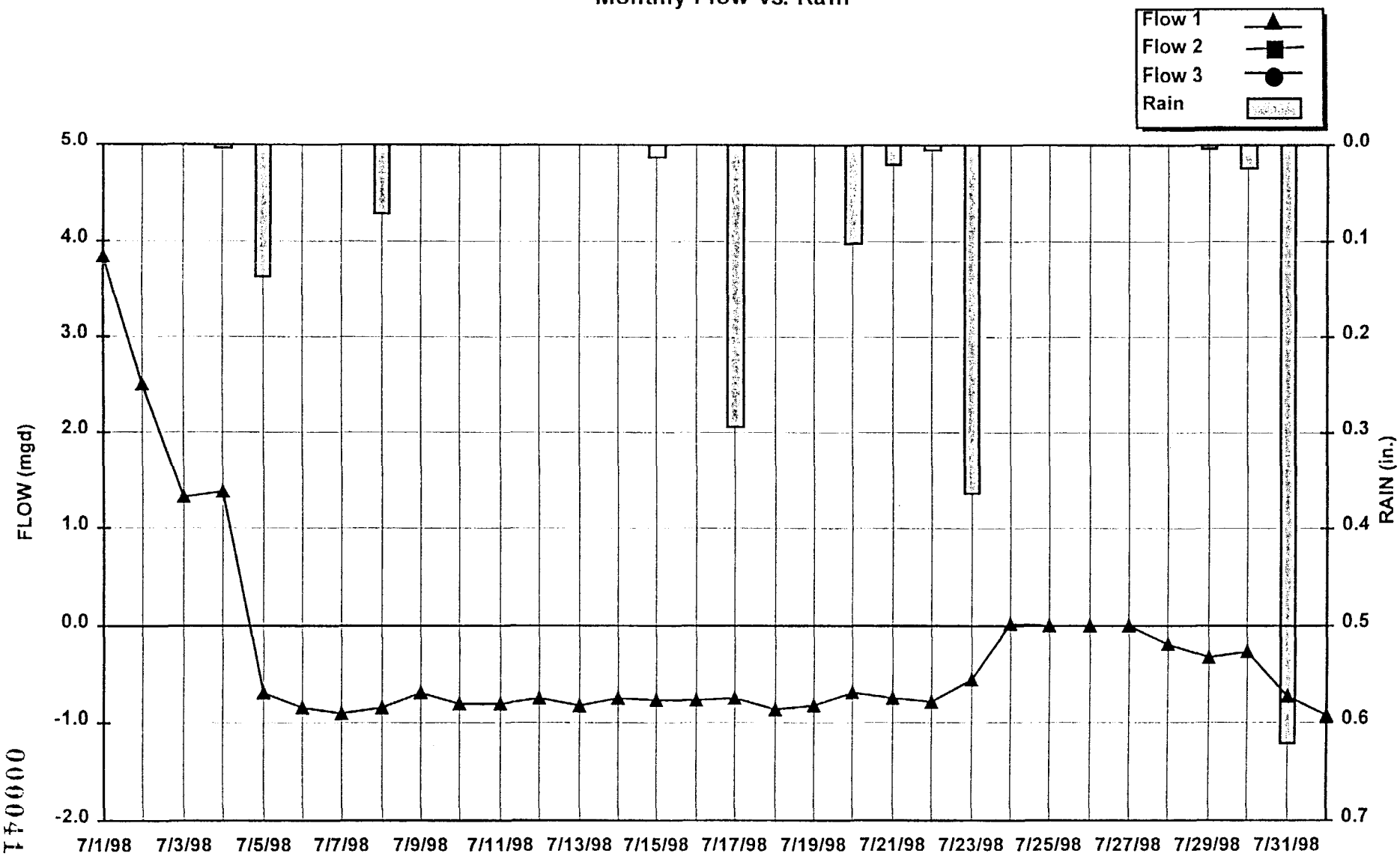


000040

EAST ORANGE NO. 1
Address: Central Ave. and 15th St.
Serial#: QRH

863690133

Monthly Flow vs. Rain

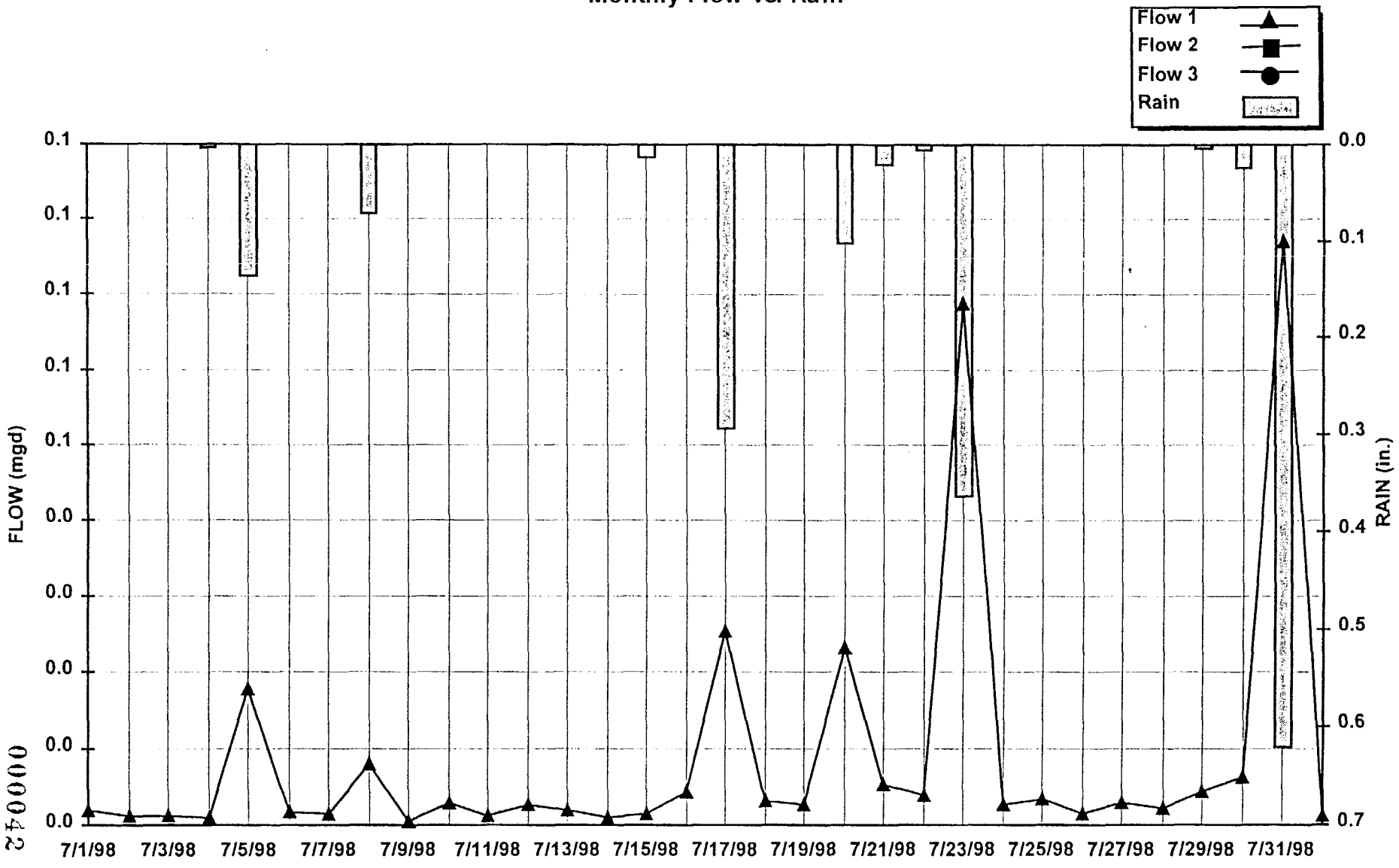


000041

EAST ORANGE NO. 2
Address: 9th Ave. and 15th St.
Serial#: QRM

863690134

Monthly Flow vs. Rain

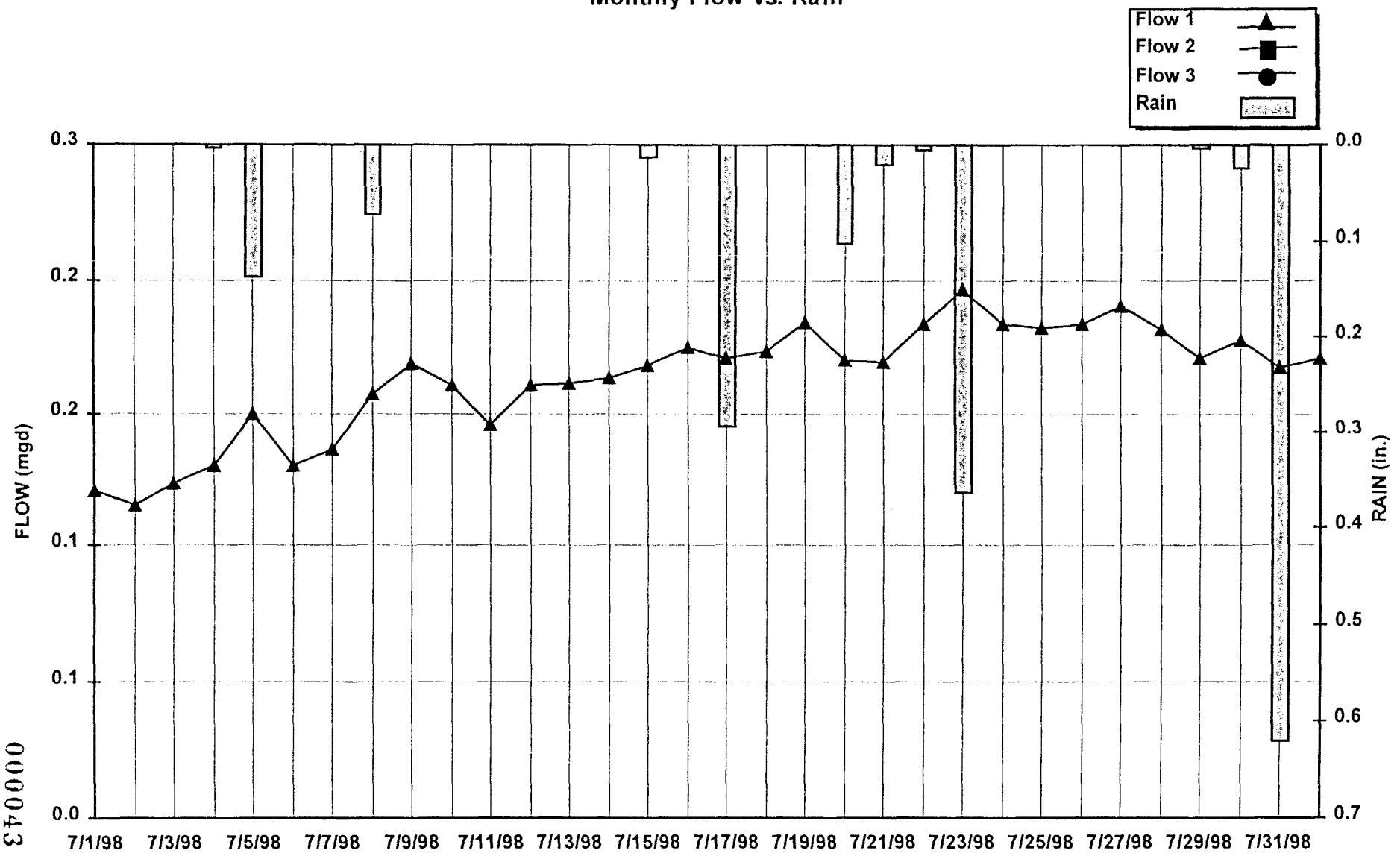


000042

EAST ORANGE NO. 3
Address: Sussex Ave. and 15th St.
Serial#: QQZ

863690135

Monthly Flow vs. Rain

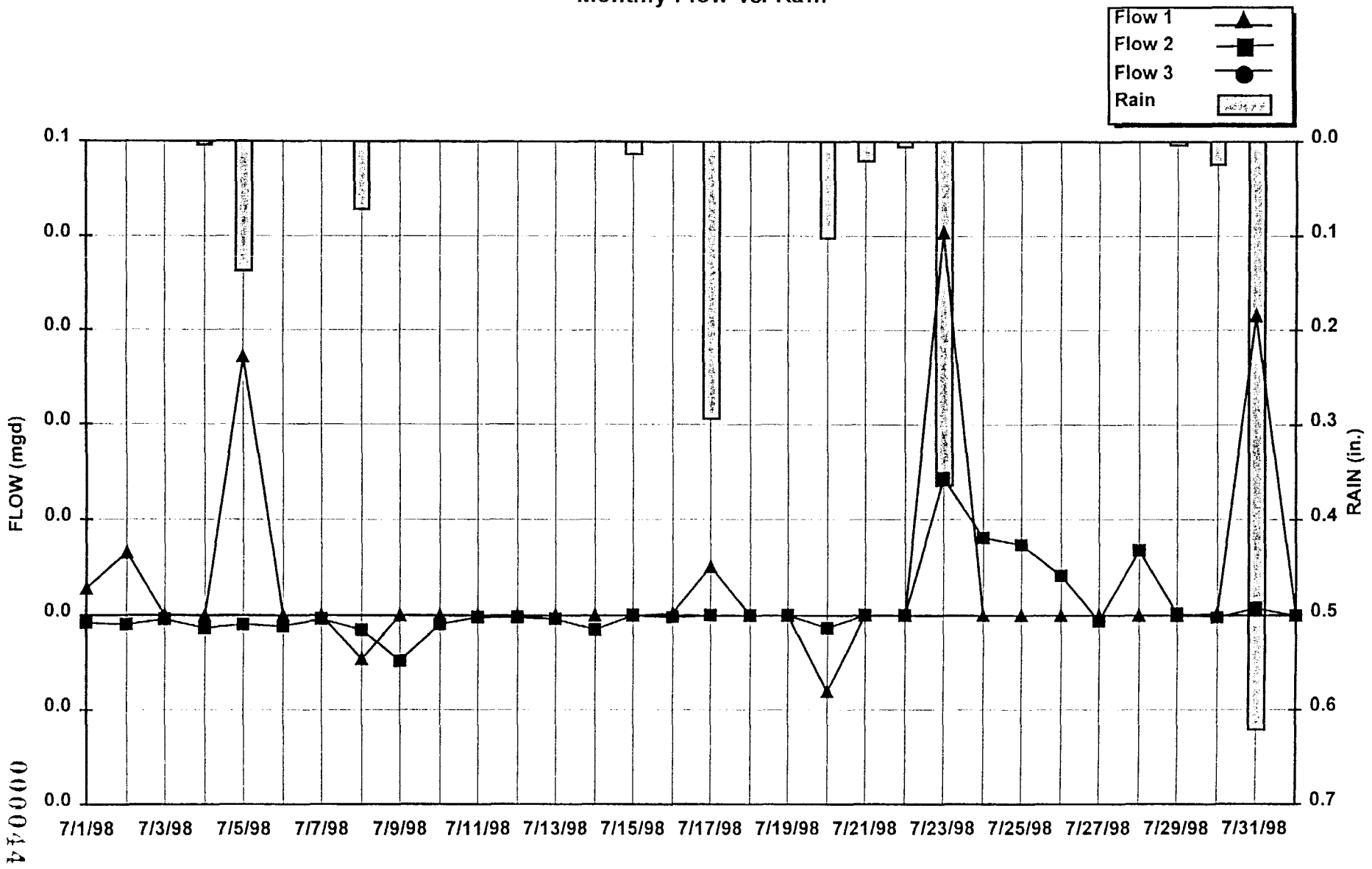


000043

EAST ORANGE NO. 4
Address: Sussex Ave. and 15th St.
Serial#: QRC

863690136

Monthly Flow vs. Rain

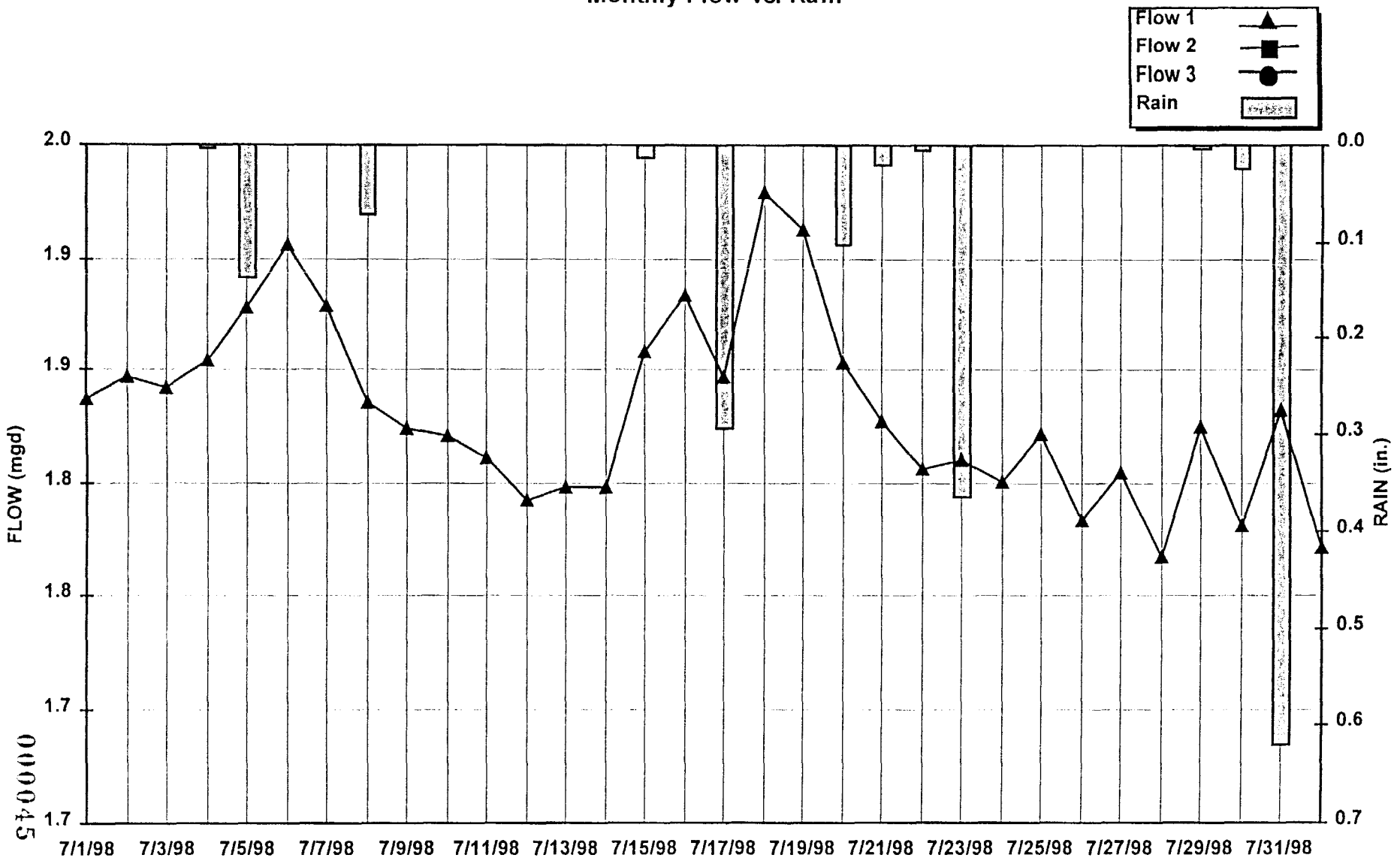


000044

EAST ORANGE NO. 5/6 - 14TH & HEDDEN PL
Address: 14TH ST. & HEDDEN PL.
Serial#: QR1

863690137

Monthly Flow vs. Rain

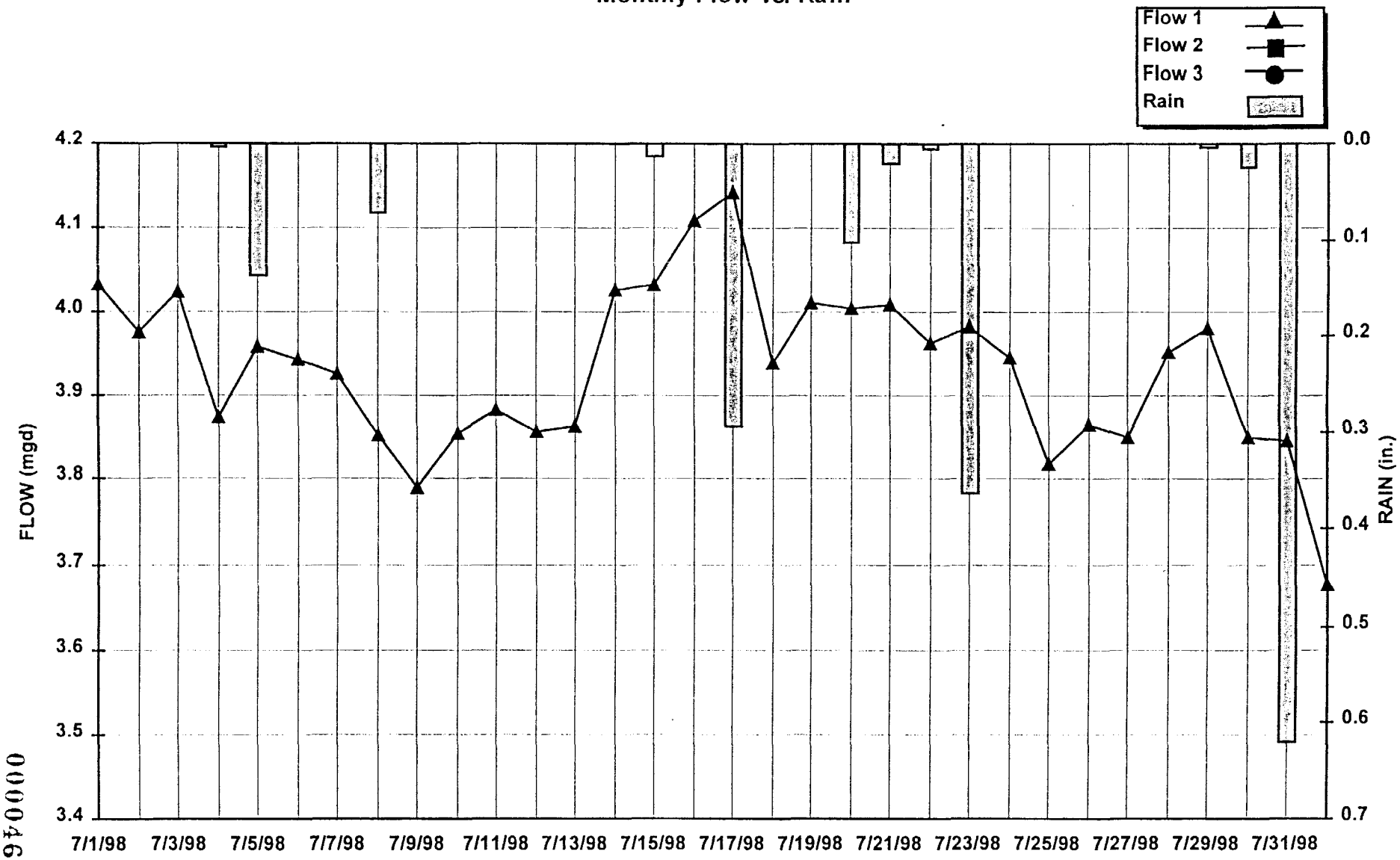


000045

EAST ORANGE NO. 7
Address: 6TH ST. & 13TH ST.
Serial#: QPT

863690138

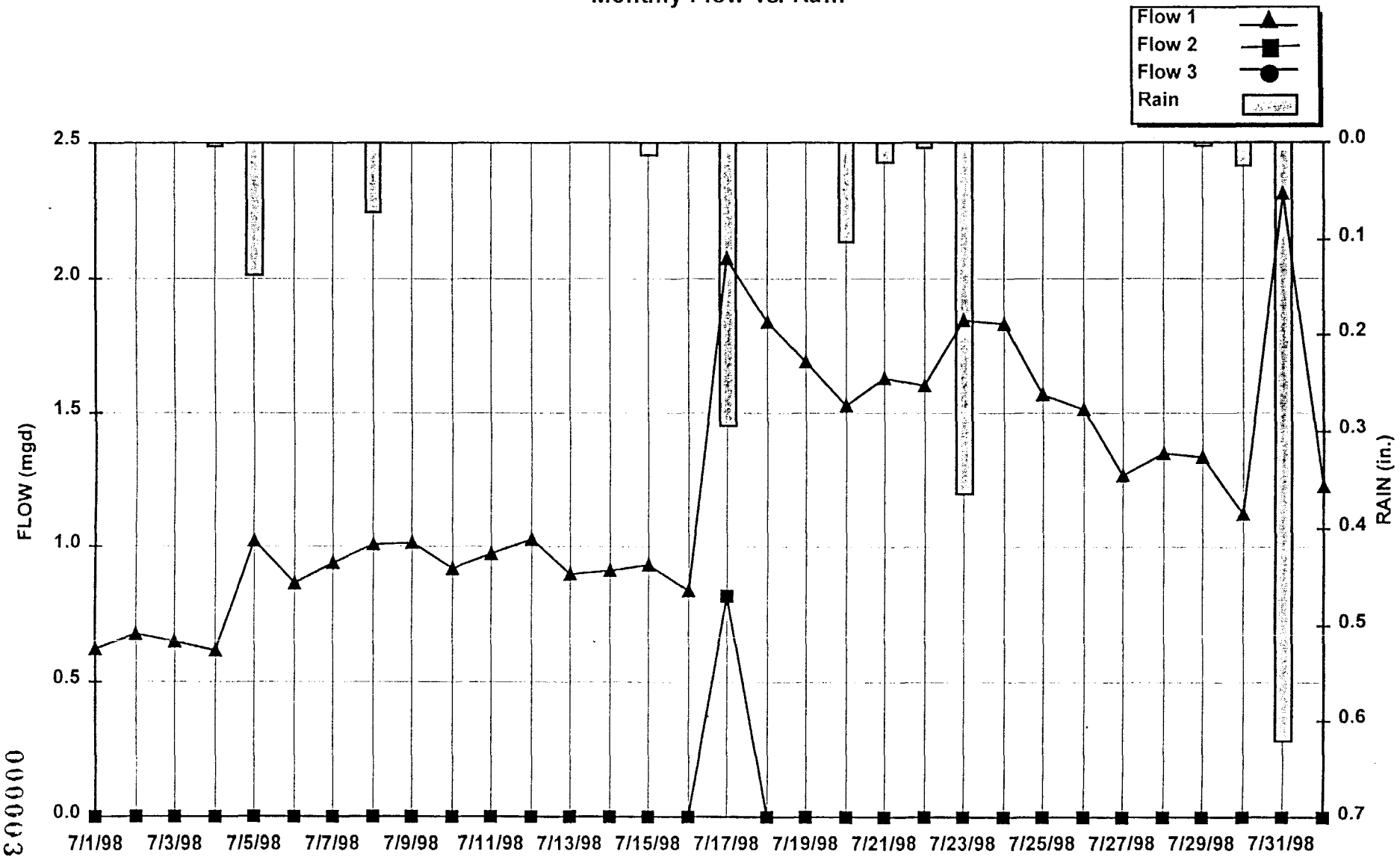
Monthly Flow vs. Rain



000046

EAST ORANGE NO. 8
Address: 13TH ST. & SPRINGDALE AVE.
Serial#: QO1

Monthly Flow vs. Rain



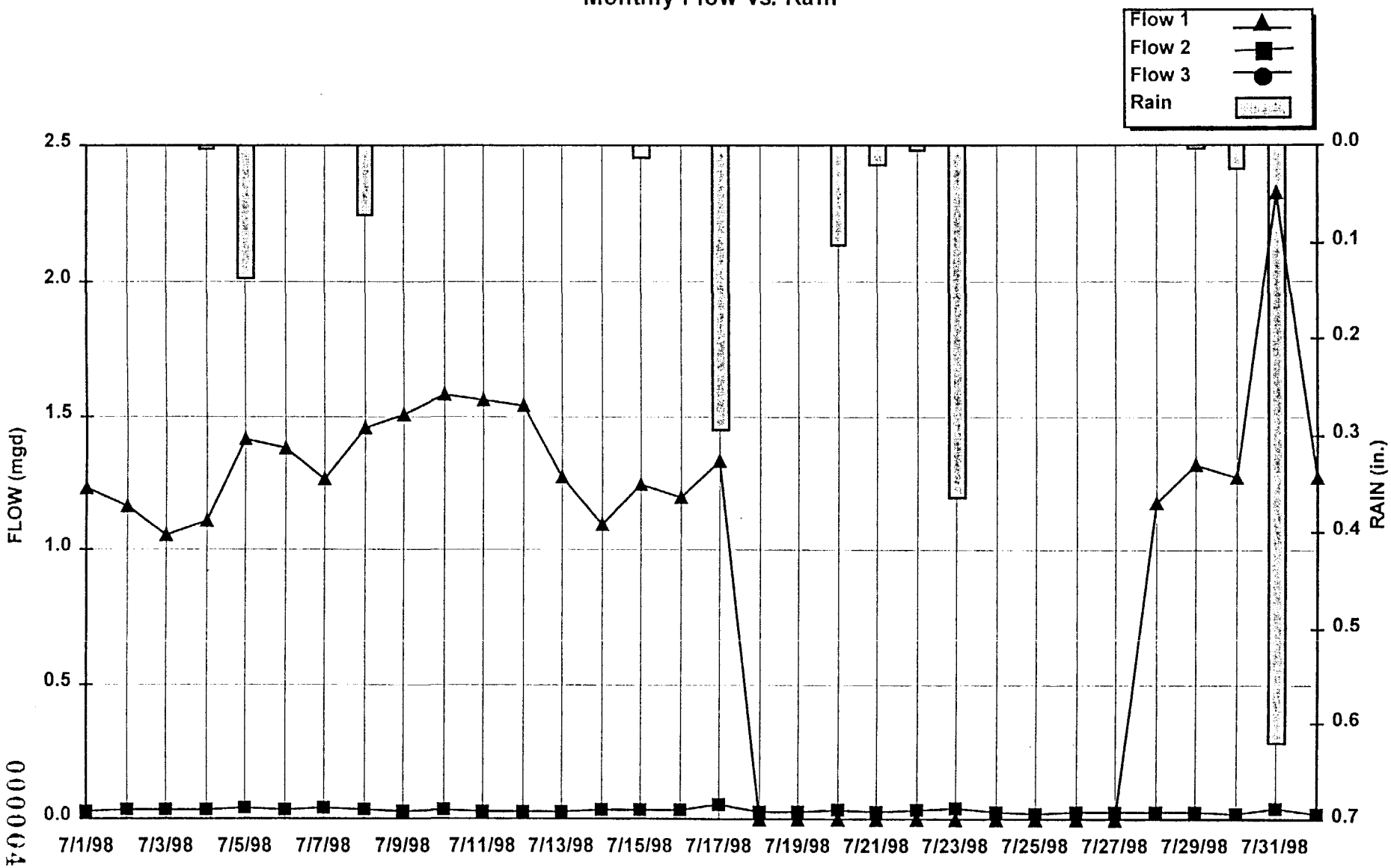
CSO 002 - VERONA AVE
Address: Verona Ave. and McCarter Hwy
Serial#: QR8

000003
863690139

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000004

863690140

CSO 004/005 HERBERT PL. - Influent

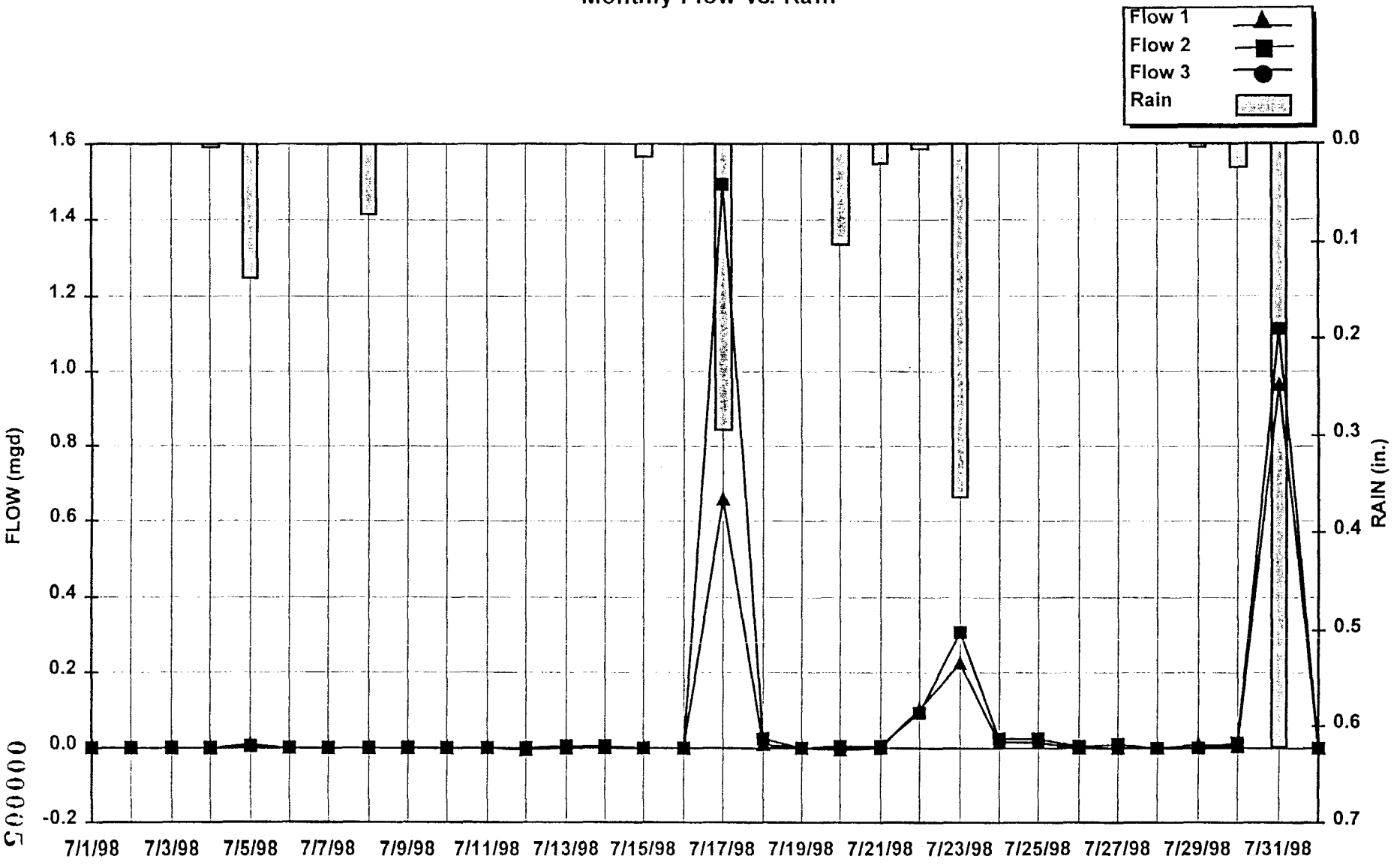
Address: Herbert Pl. and McCarter Hwy

Serial#: QTQ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000005

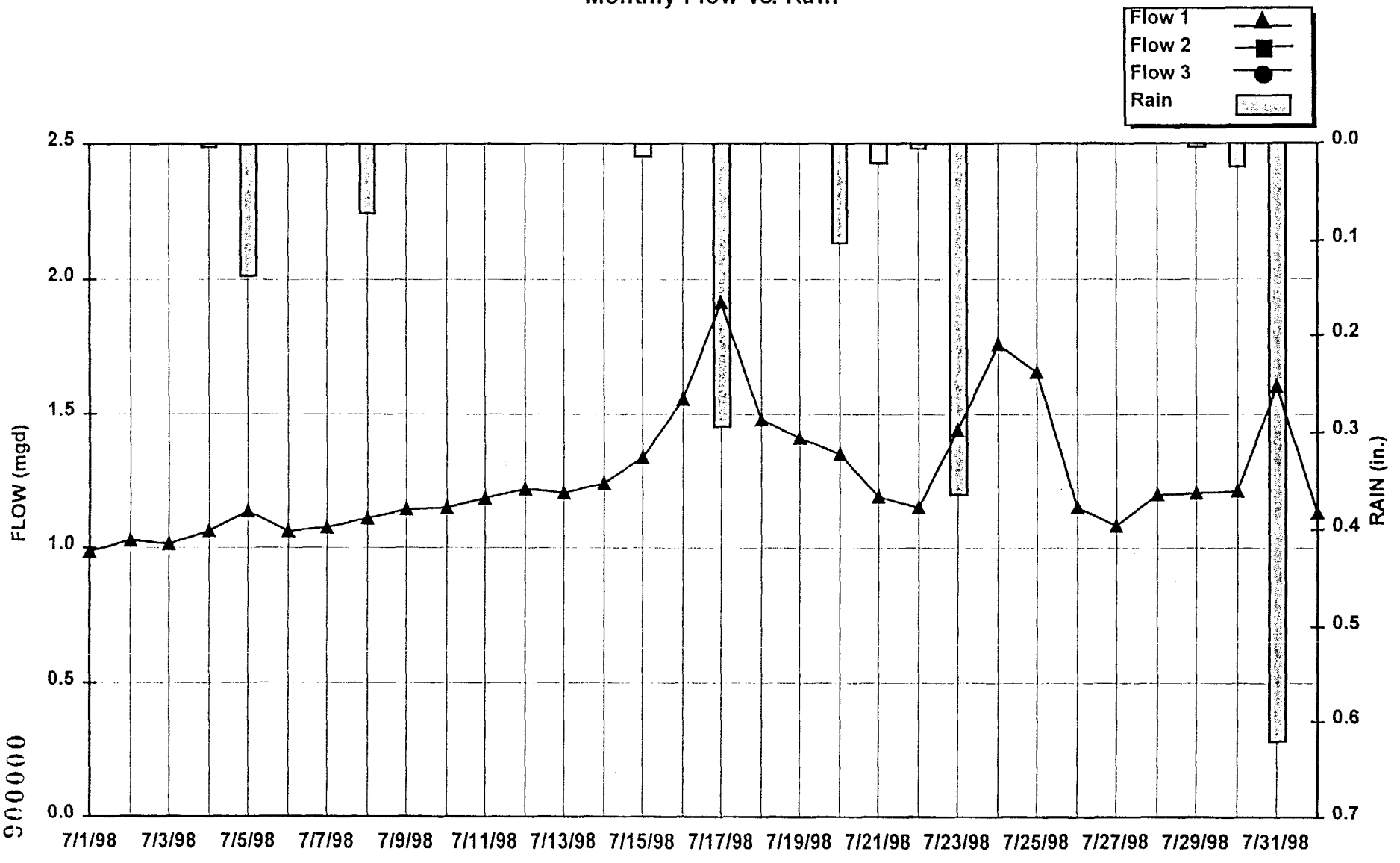
863690141

CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy
Serial#: QTP

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Influent
Address: Broadway and Second St.
Serial#: QUL

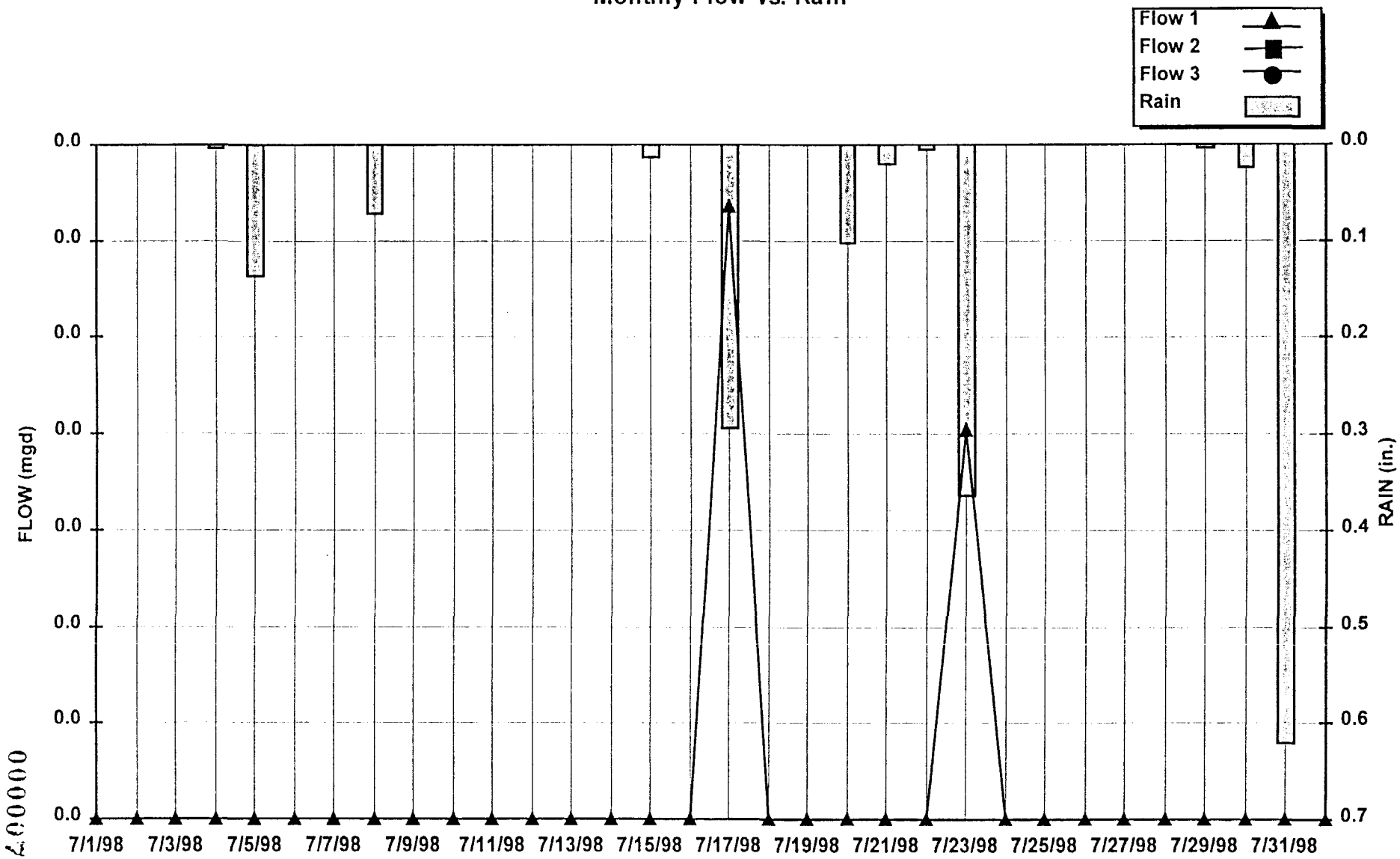
000006

863690142

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Overflow

Address: Broadway and Second St.

Serial#: QUJ

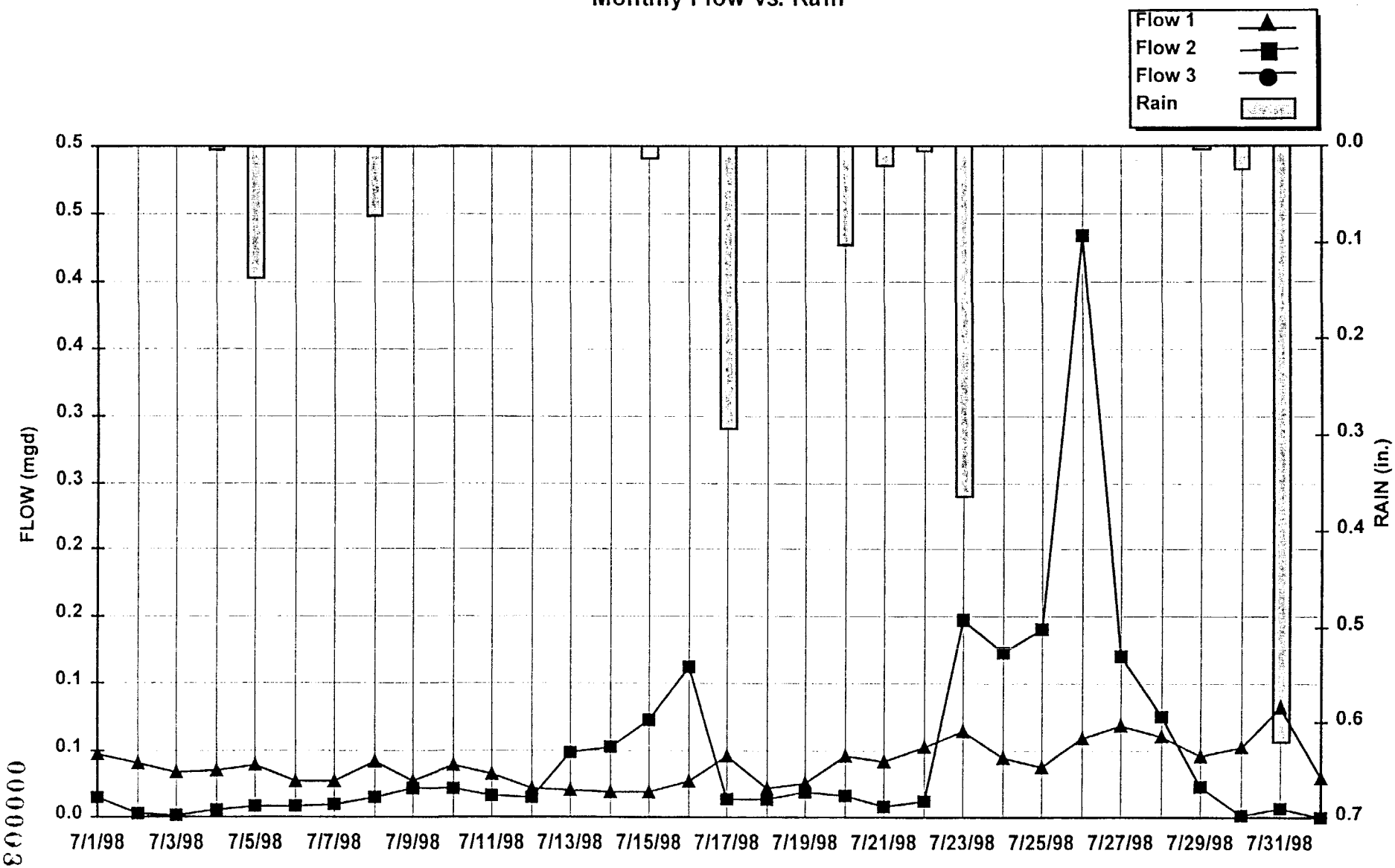
000007

863690143

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

Serial#: QR6

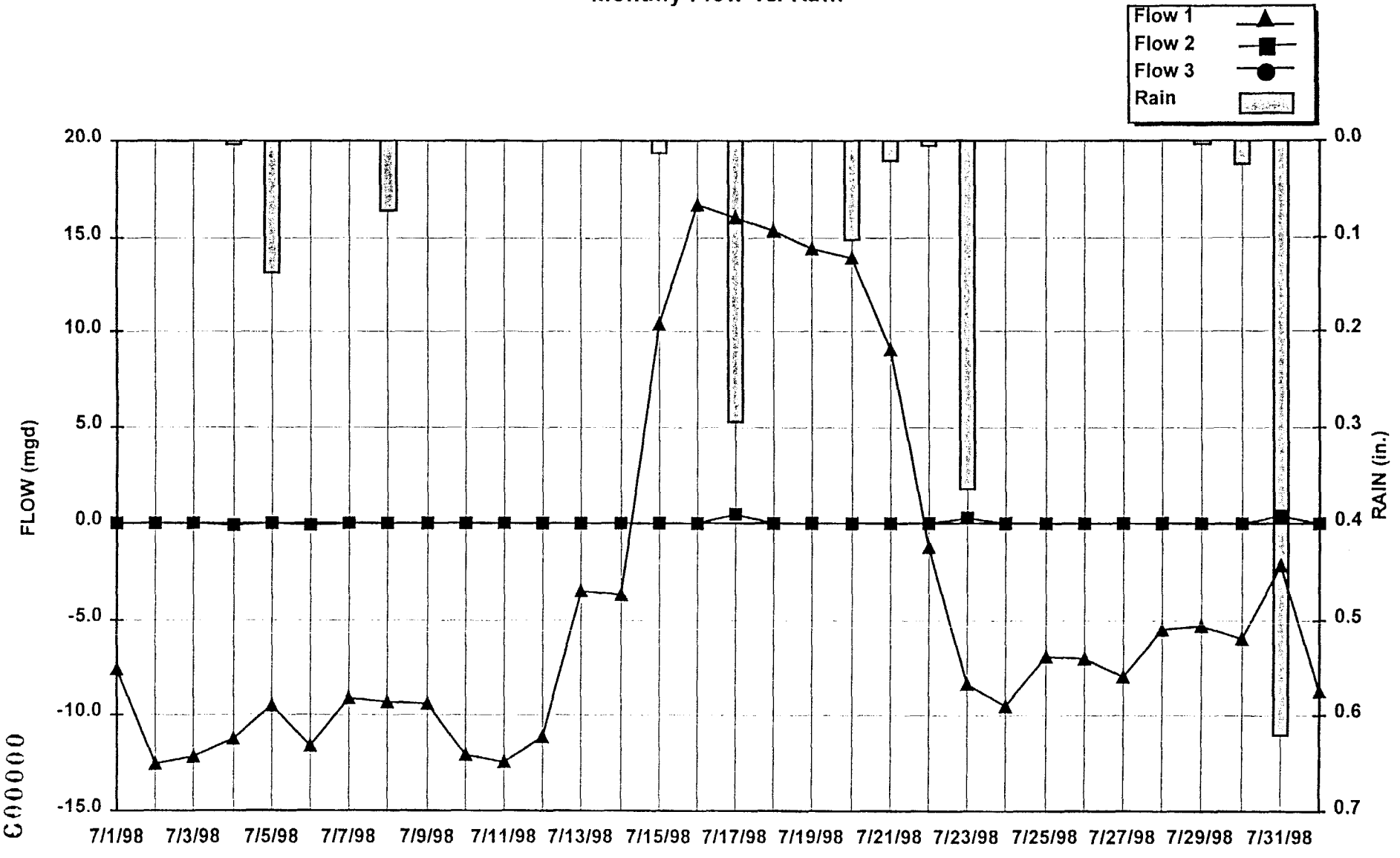
000003

863690144

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



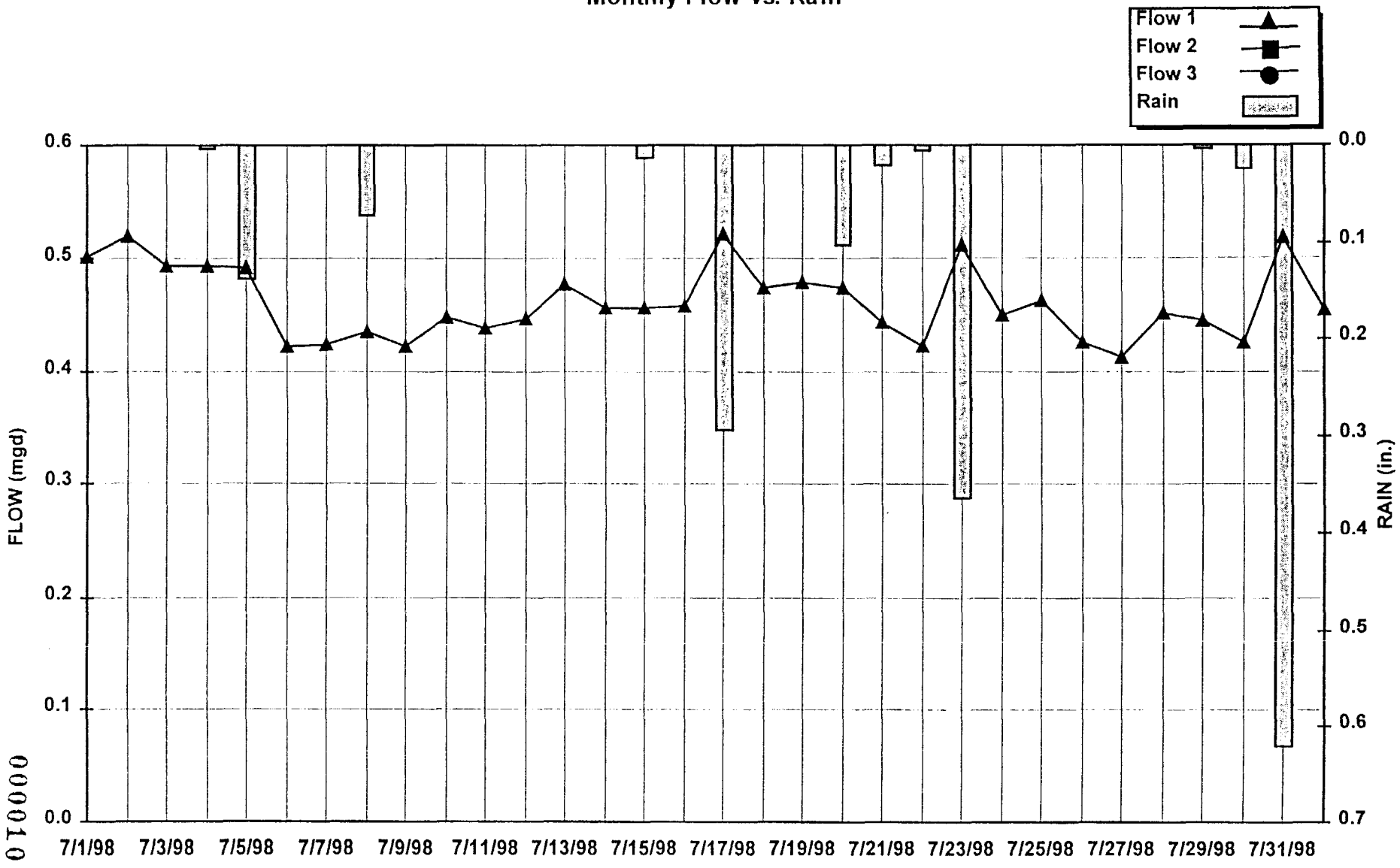
CSO 008 - FOURTH AVE
Address: Fourth Ave. and Passaic St.
Serial#: QQD

863690145

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000010

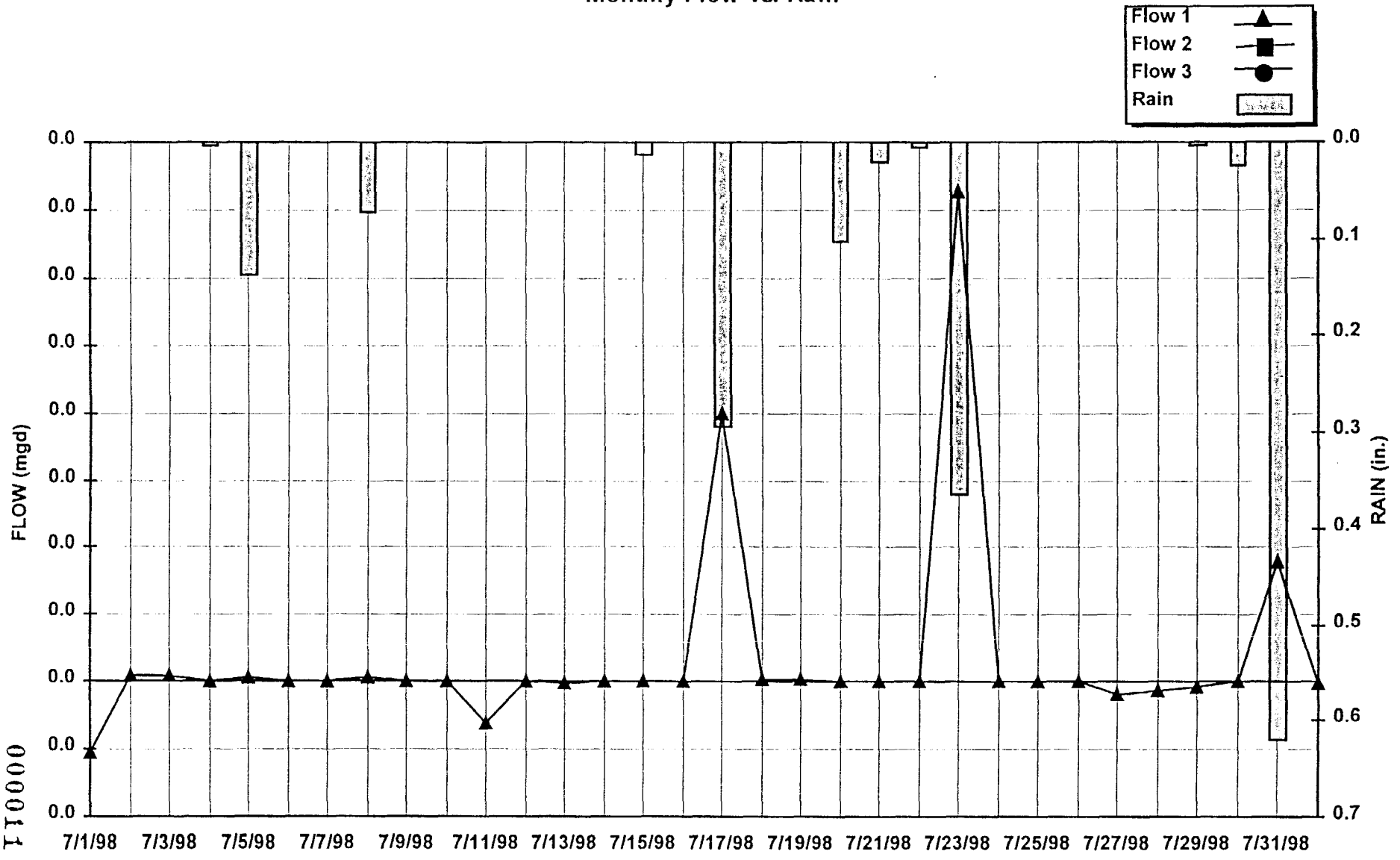
863690146

CSO 009B - CLAY ST Influent
Address: Clay St. at Passaic St.
Serial#: QRG

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Overflow
Address: Clay St. at Passaic St.
Serial#: QU3

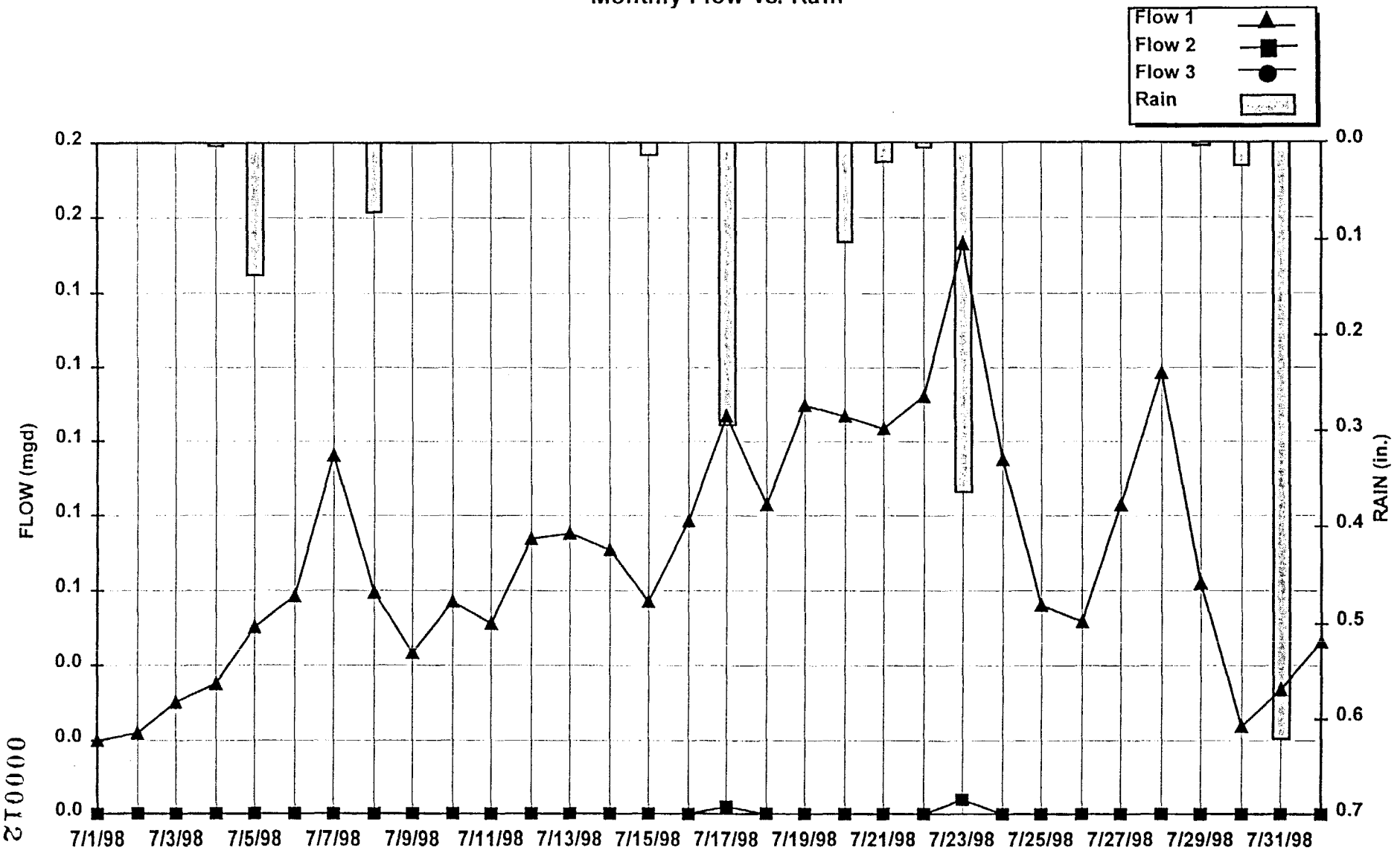
000011

863690147

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST
Address: Clay St. and McCarter Hwy
Serial#: QRW

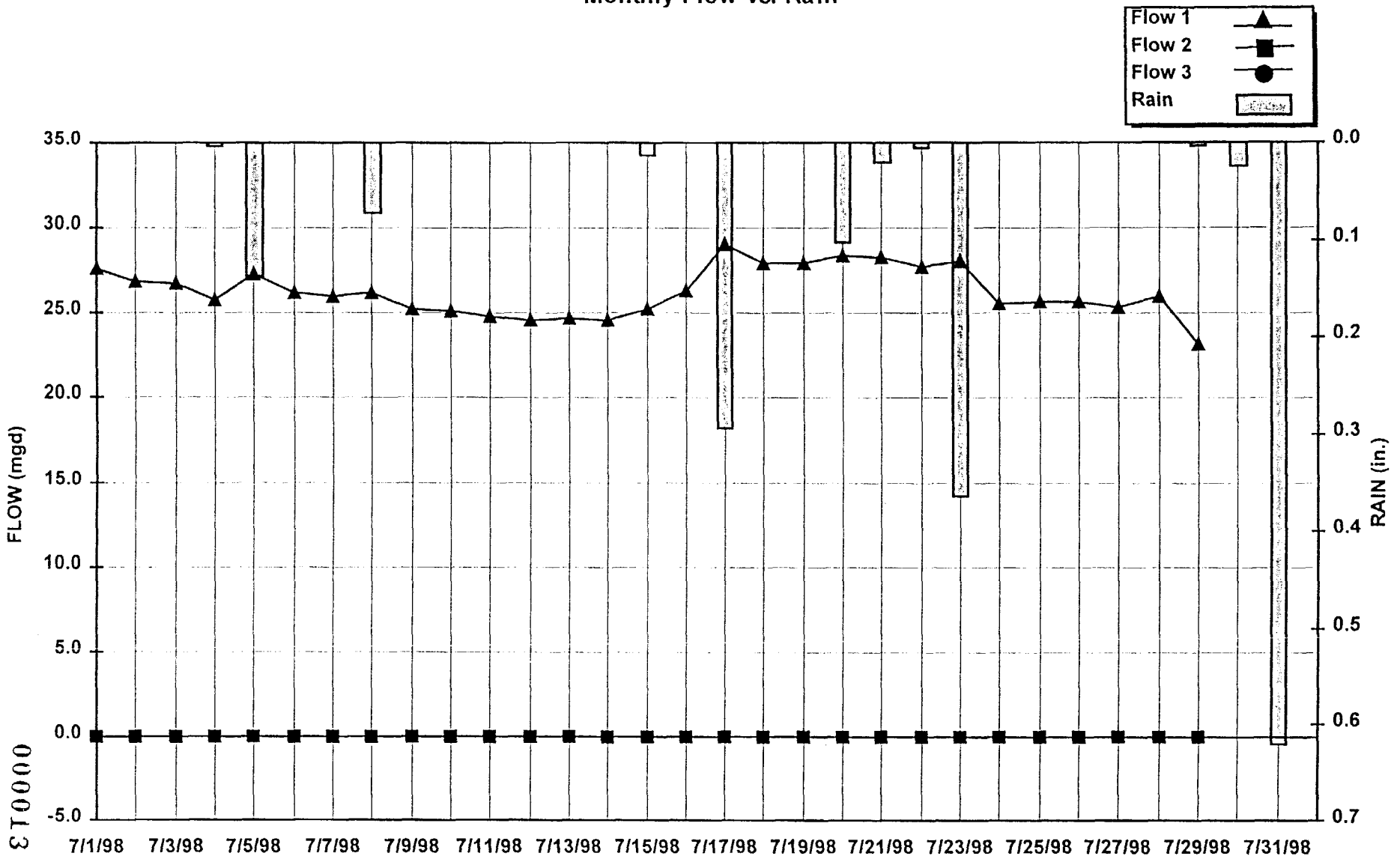
000012

863690148

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Influents

Address: Clay St. at McCarter Hwy

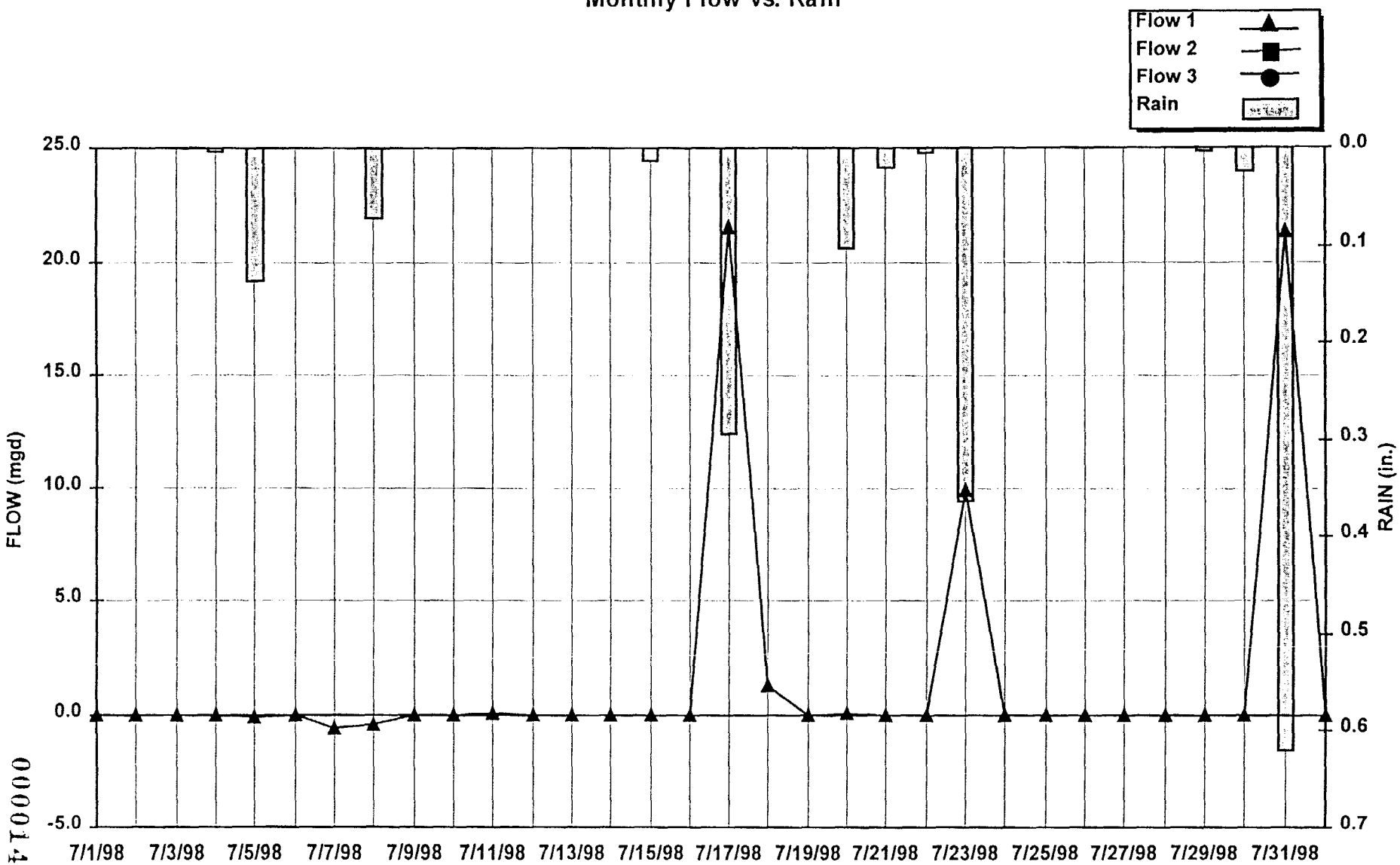
Serial#: QTR

863690149

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow North Pipe
Address: Clay St. at Passaic St.
Serial#: QPS

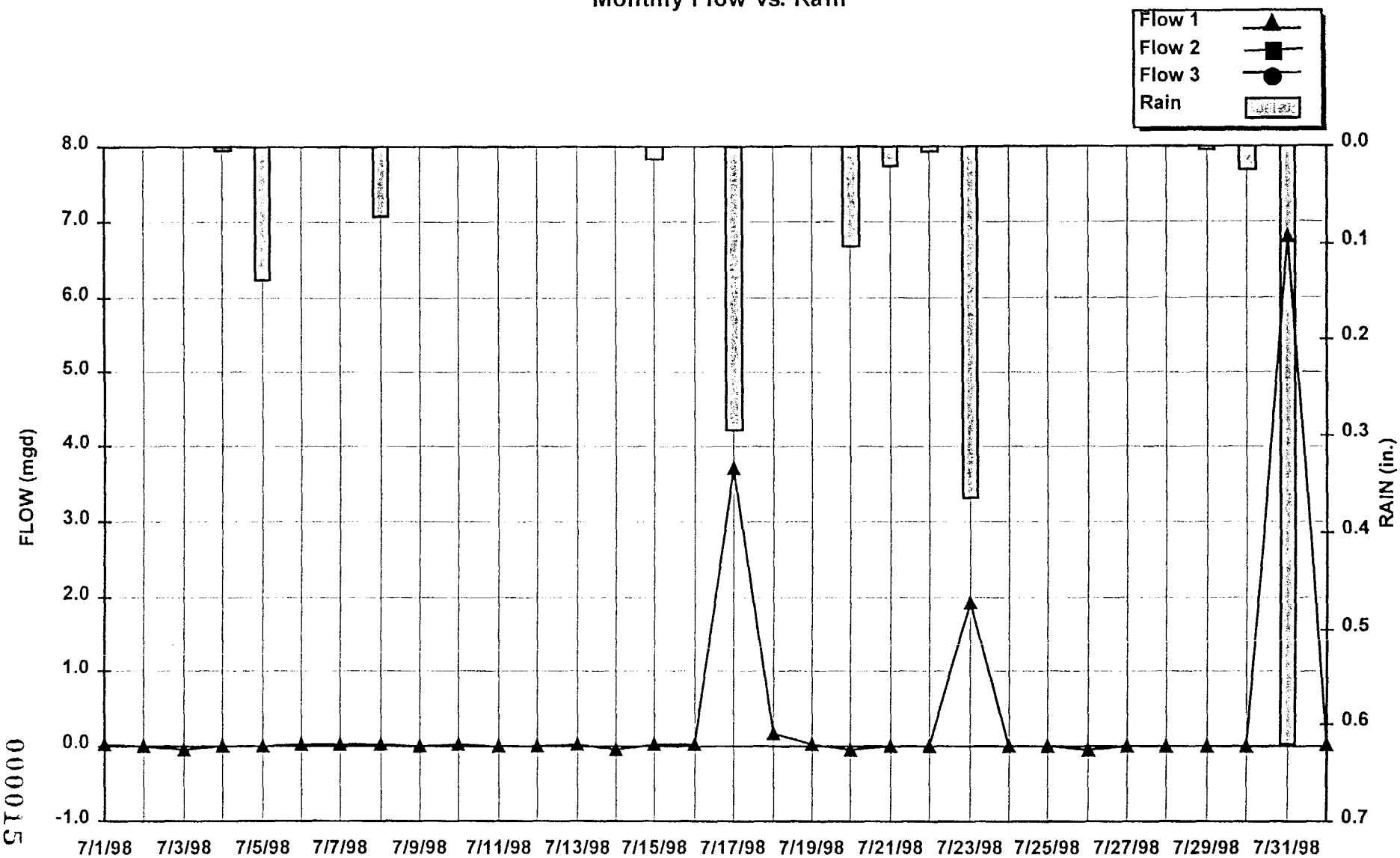
000014

863690150

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain

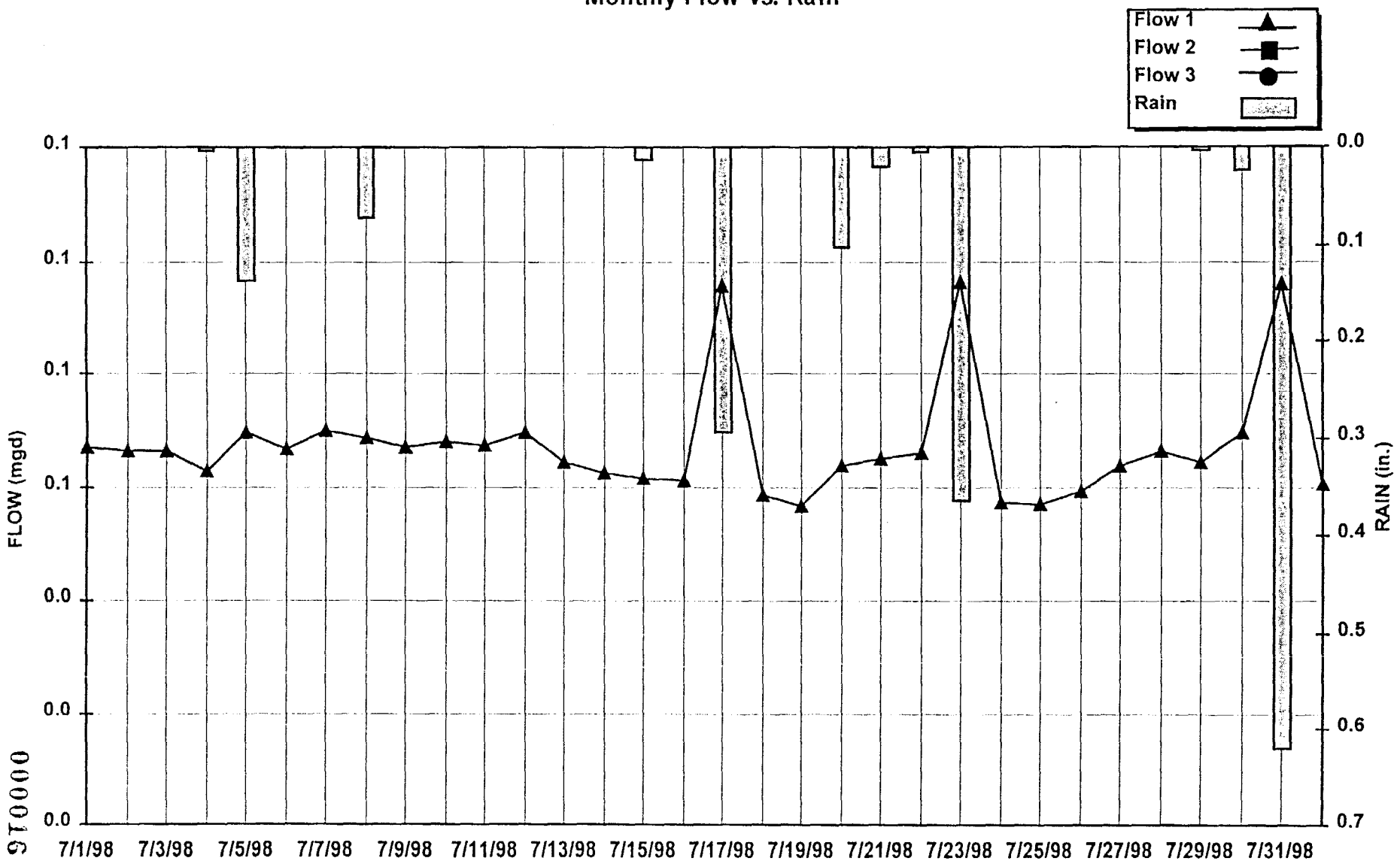


CSO 010 - CLAY ST Overflow South Pipe
Address: Clay St. at Passaic St.
Serial#: QUM

000015

863690151

Monthly Flow vs. Rain



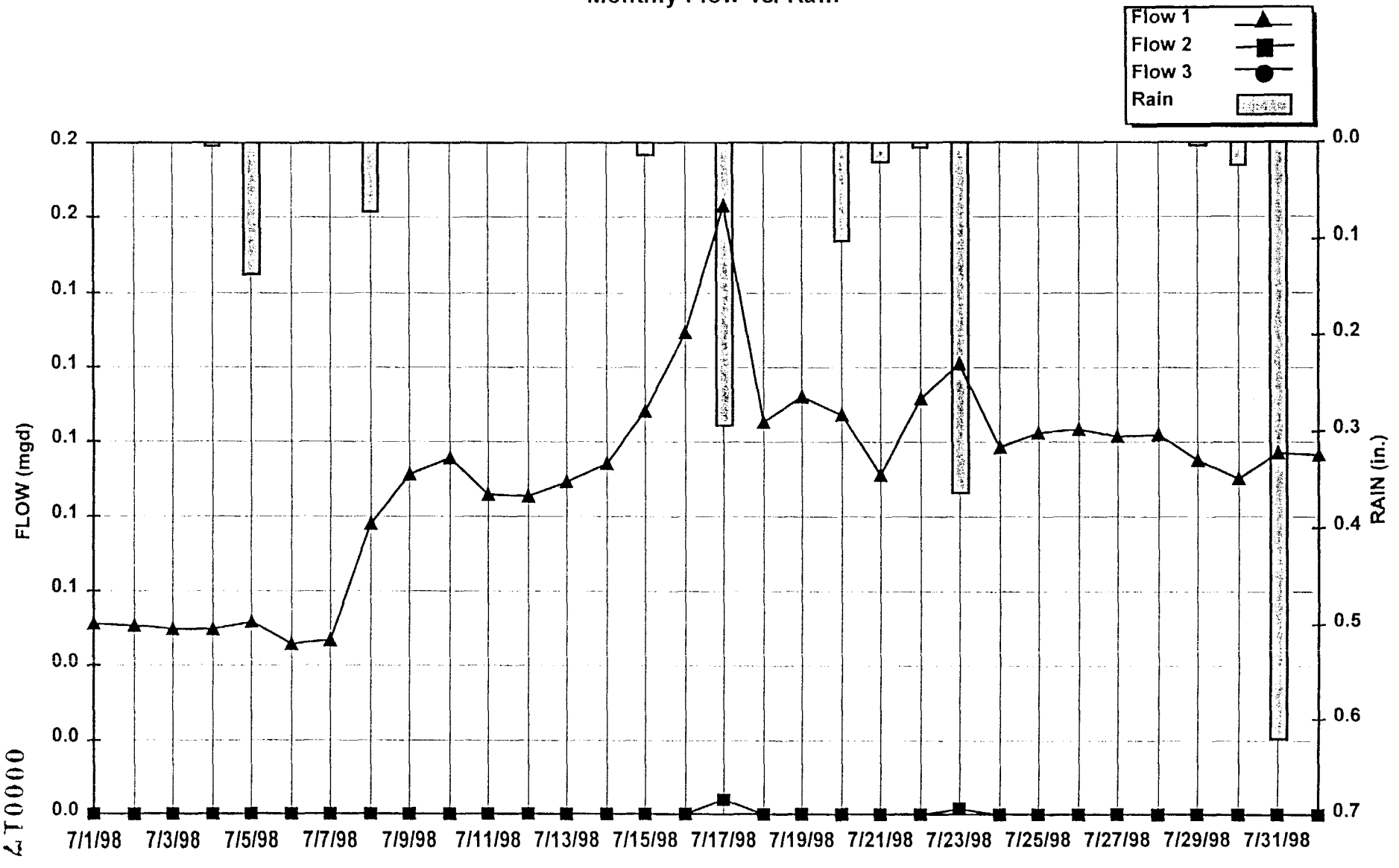
CSO 011 - ORANGE ST Influent
Address: Orange St. and McCarter Hwy
Serial#: QRF

000016
863690152

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain

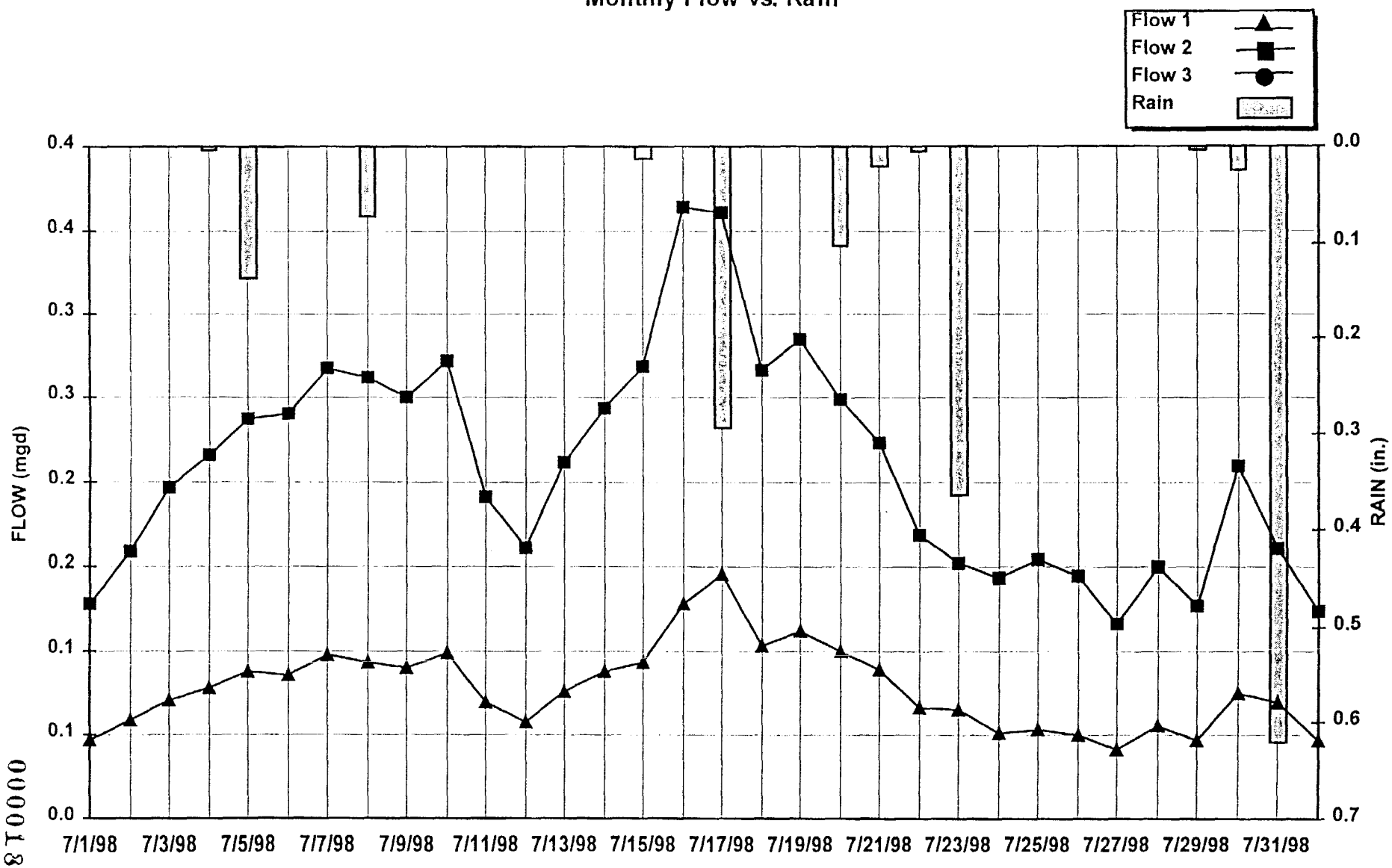


CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy
Serial#: QRZ

000017

863690153

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy
Serial#: QR7

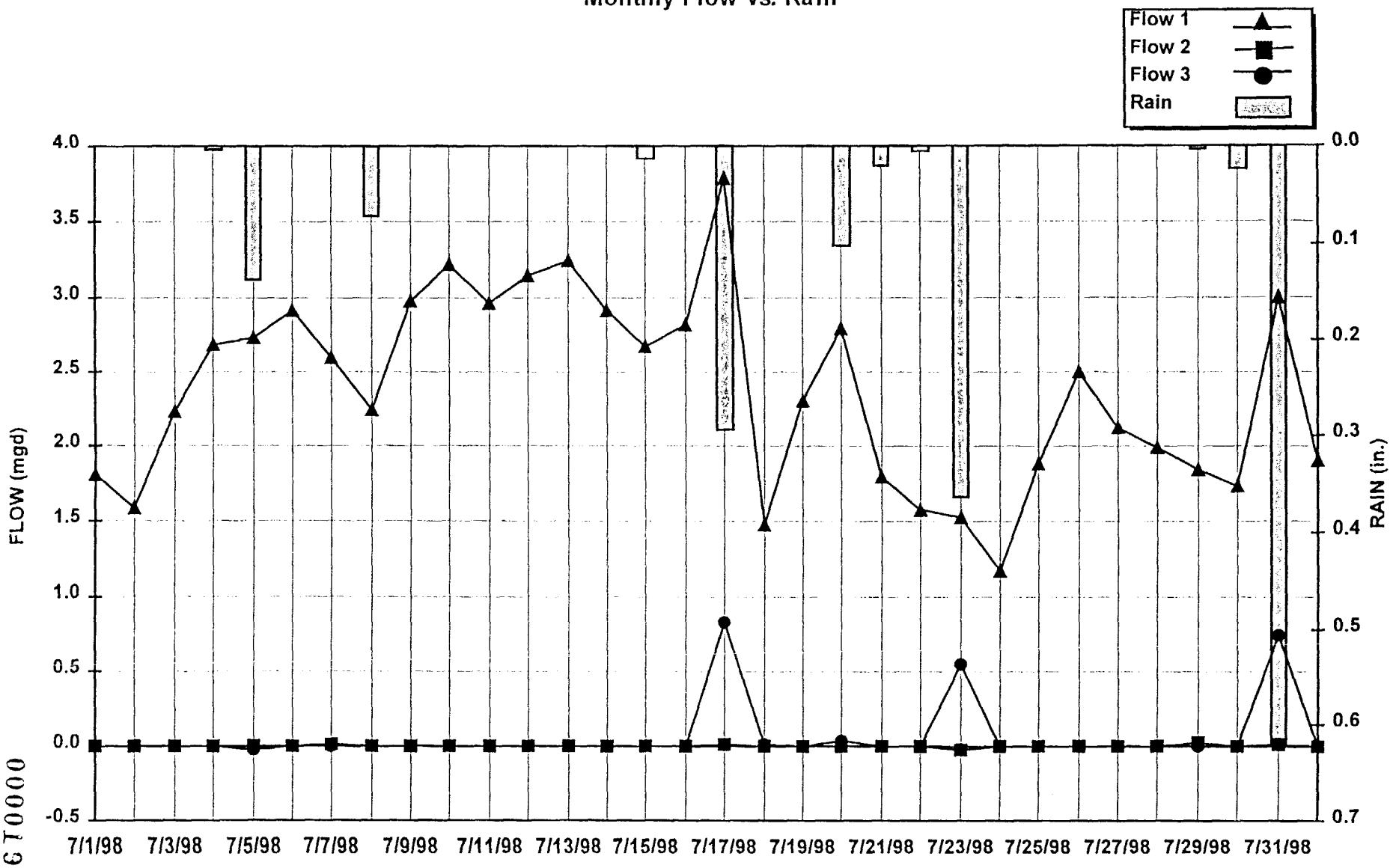
000018

863690154

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

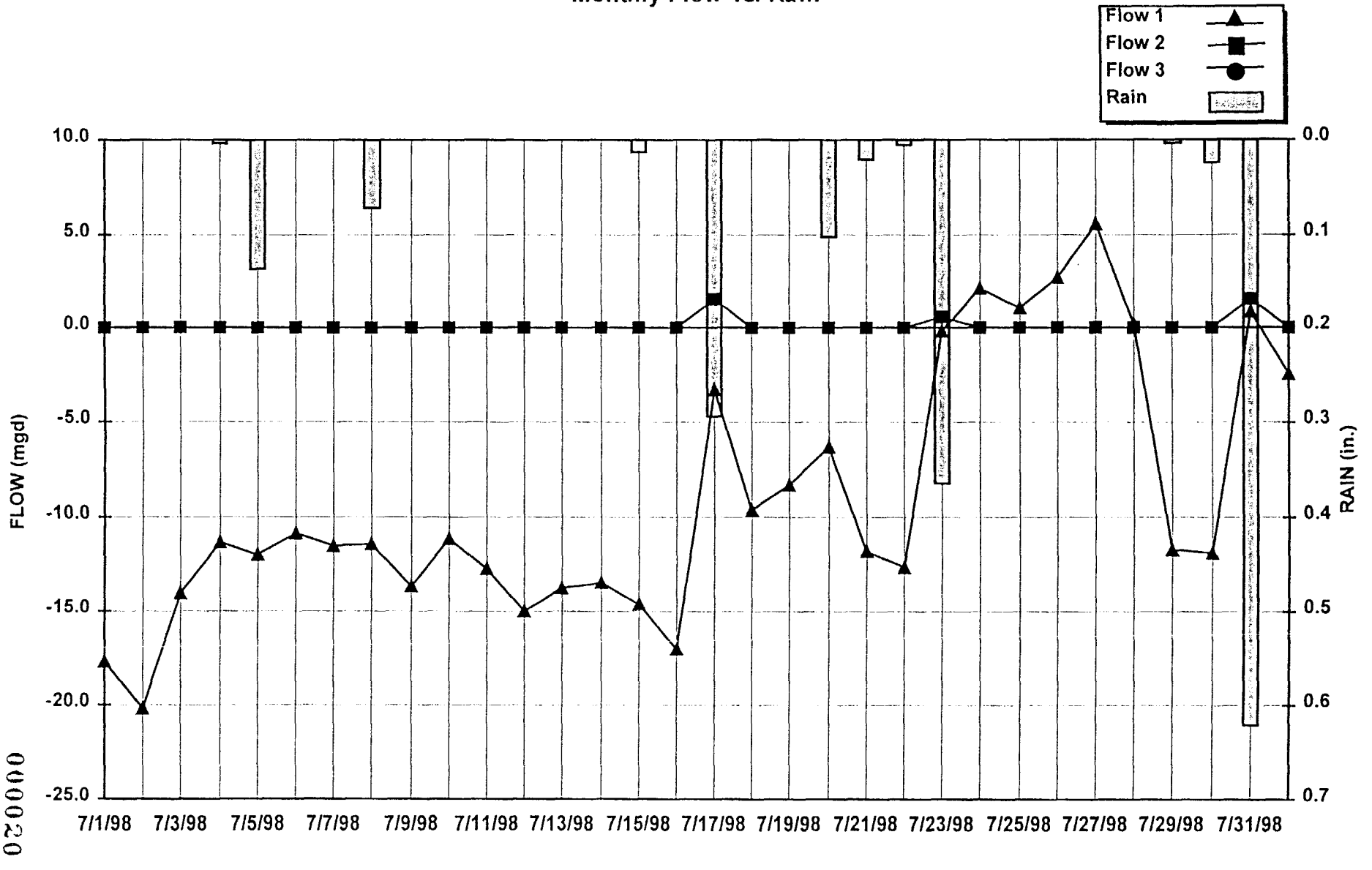
Serial#: QUY

863690155

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy
Serial#: QRV

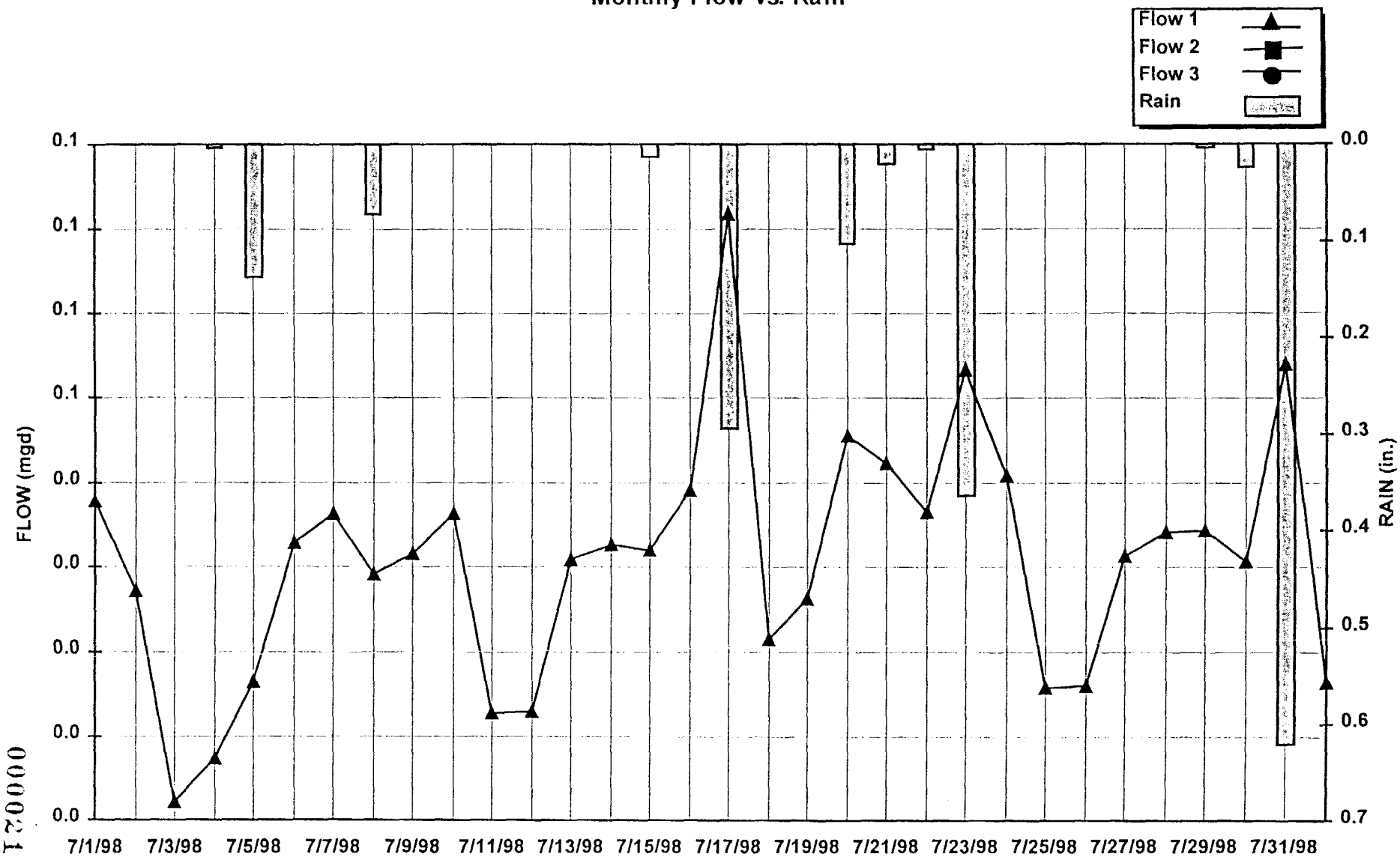
000020

863690156

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent1
Address: Raymond Plaza near Raymond Blvd.
Serial#: QQT

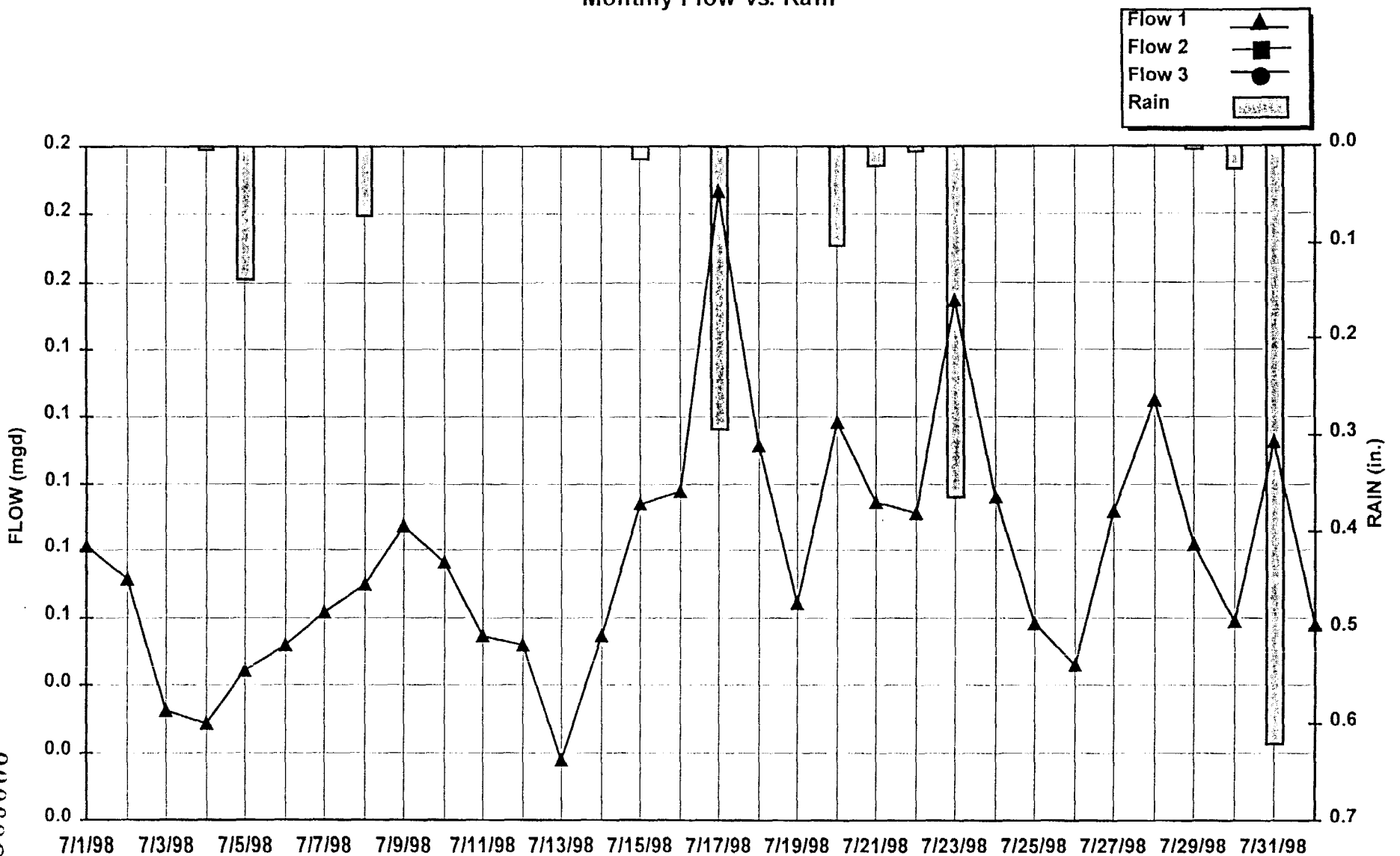
000021

863690157

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent2
Address: Raymond Plaza East near Raymond Blvd.
Serial#: QU2

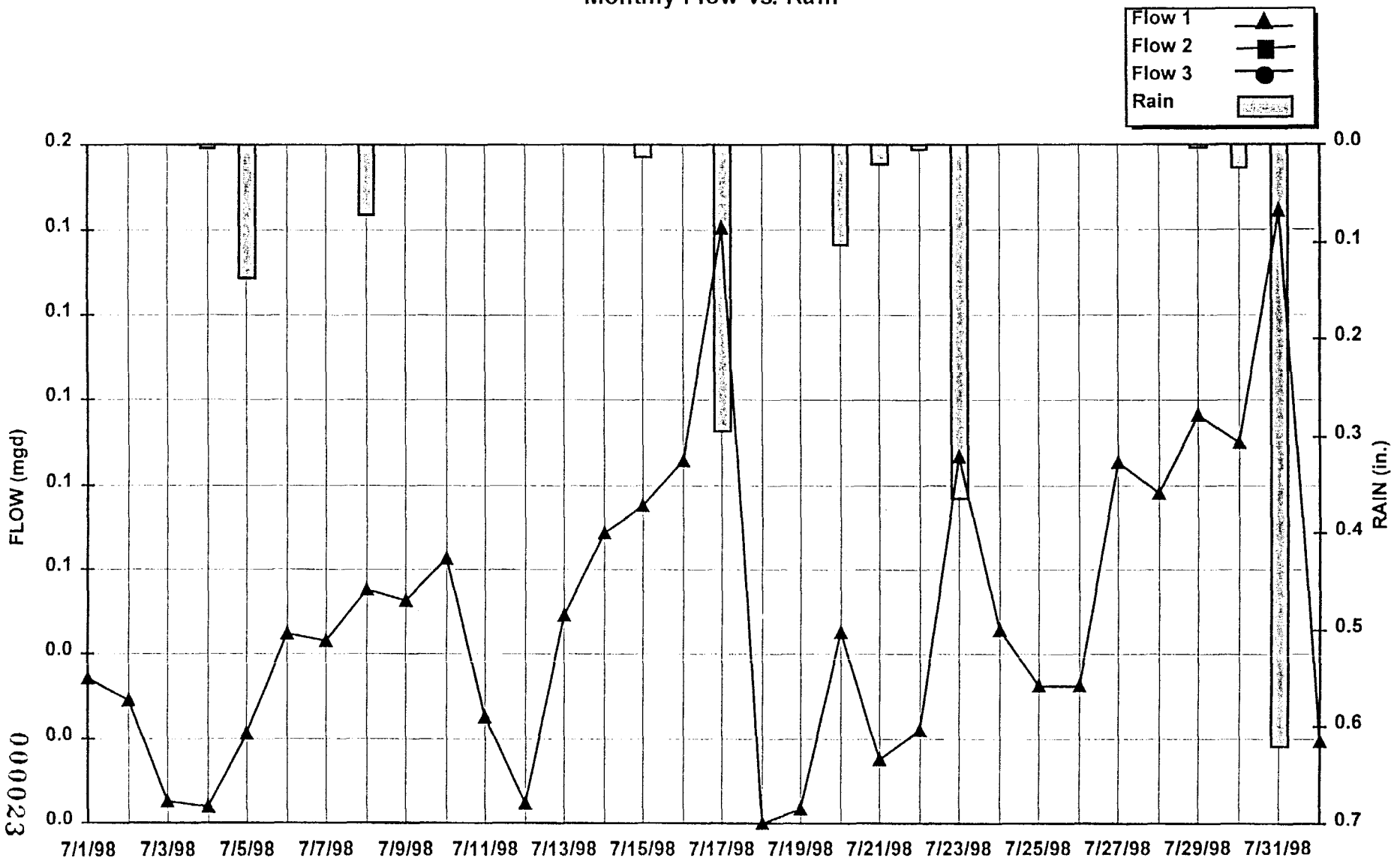
000022

863690158

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent3
Address: Raymond Plaza East near Raymond Blvd.
Serial#: QPV

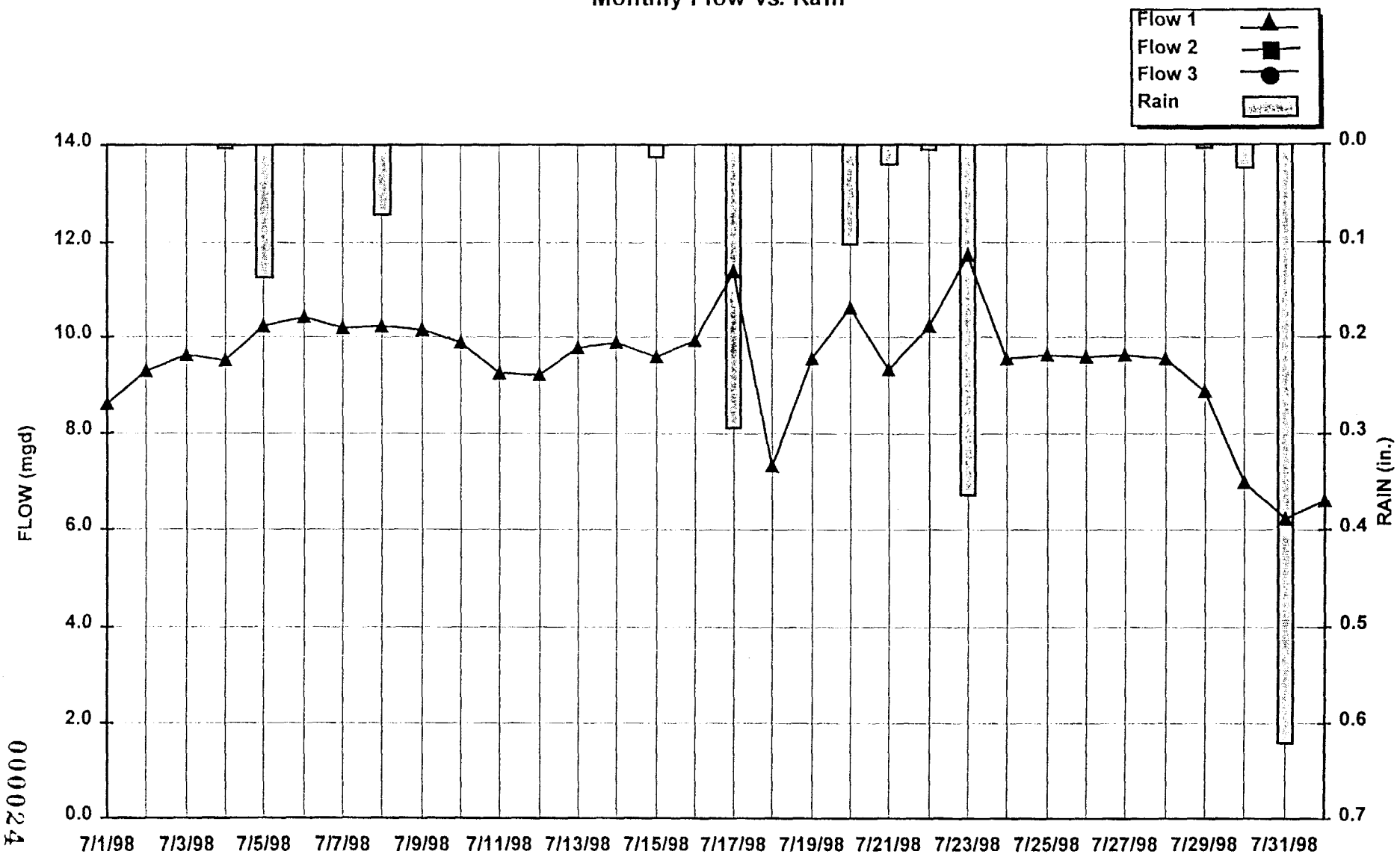
000023

863690159

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000024

863690160

CSO 015 - CITY DOCK influent4

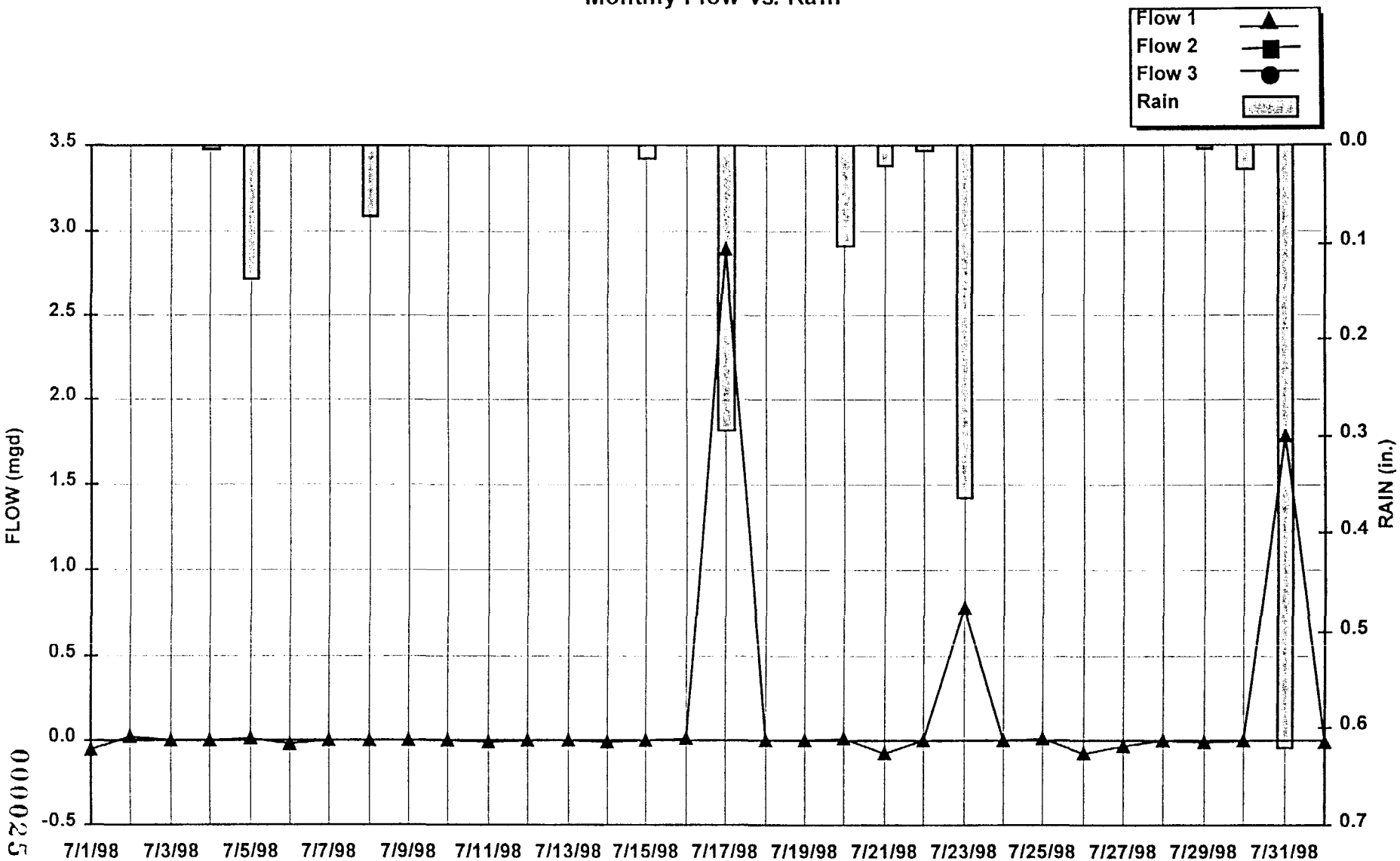
Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPQ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Overflow
Address: Raymond Plaza East near Raymond Blvd.
Serial#: QLK

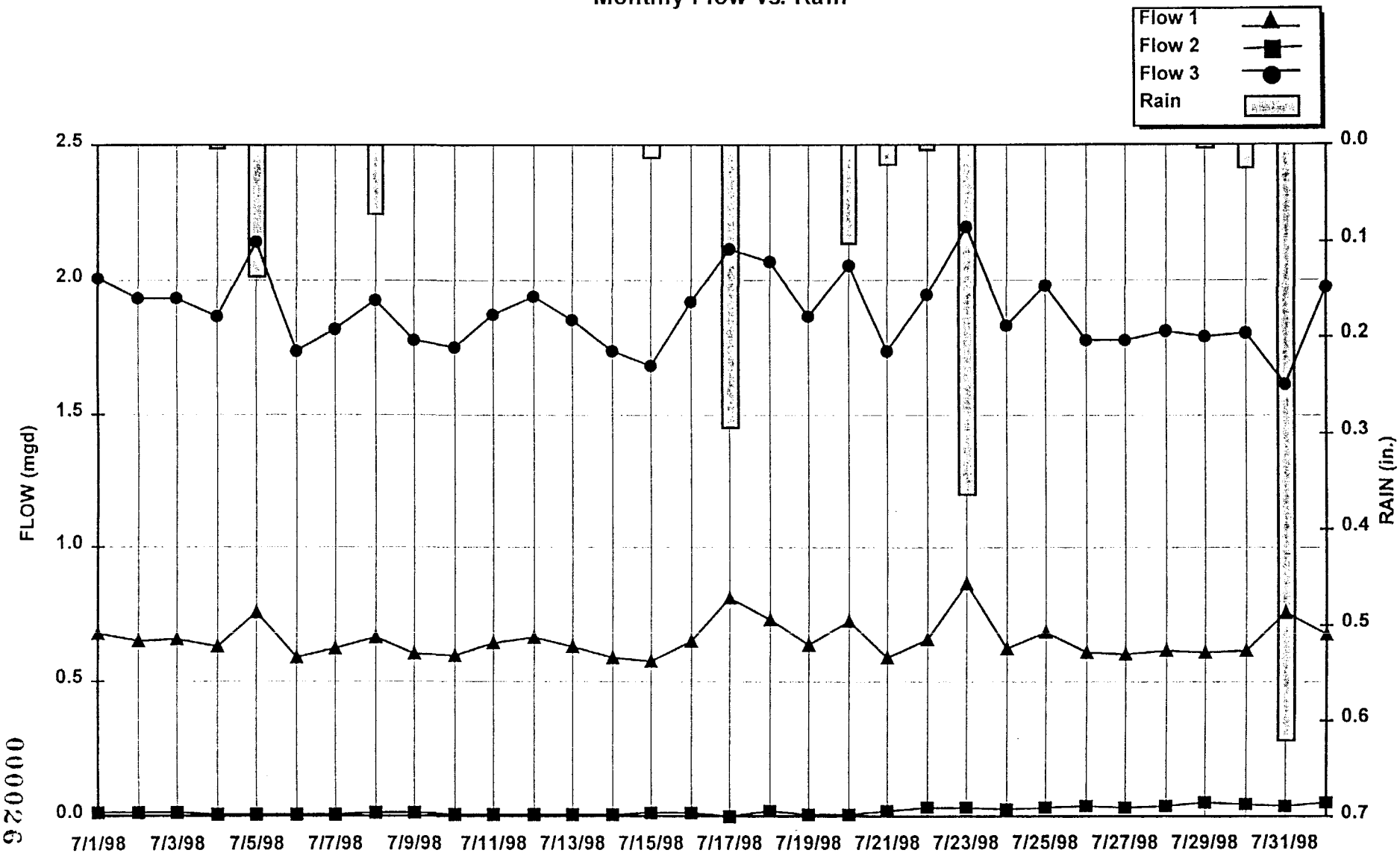
000025

863690161

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST
Address: Jackson St. near Raymond Blvd.
Serial#: QTO

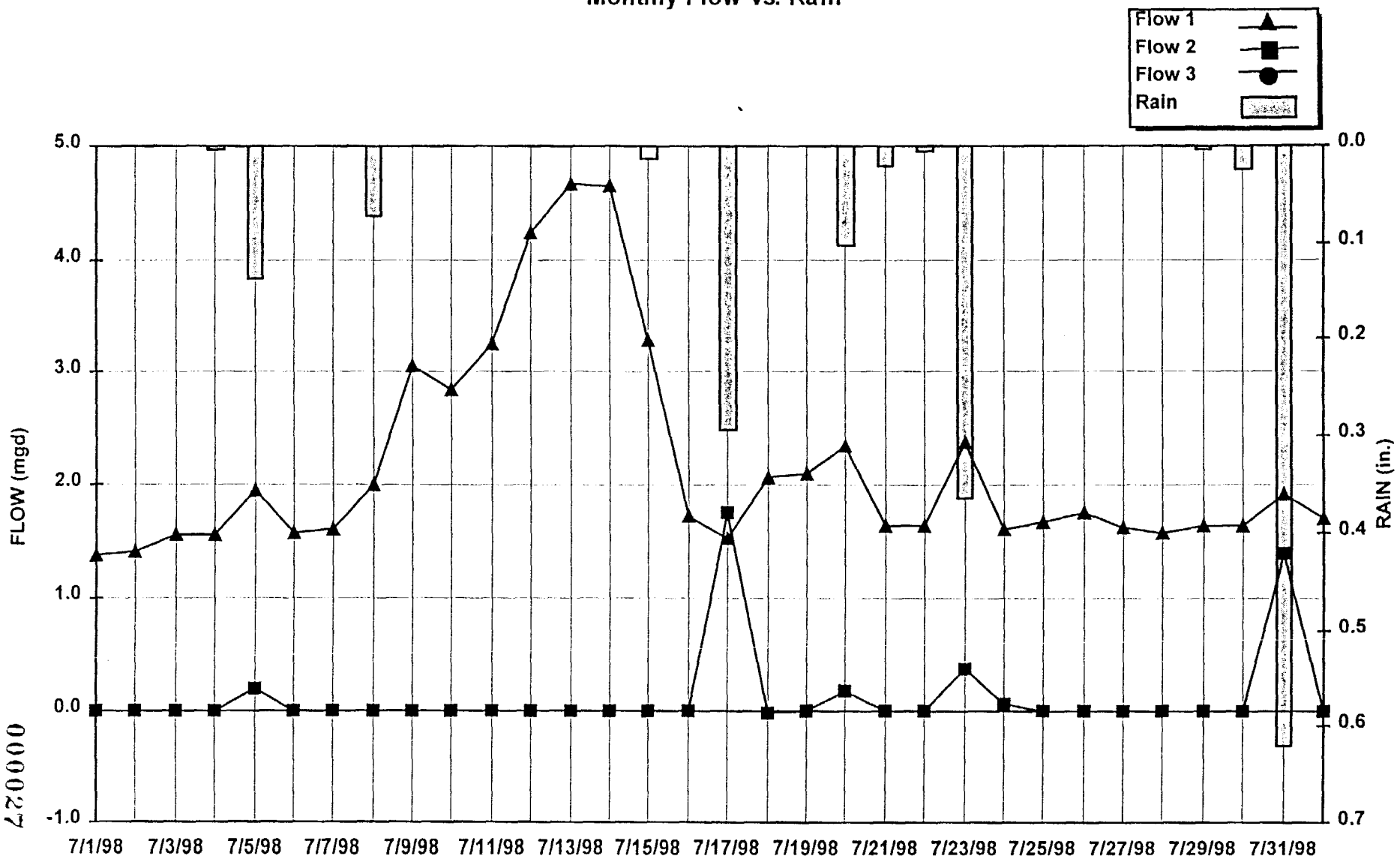
000026

863690162

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 017 - POLK ST
Address: Polk St. and Raymond Blvd.
Serial#: QUG

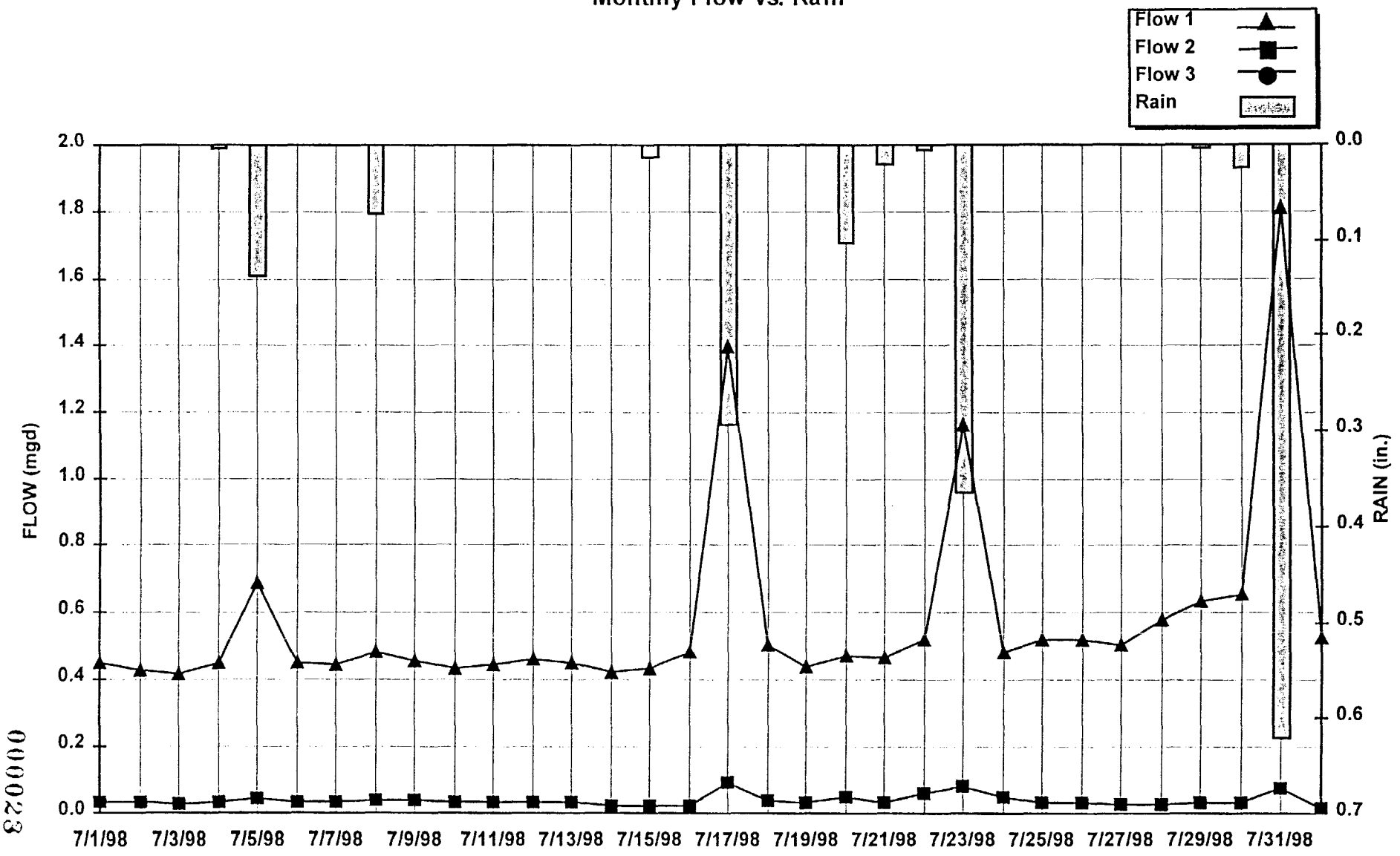
000027

863690163

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

Serial#: QUF

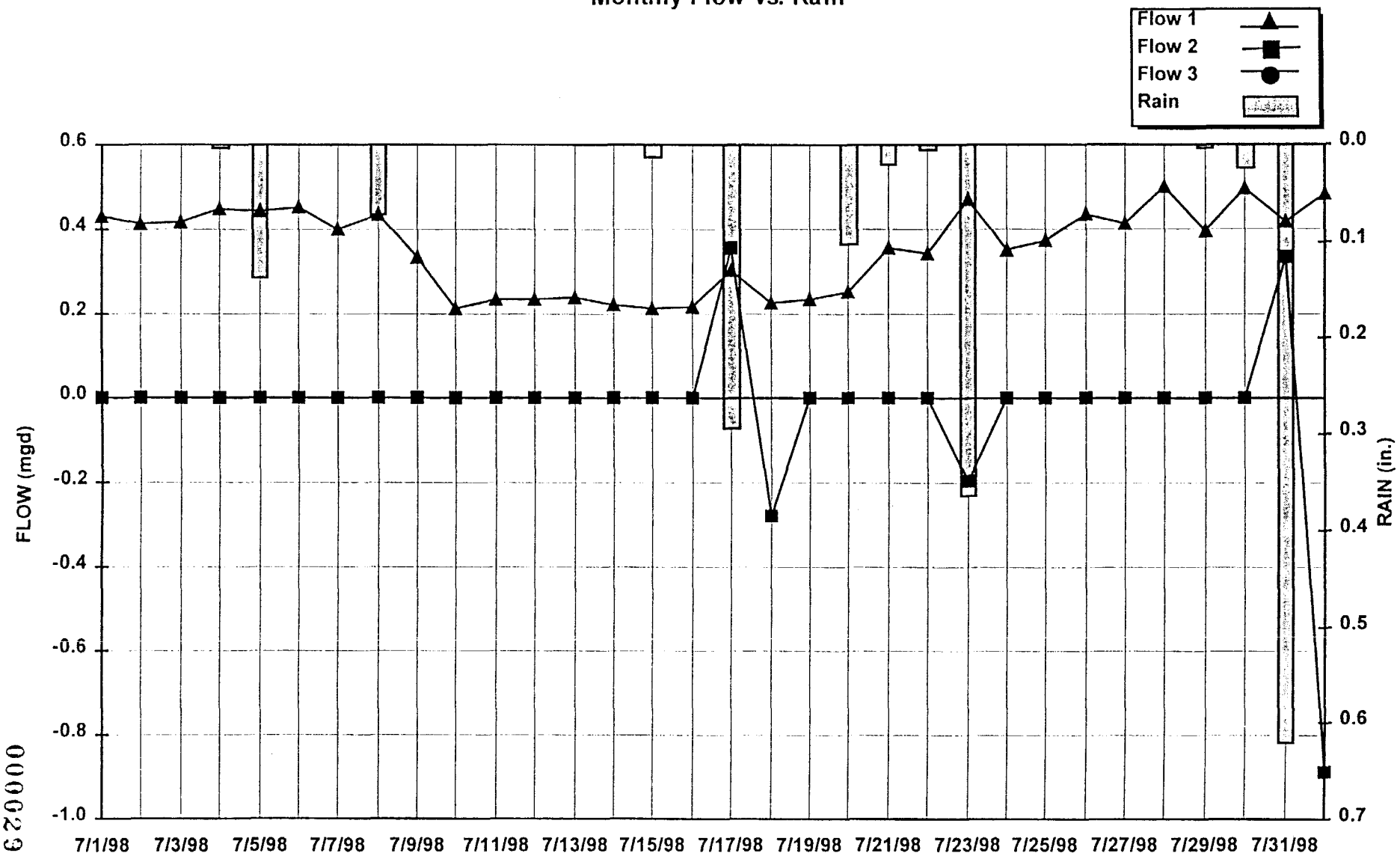
000028

863690164

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow

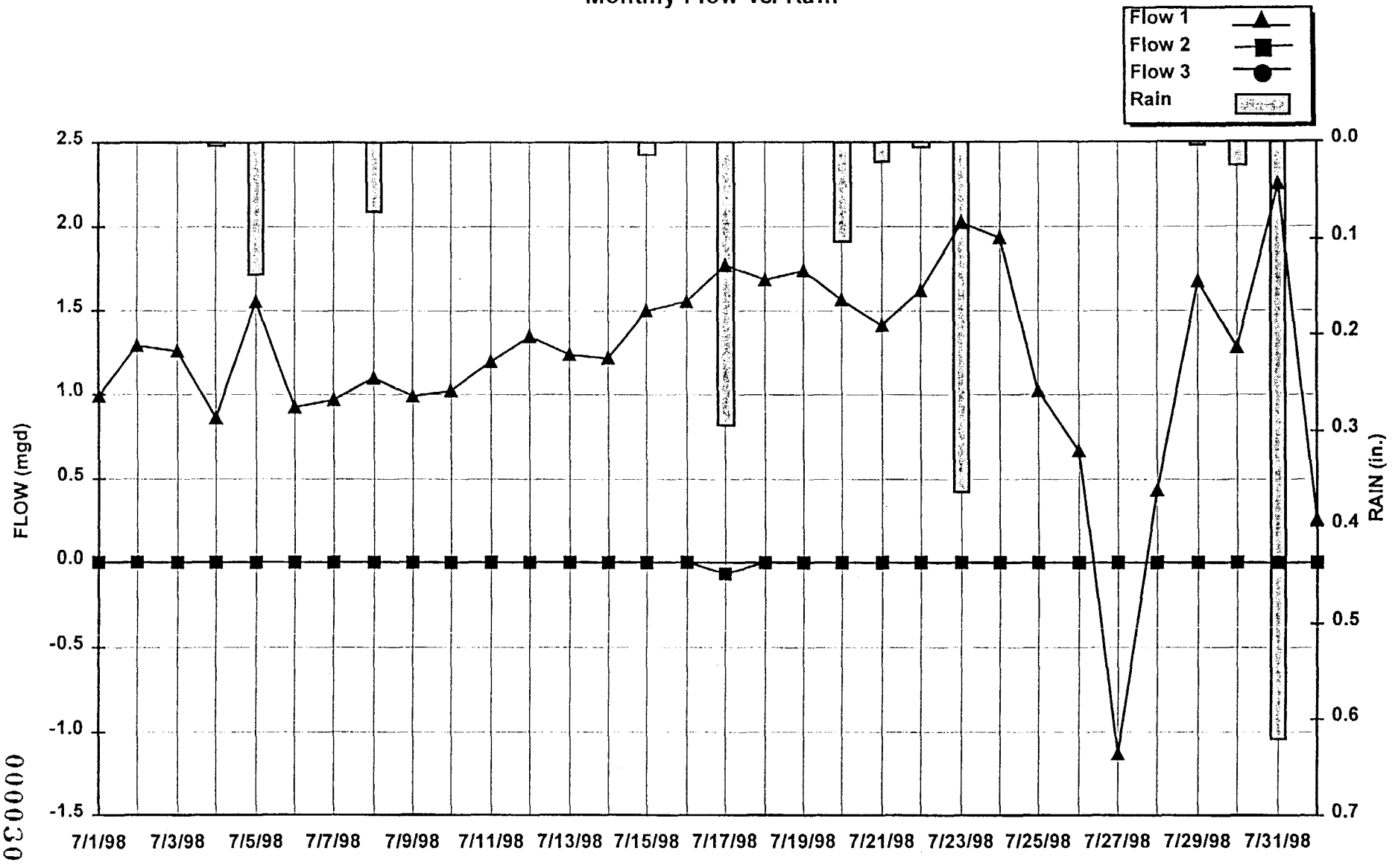
Address: Freeman St. and Raymond Blvd.

Serial#: QU0

000029

863690165

Monthly Flow vs. Rain



CSO 022 - ROANOKE AVE
Address: Roanoke Ave. and Doremus Ave.
Serial#: QUZ

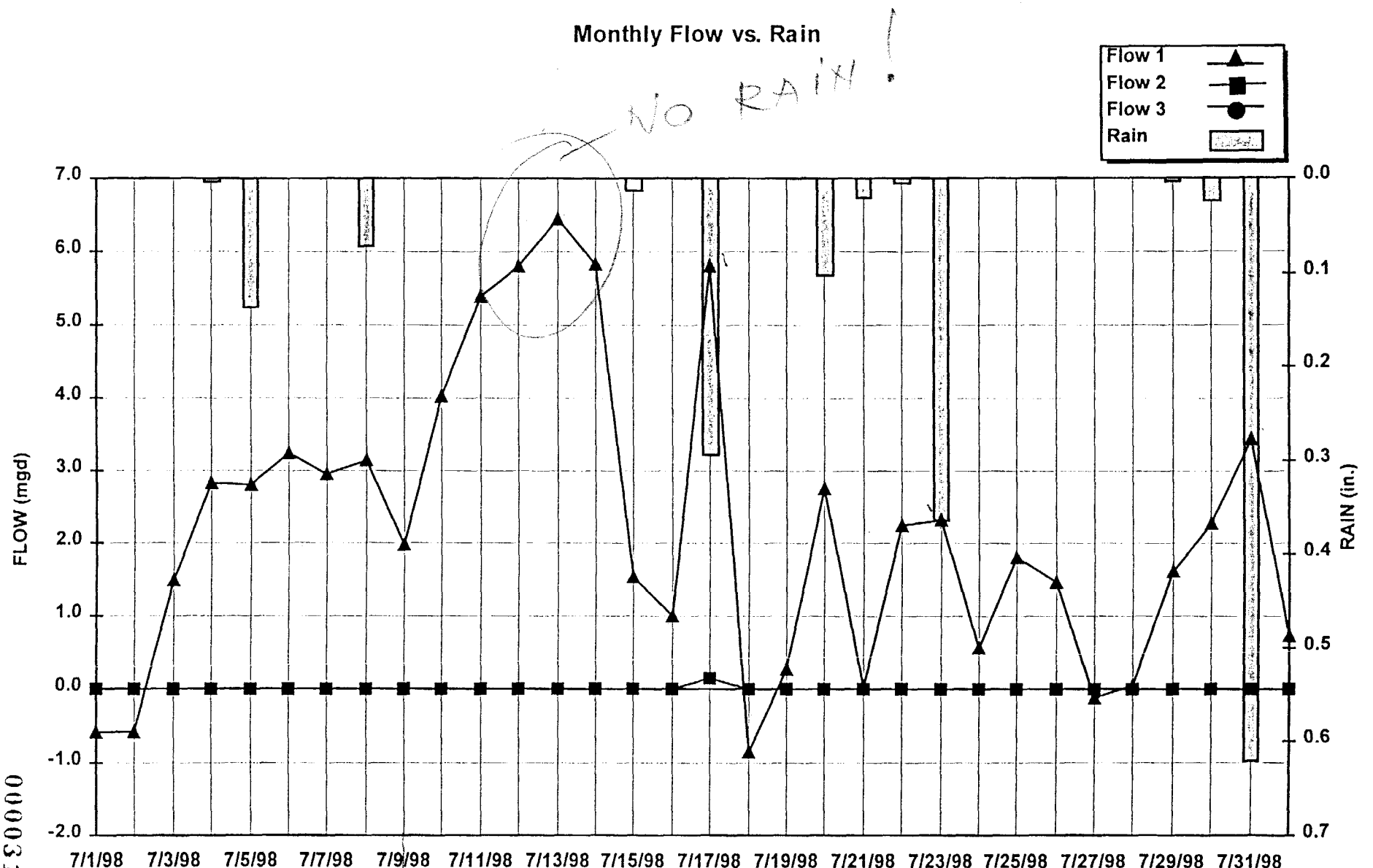
000030

863690166

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000031

CSO 023a - ADAMS ST
Address: South St. near Dawson St.
Serial#: QR4

10

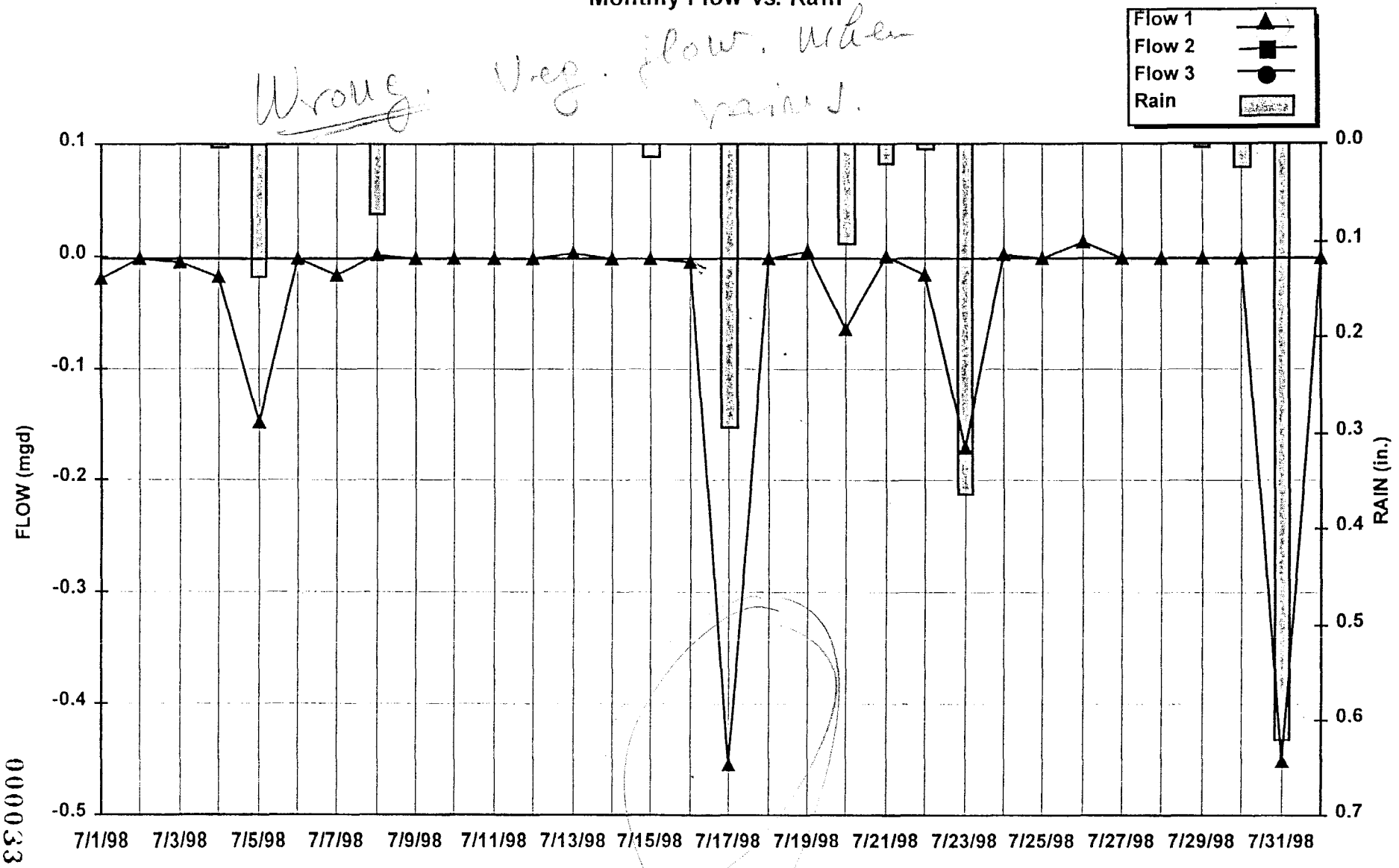
863690167

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain

Wrong: Neg. flow. when rained.



000033

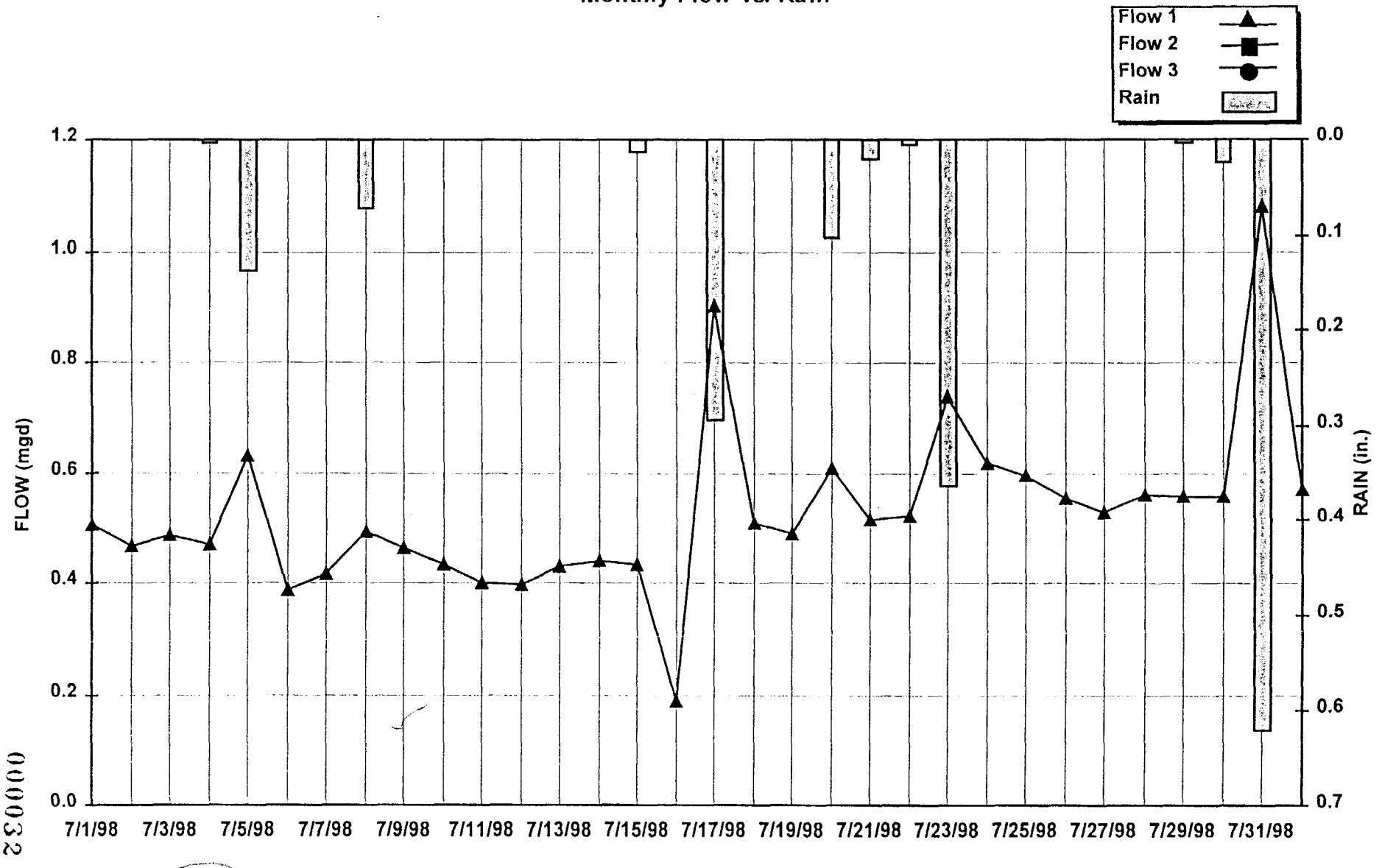
863690168

CSO 023B - ADAMS ST. overflow
Address: South St. and Jefferson St
Serial#: QPP

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023b - ADAMS ST. influent
Address: South St. and Jefferson St.
Serial#: QO4

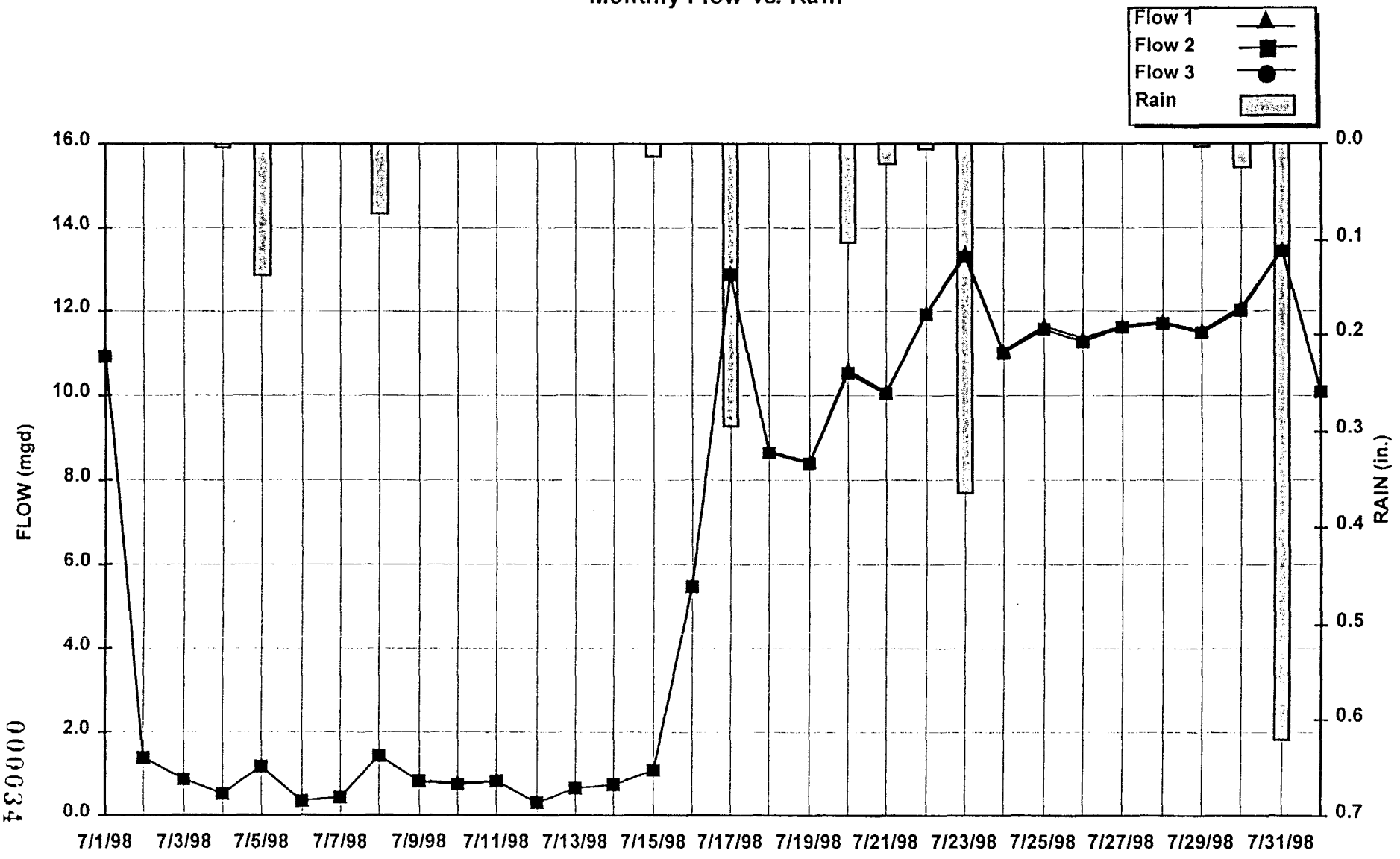
000032

863690169

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000034

863690170

CSO 025 - PEDDIE ST unregulated

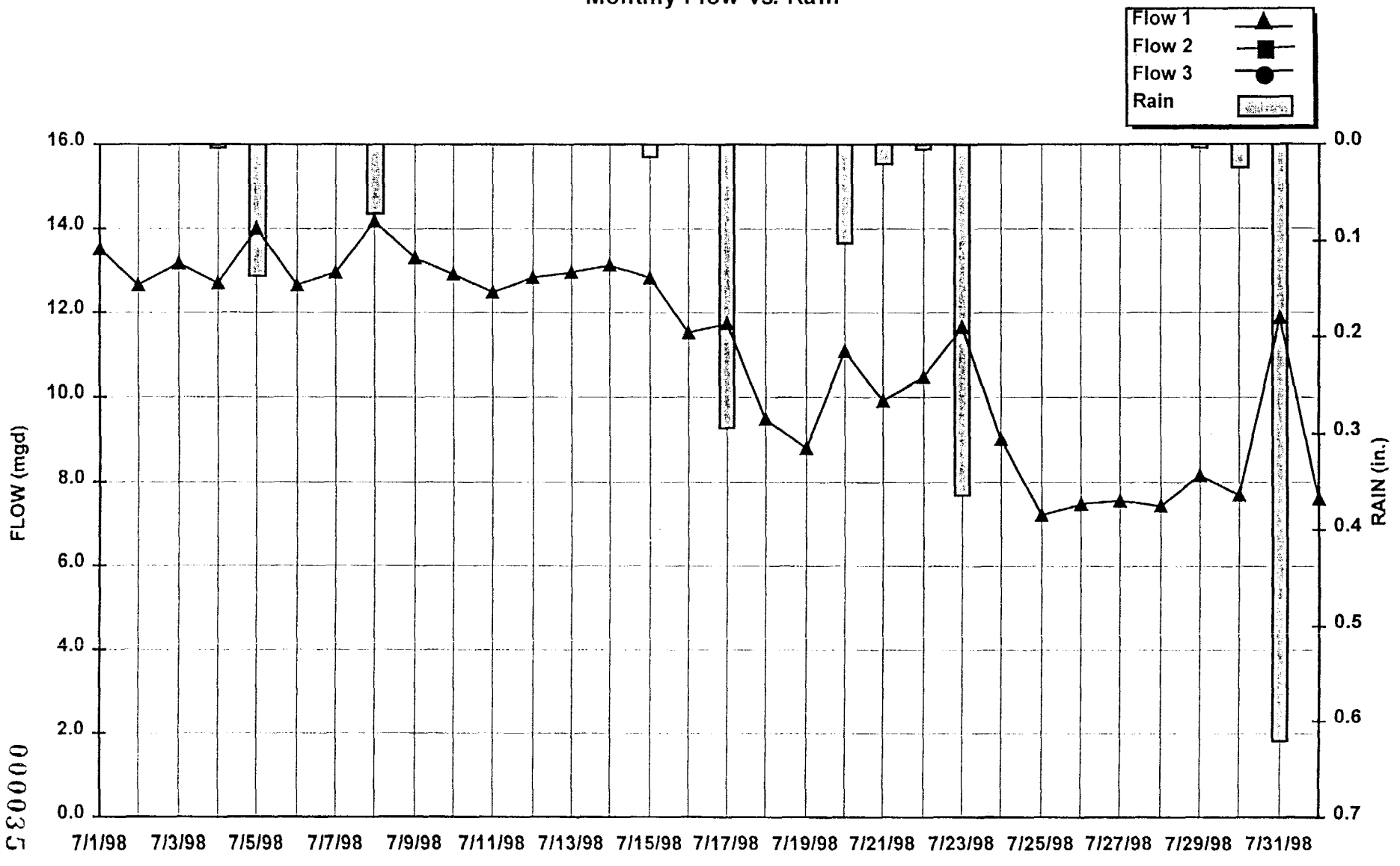
Address: Peddie Ditch

Serial#: QUE

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 Peddie St regulated
Address: Peddie Ditch
Serial#: QO7

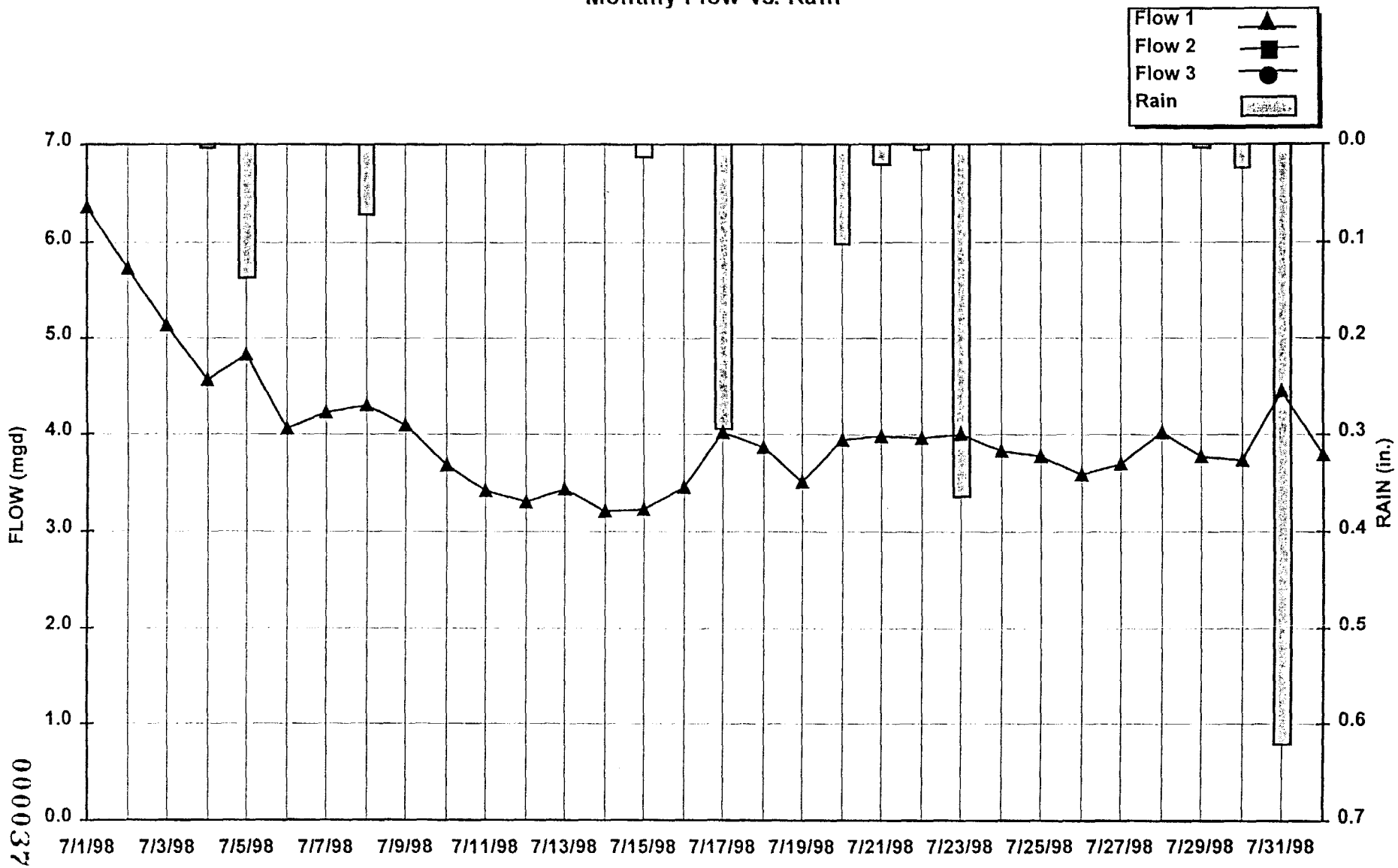
000035

863690171

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000037

863690172

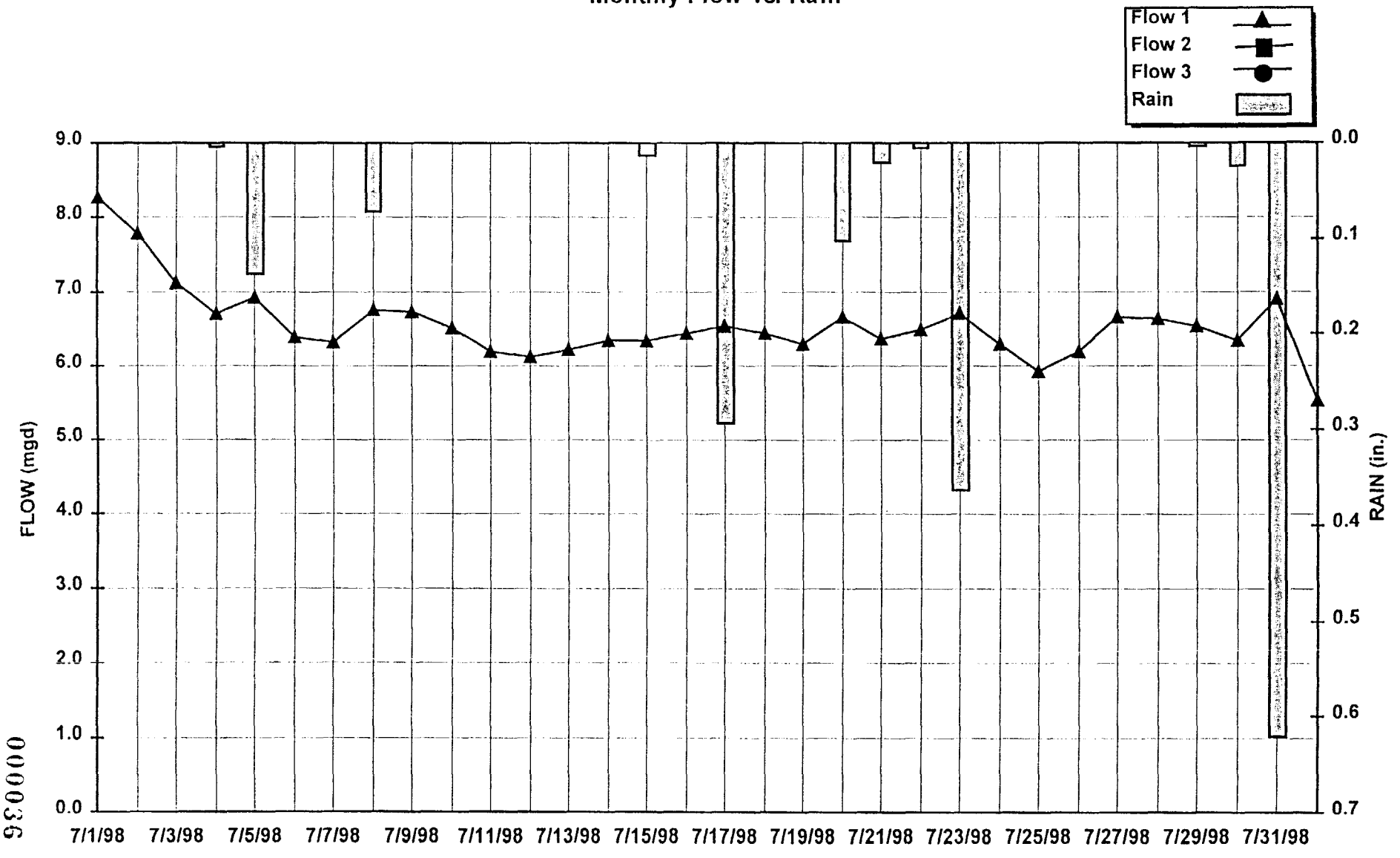
CSO 026 - QUEEN regulated
Address: Queen Ditch
Serial#: QQV

I.D. Identify on drawing.
Where?

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000036

863690173

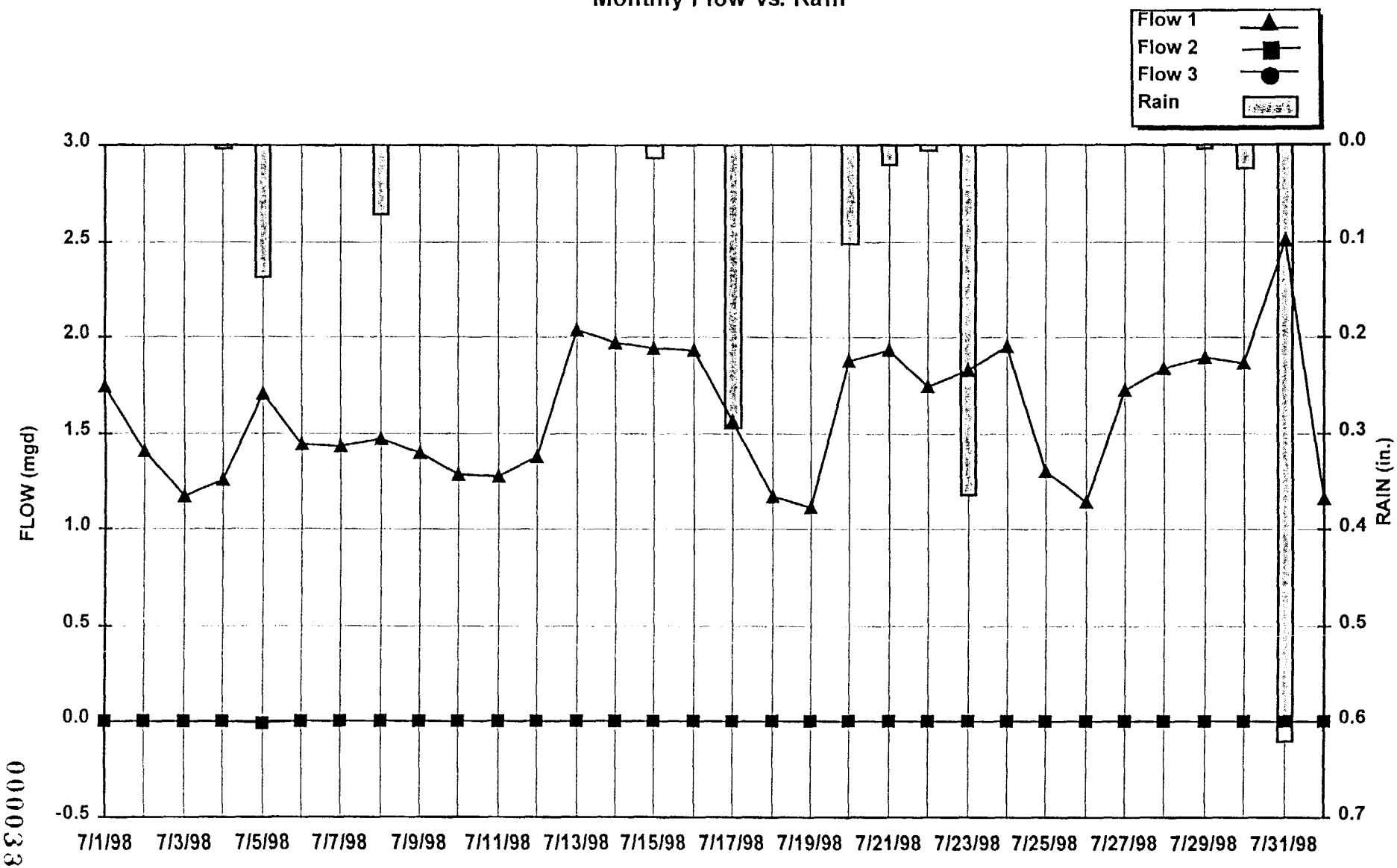
CSO 026 - QUEEN unregulated
Address: Queen Ditch
Serial#: QQU

2 FM ID? ON DRAWING?

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY

Address: Anheuser-Busch

Serial#: QRY

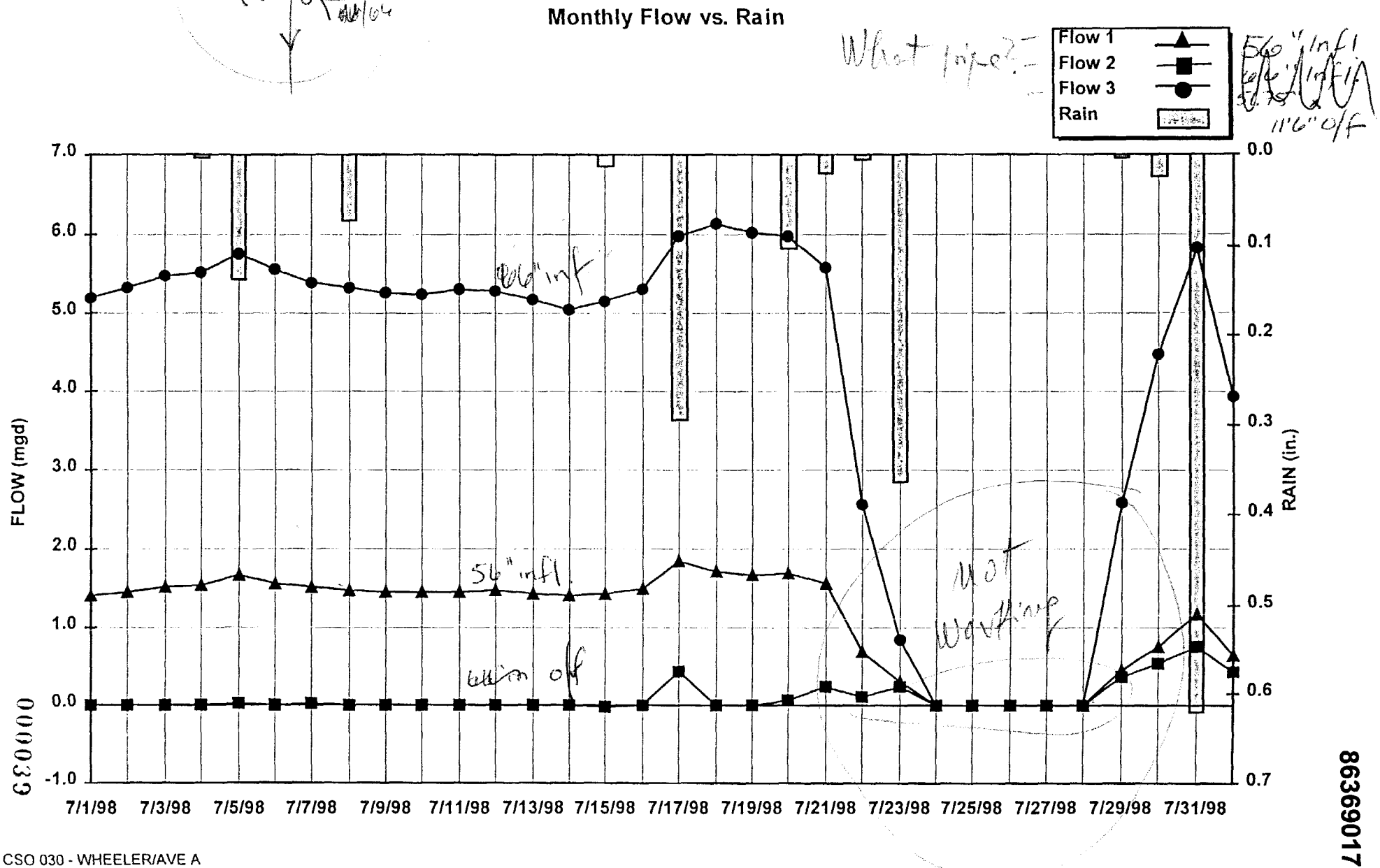
000033

863690174

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



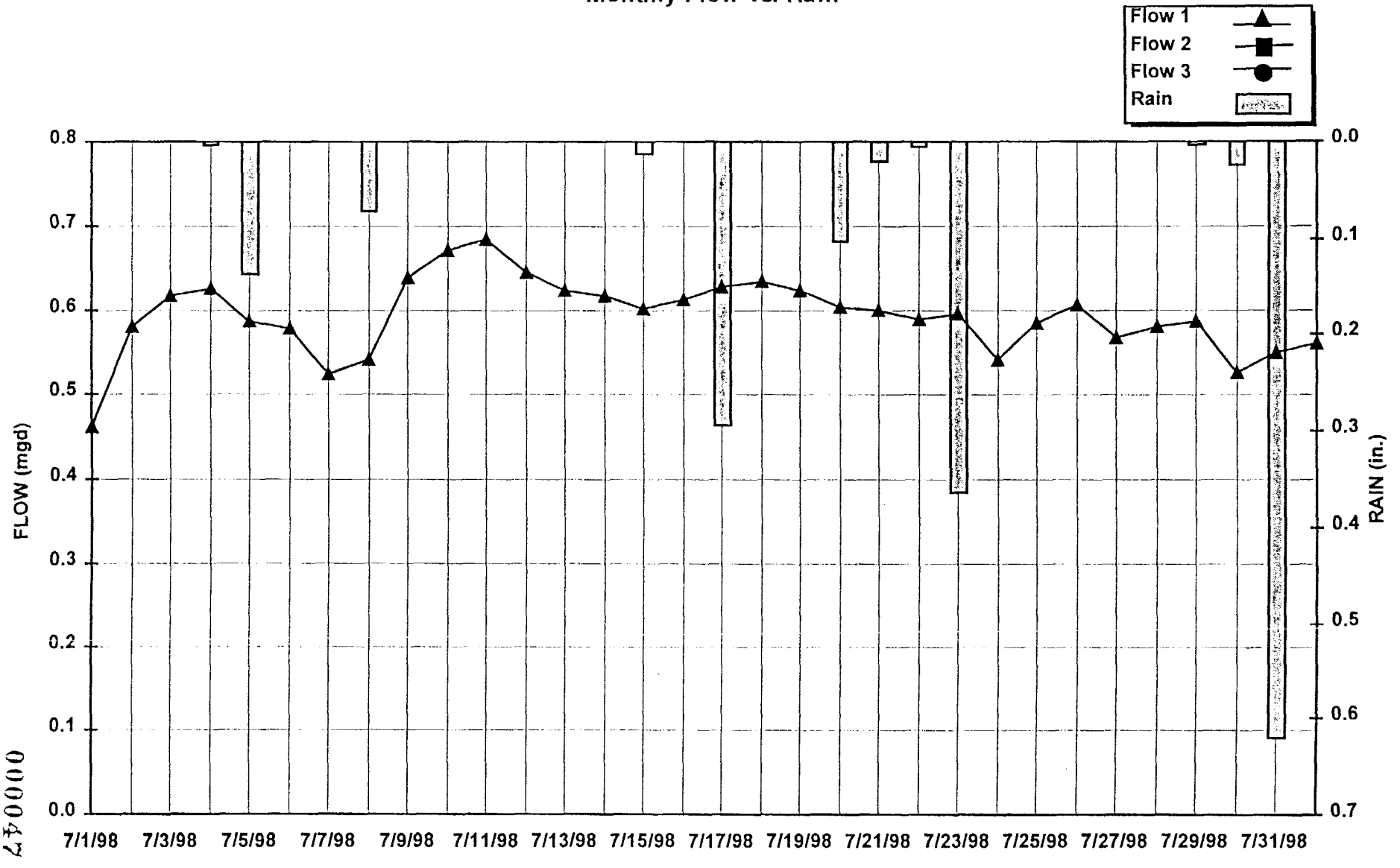
CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy
Serial#: QUD

863690175

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000047

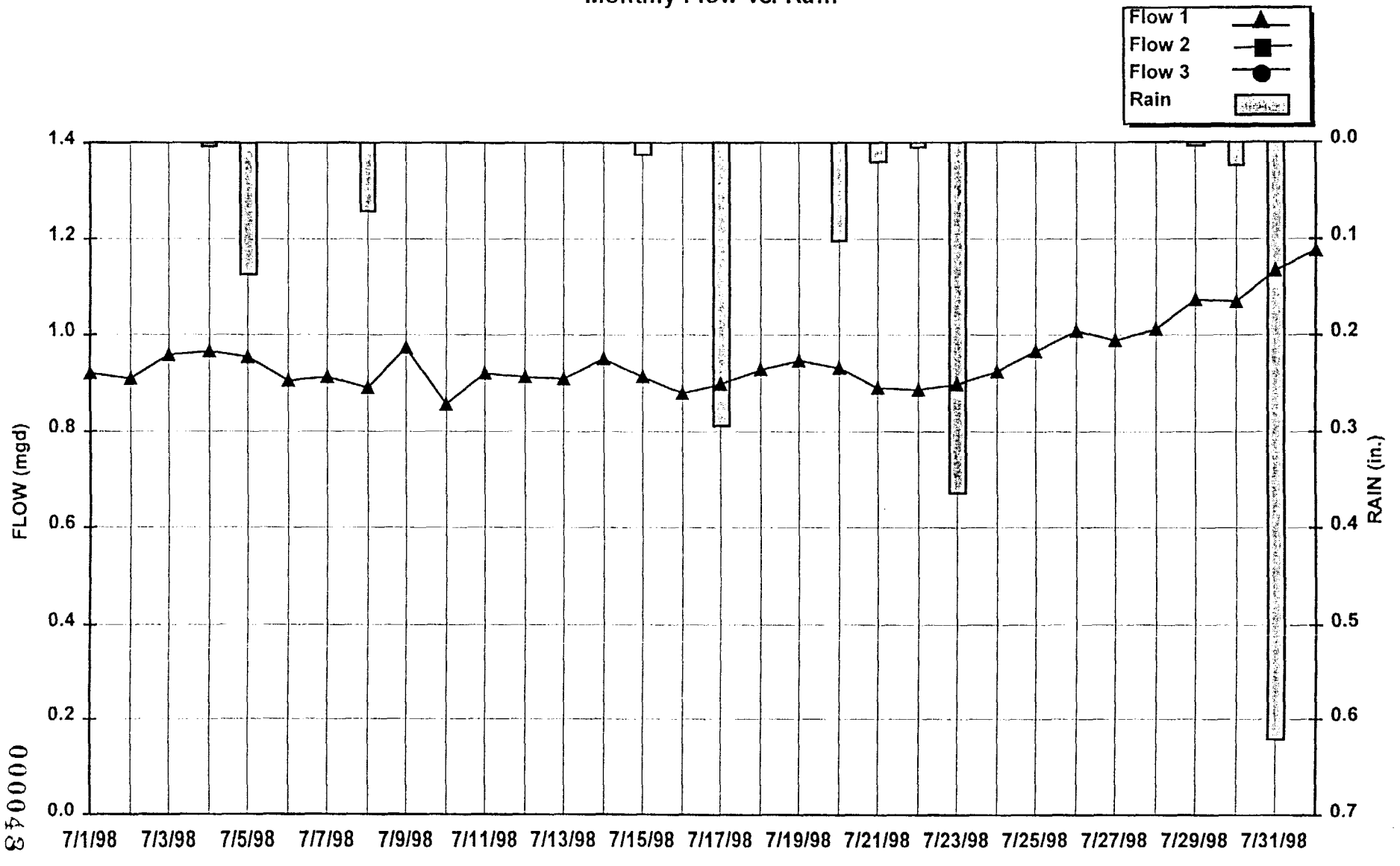
863690176

Outgoing No. 1
Address: Mt. Vernon St. near Chapman St.
Serial#: QQ7

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000043

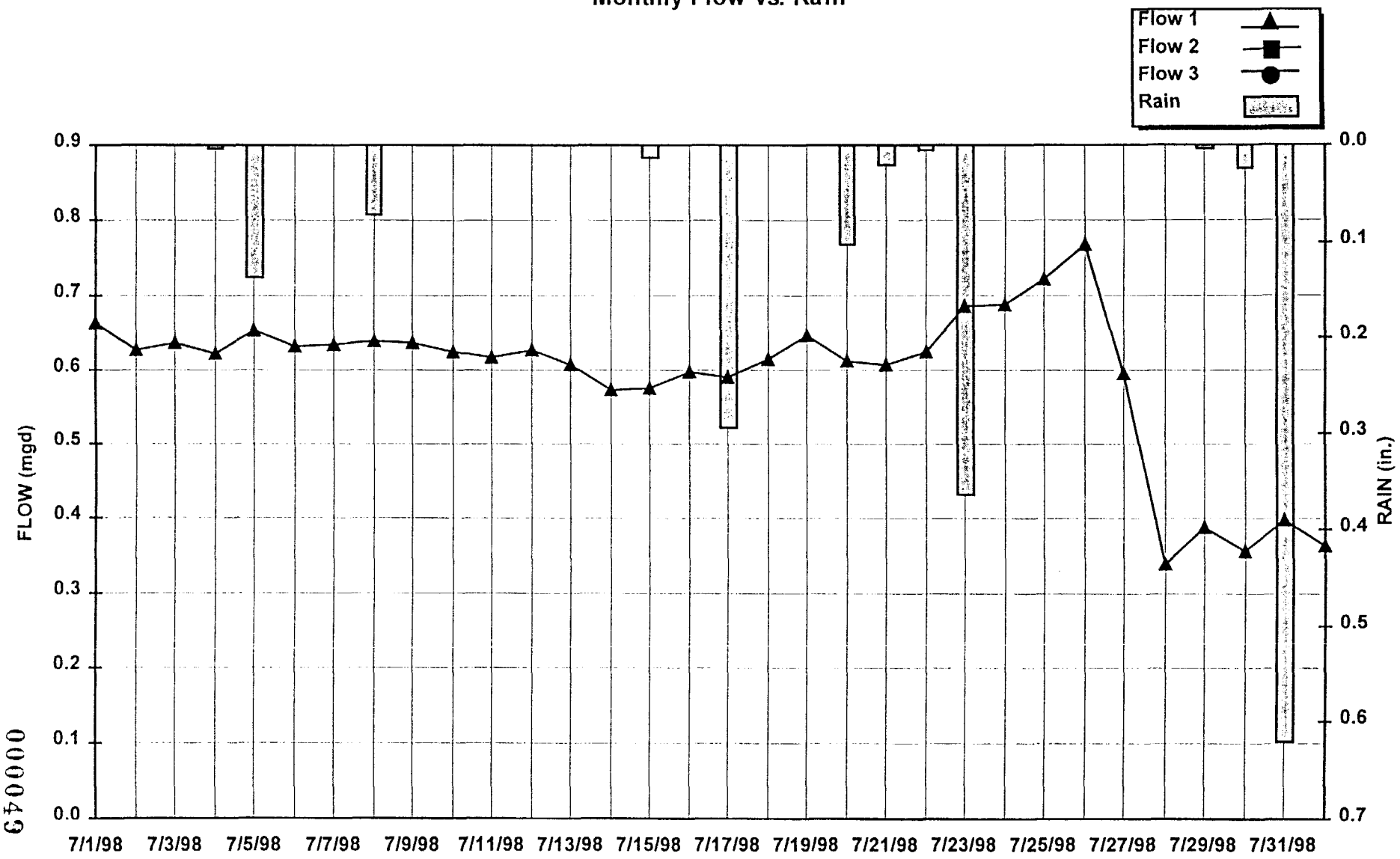
863690177

Outgoing No. 2
Address: Unity and Valley St.
Serial#: QQ2

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 3
Address: Fabyan Pl. near Exit Ramp of I-78
Serial#: QRD

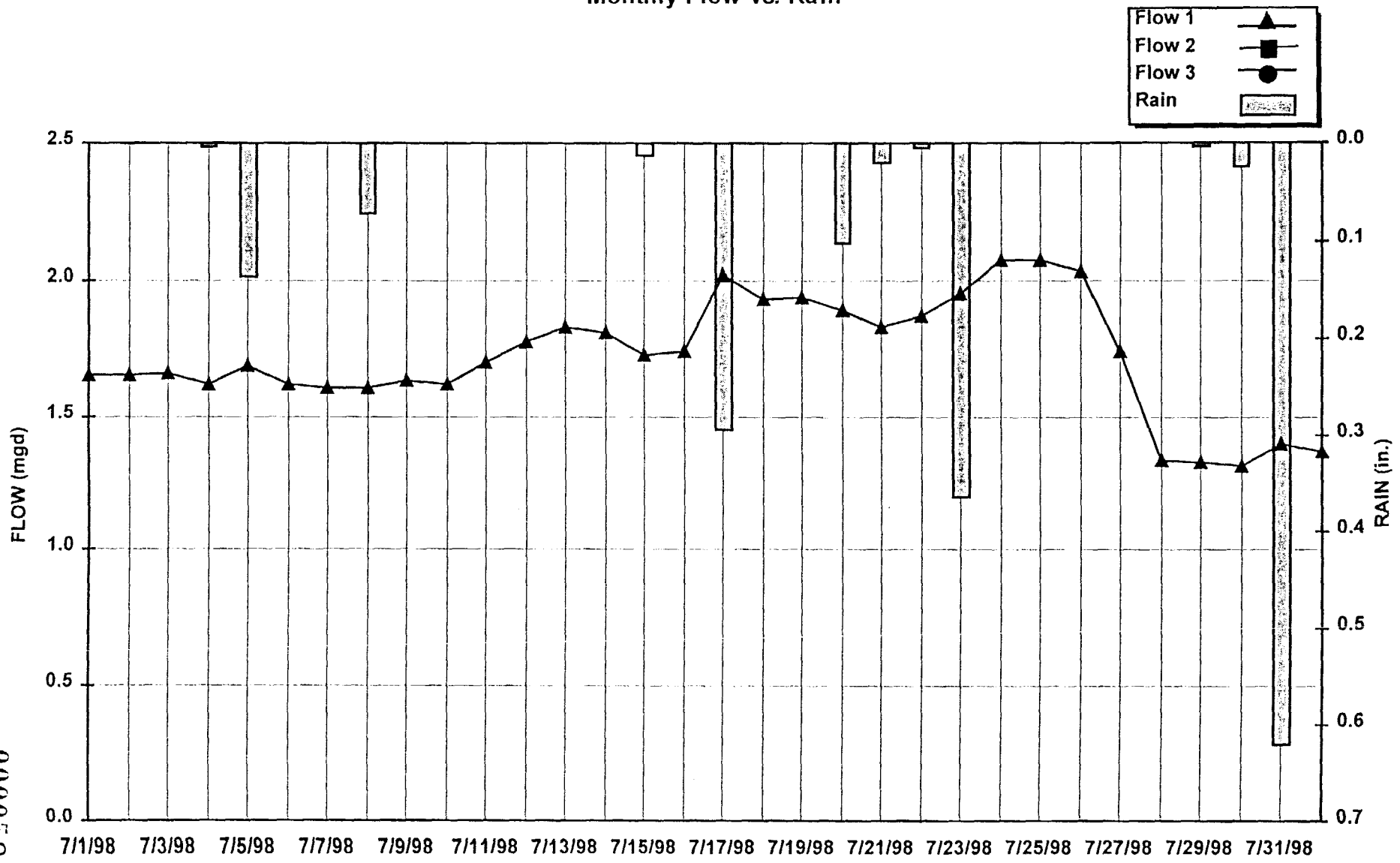
000049

863690178

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000050

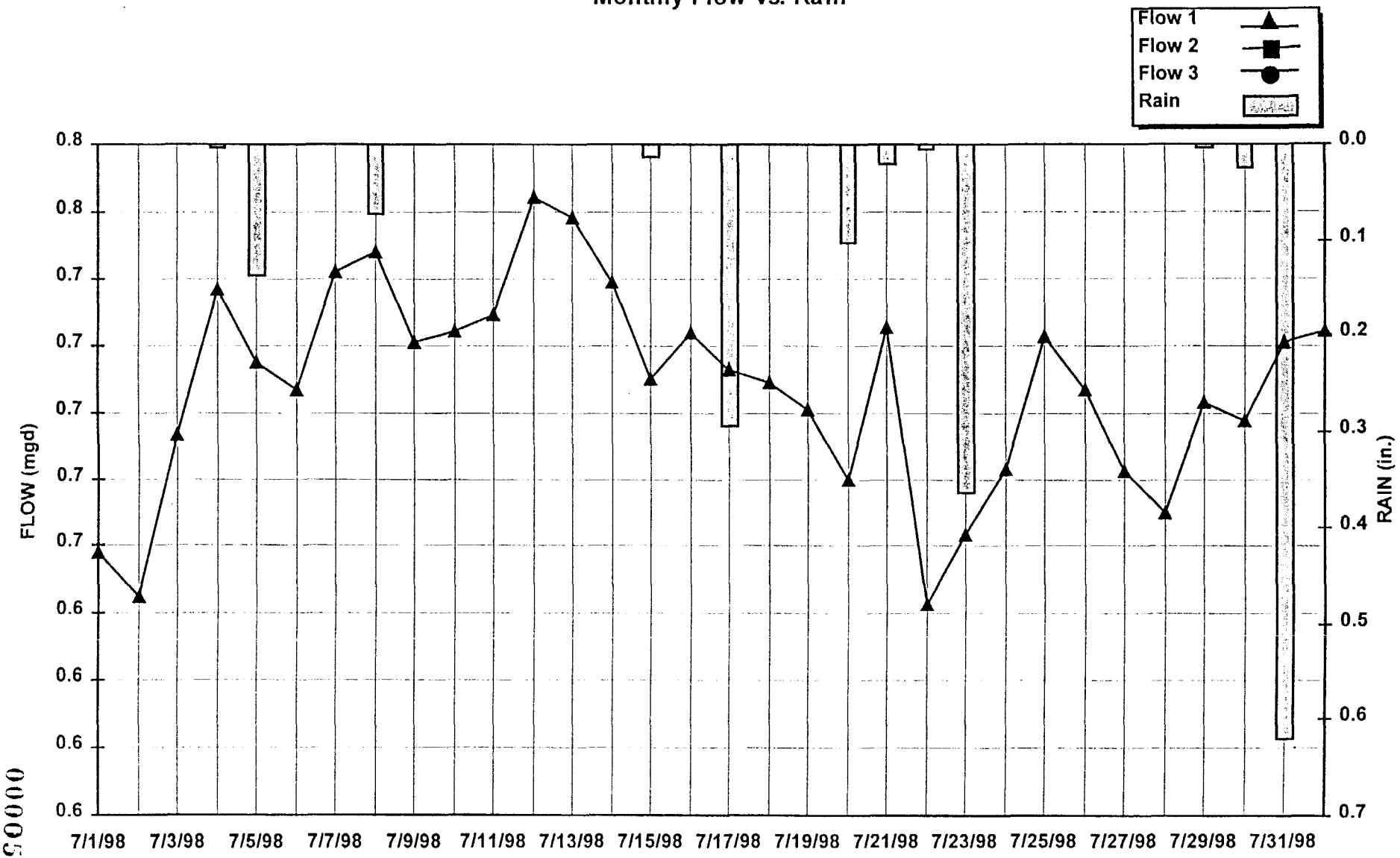
863690179

Outgoing No. 4
Address: N. Lindon Ln between House # 63 and 65
Serial#: QUI

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 2

Address: Weequahic Park

Serial#: QUN

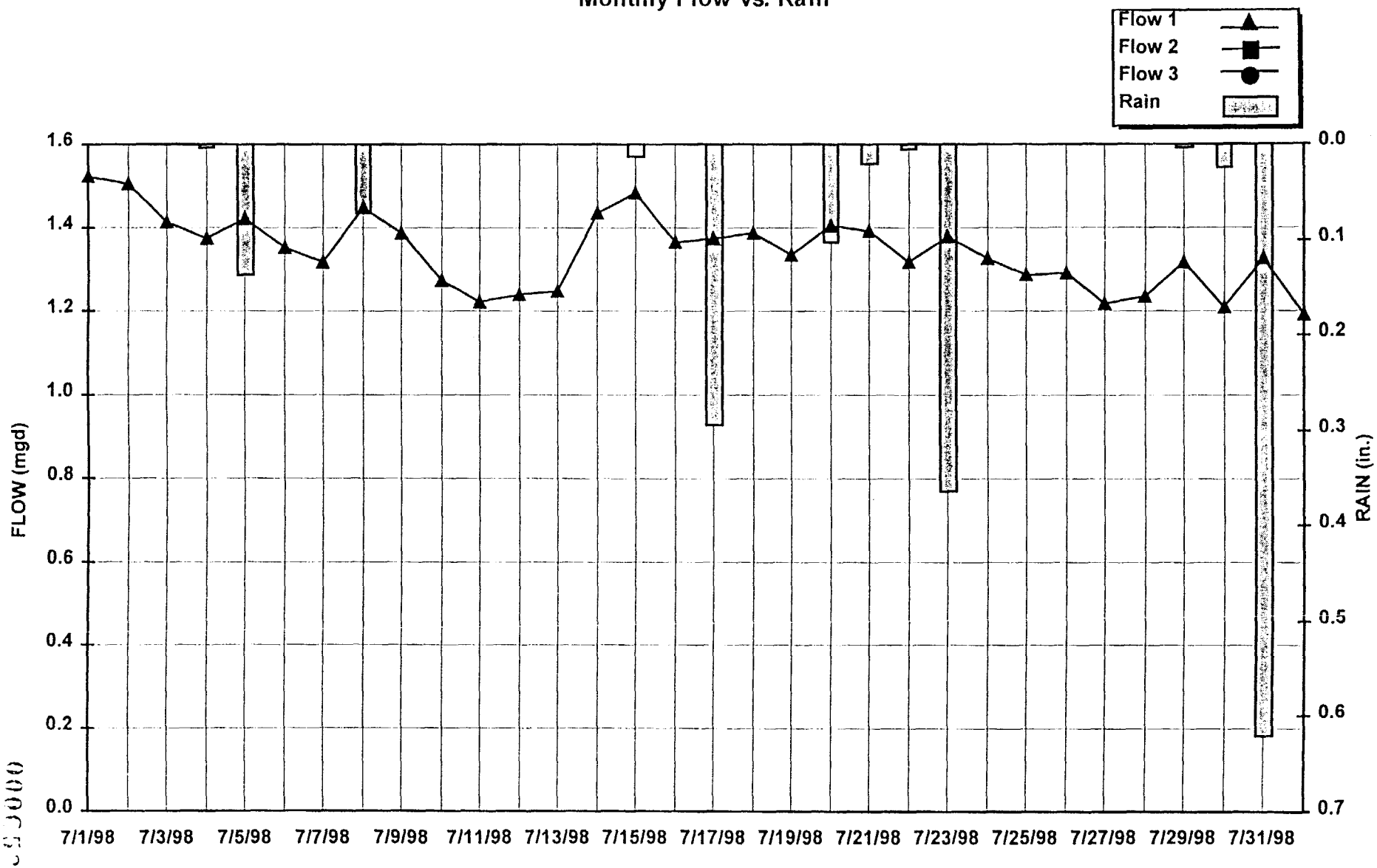
000051

863690180

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



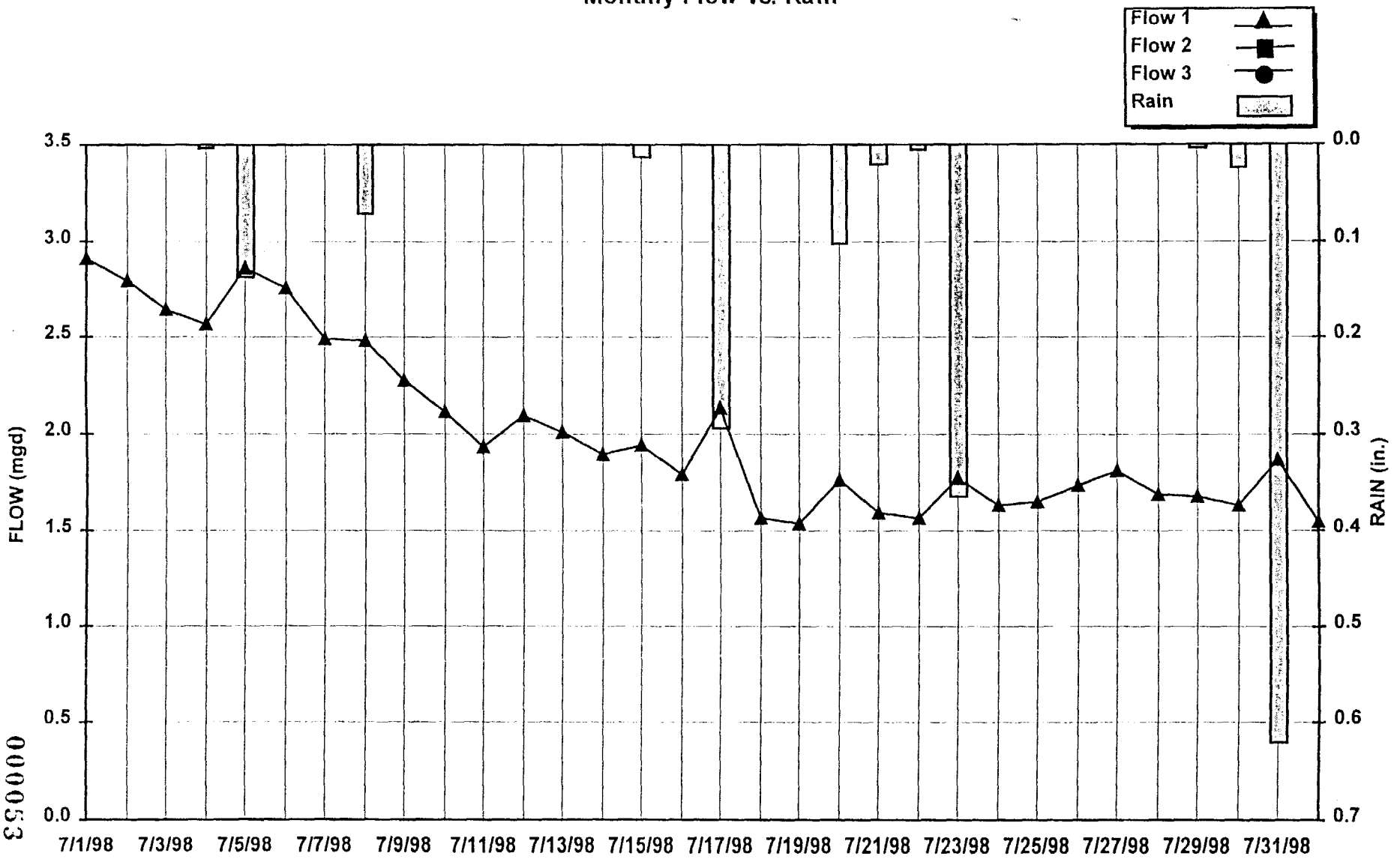
NEWARK No. 1
Address: Elizabeth Ave. near Mapes Ave.
Serial#: QLL

863690181

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 3
Address: Jabez Ave. near Backus St.
Serial#: QTZ

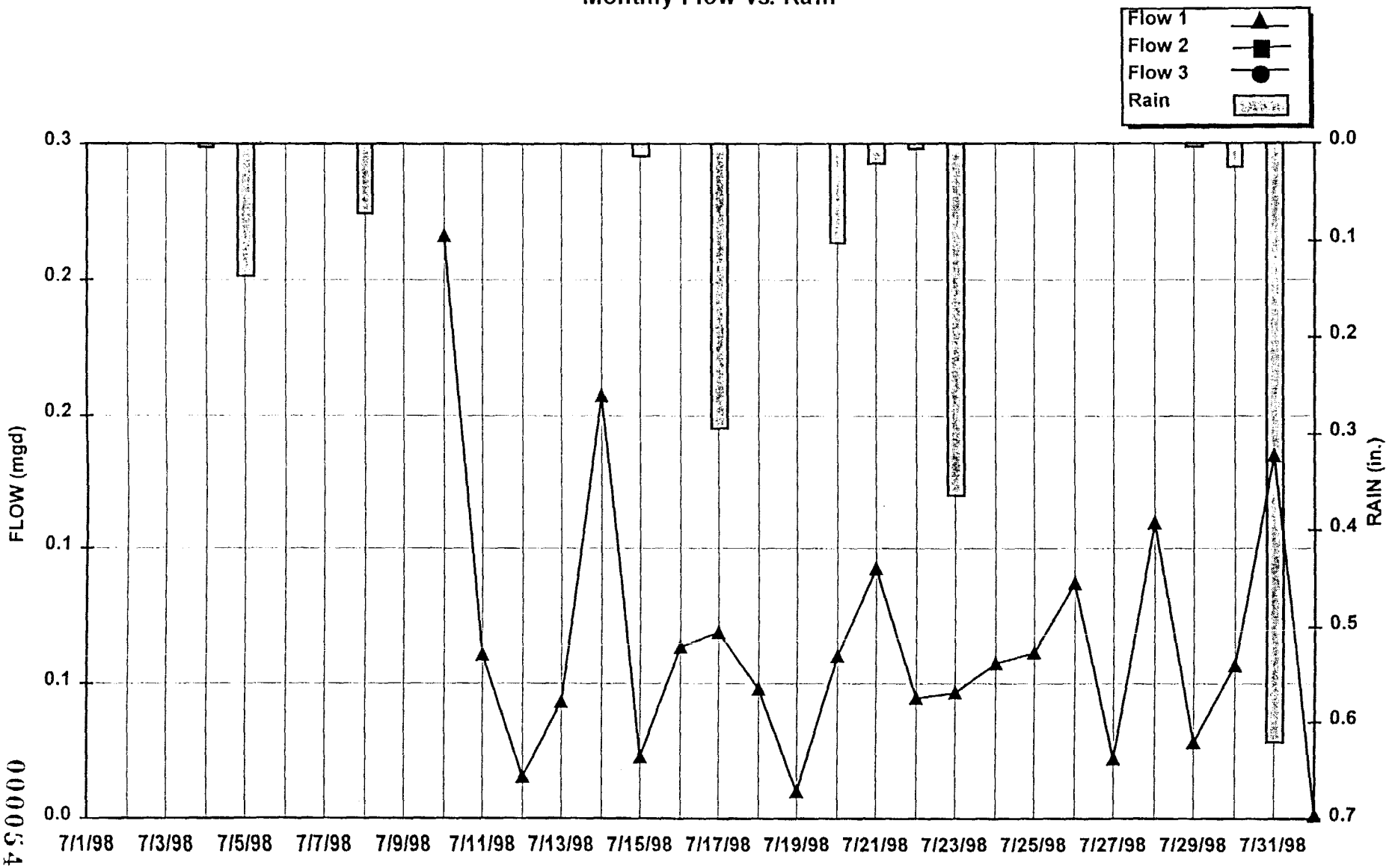
000053

863690182

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain

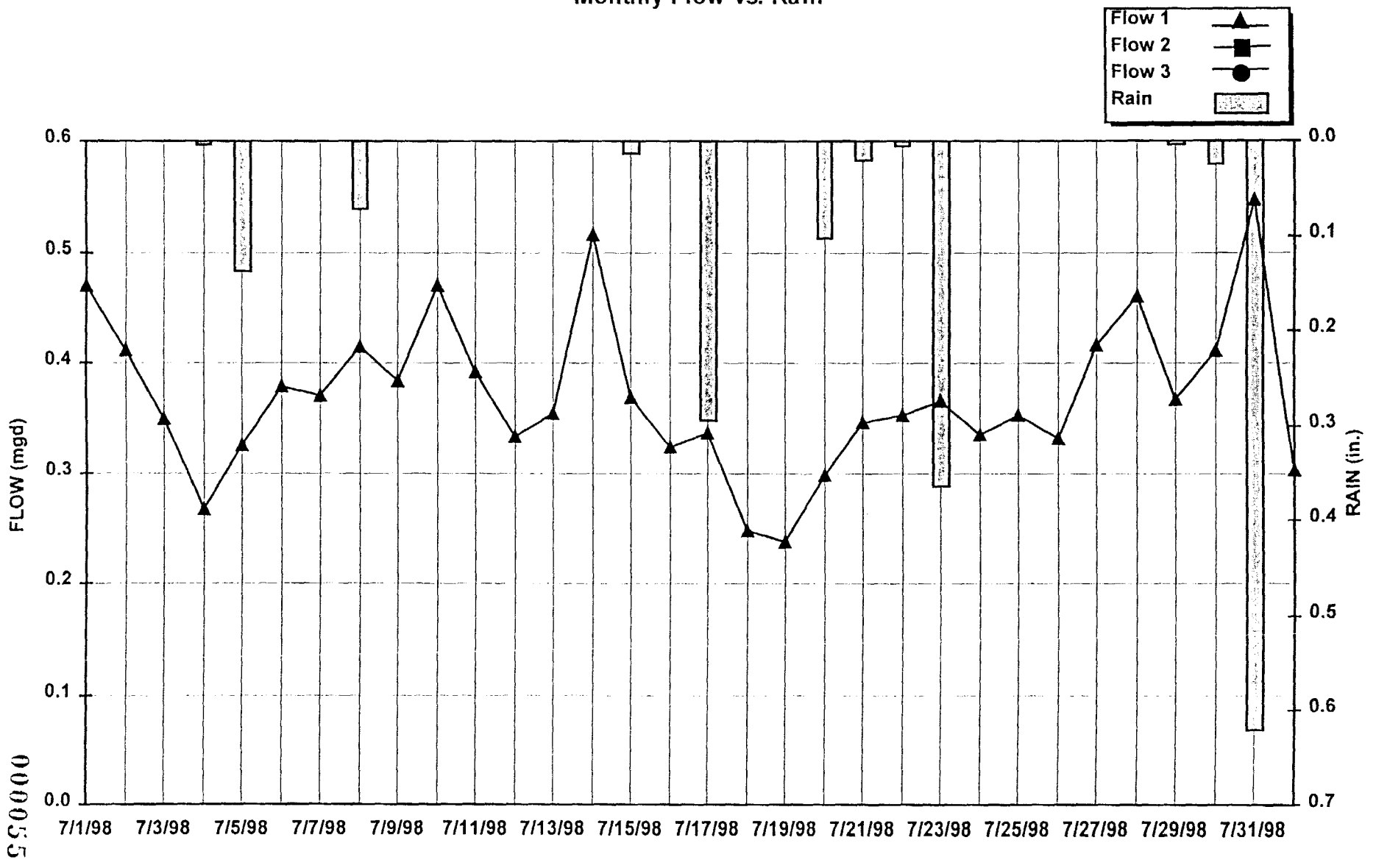


NEWARK No. 4
Address: Wilson and Ave. P
Serial#: QT1

000054

863690183

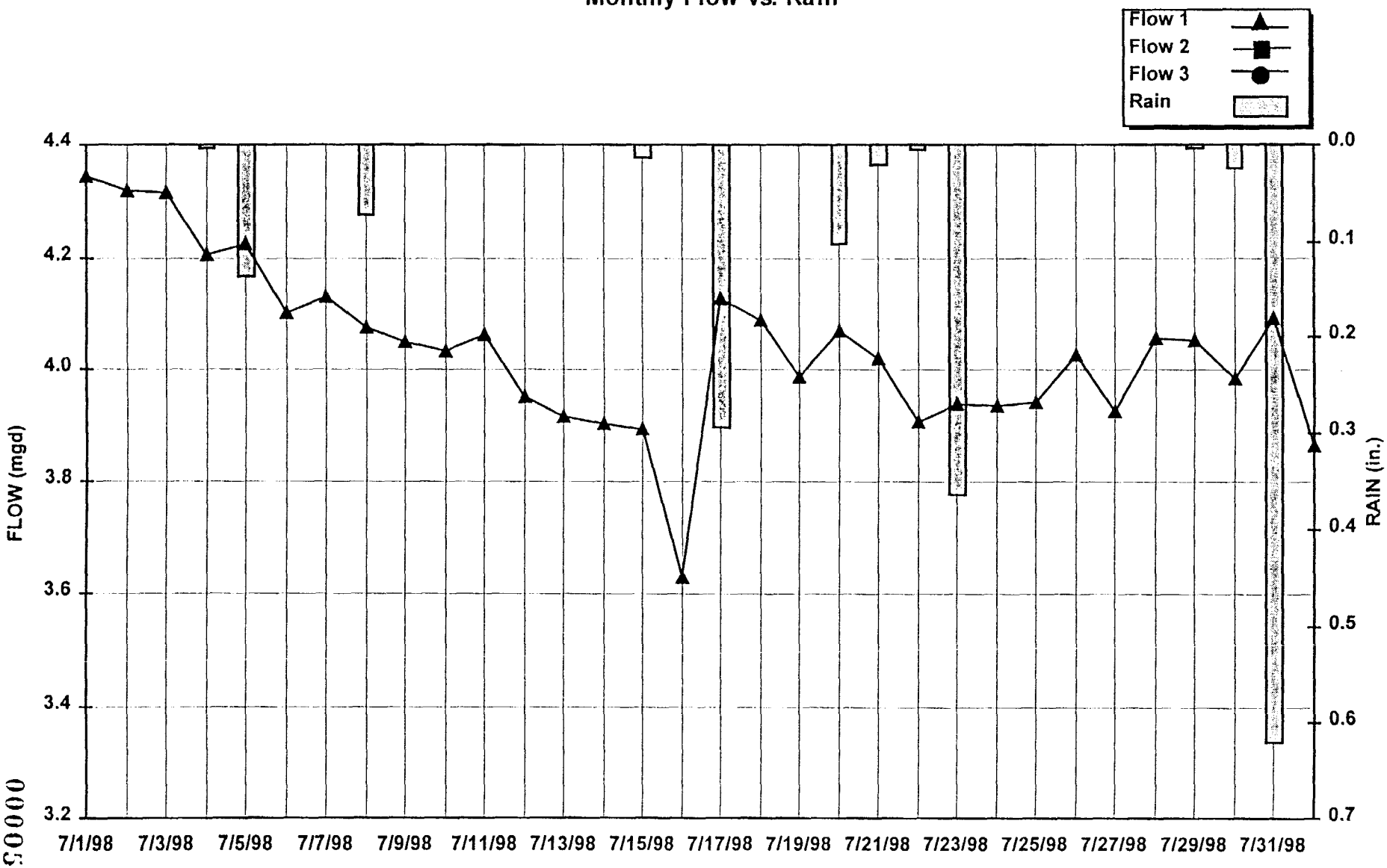
Monthly Flow vs. Rain



NEWARK No. 5
Address: Doremus Ave. near Delancy St.
Serial#: QUO

000055
863690184

Monthly Flow vs. Rain



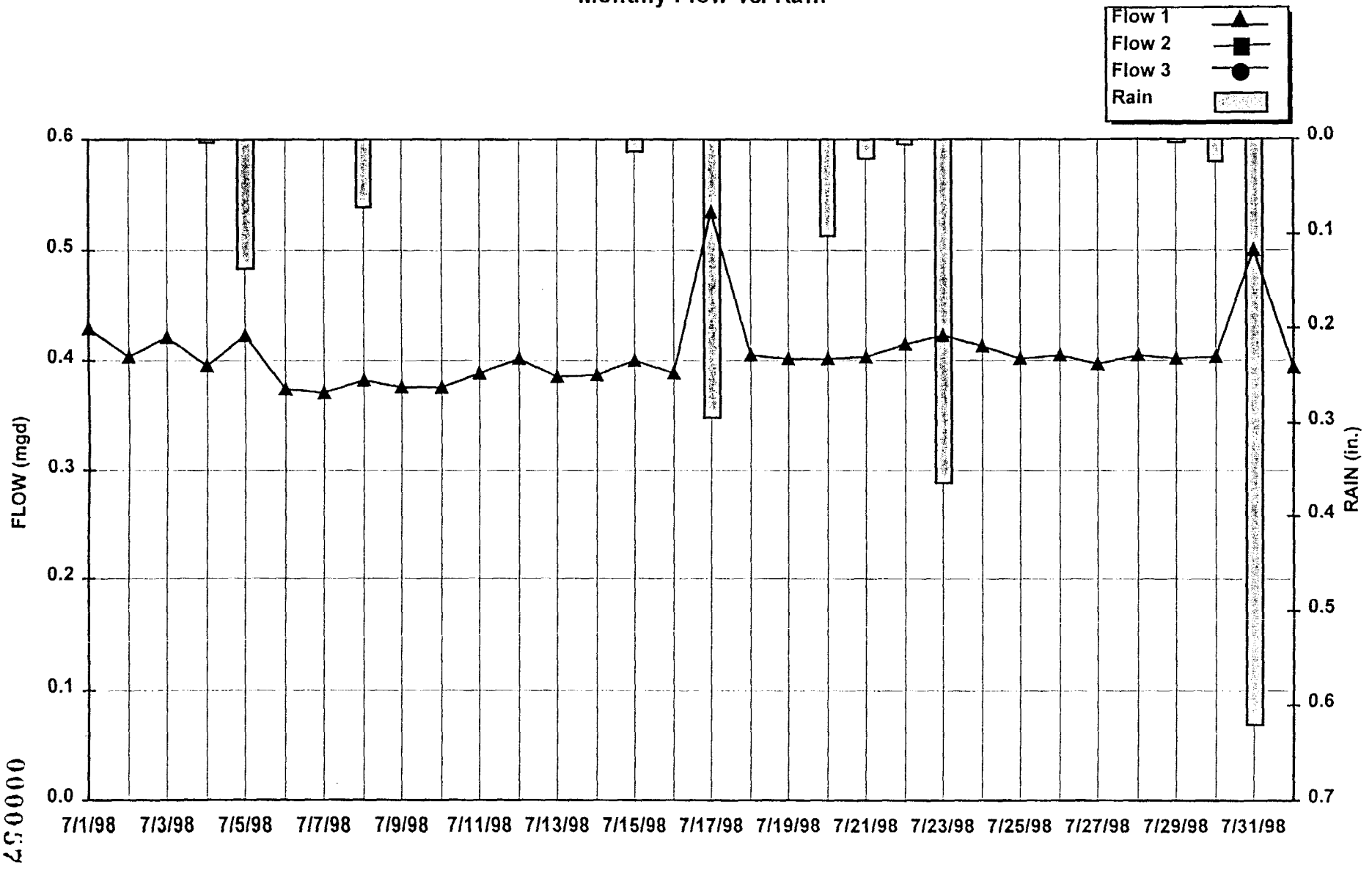
NEWARK No. 6
Address: Near 355 5th St.
Serial#: QU1

000056
863690185

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



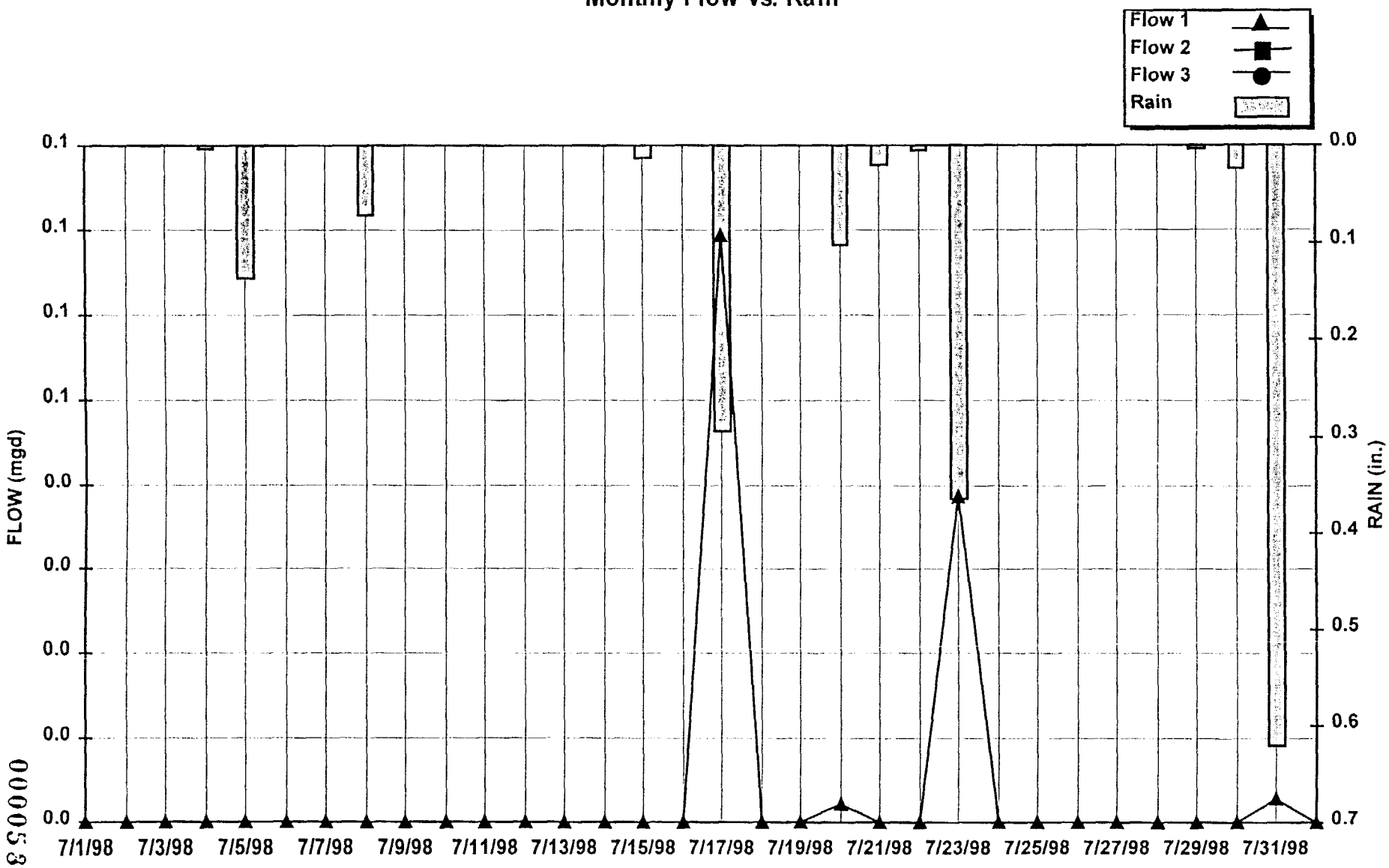
NEWARK No. 7
Address: Verona St. near Broadway
Serial#: QUK

000037
863690186

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 8
Address: Earl and Frelinghuysen
Serial#: QT3

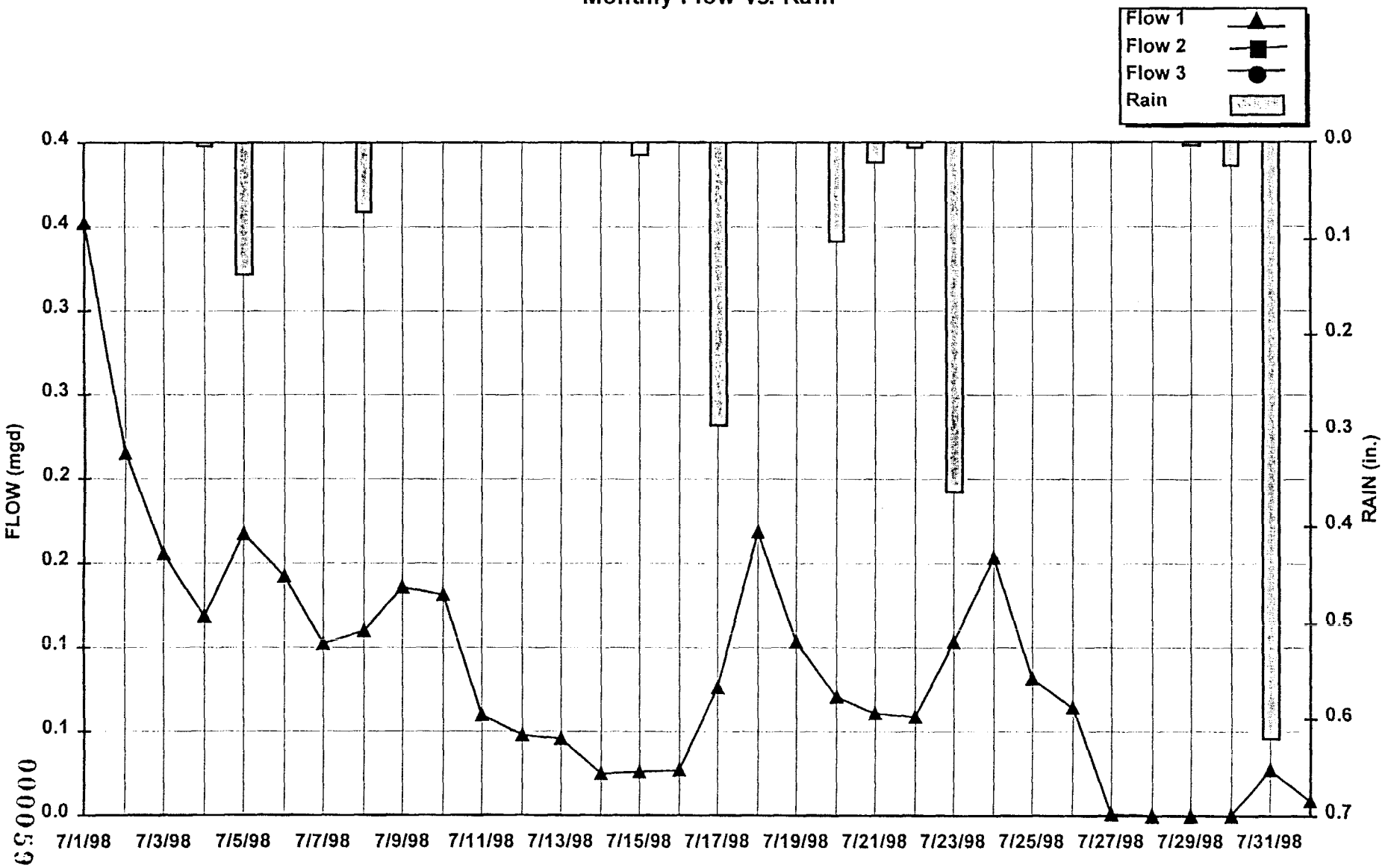
000053

863690187

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 9

Address: Branch Brook Park Lake Overflow

Serial#: QLF

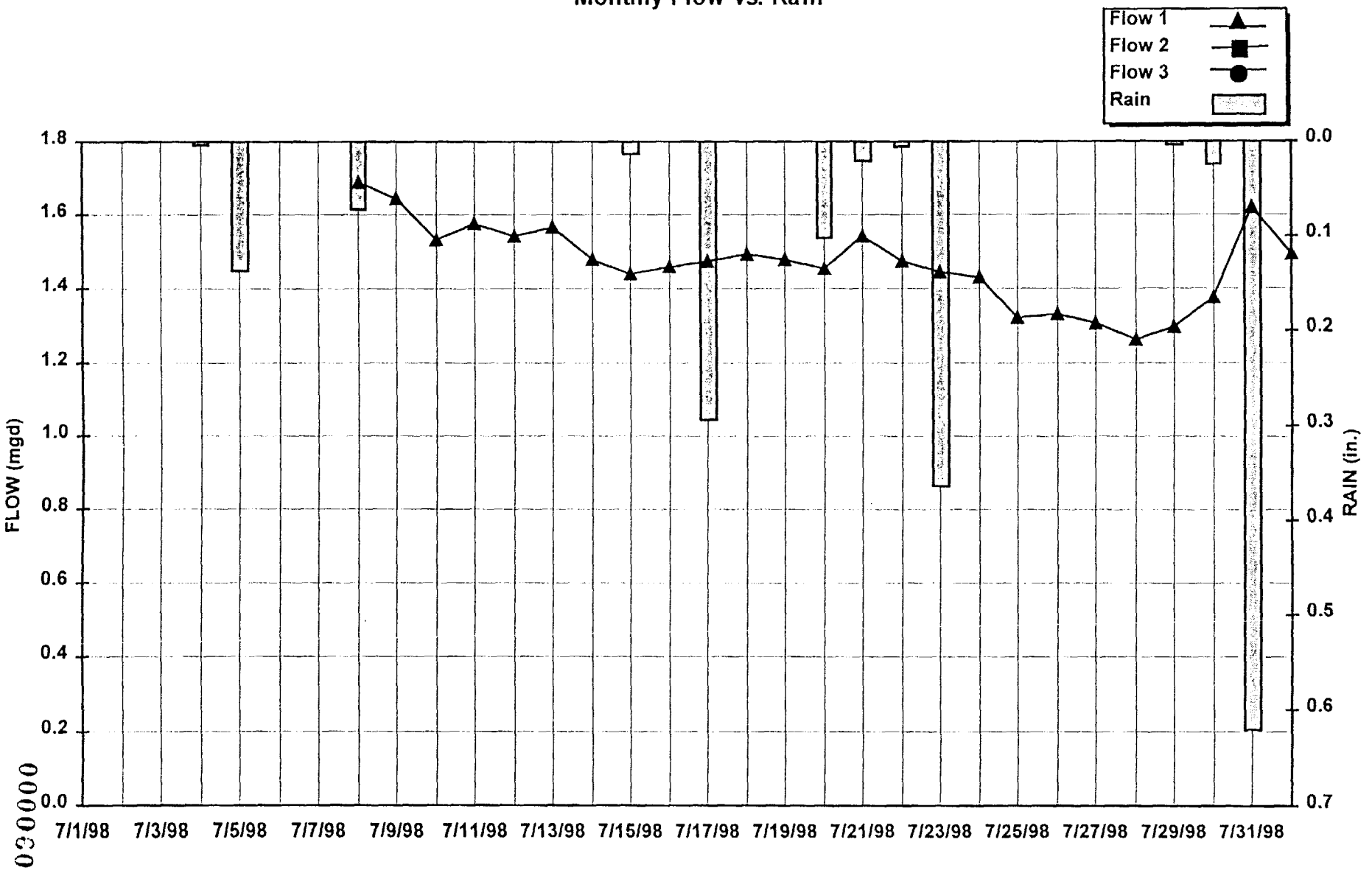
0000039

863690188

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 10
Address: Weequahic Park Lake Overflow
Serial#: QUX

000000
863690189

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.62	.00		.00
07/02/98	.68	.00		.00
07/03/98	.65	.00		.00
07/04/98	.62	.00		.00
07/05/98	1.02	.00		.14
07/06/98	.87	.00		.00
07/07/98	.94	.00		.00
07/08/98	1.01	.00		.07
07/09/98	1.01	.00		.00
07/10/98	.92	.00		.00
07/11/98	.98	.00		.00
07/12/98	1.03	.00		.00
07/13/98	.90	.00		.00
07/14/98	.92	.00		.00
07/15/98	.94	.00		.01
07/16/98	.84	.00		.00
07/17/98	2.08	.82		.29
07/18/98	1.84	.00		.00
07/19/98	1.69	.00		.00
07/20/98	1.53	.00		.10
07/21/98	1.63	.00		.02
07/22/98	1.60	.00		.01
07/23/98	1.85	.00		.36
07/24/98	1.83	.00		.00
07/25/98	1.57	.00		.00
07/26/98	1.51	.00		.00
07/27/98	1.27	.00		.00
07/28/98	1.35	.00		.00
07/29/98	1.33	.00		.00
07/30/98	1.13	.00		.02
07/31/98	2.31	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

Serial#: QTQ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.23	.03		.00
07/02/98	1.16	.03		.00
07/03/98	1.06	.03		.00
07/04/98	1.11	.04		.00
07/05/98	1.42	.04		.14
07/06/98	1.39	.04		.00
07/07/98	1.27	.04		.00
07/08/98	1.46	.03		.07
07/09/98	1.50	.03		.00
07/10/98	1.58	.03		.00
07/11/98	1.56	.03		.00
07/12/98	1.54	.03		.00
07/13/98	1.27	.03		.00
07/14/98	1.10	.03		.00
07/15/98	1.25	.03		.01
07/16/98	1.20	.03		.00
07/17/98	1.34	.05		.29
07/18/98	.00	.03		.00
07/19/98	.00	.03		.00
07/20/98	.00	.03		.10
07/21/98	.00	.03		.02
07/22/98	.00	.03		.01
07/23/98	.00	.04		.36
07/24/98	.00	.03		.00
07/25/98	.00	.02		.00
07/26/98	.00	.03		.00
07/27/98	.00	.02		.00
07/28/98	1.18	.02		.00
07/29/98	1.32	.03		.00
07/30/98	1.27	.02		.02
07/31/98	2.32	.04		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. -
Overflows

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.00	.00		.00
07/02/98	.00	.00		.00
07/03/98	.00	.00		.00
07/04/98	.00	.00		.00
07/05/98	.01	.00		.14
07/06/98	.00	.00		.00
07/07/98	.00	.00		.00
07/08/98	.00	.00		.07
07/09/98	.00	.00		.00
07/10/98	.00	.00		.00
07/11/98	.00	.00		.00
07/12/98	-.01	.00		.00
07/13/98	.00	.00		.00
07/14/98	.00	.00		.00
07/15/98	.00	.00		.01
07/16/98	.00	.00		.00
07/17/98	.66	1.49		.29
07/18/98	.01	.03		.00
07/19/98	.00	.00		.00
07/20/98	.00	.00		.10
07/21/98	.00	.00		.02
07/22/98	.10	.09		.01
07/23/98	.22	.31		.36
07/24/98	.02	.02		.00
07/25/98	.02	.02		.00
07/26/98	.00	.00		.00
07/27/98	.00	.01		.00
07/28/98	.00	.00		.00
07/29/98	.01	.00		.00
07/30/98	.00	.01		.02
07/31/98	.97	1.11		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Influent

Address: Broadway and Second St.

Serial#: QUL

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.99			.00
07/02/98	1.03			.00
07/03/98	1.02			.00
07/04/98	1.06			.00
07/05/98	1.14			.14
07/06/98	1.06			.00
07/07/98	1.08			.00
07/08/98	1.11			.07
07/09/98	1.14			.00
07/10/98	1.15			.00
07/11/98	1.19			.00
07/12/98	1.22			.00
07/13/98	1.20			.00
07/14/98	1.24			.00
07/15/98	1.34			.01
07/16/98	1.55			.00
07/17/98	1.91			.29
07/18/98	1.48			.00
07/19/98	1.41			.00
07/20/98	1.35			.10
07/21/98	1.19			.02
07/22/98	1.15			.01
07/23/98	1.43			.36
07/24/98	1.75			.00
07/25/98	1.65			.00
07/26/98	1.15			.00
07/27/98	1.09			.00
07/28/98	1.20			.00
07/29/98	1.20			.00
07/30/98	1.21			.02
07/31/98	1.60			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Overflow

Address: Broadway and Second St.

Serial#: QUJ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.00			.00
07/02/98	.00			.00
07/03/98	.00			.00
07/04/98	.00			.00
07/05/98	.00			.14
07/06/98	.00			.00
07/07/98	.00			.00
07/08/98	.00			.07
07/09/98	.00			.00
07/10/98	.00			.00
07/11/98	.00			.00
07/12/98	.00			.00
07/13/98	.00			.00
07/14/98	.00			.00
07/15/98	.00			.01
07/16/98	.00			.00
07/17/98	.03			.29
07/18/98	.00			.00
07/19/98	.00			.00
07/20/98	.00			.10
07/21/98	.00			.02
07/22/98	.00			.01
07/23/98	.02			.36
07/24/98	.00			.00
07/25/98	.00			.00
07/26/98	.00			.00
07/27/98	.00			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	.00			.02
07/31/98	.00			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

Serial#: QR6

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.05	.01		.00
07/02/98	.04	.00		.00
07/03/98	.03	.00		.00
07/04/98	.04	.01		.00
07/05/98	.04	.01		.14
07/06/98	.03	.01		.00
07/07/98	.03	.01		.00
07/08/98	.04	.02		.07
07/09/98	.03	.02		.00
07/10/98	.04	.02		.00
07/11/98	.03	.02		.00
07/12/98	.02	.01		.00
07/13/98	.02	.05		.00
07/14/98	.02	.05		.00
07/15/98	.02	.07		.01
07/16/98	.03	.11		.00
07/17/98	.05	.01		.29
07/18/98	.02	.01		.00
07/19/98	.03	.02		.00
07/20/98	.05	.02		.10
07/21/98	.04	.01		.02
07/22/98	.05	.01		.01
07/23/98	.06	.15		.36
07/24/98	.04	.12		.00
07/25/98	.04	.14		.00
07/26/98	.06	.43		.00
07/27/98	.07	.12		.00
07/28/98	.06	.08		.00
07/29/98	.05	.02		.00
07/30/98	.05	.00		.02
07/31/98	.08	.01		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

Serial#: QQD

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-7.62	.00		.00
07/02/98	-12.50	.00		.00
07/03/98	-12.20	.00		.00
07/04/98	-11.24	-.11		.00
07/05/98	-9.46	-.05		.14
07/06/98	-11.61	-.09		.00
07/07/98	-9.08	-.02		.00
07/08/98	-9.33	.01		.07
07/09/98	-9.42	.00		.00
07/10/98	-12.05	.00		.00
07/11/98	-12.43	.00		.00
07/12/98	-11.14	.00		.00
07/13/98	-3.56	.00		.00
07/14/98	-3.74	.00		.00
07/15/98	10.39	.00		.01
07/16/98	16.70	.00		.00
07/17/98	16.01	.45		.29
07/18/98	15.31	.02		.00
07/19/98	14.40	.00		.00
07/20/98	13.89	.00		.10
07/21/98	9.05	.00		.02
07/22/98	-1.23	.00		.01
07/23/98	-8.33	.27		.36
07/24/98	-9.47	.00		.00
07/25/98	-6.92	.00		.00
07/26/98	-7.06	.00		.00
07/27/98	-7.99	.00		.00
07/28/98	-5.56	.00		.00
07/29/98	-5.35	.00		.00
07/30/98	-5.96	.00		.02
07/31/98	-2.18	.36		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Influent

Address: Clay St. at Passaic St.

Serial#: QRG

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.50			.00
07/02/98	.52			.00
07/03/98	.49			.00
07/04/98	.49			.00
07/05/98	.49			.14
07/06/98	.42			.00
07/07/98	.42			.00
07/08/98	.44			.07
07/09/98	.42			.00
07/10/98	.45			.00
07/11/98	.44			.00
07/12/98	.45			.00
07/13/98	.48			.00
07/14/98	.46			.00
07/15/98	.46			.01
07/16/98	.46			.00
07/17/98	.52			.29
07/18/98	.48			.00
07/19/98	.48			.00
07/20/98	.48			.10
07/21/98	.44			.02
07/22/98	.42			.01
07/23/98	.51			.36
07/24/98	.45			.00
07/25/98	.46			.00
07/26/98	.43			.00
07/27/98	.41			.00
07/28/98	.45			.00
07/29/98	.44			.00
07/30/98	.43			.02
07/31/98	.52			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Overflow

Address: Clay St. at Passaic St.

Serial#: QU3

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-.01			.00
07/02/98	.00			.00
07/03/98	.00			.00
07/04/98	.00			.00
07/05/98	.00			.14
07/06/98	.00			.00
07/07/98	.00			.00
07/08/98	.00			.07
07/09/98	.00			.00
07/10/98	.00			.00
07/11/98	.00			.00
07/12/98	.00			.00
07/13/98	.00			.00
07/14/98	.00			.00
07/15/98	.00			.01
07/16/98	.00			.00
07/17/98	.02			.29
07/18/98	.00			.00
07/19/98	.00			.00
07/20/98	.00			.10
07/21/98	.00			.02
07/22/98	.00			.01
07/23/98	.04			.36
07/24/98	.00			.00
07/25/98	.00			.00
07/26/98	.00			.00
07/27/98	.00			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	.00			.02
07/31/98	.01			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

Serial#: QRW

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.02	.00		.00
07/02/98	.02	.00		.00
07/03/98	.03	.00		.00
07/04/98	.04	.00		.00
07/05/98	.05	.00		.14
07/06/98	.06	.00		.00
07/07/98	.10	.00		.00
07/08/98	.06	.00		.07
07/09/98	.04	.00		.00
07/10/98	.06	.00		.00
07/11/98	.05	.00		.00
07/12/98	.07	.00		.00
07/13/98	.08	.00		.00
07/14/98	.07	.00		.00
07/15/98	.06	.00		.01
07/16/98	.08	.00		.00
07/17/98	.11	.00		.29
07/18/98	.08	.00		.00
07/19/98	.11	.00		.00
07/20/98	.11	.00		.10
07/21/98	.10	.00		.02
07/22/98	.11	.00		.01
07/23/98	.15	.00		.36
07/24/98	.10	.00		.00
07/25/98	.06	.00		.00
07/26/98	.05	.00		.00
07/27/98	.08	.00		.00
07/28/98	.12	.00		.00
07/29/98	.06	.00		.00
07/30/98	.02	.00		.02
07/31/98	.03	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Influents

Address: Clay St. at McCarter Hwy

Serial#: QTR

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	27.63	.00		.00
07/02/98	26.90	.00		.00
07/03/98	26.73	.00		.00
07/04/98	25.75	.00		.00
07/05/98	27.31	-.05		.14
07/06/98	26.18	.00		.00
07/07/98	25.96	.00		.00
07/08/98	26.19	.00		.07
07/09/98	25.28	-.04		.00
07/10/98	25.12	.00		.00
07/11/98	24.85	.00		.00
07/12/98	24.62	.00		.00
07/13/98	24.65	.00		.00
07/14/98	24.56	.01		.00
07/15/98	25.20	-.03		.01
07/16/98	26.36	.00		.00
07/17/98	29.06	.01		.29
07/18/98	27.94	.00		.00
07/19/98	27.93	.00		.00
07/20/98	28.44	.00		.10
07/21/98	28.26	.00		.02
07/22/98	27.79	.00		.01
07/23/98	28.08	.00		.36
07/24/98	25.59	.00		.00
07/25/98	25.71	.00		.00
07/26/98	25.70	.00		.00
07/27/98	25.31	.00		.00
07/28/98	25.99	.00		.00
07/29/98	23.16	.00		.00
07/30/98				.02
07/31/98				.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow North Pipe

Address: Clay St. at Passaic St.

Serial#: QPS

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-.01			.00
07/02/98	.00			.00
07/03/98	-.04			.00
07/04/98	.00			.00
07/05/98	-.09			.14
07/06/98	-.01			.00
07/07/98	-.57			.00
07/08/98	-.47			.07
07/09/98	-.03			.00
07/10/98	.00			.00
07/11/98	.00			.00
07/12/98	-.01			.00
07/13/98	-.02			.00
07/14/98	-.01			.00
07/15/98	.00			.01
07/16/98	-.02			.00
07/17/98	21.53			.29
07/18/98	1.30			.00
07/19/98	-.03			.00
07/20/98	.05			.10
07/21/98	-.07			.02
07/22/98	.00			.01
07/23/98	9.87			.36
07/24/98	.00			.00
07/25/98	-.02			.00
07/26/98	-.01			.00
07/27/98	-.01			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	-.02			.02
07/31/98	21.31			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow South Pipe

Address: Clay St. at Passaic St.

Serial#: QUM

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.02			.00
07/02/98	.00			.00
07/03/98	-.04			.00
07/04/98	.00			.00
07/05/98	-.01			.14
07/06/98	.02			.00
07/07/98	.01			.00
07/08/98	.03			.07
07/09/98	-.01			.00
07/10/98	.03			.00
07/11/98	.00			.00
07/12/98	.00			.00
07/13/98	.01			.00
07/14/98	-.05			.00
07/15/98	.03			.01
07/16/98	.03			.00
07/17/98	3.70			.29
07/18/98	.16			.00
07/19/98	.03			.00
07/20/98	-.04			.10
07/21/98	-.01			.02
07/22/98	.00			.01
07/23/98	1.92			.36
07/24/98	-.01			.00
07/25/98	.00			.00
07/26/98	-.04			.00
07/27/98	-.01			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	-.01			.02
07/31/98	6.81			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST Influent

Address: Orange St. and McCarter Hwy

Serial#: QRF

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.07			.00
07/02/98	.07			.00
07/03/98	.07			.00
07/04/98	.06			.00
07/05/98	.07			.14
07/06/98	.07			.00
07/07/98	.07			.00
07/08/98	.07			.07
07/09/98	.07			.00
07/10/98	.07			.00
07/11/98	.07			.00
07/12/98	.07			.00
07/13/98	.06			.00
07/14/98	.06			.00
07/15/98	.06			.01
07/16/98	.06			.00
07/17/98	.10			.29
07/18/98	.06			.00
07/19/98	.06			.00
07/20/98	.06			.10
07/21/98	.07			.02
07/22/98	.07			.01
07/23/98	.10			.36
07/24/98	.06			.00
07/25/98	.06			.00
07/26/98	.06			.00
07/27/98	.06			.00
07/28/98	.07			.00
07/29/98	.06			.00
07/30/98	.07			.02
07/31/98	.10			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.05	.00		.00
07/02/98	.05	.00		.00
07/03/98	.05	.00		.00
07/04/98	.05	.00		.00
07/05/98	.05	.00		.14
07/06/98	.05	.00		.00
07/07/98	.05	.00		.00
07/08/98	.08	.00		.07
07/09/98	.09	.00		.00
07/10/98	.10	.00		.00
07/11/98	.09	.00		.00
07/12/98	.09	.00		.00
07/13/98	.09	.00		.00
07/14/98	.09	.00		.00
07/15/98	.11	.00		.01
07/16/98	.13	.00		.00
07/17/98	.16	.00		.29
07/18/98	.11	.00		.00
07/19/98	.11	.00		.00
07/20/98	.11	.00		.10
07/21/98	.09	.00		.02
07/22/98	.11	.00		.01
07/23/98	.12	.00		.36
07/24/98	.10	.00		.00
07/25/98	.10	.00		.00
07/26/98	.10	.00		.00
07/27/98	.10	.00		.00
07/28/98	.10	.00		.00
07/29/98	.10	.00		.00
07/30/98	.09	.00		.02
07/31/98	.10	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

Serial#: QR7

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.05	.13		.00
07/02/98	.06	.16		.00
07/03/98	.07	.20		.00
07/04/98	.08	.22		.00
07/05/98	.09	.24		.14
07/06/98	.09	.24		.00
07/07/98	.10	.27		.00
07/08/98	.09	.26		.07
07/09/98	.09	.25		.00
07/10/98	.10	.27		.00
07/11/98	.07	.19		.00
07/12/98	.06	.16		.00
07/13/98	.08	.21		.00
07/14/98	.09	.24		.00
07/15/98	.09	.27		.01
07/16/98	.13	.36		.00
07/17/98	.14	.36		.29
07/18/98	.10	.27		.00
07/19/98	.11	.29		.00
07/20/98	.10	.25		.10
07/21/98	.09	.22		.02
07/22/98	.07	.17		.01
07/23/98	.07	.15		.36
07/24/98	.05	.14		.00
07/25/98	.05	.15		.00
07/26/98	.05	.14		.00
07/27/98	.04	.12		.00
07/28/98	.06	.15		.00
07/29/98	.05	.13		.00
07/30/98	.07	.21		.02
07/31/98	.07	.16		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

Serial#: QUY

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.81	.00	.00	.00
07/02/98	1.58	.00	.00	.00
07/03/98	2.23	.00	.00	.00
07/04/98	2.68	.00	.00	.00
07/05/98	2.73	.00	-.03	.14
07/06/98	2.92	.00	.00	.00
07/07/98	2.60	.02	.00	.00
07/08/98	2.25	.00	.00	.07
07/09/98	2.97	.00	.00	.00
07/10/98	3.22	.00	.00	.00
07/11/98	2.96	.00	.00	.00
07/12/98	3.15	.00	.00	.00
07/13/98	3.24	.00	.00	.00
07/14/98	2.91	.00	.00	.00
07/15/98	2.67	.00	.00	.01
07/16/98	2.82	.00	.00	.00
07/17/98	3.78	.02	.83	.29
07/18/98	1.48	.00	.01	.00
07/19/98	2.30	.00	.00	.00
07/20/98	2.79	.00	.03	.10
07/21/98	1.79	.00	.00	.02
07/22/98	1.57	.00	.00	.01
07/23/98	1.53	-.03	.54	.36
07/24/98	1.17	.00	.00	.00
07/25/98	1.88	.00	.00	.00
07/26/98	2.50	.00	.00	.00
07/27/98	2.12	.00	.00	.00
07/28/98	1.99	.00	.00	.00
07/29/98	1.84	.02	.00	.00
07/30/98	1.73	.00	.00	.02
07/31/98	3.00	.01	.75	.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-17.71	.00		.00
07/02/98	-20.12	.00		.00
07/03/98	-14.07	.00		.00
07/04/98	-11.32	.00		.00
07/05/98	-12.04	.00		.14
07/06/98	-10.82	.00		.00
07/07/98	-11.54	.00		.00
07/08/98	-11.44	.00		.07
07/09/98	-13.71	.00		.00
07/10/98	-11.14	.00		.00
07/11/98	-12.77	.00		.00
07/12/98	-15.05	.00		.00
07/13/98	-13.82	.00		.00
07/14/98	-13.49	.00		.00
07/15/98	-14.68	.00		.01
07/16/98	-16.99	.00		.00
07/17/98	-3.32	1.60		.29
07/18/98	-9.62	.02		.00
07/19/98	-8.31	.00		.00
07/20/98	-6.29	.01		.10
07/21/98	-11.86	.00		.02
07/22/98	-12.67	.00		.01
07/23/98	-.13	.63		.36
07/24/98	2.08	.00		.00
07/25/98	1.11	.00		.00
07/26/98	2.74	.00		.00
07/27/98	5.51	.00		.00
07/28/98	.21	.00		.00
07/29/98	-11.68	.00		.00
07/30/98	-11.93	.00		.02
07/31/98	.90	1.52		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent1

Address: Raymond Plaza near
Raymond Blvd.

Serial#: QQT

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.04			.00
07/02/98	.03			.00
07/03/98	.00			.00
07/04/98	.01			.00
07/05/98	.02			.14
07/06/98	.03			.00
07/07/98	.04			.00
07/08/98	.03			.07
07/09/98	.03			.00
07/10/98	.04			.00
07/11/98	.01			.00
07/12/98	.01			.00
07/13/98	.03			.00
07/14/98	.03			.00
07/15/98	.03			.01
07/16/98	.04			.00
07/17/98	.07			.29
07/18/98	.02			.00
07/19/98	.03			.00
07/20/98	.05			.10
07/21/98	.04			.02
07/22/98	.04			.01
07/23/98	.05			.36
07/24/98	.04			.00
07/25/98	.02			.00
07/26/98	.02			.00
07/27/98	.03			.00
07/28/98	.03			.00
07/29/98	.03			.00
07/30/98	.03			.02
07/31/98	.05			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near
Raymond Blvd.

Serial#: QU2

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.08			.00
07/02/98	.07			.00
07/03/98	.03			.00
07/04/98	.03			.00
07/05/98	.04			.14
07/06/98	.05			.00
07/07/98	.06			.00
07/08/98	.07			.07
07/09/98	.09			.00
07/10/98	.08			.00
07/11/98	.05			.00
07/12/98	.05			.00
07/13/98	.02			.00
07/14/98	.05			.00
07/15/98	.09			.01
07/16/98	.10			.00
07/17/98	.19			.29
07/18/98	.11			.00
07/19/98	.06			.00
07/20/98	.12			.10
07/21/98	.09			.02
07/22/98	.09			.01
07/23/98	.15			.36
07/24/98	.10			.00
07/25/98	.06			.00
07/26/98	.05			.00
07/27/98	.09			.00
07/28/98	.12			.00
07/29/98	.08			.00
07/30/98	.06			.02
07/31/98	.11			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent3

Address: Raymond Plaza East near
Raymond Blvd.

Serial#: QPV

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.03			.00
07/02/98	.03			.00
07/03/98	.01			.00
07/04/98	.00			.00
07/05/98	.02			.14
07/06/98	.04			.00
07/07/98	.04			.00
07/08/98	.05			.07
07/09/98	.05			.00
07/10/98	.06			.00
07/11/98	.03			.00
07/12/98	.00			.00
07/13/98	.05			.00
07/14/98	.07			.00
07/15/98	.08			.01
07/16/98	.09			.00
07/17/98	.14			.29
07/18/98	.00			.00
07/19/98	.00			.00
07/20/98	.05			.10
07/21/98	.02			.02
07/22/98	.02			.01
07/23/98	.09			.36
07/24/98	.05			.00
07/25/98	.03			.00
07/26/98	.03			.00
07/27/98	.09			.00
07/28/98	.08			.00
07/29/98	.10			.00
07/30/98	.09			.02
07/31/98	.14			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near
Raymond Blvd.

Serial#: QPQ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	8.59			.00
07/02/98	9.29			.00
07/03/98	9.65			.00
07/04/98	9.51			.00
07/05/98	10.23			.14
07/06/98	10.42			.00
07/07/98	10.20			.00
07/08/98	10.23			.07
07/09/98	10.17			.00
07/10/98	9.91			.00
07/11/98	9.26			.00
07/12/98	9.22			.00
07/13/98	9.81			.00
07/14/98	9.91			.00
07/15/98	9.59			.01
07/16/98	9.94			.00
07/17/98	11.38			.29
07/18/98	7.31			.00
07/19/98	9.56			.00
07/20/98	10.61			.10
07/21/98	9.35			.02
07/22/98	10.23			.01
07/23/98	11.73			.36
07/24/98	9.58			.00
07/25/98	9.63			.00
07/26/98	9.60			.00
07/27/98	9.65			.00
07/28/98	9.58			.00
07/29/98	8.88			.00
07/30/98	6.98			.02
07/31/98	6.23			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QLK

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-.06			.00
07/02/98	.02			.00
07/03/98	.00			.00
07/04/98	.00			.00
07/05/98	.01			.14
07/06/98	-.02			.00
07/07/98	.00			.00
07/08/98	.00			.07
07/09/98	.00			.00
07/10/98	.00			.00
07/11/98	-.01			.00
07/12/98	.00			.00
07/13/98	.00			.00
07/14/98	-.01			.00
07/15/98	.00			.01
07/16/98	.01			.00
07/17/98	2.90			.29
07/18/98	.00			.00
07/19/98	.00			.00
07/20/98	.01			.10
07/21/98	-.08			.02
07/22/98	.00			.01
07/23/98	.78			.36
07/24/98	.00			.00
07/25/98	.01			.00
07/26/98	-.08			.00
07/27/98	-.04			.00
07/28/98	.00			.00
07/29/98	-.01			.00
07/30/98	.00			.02
07/31/98	1.78			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

Serial#: QTO

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.67	.01	2.00	.00
07/02/98	.65	.02	1.93	.00
07/03/98	.66	.01	1.93	.00
07/04/98	.63	.01	1.87	.00
07/05/98	.76	.01	2.14	.14
07/06/98	.59	.01	1.73	.00
07/07/98	.62	.01	1.82	.00
07/08/98	.66	.02	1.92	.07
07/09/98	.61	.01	1.78	.00
07/10/98	.60	.01	1.75	.00
07/11/98	.65	.01	1.87	.00
07/12/98	.67	.01	1.94	.00
07/13/98	.63	.01	1.85	.00
07/14/98	.59	.01	1.73	.00
07/15/98	.57	.01	1.68	.01
07/16/98	.65	.01	1.92	.00
07/17/98	.81	.00	2.11	.29
07/18/98	.73	.02	2.06	.00
07/19/98	.63	.00	1.86	.00
07/20/98	.72	.01	2.05	.10
07/21/98	.59	.02	1.73	.02
07/22/98	.66	.03	1.95	.01
07/23/98	.86	.03	2.20	.36
07/24/98	.62	.03	1.83	.00
07/25/98	.68	.03	1.98	.00
07/26/98	.61	.04	1.78	.00
07/27/98	.60	.03	1.77	.00
07/28/98	.62	.04	1.81	.00
07/29/98	.61	.05	1.79	.00
07/30/98	.62	.05	1.80	.02
07/31/98	.76	.04	1.61	.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

Serial#: QUG

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.37	.00		.00
07/02/98	1.41	.00		.00
07/03/98	1.56	.00		.00
07/04/98	1.55	.00		.00
07/05/98	1.95	.19		.14
07/06/98	1.57	.00		.00
07/07/98	1.60	.00		.00
07/08/98	1.99	.00		.07
07/09/98	3.05	.00		.00
07/10/98	2.84	.00		.00
07/11/98	3.24	.00		.00
07/12/98	4.24	.00		.00
07/13/98	4.66	.00		.00
07/14/98	4.64	.00		.00
07/15/98	3.28	.00		.01
07/16/98	1.71	.00		.00
07/17/98	1.51	1.74		.29
07/18/98	2.06	-.03		.00
07/19/98	2.10	.00		.00
07/20/98	2.34	.17		.10
07/21/98	1.63	.00		.02
07/22/98	1.64	.00		.01
07/23/98	2.37	.37		.36
07/24/98	1.60	.06		.00
07/25/98	1.67	.00		.00
07/26/98	1.75	.00		.00
07/27/98	1.62	.00		.00
07/28/98	1.57	.00		.00
07/29/98	1.64	.00		.00
07/30/98	1.64	.00		.02
07/31/98	1.90	1.40		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

Serial#: QUF

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.45	.04		.00
07/02/98	.43	.03		.00
07/03/98	.42	.03		.00
07/04/98	.45	.03		.00
07/05/98	.69	.05		.14
07/06/98	.45	.03		.00
07/07/98	.44	.03		.00
07/08/98	.48	.04		.07
07/09/98	.46	.04		.00
07/10/98	.44	.03		.00
07/11/98	.45	.03		.00
07/12/98	.46	.03		.00
07/13/98	.45	.03		.00
07/14/98	.43	.02		.00
07/15/98	.44	.02		.01
07/16/98	.48	.02		.00
07/17/98	1.39	.09		.29
07/18/98	.50	.04		.00
07/19/98	.44	.03		.00
07/20/98	.47	.05		.10
07/21/98	.47	.03		.02
07/22/98	.52	.06		.01
07/23/98	1.16	.08		.36
07/24/98	.48	.05		.00
07/25/98	.52	.03		.00
07/26/98	.52	.03		.00
07/27/98	.50	.03		.00
07/28/98	.58	.03		.00
07/29/98	.64	.03		.00
07/30/98	.66	.03		.02
07/31/98	1.81	.08		.62

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Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.43	.00		.00
07/02/98	.41	.00		.00
07/03/98	.42	.00		.00
07/04/98	.45	.00		.00
07/05/98	.45	.00		.14
07/06/98	.45	.00		.00
07/07/98	.40	.00		.00
07/08/98	.43	.00		.07
07/09/98	.34	.00		.00
07/10/98	.22	.00		.00
07/11/98	.24	.00		.00
07/12/98	.24	.00		.00
07/13/98	.24	.00		.00
07/14/98	.22	.00		.00
07/15/98	.21	.00		.01
07/16/98	.22	.00		.00
07/17/98	.30	.36		.29
07/18/98	.23	-.28		.00
07/19/98	.24	.00		.00
07/20/98	.25	.00		.10
07/21/98	.36	.00		.02
07/22/98	.34	.00		.01
07/23/98	.47	-.20		.36
07/24/98	.35	.00		.00
07/25/98	.38	.00		.00
07/26/98	.44	.00		.00
07/27/98	.41	.00		.00
07/28/98	.50	.00		.00
07/29/98	.40	.00		.00
07/30/98	.50	.00		.02
07/31/98	.42	.34		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.99	.00		.00
07/02/98	1.30	.00		.00
07/03/98	1.26	.00		.00
07/04/98	.86	.00		.00
07/05/98	1.56	.00		.14
07/06/98	.93	.00		.00
07/07/98	.97	.00		.00
07/08/98	1.10	.00		.07
07/09/98	1.00	.00		.00
07/10/98	1.03	.00		.00
07/11/98	1.20	.00		.00
07/12/98	1.36	.00		.00
07/13/98	1.25	.00		.00
07/14/98	1.22	.00		.00
07/15/98	1.50	.00		.01
07/16/98	1.56	.00		.00
07/17/98	1.77	-.07		.29
07/18/98	1.69	.00		.00
07/19/98	1.75	.00		.00
07/20/98	1.56	.00		.10
07/21/98	1.42	.00		.02
07/22/98	1.62	.00		.01
07/23/98	2.02	.00		.36
07/24/98	1.93	.00		.00
07/25/98	1.03	.00		.00
07/26/98	.67	.00		.00
07/27/98	-1.13	.00		.00
07/28/98	.43	.00		.00
07/29/98	1.68	.00		.00
07/30/98	1.28	.00		.02
07/31/98	2.25	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

Serial#: QR4

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-.59	.00		.00
07/02/98	-.59	.00		.00
07/03/98	1.48	.00		.00
07/04/98	2.82	.00		.00
07/05/98	2.80	.00		.14
07/06/98	3.24	.00		.00
07/07/98	2.95	.00		.00
07/08/98	3.14	.00		.07
07/09/98	1.98	.00		.00
07/10/98	4.02	.00		.00
07/11/98	5.39	.00		.00
07/12/98	5.80	.00		.00
07/13/98	6.44	.00		.00
07/14/98	5.82	.00		.00
07/15/98	1.54	.00		.01
07/16/98	.99	.00		.00
07/17/98	5.81	.15		.29
07/18/98	-.86	.00		.00
07/19/98	.27	.00		.00
07/20/98	2.76	.00		.10
07/21/98	.02	.00		.02
07/22/98	2.25	.00		.01
07/23/98	2.32	.00		.36
07/24/98	.57	.00		.00
07/25/98	1.81	.00		.00
07/26/98	1.47	.00		.00
07/27/98	-.12	.00		.00
07/28/98	.04	.00		.00
07/29/98	1.62	.00		.00
07/30/98	2.28	.00		.02
07/31/98	3.45	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

Serial#: QO4

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.51			.00
07/02/98	.47			.00
07/03/98	.48			.00
07/04/98	.47			.00
07/05/98	.63			.14
07/06/98	.39			.00
07/07/98	.42			.00
07/08/98	.49			.07
07/09/98	.46			.00
07/10/98	.43			.00
07/11/98	.40			.00
07/12/98	.40			.00
07/13/98	.43			.00
07/14/98	.44			.00
07/15/98	.43			.01
07/16/98	.19			.00
07/17/98	.90			.29
07/18/98	.51			.00
07/19/98	.49			.00
07/20/98	.61			.10
07/21/98	.52			.02
07/22/98	.52			.01
07/23/98	.74			.36
07/24/98	.62			.00
07/25/98	.60			.00
07/26/98	.55			.00
07/27/98	.53			.00
07/28/98	.56			.00
07/29/98	.56			.00
07/30/98	.56			.02
07/31/98	1.08			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

Serial#: QPP

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-.02			.00
07/02/98	.00			.00
07/03/98	.00			.00
07/04/98	-.02			.00
07/05/98	-.15			.14
07/06/98	.00			.00
07/07/98	-.02			.00
07/08/98	.00			.07
07/09/98	.00			.00
07/10/98	.00			.00
07/11/98	.00			.00
07/12/98	.00			.00
07/13/98	.00			.00
07/14/98	.00			.00
07/15/98	.00			.01
07/16/98	.00			.00
07/17/98	-.46			.29
07/18/98	.00			.00
07/19/98	.01			.00
07/20/98	-.06			.10
07/21/98	.00			.02
07/22/98	-.02			.01
07/23/98	-.17			.36
07/24/98	.00			.00
07/25/98	.00			.00
07/26/98	.01			.00
07/27/98	.00			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	.00			.02
07/31/98	-.45			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated

Address: Peddie Ditch

Serial#: QUE

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	10.99	10.94		.00
07/02/98	1.39	1.38		.00
07/03/98	.87	.86		.00
07/04/98	.51	.51		.00
07/05/98	1.19	1.18		.14
07/06/98	.35	.35		.00
07/07/98	.42	.42		.00
07/08/98	1.45	1.44		.07
07/09/98	.83	.83		.00
07/10/98	.76	.76		.00
07/11/98	.82	.81		.00
07/12/98	.32	.32		.00
07/13/98	.66	.65		.00
07/14/98	.74	.74		.00
07/15/98	1.09	1.08		.01
07/16/98	5.49	5.46		.00
07/17/98	12.93	12.87		.29
07/18/98	8.68	8.64		.00
07/19/98	8.42	8.37		.00
07/20/98	10.60	10.55		.10
07/21/98	10.12	10.07		.02
07/22/98	11.97	11.91		.01
07/23/98	13.40	13.33		.36
07/24/98	11.05	10.99		.00
07/25/98	11.66	11.60		.00
07/26/98	11.35	11.30		.00
07/27/98	11.68	11.62		.00
07/28/98	11.76	11.69		.00
07/29/98	11.53	11.47		.00
07/30/98	12.09	12.03		.02
07/31/98	13.49	13.42		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 Peddie St regulated

Address: Peddie Ditch

Serial#: QO7

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	13.53			.00
07/02/98	12.66			.00
07/03/98	13.19			.00
07/04/98	12.72			.00
07/05/98	13.99			.14
07/06/98	12.65			.00
07/07/98	12.95			.00
07/08/98	14.16			.07
07/09/98	13.32			.00
07/10/98	12.90			.00
07/11/98	12.49			.00
07/12/98	12.83			.00
07/13/98	12.95			.00
07/14/98	13.13			.00
07/15/98	12.83			.01
07/16/98	11.52			.00
07/17/98	11.75			.29
07/18/98	9.48			.00
07/19/98	8.82			.00
07/20/98	11.10			.10
07/21/98	9.95			.02
07/22/98	10.50			.01
07/23/98	11.66			.36
07/24/98	9.03			.00
07/25/98	7.18			.00
07/26/98	7.47			.00
07/27/98	7.55			.00
07/28/98	7.43			.00
07/29/98	8.14			.00
07/30/98	7.69			.02
07/31/98	11.90			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN unregulated

Address: Queen Ditch

Serial#: QQU

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	8.27			.00
07/02/98	7.77			.00
07/03/98	7.11			.00
07/04/98	6.71			.00
07/05/98	6.93			.14
07/06/98	6.39			.00
07/07/98	6.31			.00
07/08/98	6.75			.07
07/09/98	6.74			.00
07/10/98	6.52			.00
07/11/98	6.20			.00
07/12/98	6.12			.00
07/13/98	6.23			.00
07/14/98	6.34			.00
07/15/98	6.35			.01
07/16/98	6.44			.00
07/17/98	6.55			.29
07/18/98	6.44			.00
07/19/98	6.29			.00
07/20/98	6.67			.10
07/21/98	6.36			.02
07/22/98	6.48			.01
07/23/98	6.70			.36
07/24/98	6.29			.00
07/25/98	5.94			.00
07/26/98	6.20			.00
07/27/98	6.67			.00
07/28/98	6.64			.00
07/29/98	6.55			.00
07/30/98	6.33			.02
07/31/98	6.91			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN regulated

Address: Queen Ditch

Serial#: QQV

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	6.35			.00
07/02/98	5.73			.00
07/03/98	5.14			.00
07/04/98	4.57			.00
07/05/98	4.84			.14
07/06/98	4.06			.00
07/07/98	4.24			.00
07/08/98	4.31			.07
07/09/98	4.09			.00
07/10/98	3.69			.00
07/11/98	3.41			.00
07/12/98	3.30			.00
07/13/98	3.43			.00
07/14/98	3.21			.00
07/15/98	3.22			.01
07/16/98	3.46			.00
07/17/98	4.02			.29
07/18/98	3.88			.00
07/19/98	3.52			.00
07/20/98	3.95			.10
07/21/98	3.99			.02
07/22/98	3.96			.01
07/23/98	3.99			.36
07/24/98	3.83			.00
07/25/98	3.78			.00
07/26/98	3.59			.00
07/27/98	3.70			.00
07/28/98	4.03			.00
07/29/98	3.78			.00
07/30/98	3.74			.02
07/31/98	4.47			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

Serial#: QRY

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.75	.00		.00
07/02/98	1.40	.00		.00
07/03/98	1.17	.00		.00
07/04/98	1.26	.00		.00
07/05/98	1.71	.00		.14
07/06/98	1.45	.00		.00
07/07/98	1.44	.00		.00
07/08/98	1.47	.00		.07
07/09/98	1.40	.00		.00
07/10/98	1.28	.00		.00
07/11/98	1.28	.00		.00
07/12/98	1.38	.00		.00
07/13/98	2.04	.00		.00
07/14/98	1.96	.00		.00
07/15/98	1.95	.00		.01
07/16/98	1.94	.00		.00
07/17/98	1.57	.00		.29
07/18/98	1.17	.00		.00
07/19/98	1.11	.00		.00
07/20/98	1.88	.00		.10
07/21/98	1.94	.00		.02
07/22/98	1.75	.00		.01
07/23/98	1.84	.00		.36
07/24/98	1.96	.00		.00
07/25/98	1.31	.00		.00
07/26/98	1.14	.00		.00
07/27/98	1.73	.00		.00
07/28/98	1.85	.00		.00
07/29/98	1.90	.00		.00
07/30/98	1.87	.00		.02
07/31/98	2.51	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

Serial#: QUD

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.42	.00	5.20	.00
07/02/98	1.45	.00	5.33	.00
07/03/98	1.52	.00	5.49	.00
07/04/98	1.54	.00	5.53	.00
07/05/98	1.66	.01	5.77	.14
07/06/98	1.56	.00	5.57	.00
07/07/98	1.51	.01	5.40	.00
07/08/98	1.48	.00	5.34	.07
07/09/98	1.45	.00	5.28	.00
07/10/98	1.44	.00	5.25	.00
07/11/98	1.45	.00	5.31	.00
07/12/98	1.47	.00	5.29	.00
07/13/98	1.43	.00	5.18	.00
07/14/98	1.41	.00	5.05	.00
07/15/98	1.44	-.02	5.16	.01
07/16/98	1.49	.00	5.31	.00
07/17/98	1.85	.44	5.97	.29
07/18/98	1.70	.00	6.13	.00
07/19/98	1.67	.00	6.02	.00
07/20/98	1.69	.05	5.98	.10
07/21/98	1.56	.23	5.59	.02
07/22/98	.69	.10	2.55	.01
07/23/98	.29	.23	.85	.36
07/24/98	.00	.00	.00	.00
07/25/98	.00	.00	.00	.00
07/26/98	.00	.00	.00	.00
07/27/98	.00	.00	.00	.00
07/28/98	.00	.00	.00	.00
07/29/98	.45	.36	2.57	.00
07/30/98	.76	.53	4.49	.02
07/31/98	1.17	.75	5.83	.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 1

Address: Central Ave. and 15th St.

Serial#: QRH

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	-4.84			.00
07/02/98	-4.92			.00
07/03/98	-5.04			.00
07/04/98	-4.90			.00
07/05/98	-4.80			.14
07/06/98	-4.83			.00
07/07/98	-4.80			.00
07/08/98	-4.72			.07
07/09/98	-4.76			.00
07/10/98	-4.67			.00
07/11/98	-4.63			.00
07/12/98	-4.58			.00
07/13/98	-4.39			.00
07/14/98	-3.94			.00
07/15/98	-4.07			.01
07/16/98	-4.28			.00
07/17/98	-4.49			.29
07/18/98	-4.55			.00
07/19/98	-4.02			.00
07/20/98	-3.77			.10
07/21/98	-4.41			.02
07/22/98	-4.65			.01
07/23/98	-3.50			.36
07/24/98	-3.83			.00
07/25/98	-4.07			.00
07/26/98	-3.77			.00
07/27/98	-3.44			.00
07/28/98	-3.65			.00
07/29/98	-4.06			.00
07/30/98	-4.51			.02
07/31/98	-3.54			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 2

Address: 9th Ave. and 15th St.

Serial#: QRM

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	3.84			.00
07/02/98	2.52			.00
07/03/98	1.32			.00
07/04/98	1.37			.00
07/05/98	-.68			.14
07/06/98	-.85			.00
07/07/98	-.89			.00
07/08/98	-.83			.07
07/09/98	-.68			.00
07/10/98	-.81			.00
07/11/98	-.80			.00
07/12/98	-.76			.00
07/13/98	-.83			.00
07/14/98	-.76			.00
07/15/98	-.76			.01
07/16/98	-.77			.00
07/17/98	-.74			.29
07/18/98	-.86			.00
07/19/98	-.82			.00
07/20/98	-.69			.10
07/21/98	-.75			.02
07/22/98	-.79			.01
07/23/98	-.55			.36
07/24/98	.00			.00
07/25/98	-.01			.00
07/26/98	.00			.00
07/27/98	.00			.00
07/28/98	-.20			.00
07/29/98	-.32			.00
07/30/98	-.28			.02
07/31/98	-.74			.62

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Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 3

Address: Sussex Ave. and 15th St.

Serial#: QQZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.00			.00
07/02/98	.00			.00
07/03/98	.00			.00
07/04/98	.00			.00
07/05/98	.02			.14
07/06/98	.00			.00
07/07/98	.00			.00
07/08/98	.01			.07
07/09/98	.00			.00
07/10/98	.00			.00
07/11/98	.00			.00
07/12/98	.00			.00
07/13/98	.00			.00
07/14/98	.00			.00
07/15/98	.00			.01
07/16/98	.00			.00
07/17/98	.03			.29
07/18/98	.00			.00
07/19/98	.00			.00
07/20/98	.02			.10
07/21/98	.01			.02
07/22/98	.00			.01
07/23/98	.07			.36
07/24/98	.00			.00
07/25/98	.00			.00
07/26/98	.00			.00
07/27/98	.00			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	.01			.02
07/31/98	.08			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 4

Address: Sussex Ave. and 15th St.

Serial#: QRC

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.12			.00
07/02/98	.11			.00
07/03/98	.12			.00
07/04/98	.13			.00
07/05/98	.15			.14
07/06/98	.13			.00
07/07/98	.14			.00
07/08/98	.16			.07
07/09/98	.17			.00
07/10/98	.16			.00
07/11/98	.15			.00
07/12/98	.16			.00
07/13/98	.16			.00
07/14/98	.16			.00
07/15/98	.17			.01
07/16/98	.17			.00
07/17/98	.17			.29
07/18/98	.17			.00
07/19/98	.18			.00
07/20/98	.17			.10
07/21/98	.17			.02
07/22/98	.18			.01
07/23/98	.20			.36
07/24/98	.18			.00
07/25/98	.18			.00
07/26/98	.18			.00
07/27/98	.19			.00
07/28/98	.18			.00
07/29/98	.17			.00
07/30/98	.18			.02
07/31/98	.17			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 - 14TH & HEDDEN PL

Address: 14TH ST. & HEDDEN PL.

Serial#: QR1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.00	.00		.00
07/02/98	.01	.00		.00
07/03/98	.00	.00		.00
07/04/98	.00	.00		.00
07/05/98	.03	.00		.14
07/06/98	.00	.00		.00
07/07/98	.00	.00		.00
07/08/98	.00	.00		.07
07/09/98	.00	.00		.00
07/10/98	.00	.00		.00
07/11/98	.00	.00		.00
07/12/98	.00	.00		.00
07/13/98	.00	.00		.00
07/14/98	.00	.00		.00
07/15/98	.00	.00		.01
07/16/98	.00	.00		.00
07/17/98	.01	.00		.29
07/18/98	.00	.00		.00
07/19/98	.00	.00		.00
07/20/98	-.01	.00		.10
07/21/98	.00	.00		.02
07/22/98	.00	.00		.01
07/23/98	.04	.01		.36
07/24/98	.00	.01		.00
07/25/98	.00	.01		.00
07/26/98	.00	.00		.00
07/27/98	.00	.00		.00
07/28/98	.00	.01		.00
07/29/98	.00	.00		.00
07/30/98	.00	.00		.02
07/31/98	.03	.00		.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 7

Address: 6TH ST. & 13TH ST.

Serial#: QPT

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.84			.00
07/02/98	1.85			.00
07/03/98	1.84			.00
07/04/98	1.85			.00
07/05/98	1.88			.14
07/06/98	1.91			.00
07/07/98	1.88			.00
07/08/98	1.84			.07
07/09/98	1.82			.00
07/10/98	1.82			.00
07/11/98	1.81			.00
07/12/98	1.79			.00
07/13/98	1.80			.00
07/14/98	1.80			.00
07/15/98	1.86			.01
07/16/98	1.88			.00
07/17/98	1.85			.29
07/18/98	1.93			.00
07/19/98	1.91			.00
07/20/98	1.85			.10
07/21/98	1.83			.02
07/22/98	1.81			.01
07/23/98	1.81			.36
07/24/98	1.80			.00
07/25/98	1.82			.00
07/26/98	1.78			.00
07/27/98	1.80			.00
07/28/98	1.77			.00
07/29/98	1.82			.00
07/30/98	1.78			.02
07/31/98	1.83			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

Serial#: QO1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	4.03			.00
07/02/98	3.98			.00
07/03/98	4.03			.00
07/04/98	3.88			.00
07/05/98	3.96			.14
07/06/98	3.94			.00
07/07/98	3.93			.00
07/08/98	3.85			.07
07/09/98	3.79			.00
07/10/98	3.85			.00
07/11/98	3.88			.00
07/12/98	3.86			.00
07/13/98	3.86			.00
07/14/98	4.03			.00
07/15/98	4.03			.01
07/16/98	4.11			.00
07/17/98	4.14			.29
07/18/98	3.94			.00
07/19/98	4.01			.00
07/20/98	4.01			.10
07/21/98	4.01			.02
07/22/98	3.96			.01
07/23/98	3.98			.36
07/24/98	3.95			.00
07/25/98	3.82			.00
07/26/98	3.87			.00
07/27/98	3.85			.00
07/28/98	3.95			.00
07/29/98	3.98			.00
07/30/98	3.85			.02
07/31/98	3.85			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

Serial#: QQ7

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.46			.00
07/02/98	.58			.00
07/03/98	.62			.00
07/04/98	.63			.00
07/05/98	.59			.14
07/06/98	.58			.00
07/07/98	.53			.00
07/08/98	.54			.07
07/09/98	.64			.00
07/10/98	.67			.00
07/11/98	.68			.00
07/12/98	.65			.00
07/13/98	.63			.00
07/14/98	.62			.00
07/15/98	.60			.01
07/16/98	.61			.00
07/17/98	.63			.29
07/18/98	.64			.00
07/19/98	.62			.00
07/20/98	.60			.10
07/21/98	.60			.02
07/22/98	.59			.01
07/23/98	.60			.36
07/24/98	.54			.00
07/25/98	.59			.00
07/26/98	.61			.00
07/27/98	.57			.00
07/28/98	.58			.00
07/29/98	.59			.00
07/30/98	.53			.02
07/31/98	.55			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 2

Address: Unity and Valley St.

Serial#: QQ2

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.92			.00
07/02/98	.91			.00
07/03/98	.96			.00
07/04/98	.97			.00
07/05/98	.96			.14
07/06/98	.91			.00
07/07/98	.92			.00
07/08/98	.89			.07
07/09/98	.97			.00
07/10/98	.86			.00
07/11/98	.92			.00
07/12/98	.92			.00
07/13/98	.91			.00
07/14/98	.95			.00
07/15/98	.91			.01
07/16/98	.88			.00
07/17/98	.90			.29
07/18/98	.93			.00
07/19/98	.95			.00
07/20/98	.93			.10
07/21/98	.89			.02
07/22/98	.89			.01
07/23/98	.90			.36
07/24/98	.92			.00
07/25/98	.97			.00
07/26/98	1.01			.00
07/27/98	.99			.00
07/28/98	1.01			.00
07/29/98	1.07			.00
07/30/98	1.07			.02
07/31/98	1.13			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 3

Address: Fabyan Pl. near Exit Ramp of I-78

Serial#: QRD

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.66			.00
07/02/98	.63			.00
07/03/98	.64			.00
07/04/98	.62			.00
07/05/98	.65			.14
07/06/98	.63			.00
07/07/98	.63			.00
07/08/98	.64			.07
07/09/98	.64			.00
07/10/98	.62			.00
07/11/98	.62			.00
07/12/98	.63			.00
07/13/98	.61			.00
07/14/98	.57			.00
07/15/98	.58			.01
07/16/98	.60			.00
07/17/98	.59			.29
07/18/98	.61			.00
07/19/98	.65			.00
07/20/98	.61			.10
07/21/98	.61			.02
07/22/98	.62			.01
07/23/98	.69			.36
07/24/98	.69			.00
07/25/98	.72			.00
07/26/98	.77			.00
07/27/98	.60			.00
07/28/98	.34			.00
07/29/98	.39			.00
07/30/98	.36			.02
07/31/98	.40			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 4

Address: N. Lindon Ln between House # 63 and 65

Serial#: QUI

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.65			.00
07/02/98	1.65			.00
07/03/98	1.66			.00
07/04/98	1.62			.00
07/05/98	1.69			.14
07/06/98	1.62			.00
07/07/98	1.61			.00
07/08/98	1.61			.07
07/09/98	1.63			.00
07/10/98	1.62			.00
07/11/98	1.70			.00
07/12/98	1.77			.00
07/13/98	1.83			.00
07/14/98	1.81			.00
07/15/98	1.73			.01
07/16/98	1.74			.00
07/17/98	2.02			.29
07/18/98	1.93			.00
07/19/98	1.94			.00
07/20/98	1.89			.10
07/21/98	1.83			.02
07/22/98	1.87			.01
07/23/98	1.95			.36
07/24/98	2.07			.00
07/25/98	2.07			.00
07/26/98	2.04			.00
07/27/98	1.74			.00
07/28/98	1.33			.00
07/29/98	1.33			.00
07/30/98	1.31			.02
07/31/98	1.40			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 1

Address: Elizabeth Ave. near Mapes Ave.

Serial#: QLL

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	1.52			.00
07/02/98	1.50			.00
07/03/98	1.41			.00
07/04/98	1.38			.00
07/05/98	1.42			.14
07/06/98	1.35			.00
07/07/98	1.32			.00
07/08/98	1.45			.07
07/09/98	1.39			.00
07/10/98	1.27			.00
07/11/98	1.22			.00
07/12/98	1.24			.00
07/13/98	1.25			.00
07/14/98	1.44			.00
07/15/98	1.48			.01
07/16/98	1.37			.00
07/17/98	1.38			.29
07/18/98	1.39			.00
07/19/98	1.34			.00
07/20/98	1.40			.10
07/21/98	1.39			.02
07/22/98	1.32			.01
07/23/98	1.38			.36
07/24/98	1.33			.00
07/25/98	1.29			.00
07/26/98	1.29			.00
07/27/98	1.22			.00
07/28/98	1.23			.00
07/29/98	1.32			.00
07/30/98	1.21			.02
07/31/98	1.33			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 2

Address: Weequahic Park

Serial#: QUN

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.66			.00
07/02/98	.65			.00
07/03/98	.69			.00
07/04/98	.74			.00
07/05/98	.71			.14
07/06/98	.71			.00
07/07/98	.74			.00
07/08/98	.75			.07
07/09/98	.72			.00
07/10/98	.72			.00
07/11/98	.73			.00
07/12/98	.76			.00
07/13/98	.76			.00
07/14/98	.74			.00
07/15/98	.71			.01
07/16/98	.72			.00
07/17/98	.71			.29
07/18/98	.71			.00
07/19/98	.70			.00
07/20/98	.68			.10
07/21/98	.73			.02
07/22/98	.64			.01
07/23/98	.66			.36
07/24/98	.68			.00
07/25/98	.72			.00
07/26/98	.71			.00
07/27/98	.68			.00
07/28/98	.67			.00
07/29/98	.70			.00
07/30/98	.70			.02
07/31/98	.72			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 3

Address: Jabez Ave. near Backus St.

Serial#: QTZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	2.91			.00
07/02/98	2.80			.00
07/03/98	2.65			.00
07/04/98	2.58			.00
07/05/98	2.87			.14
07/06/98	2.76			.00
07/07/98	2.50			.00
07/08/98	2.49			.07
07/09/98	2.28			.00
07/10/98	2.12			.00
07/11/98	1.93			.00
07/12/98	2.09			.00
07/13/98	2.01			.00
07/14/98	1.90			.00
07/15/98	1.94			.01
07/16/98	1.80			.00
07/17/98	2.13			.29
07/18/98	1.57			.00
07/19/98	1.54			.00
07/20/98	1.77			.10
07/21/98	1.60			.02
07/22/98	1.57			.01
07/23/98	1.77			.36
07/24/98	1.64			.00
07/25/98	1.65			.00
07/26/98	1.73			.00
07/27/98	1.81			.00
07/28/98	1.69			.00
07/29/98	1.68			.00
07/30/98	1.64			.02
07/31/98	1.87			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4

Address: Wilson and Ave. P

Serial#: QT1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98				.00
07/02/98				.00
07/03/98				.00
07/04/98				.00
07/05/98				.14
07/06/98				.00
07/07/98				.00
07/08/98				.07
07/09/98				.00
07/10/98	.22			.00
07/11/98	.06			.00
07/12/98	.02			.00
07/13/98	.04			.00
07/14/98	.16			.00
07/15/98	.02			.01
07/16/98	.06			.00
07/17/98	.07			.29
07/18/98	.05			.00
07/19/98	.01			.00
07/20/98	.06			.10
07/21/98	.09			.02
07/22/98	.04			.01
07/23/98	.05			.36
07/24/98	.06			.00
07/25/98	.06			.00
07/26/98	.09			.00
07/27/98	.02			.00
07/28/98	.11			.00
07/29/98	.03			.00
07/30/98	.06			.02
07/31/98	.13			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 5

Address: Doremus Ave. near Delancy St.

Serial#: QUO

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.47			.00
07/02/98	.41			.00
07/03/98	.35			.00
07/04/98	.27			.00
07/05/98	.32			.14
07/06/98	.38			.00
07/07/98	.37			.00
07/08/98	.42			.07
07/09/98	.38			.00
07/10/98	.47			.00
07/11/98	.39			.00
07/12/98	.33			.00
07/13/98	.35			.00
07/14/98	.52			.00
07/15/98	.37			.01
07/16/98	.32			.00
07/17/98	.34			.29
07/18/98	.25			.00
07/19/98	.24			.00
07/20/98	.30			.10
07/21/98	.35			.02
07/22/98	.35			.01
07/23/98	.37			.36
07/24/98	.33			.00
07/25/98	.35			.00
07/26/98	.33			.00
07/27/98	.42			.00
07/28/98	.46			.00
07/29/98	.37			.00
07/30/98	.41			.02
07/31/98	.55			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 6

Address: Near 355 5th St.

Serial#: QU1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	4.34			.00
07/02/98	4.32			.00
07/03/98	4.32			.00
07/04/98	4.21			.00
07/05/98	4.23			.14
07/06/98	4.10			.00
07/07/98	4.13			.00
07/08/98	4.07			.07
07/09/98	4.05			.00
07/10/98	4.03			.00
07/11/98	4.06			.00
07/12/98	3.95			.00
07/13/98	3.92			.00
07/14/98	3.90			.00
07/15/98	3.89			.01
07/16/98	3.63			.00
07/17/98	4.13			.29
07/18/98	4.09			.00
07/19/98	3.99			.00
07/20/98	4.07			.10
07/21/98	4.02			.02
07/22/98	3.91			.01
07/23/98	3.94			.36
07/24/98	3.93			.00
07/25/98	3.94			.00
07/26/98	4.02			.00
07/27/98	3.93			.00
07/28/98	4.05			.00
07/29/98	4.05			.00
07/30/98	3.98			.02
07/31/98	4.09			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 7

Address: Verona St. near Broadway

Serial#: QUK

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.43			.00
07/02/98	.40			.00
07/03/98	.42			.00
07/04/98	.40			.00
07/05/98	.42			.14
07/06/98	.37			.00
07/07/98	.37			.00
07/08/98	.38			.07
07/09/98	.38			.00
07/10/98	.38			.00
07/11/98	.39			.00
07/12/98	.40			.00
07/13/98	.39			.00
07/14/98	.39			.00
07/15/98	.40			.01
07/16/98	.39			.00
07/17/98	.53			.29
07/18/98	.40			.00
07/19/98	.40			.00
07/20/98	.40			.10
07/21/98	.40			.02
07/22/98	.41			.01
07/23/98	.42			.36
07/24/98	.41			.00
07/25/98	.40			.00
07/26/98	.40			.00
07/27/98	.40			.00
07/28/98	.40			.00
07/29/98	.40			.00
07/30/98	.40			.02
07/31/98	.50			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 8

Address: Earl and Frelinghuysen

Serial#: QT3

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.00			.00
07/02/98	.00			.00
07/03/98	.00			.00
07/04/98	.00			.00
07/05/98	.00			.14
07/06/98	.00			.00
07/07/98	.00			.00
07/08/98	.00			.07
07/09/98	.00			.00
07/10/98	.00			.00
07/11/98	.00			.00
07/12/98	.00			.00
07/13/98	.00			.00
07/14/98	.00			.00
07/15/98	.00			.01
07/16/98	.00			.00
07/17/98	.07			.29
07/18/98	.00			.00
07/19/98	.00			.00
07/20/98	.00			.10
07/21/98	.00			.02
07/22/98	.00			.01
07/23/98	.04			.36
07/24/98	.00			.00
07/25/98	.00			.00
07/26/98	.00			.00
07/27/98	.00			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	.00			.02
07/31/98	.00			.62

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 9

Address: Branch Brook Park Lake
Overflow

Serial#: QLF

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98	.35			.00
07/02/98	.21			.00
07/03/98	.16			.00
07/04/98	.12			.00
07/05/98	.17			.14
07/06/98	.14			.00
07/07/98	.10			.00
07/08/98	.11			.07
07/09/98	.14			.00
07/10/98	.13			.00
07/11/98	.06			.00
07/12/98	.05			.00
07/13/98	.05			.00
07/14/98	.02			.00
07/15/98	.03			.01
07/16/98	.03			.00
07/17/98	.08			.29
07/18/98	.17			.00
07/19/98	.10			.00
07/20/98	.07			.10
07/21/98	.06			.02
07/22/98	.06			.01
07/23/98	.10			.36
07/24/98	.15			.00
07/25/98	.08			.00
07/26/98	.06			.00
07/27/98	.00			.00
07/28/98	.00			.00
07/29/98	.00			.00
07/30/98	.00			.02
07/31/98	.03			.62

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Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 10

Address: Weequahic Park Lake Overflow

Serial#: QUX

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
07/01/98				.00
07/02/98				.00
07/03/98				.00
07/04/98				.00
07/05/98				.14
07/06/98				.00
07/07/98				.00
07/08/98	1.69			.07
07/09/98	1.64			.00
07/10/98	1.53			.00
07/11/98	1.57			.00
07/12/98	1.54			.00
07/13/98	1.57			.00
07/14/98	1.48			.00
07/15/98	1.44			.01
07/16/98	1.46			.00
07/17/98	1.47			.29
07/18/98	1.49			.00
07/19/98	1.48			.00
07/20/98	1.46			.10
07/21/98	1.54			.02
07/22/98	1.47			.01
07/23/98	1.44			.36
07/24/98	1.43			.00
07/25/98	1.32			.00
07/26/98	1.33			.00
07/27/98	1.31			.00
07/28/98	1.26			.00
07/29/98	1.30			.00
07/30/98	1.37			.02
07/31/98	1.62			.62

ALL — AUGUST '98

Newark CSO Discharge Characterization Study

August Flow Metering Report

American Sigma flow meters have been installed at 24 CSO locations, 8 incoming sewer lines from East Orange, 4 outgoing sewer lines to surrounding municipalities, 10 internal Newark sewer lines and 4 points of flow on PVSC/Newark Interceptors. The flow meters use Doppler technology and are equipped with one, two or three probes. Each probe is capable of measuring the level and velocity in a single conduit. The level and velocity measurements are then used to calculate the flow rate in each conduit.

At CSO locations, levels and velocities are measured in each sewer line influent to the regulator chamber and at *either* the overflow to the receiving water *or* downstream of the regulator chamber in the sewer line carrying flow to the interceptor. Therefore many CSO locations required the installation of more than one meter with multiple probes.

Each graph/table in this Monthly Flow Metering Report represents the average daily flow rate(s) calculated by a single flow meter. Graphs/tables representing a flow meter with one probe will include one flow rate (Flow1), meters with two probes, two flow rates (Flow1 and Flow2), and meters with three probes, three flow rates (Flow1, Flow2 and Flow3).

The flow rates presented in this report are considered "raw" data, that is it has not yet been adjusted for transient field conditions such as electronic drift, pipe debris, etc. These adjustments will be made during the modeling phase of the project. The size and type of each flow conduit is listed in the attached Flow Meter Report Key.

Total daily rainfall is also included in the graphs/tables. This rainfall is the average of the five rain gauges located throughout the City.

Special notes:

Flow meter equipment has been removed from CSO 010 - Clay Street to prevent damage during ongoing gunite work. Upon completion of this work, the meters will be reinstalled and new pipe dimensions profiled.

Graphs/tables for flow meters installed on the interceptors are not yet available. This equipment is being fine tuned and flow data will be forthcoming.

Newark CSO Discharge Characterization Study

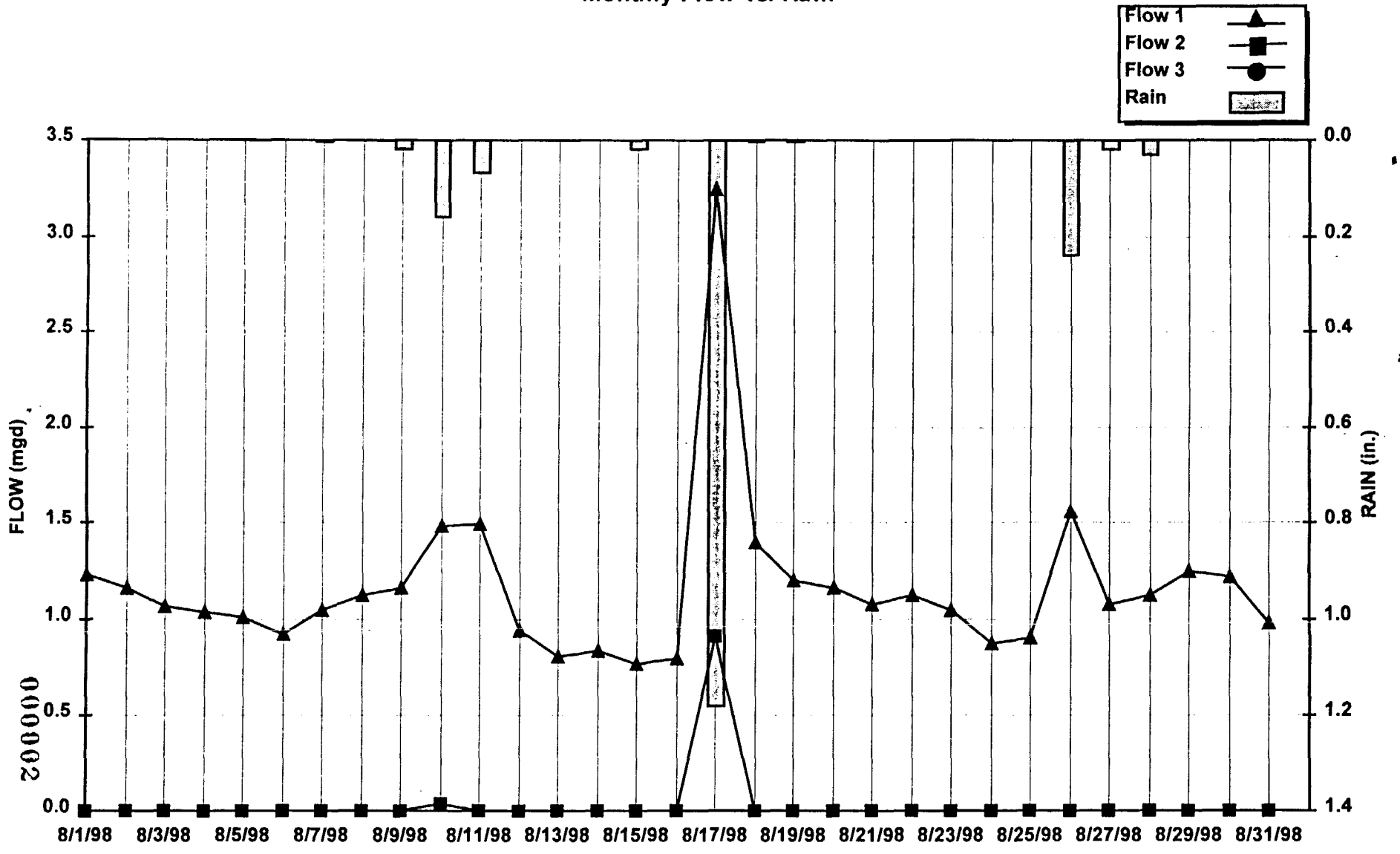
Flow Meter Report Key

Region/Location	Meter Serial Number	Flow1	Flow2	Flow3
CSO 002 - Verona Ave	QR8	54.75" Influent	72"W x 58.75"H Overflow	
CSO 004/005 - Herbert Pl. - Influent	QTQ	48" Influent	24" Influent	
CSO 004/005 - Herbert Pl. - Overflows	QTP	51" Overflow	48.5"H x 72.4"W Overflow	
CSO 006 - Oriental Ave Influent	QUL	48" Influent		
CSO 006 - Orential Ave Overflow 10	QUJ	54" Overflow		
CSO 007 - Third Ave	QR6	15" Influent	48"W Overflow Weir	
CSO 008 - Fourth Ave	QQD	45"H x 25.75"W Influent	72"W x 53"H Overflow	
CSO 009B - Clay St Influent	QRG	18" Influent		
CSO 009B - Clay St Overflow	QU3	18" Overflow		
CSO 009C - Clay St	QRW	15.2" Influent	15.1" Overflow	
CSO 010 - Clay St Influents	QTR	To Be Profiled	To be Profiled	
CSO 010 - Clay St Overflow North Pipe	QPS	100"W x75.3"H Overflow		
CSO 010 - Clay St Overflow South Pipe	QUM	100"W x75.3"H Overflow		
CSO 011 - Orange St Influent 20	QRF	15" Influent		
CSO 011 - Orange St influent and overflow	QRZ	18" Influent	22.5" Overflow	
CSO 012 - Bridge St	QR7	15" Influent	48"W Overflow Weir	
CSO 013 - Rector St	QUY	62" Influent	45"W x 54"H Influent	79.5"W x 66.5"H Overflow
CSO 014 - Saybrook Pl Influent and Overflow	QRV	75.75"H x74"W Influent	102.5"W x 83"H Overflow	
CSO 015 - City Dock Influent1	QQT	12" Influent		
CSO 015 - City Dock Influent2	QU2	18" Influent		
CSO 015 - City Dock Influent3	QPV	36" Influent		
CSO 015 - City Dock Influent4	QPQ	108"W x 88"H Influent (Siphon)		
CSO 015 - City Dock Overflow	QLK	87"H x 108"W Overflow		
CSO 016 - Jackson St	QTO	56.5" Influent	12" Influent	72"W Overflow Weir
CSO 017 - Polk St 30	QUG	85" Influent	97" Overflow Weir	
CSO 018 - Freeman St Influent	QUF	28.5" Influent	18.25" Influent	
CSO 018 - Freeman St Influent&Overflow	QU0	24.2" Influent	44"W Overflow Weir	
CSO 022 - Roanoke Ave	QUZ	60" Influnet	60" Overflow	
CSO 023a - Adams St	QR4	64"H x 51.5"W Influent	88"W x 12"H Overflow	
CSO 023b - Adams St Influent	QO4	48" Influent		
CSO 023b - Adams St overflow	QPP	42" Overflow		
CSO 025 - Peddie St unregulated	QUE	192"W x 80"H Influent	191"W x 85"H Influent	
CSO 025 - Peddie St regulated	QO7	48"H x 48"W Regulated Flow		
CSO 026 - Queen unregulated	QQU	102.5"W x 61"H Influent		
CSO 026 - Queen regulated 40	QQV	47.3"H x 48.2"W Regulated Flow		
CSO 027 - Waverly	QRY	96" Influent	96" Overflow	
CSO 030 - Wheeler/Ave A	QUD	56" Influent	66" Influent	51.75"H x 11.6"H Overflow
East Orange No. 1	QRH	49.25"H x 32.75"W		
East Orange No. 2	QRM	48.8"H x 33.4"W		
East Orange No. 3	QQZ	33"		
East Orange No. 4	QRC	12"		
East Orange No. 5/6	QR1	33"	18.75"	
East Orange No. 7	QPT	30"		
East Orange No. 8	QO1	24.25"		
Outgoing No. 1	QQ7	12"		
Outgoing No. 2 50	QQ2	20"		
Outgoing No. 3	QRD	15"		
Outgoing No. 4	QUI	18.25"		
Newark No. 1	QLL	36"		
Newark No. 2	QUN	18.25"		
Newark No. 3	QTZ	47.1"		
Newark No. 4	QT1	45"W x 48"H		
Newark No. 5	QUO	21.1"		
Newark No. 6	QU1	24.5"		
Newark No. 7 58	QUK	24.4"		
Newark No. 8	QT3	18"		
Newark No. 9	QLF	102"W x 24"H		
Newark No. 10	QUX	2 - 20.5"		

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690250

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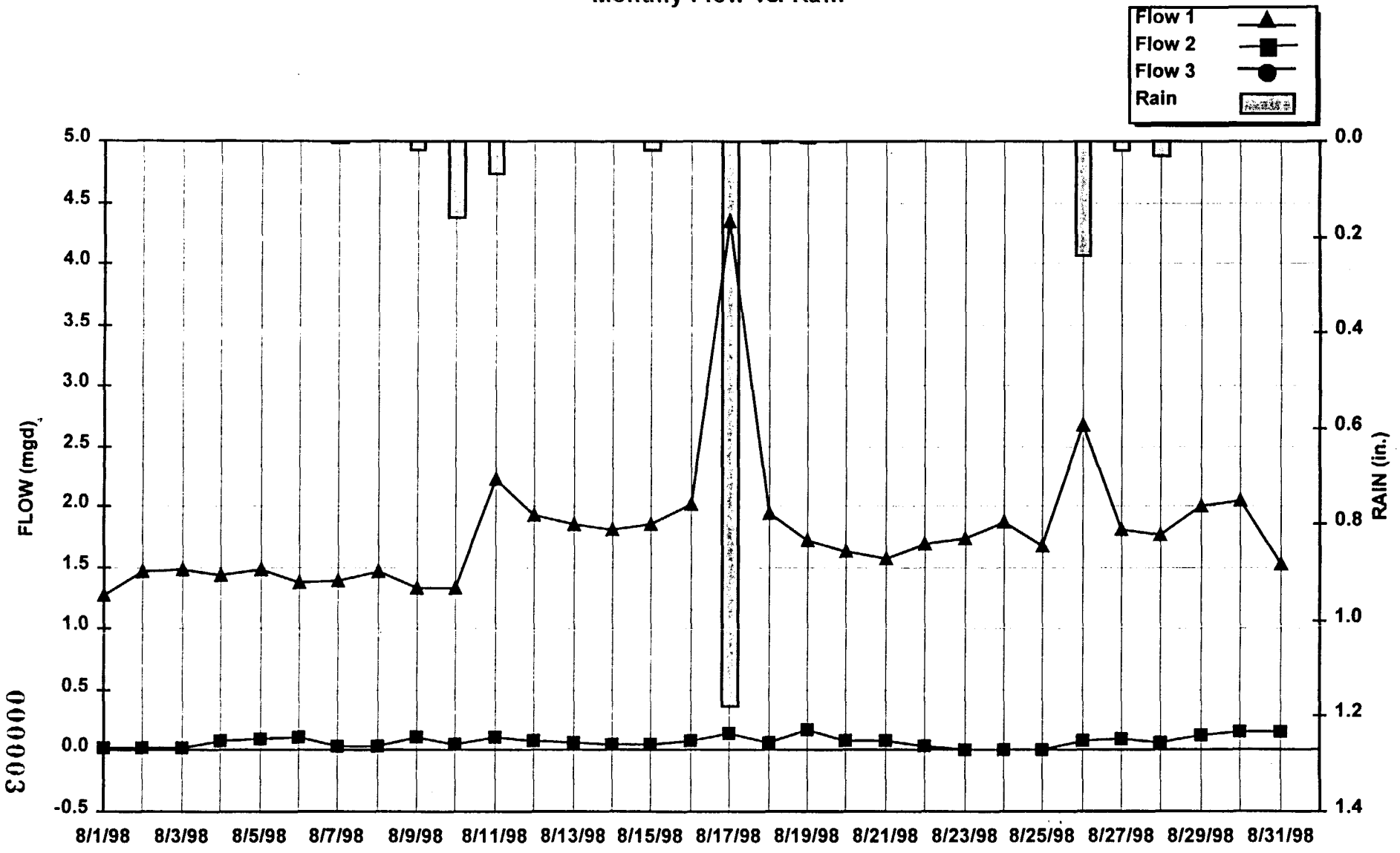
CSO 002 - VERONA AVE
Address: Verona Ave. and McCarter Hwy
Serial#: QR8

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy
Serial#: QTQ

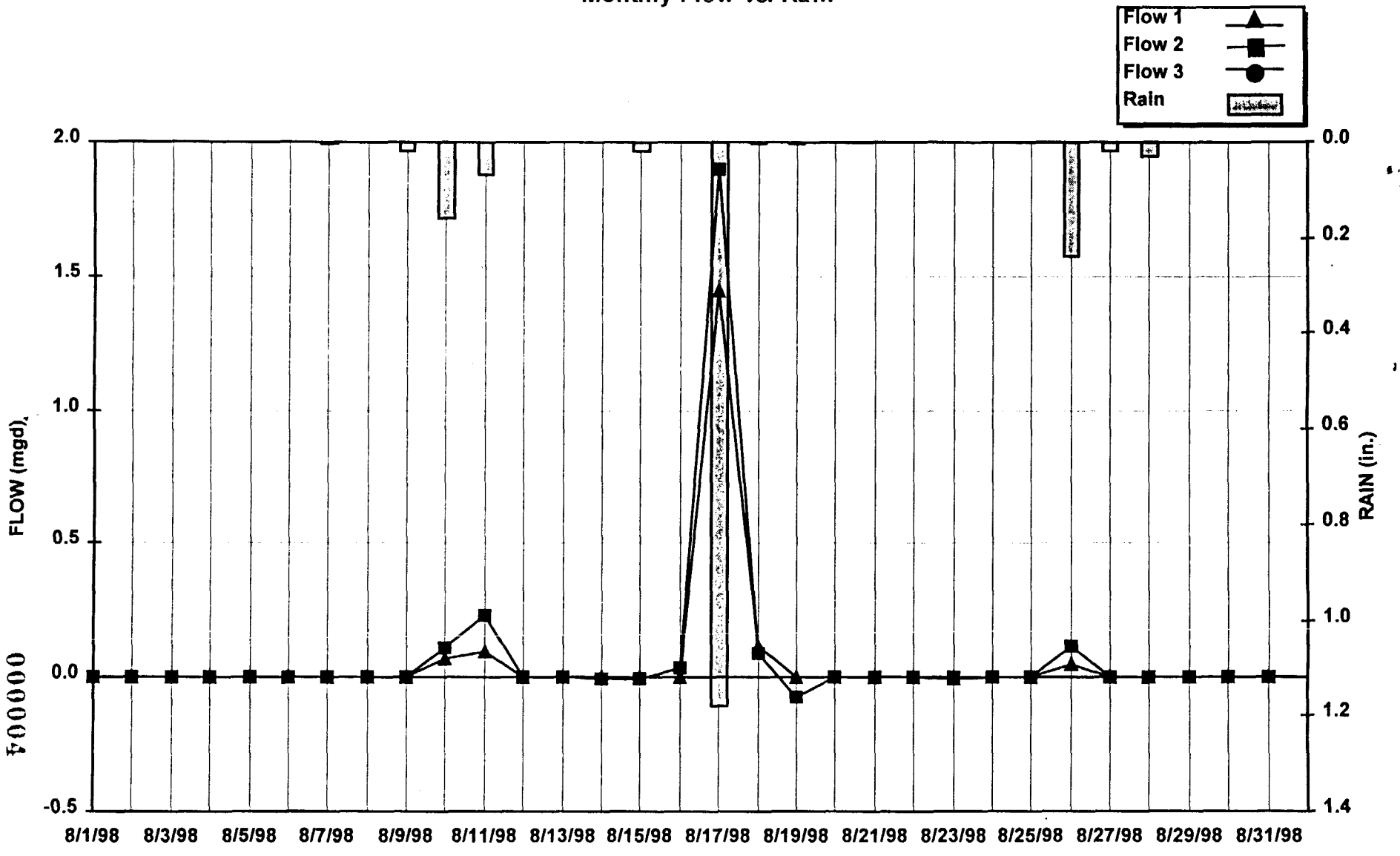
000003

863690251

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy
Serial#: QTP

000004

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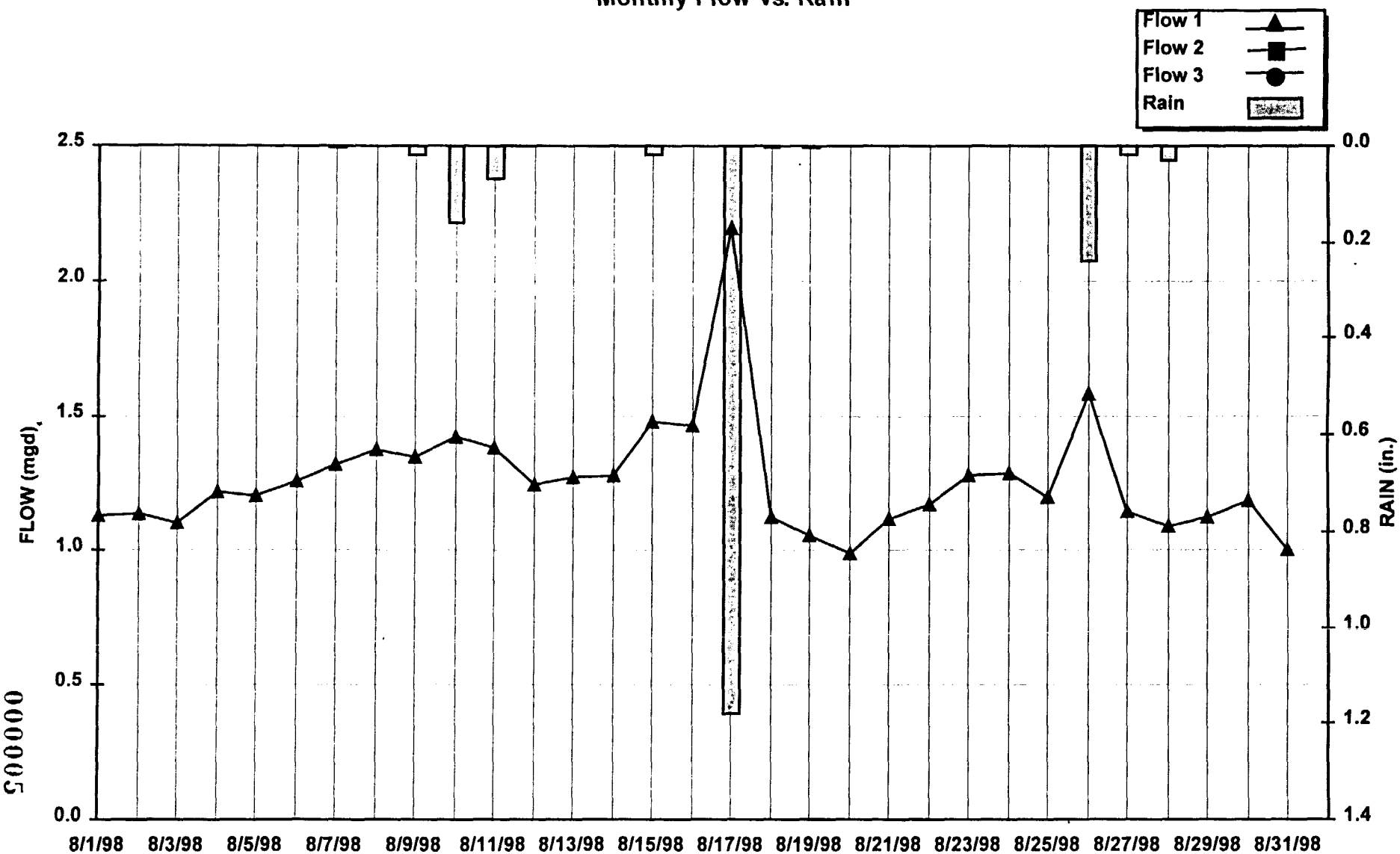
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



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000005

CSO 006 - ORIENTAL AVE Influent

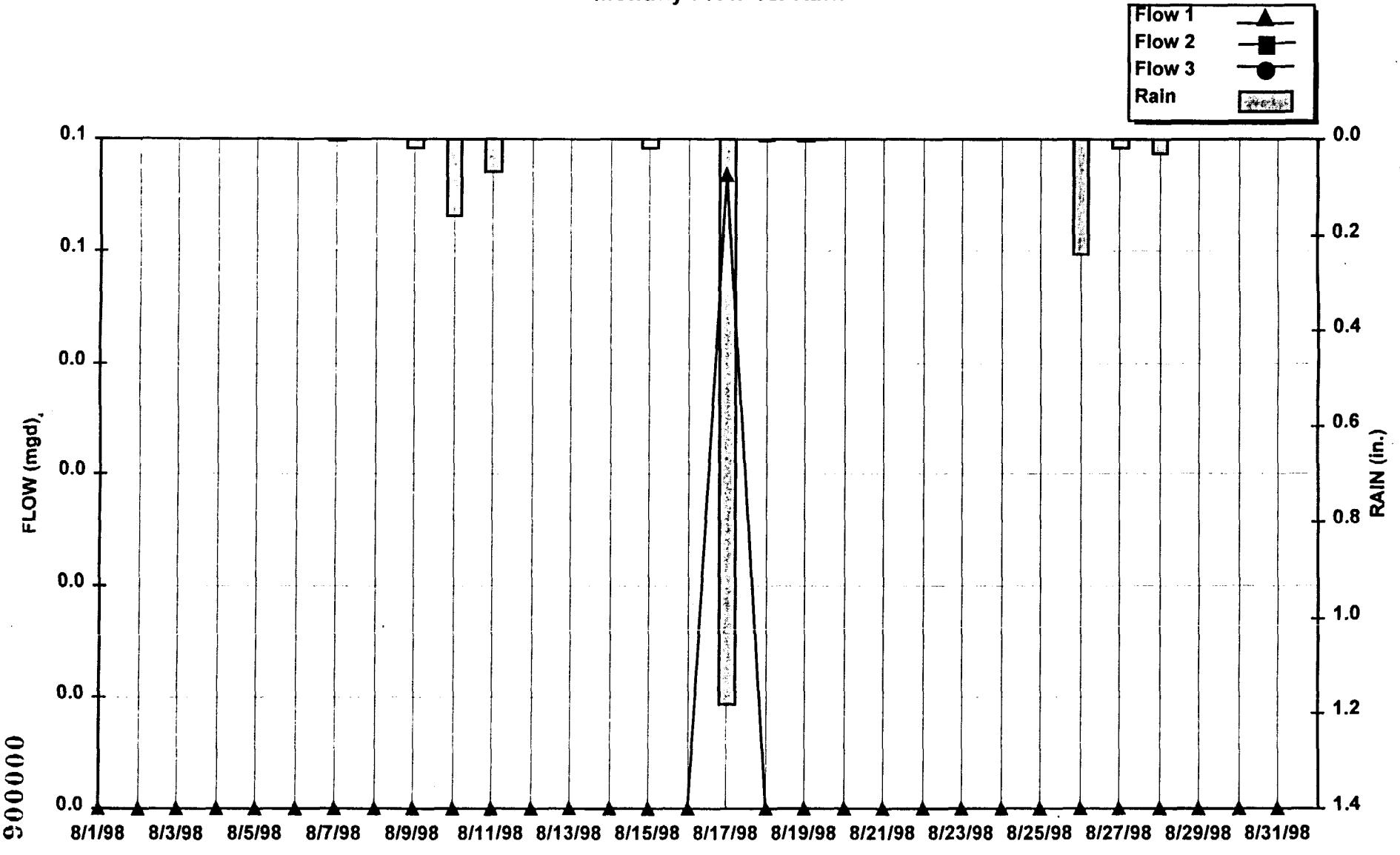
Address: Broadway and Second St.

Serial#: QUL

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



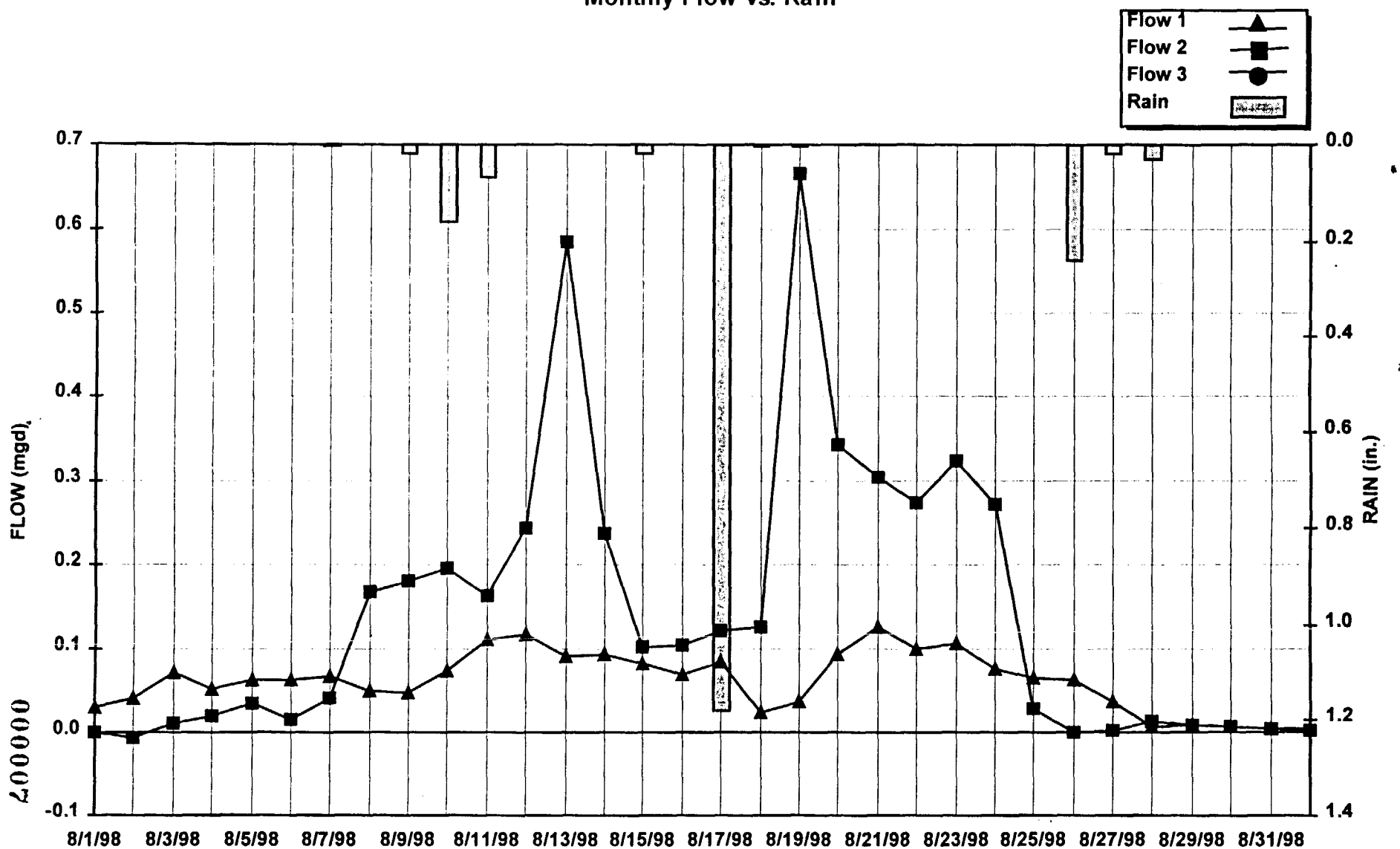
CSO 006 - ORIENTAL AVE Overflow
Address: Broadway and Second St.
Serial#: QUJ

863690254
000006

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



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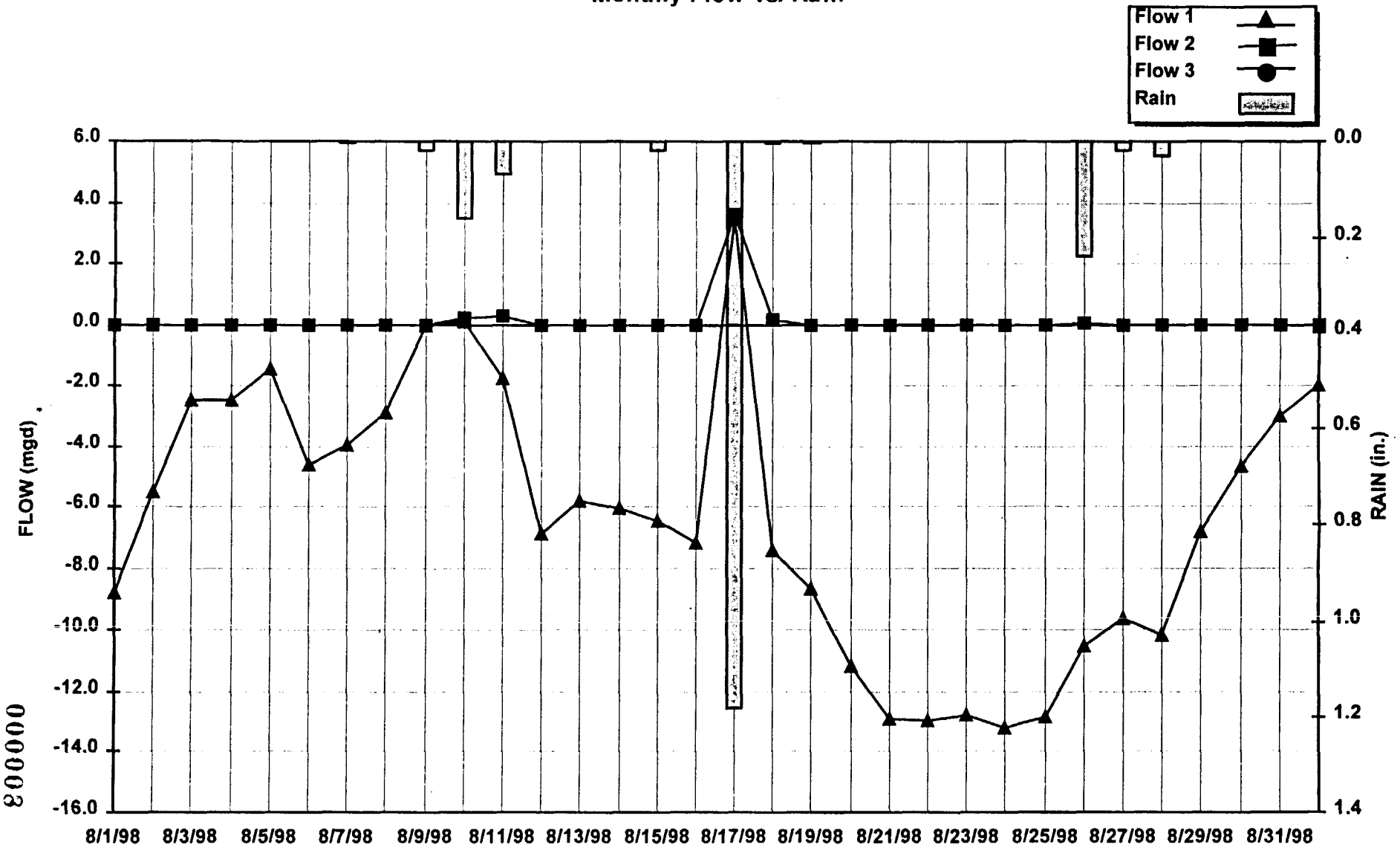
CSO 007 - THIRD AVE
Address: Third Ave. and Passaic St.
Serial#: QR6

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 008 - FOURTH AVE
Address: Fourth Ave. and Passaic St.
Serial#: QQD

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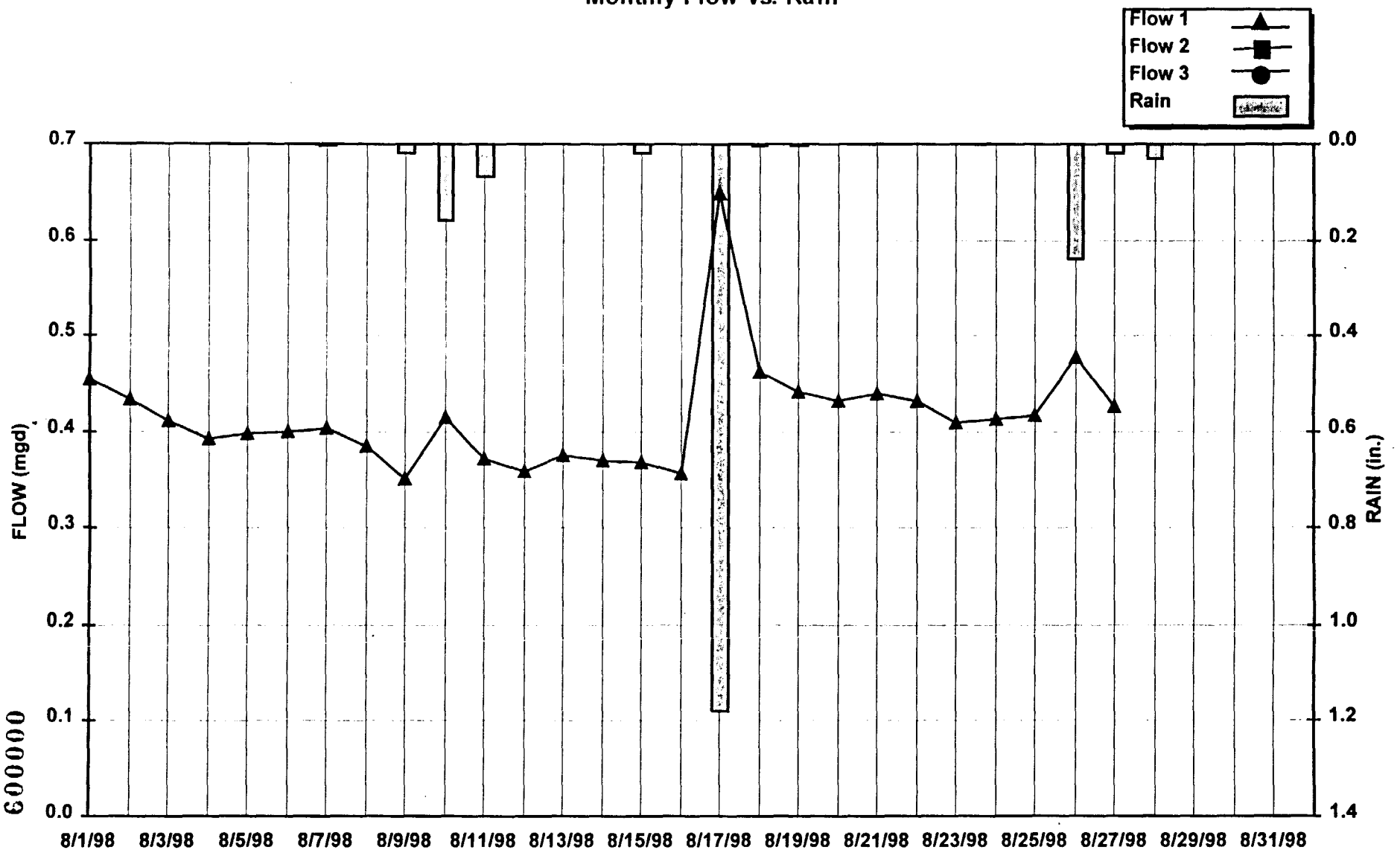
000003

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Influent
Address: Clay St. at Passaic St.
Serial#: QRG

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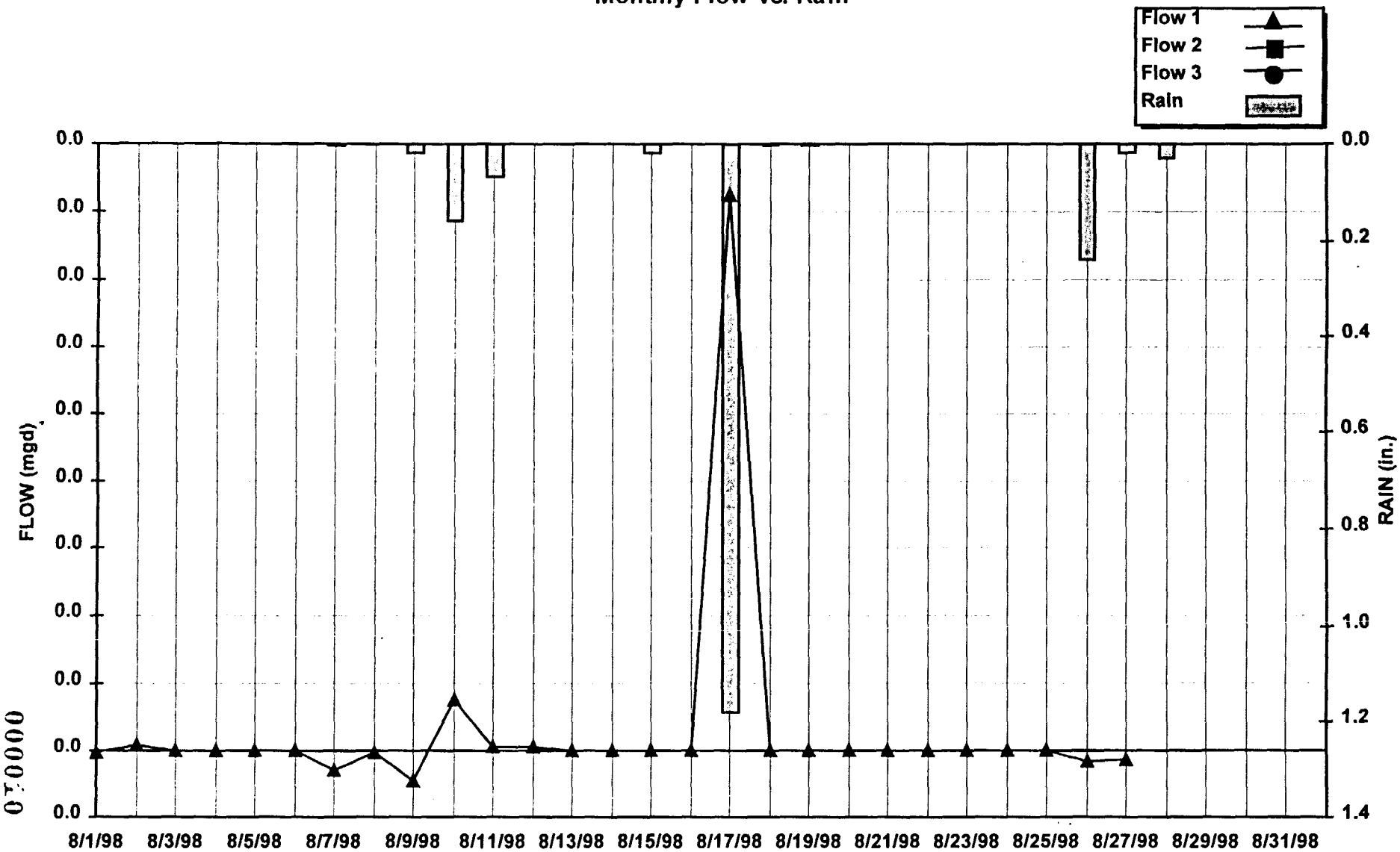
000009

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Overflow

Address: Clay St. at Passaic St.

Serial#: QU3

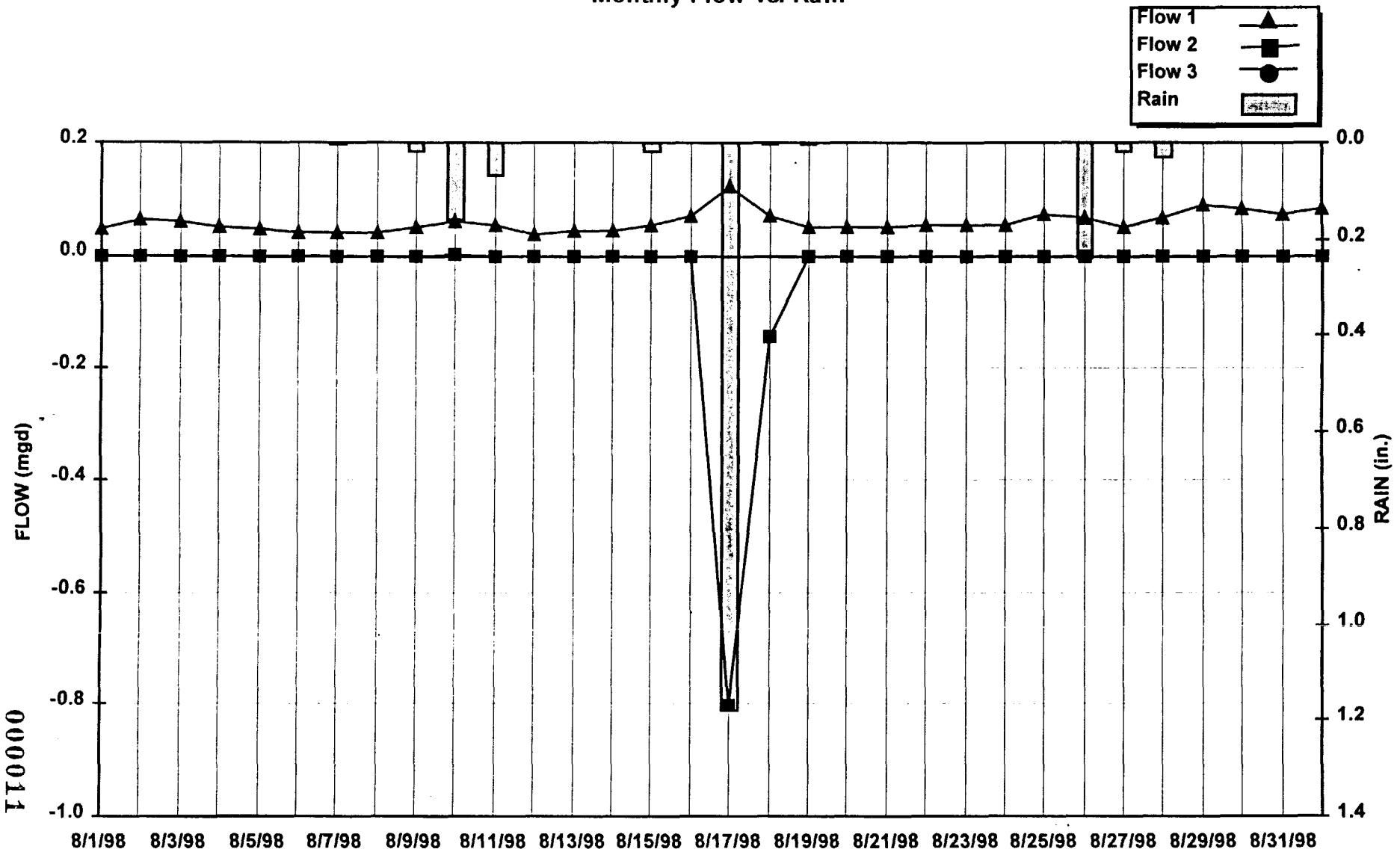
000010

863690258

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

Serial#: QRW

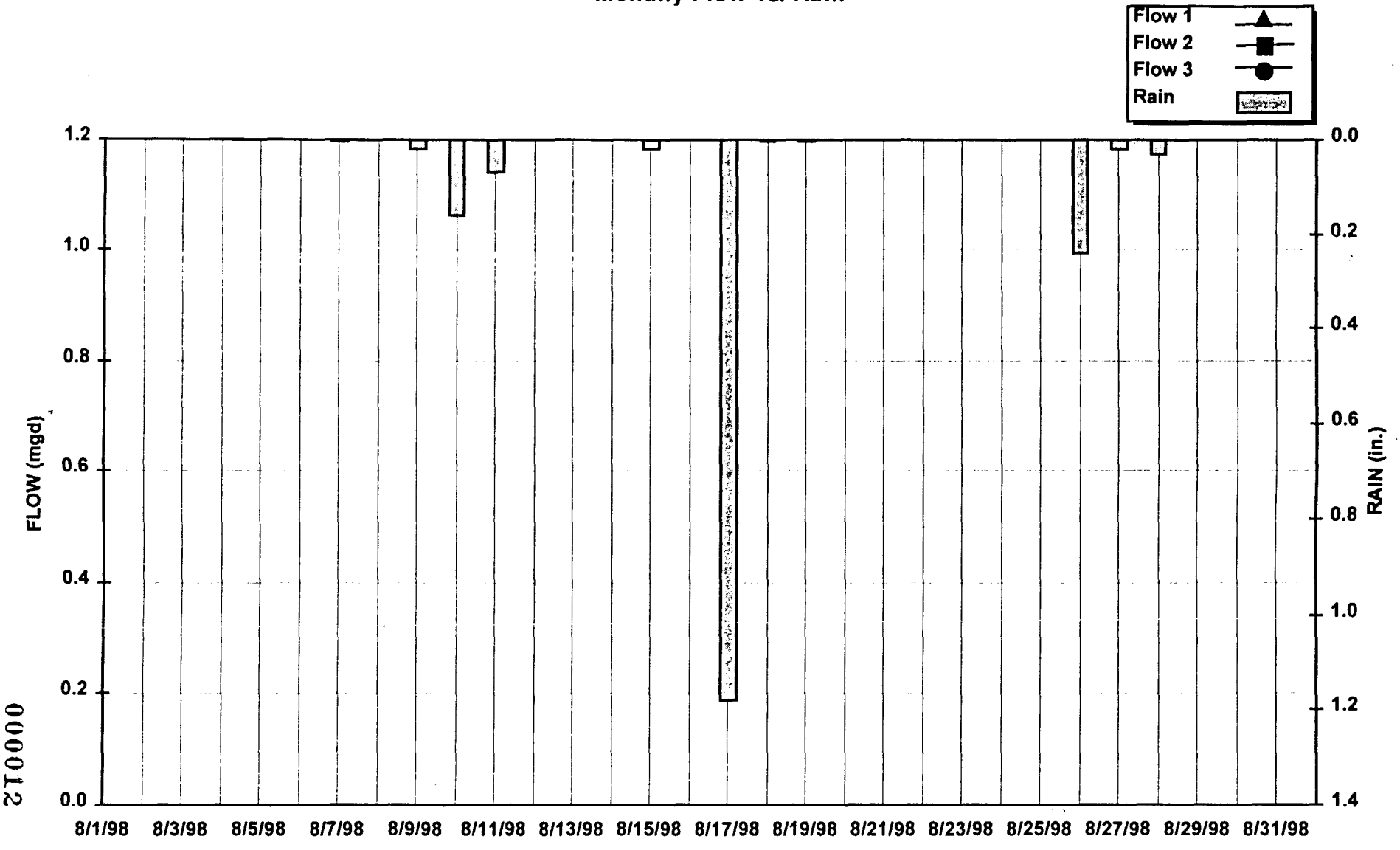
000011

863690259

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Influents
Address: Clay St. at McCarter Hwy
Serial#: QTR

000012

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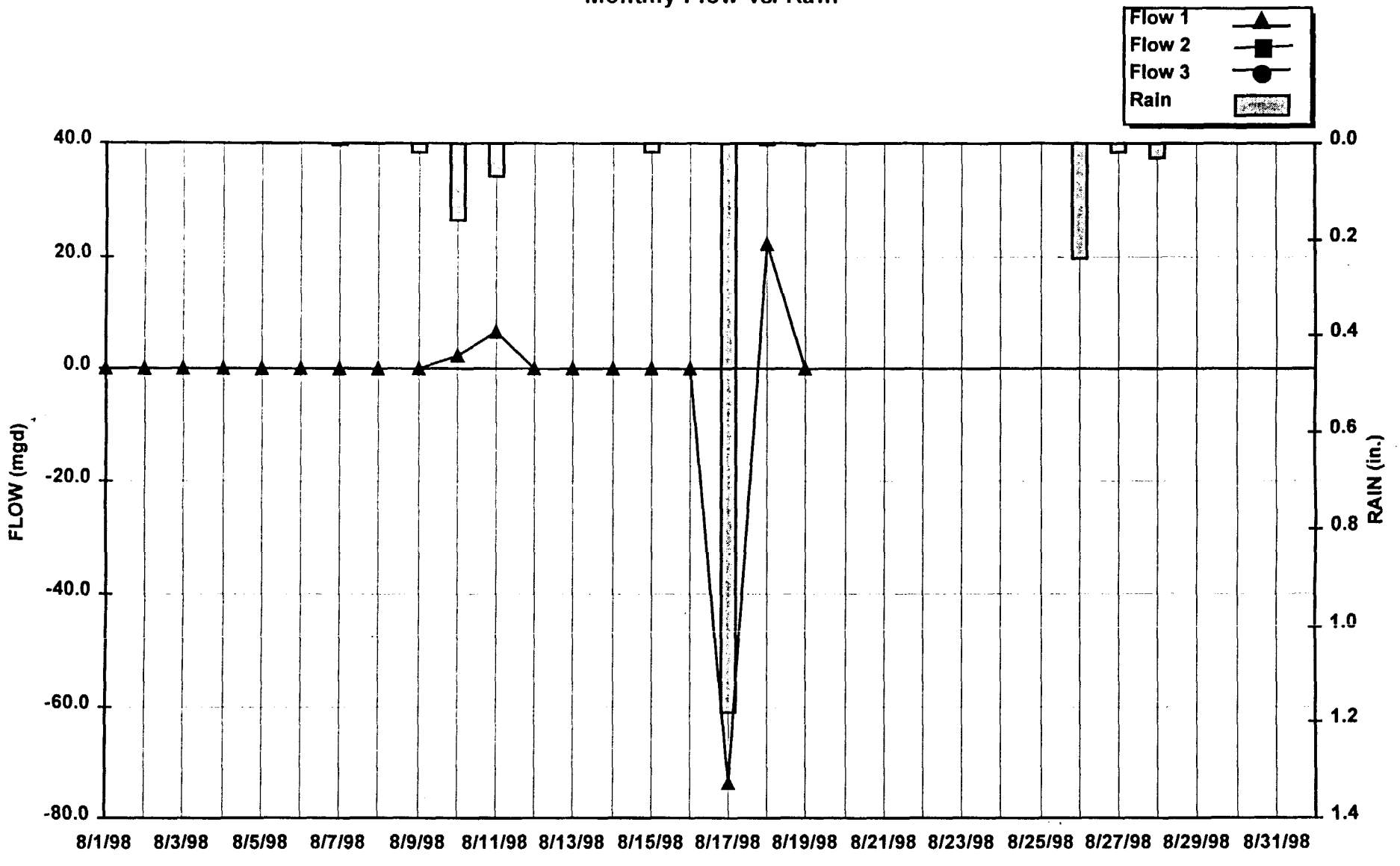
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow North Pipe

Address: Clay St. at Passaic St.

Serial#: QPS

000013

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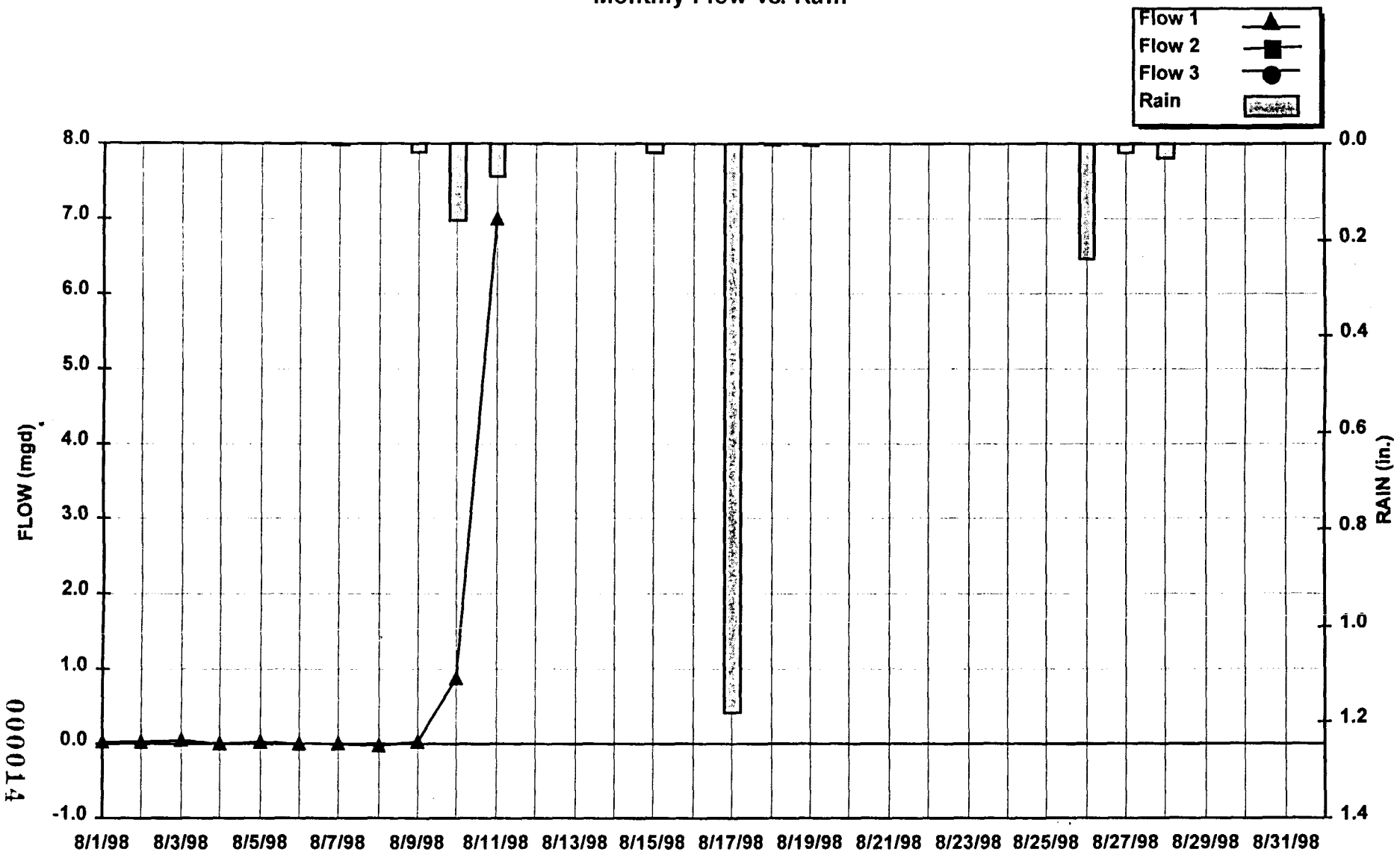
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



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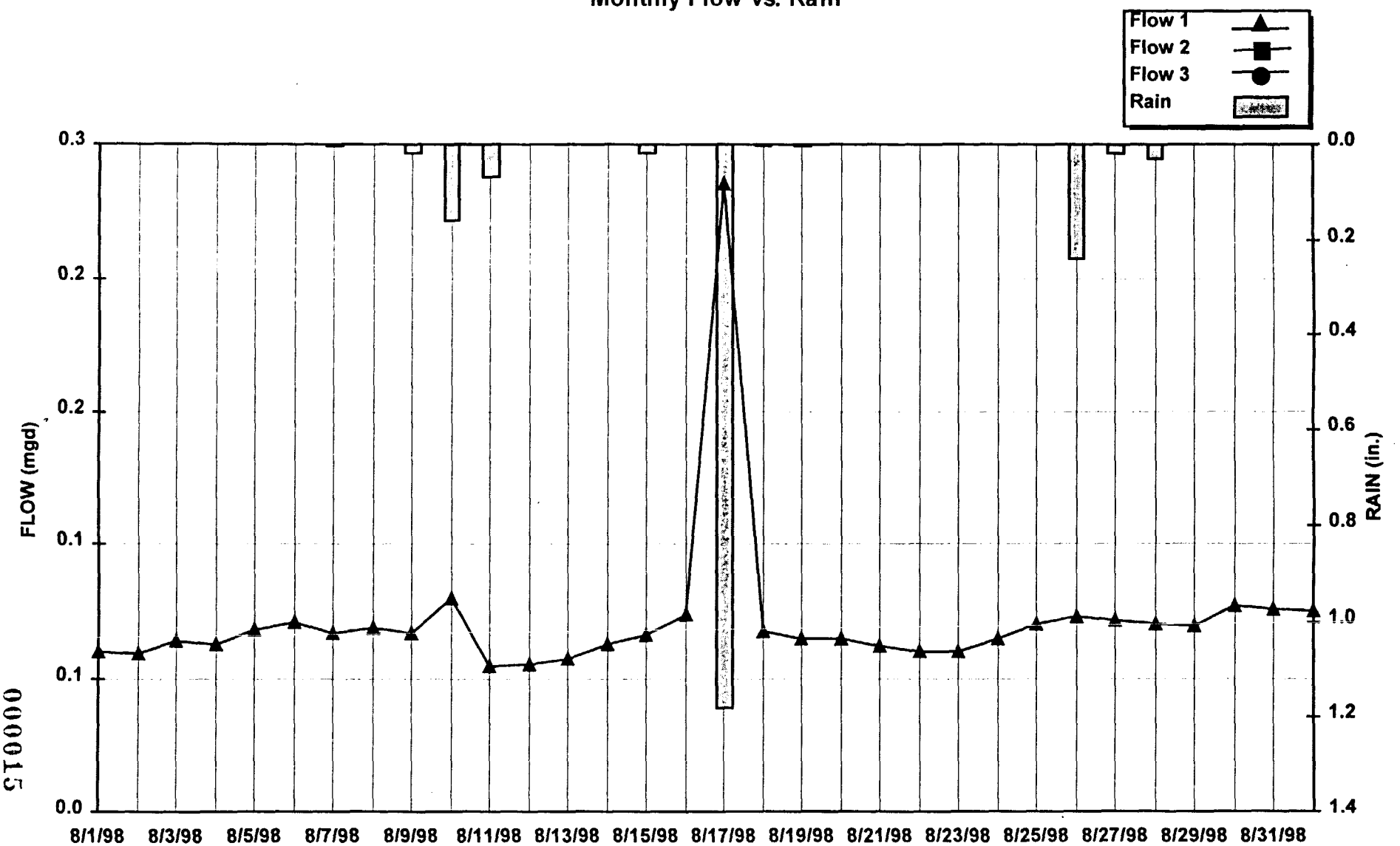
CSO 010 - CLAY ST Overflow South Pipe
Address: Clay St. at Passaic St.
Serial#: QUM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000015

863690263

CSO 011 - ORANGE ST Influent

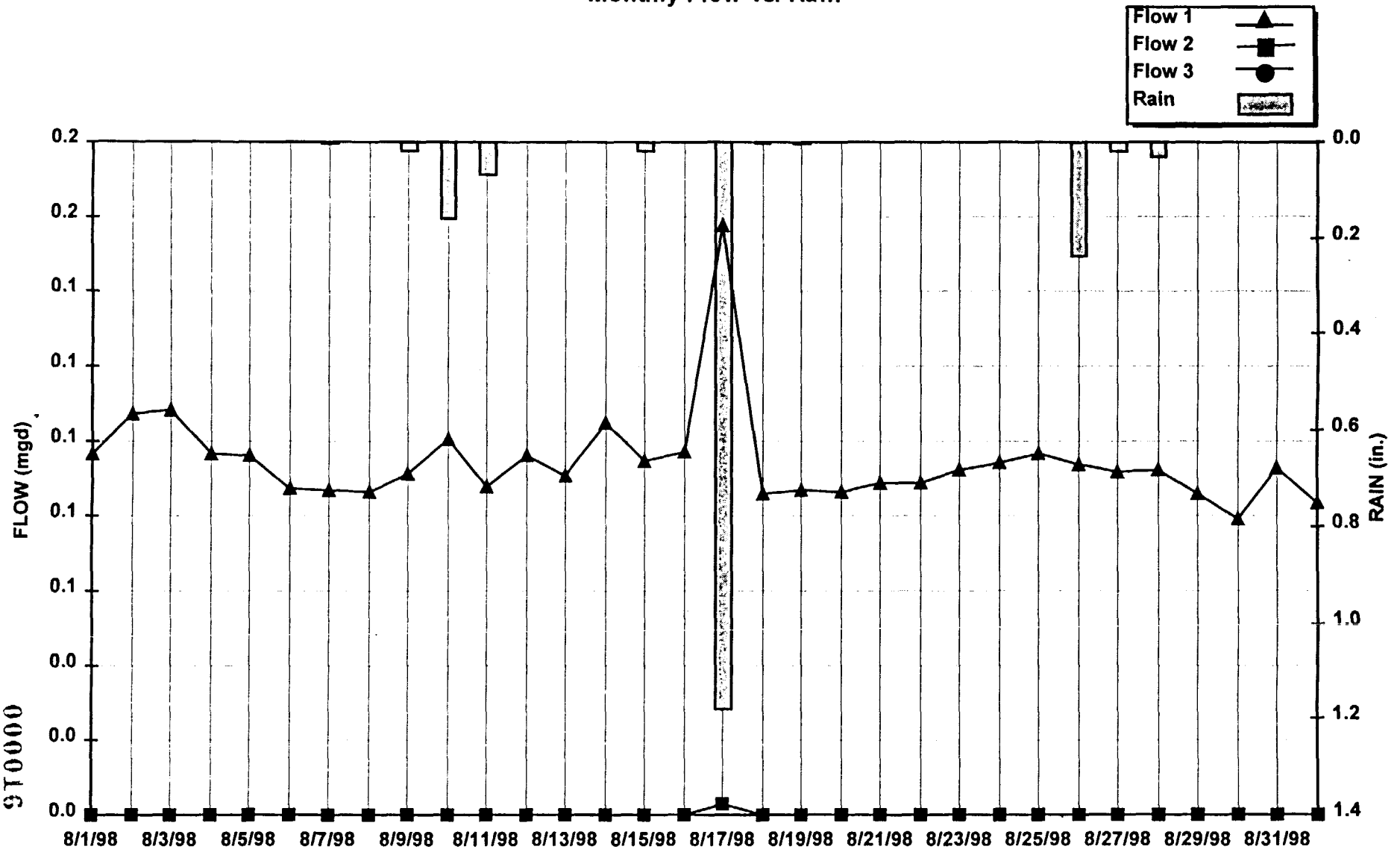
Address: Orange St. and McCarter Hwy

Serial#: QRF

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



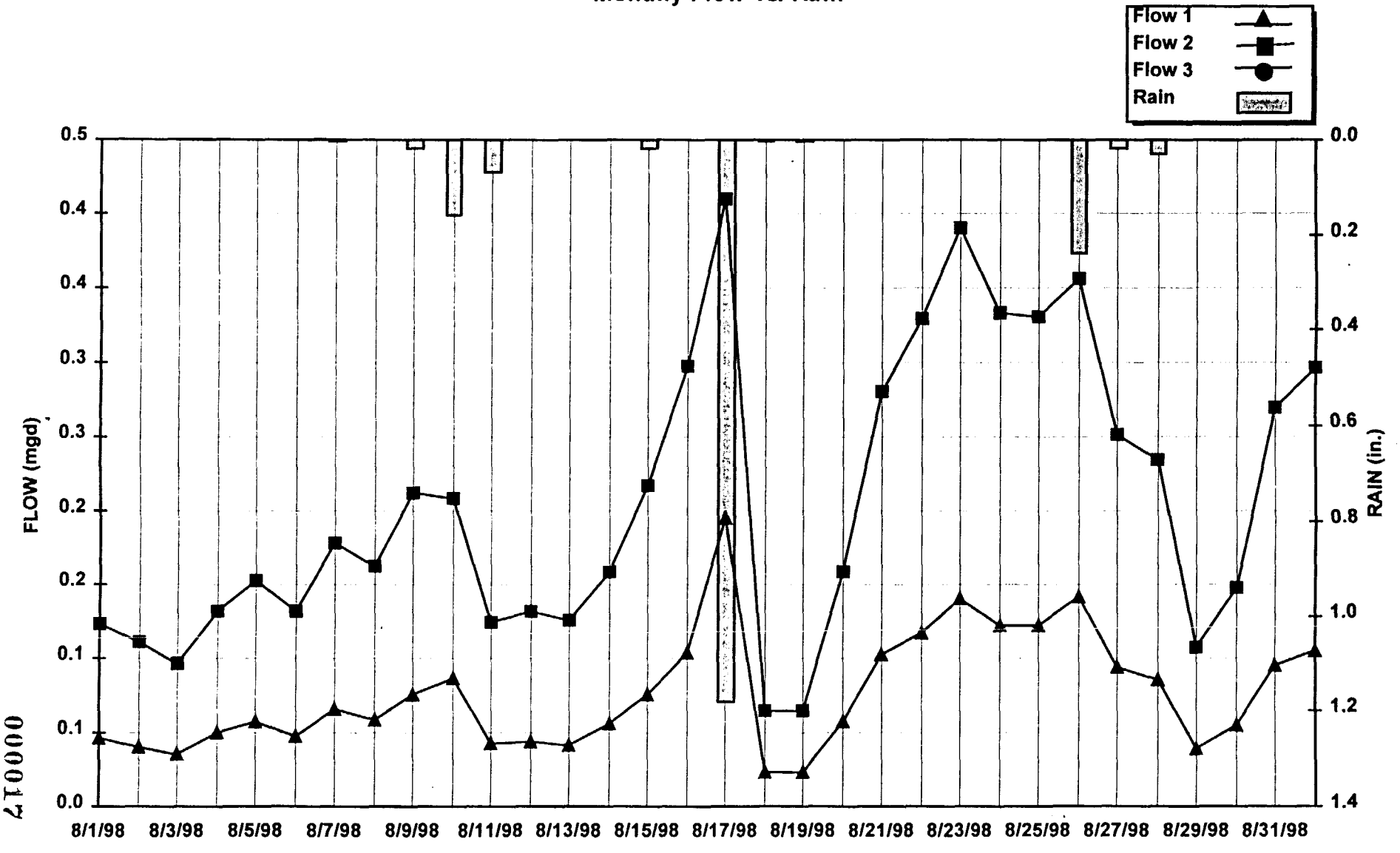
CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy
Serial#: QRZ

863690264

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain

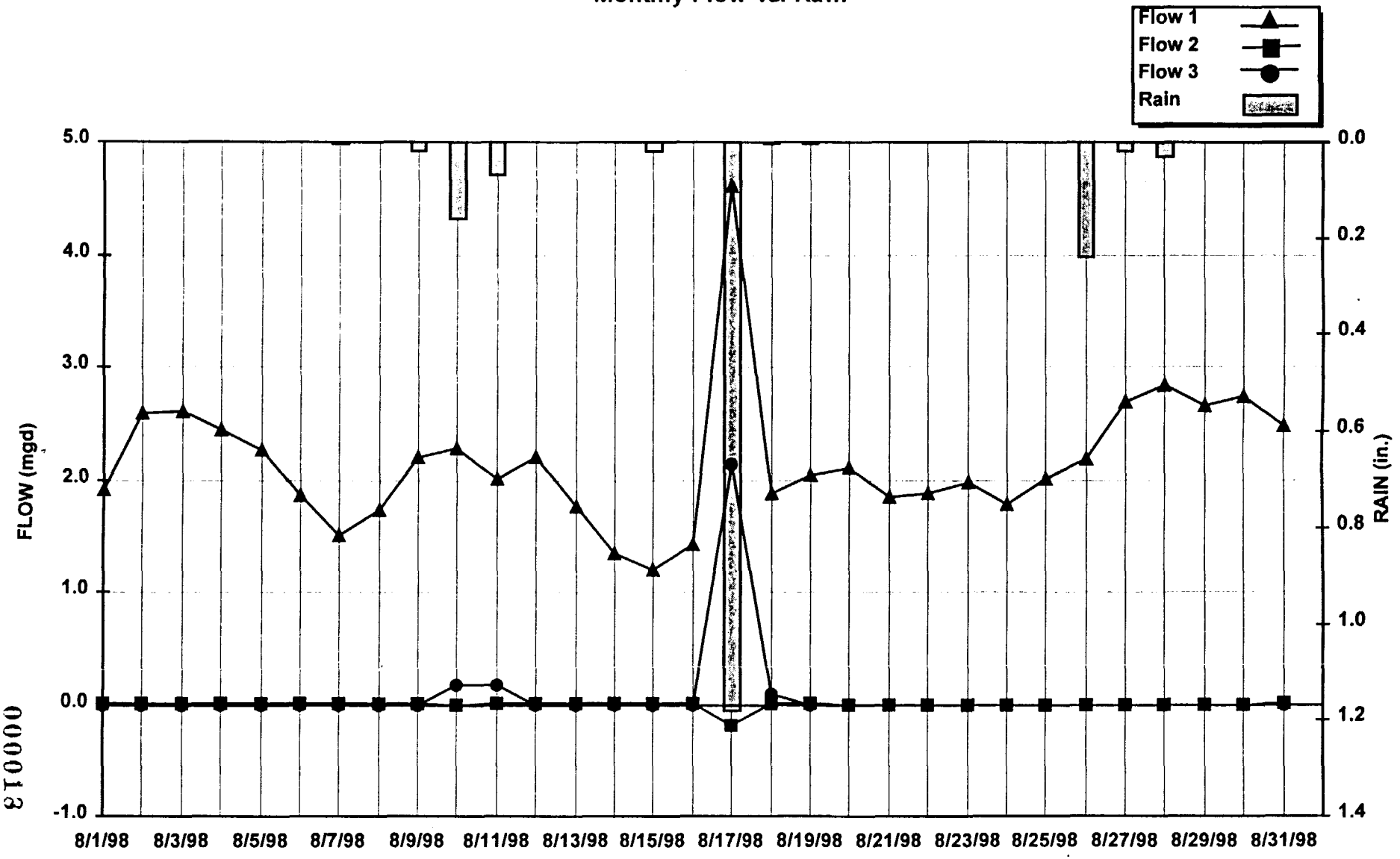


CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy
Serial#: QR7

000017

863690265

Monthly Flow vs. Rain



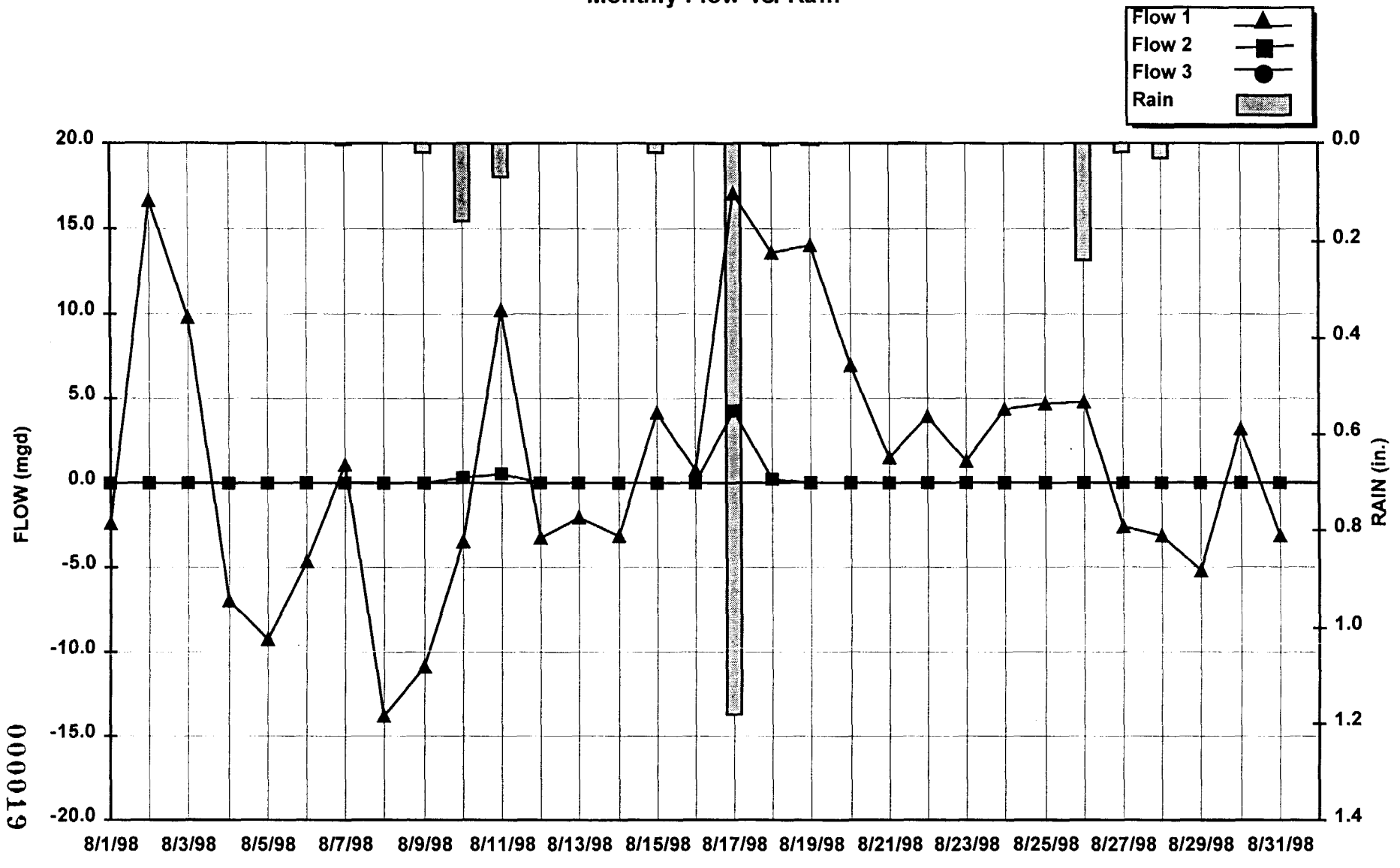
CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy
Serial#: QUY

000013
863690266

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy
Serial#: QRV

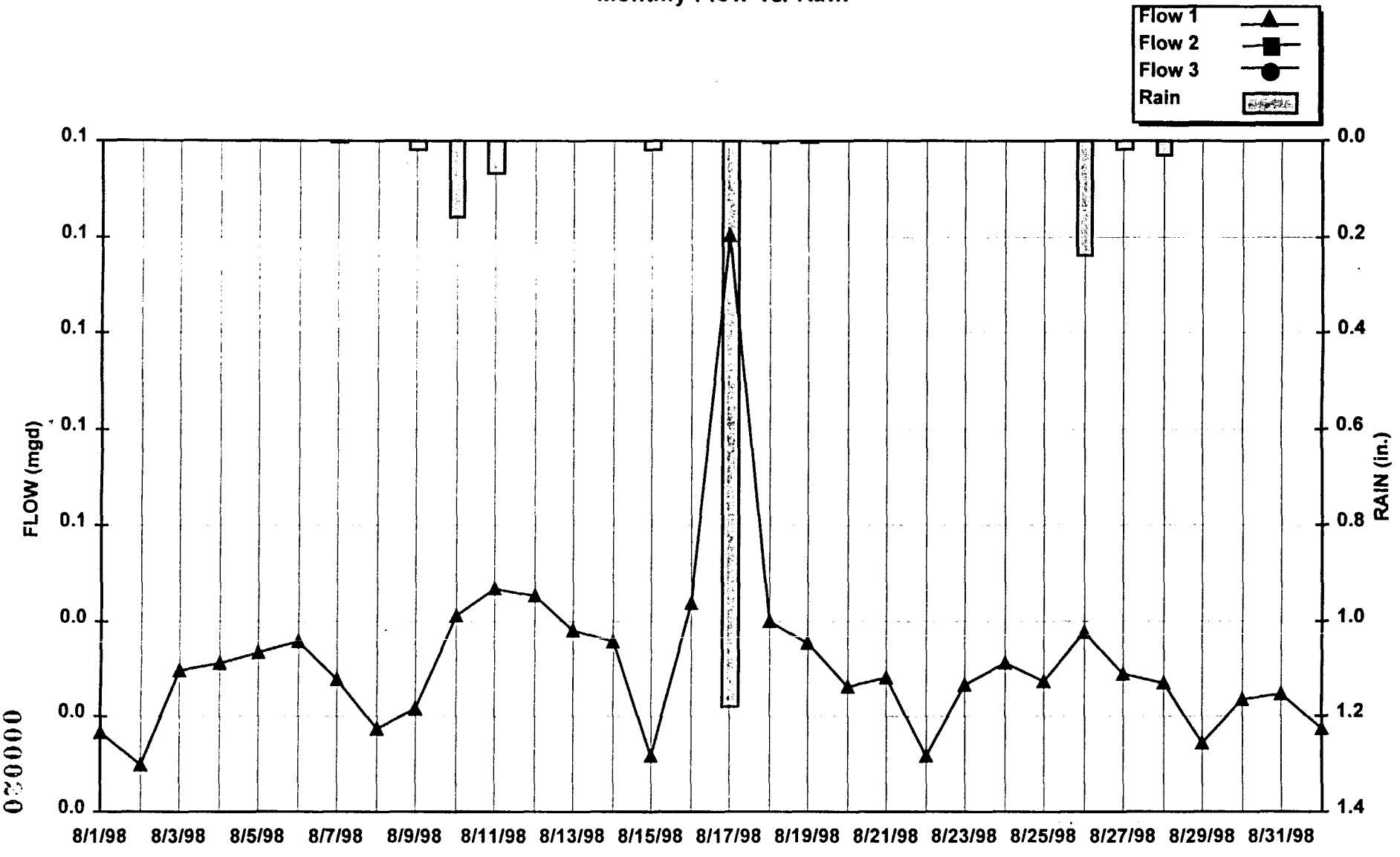
000019

863690267

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent1

Address: Raymond Plaza near Raymond Blvd.

Serial#: QQT

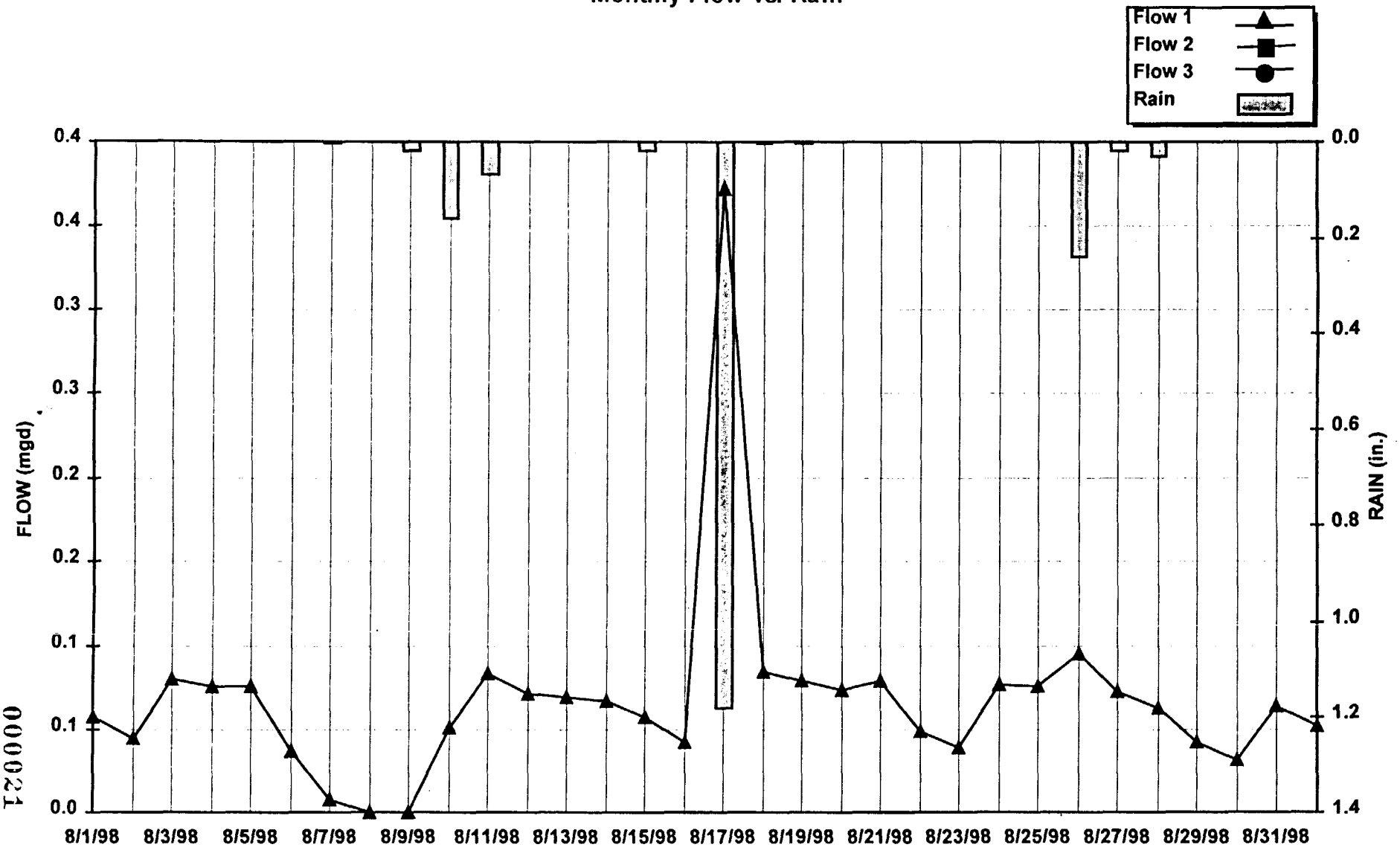
000020

863690268

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



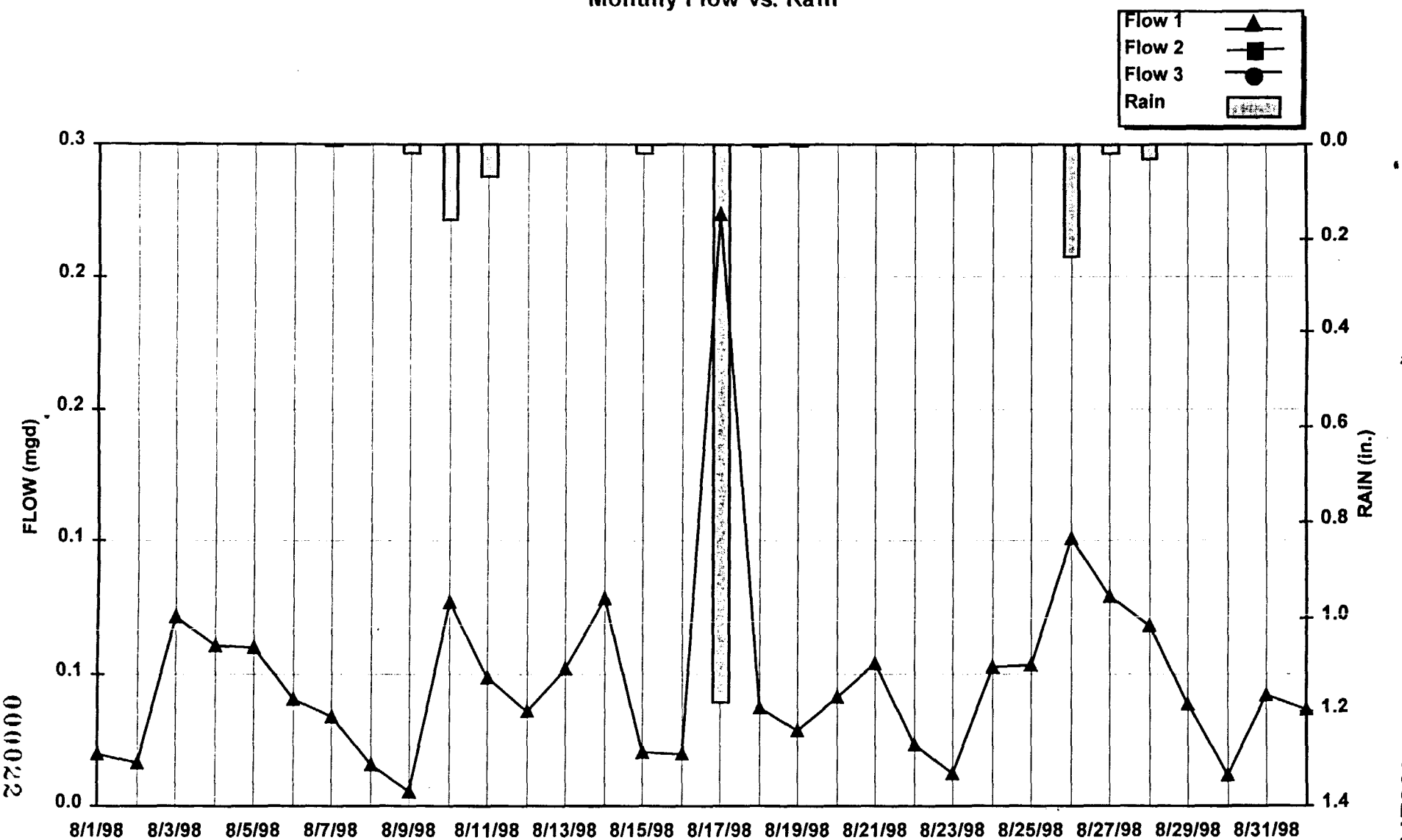
CSO 015 - CITY DOCK influent2
Address: Raymond Plaza East near Raymond Blvd.
Serial#: QU2

000021
863690269

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



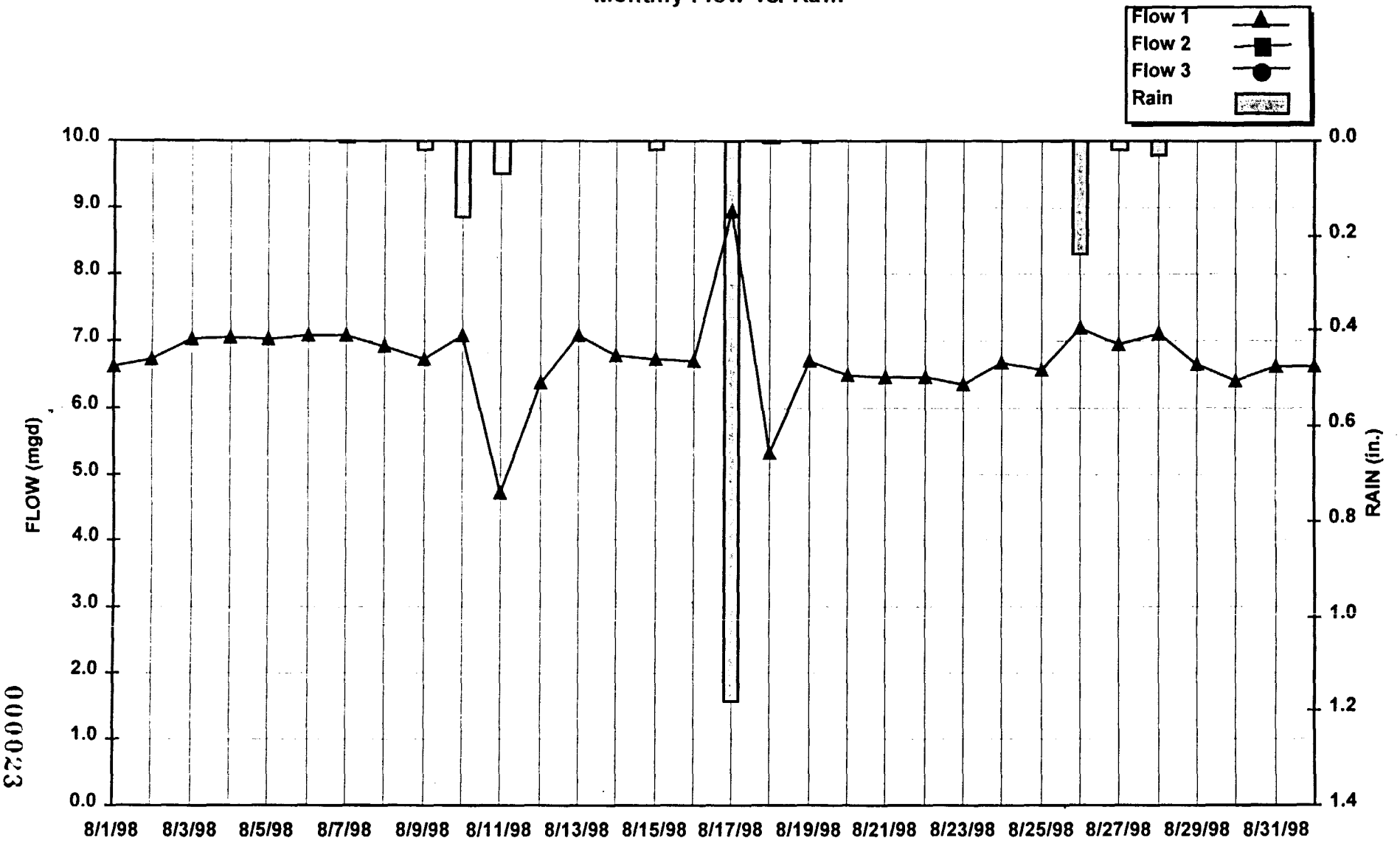
CSO 015 - CITY DOCK Influent3
Address: Raymond Plaza East near Raymond Blvd.
Serial#: QPV

000022
863690270

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPQ

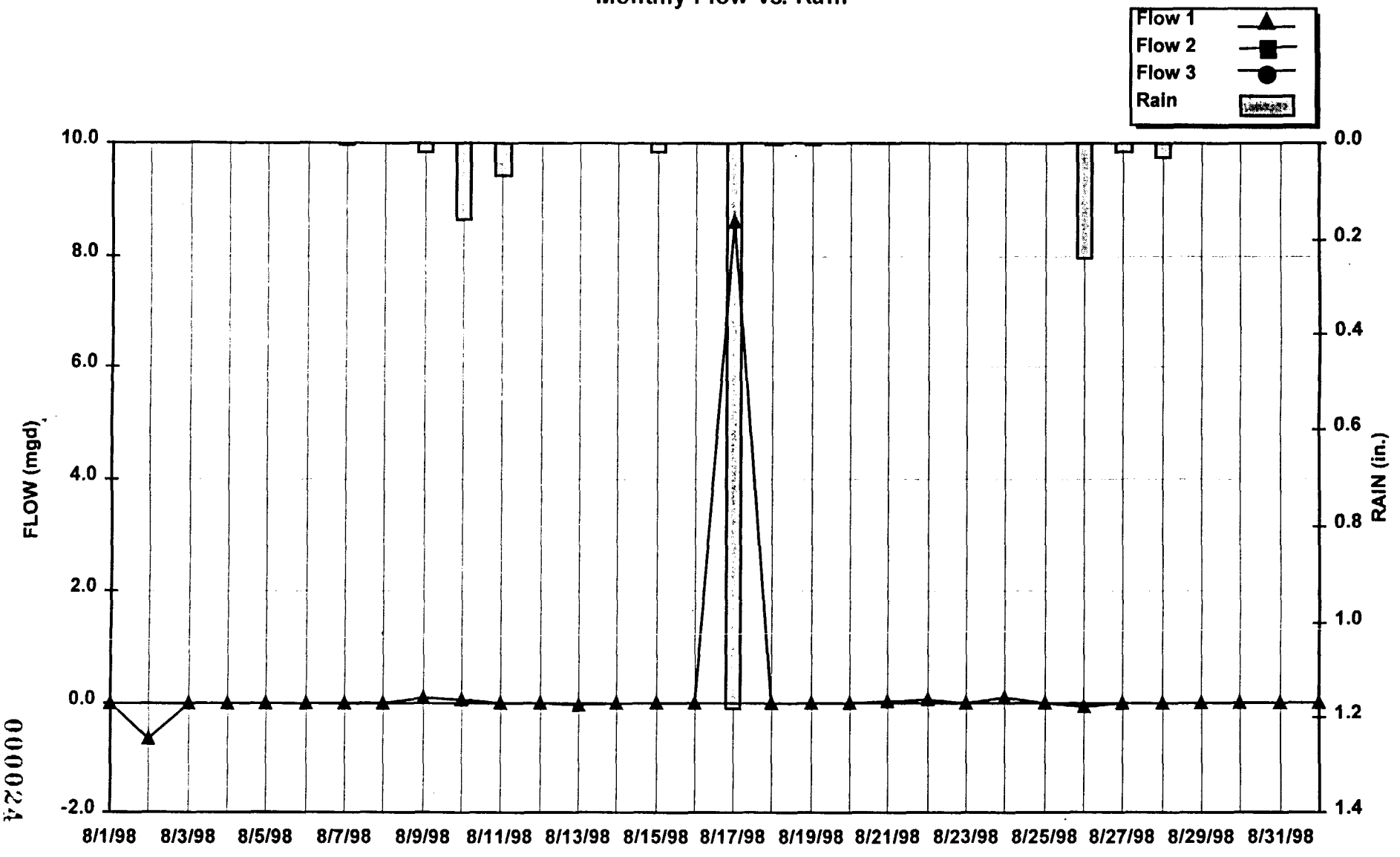
000023

863690271

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Overflow
Address: Raymond Plaza East near Raymond Blvd.
Serial#: QLK

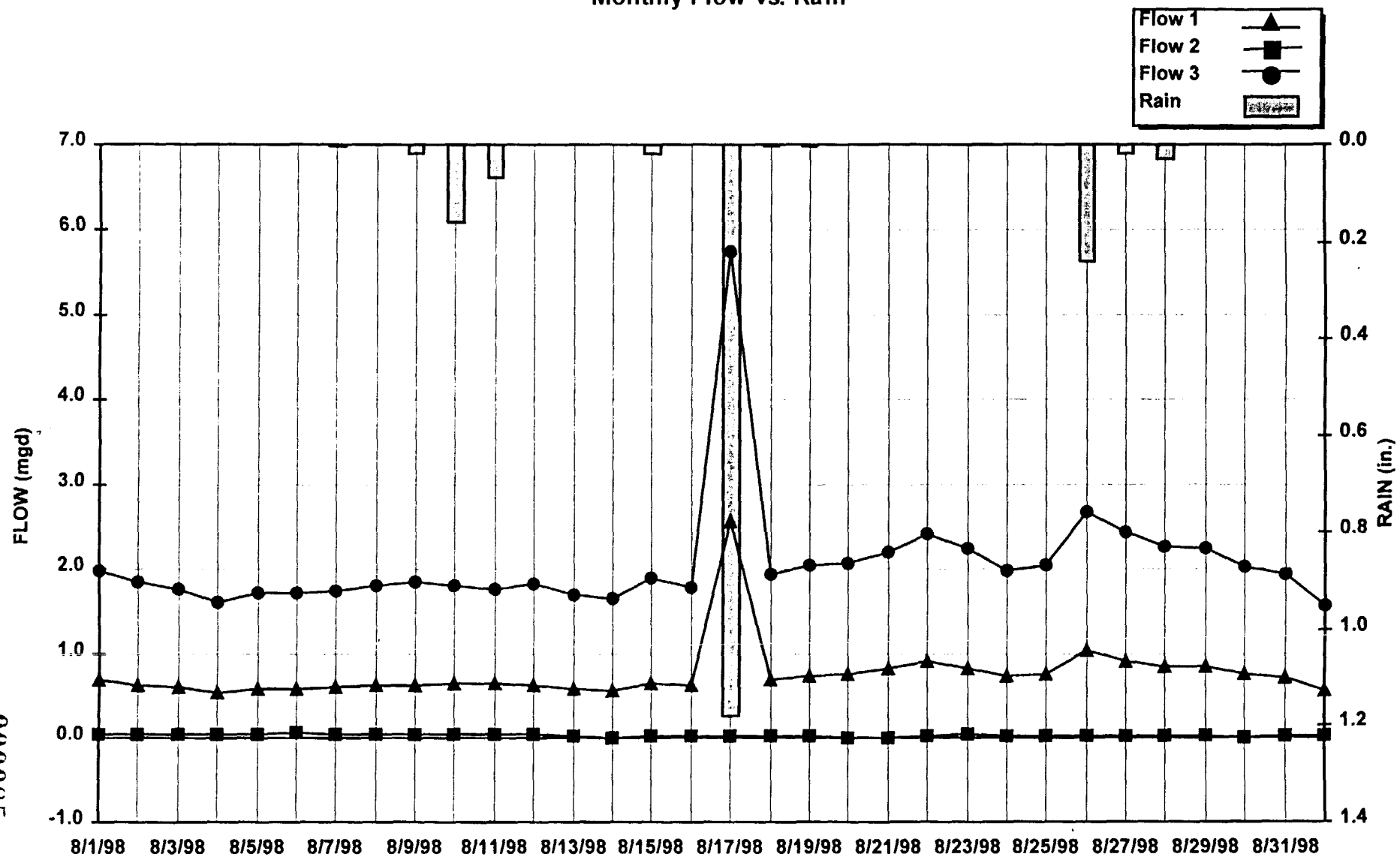
000024

863690272

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST
Address: Jackson St. near Raymond Blvd.
Serial#: QTO

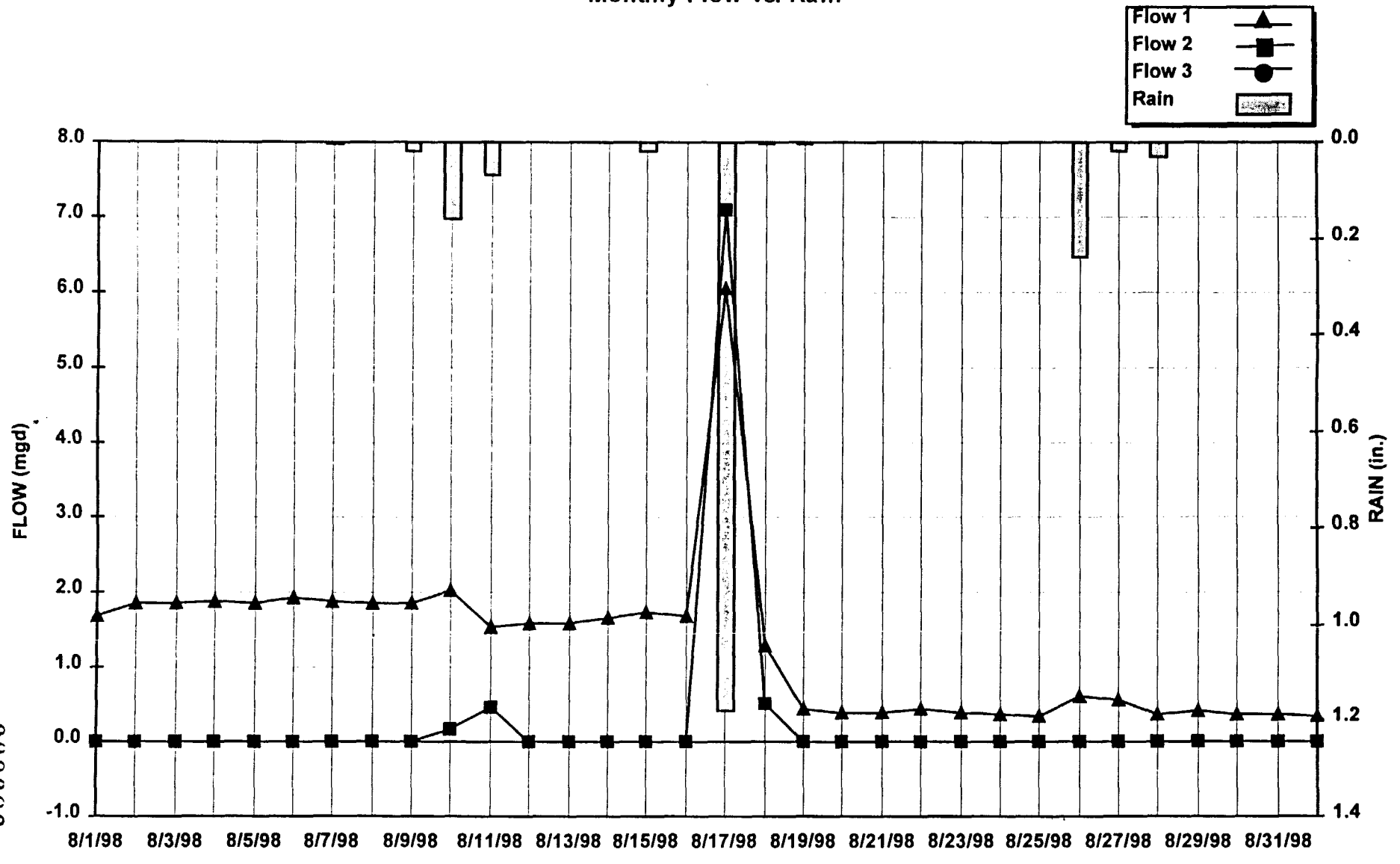
000025

863690273

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 017 - POLK ST
Address: Polk St. and Raymond Blvd.
Serial#: QUG

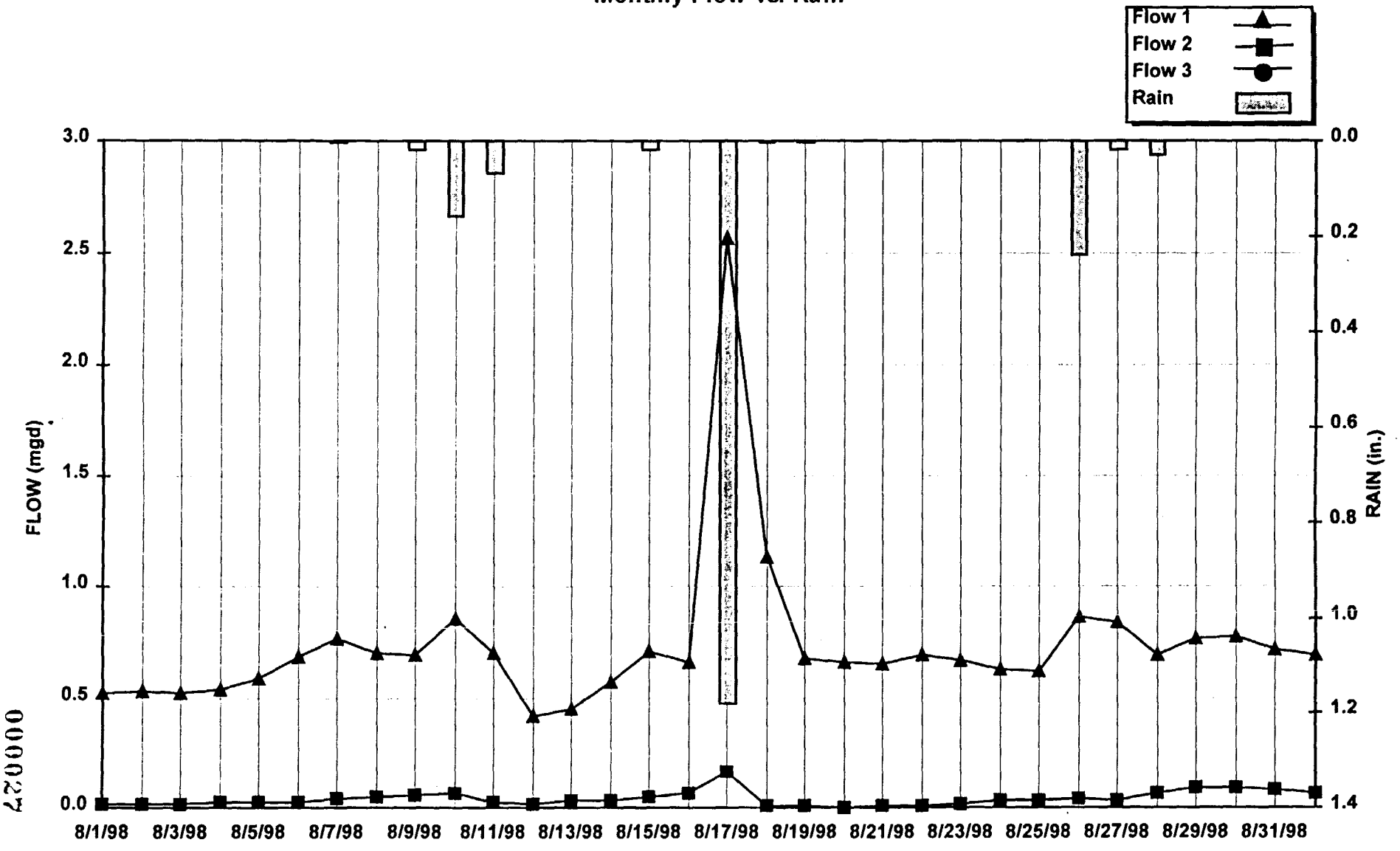
000026

863690274

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

Serial#: QUF

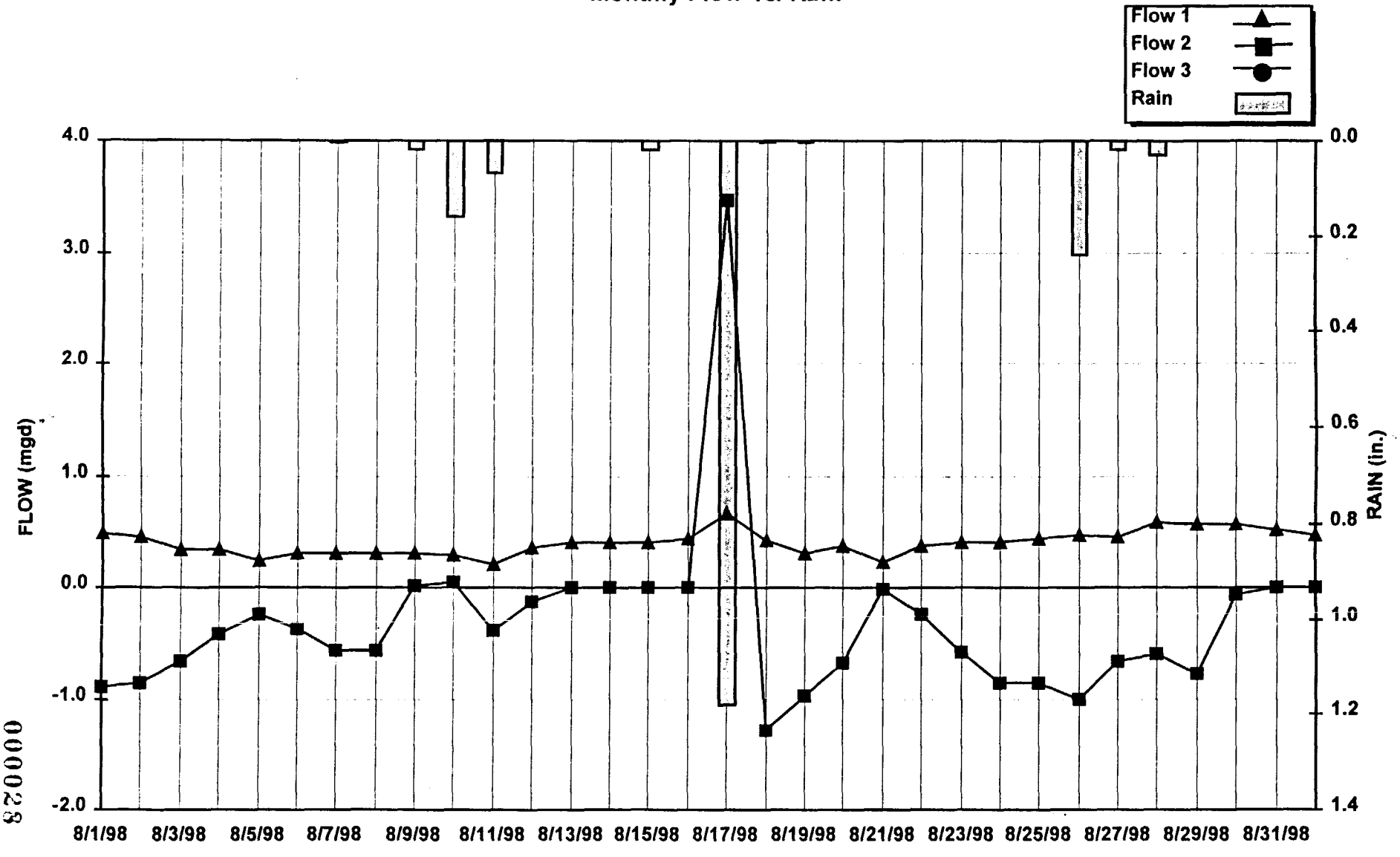
000027

863690275

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000028

863690276

CSO 018 - FREEMAN ST Influent&Overflow

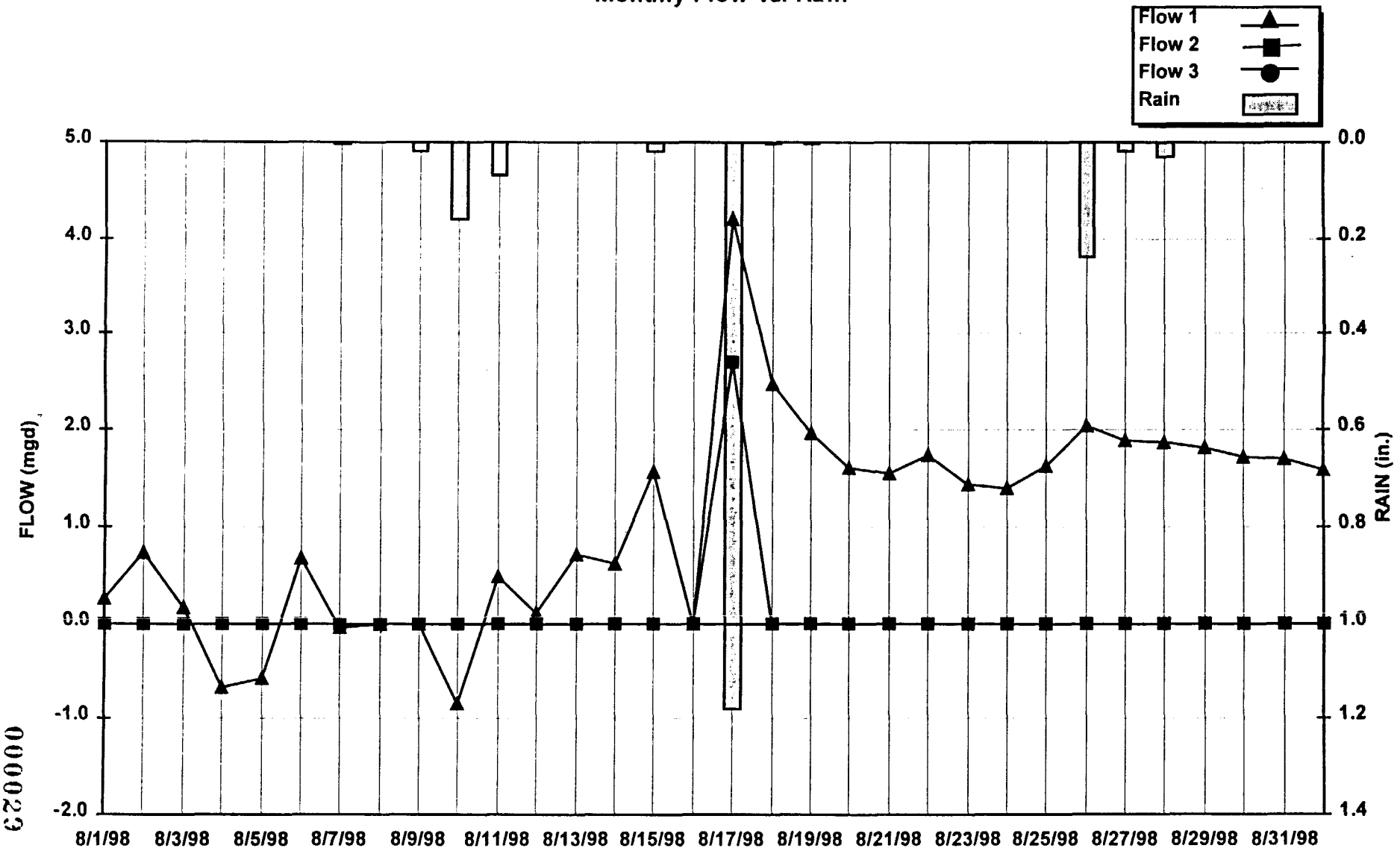
Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000023

863690277

CSO 022 - ROANOKE AVE

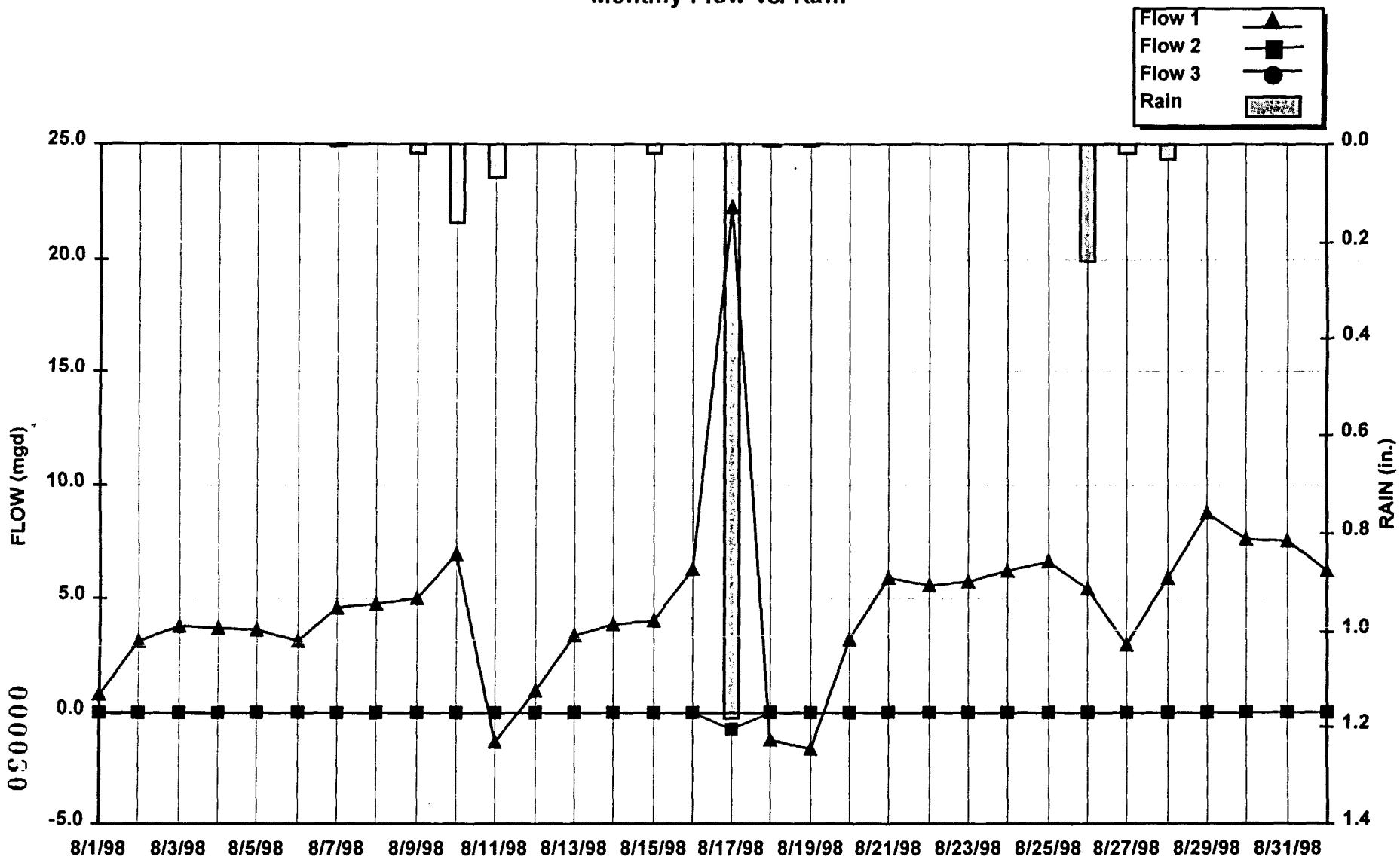
Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST

Address: South St. near Dawson St.

Serial#: QR4

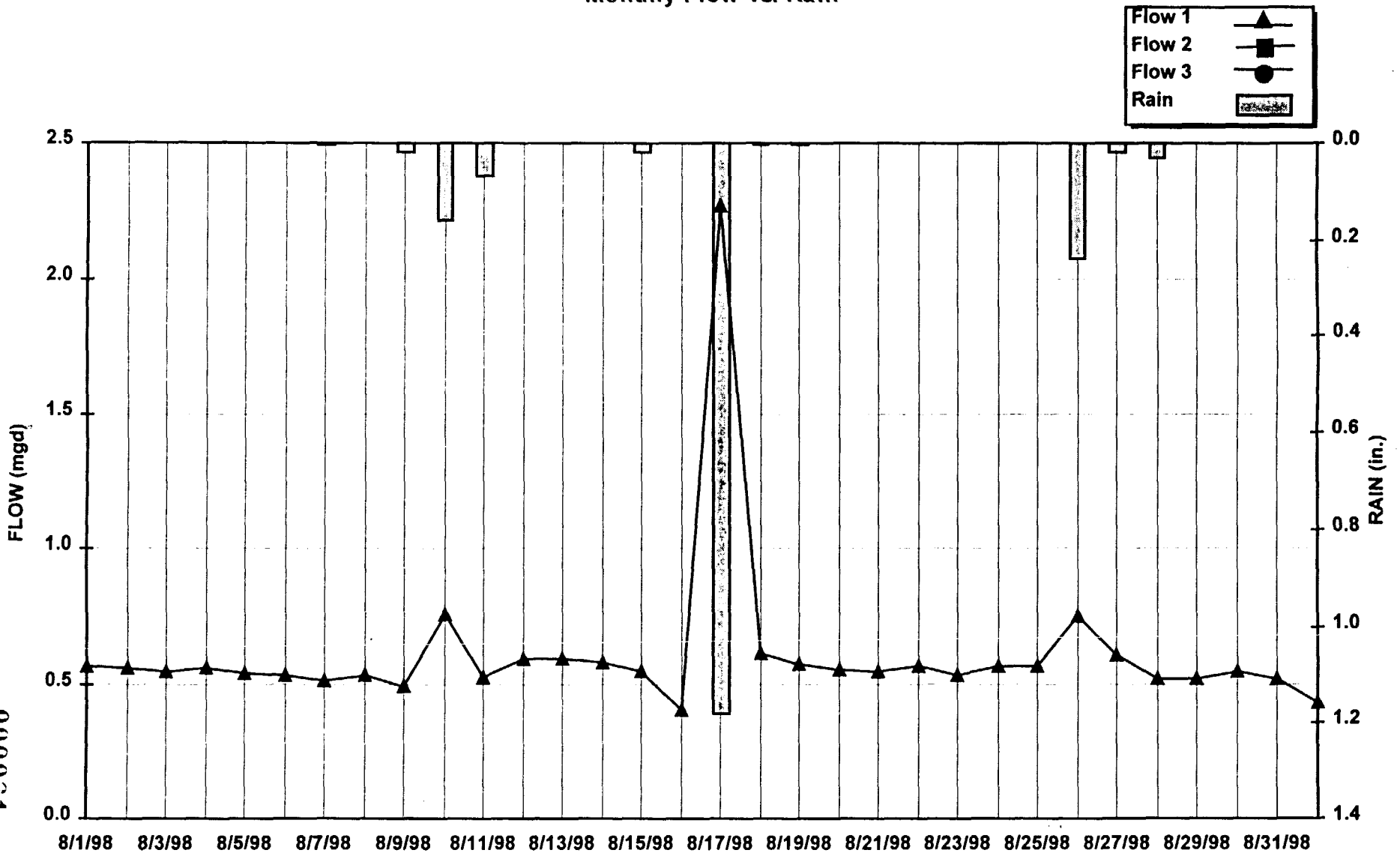
000030

863690278

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023b - ADAMS ST. influent
Address: South St. and Jefferson St.
Serial#: QO4

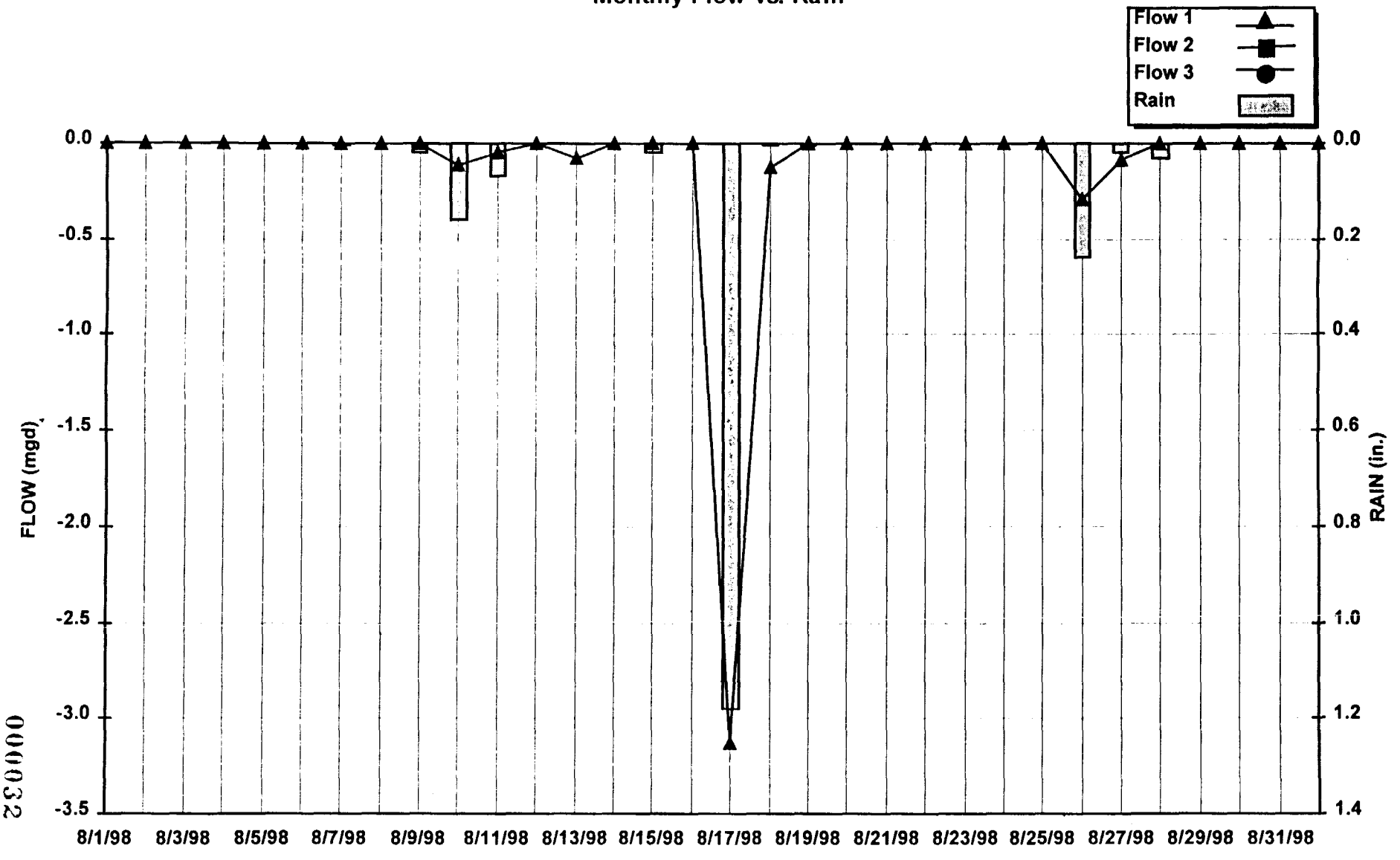
000031

863690279

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023B - ADAMS ST. overflow
Address: South St. and Jefferson St
Serial#: QPP

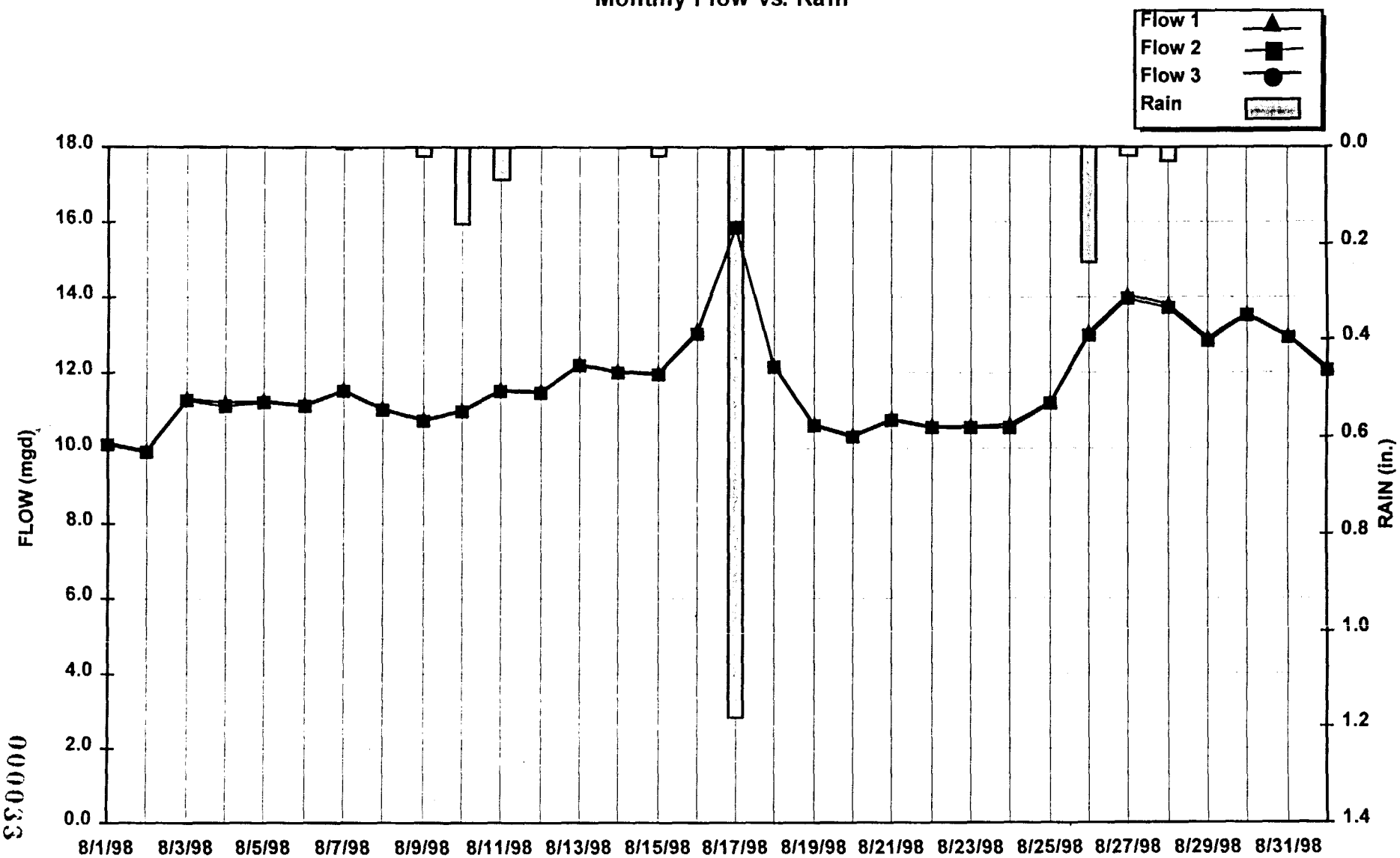
000032

863690280

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000033

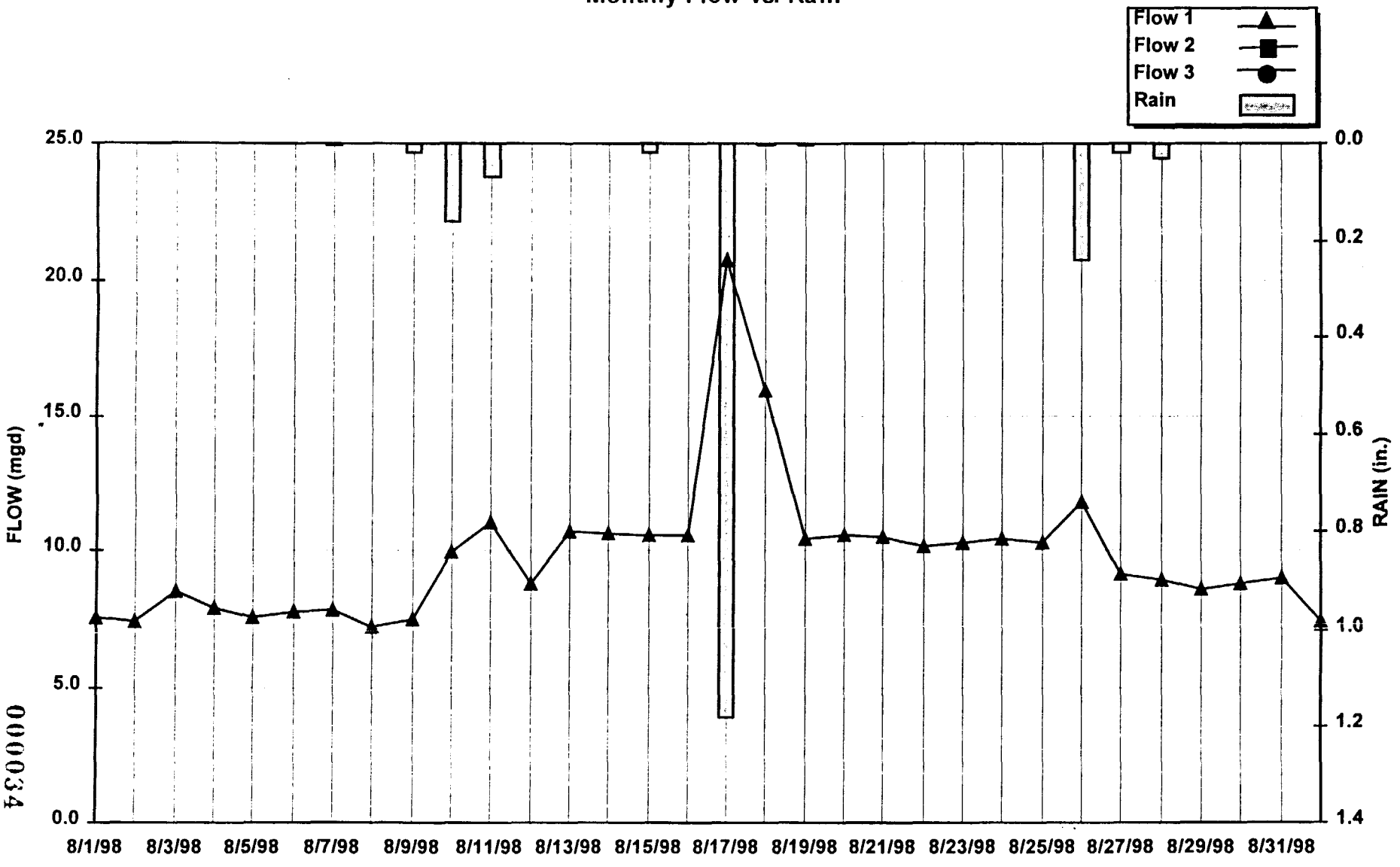
863690281

CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch
Serial#: QUE

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 Peddie St regulated
Address: Peddie Ditch
Serial#: QO7

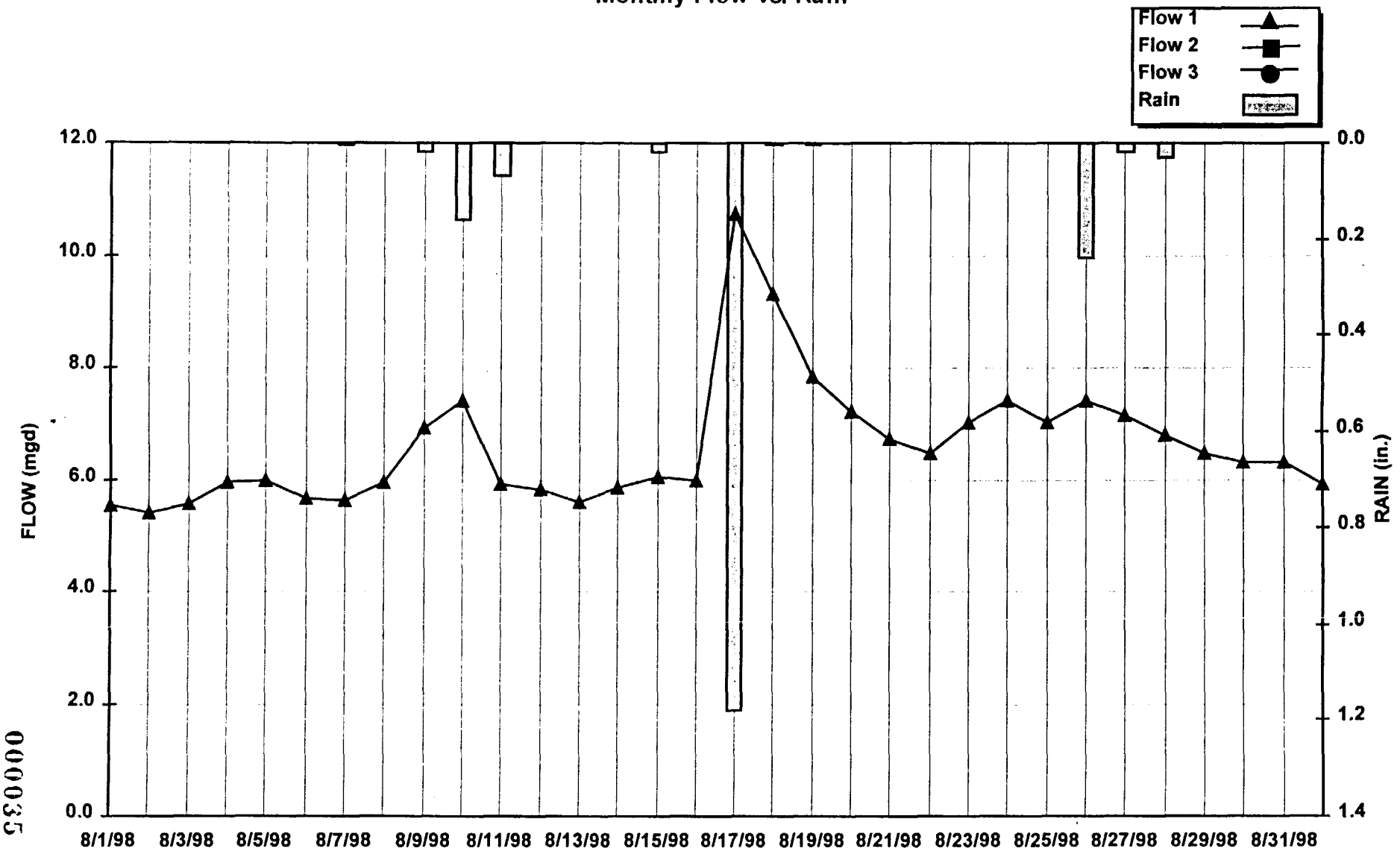
0000034

863690282

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN unregulated
Address: Queen Ditch
Serial#: QQU

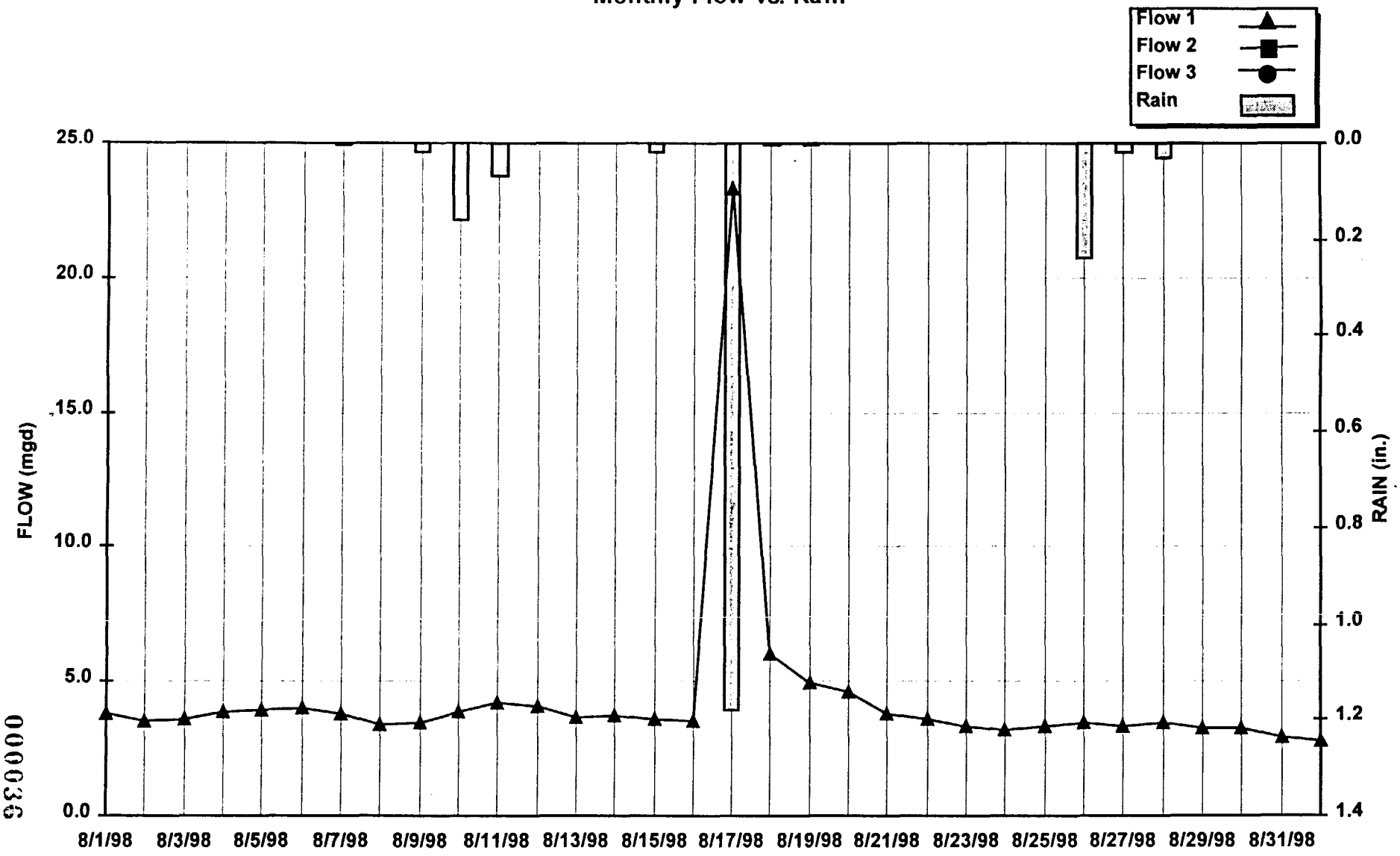
000035

863690283

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN regulated

Address: Queen Ditch

Serial#: QQV

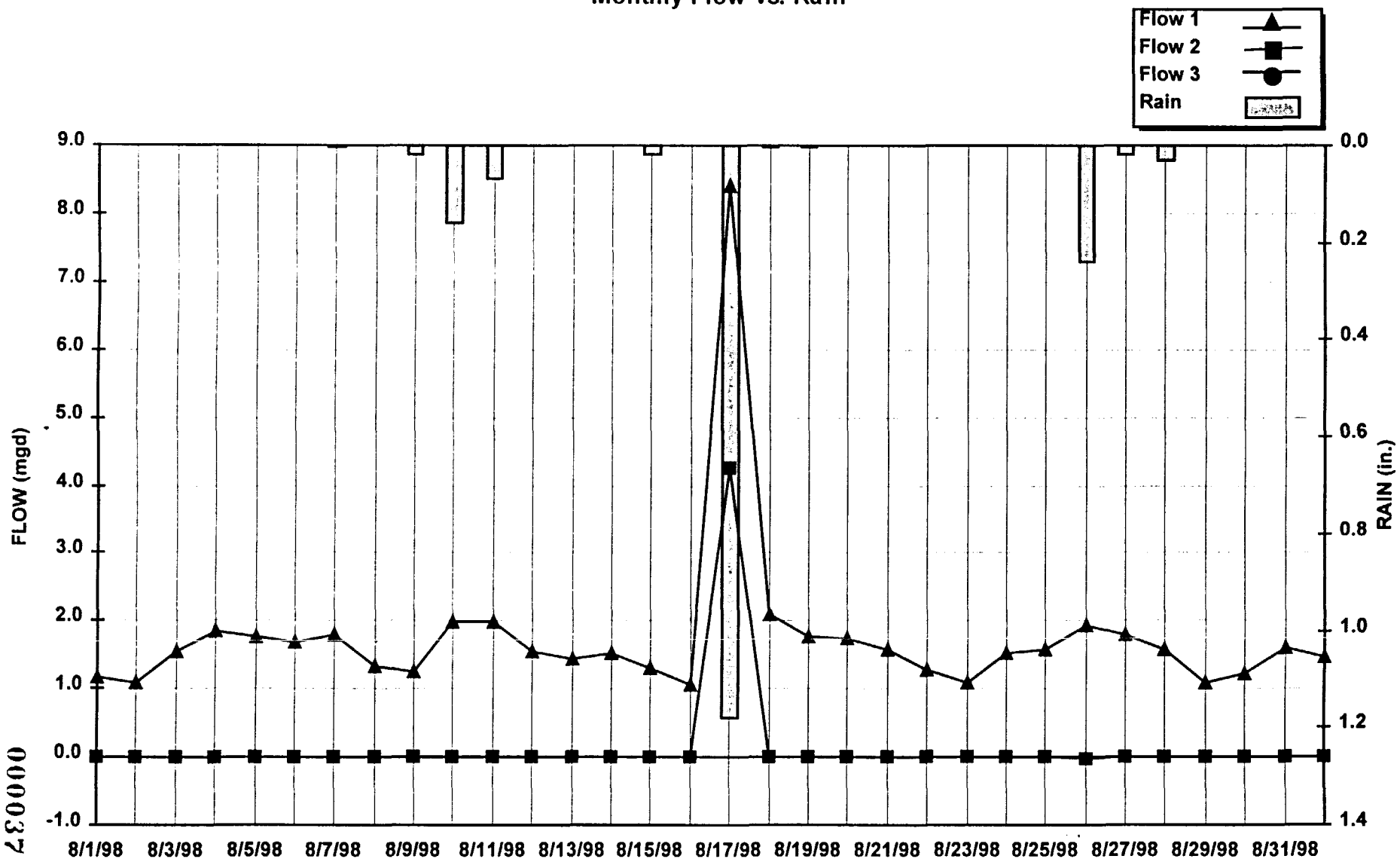
000036

863690284

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch
Serial#: QRY

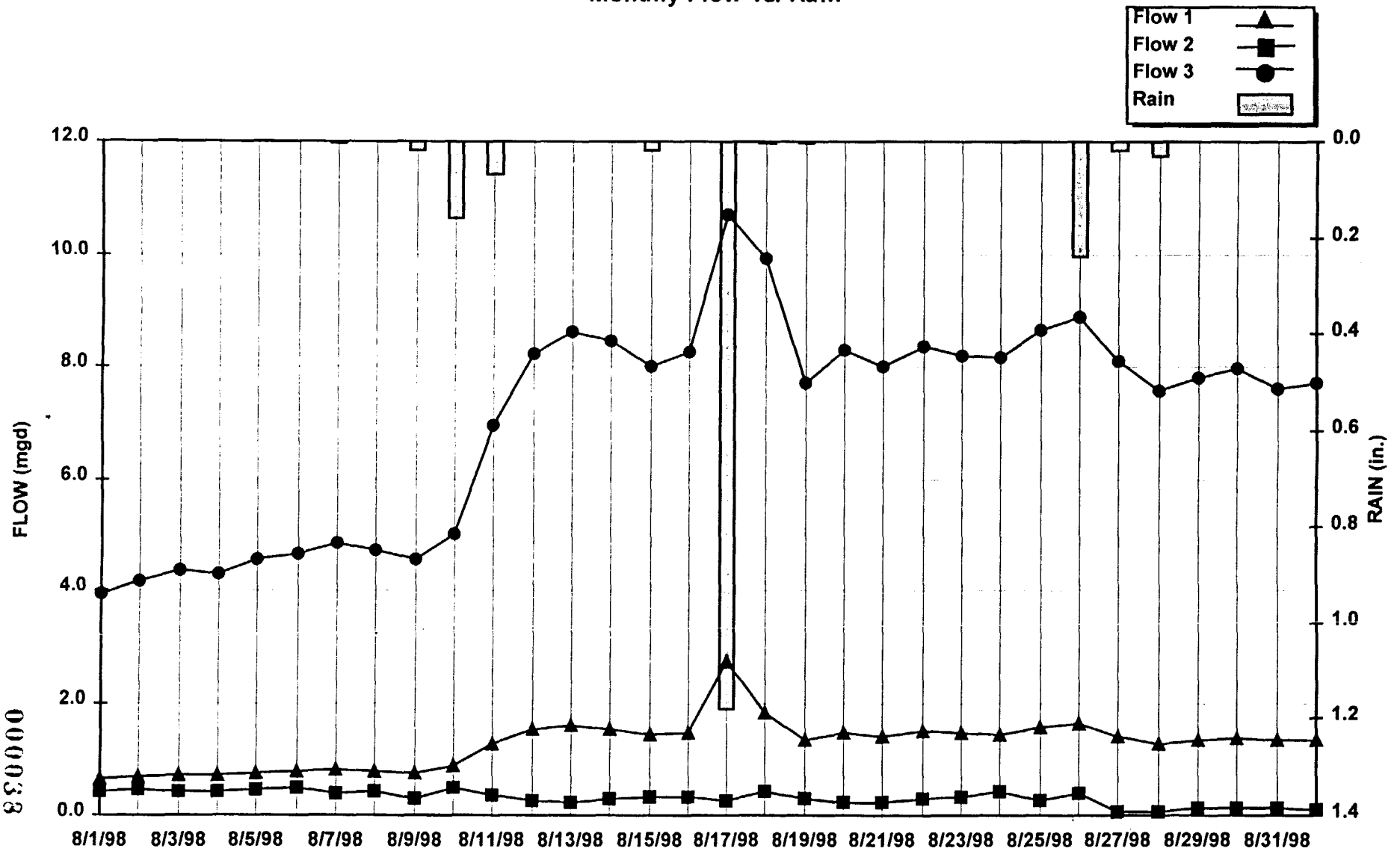
000037

863690285

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy
Serial#: QUD

000038

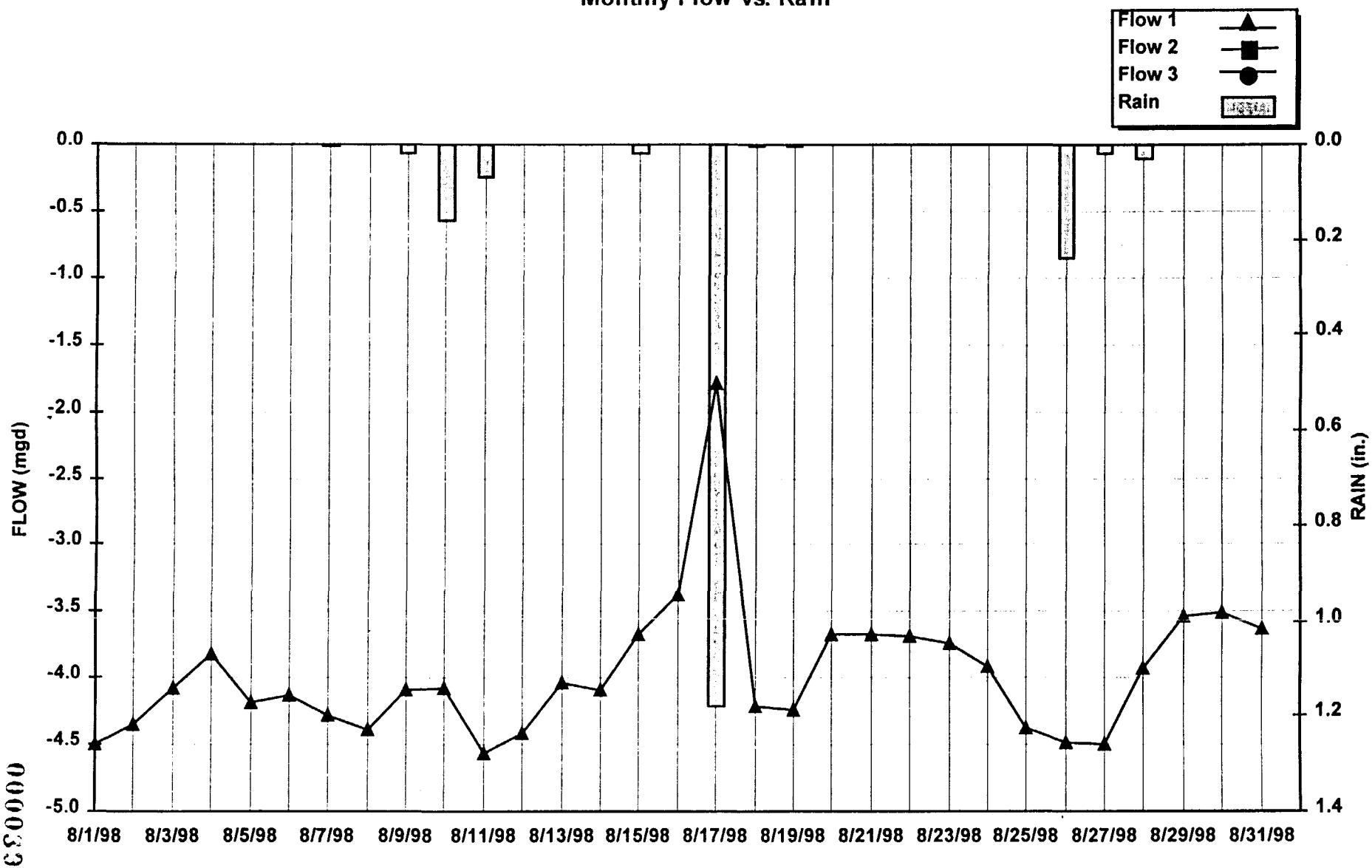
863690286

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

August Report

Monthly Flow vs. Rain



000033

863690287

EAST ORANGE NO. 1

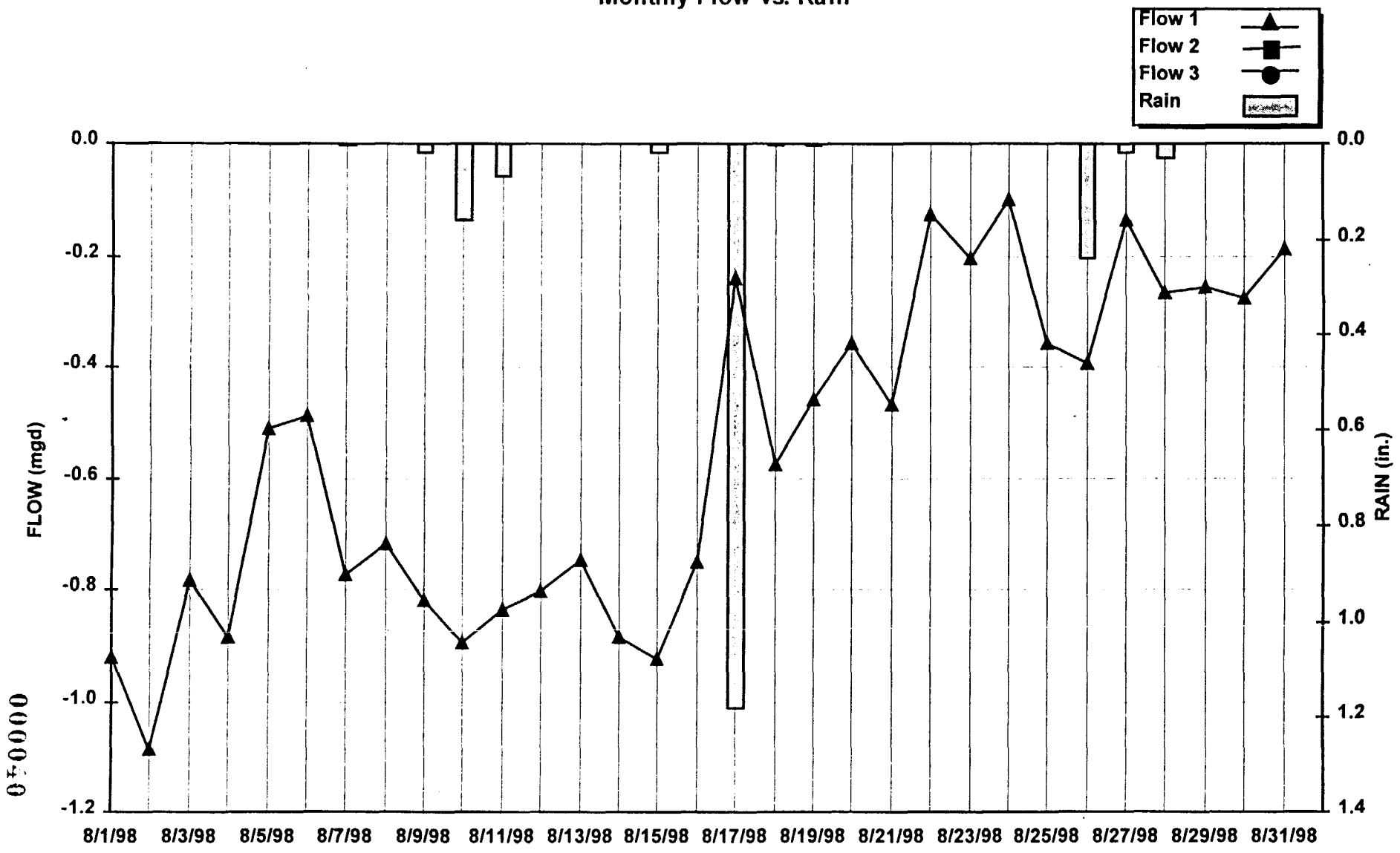
Address: Central Ave. and 15th St.

Serial#: QRH

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



EAST ORANGE NO. 2
Address: 9th Ave. and 15th St.
Serial#: QRM

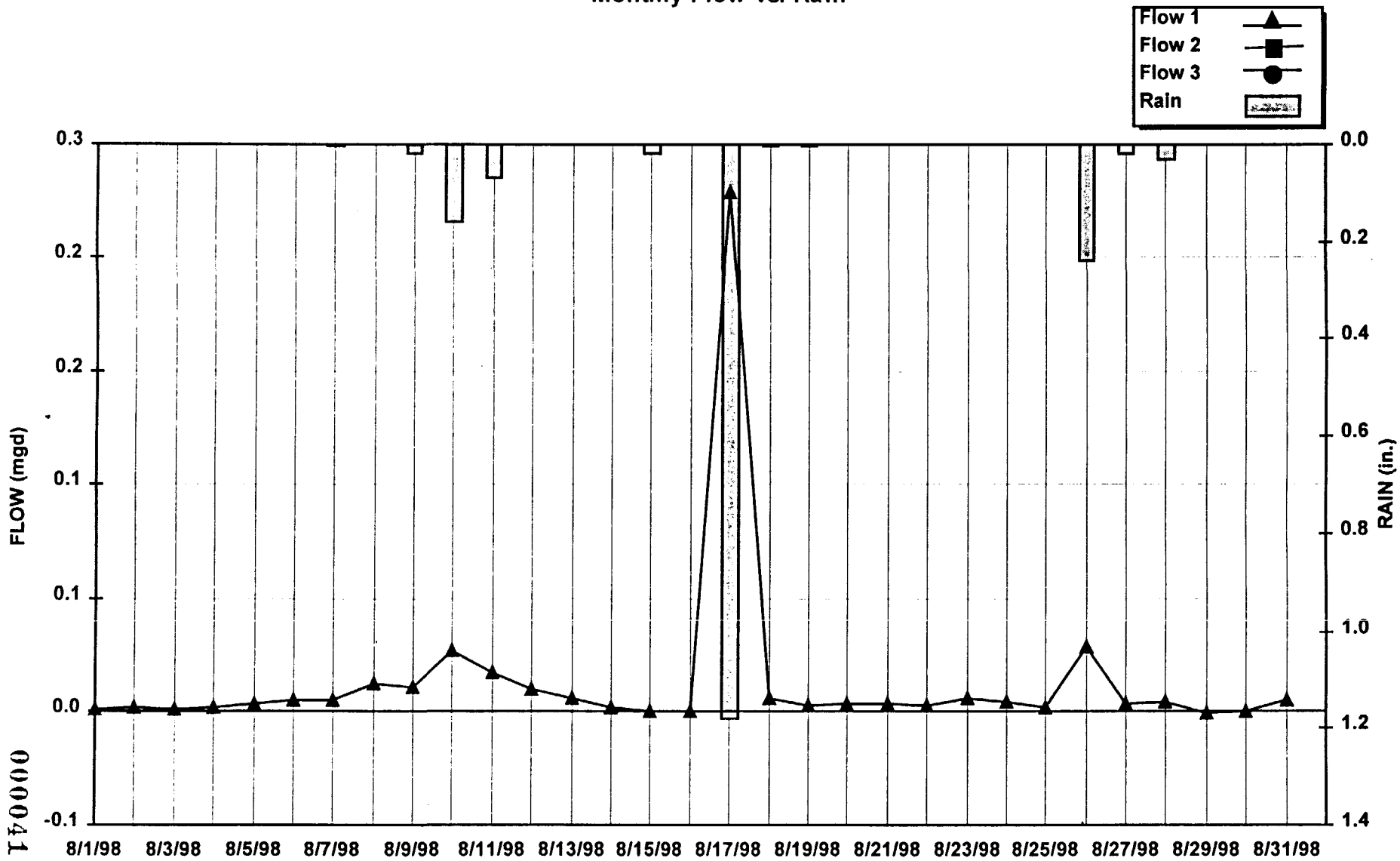
000040

863690288

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000041

863690289

EAST ORANGE NO. 3

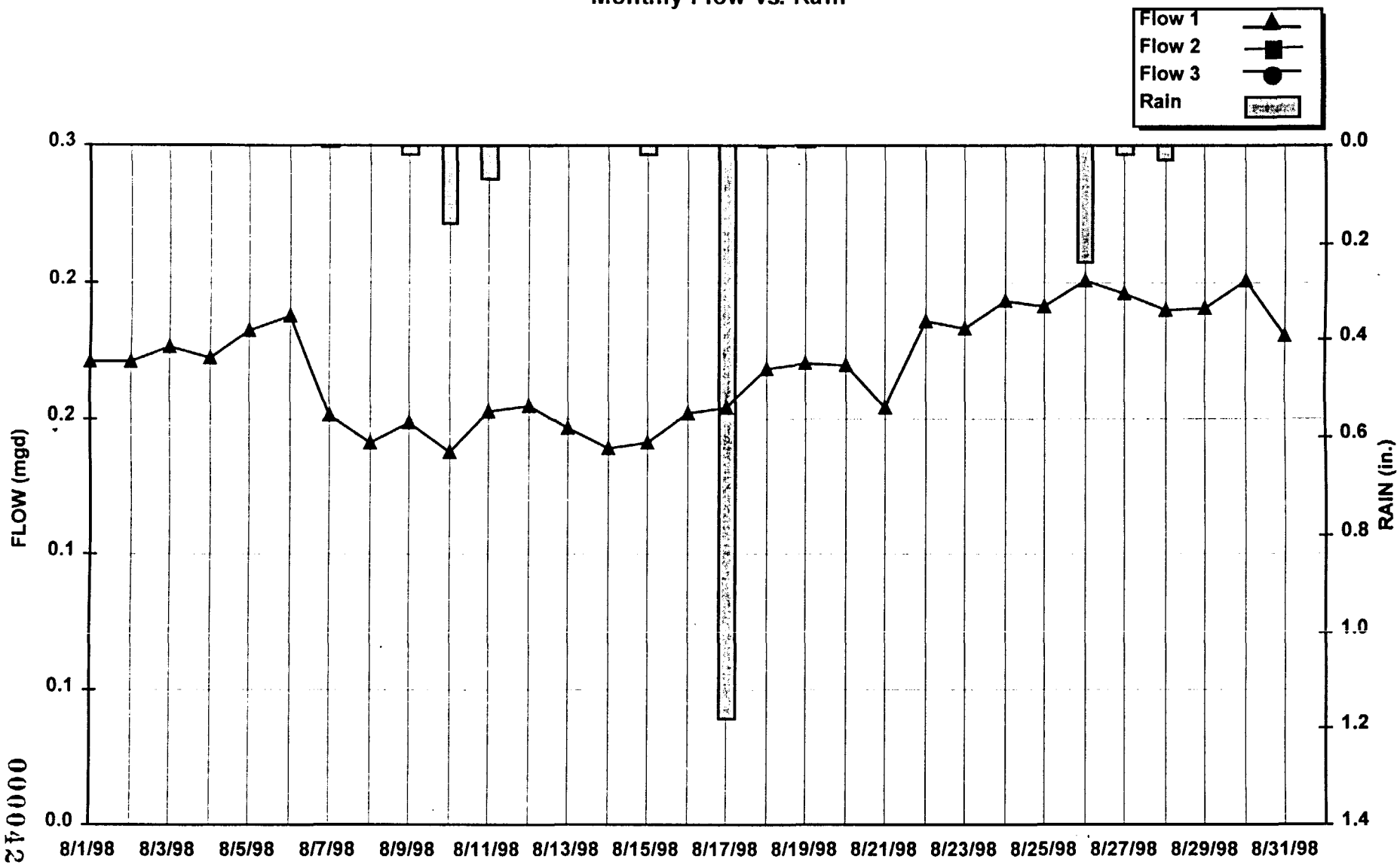
Address: Sussex Ave. and 15th St.

Serial#: QQZ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000042

863690290

EAST ORANGE NO. 4

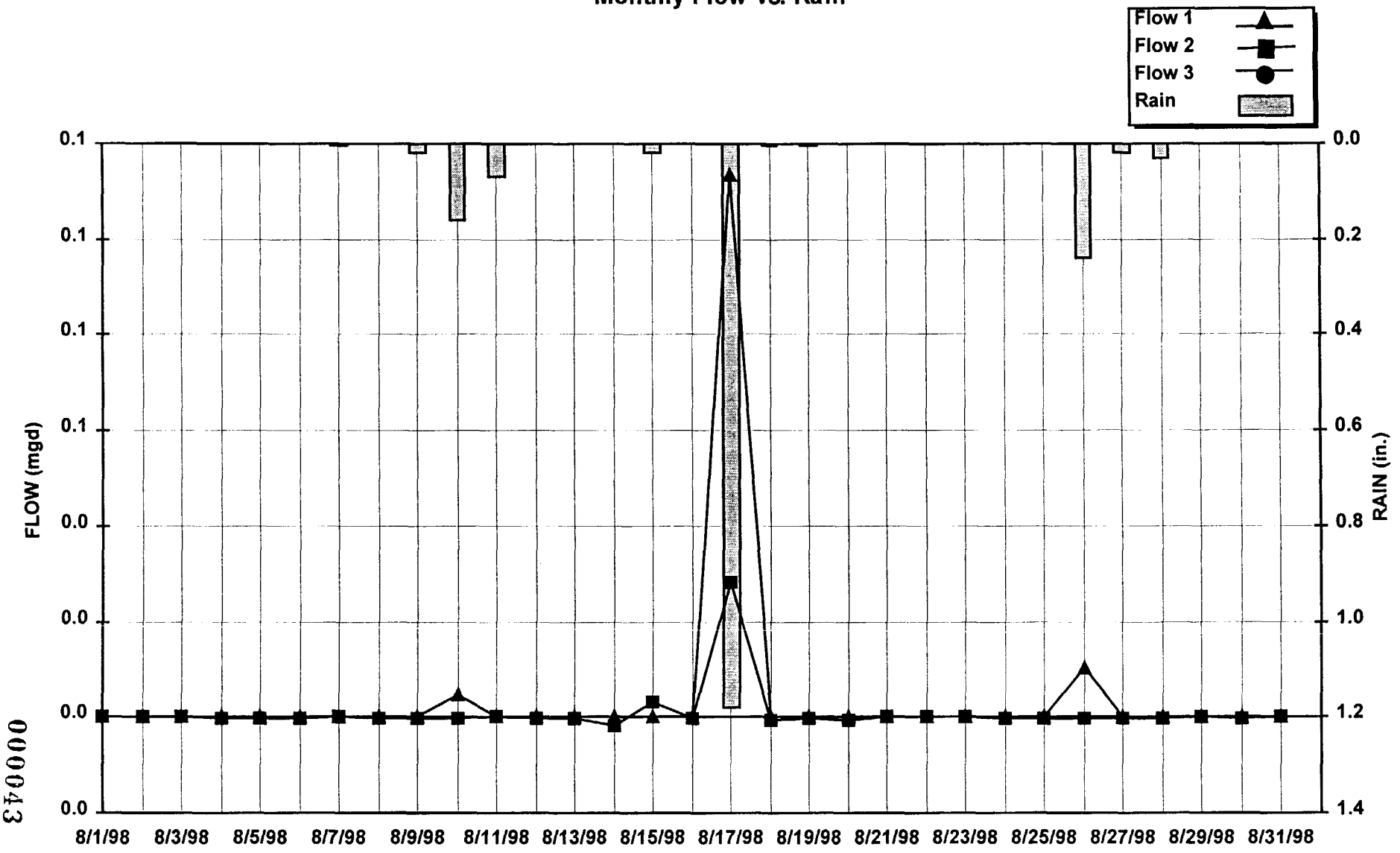
Address: Sussex Ave. and 15th St.

Serial#: QRC

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000043

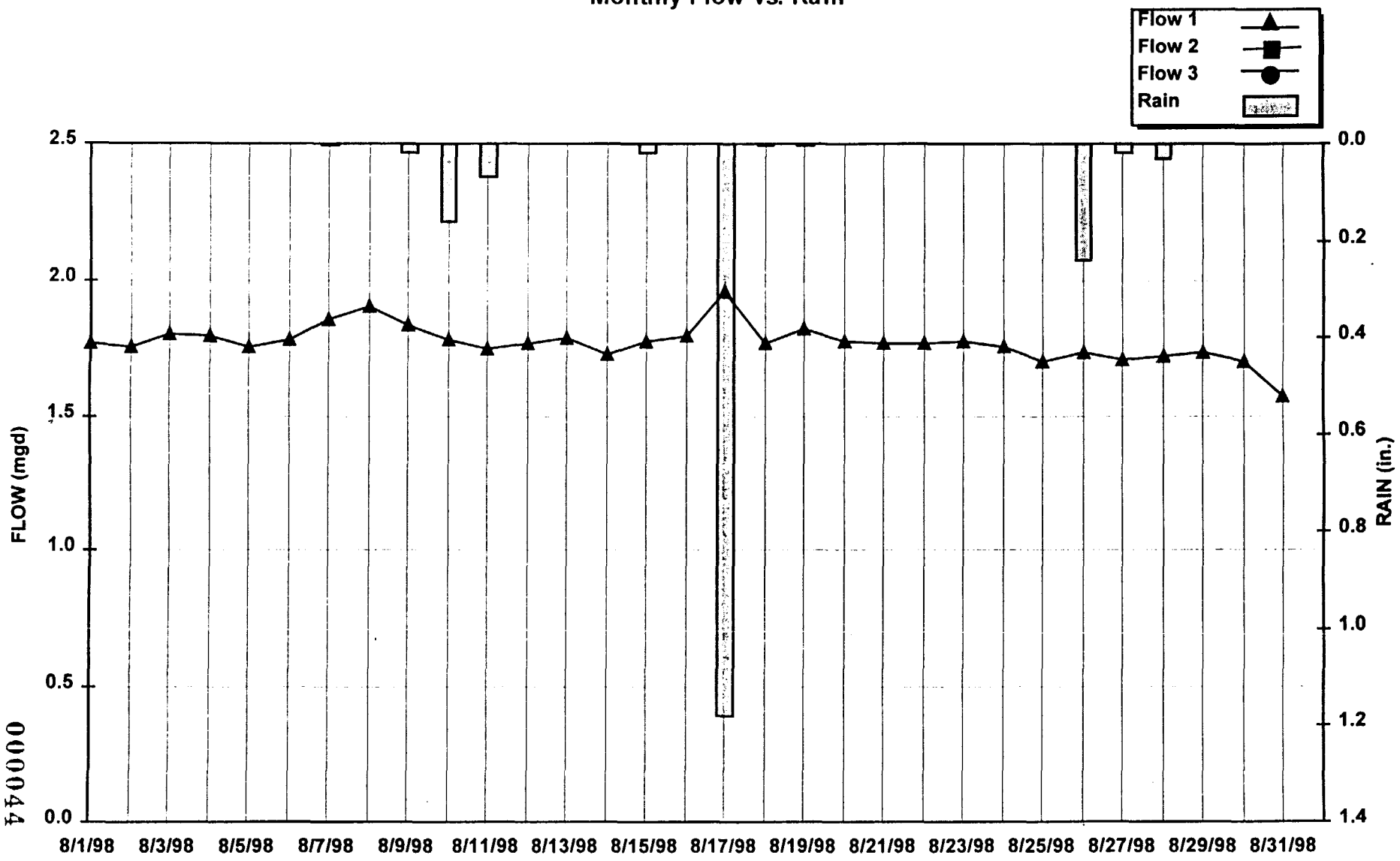
863690291

EAST ORANGE NO. 5/6 - 14TH & HEDDEN PL
Address: 14TH ST. & HEDDEN PL.
Serial#: QR1

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000044

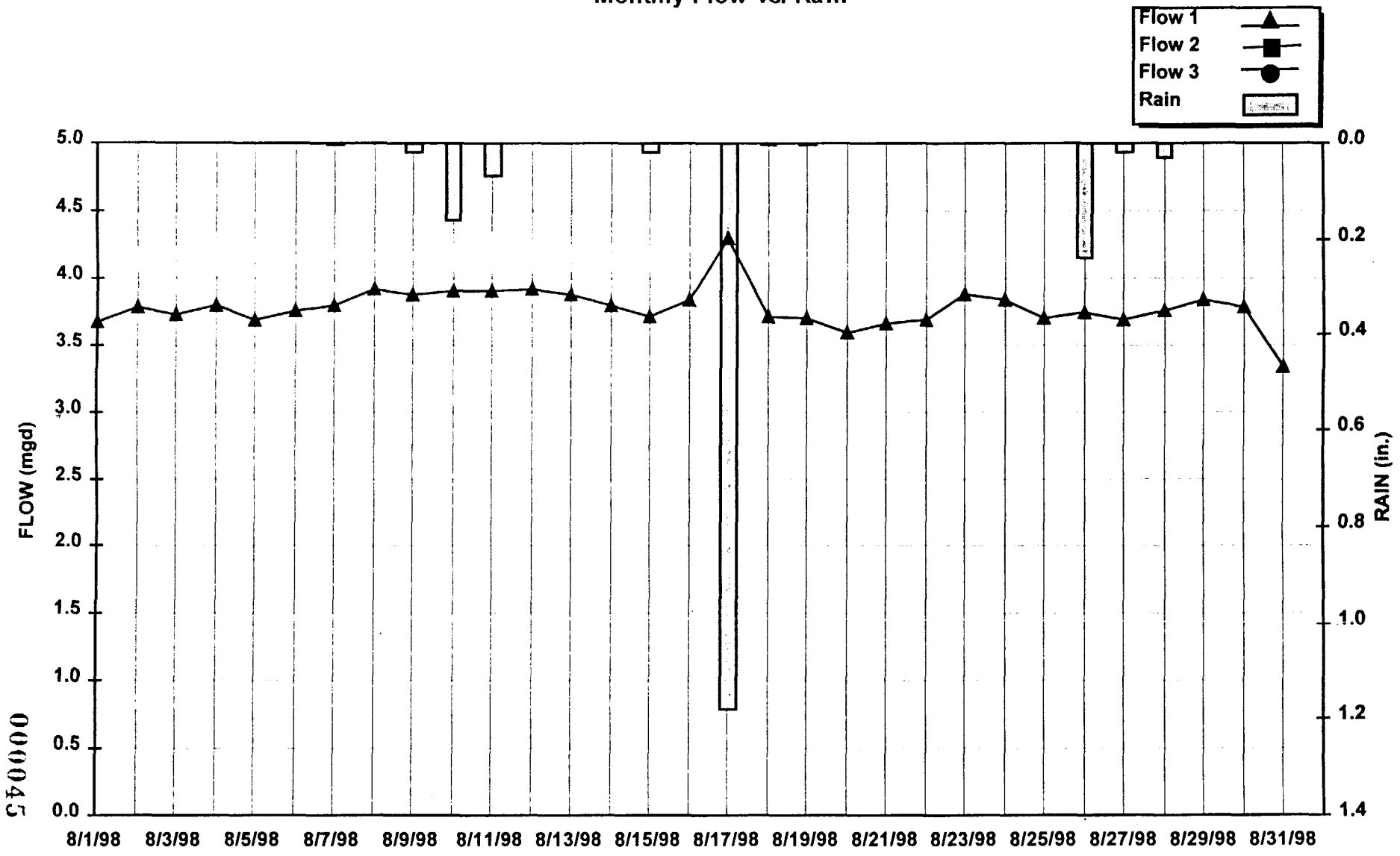
863690292

EAST ORANGE NO. 7
Address: 6TH ST. & 13TH ST.
Serial#: QPT

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

Serial#: QO1

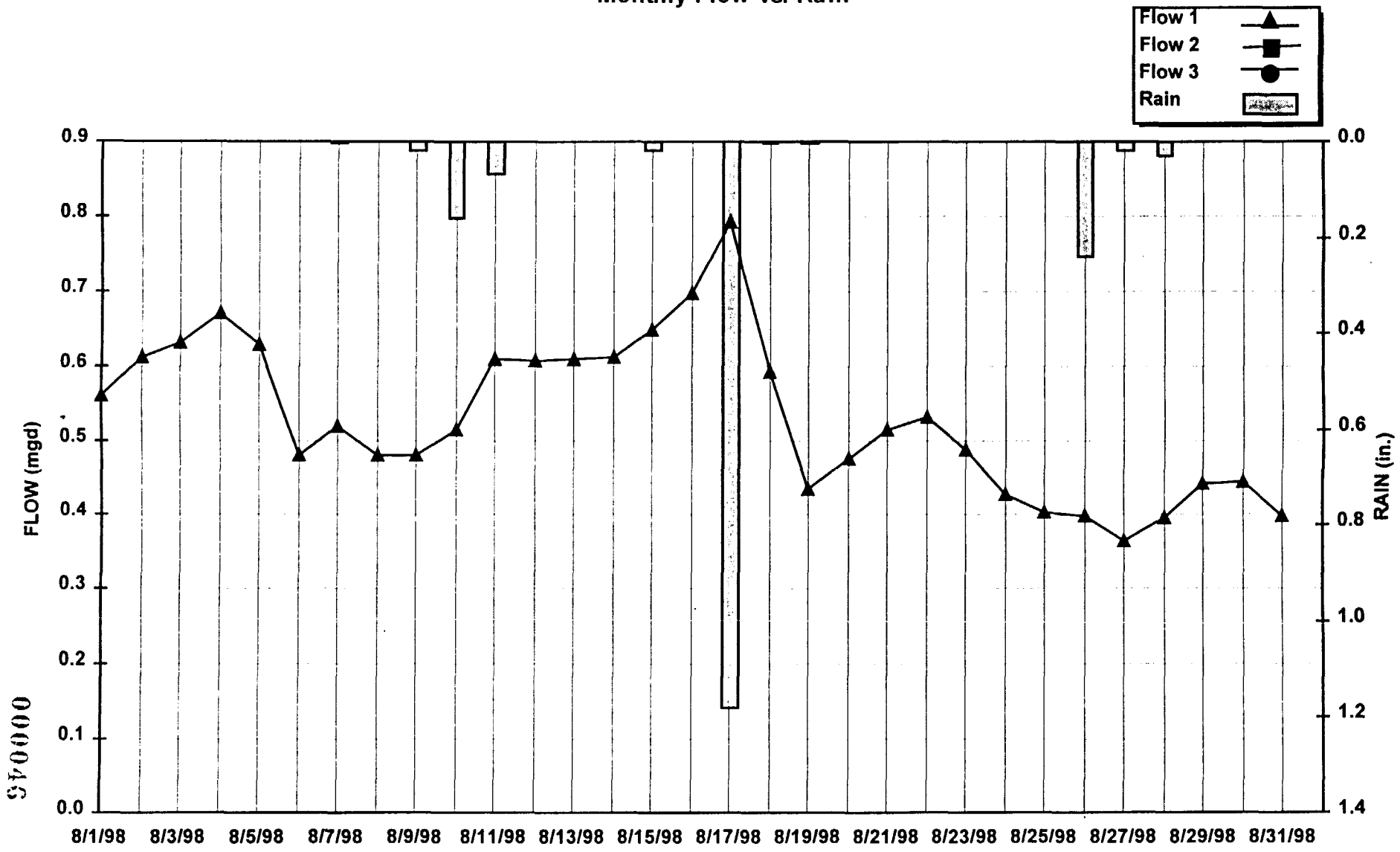
000045

863690293

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

Serial#: QQ7

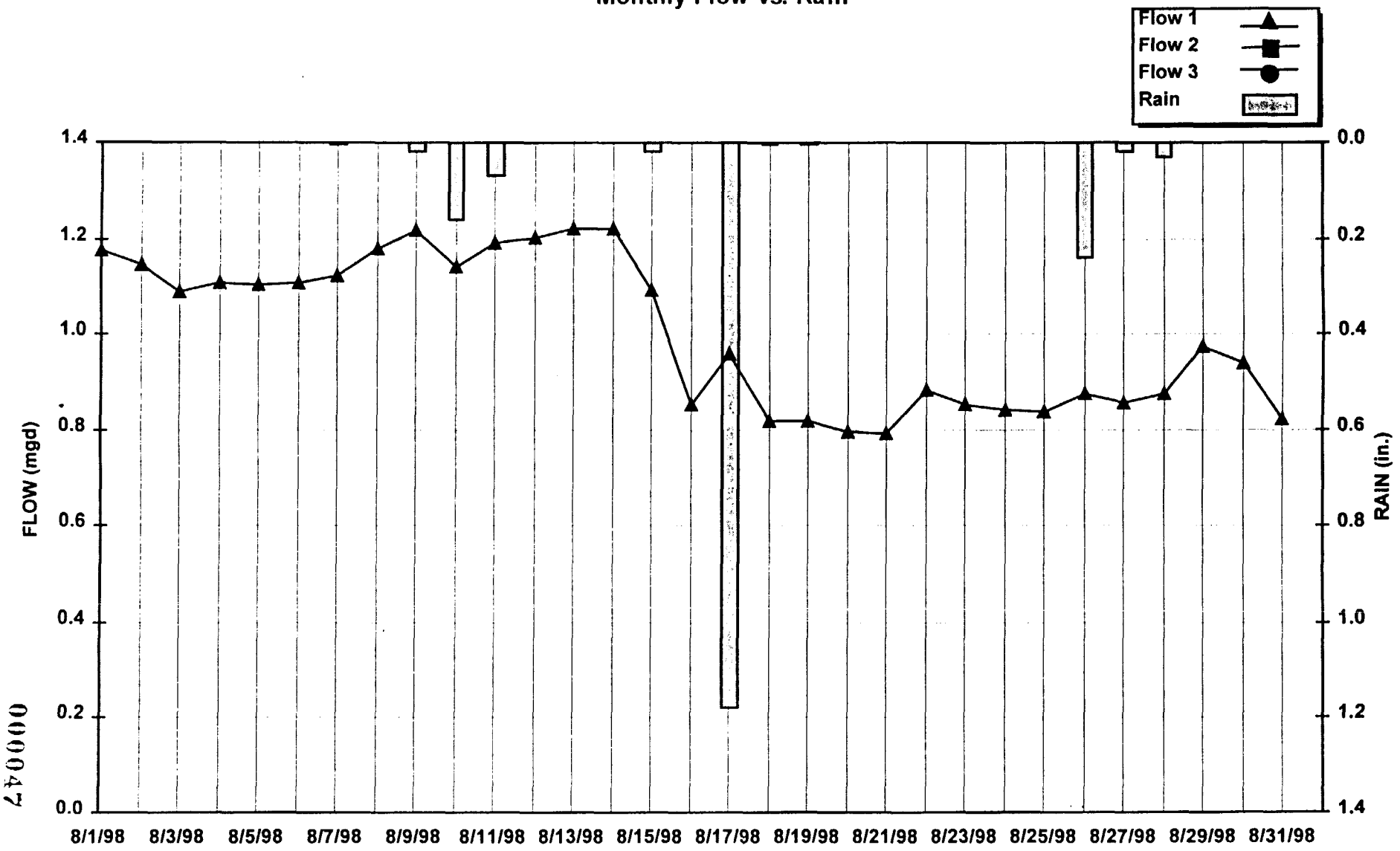
000045

863690294

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000047

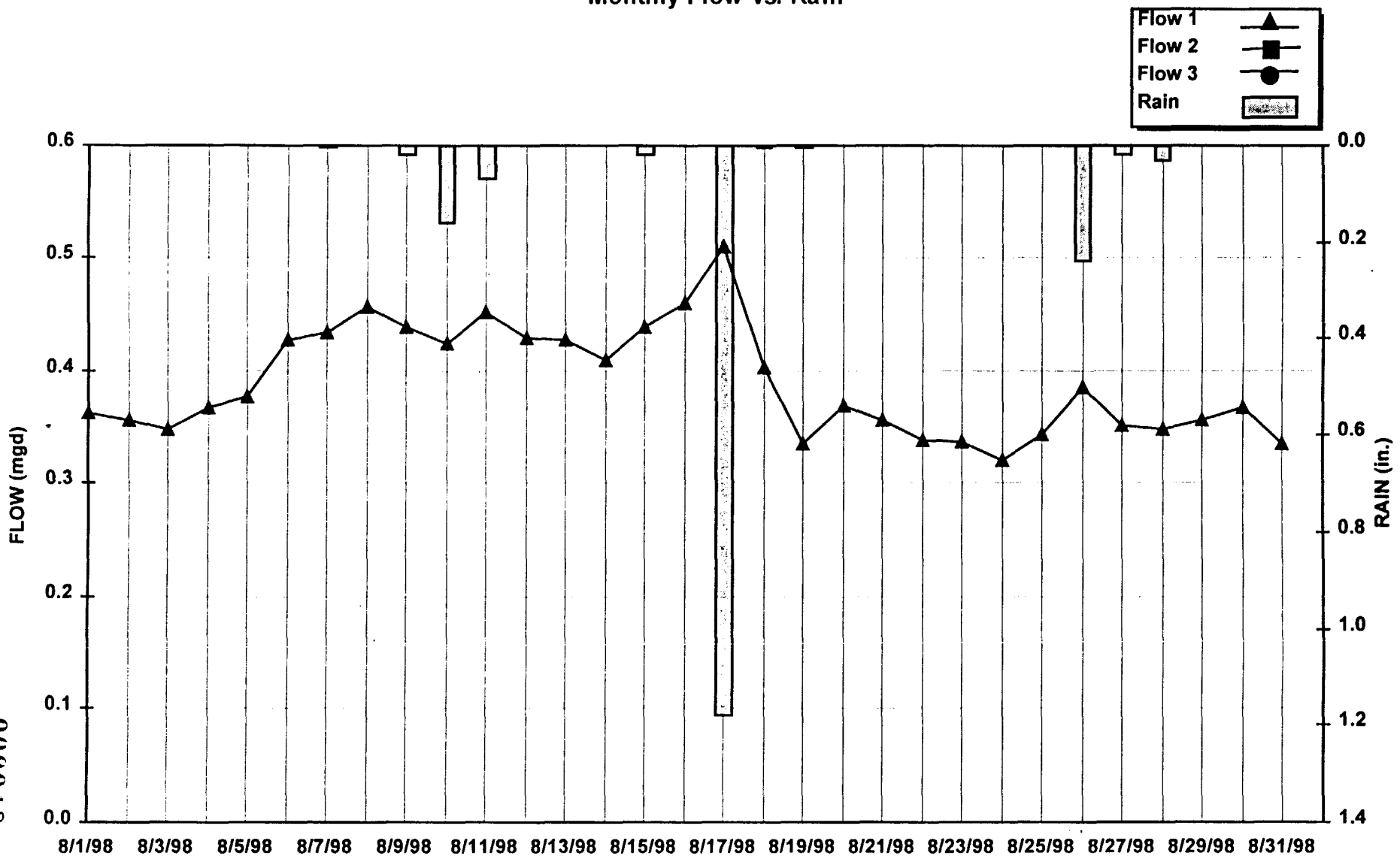
863690295

Outgoing No. 2
Address: Unity and Valley St.
Serial#: QQ2

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



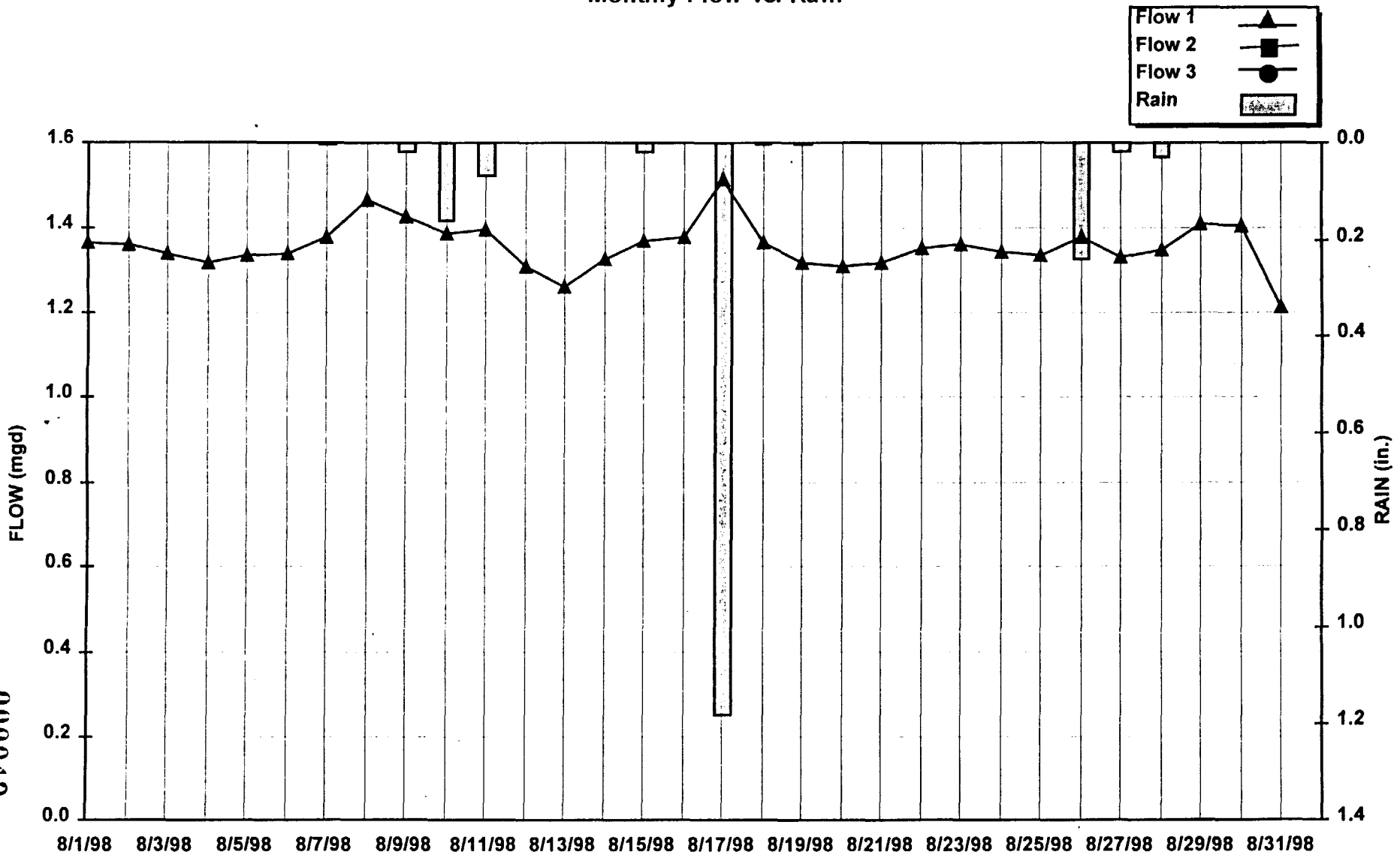
Outgoing No. 3
Address: Fabyan Pl. near Exit Ramp of I-78
Serial#: QRD

000043
863690296

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000049

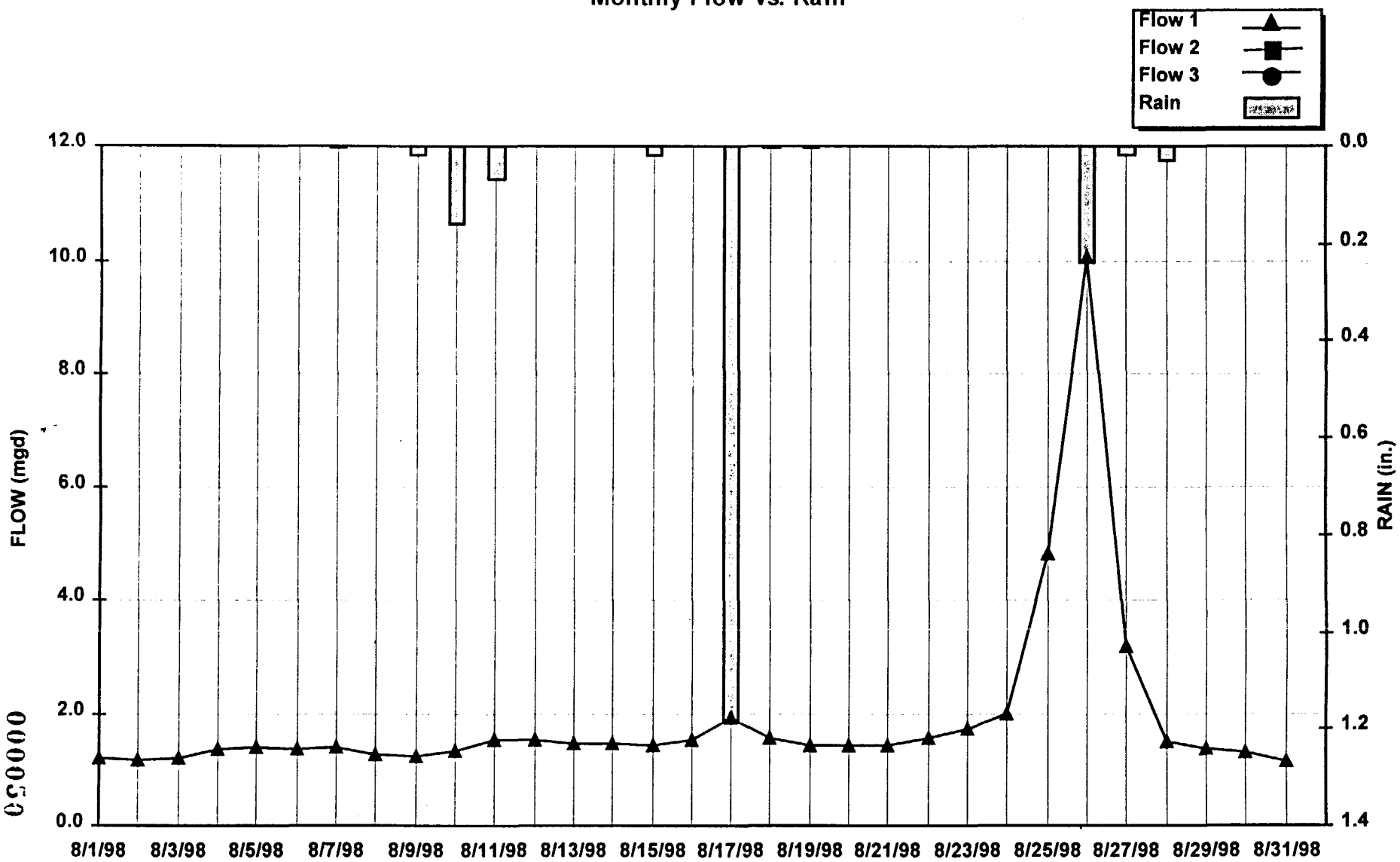
863690297

Outgoing No. 4
Address: N. Lindon Ln between House # 63 and 65
Serial#: QUI

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 1

Address: Elizabeth Ave. near Mapes Ave.

Serial#: QLL

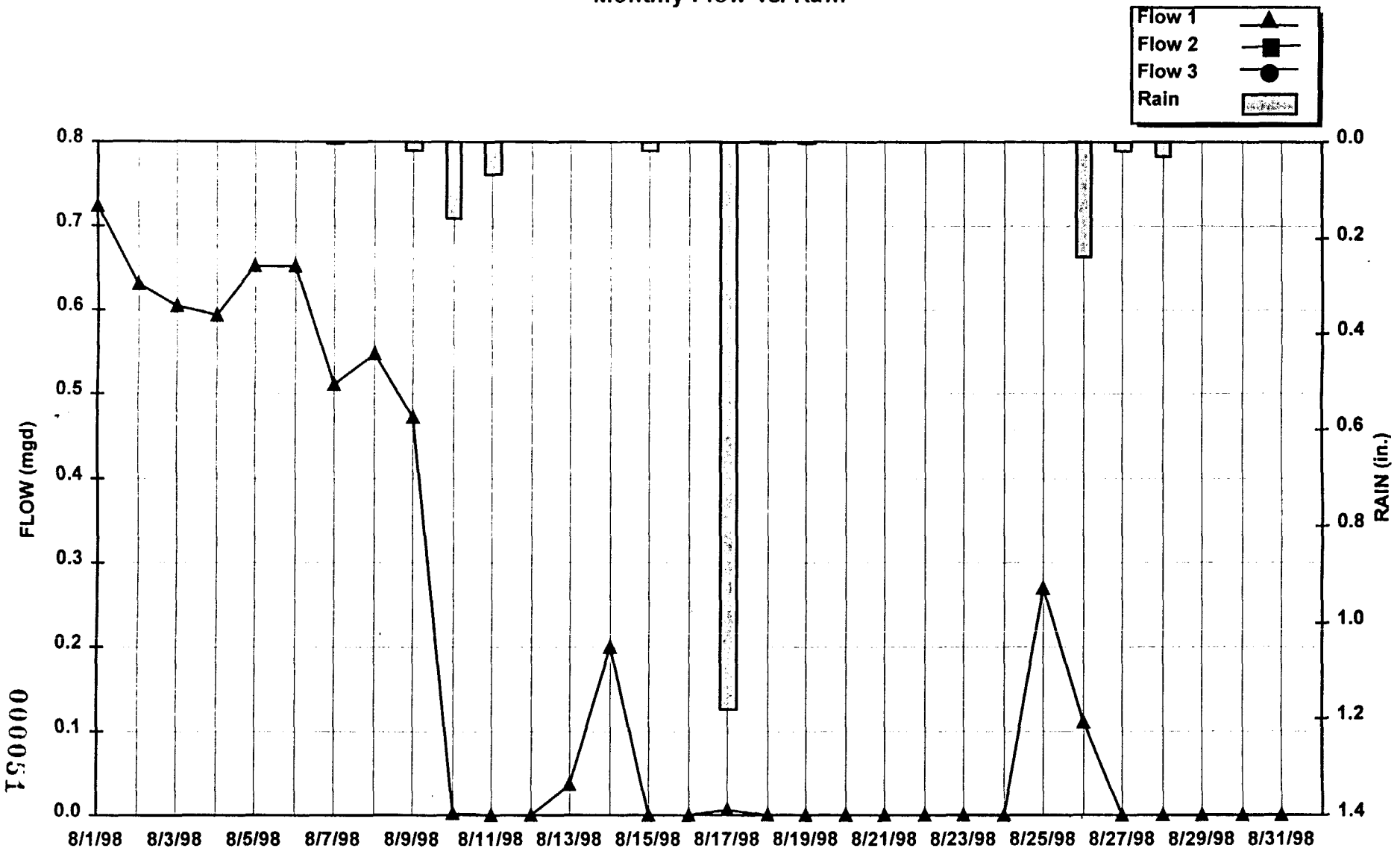
000050

863690298

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 2
Address: Weequahic Park
Serial#: QUN

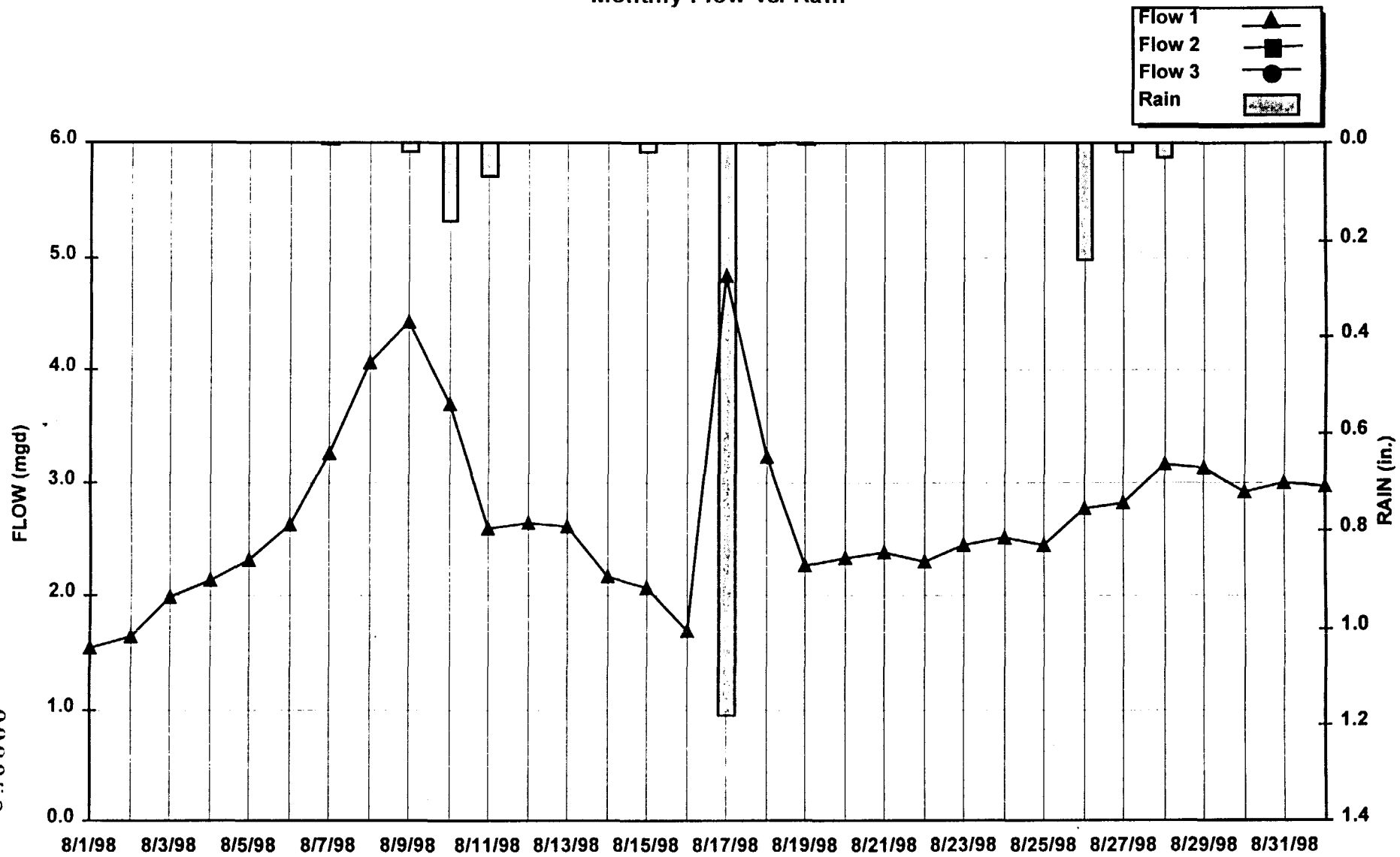
000051

863690299

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 3
Address: Jabez Ave. near Backus St.
Serial#: QTZ

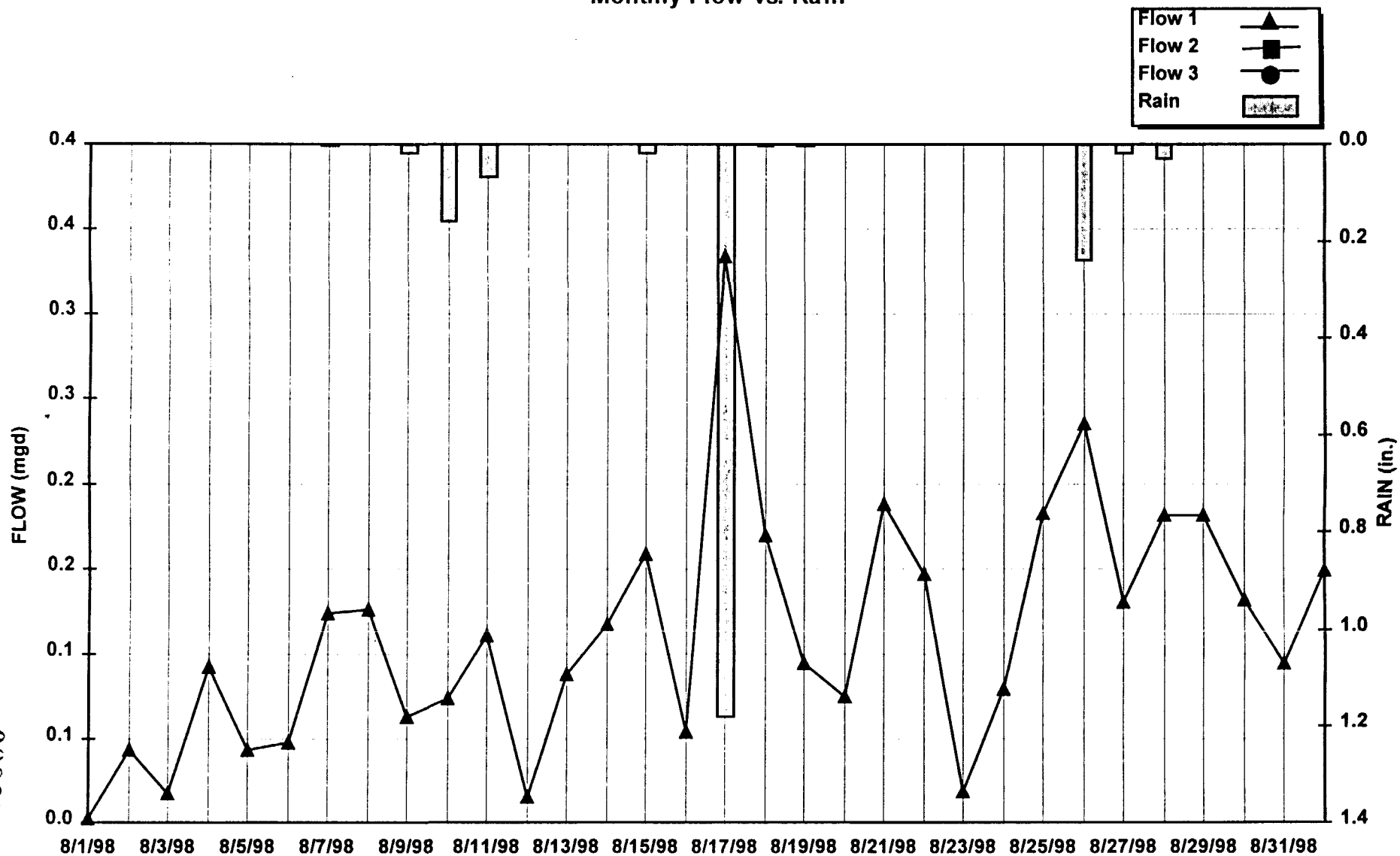
0000052

863690300

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 4
Address: Wilson and Ave. P
Serial#: QT1

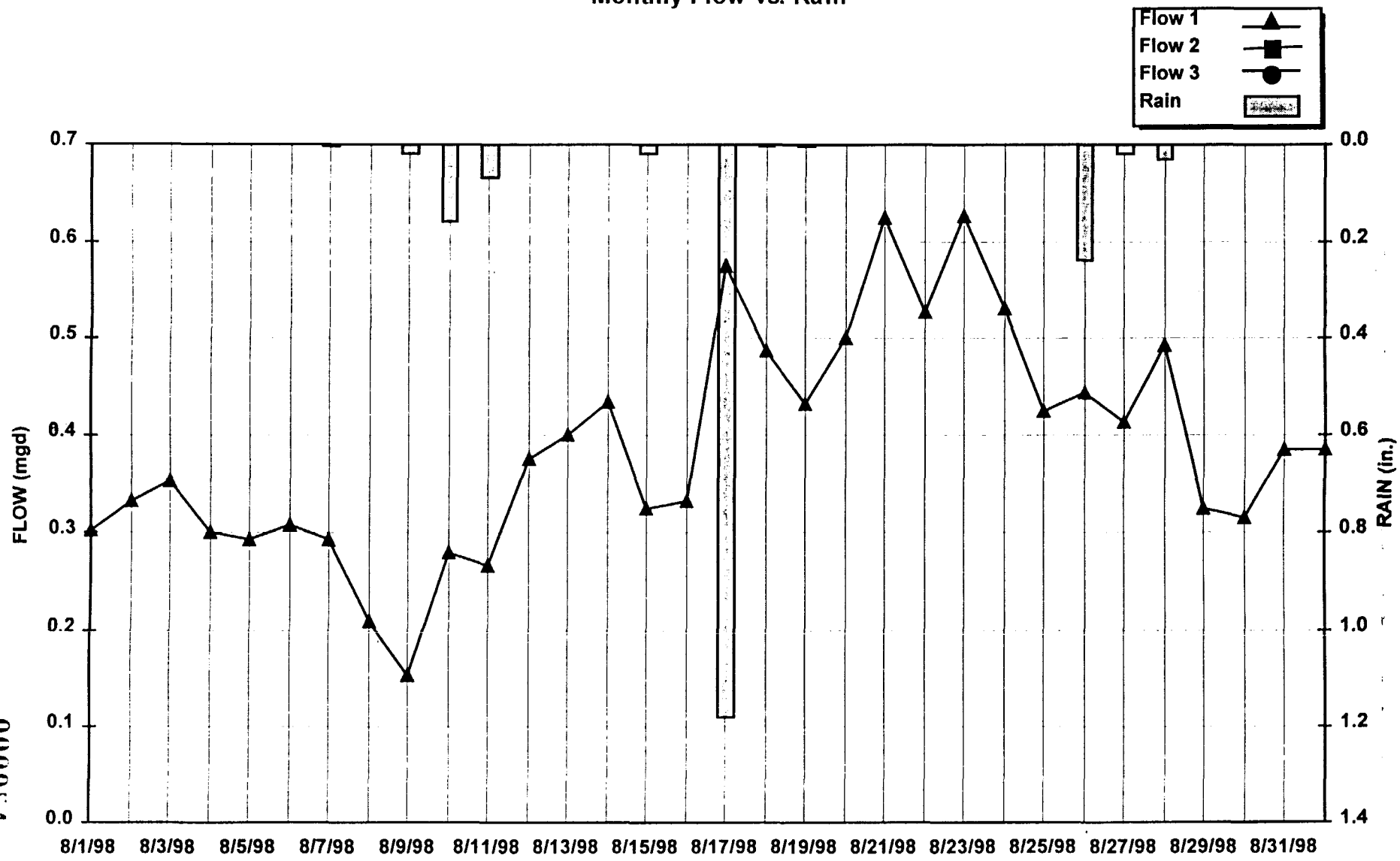
000053

863690301

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 5

Address: Doremus Ave. near Delancy St.

Serial#: QUO

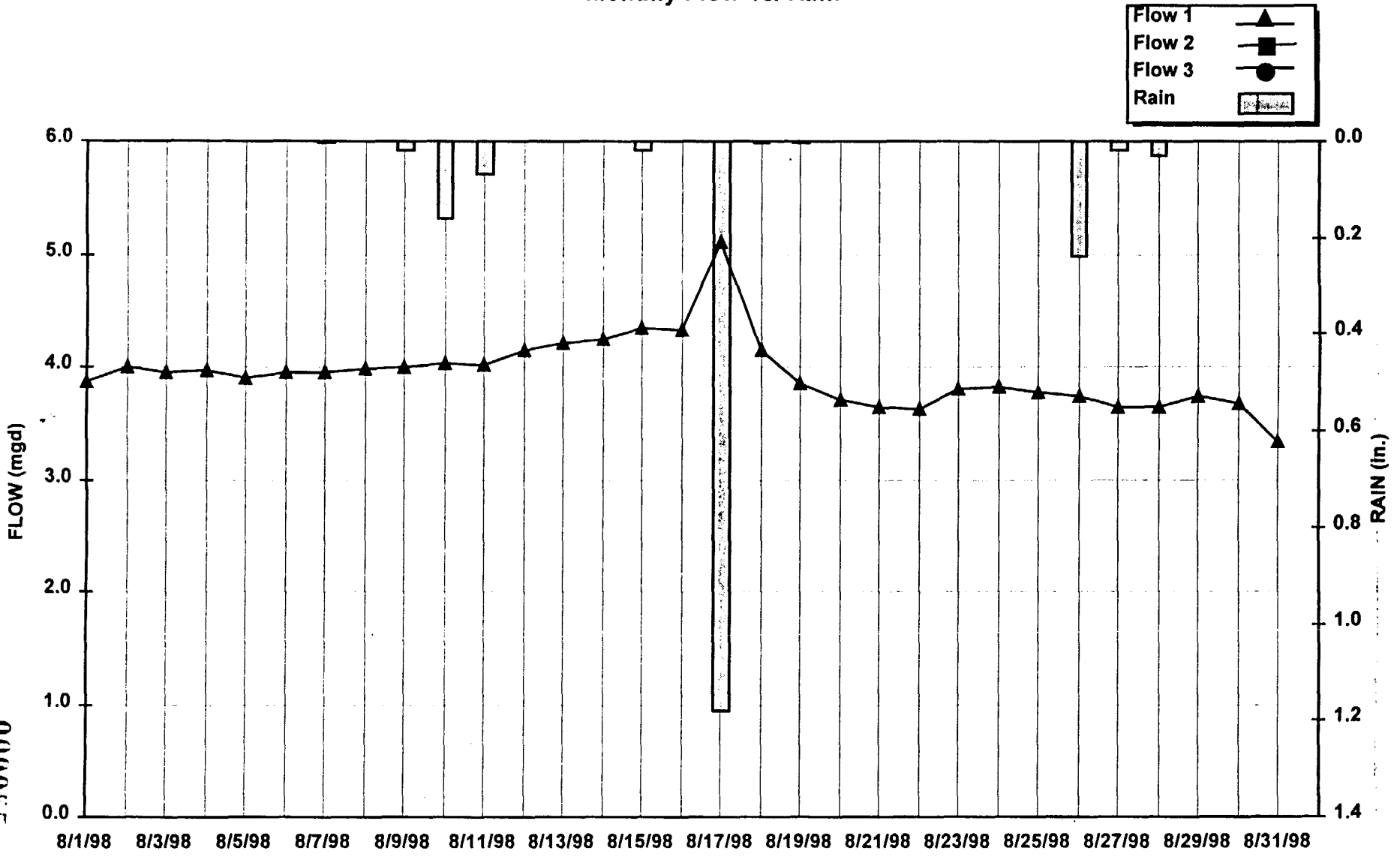
000054

863690302

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



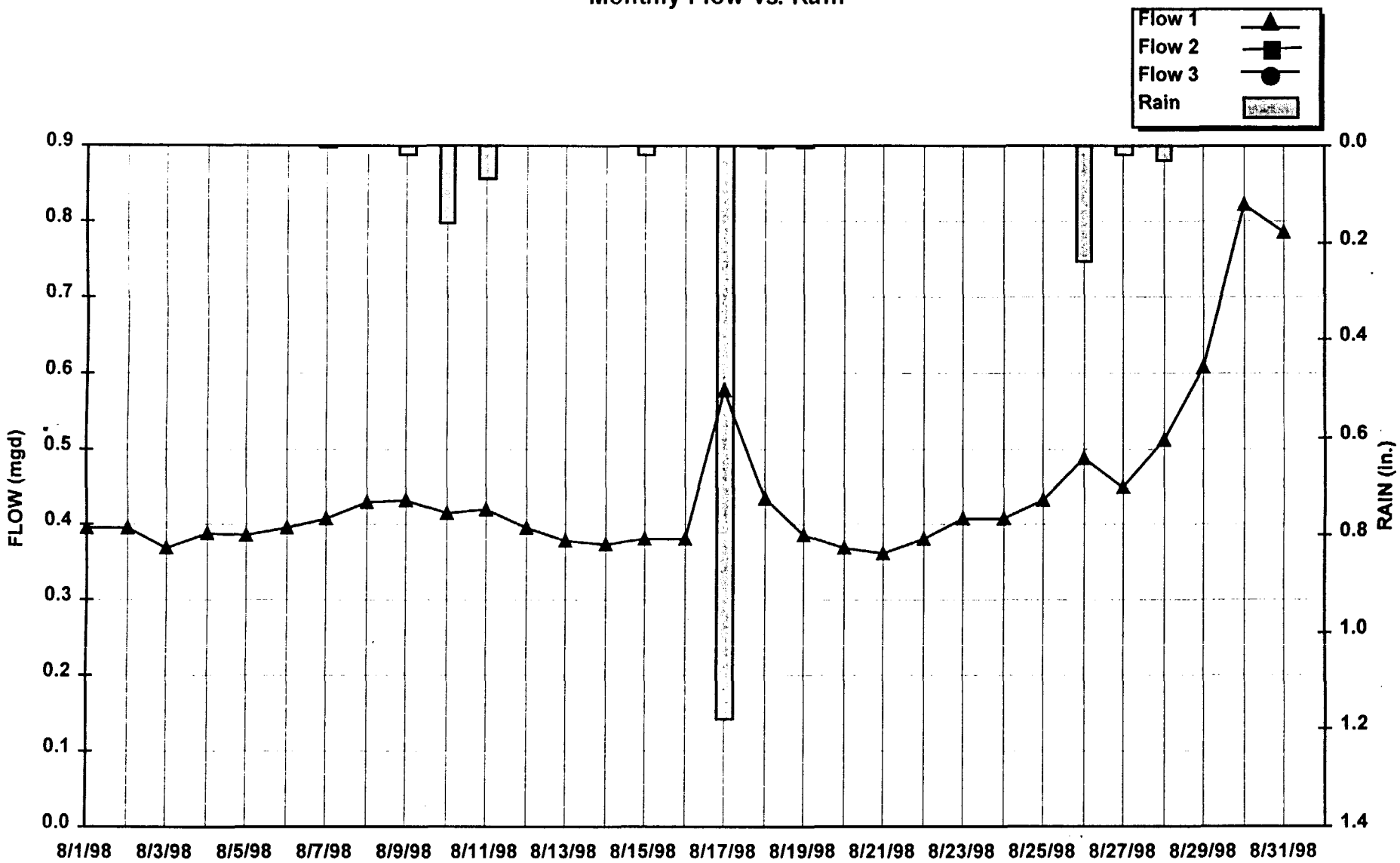
NEWARK No. 6
Address: Near 355 5th St.
Serial#: QU1

000055
863690303

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



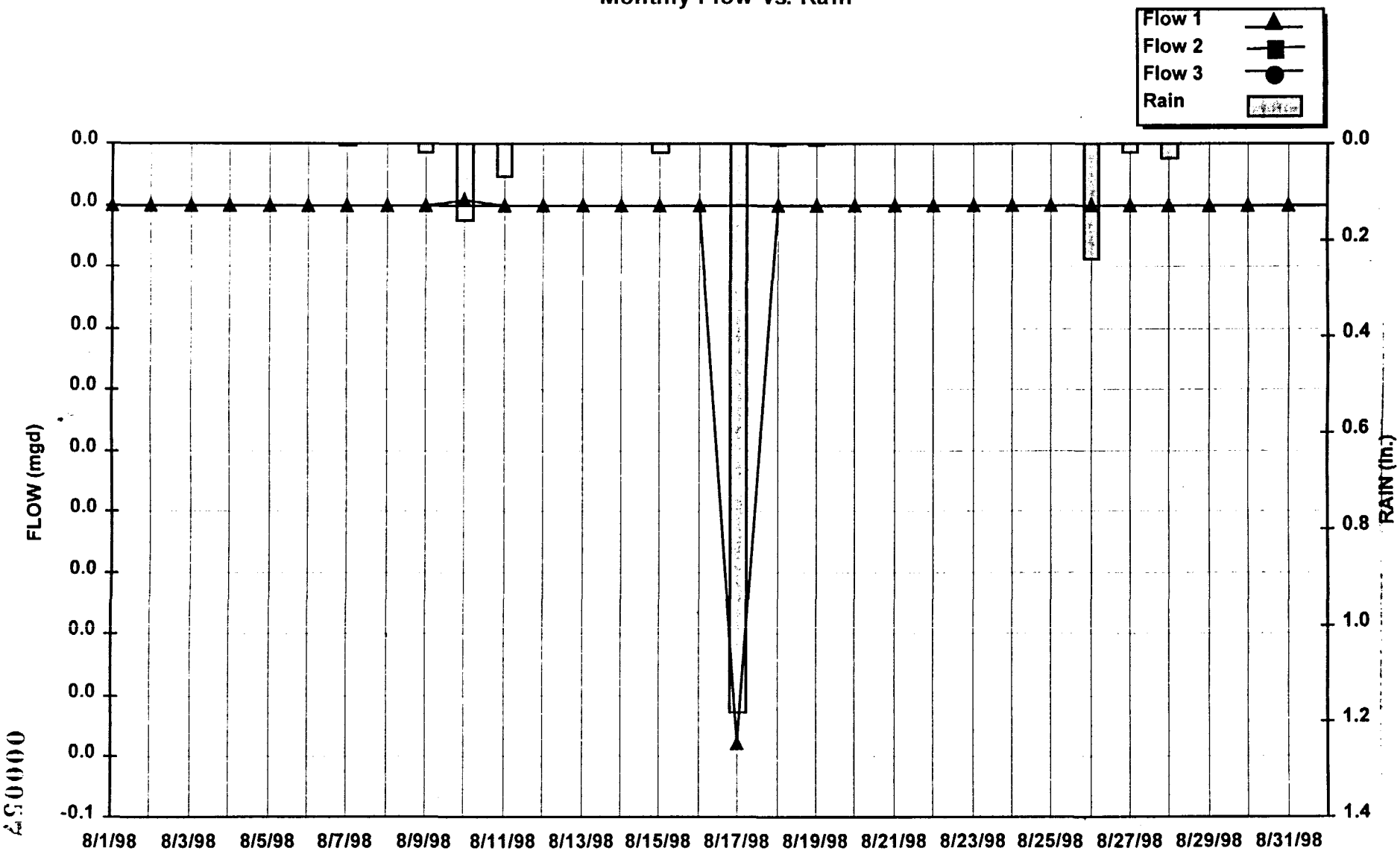
NEWARK No. 7
Address: Verona St. near Broadway
Serial#: QUK

000035
863690304

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



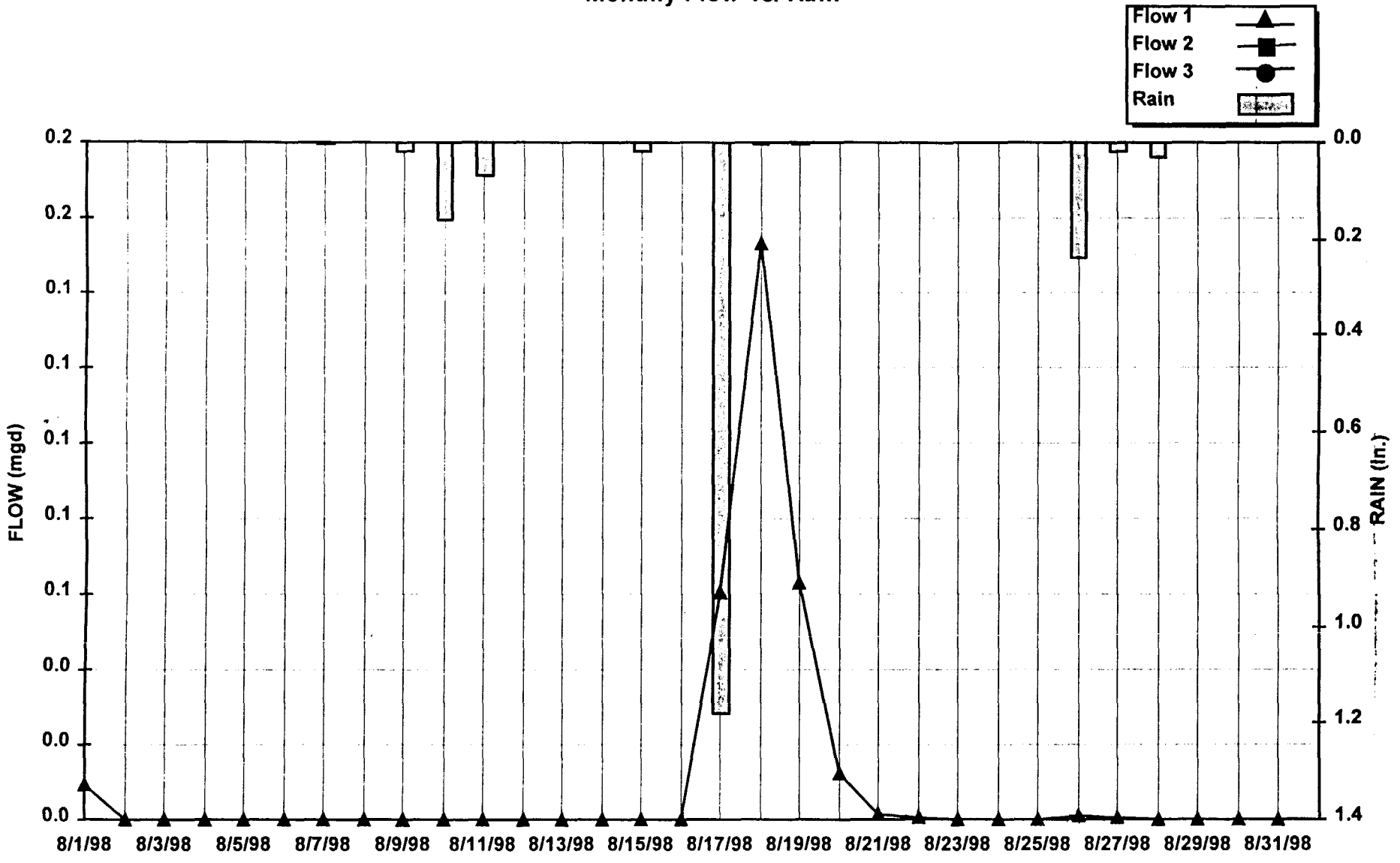
NEWARK No. 8
Address: Earl and Frelinghuysen
Serial#: QT3

863690305

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



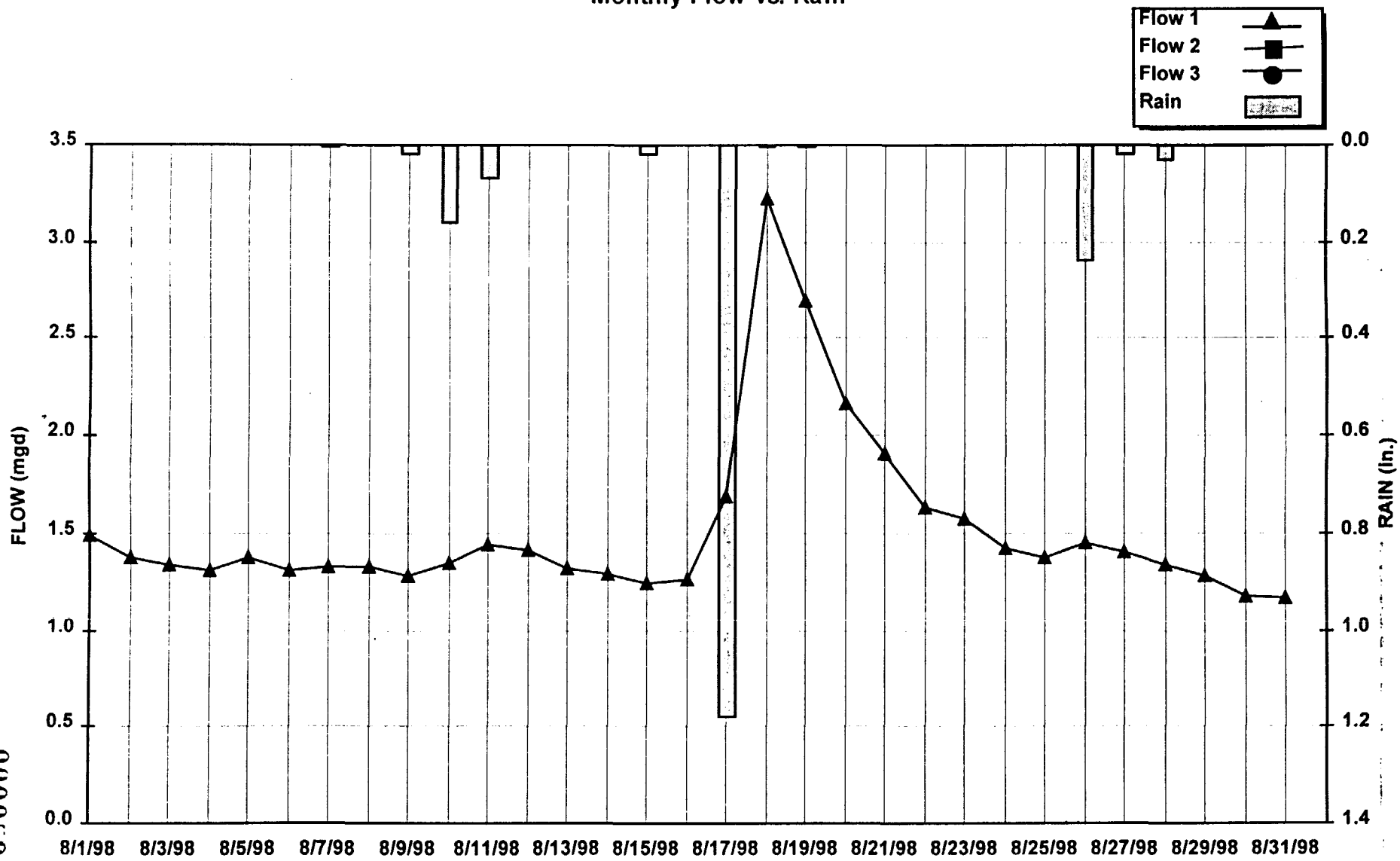
NEWARK No. 9
Address: Branch Brook Park Lake Overflow
Serial#: QLF

000053
863690306

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 10

Address: Weequahic Park Lake Overflow

Serial#: QUX

000053

863690307

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.22	.00		.00
08/02/98	1.16	.00		.00
08/03/98	1.06	.00		.00
08/04/98	1.03	.00		.00
08/05/98	1.01	.00		.00
08/06/98	.92	.00		.00
08/07/98	1.05	.00		.00
08/08/98	1.12	.00		.00
08/09/98	1.16	.00		.02
08/10/98	1.48	.04		.16
08/11/98	1.49	.00		.07
08/12/98	.93	.00		.00
08/13/98	.80	.00		.00
08/14/98	.84	.00		.00
08/15/98	.77	.00		.02
08/16/98	.80	.00		.00
08/17/98	3.24	.91		1.18
08/18/98	1.39	.00		.00
08/19/98	1.19	.00		.00
08/20/98	1.15	.00		.00
08/21/98	1.08	.00		.00
08/22/98	1.12	.00		.00
08/23/98	1.04	.00		.00
08/24/98	.87	.00		.00
08/25/98	.91	.00		.00
08/26/98	1.55	.00		.24
08/27/98	1.07	.00		.02
08/28/98	1.11	.00		.03
08/29/98	1.25	.00		.00
08/30/98	1.22	.00		.00
08/31/98	.98	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

Serial#: QTQ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.28	.02		.00
08/02/98	1.47	.03		.00
08/03/98	1.49	.03		.00
08/04/98	1.44	.07		.00
08/05/98	1.48	.10		.00
08/06/98	1.38	.11		.00
08/07/98	1.39	.04		.00
08/08/98	1.46	.04		.00
08/09/98	1.33	.11		.02
08/10/98	1.33	.05		.16
08/11/98	2.23	.11		.07
08/12/98	1.94	.08		.00
08/13/98	1.85	.07		.00
08/14/98	1.81	.06		.00
08/15/98	1.86	.05		.02
08/16/98	2.02	.08		.00
08/17/98	4.34	.14		1.18
08/18/98	1.94	.06		.00
08/19/98	1.73	.17		.00
08/20/98	1.63	.08		.00
08/21/98	1.57	.07		.00
08/22/98	1.70	.04		.00
08/23/98	1.73	.00		.00
08/24/98	1.88	.00		.00
08/25/98	1.68	.00		.00
08/26/98	2.67	.08		.24
08/27/98	1.81	.10		.02
08/28/98	1.76	.06		.03
08/29/98	2.00	.12		.00
08/30/98	2.06	.15		.00
08/31/98	1.52	.15		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. -
Overflows

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00	.00		.00
08/02/98	.00	.00		.00
08/03/98	.00	.00		.00
08/04/98	.00	.00		.00
08/05/98	.00	.00		.00
08/06/98	.00	.00		.00
08/07/98	.00	.00		.00
08/08/98	.00	.00		.00
08/09/98	.00	.00		.02
08/10/98	.07	.11		.16
08/11/98	.09	.23		.07
08/12/98	.00	.00		.00
08/13/98	.00	.00		.00
08/14/98	.00	.00		.00
08/15/98	.00	.00		.02
08/16/98	.00	.04		.00
08/17/98	1.44	1.90		1.18
08/18/98	.12	.09		.00
08/19/98	.00	-.07		.00
08/20/98	.00	.00		.00
08/21/98	.00	.00		.00
08/22/98	.00	.00		.00
08/23/98	-.01	.00		.00
08/24/98	.00	.00		.00
08/25/98	.00	.00		.00
08/26/98	.05	.11		.24
08/27/98	.00	.00		.02
08/28/98	.00	.00		.03
08/29/98	.00	.00		.00
08/30/98	.00	.00		.00
08/31/98	.00	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Influent

Address: Broadway and Second St.

Serial#: QUL

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.13			.00
08/02/98	1.14			.00
08/03/98	1.10			.00
08/04/98	1.22			.00
08/05/98	1.20			.00
08/06/98	1.26			.00
08/07/98	1.32			.00
08/08/98	1.37			.00
08/09/98	1.35			.02
08/10/98	1.42			.16
08/11/98	1.39			.07
08/12/98	1.24			.00
08/13/98	1.28			.00
08/14/98	1.28			.00
08/15/98	1.47			.02
08/16/98	1.47			.00
08/17/98	2.20			1.18
08/18/98	1.12			.00
08/19/98	1.06			.00
08/20/98	.99			.00
08/21/98	1.12			.00
08/22/98	1.17			.00
08/23/98	1.28			.00
08/24/98	1.29			.00
08/25/98	1.20			.00
08/26/98	1.58			.24
08/27/98	1.15			.02
08/28/98	1.09			.03
08/29/98	1.13			.00
08/30/98	1.19			.00
08/31/98	1.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Overflow

Address: Broadway and Second St.

Serial#: QUJ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.00			.00
08/07/98	.00			.00
08/08/98	.00			.00
08/09/98	.00			.02
08/10/98	.00			.16
08/11/98	.00			.07
08/12/98	.00			.00
08/13/98	.00			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	.06			1.18
08/18/98	.00			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.00			.00
08/24/98	.00			.00
08/25/98	.00			.00
08/26/98	.00			.24
08/27/98	.00			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

Serial#: QR6

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.03	.00		.00
08/02/98	.04	-.01		.00
08/03/98	.07	.01		.00
08/04/98	.05	.02		.00
08/05/98	.06	.04		.00
08/06/98	.06	.01		.00
08/07/98	.07	.04		.00
08/08/98	.05	.17		.00
08/09/98	.05	.18		.02
08/10/98	.07	.20		.16
08/11/98	.11	.16		.07
08/12/98	.12	.24		.00
08/13/98	.09	.58		.00
08/14/98	.09	.24		.00
08/15/98	.08	.10		.02
08/16/98	.07	.10		.00
08/17/98	.09	.12		1.18
08/18/98	.02	.13		.00
08/19/98	.04	.66		.00
08/20/98	.09	.34		.00
08/21/98	.12	.30		.00
08/22/98	.10	.27		.00
08/23/98	.10	.32		.00
08/24/98	.07	.27		.00
08/25/98	.07	.03		.00
08/26/98	.06	.00		.24
08/27/98	.04	.00		.02
08/28/98	.01	.01		.03
08/29/98	.01	.01		.00
08/30/98	.01	.01		.00
08/31/98	.00	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

Serial#: QQD

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	-8.77	.00		.00
08/02/98	-5.52	.00		.00
08/03/98	-2.46	.00		.00
08/04/98	-2.44	.00		.00
08/05/98	-1.44	.00		.00
08/06/98	-4.62	.00		.00
08/07/98	-3.96	.00		.00
08/08/98	-2.91	.00		.00
08/09/98	.00	.00		.02
08/10/98	.09	.24		.16
08/11/98	-1.78	.28		.07
08/12/98	-6.91	.00		.00
08/13/98	-5.82	.00		.00
08/14/98	-6.04	.00		.00
08/15/98	-6.46	.00		.02
08/16/98	-7.15	.00		.00
08/17/98	3.49	3.61		1.18
08/18/98	-7.39	.13		.00
08/19/98	-8.68	.00		.00
08/20/98	-11.17	.00		.00
08/21/98	-12.89	.00		.00
08/22/98	-12.96	.00		.00
08/23/98	-12.81	.00		.00
08/24/98	-13.18	.00		.00
08/25/98	-12.84	.00		.00
08/26/98	-10.51	.01		.24
08/27/98	-9.64	.00		.02
08/28/98	-10.13	.00		.03
08/29/98	-6.84	.00		.00
08/30/98	-4.69	.00		.00
08/31/98	-2.99	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Influent

Address: Clay St. at Passaic St.

Serial#: QRG

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.45			.00
08/02/98	.43			.00
08/03/98	.41			.00
08/04/98	.39			.00
08/05/98	.40			.00
08/06/98	.40			.00
08/07/98	.40			.00
08/08/98	.39			.00
08/09/98	.35			.02
08/10/98	.42			.16
08/11/98	.37			.07
08/12/98	.36			.00
08/13/98	.38			.00
08/14/98	.37			.00
08/15/98	.37			.02
08/16/98	.36			.00
08/17/98	.65			1.18
08/18/98	.46			.00
08/19/98	.44			.00
08/20/98	.43			.00
08/21/98	.44			.00
08/22/98	.43			.00
08/23/98	.41			.00
08/24/98	.41			.00
08/25/98	.42			.00
08/26/98	.48			.24
08/27/98	.43			.02
08/28/98				.03
08/29/98				.00
08/30/98				.00
08/31/98				.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Overflow

Address: Clay St. at Passaic St.

Serial#: QU3

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.00			.00
08/07/98	.00			.00
08/08/98	.00			.00
08/09/98	.00			.02
08/10/98	.00			.16
08/11/98	.00			.07
08/12/98	.00			.00
08/13/98	.00			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	.04			1.18
08/18/98	.00			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.00			.00
08/24/98	.00			.00
08/25/98	.00			.00
08/26/98	.00			.24
08/27/98	.00			.02
08/28/98				.03
08/29/98				.00
08/30/98				.00
08/31/98				.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

Serial#: QRW

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.05	.00		.00
08/02/98	.06	.00		.00
08/03/98	.06	.00		.00
08/04/98	.05	.00		.00
08/05/98	.05	.00		.00
08/06/98	.04	.00		.00
08/07/98	.04	.00		.00
08/08/98	.04	.00		.00
08/09/98	.05	.00		.02
08/10/98	.06	.00		.16
08/11/98	.05	.00		.07
08/12/98	.04	.00		.00
08/13/98	.04	.00		.00
08/14/98	.04	.00		.00
08/15/98	.05	.00		.02
08/16/98	.07	.00		.00
08/17/98	.12	-.80		1.18
08/18/98	.07	-.15		.00
08/19/98	.05	.00		.00
08/20/98	.05	.00		.00
08/21/98	.05	.00		.00
08/22/98	.05	.00		.00
08/23/98	.05	.00		.00
08/24/98	.05	.00		.00
08/25/98	.07	.00		.00
08/26/98	.07	.00		.24
08/27/98	.05	.00		.02
08/28/98	.07	.00		.03
08/29/98	.09	.00		.00
08/30/98	.08	.00		.00
08/31/98	.07	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Influents

Address: Clay St. at McCarter Hwy

Serial#: QTR

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98				.00
08/02/98				.00
08/03/98				.00
08/04/98				.00
08/05/98				.00
08/06/98				.00
08/07/98				.00
08/08/98				.00
08/09/98				.02
08/10/98				.16
08/11/98				.07
08/12/98				.00
08/13/98				.00
08/14/98				.00
08/15/98				.02
08/16/98				.00
08/17/98				1.18
08/18/98				.00
08/19/98				.00
08/20/98				.00
08/21/98				.00
08/22/98				.00
08/23/98				.00
08/24/98				.00
08/25/98				.00
08/26/98				.24
08/27/98				.02
08/28/98				.03
08/29/98				.00
08/30/98				.00
08/31/98				.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow North Pipe

Address: Clay St. at Passaic St.

Serial#: QPS

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	-.01			.00
08/05/98	.00			.00
08/06/98	-.01			.00
08/07/98	.00			.00
08/08/98	-.01			.00
08/09/98	-.05			.02
08/10/98	2.23			.16
08/11/98	6.59			.07
08/12/98	-.05			.00
08/13/98	.00			.00
08/14/98	-.05			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	-73.76			1.18
08/18/98	21.99			.00
08/19/98	.00			.00
08/20/98				.00
08/21/98				.00
08/22/98				.00
08/23/98				.00
08/24/98				.00
08/25/98				.00
08/26/98				.24
08/27/98				.02
08/28/98				.03
08/29/98				.00
08/30/98				.00
08/31/98				.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow South Pipe

Address: Clay St. at Passaic St.

Serial#: QUM

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.02			.00
08/02/98	.02			.00
08/03/98	.06			.00
08/04/98	.00			.00
08/05/98	.01			.00
08/06/98	.01			.00
08/07/98	.01			.00
08/08/98	-.02			.00
08/09/98	.03			.02
08/10/98	.88			.16
08/11/98	7.01			.07
08/12/98				.00
08/13/98				.00
08/14/98				.00
08/15/98				.02
08/16/98				.00
08/17/98				1.18
08/18/98				.00
08/19/98				.00
08/20/98				.00
08/21/98				.00
08/22/98				.00
08/23/98				.00
08/24/98				.00
08/25/98				.00
08/26/98				.24
08/27/98				.02
08/28/98				.03
08/29/98				.00
08/30/98				.00
08/31/98				.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST Influent

Address: Orange St. and McCarter Hwy

Serial#: QRF

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.06			.00
08/02/98	.06			.00
08/03/98	.06			.00
08/04/98	.06			.00
08/05/98	.07			.00
08/06/98	.07			.00
08/07/98	.07			.00
08/08/98	.07			.00
08/09/98	.07			.02
08/10/98	.08			.16
08/11/98	.06			.07
08/12/98	.06			.00
08/13/98	.06			.00
08/14/98	.06			.00
08/15/98	.07			.02
08/16/98	.07			.00
08/17/98	.23			1.18
08/18/98	.07			.00
08/19/98	.06			.00
08/20/98	.06			.00
08/21/98	.06			.00
08/22/98	.06			.00
08/23/98	.06			.00
08/24/98	.06			.00
08/25/98	.07			.00
08/26/98	.07			.24
08/27/98	.07			.02
08/28/98	.07			.03
08/29/98	.07			.00
08/30/98	.08			.00
08/31/98	.08			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.10	.00		.00
08/02/98	.11	.00		.00
08/03/98	.11	.00		.00
08/04/98	.10	.00		.00
08/05/98	.10	.00		.00
08/06/98	.09	.00		.00
08/07/98	.09	.00		.00
08/08/98	.09	.00		.00
08/09/98	.09	.00		.02
08/10/98	.10	.00		.16
08/11/98	.09	.00		.07
08/12/98	.10	.00		.00
08/13/98	.09	.00		.00
08/14/98	.10	.00		.00
08/15/98	.09	.00		.02
08/16/98	.10	.00		.00
08/17/98	.16	.00		1.18
08/18/98	.09	.00		.00
08/19/98	.09	.00		.00
08/20/98	.09	.00		.00
08/21/98	.09	.00		.00
08/22/98	.09	.00		.00
08/23/98	.09	.00		.00
08/24/98	.09	.00		.00
08/25/98	.10	.00		.00
08/26/98	.09	.00		.24
08/27/98	.09	.00		.02
08/28/98	.09	.00		.03
08/29/98	.09	.00		.00
08/30/98	.08	.00		.00
08/31/98	.09	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

Serial#: QR7

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.05	.12		.00
08/02/98	.04	.11		.00
08/03/98	.04	.10		.00
08/04/98	.05	.13		.00
08/05/98	.06	.15		.00
08/06/98	.05	.13		.00
08/07/98	.07	.18		.00
08/08/98	.06	.16		.00
08/09/98	.08	.21		.02
08/10/98	.09	.21		.16
08/11/98	.04	.12		.07
08/12/98	.04	.13		.00
08/13/98	.04	.13		.00
08/14/98	.06	.16		.00
08/15/98	.08	.22		.02
08/16/98	.10	.30		.00
08/17/98	.20	.41		1.18
08/18/98	.02	.06		.00
08/19/98	.02	.07		.00
08/20/98	.06	.16		.00
08/21/98	.10	.28		.00
08/22/98	.12	.33		.00
08/23/98	.14	.39		.00
08/24/98	.12	.33		.00
08/25/98	.12	.33		.00
08/26/98	.14	.36		.24
08/27/98	.09	.25		.02
08/28/98	.09	.23		.03
08/29/98	.04	.11		.00
08/30/98	.05	.15		.00
08/31/98	.10	.27		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

Serial#: QUY

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.91	.00	.00	.00
08/02/98	2.60	.00	.00	.00
08/03/98	2.62	.00	.00	.00
08/04/98	2.44	.00	.00	.00
08/05/98	2.27	.00	.00	.00
08/06/98	1.86	.00	.00	.00
08/07/98	1.50	.00	.00	.00
08/08/98	1.73	.00	.00	.00
08/09/98	2.20	.00	.00	.02
08/10/98	2.28	.00	.16	.16
08/11/98	2.01	.00	.17	.07
08/12/98	2.20	.00	.00	.00
08/13/98	1.76	.00	.00	.00
08/14/98	1.34	.01	.00	.00
08/15/98	1.19	.01	.00	.02
08/16/98	1.43	.01	.00	.00
08/17/98	4.60	-.18	2.14	1.18
08/18/98	1.88	.00	.09	.00
08/19/98	2.04	.00	.00	.00
08/20/98	2.11	.00	.00	.00
08/21/98	1.84	.00	.00	.00
08/22/98	1.87	.00	.00	.00
08/23/98	1.98	.00	.00	.00
08/24/98	1.78	.00	.00	.00
08/25/98	2.02	.00	.00	.00
08/26/98	2.19	-.01	.00	.24
08/27/98	2.70	.00	.00	.02
08/28/98	2.84	.00	.00	.03
08/29/98	2.65	.00	.00	.00
08/30/98	2.75	.00	.00	.00
08/31/98	2.49	.00	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	-2.39	.00		.00
08/02/98	16.59	.00		.00
08/03/98	9.79	.00		.00
08/04/98	-6.95	.00		.00
08/05/98	-9.23	.00		.00
08/06/98	-4.71	.00		.00
08/07/98	.98	.00		.00
08/08/98	-13.86	.00		.00
08/09/98	-10.89	.00		.02
08/10/98	-3.49	.31		.16
08/11/98	10.28	.45		.07
08/12/98	-3.30	.00		.00
08/13/98	-2.13	.00		.00
08/14/98	-3.23	.00		.00
08/15/98	4.13	.00		.02
08/16/98	.68	.00		.00
08/17/98	17.07	4.27		1.18
08/18/98	13.59	.15		.00
08/19/98	13.99	.00		.00
08/20/98	7.03	.00		.00
08/21/98	1.42	.00		.00
08/22/98	3.97	.00		.00
08/23/98	1.23	.00		.00
08/24/98	4.40	.00		.00
08/25/98	4.76	.00		.00
08/26/98	4.81	.00		.24
08/27/98	-2.63	.00		.02
08/28/98	-3.18	.00		.03
08/29/98	-5.23	.00		.00
08/30/98	3.21	.00		.00
08/31/98	-3.22	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent1

Address: Raymond Plaza near
Raymond Blvd.

Serial#: QQT

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.02			.00
08/02/98	.01			.00
08/03/98	.03			.00
08/04/98	.03			.00
08/05/98	.03			.00
08/06/98	.04			.00
08/07/98	.03			.00
08/08/98	.02			.00
08/09/98	.02			.02
08/10/98	.04			.16
08/11/98	.05			.07
08/12/98	.05			.00
08/13/98	.04			.00
08/14/98	.04			.00
08/15/98	.01			.02
08/16/98	.04			.00
08/17/98	.12			1.18
08/18/98	.04			.00
08/19/98	.04			.00
08/20/98	.03			.00
08/21/98	.03			.00
08/22/98	.01			.00
08/23/98	.03			.00
08/24/98	.03			.00
08/25/98	.03			.00
08/26/98	.04			.24
08/27/98	.03			.02
08/28/98	.03			.03
08/29/98	.01			.00
08/30/98	.02			.00
08/31/98	.02			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QU2

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.06			.00
08/02/98	.04			.00
08/03/98	.08			.00
08/04/98	.08			.00
08/05/98	.08			.00
08/06/98	.04			.00
08/07/98	.01			.00
08/08/98	.00			.00
08/09/98	.00			.02
08/10/98	.05			.16
08/11/98	.08			.07
08/12/98	.07			.00
08/13/98	.07			.00
08/14/98	.07			.00
08/15/98	.06			.02
08/16/98	.04			.00
08/17/98	.37			1.18
08/18/98	.08			.00
08/19/98	.08			.00
08/20/98	.07			.00
08/21/98	.08			.00
08/22/98	.05			.00
08/23/98	.04			.00
08/24/98	.08			.00
08/25/98	.08			.00
08/26/98	.10			.24
08/27/98	.07			.02
08/28/98	.06			.03
08/29/98	.04			.00
08/30/98	.03			.00
08/31/98	.06			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent3

Address: Raymond Plaza East near
Raymond Blvd.

Serial#: QPV

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.02			.00
08/02/98	.02			.00
08/03/98	.07			.00
08/04/98	.06			.00
08/05/98	.06			.00
08/06/98	.04			.00
08/07/98	.03			.00
08/08/98	.02			.00
08/09/98	.01			.02
08/10/98	.08			.16
08/11/98	.05			.07
08/12/98	.04			.00
08/13/98	.05			.00
08/14/98	.08			.00
08/15/98	.02			.02
08/16/98	.02			.00
08/17/98	.22			1.18
08/18/98	.04			.00
08/19/98	.03			.00
08/20/98	.04			.00
08/21/98	.05			.00
08/22/98	.02			.00
08/23/98	.01			.00
08/24/98	.05			.00
08/25/98	.05			.00
08/26/98	.10			.24
08/27/98	.08			.02
08/28/98	.07			.03
08/29/98	.04			.00
08/30/98	.01			.00
08/31/98	.04			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPQ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	6.60			.00
08/02/98	6.72			.00
08/03/98	7.01			.00
08/04/98	7.03			.00
08/05/98	7.03			.00
08/06/98	7.06			.00
08/07/98	7.06			.00
08/08/98	6.91			.00
08/09/98	6.72			.02
08/10/98	7.07			.16
08/11/98	4.72			.07
08/12/98	6.36			.00
08/13/98	7.07			.00
08/14/98	6.77			.00
08/15/98	6.71			.02
08/16/98	6.69			.00
08/17/98	8.95			1.18
08/18/98	5.30			.00
08/19/98	6.69			.00
08/20/98	6.47			.00
08/21/98	6.45			.00
08/22/98	6.45			.00
08/23/98	6.34			.00
08/24/98	6.65			.00
08/25/98	6.55			.00
08/26/98	7.17			.24
08/27/98	6.94			.02
08/28/98	7.09			.03
08/29/98	6.63			.00
08/30/98	6.40			.00
08/31/98	6.61			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near
Raymond Blvd.

Serial#: QLK

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	-.01			.00
08/02/98	-.65			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.00			.00
08/07/98	.00			.00
08/08/98	-.02			.00
08/09/98	.09			.02
08/10/98	.04			.16
08/11/98	-.02			.07
08/12/98	.00			.00
08/13/98	-.04			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	8.59			1.18
08/18/98	-.02			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.03			.00
08/22/98	.06			.00
08/23/98	.00			.00
08/24/98	.08			.00
08/25/98	.00			.00
08/26/98	-.09			.24
08/27/98	.00			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

Serial#: QTO

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.68	.05	1.97	.00
08/02/98	.63	.04	1.85	.00
08/03/98	.59	.04	1.75	.00
08/04/98	.55	.04	1.60	.00
08/05/98	.58	.04	1.72	.00
08/06/98	.58	.05	1.71	.00
08/07/98	.60	.04	1.74	.00
08/08/98	.62	.04	1.79	.00
08/09/98	.63	.04	1.83	.02
08/10/98	.65	.04	1.80	.16
08/11/98	.64	.05	1.76	.07
08/12/98	.62	.04	1.82	.00
08/13/98	.58	.01	1.69	.00
08/14/98	.57	.00	1.65	.00
08/15/98	.66	.01	1.88	.02
08/16/98	.62	.01	1.77	.00
08/17/98	2.56	.03	5.74	1.18
08/18/98	.69	.02	1.93	.00
08/19/98	.73	.02	2.04	.00
08/20/98	.75	.00	2.05	.00
08/21/98	.82	.00	2.19	.00
08/22/98	.91	.03	2.40	.00
08/23/98	.83	.04	2.22	.00
08/24/98	.74	.02	1.98	.00
08/25/98	.76	.01	2.03	.00
08/26/98	1.03	.02	2.66	.24
08/27/98	.92	.02	2.43	.02
08/28/98	.85	.02	2.24	.03
08/29/98	.84	.01	2.22	.00
08/30/98	.75	.01	2.01	.00
08/31/98	.71	.01	1.92	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

Serial#: QUG

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.69	.00		.00
08/02/98	1.87	.00		.00
08/03/98	1.85	.00		.00
08/04/98	1.88	.00		.00
08/05/98	1.86	.00		.00
08/06/98	1.92	.00		.00
08/07/98	1.89	.00		.00
08/08/98	1.86	.00		.00
08/09/98	1.85	.00		.02
08/10/98	2.02	.16		.16
08/11/98	1.54	.47		.07
08/12/98	1.59	.00		.00
08/13/98	1.59	.00		.00
08/14/98	1.66	.00		.00
08/15/98	1.73	.00		.02
08/16/98	1.69	.00		.00
08/17/98	6.06	7.10		1.18
08/18/98	1.28	.52		.00
08/19/98	.44	.00		.00
08/20/98	.39	.00		.00
08/21/98	.38	.00		.00
08/22/98	.43	.00		.00
08/23/98	.40	.00		.00
08/24/98	.37	.00		.00
08/25/98	.35	.00		.00
08/26/98	.61	.00		.24
08/27/98	.57	.00		.02
08/28/98	.37	.00		.03
08/29/98	.42	.00		.00
08/30/98	.36	.00		.00
08/31/98	.36	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

Serial#: QUF

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.52	.02		.00
08/02/98	.53	.02		.00
08/03/98	.52	.02		.00
08/04/98	.53	.02		.00
08/05/98	.58	.02		.00
08/06/98	.68	.03		.00
08/07/98	.77	.04		.00
08/08/98	.70	.05		.00
08/09/98	.69	.06		.02
08/10/98	.85	.06		.16
08/11/98	.70	.02		.07
08/12/98	.41	.01		.00
08/13/98	.45	.03		.00
08/14/98	.57	.04		.00
08/15/98	.71	.05		.02
08/16/98	.66	.07		.00
08/17/98	2.56	.16		1.18
08/18/98	1.13	.01		.00
08/19/98	.68	.01		.00
08/20/98	.66	.00		.00
08/21/98	.65	.01		.00
08/22/98	.69	.01		.00
08/23/98	.67	.02		.00
08/24/98	.63	.03		.00
08/25/98	.62	.03		.00
08/26/98	.86	.04		.24
08/27/98	.84	.04		.02
08/28/98	.69	.06		.03
08/29/98	.76	.09		.00
08/30/98	.77	.09		.00
08/31/98	.72	.08		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.48	-.89		.00
08/02/98	.45	-.86		.00
08/03/98	.34	-.67		.00
08/04/98	.34	-.43		.00
08/05/98	.24	-.25		.00
08/06/98	.31	-.38		.00
08/07/98	.31	-.57		.00
08/08/98	.31	-.57		.00
08/09/98	.31	.01		.02
08/10/98	.30	.05		.16
08/11/98	.21	-.39		.07
08/12/98	.36	-.13		.00
08/13/98	.40	.00		.00
08/14/98	.40	.00		.00
08/15/98	.41	.00		.02
08/16/98	.44	.00		.00
08/17/98	.67	3.46		1.18
08/18/98	.42	-1.29		.00
08/19/98	.32	-.98		.00
08/20/98	.37	-.68		.00
08/21/98	.22	-.01		.00
08/22/98	.38	-.25		.00
08/23/98	.41	-.59		.00
08/24/98	.40	-.87		.00
08/25/98	.43	-.86		.00
08/26/98	.48	-1.01		.24
08/27/98	.45	-.67		.02
08/28/98	.59	-.60		.03
08/29/98	.57	-.77		.00
08/30/98	.56	-.07		.00
08/31/98	.52	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.26	.00		.00
08/02/98	.72	.00		.00
08/03/98	.16	.00		.00
08/04/98	-.66	.00		.00
08/05/98	-.58	.00		.00
08/06/98	.68	.00		.00
08/07/98	-.05	.00		.00
08/08/98	.00	.00		.00
08/09/98	.00	.00		.02
08/10/98	-.84	.00		.16
08/11/98	.48	.00		.07
08/12/98	.11	.00		.00
08/13/98	.72	.00		.00
08/14/98	.62	.00		.00
08/15/98	1.57	.00		.02
08/16/98	.00	.00		.00
08/17/98	4.20	2.71		1.18
08/18/98	2.48	.00		.00
08/19/98	1.96	.00		.00
08/20/98	1.60	.00		.00
08/21/98	1.54	.00		.00
08/22/98	1.74	.00		.00
08/23/98	1.43	.00		.00
08/24/98	1.40	.00		.00
08/25/98	1.62	.00		.00
08/26/98	2.05	.00		.24
08/27/98	1.88	.00		.02
08/28/98	1.87	.00		.03
08/29/98	1.82	.00		.00
08/30/98	1.73	.00		.00
08/31/98	1.70	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

Serial#: QR4

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.74	.00		.00
08/02/98	3.16	.00		.00
08/03/98	3.81	.00		.00
08/04/98	3.71	.00		.00
08/05/98	3.58	.00		.00
08/06/98	3.12	.00		.00
08/07/98	4.60	.00		.00
08/08/98	4.77	.00		.00
08/09/98	4.99	.00		.02
08/10/98	6.97	.00		.16
08/11/98	-1.37	.00		.07
08/12/98	.92	.00		.00
08/13/98	3.40	.00		.00
08/14/98	3.82	.00		.00
08/15/98	4.05	.00		.02
08/16/98	6.29	.00		.00
08/17/98	22.21	-.80		1.18
08/18/98	-1.28	.00		.00
08/19/98	-1.65	.00		.00
08/20/98	3.20	.00		.00
08/21/98	5.90	.00		.00
08/22/98	5.59	.00		.00
08/23/98	5.75	.00		.00
08/24/98	6.20	.00		.00
08/25/98	6.61	.00		.00
08/26/98	5.44	.00		.24
08/27/98	2.98	.00		.02
08/28/98	5.93	.00		.03
08/29/98	8.74	.00		.00
08/30/98	7.59	.00		.00
08/31/98	7.53	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

Serial#: QO4

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.57			.00
08/02/98	.56			.00
08/03/98	.55			.00
08/04/98	.56			.00
08/05/98	.54			.00
08/06/98	.53			.00
08/07/98	.51			.00
08/08/98	.54			.00
08/09/98	.49			.02
08/10/98	.76			.16
08/11/98	.53			.07
08/12/98	.60			.00
08/13/98	.60			.00
08/14/98	.58			.00
08/15/98	.55			.02
08/16/98	.41			.00
08/17/98	2.27			1.18
08/18/98	.62			.00
08/19/98	.57			.00
08/20/98	.56			.00
08/21/98	.55			.00
08/22/98	.57			.00
08/23/98	.54			.00
08/24/98	.57			.00
08/25/98	.57			.00
08/26/98	.75			.24
08/27/98	.61			.02
08/28/98	.52			.03
08/29/98	.52			.00
08/30/98	.55			.00
08/31/98	.52			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

Serial#: QPP

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.00			.00
08/07/98	.00			.00
08/08/98	.00			.00
08/09/98	.00			.02
08/10/98	-.11			.16
08/11/98	-.05			.07
08/12/98	.00			.00
08/13/98	-.07			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	-3.13			1.18
08/18/98	-.12			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.00			.00
08/24/98	.00			.00
08/25/98	.00			.00
08/26/98	-.29			.24
08/27/98	-.09			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated

Address: Peddie Ditch

Serial#: QUE

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	10.16	10.11		.00
08/02/98	9.93	9.88		.00
08/03/98	11.34	11.28		.00
08/04/98	11.20	11.14		.00
08/05/98	11.27	11.21		.00
08/06/98	11.17	11.11		.00
08/07/98	11.57	11.51		.00
08/08/98	11.10	11.04		.00
08/09/98	10.77	10.71		.02
08/10/98	11.04	10.98		.16
08/11/98	11.58	11.52		.07
08/12/98	11.52	11.46		.00
08/13/98	12.25	12.18		.00
08/14/98	12.05	11.98		.00
08/15/98	11.99	11.93		.02
08/16/98	13.10	13.03		.00
08/17/98	15.85	15.86		1.18
08/18/98	12.20	12.14		.00
08/19/98	10.65	10.59		.00
08/20/98	10.36	10.30		.00
08/21/98	10.78	10.72		.00
08/22/98	10.59	10.54		.00
08/23/98	10.60	10.55		.00
08/24/98	10.61	10.56		.00
08/25/98	11.22	11.16		.00
08/26/98	13.07	13.00		.24
08/27/98	14.05	13.97		.02
08/28/98	13.78	13.71		.03
08/29/98	12.91	12.84		.00
08/30/98	13.56	13.49		.00
08/31/98	12.97	12.91		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 Peddie St regulated

Address: Peddie Ditch

Serial#: QO7

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	7.59			.00
08/02/98	7.47			.00
08/03/98	8.57			.00
08/04/98	7.90			.00
08/05/98	7.60			.00
08/06/98	7.77			.00
08/07/98	7.89			.00
08/08/98	7.26			.00
08/09/98	7.51			.02
08/10/98	9.94			.16
08/11/98	11.05			.07
08/12/98	8.79			.00
08/13/98	10.74			.00
08/14/98	10.63			.00
08/15/98	10.54			.02
08/16/98	10.54			.00
08/17/98	20.74			1.18
08/18/98	15.91			.00
08/19/98	10.46			.00
08/20/98	10.57			.00
08/21/98	10.50			.00
08/22/98	10.14			.00
08/23/98	10.27			.00
08/24/98	10.44			.00
08/25/98	10.30			.00
08/26/98	11.77			.24
08/27/98	9.13			.02
08/28/98	8.92			.03
08/29/98	8.59			.00
08/30/98	8.79			.00
08/31/98	9.04			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN unregulated

Address: Queen Ditch

Serial#: QQU

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	5.53			.00
08/02/98	5.39			.00
08/03/98	5.57			.00
08/04/98	5.96			.00
08/05/98	6.00			.00
08/06/98	5.65			.00
08/07/98	5.63			.00
08/08/98	5.94			.00
08/09/98	6.92			.02
08/10/98	7.41			.16
08/11/98	5.91			.07
08/12/98	5.82			.00
08/13/98	5.61			.00
08/14/98	5.86			.00
08/15/98	6.06			.02
08/16/98	5.98			.00
08/17/98	10.72			1.18
08/18/98	9.30			.00
08/19/98	7.83			.00
08/20/98	7.22			.00
08/21/98	6.74			.00
08/22/98	6.47			.00
08/23/98	7.02			.00
08/24/98	7.41			.00
08/25/98	7.03			.00
08/26/98	7.41			.24
08/27/98	7.14			.02
08/28/98	6.80			.03
08/29/98	6.47			.00
08/30/98	6.31			.00
08/31/98	6.31			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN regulated

Address: Queen Ditch

Serial#: QQV

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	3.80			.00
08/02/98	3.50			.00
08/03/98	3.61			.00
08/04/98	3.85			.00
08/05/98	3.94			.00
08/06/98	4.00			.00
08/07/98	3.81			.00
08/08/98	3.40			.00
08/09/98	3.43			.02
08/10/98	3.87			.16
08/11/98	4.22			.07
08/12/98	4.03			.00
08/13/98	3.68			.00
08/14/98	3.74			.00
08/15/98	3.61			.02
08/16/98	3.53			.00
08/17/98	23.34			1.18
08/18/98	6.01			.00
08/19/98	4.94			.00
08/20/98	4.60			.00
08/21/98	3.83			.00
08/22/98	3.56			.00
08/23/98	3.34			.00
08/24/98	3.20			.00
08/25/98	3.30			.00
08/26/98	3.47			.24
08/27/98	3.34			.02
08/28/98	3.43			.03
08/29/98	3.28			.00
08/30/98	3.28			.00
08/31/98	2.89			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

Serial#: QRY

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.16	.00		.00
08/02/98	1.08	.00		.00
08/03/98	1.56	.00		.00
08/04/98	1.83	.00		.00
08/05/98	1.76	.00		.00
08/06/98	1.68	.00		.00
08/07/98	1.79	.00		.00
08/08/98	1.34	.00		.00
08/09/98	1.25	.00		.02
08/10/98	1.99	.00		.16
08/11/98	1.97	.00		.07
08/12/98	1.55	.00		.00
08/13/98	1.45	.00		.00
08/14/98	1.52	.00		.00
08/15/98	1.30	.00		.02
08/16/98	1.07	.00		.00
08/17/98	8.40	4.27		1.18
08/18/98	2.09	.00		.00
08/19/98	1.75	.00		.00
08/20/98	1.73	.00		.00
08/21/98	1.57	.00		.00
08/22/98	1.27	.00		.00
08/23/98	1.09	.00		.00
08/24/98	1.52	.00		.00
08/25/98	1.58	.00		.00
08/26/98	1.92	-.03		.24
08/27/98	1.79	.00		.02
08/28/98	1.58	.00		.03
08/29/98	1.09	.00		.00
08/30/98	1.22	.00		.00
08/31/98	1.61	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

Serial#: QUD

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.64	.43	3.95	.00
08/02/98	.68	.45	4.16	.00
08/03/98	.71	.43	4.34	.00
08/04/98	.71	.44	4.29	.00
08/05/98	.76	.46	4.54	.00
08/06/98	.78	.48	4.66	.00
08/07/98	.81	.39	4.85	.00
08/08/98	.79	.42	4.72	.00
08/09/98	.76	.30	4.56	.02
08/10/98	.88	.48	5.01	.16
08/11/98	1.27	.36	6.95	.07
08/12/98	1.52	.27	8.21	.00
08/13/98	1.59	.22	8.62	.00
08/14/98	1.52	.28	8.47	.00
08/15/98	1.42	.32	7.99	.02
08/16/98	1.48	.34	8.25	.00
08/17/98	2.75	.25	10.71	1.18
08/18/98	1.81	.42	9.93	.00
08/19/98	1.34	.29	7.71	.00
08/20/98	1.45	.22	8.31	.00
08/21/98	1.40	.22	8.00	.00
08/22/98	1.50	.30	8.35	.00
08/23/98	1.46	.31	8.19	.00
08/24/98	1.43	.42	8.15	.00
08/25/98	1.55	.27	8.65	.00
08/26/98	1.64	.38	8.89	.24
08/27/98	1.40	.07	8.08	.02
08/28/98	1.27	.06	7.57	.03
08/29/98	1.33	.12	7.80	.00
08/30/98	1.37	.13	7.98	.00
08/31/98	1.32	.13	7.60	.00

Newark CSO Discharge Characteization Study

July Rep.

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 1 — Rain Gauge

Address: Central Ave. and 15th St. — RG-3, Water Supply Central Ave

49.25" H x 32.75" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
08/01/98	.20	.00
08/02/98	.19	.00
08/03/98	.20	.00
08/04/98	.18	.00
08/05/98	.19	.00
08/06/98	.19	.00
08/07/98	.19	.00
08/08/98	.19	.00
08/09/98	.17	.00
08/10/98	.20	.18
08/11/98	.21	.07
08/12/98	.19	.00
08/13/98	.17	.00
08/14/98	.17	.00
08/15/98	.15	.00
08/16/98	.13	.00
08/17/98	.66	1.30
08/18/98	.24	.02
08/19/98	.19	.00
08/20/98	.20	.00
08/21/98	.20	.00
08/22/98	.19	.00
08/23/98	.20	.00
08/24/98	.19	.00
08/25/98	.20	.00
08/26/98	.27	.26
08/27/98	.18	.01
08/28/98	.17	.00
08/29/98	.20	.00
08/30/98	.20	.00
08/31/98	.27	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 2

Address: 9th Ave. and 15th St.

Serial#: QRM

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	-.92			.00
08/02/98	-1.09			.00
08/03/98	-.78			.00
08/04/98	-.89			.00
08/05/98	-.51			.00
08/06/98	-.49			.00
08/07/98	-.78			.00
08/08/98	-.72			.00
08/09/98	-.82			.02
08/10/98	-.89			.16
08/11/98	-.84			.07
08/12/98	-.80			.00
08/13/98	-.75			.00
08/14/98	-.89			.00
08/15/98	-.92			.02
08/16/98	-.75			.00
08/17/98	-.24			1.18
08/18/98	-.58			.00
08/19/98	-.46			.00
08/20/98	-.36			.00
08/21/98	-.47			.00
08/22/98	-.13			.00
08/23/98	-.21			.00
08/24/98	-.10			.00
08/25/98	-.36			.00
08/26/98	-.39			.24
08/27/98	-.14			.02
08/28/98	-.27			.03
08/29/98	-.26			.00
08/30/98	-.28			.00
08/31/98	-.19			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 3

Address: Sussex Ave. and 15th St.

Serial#: QQZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.01			.00
08/07/98	.01			.00
08/08/98	.01			.00
08/09/98	.01			.02
08/10/98	.03			.16
08/11/98	.02			.07
08/12/98	.01			.00
08/13/98	.01			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	.23			1.18
08/18/98	.01			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.01			.00
08/24/98	.00			.00
08/25/98	.00			.00
08/26/98	.03			.24
08/27/98	.00			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.01			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 4

Address: Sussex Ave. and 15th St.

Serial#: QRC

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.17			.00
08/02/98	.17			.00
08/03/98	.18			.00
08/04/98	.17			.00
08/05/98	.18			.00
08/06/98	.19			.00
08/07/98	.15			.00
08/08/98	.14			.00
08/09/98	.15			.02
08/10/98	.14			.16
08/11/98	.15			.07
08/12/98	.15			.00
08/13/98	.15			.00
08/14/98	.14			.00
08/15/98	.14			.02
08/16/98	.15			.00
08/17/98	.15			1.18
08/18/98	.17			.00
08/19/98	.17			.00
08/20/98	.17			.00
08/21/98	.15			.00
08/22/98	.19			.00
08/23/98	.18			.00
08/24/98	.19			.00
08/25/98	.19			.00
08/26/98	.20			.24
08/27/98	.20			.02
08/28/98	.19			.03
08/29/98	.19			.00
08/30/98	.20			.00
08/31/98	.18			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 - 14TH & HEDDEN PL

Address: 14TH ST. & HEDDEN PL.

Serial#: QR1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00	.00		.00
08/02/98	.00	.00		.00
08/03/98	.00	.00		.00
08/04/98	.00	.00		.00
08/05/98	.00	.00		.00
08/06/98	.00	.00		.00
08/07/98	.00	.00		.00
08/08/98	.00	.00		.00
08/09/98	.00	.00		.02
08/10/98	.00	.00		.16
08/11/98	.00	.00		.07
08/12/98	.00	.00		.00
08/13/98	.00	.00		.00
08/14/98	.00	.00		.00
08/15/98	.00	.00		.02
08/16/98	.00	.00		.00
08/17/98	.11	.03		1.18
08/18/98	.00	.00		.00
08/19/98	.00	.00		.00
08/20/98	.00	.00		.00
08/21/98	.00	.00		.00
08/22/98	.00	.00		.00
08/23/98	.00	.00		.00
08/24/98	.00	.00		.00
08/25/98	.00	.00		.00
08/26/98	.01	.00		.24
08/27/98	.00	.00		.02
08/28/98	.00	.00		.03
08/29/98	.00	.00		.00
08/30/98	.00	.00		.00
08/31/98	.00	.00		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 7

Address: 6TH ST. & 13TH ST.

Serial#: QPT

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.77			.00
08/02/98	1.76			.00
08/03/98	1.81			.00
08/04/98	1.80			.00
08/05/98	1.75			.00
08/06/98	1.78			.00
08/07/98	1.85			.00
08/08/98	1.90			.00
08/09/98	1.84			.02
08/10/98	1.78			.16
08/11/98	1.75			.07
08/12/98	1.77			.00
08/13/98	1.79			.00
08/14/98	1.72			.00
08/15/98	1.77			.02
08/16/98	1.80			.00
08/17/98	1.96			1.18
08/18/98	1.77			.00
08/19/98	1.82			.00
08/20/98	1.77			.00
08/21/98	1.77			.00
08/22/98	1.77			.00
08/23/98	1.77			.00
08/24/98	1.76			.00
08/25/98	1.70			.00
08/26/98	1.74			.24
08/27/98	1.71			.02
08/28/98	1.72			.03
08/29/98	1.73			.00
08/30/98	1.70			.00
08/31/98	1.57			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

Serial#: QO1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	3.68			.00
08/02/98	3.78			.00
08/03/98	3.73			.00
08/04/98	3.79			.00
08/05/98	3.69			.00
08/06/98	3.76			.00
08/07/98	3.79			.00
08/08/98	3.92			.00
08/09/98	3.88			.02
08/10/98	3.91			.16
08/11/98	3.91			.07
08/12/98	3.92			.00
08/13/98	3.87			.00
08/14/98	3.80			.00
08/15/98	3.72			.02
08/16/98	3.84			.00
08/17/98	4.30			1.18
08/18/98	3.72			.00
08/19/98	3.69			.00
08/20/98	3.58			.00
08/21/98	3.66			.00
08/22/98	3.69			.00
08/23/98	3.88			.00
08/24/98	3.83			.00
08/25/98	3.70			.00
08/26/98	3.75			.24
08/27/98	3.68			.02
08/28/98	3.76			.03
08/29/98	3.83			.00
08/30/98	3.78			.00
08/31/98	3.33			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

Serial#: QQ7

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.56			.00
08/02/98	.61			.00
08/03/98	.63			.00
08/04/98	.67			.00
08/05/98	.63			.00
08/06/98	.48			.00
08/07/98	.52			.00
08/08/98	.48			.00
08/09/98	.48			.02
08/10/98	.52			.16
08/11/98	.61			.07
08/12/98	.61			.00
08/13/98	.61			.00
08/14/98	.61			.00
08/15/98	.65			.02
08/16/98	.70			.00
08/17/98	.79			1.18
08/18/98	.59			.00
08/19/98	.43			.00
08/20/98	.48			.00
08/21/98	.51			.00
08/22/98	.53			.00
08/23/98	.49			.00
08/24/98	.43			.00
08/25/98	.40			.00
08/26/98	.40			.24
08/27/98	.36			.02
08/28/98	.40			.03
08/29/98	.44			.00
08/30/98	.44			.00
08/31/98	.40			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 2

Address: Unity and Valley St.

Serial#: QQ2

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.18			.00
08/02/98	1.15			.00
08/03/98	1.09			.00
08/04/98	1.11			.00
08/05/98	1.10			.00
08/06/98	1.11			.00
08/07/98	1.12			.00
08/08/98	1.18			.00
08/09/98	1.22			.02
08/10/98	1.14			.16
08/11/98	1.19			.07
08/12/98	1.20			.00
08/13/98	1.22			.00
08/14/98	1.22			.00
08/15/98	1.09			.02
08/16/98	.85			.00
08/17/98	.96			1.18
08/18/98	.82			.00
08/19/98	.82			.00
08/20/98	.80			.00
08/21/98	.79			.00
08/22/98	.88			.00
08/23/98	.85			.00
08/24/98	.84			.00
08/25/98	.84			.00
08/26/98	.88			.24
08/27/98	.86			.02
08/28/98	.88			.03
08/29/98	.97			.00
08/30/98	.94			.00
08/31/98	.82			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 3

Address: Fabyan Pl. near Exit Ramp of I-78

Serial#: QRD

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.36			.00
08/02/98	.36			.00
08/03/98	.35			.00
08/04/98	.37			.00
08/05/98	.38			.00
08/06/98	.43			.00
08/07/98	.43			.00
08/08/98	.46			.00
08/09/98	.44			.02
08/10/98	.42			.16
08/11/98	.45			.07
08/12/98	.43			.00
08/13/98	.43			.00
08/14/98	.41			.00
08/15/98	.44			.02
08/16/98	.46			.00
08/17/98	.51			1.18
08/18/98	.40			.00
08/19/98	.33			.00
08/20/98	.37			.00
08/21/98	.36			.00
08/22/98	.34			.00
08/23/98	.34			.00
08/24/98	.32			.00
08/25/98	.34			.00
08/26/98	.39			.24
08/27/98	.35			.02
08/28/98	.35			.03
08/29/98	.36			.00
08/30/98	.37			.00
08/31/98	.33			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 4

Address: N. Lindon Ln between House # 63 and 65

Serial#: QUI

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.37			.00
08/02/98	1.36			.00
08/03/98	1.34			.00
08/04/98	1.32			.00
08/05/98	1.34			.00
08/06/98	1.34			.00
08/07/98	1.38			.00
08/08/98	1.47			.00
08/09/98	1.43			.02
08/10/98	1.39			.16
08/11/98	1.40			.07
08/12/98	1.31			.00
08/13/98	1.26			.00
08/14/98	1.33			.00
08/15/98	1.37			.02
08/16/98	1.38			.00
08/17/98	1.51			1.18
08/18/98	1.37			.00
08/19/98	1.32			.00
08/20/98	1.31			.00
08/21/98	1.32			.00
08/22/98	1.35			.00
08/23/98	1.36			.00
08/24/98	1.34			.00
08/25/98	1.34			.00
08/26/98	1.38			.24
08/27/98	1.33			.02
08/28/98	1.35			.03
08/29/98	1.41			.00
08/30/98	1.41			.00
08/31/98	1.21			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 1

Address: Elizabeth Ave. near Mapes Ave.

Serial#: QLL

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.19			.00
08/02/98	1.16			.00
08/03/98	1.21			.00
08/04/98	1.36			.00
08/05/98	1.39			.00
08/06/98	1.38			.00
08/07/98	1.41			.00
08/08/98	1.28			.00
08/09/98	1.23			.02
08/10/98	1.32			.16
08/11/98	1.53			.07
08/12/98	1.54			.00
08/13/98	1.48			.00
08/14/98	1.45			.00
08/15/98	1.42			.02
08/16/98	1.52			.00
08/17/98	1.90			1.18
08/18/98	1.55			.00
08/19/98	1.44			.00
08/20/98	1.43			.00
08/21/98	1.44			.00
08/22/98	1.56			.00
08/23/98	1.71			.00
08/24/98	1.97			.00
08/25/98	4.83			.00
08/26/98	10.04			.24
08/27/98	3.18			.02
08/28/98	1.48			.03
08/29/98	1.38			.00
08/30/98	1.31			.00
08/31/98	1.14			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 2

Address: Weequahic Park

Serial#: QUN

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.72			.00
08/02/98	.63			.00
08/03/98	.60			.00
08/04/98	.59			.00
08/05/98	.65			.00
08/06/98	.65			.00
08/07/98	.51			.00
08/08/98	.55			.00
08/09/98	.47			.02
08/10/98	.00			.16
08/11/98	.00			.07
08/12/98	.00			.00
08/13/98	.04			.00
08/14/98	.20			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	.01			1.18
08/18/98	.00			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.00			.00
08/24/98	.00			.00
08/25/98	.27			.00
08/26/98	.11			.24
08/27/98	.00			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4

Address: Wilson and Ave. P

Serial#: QT1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.04			.00
08/03/98	.02			.00
08/04/98	.09			.00
08/05/98	.04			.00
08/06/98	.05			.00
08/07/98	.12			.00
08/08/98	.13			.00
08/09/98	.06			.02
08/10/98	.07			.16
08/11/98	.11			.07
08/12/98	.01			.00
08/13/98	.09			.00
08/14/98	.12			.00
08/15/98	.16			.02
08/16/98	.05			.00
08/17/98	.33			1.18
08/18/98	.17			.00
08/19/98	.09			.00
08/20/98	.07			.00
08/21/98	.19			.00
08/22/98	.15			.00
08/23/98	.02			.00
08/24/98	.08			.00
08/25/98	.18			.00
08/26/98	.24			.24
08/27/98	.13			.02
08/28/98	.18			.03
08/29/98	.18			.00
08/30/98	.13			.00
08/31/98	.09			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 3

Address: Jabez Ave. near Backus St.

Serial#: QTZ

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.55			.00
08/02/98	1.65			.00
08/03/98	1.99			.00
08/04/98	2.13			.00
08/05/98	2.31			.00
08/06/98	2.62			.00
08/07/98	3.26			.00
08/08/98	4.07			.00
08/09/98	4.42			.02
08/10/98	3.69			.16
08/11/98	2.58			.07
08/12/98	2.64			.00
08/13/98	2.60			.00
08/14/98	2.16			.00
08/15/98	2.06			.02
08/16/98	1.68			.00
08/17/98	4.83			1.18
08/18/98	3.22			.00
08/19/98	2.26			.00
08/20/98	2.32			.00
08/21/98	2.38			.00
08/22/98	2.30			.00
08/23/98	2.44			.00
08/24/98	2.50			.00
08/25/98	2.44			.00
08/26/98	2.76			.24
08/27/98	2.82			.02
08/28/98	3.15			.03
08/29/98	3.12			.00
08/30/98	2.91			.00
08/31/98	2.99			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 5

Address: Doremus Ave. near Delancy St.

Serial#: QUO

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.30			.00
08/02/98	.33			.00
08/03/98	.35			.00
08/04/98	.30			.00
08/05/98	.29			.00
08/06/98	.31			.00
08/07/98	.29			.00
08/08/98	.21			.00
08/09/98	.15			.02
08/10/98	.28			.16
08/11/98	.27			.07
08/12/98	.38			.00
08/13/98	.40			.00
08/14/98	.43			.00
08/15/98	.32			.02
08/16/98	.33			.00
08/17/98	.58			1.18
08/18/98	.49			.00
08/19/98	.43			.00
08/20/98	.50			.00
08/21/98	.62			.00
08/22/98	.53			.00
08/23/98	.63			.00
08/24/98	.53			.00
08/25/98	.42			.00
08/26/98	.44			.24
08/27/98	.41			.02
08/28/98	.49			.03
08/29/98	.32			.00
08/30/98	.31			.00
08/31/98	.39			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 6

Address: Near 355 5th St.

Serial#: QU1

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	3.86			.00
08/02/98	4.00			.00
08/03/98	3.95			.00
08/04/98	3.97			.00
08/05/98	3.90			.00
08/06/98	3.95			.00
08/07/98	3.95			.00
08/08/98	3.98			.00
08/09/98	4.00			.02
08/10/98	4.03			.16
08/11/98	4.02			.07
08/12/98	4.14			.00
08/13/98	4.21			.00
08/14/98	4.25			.00
08/15/98	4.34			.02
08/16/98	4.32			.00
08/17/98	5.11			1.18
08/18/98	4.15			.00
08/19/98	3.86			.00
08/20/98	3.71			.00
08/21/98	3.65			.00
08/22/98	3.63			.00
08/23/98	3.80			.00
08/24/98	3.82			.00
08/25/98	3.77			.00
08/26/98	3.74			.24
08/27/98	3.65			.02
08/28/98	3.64			.03
08/29/98	3.75			.00
08/30/98	3.68			.00
08/31/98	3.33			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 7

Address: Verona St. near Broadway

Serial#: QUK

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.39			.00
08/02/98	.39			.00
08/03/98	.37			.00
08/04/98	.39			.00
08/05/98	.39			.00
08/06/98	.40			.00
08/07/98	.41			.00
08/08/98	.43			.00
08/09/98	.43			.02
08/10/98	.41			.16
08/11/98	.42			.07
08/12/98	.39			.00
08/13/98	.38			.00
08/14/98	.37			.00
08/15/98	.38			.02
08/16/98	.38			.00
08/17/98	.58			1.18
08/18/98	.43			.00
08/19/98	.38			.00
08/20/98	.37			.00
08/21/98	.36			.00
08/22/98	.38			.00
08/23/98	.41			.00
08/24/98	.41			.00
08/25/98	.43			.00
08/26/98	.49			.24
08/27/98	.45			.02
08/28/98	.51			.03
08/29/98	.61			.00
08/30/98	.82			.00
08/31/98	.78			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 8

Address: Earl and Frelinghuysen

Serial#: QT3

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.00			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.00			.00
08/07/98	.00			.00
08/08/98	.00			.00
08/09/98	.00			.02
08/10/98	.00			.16
08/11/98	.00			.07
08/12/98	.00			.00
08/13/98	.00			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	-.04			1.18
08/18/98	.00			.00
08/19/98	.00			.00
08/20/98	.00			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.00			.00
08/24/98	.00			.00
08/25/98	.00			.00
08/26/98	.00			.24
08/27/98	.00			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 9

Address: Branch Brook Park Lake Overflow

Serial#: QLF

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	.01			.00
08/02/98	.00			.00
08/03/98	.00			.00
08/04/98	.00			.00
08/05/98	.00			.00
08/06/98	.00			.00
08/07/98	.00			.00
08/08/98	.00			.00
08/09/98	.00			.02
08/10/98	.00			.16
08/11/98	.00			.07
08/12/98	.00			.00
08/13/98	.00			.00
08/14/98	.00			.00
08/15/98	.00			.02
08/16/98	.00			.00
08/17/98	.06			1.18
08/18/98	.15			.00
08/19/98	.06			.00
08/20/98	.01			.00
08/21/98	.00			.00
08/22/98	.00			.00
08/23/98	.00			.00
08/24/98	.00			.00
08/25/98	.00			.00
08/26/98	.00			.24
08/27/98	.00			.02
08/28/98	.00			.03
08/29/98	.00			.00
08/30/98	.00			.00
08/31/98	.00			.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 10

Address: Weequahic Park Lake Overflow

Serial#: QUX

Date	Flow1 Avg (mgd)	Flow2 Avg (mgd)	Flow3 Avg (mgd)	Rain (in.)
08/01/98	1.49			.00
08/02/98	1.37			.00
08/03/98	1.34			.00
08/04/98	1.31			.00
08/05/98	1.38			.00
08/06/98	1.31			.00
08/07/98	1.33			.00
08/08/98	1.33			.00
08/09/98	1.28			.02
08/10/98	1.34			.16
08/11/98	1.44			.07
08/12/98	1.41			.00
08/13/98	1.32			.00
08/14/98	1.29			.00
08/15/98	1.24			.02
08/16/98	1.26			.00
08/17/98	1.68			1.18
08/18/98	3.22			.00
08/19/98	2.69			.00
08/20/98	2.16			.00
08/21/98	1.90			.00
08/22/98	1.63			.00
08/23/98	1.57			.00
08/24/98	1.42			.00
08/25/98	1.37			.00
08/26/98	1.45			.24
08/27/98	1.41			.02
08/28/98	1.34			.03
08/29/98	1.28			.00
08/30/98	1.17			.00
08/31/98	1.16			.00

URS Greiner Woodward Clyde
A Division of URS Corporation

Mack Centre II
One Mack Centre Drive
Paramus, NJ 07652-3909
Tel: 201.262.7000
Fax: 201.262.9199
Offices Worldwide

December 18, 1998

Mr. Sanjeev Varghese, Project Manager
City of Newark Department of Engineering
Water/Sewer Utility
1294 McBride Avenue
Little Falls, New Jersey 07424

Subject: City of Newark CSO Discharge Characterization Study
Task 5.0 - CSO Monitoring
Flow Monitoring and Rainfall Data, September 1998

Dear Mr. Varghese:

Attached for your information is our flow metering data for September 1998. Average daily precipitation quantities are also provided in the summary tables for daily flows.

We have not yet profiled the PVSC Interceptor flow meters; therefore we have not included data for these locations.

Please call me if you have any questions.

Very truly yours,
URS Greiner, Inc.

Michael F. Lorenzo, P.E.
Project Manager

MFL:mfl
Attachments

cc:
URS Greiner: Moutal, Murray
Newark: Sherban

URS Greiner Woodward Clyde
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Task 5.0 - CSO Monitoring
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Michael F. Lorenzo, P.E.
Project Manager

MFL:mfl
Attachments

cc:
URS Greiner: Moutal, Murray
Newark: Sherban

Newark CSO Discharge Characterization Study

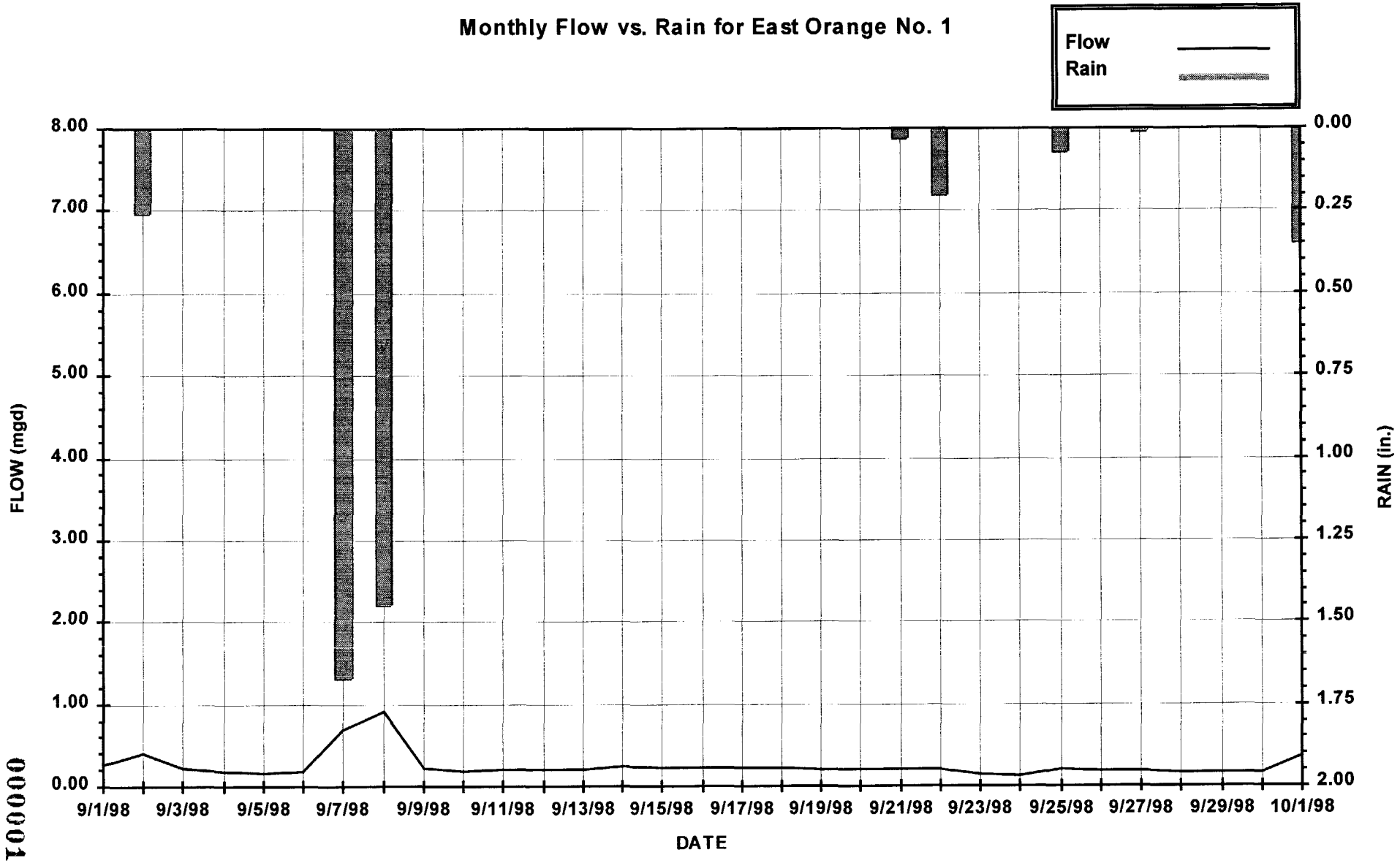
Flow Meter Report Key

Region/Location	*Meter Serial Number*	*Flow1*	*Flow2*	*Flow3*
CSO 002 - Verona Ave	QR8	54.75" Influent	72"W x 58.75"H Overflow	
CSO 004/005 - Herbert Pl. - Influent	QTQ	48" Influent	24" Influent	
CSO 004/005 - Herbert Pl. - Overflows	QTP	51" Overflow	48.5"H x 72.4"W Overflow	
CSO 006 - Oriental Ave Influent	QUL	48" Influent		
CSO 006 - Orential Ave Overflow	QUJ	54" Overflow		
CSO 007 - Third Ave	QR6	15" Influent	48"W Overflow Weir	
CSO 008 - Fourth Ave	QQD		72"W x 53"H Overflow	45"H x 25.75"W Influent
CSO 009B - Clay St Influent	QRG	18" Influent		
CSO 009B - Clay St Overflow	QU3	18" Overflow		
CSO 009C - Clay St	QRW	15.2" Influent	15.1" Overflow	
CSO 010 - Clay St Influents	QTR	To Be Profiled	To be Profiled	
CSO 010 - Clay St Overflow North Pipe	QPS		100"W x75.3"H Overflow	
CSO 010 - Clay St Overflow South Pipe	QUM		100"W x75.3"H Overflow	
CSO 011 - Orange St Influent	QRF	15" Influent		
CSO 011 - Orange St influent and overflow	QRZ	18" Influent	22.5" Overflow	
CSO 012 - Bridge St	QR7	15" Influent	48"W Overflow Weir	
CSO 013 - Rector St	QUY	62" Influent	45"W x 54"H Influent	79.5"W x 66.5"H Overflow
CSO 014 - Saybrook Pl Influent and Overflow	QRV		102.5"W x 83"H Overflow	75.75"H x74"W Influent
CSO 015 - City Dock Influent1	QQT	12" Influent		
CSO 015 - City Dock Influent2	QU2	18" Influent		
CSO 015 - City Dock Influent3	QPV	36" Influent		
CSO 015 - City Dock Influent4	QPQ		108"W x 88"H Influent (Siphon)	
CSO 015 - City Dock Overflow	QLK		87"H x 108"W Overflow	
CSO 016 - Jackson St	QTO	56.5" Influent	12" Influent	72"W Overflow Weir
CSO 017 - Polk St	QUG	85" Influent	97" Overflow Weir	
CSO 018 - Freeman St Influent	QUF	28.5" Influent	18.25" Influent	
CSO 018 - Freeman St Influent&Overflow	QU0	24.2" Influent	44"W Overflow Weir	
CSO 022 - Roanoke Ave	QUZ	60" Influent	60" Overflow	
CSO 023a - Adams St	QR4		88"W x 12"H Overflow	64"H x 51.5"W Influent
CSO 023b - Adams St Influent	QO4	48" Influent		
CSO 023b - Adams St overflow	QPP	42" Overflow		
CSO 025 - Peddie St unregulated	QUE	192"W x 80"H Influent	191"W x 85"H Influent	
CSO 025 - Peddie St regulated	QO7	48"H x 48"W Regulated Flow		
CSO 026 - Queen unregulated	QQU	102.5"W x 61"H Influent		
CSO 026 - Queen regulated	QQV	47.3"H x 48.2"W Regulated Flow		
CSO 027 - Waverly	QRY	96" Influent	96" Overflow	
CSO 030 - Wheeler/Ave A	QUD	56" Influent	66" Influent	51.75"H x 11.6"H Overflow
East Orange No. 1	QRH	49.25"H x 32.75"W		
East Orange No. 2	QRM	48.8"H x 33.4"W		
East Orange No. 3	QQZ	33"		
East Orange No. 4	QRC	12"		
East Orange No. 5/6	QR1	33"	18.75"	
East Orange No. 7	QPT	30"		
East Orange No. 8	QO1	24.25"		
Outgoing No. 1	QQ7	12"		
Outgoing No. 2	QQ2	20"		
Outgoing No. 3	QRD	15"		
Outgoing No. 4	QUI	18.25"		
Newark No. 1	QLL	36"		
Newark No. 2	QUN	18.25"		
Newark No. 3	QTZ	47.1"		
Newark No. 4	QT1	45"W x 48"H		
Newark No. 5	QUO	21.1"		
Newark No. 6	QU1	24.5"		
Newark No. 7	QUK	24.4"		
Newark No. 8	QT3	18"		
Newark No. 9	QLF	102"W x 24"H		
Newark No. 10	QUX	2 - 20.5"		

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 1



EAST ORANGE NO. 1
Address: Central Ave. and 15th St.
49.25" H x 32.75"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

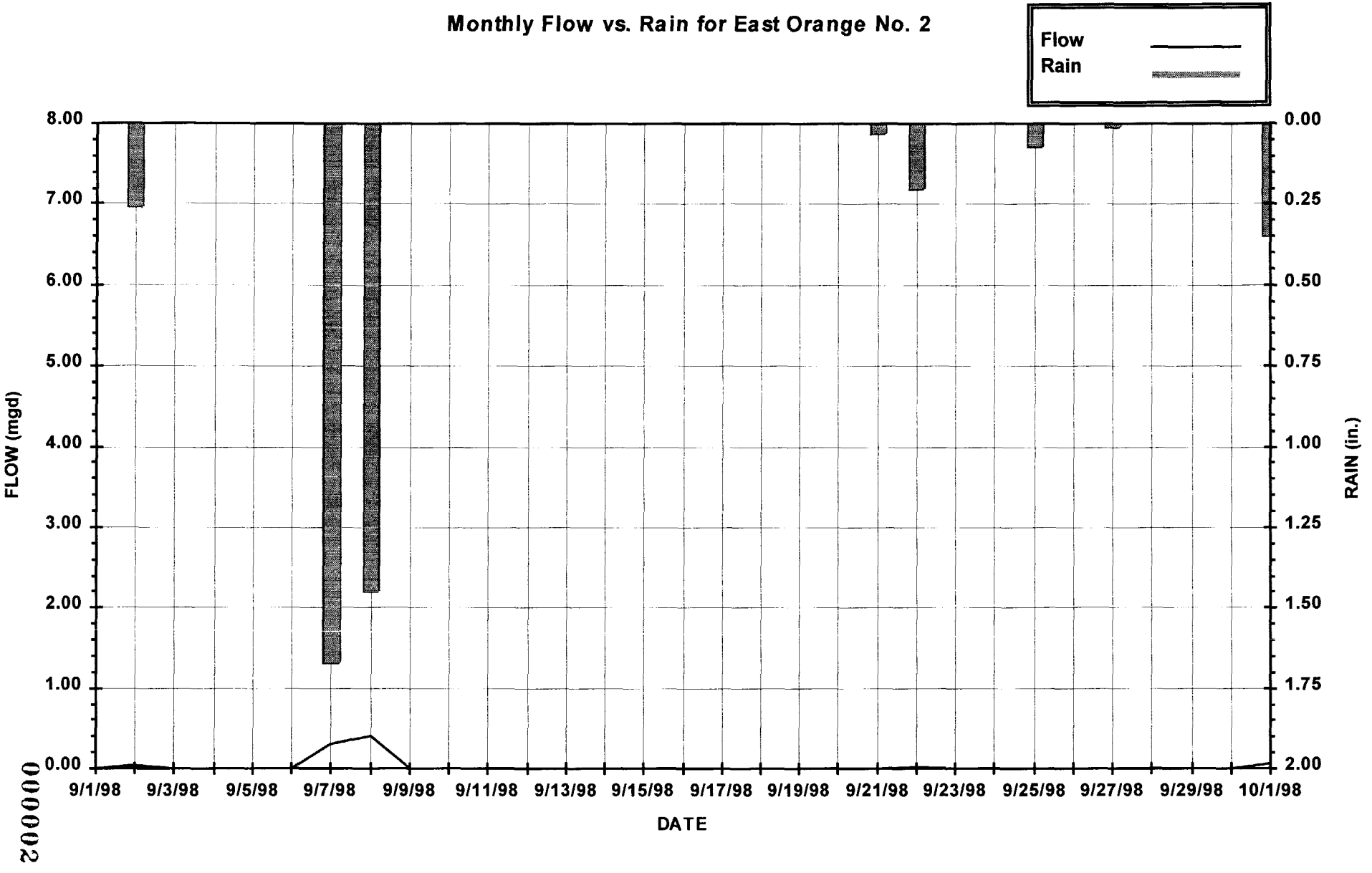
000001

863690369

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 2



EAST ORANGE NO. 2
Address: 9th Ave. and 15th St.
48.8" H x 33.4"W Egg Shaped

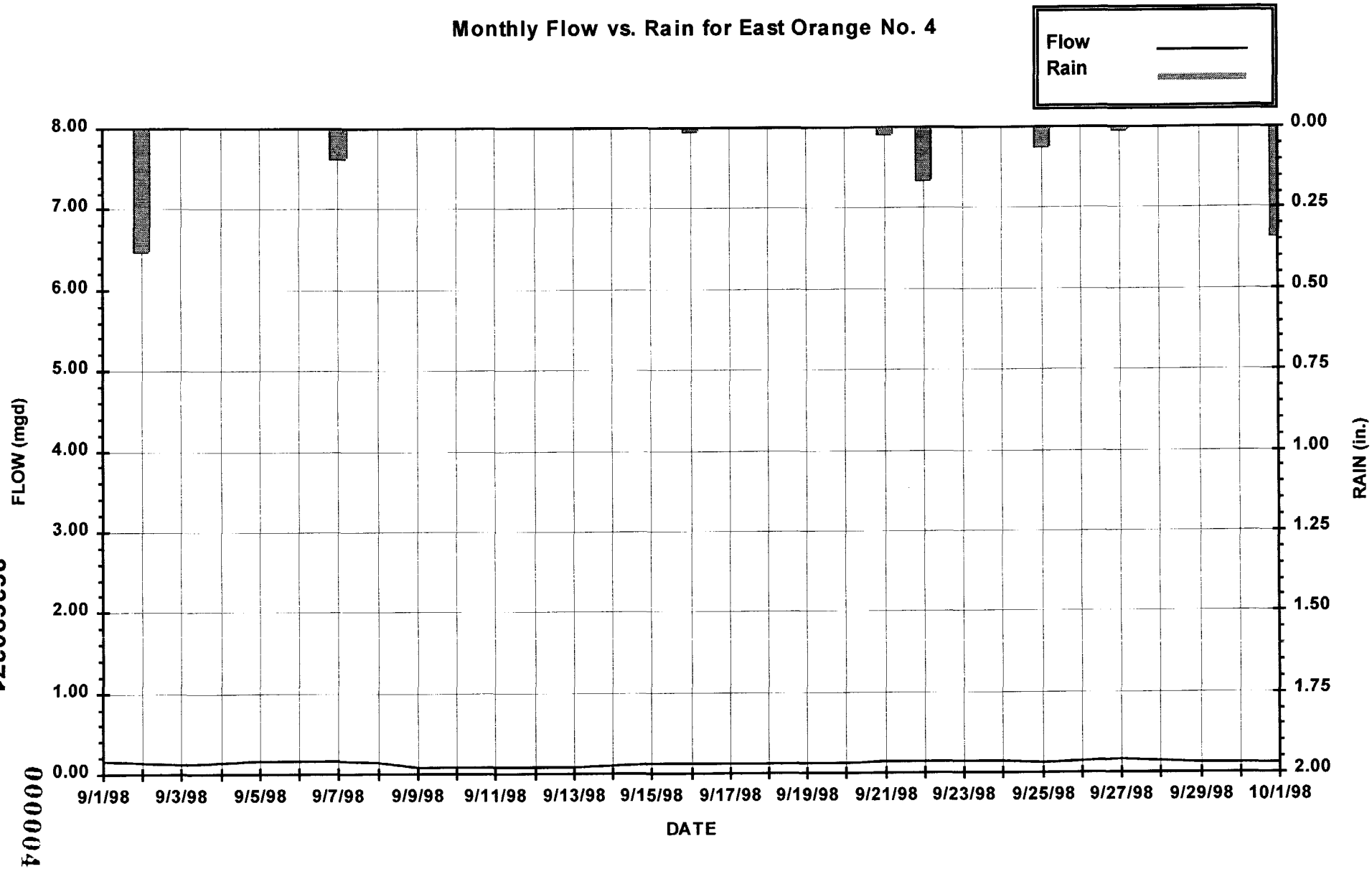
Rain Gauge
RG-3, Water Supply Central Ave

863690370
0000002

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 4



863690371

000004

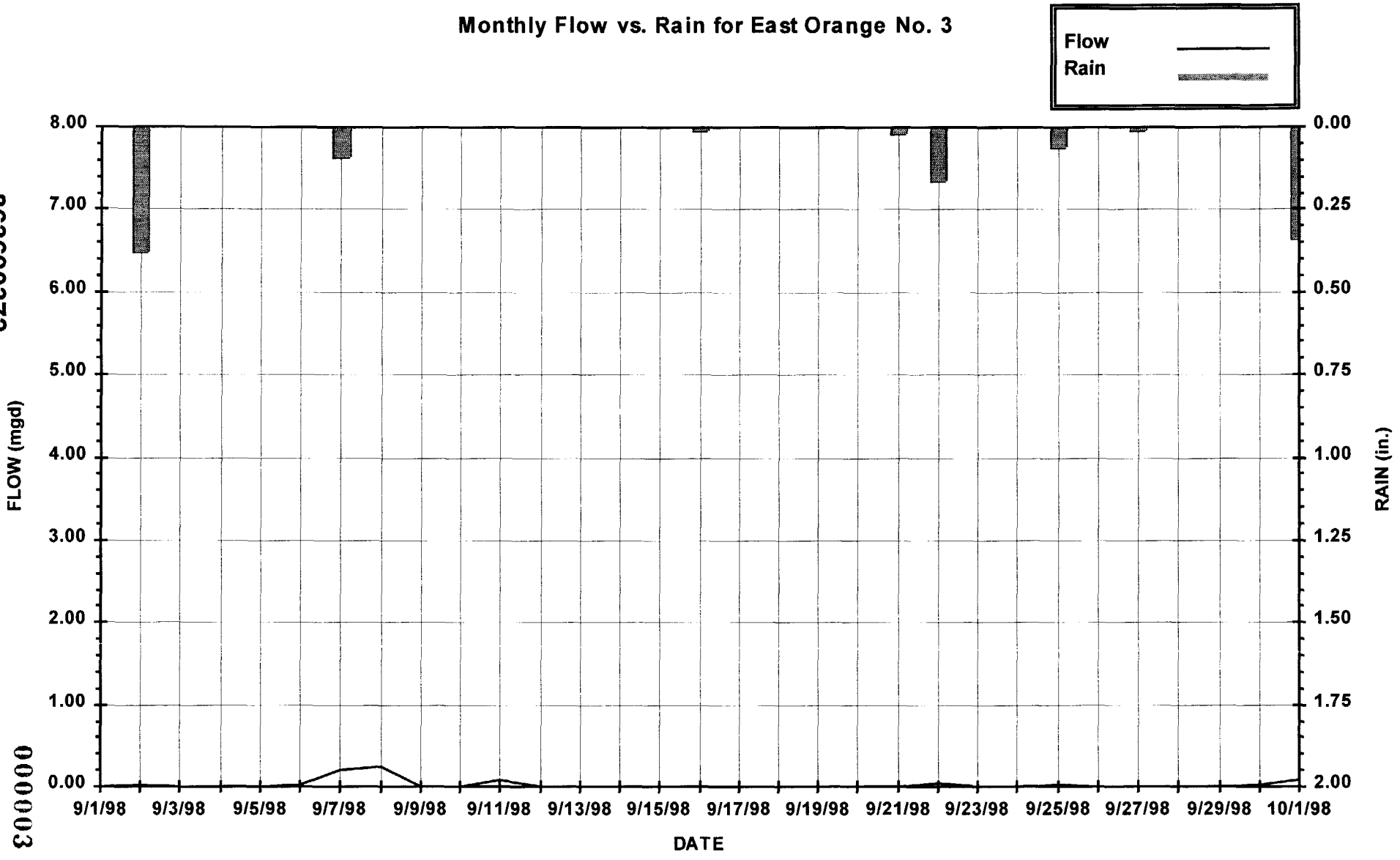
EAST ORANGE NO. 4
Address: Sussex Ave. and 15th St.
12" VCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 3



EAST ORANGE NO. 3
Address: Sussex Ave. and 15th St.
33" Storm

Rain Gauge
RG-1, Roberto Clemente School

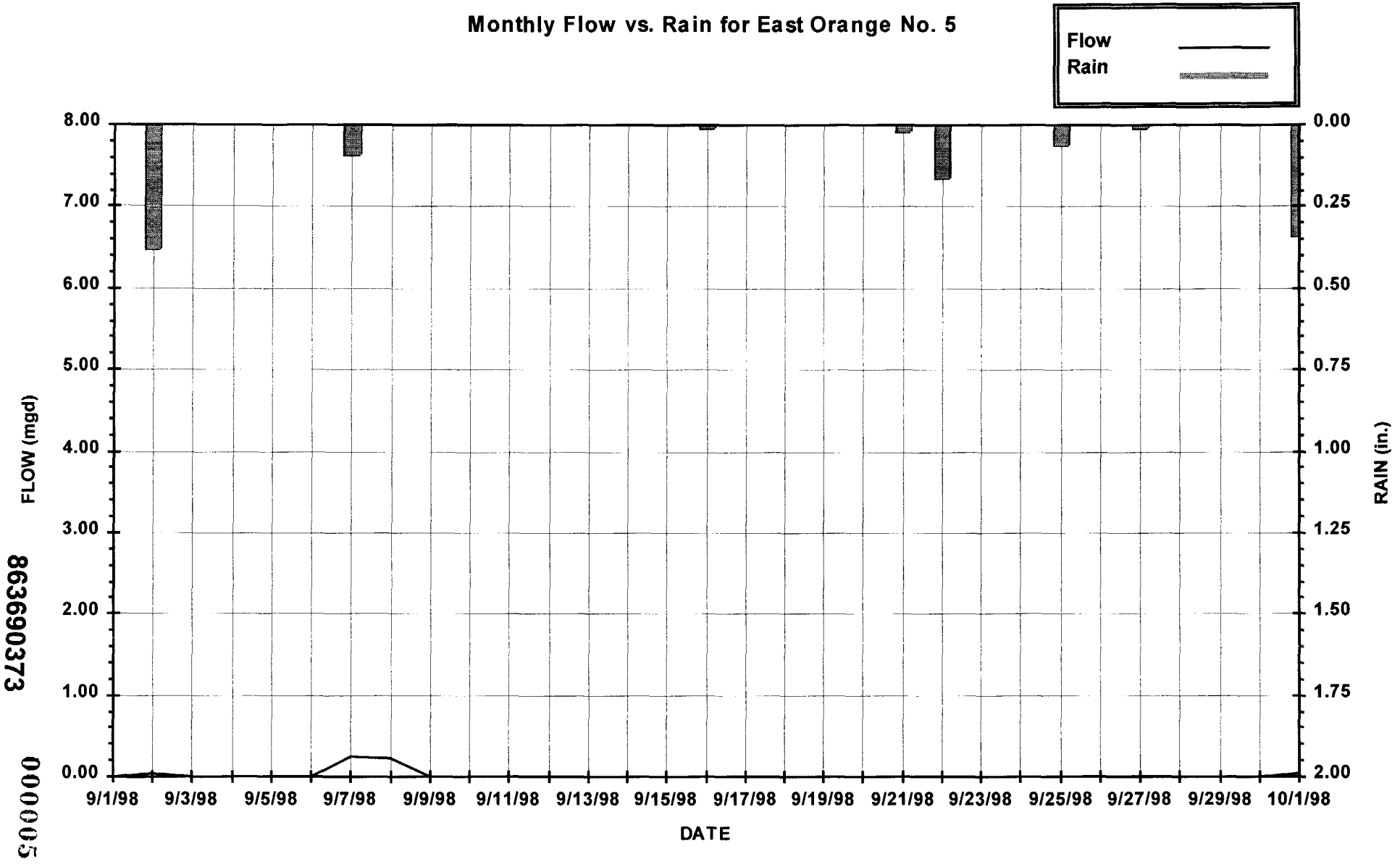
863690372

000003

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 5



863690373

000005

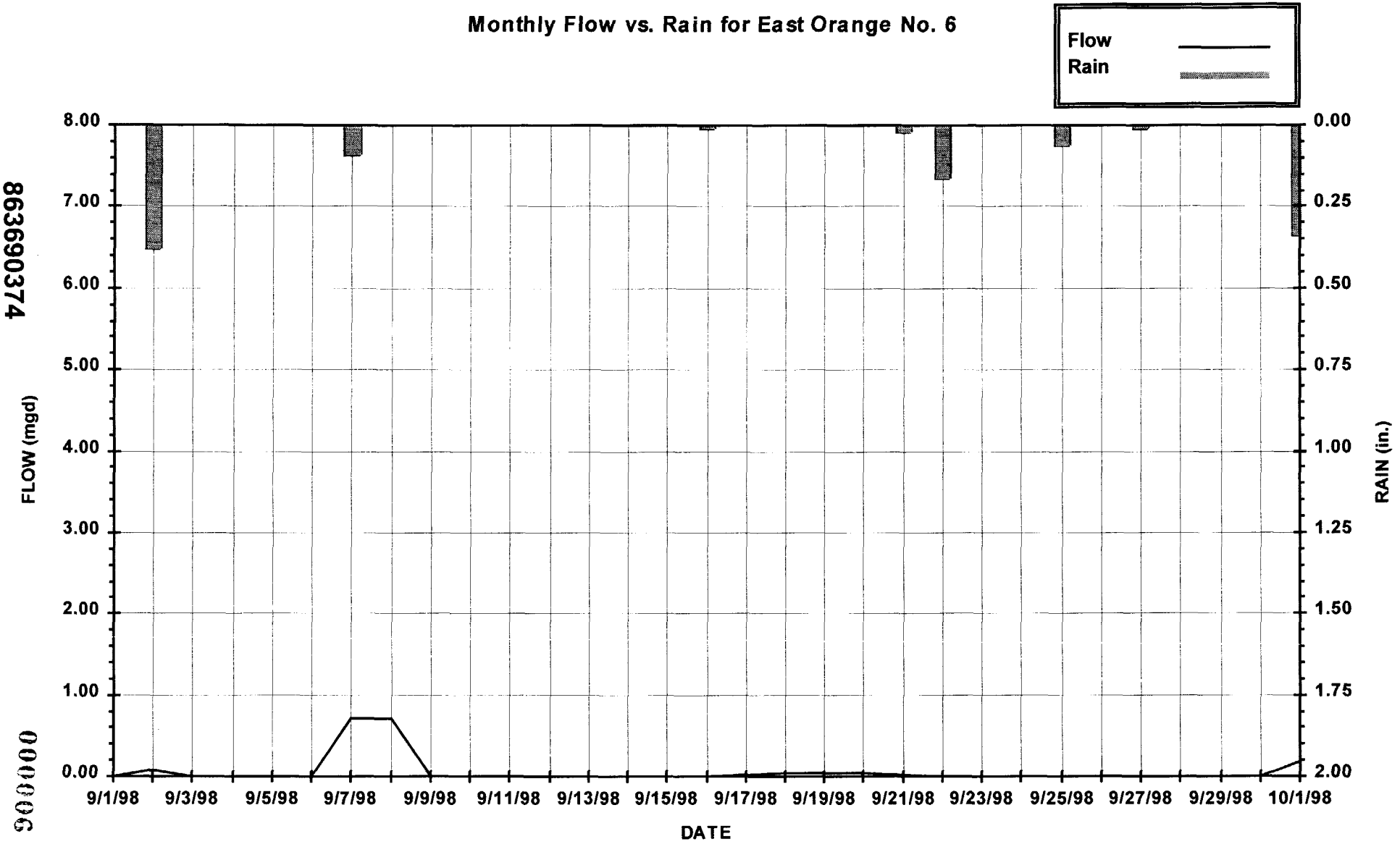
EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
33" RCP Storm

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 6



863690374

000006

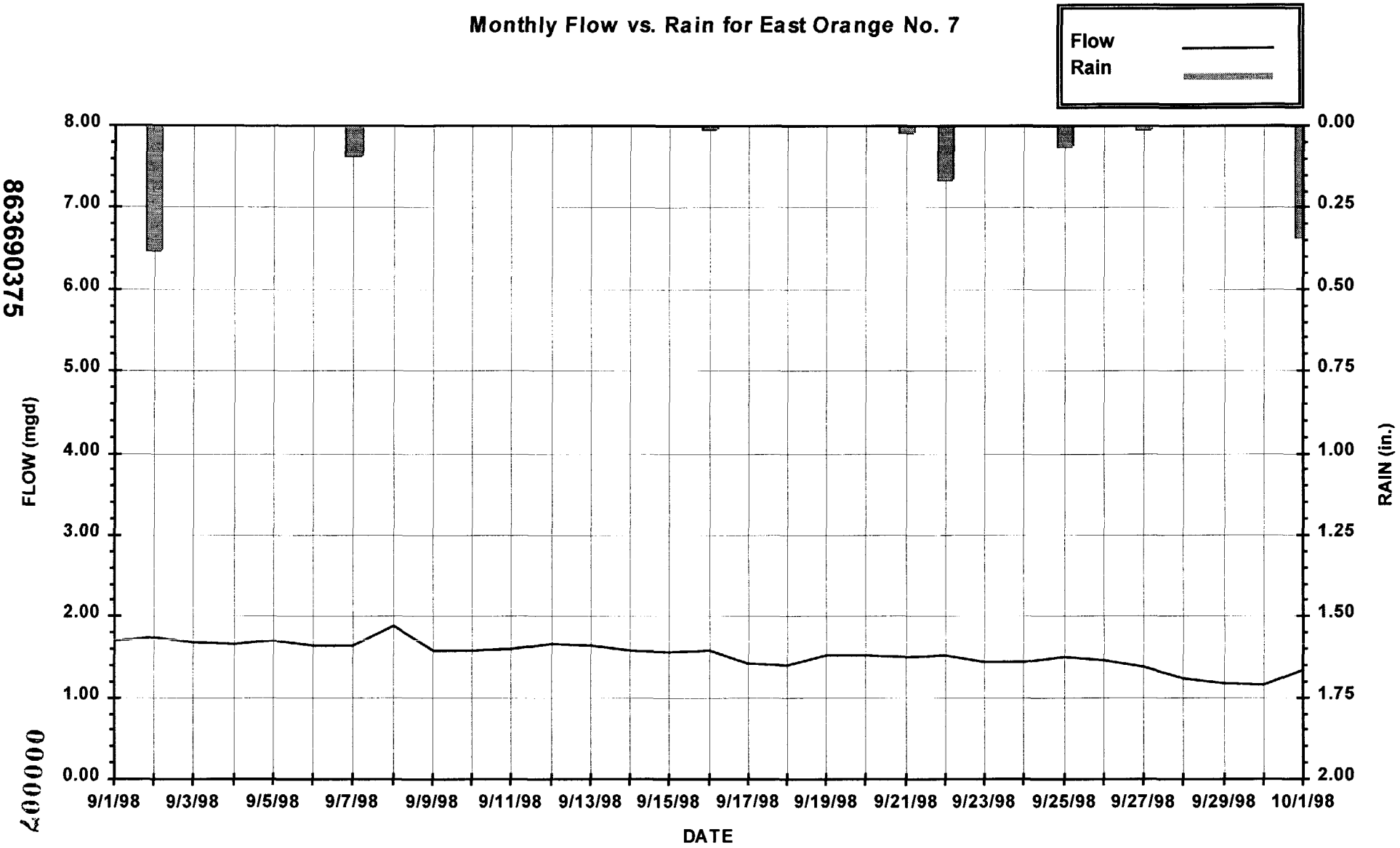
EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
18.75" VCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 7



863690375

000007

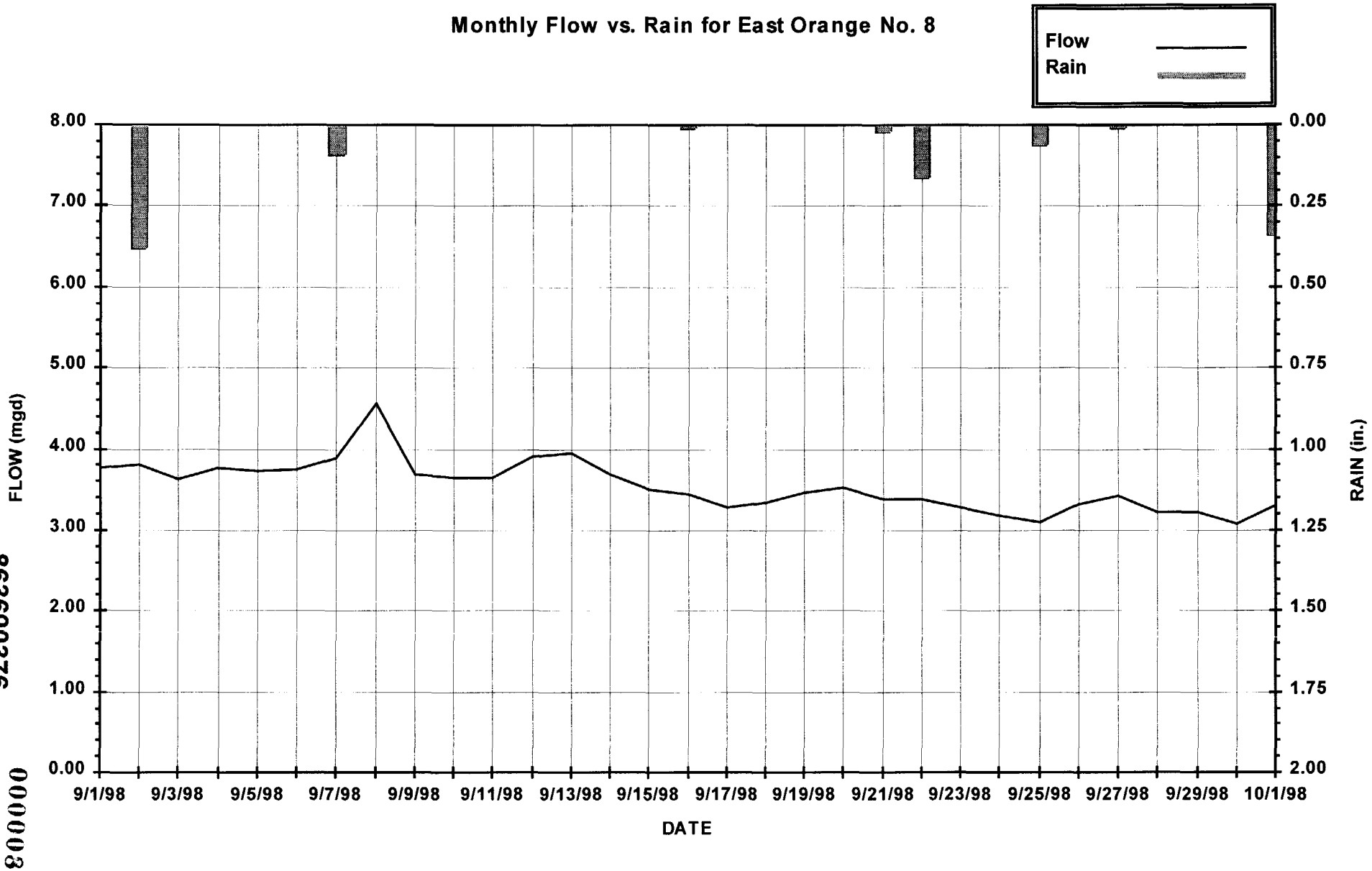
EAST ORANGE NO. 7
Address: 6TH ST. & 13TH ST.
30" RCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 8



EAST ORANGE NO. 8
Address: 13TH ST. & SPRINGDALE AVE.
24.25" VCP

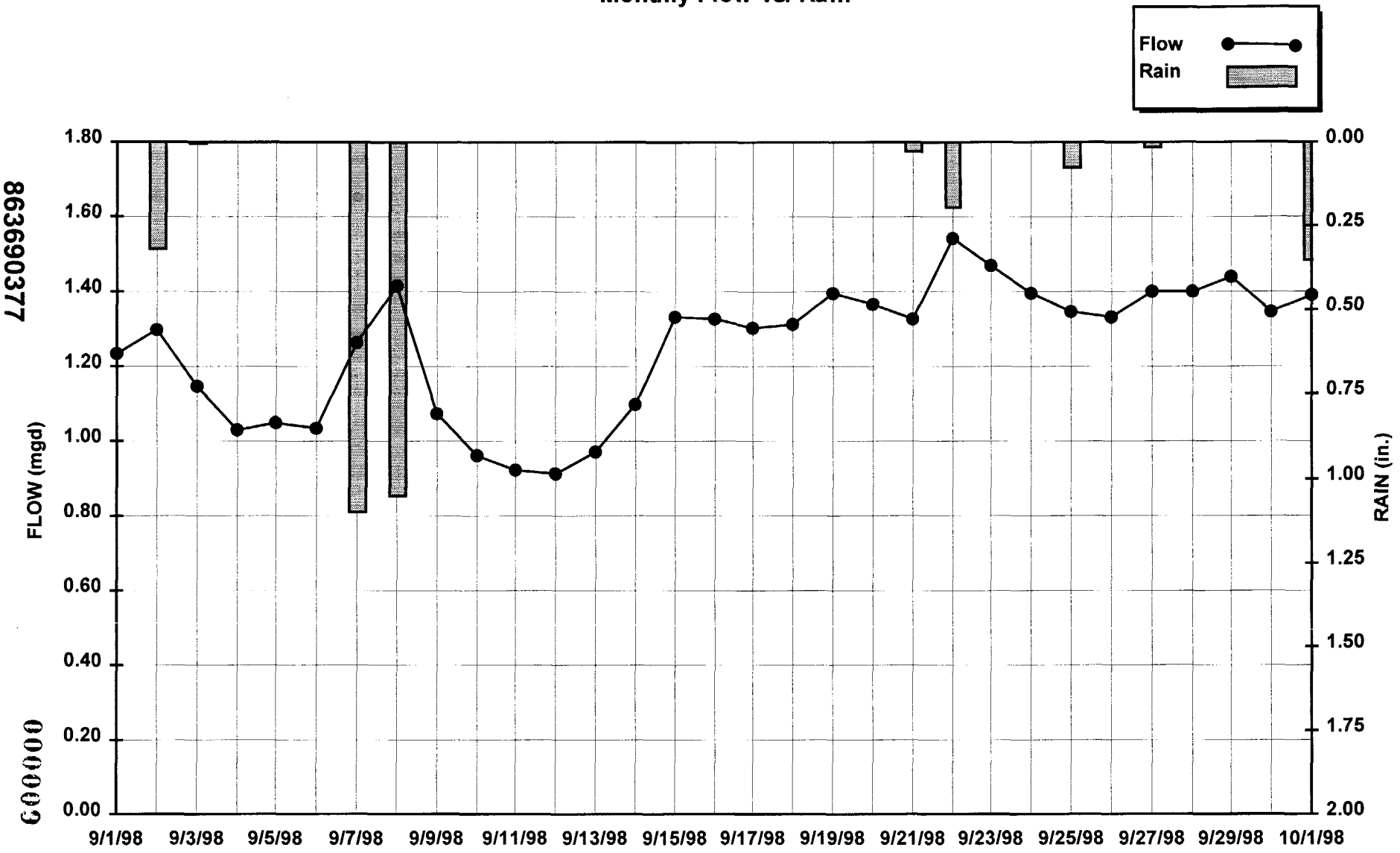
Rain Gauge
RG-1, Roberto Clemente School

863690376
000008

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690377

NEWARK No. 1

Address: Elizabeth Ave. near Mapes Ave.

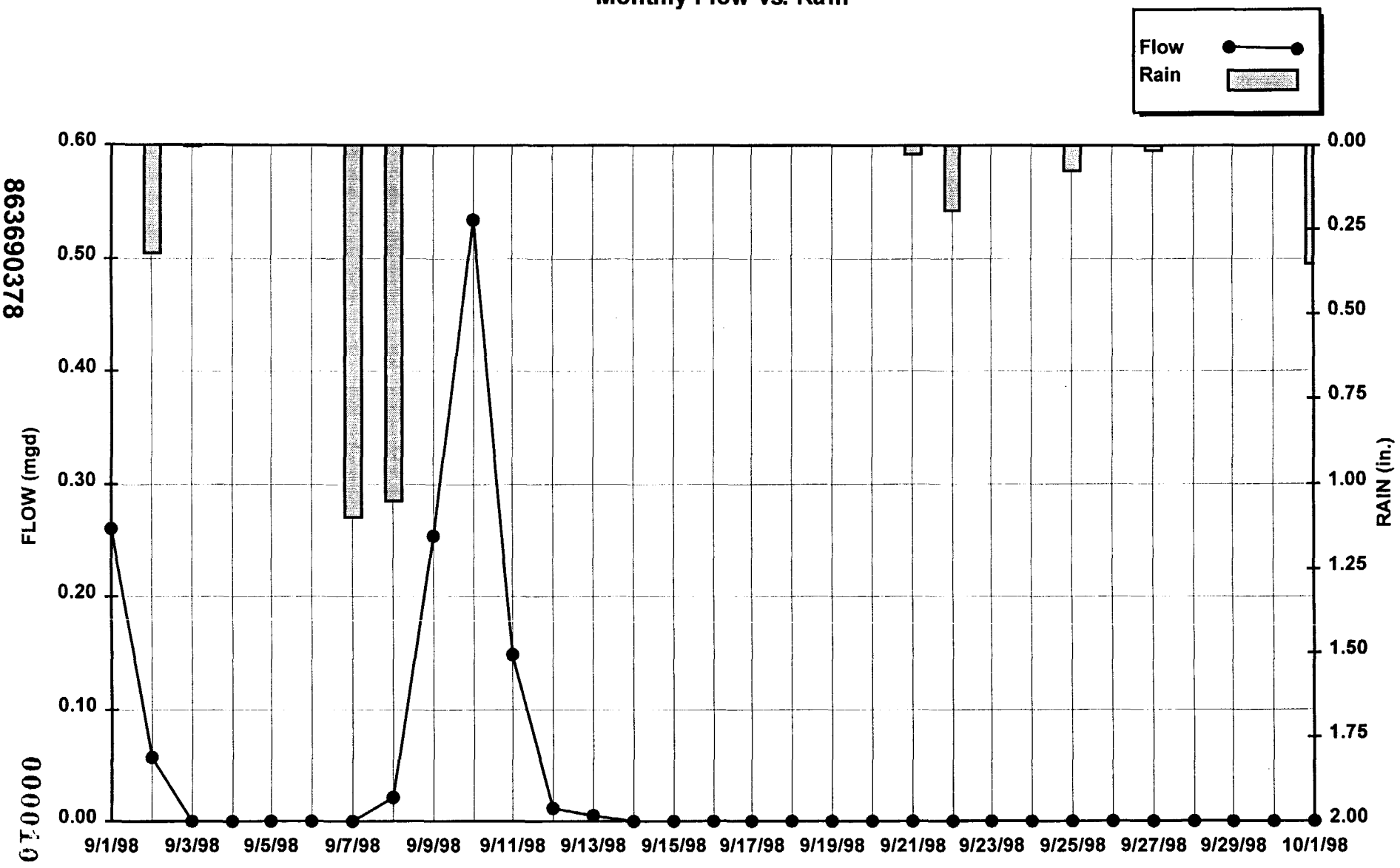
910 F.M. VERSION: 1.02

Serial#: QLL

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 2
Address: Weequahic Park

910 F.M. VERSION: 1.02
Serial#: QUN

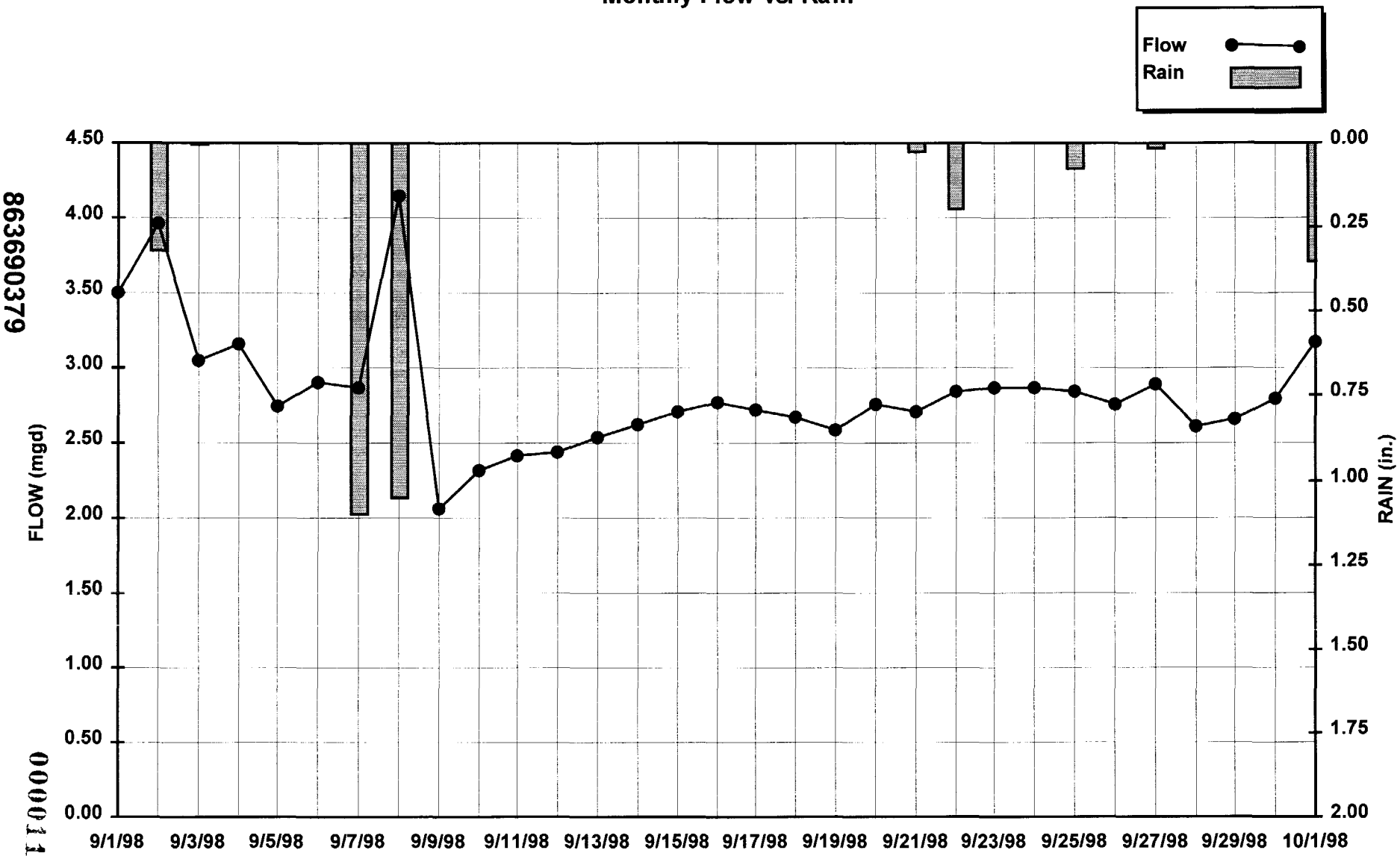
863690378

010000

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 3
Address: Jabez Ave. near Backus St.

910 F.M. VERSION: 1.02
Serial#: QTZ

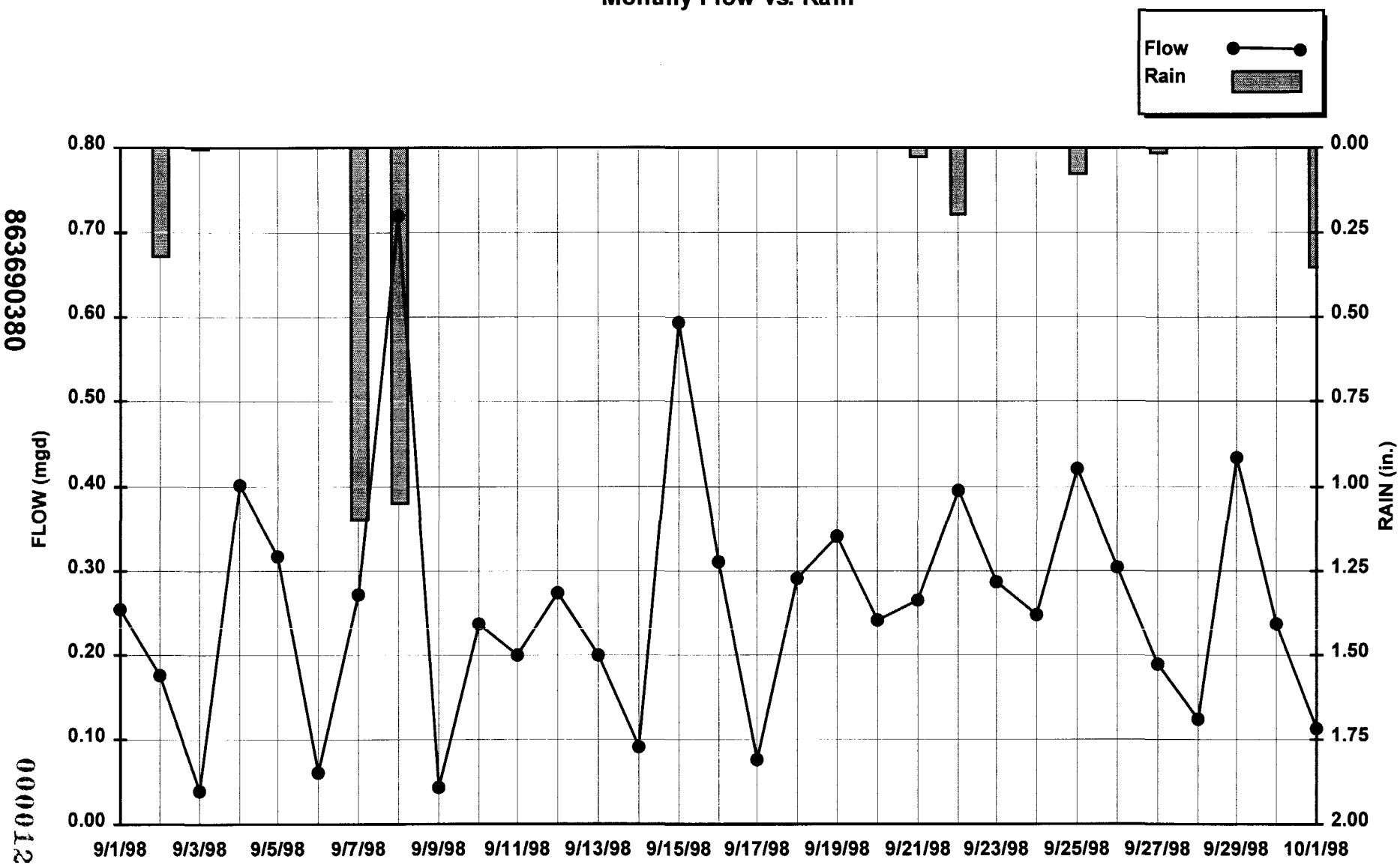
863690379

0000011

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690380

000012

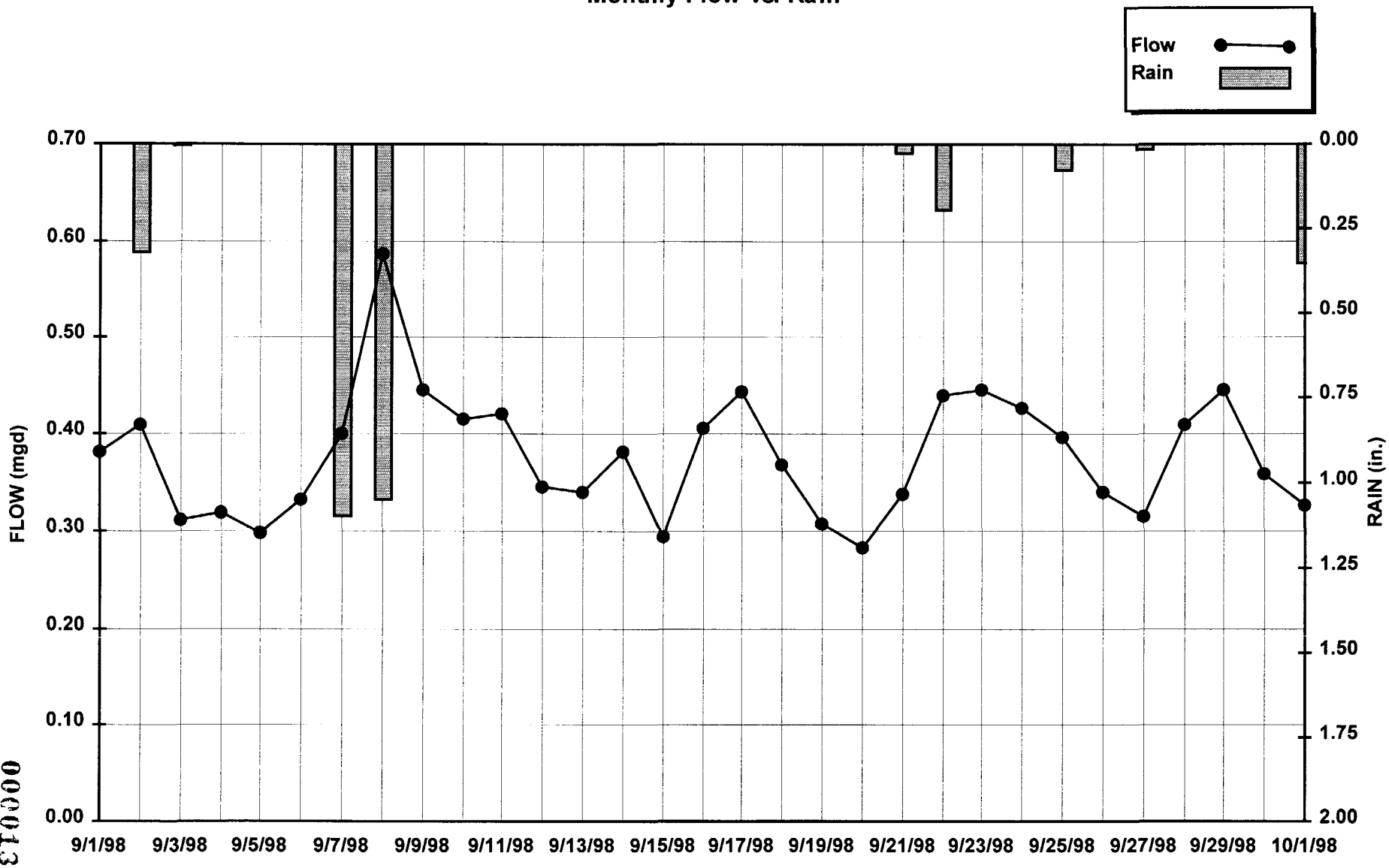
NEWARK No. 4
Address: Wilson and Ave. P

910 F.M. VERSION: 1.02
Serial#: QT1

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 5
Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02
Serial#: QUO

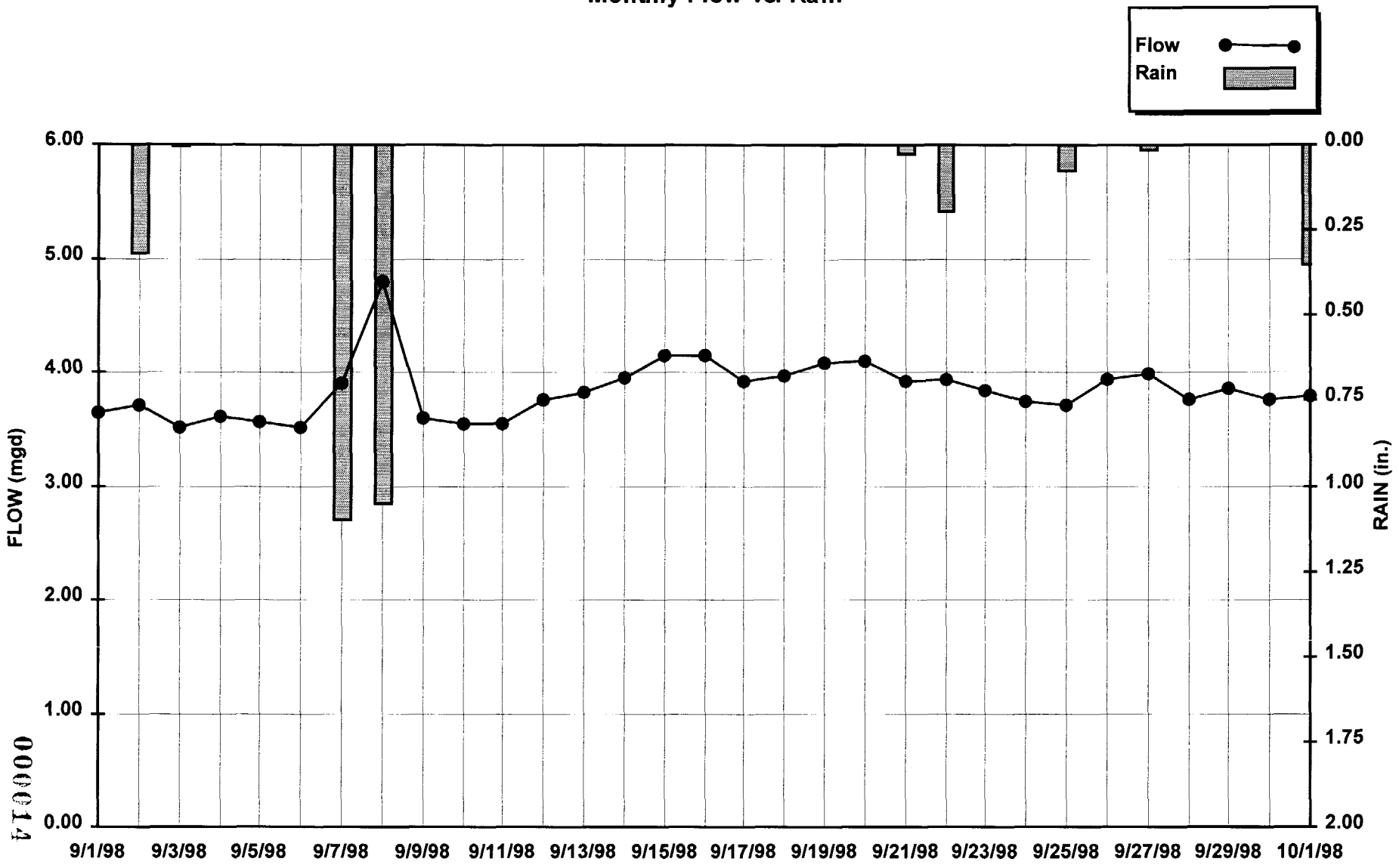
863690381

000013

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690382

000014

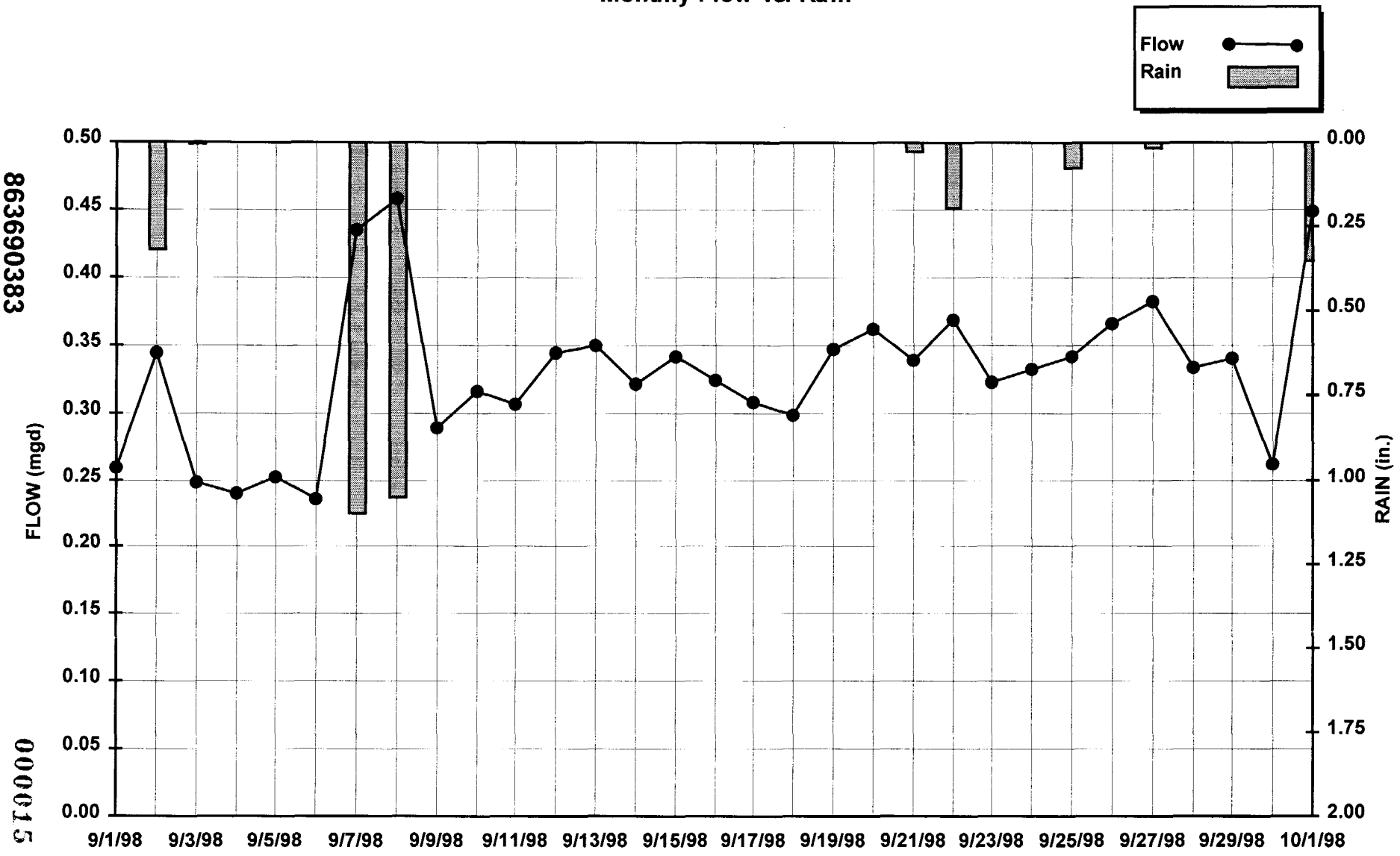
NEWARK No. 6
Address: Near 355 5th St.

910 F.M. VERSION: 1.02
Serial#: QU1

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690383

000015

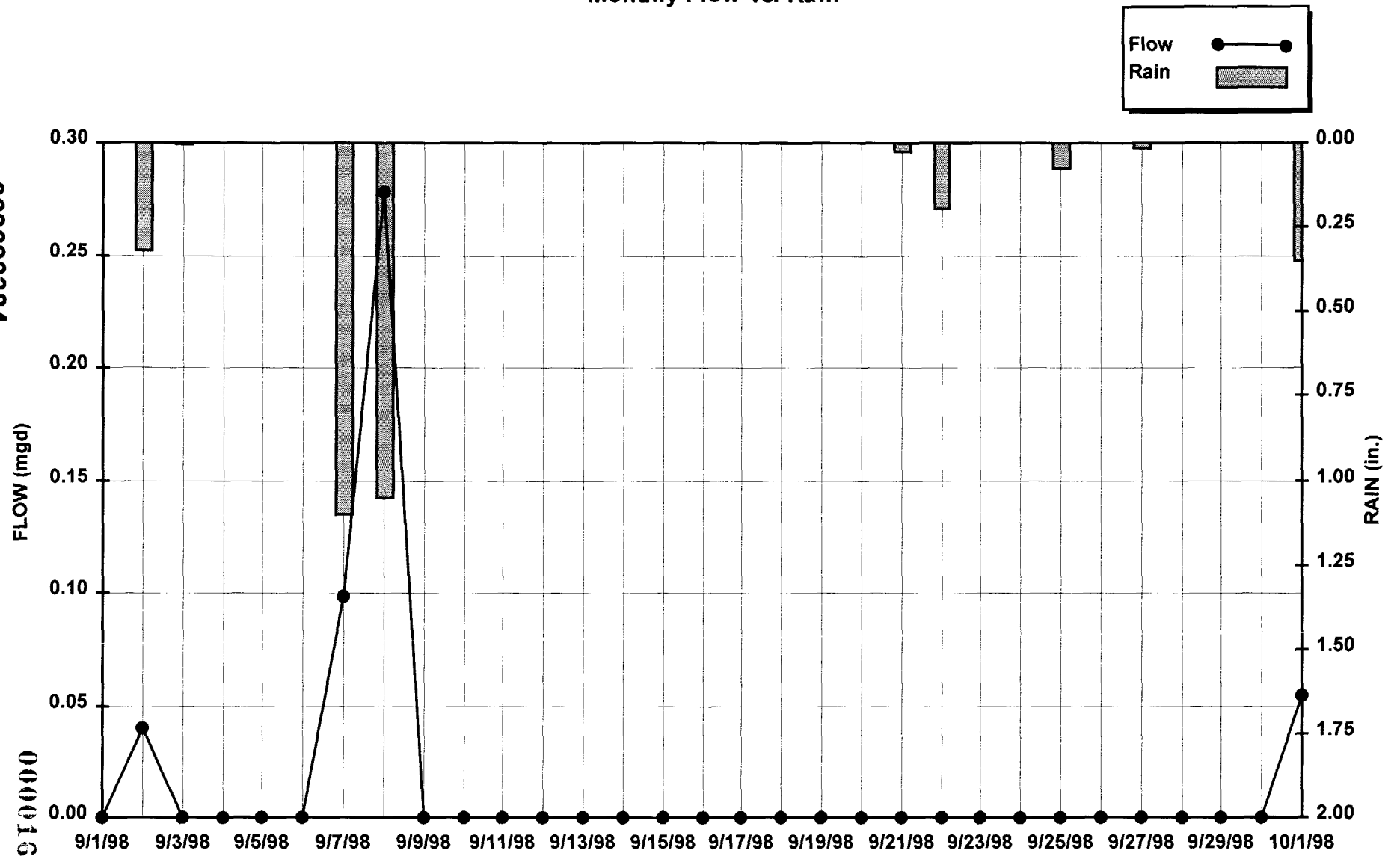
NEWARK No. 7
Address: Verona St. near Broadway

910 F.M. VERSION: 1.02
Serial#: QUK

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690384

000015

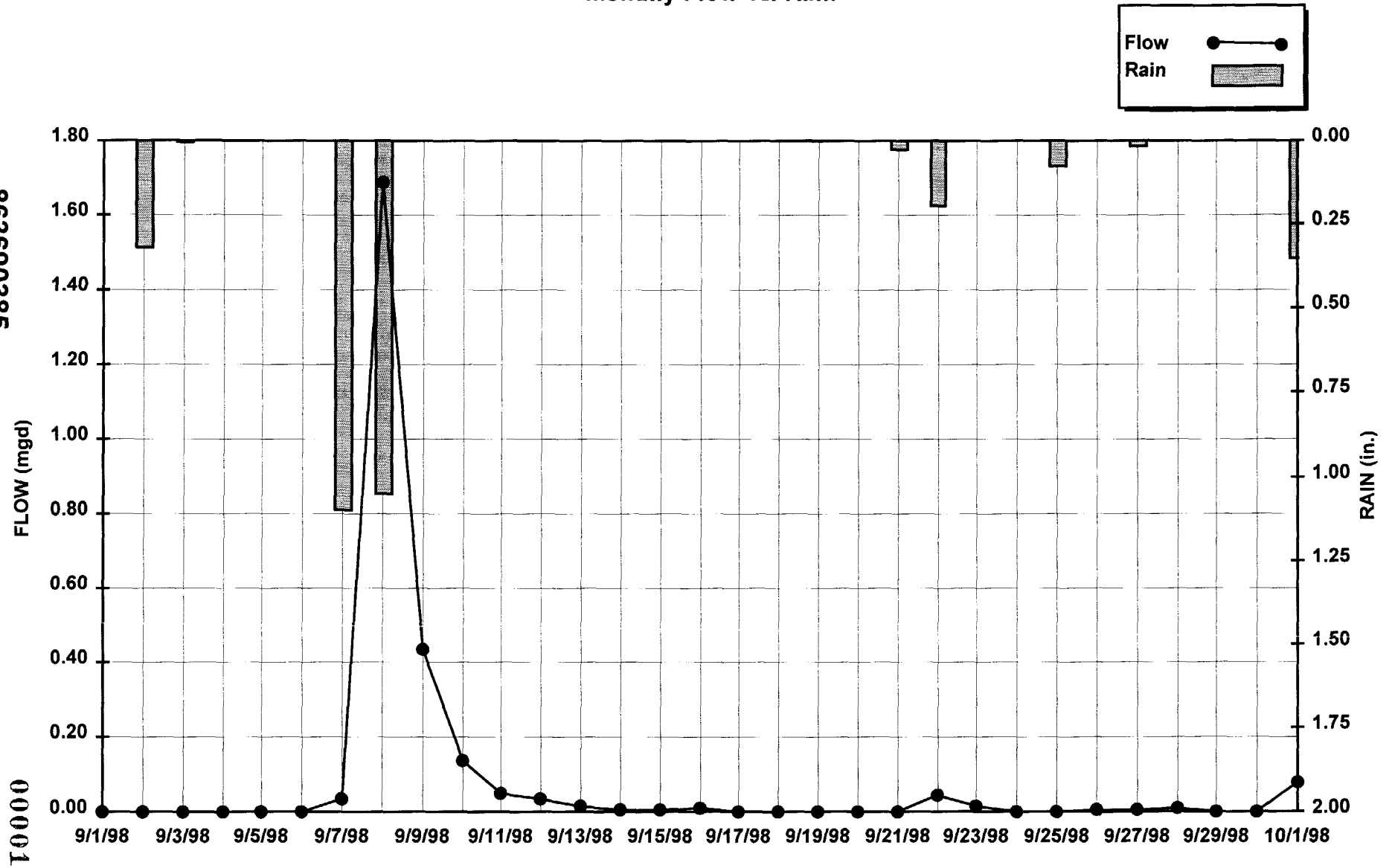
NEWARK No. 8
Address: Earl and Frelinghuysen

910 F.M. VERSION: 1.02
Serial#: QT3

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690385

0000017

NEWARK No. 9

Address: Branch Brook Park Lake Overflow

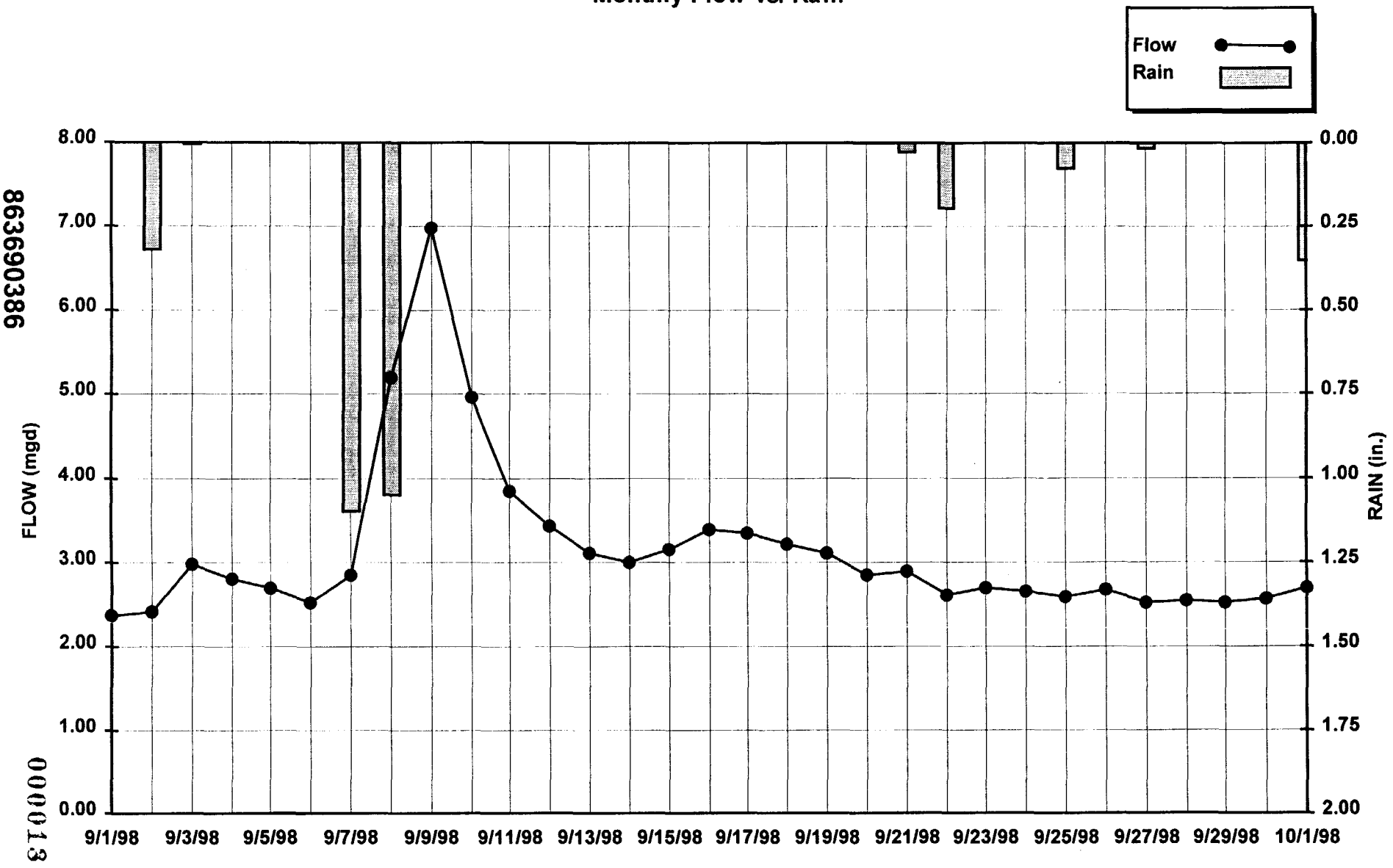
910 F.M. VERSION: 1.02

Serial#: QLF

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690386

0000013

NEWARK No. 10

Address: Weequahic Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QUX

See page 10.

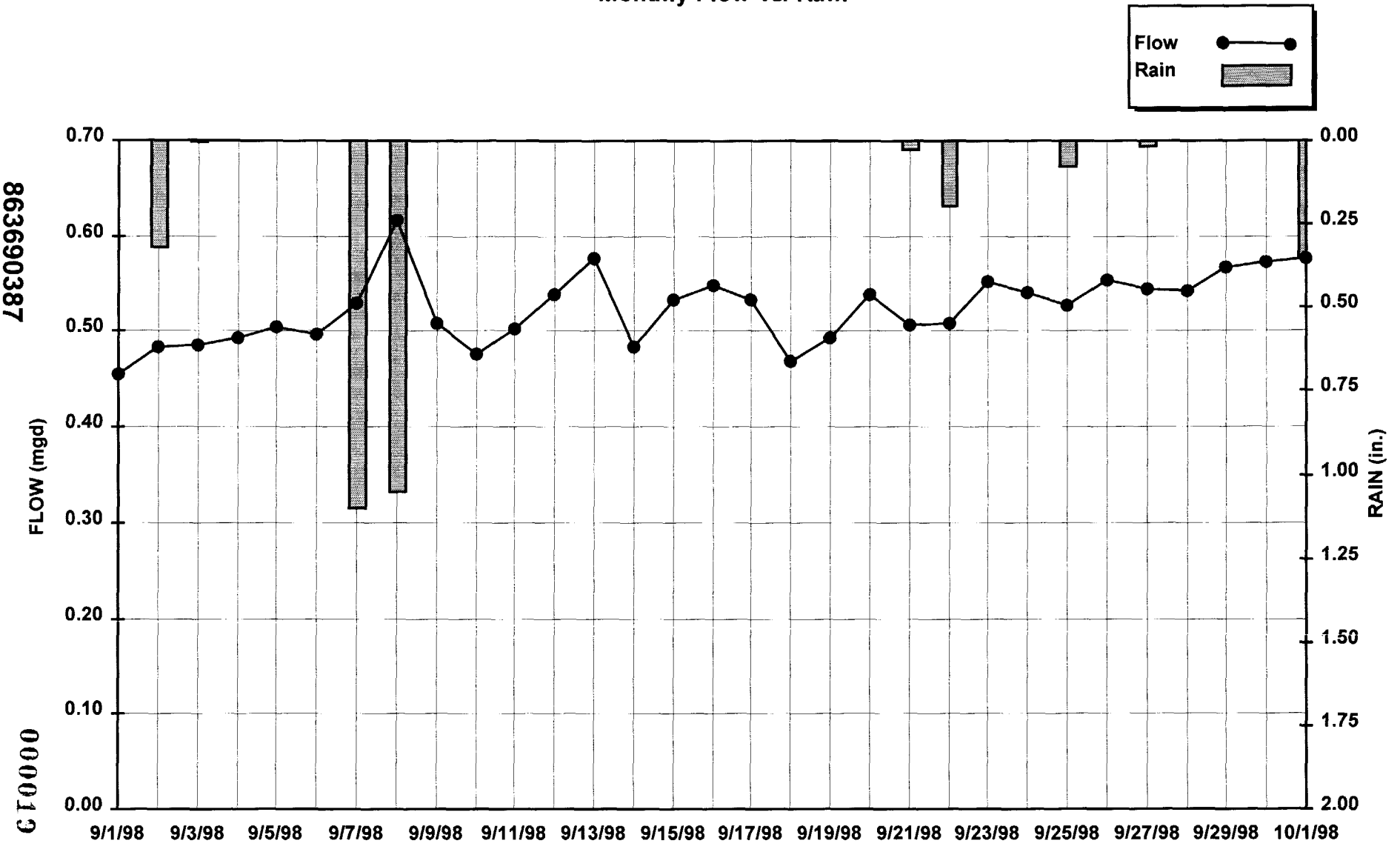
Monthly Flow Report (Flow1)

12/10/1998 1:10:21 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690387

000012

Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

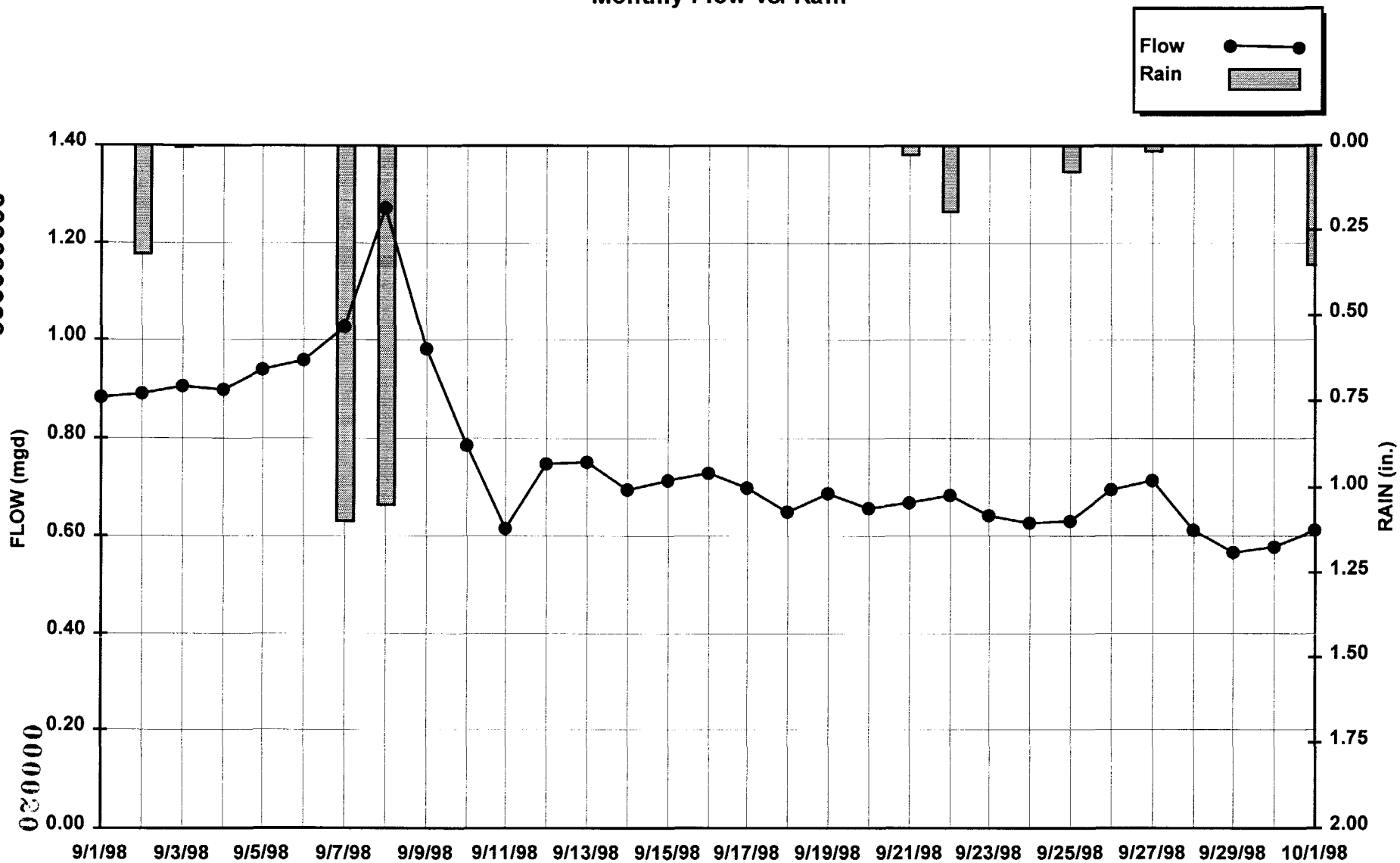
910 F.M. VERSION: 1.02

Serial#: QQ7

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690388

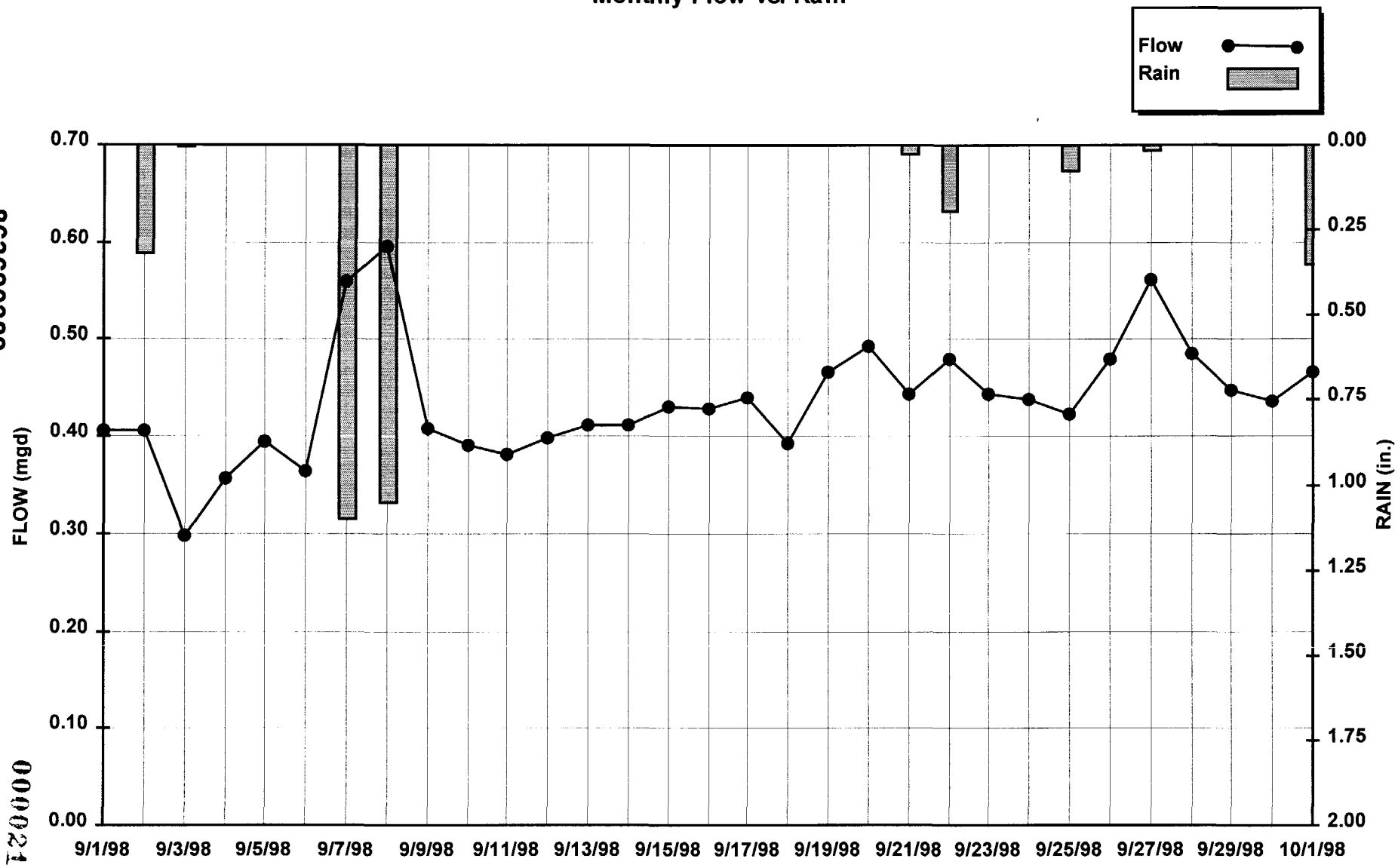
Outgoing No. 2
Address: Unity and Valley St.

910 F.M. VERSION: 1.02
Serial#: QQ2

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690389

000021

Outgoing No. 3

Address: Fabyan Pl. near Exit Ramp of I-78

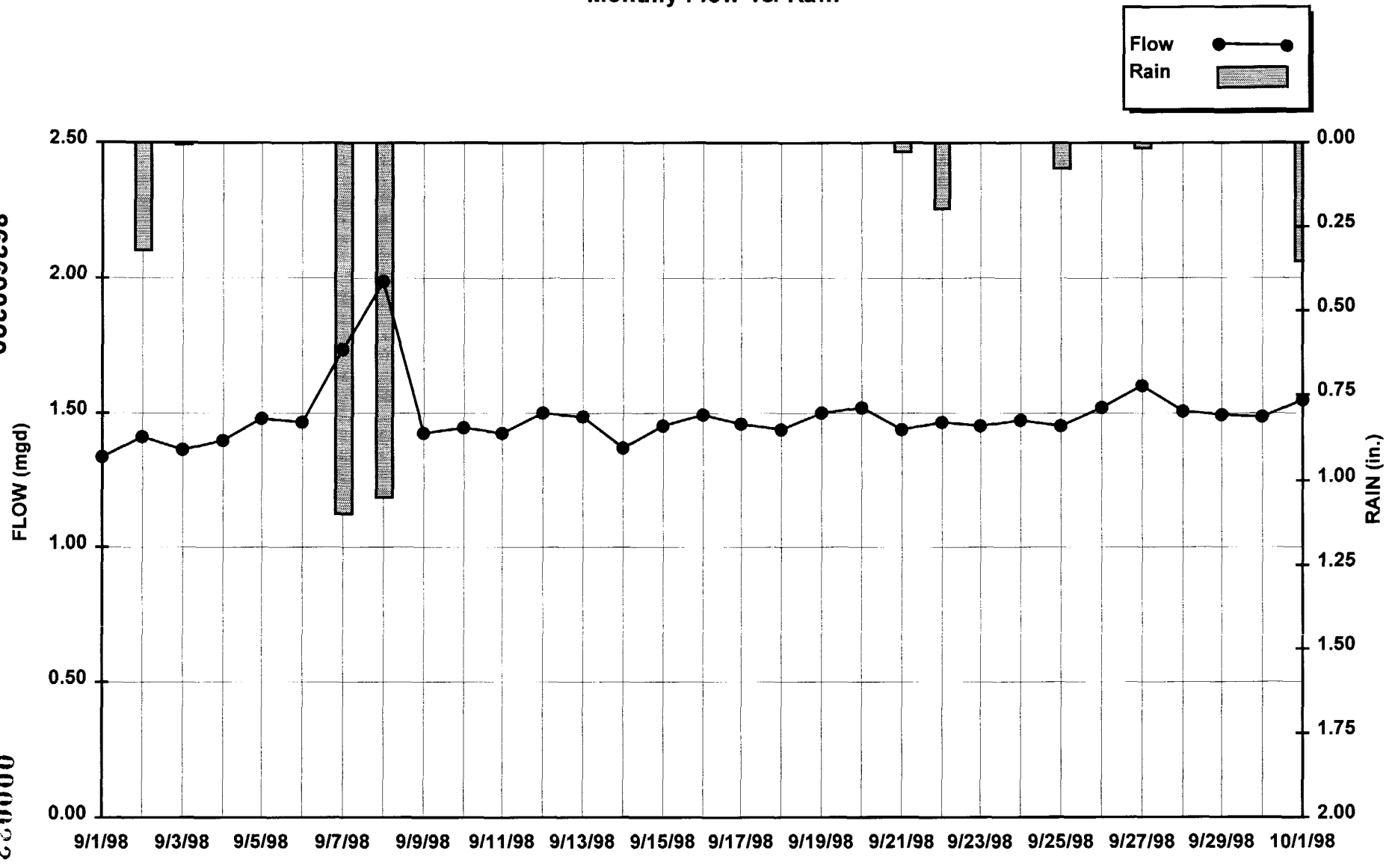
910 F.M. VERSION: 1.02

Serial#: QRD

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 4

Address: N. Lindon Ln between House # 63 and 65

910 F.M. VERSION: 1.02

Serial#: QUI

Monthly Flow Report (Flow1)

12/10/1998 1:07:50 PM

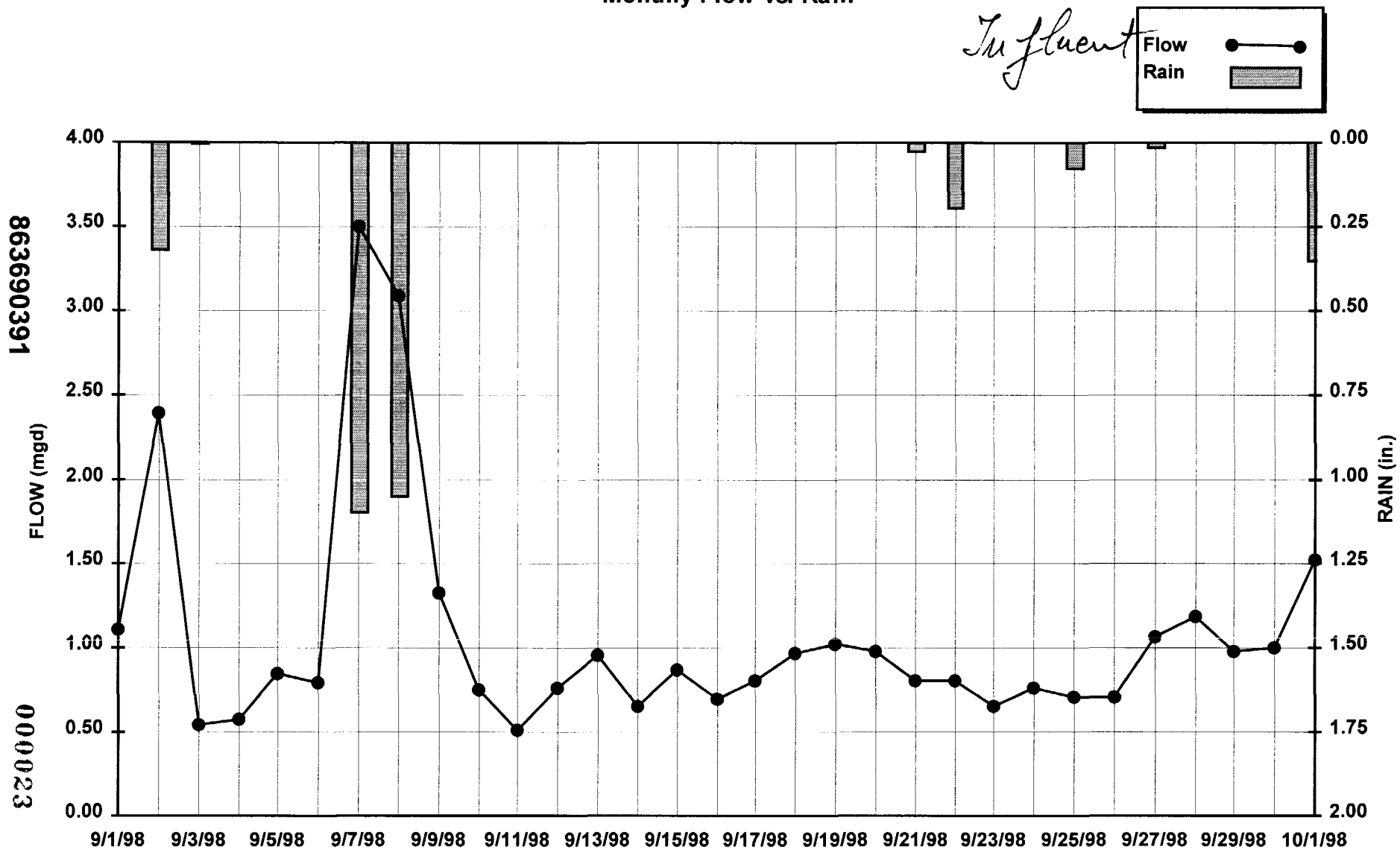
863690390

000022

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690391

0000023

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

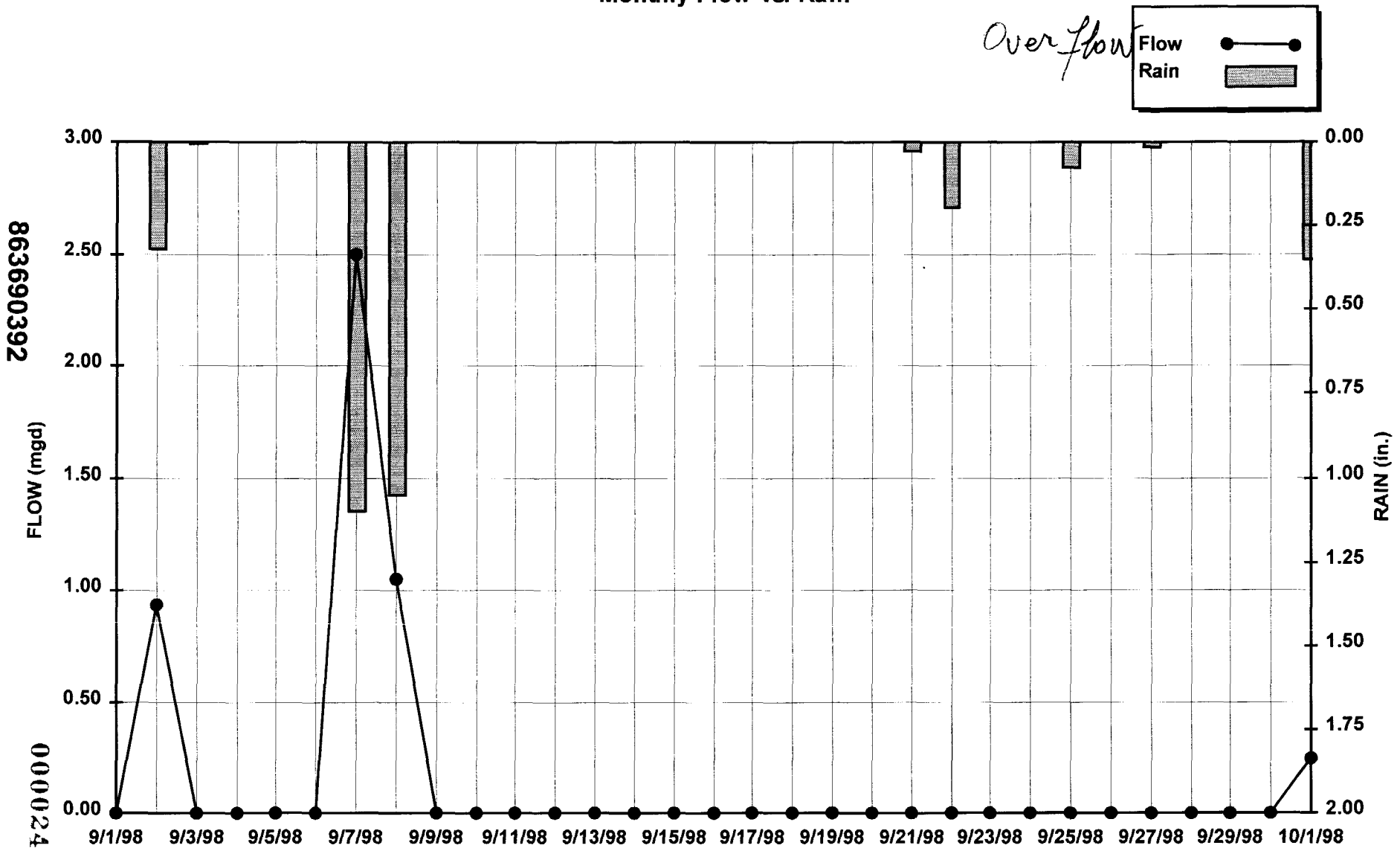
Monthly Flow Report (Flow1)

12/10/1998 12:59:23 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690392

000024

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

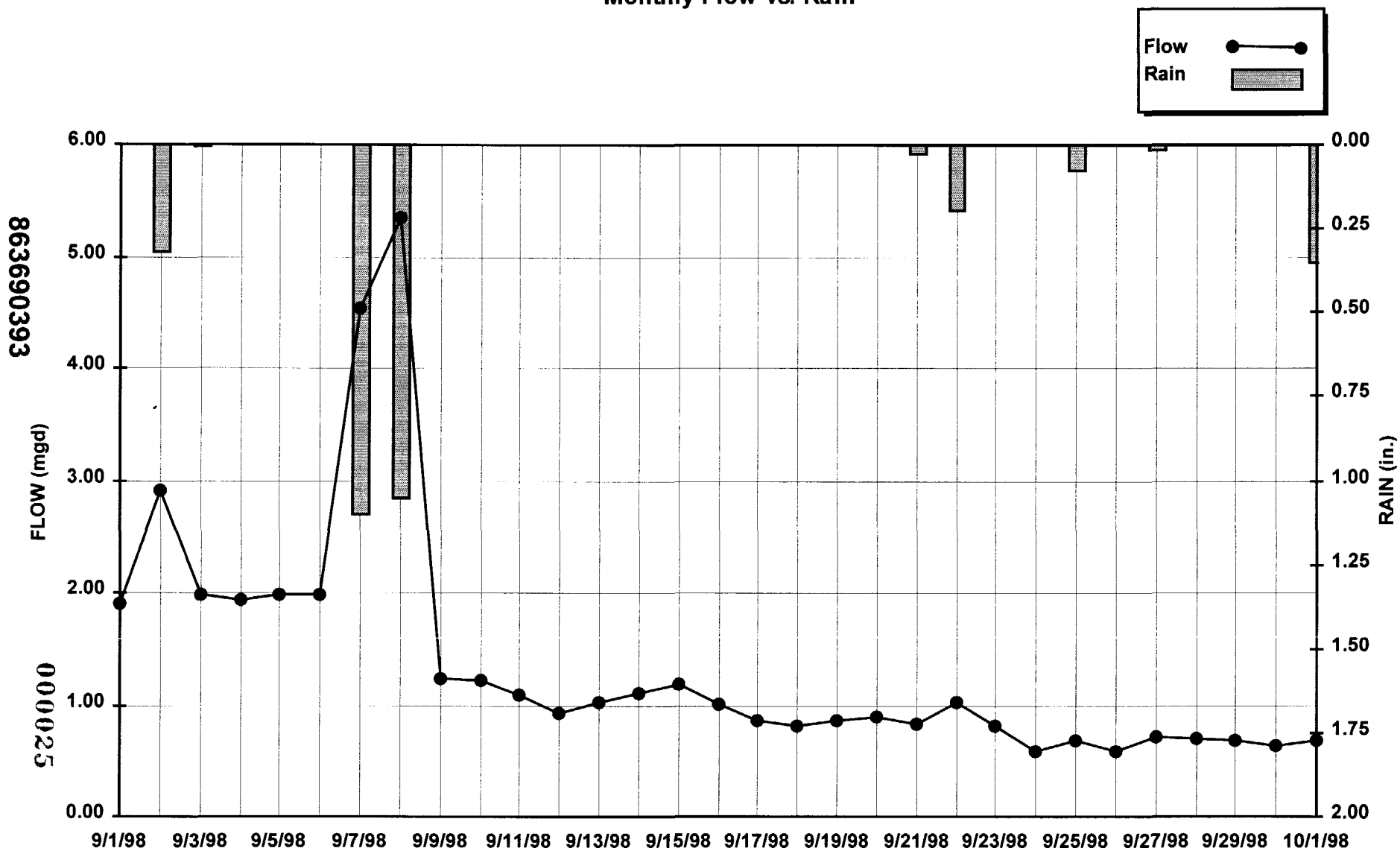
920 F.M. VERSION: 1.02

Serial#: QR8

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690393

0000025

CSO 004/005 HERBERT PL. - Influent → 48"

Address: Herbert Pl. and McCarter Hwy

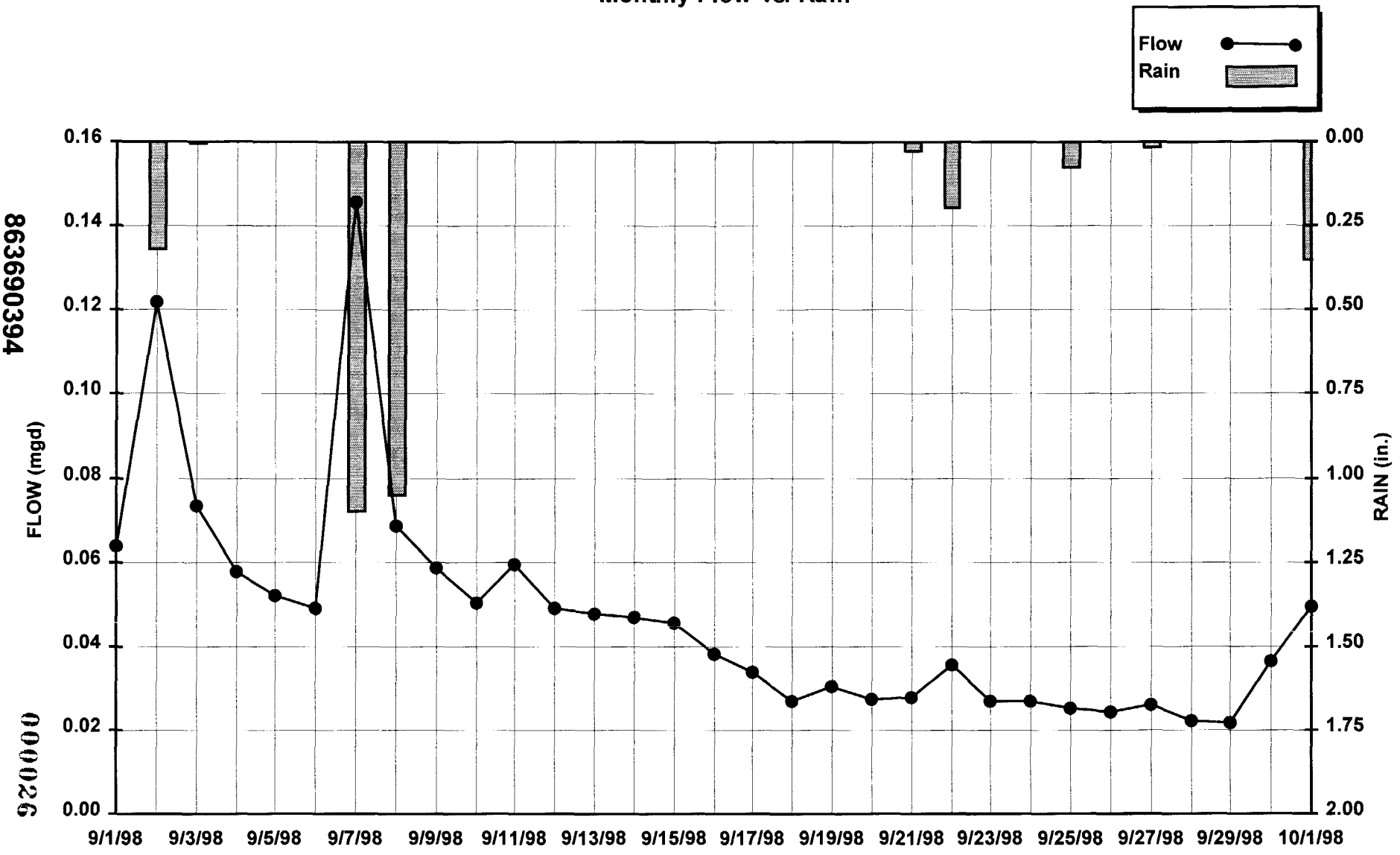
920 F.M. VERSION: 1.02

Serial#: QTQ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690394

0000026

CSO 004/005 HERBERT PL. - Influent – 24"

Address: Herbert Pl. and McCarter Hwy

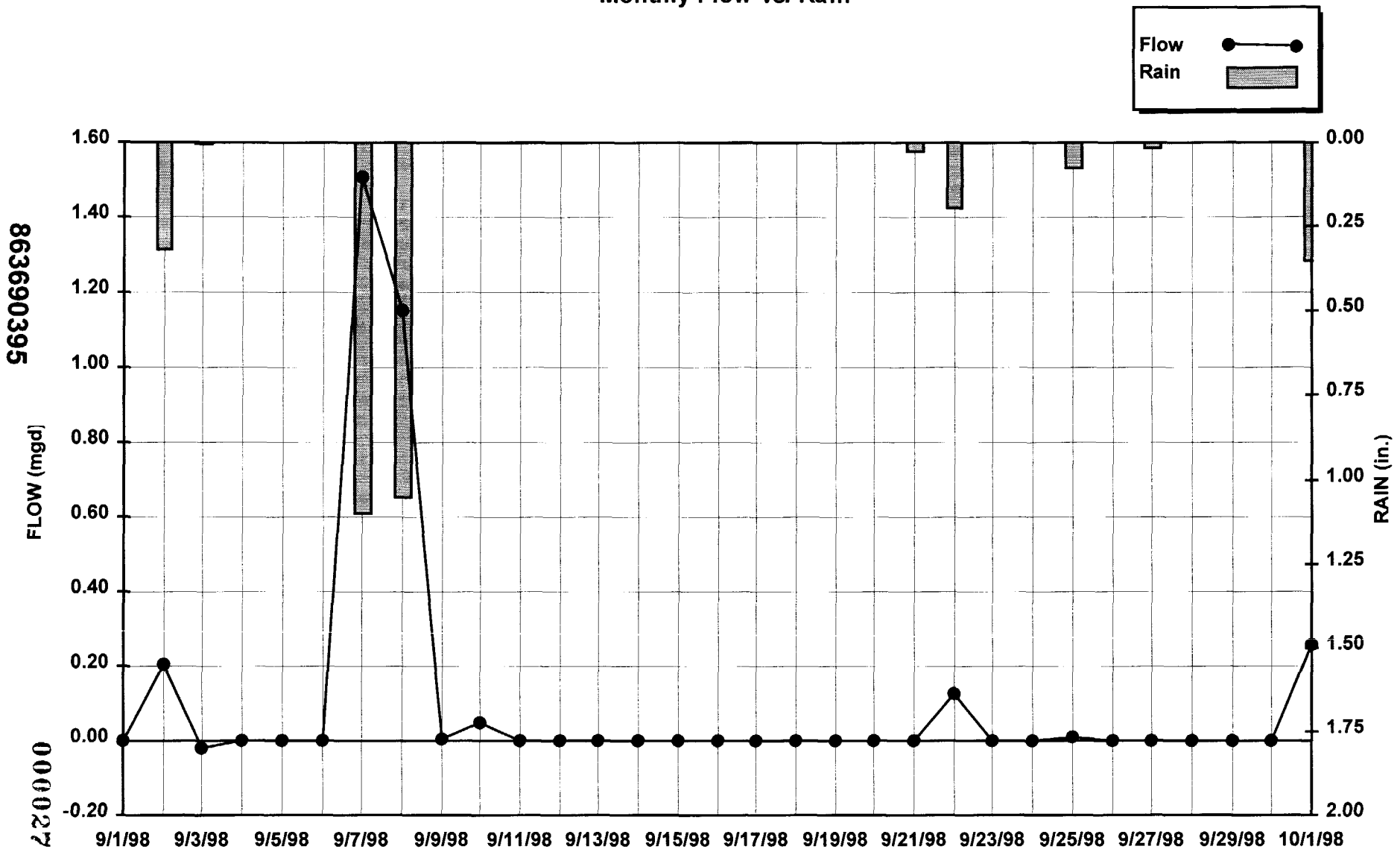
920 F.M. VERSION: 1.02

Serial#: QTQ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690395

000022

CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

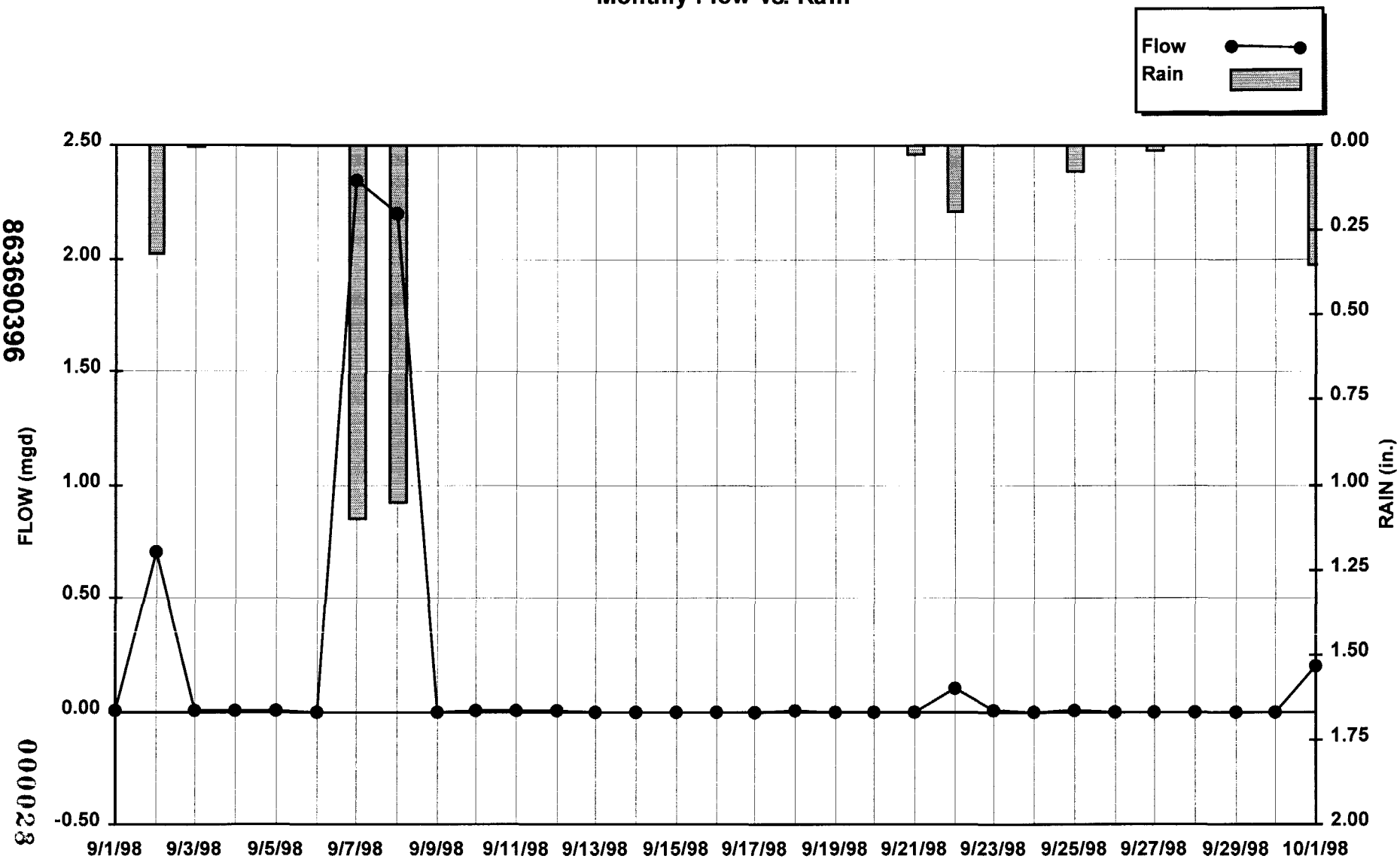
Monthly Flow Report (Flow1)

12/10/1998 12:58:22 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690396

000023

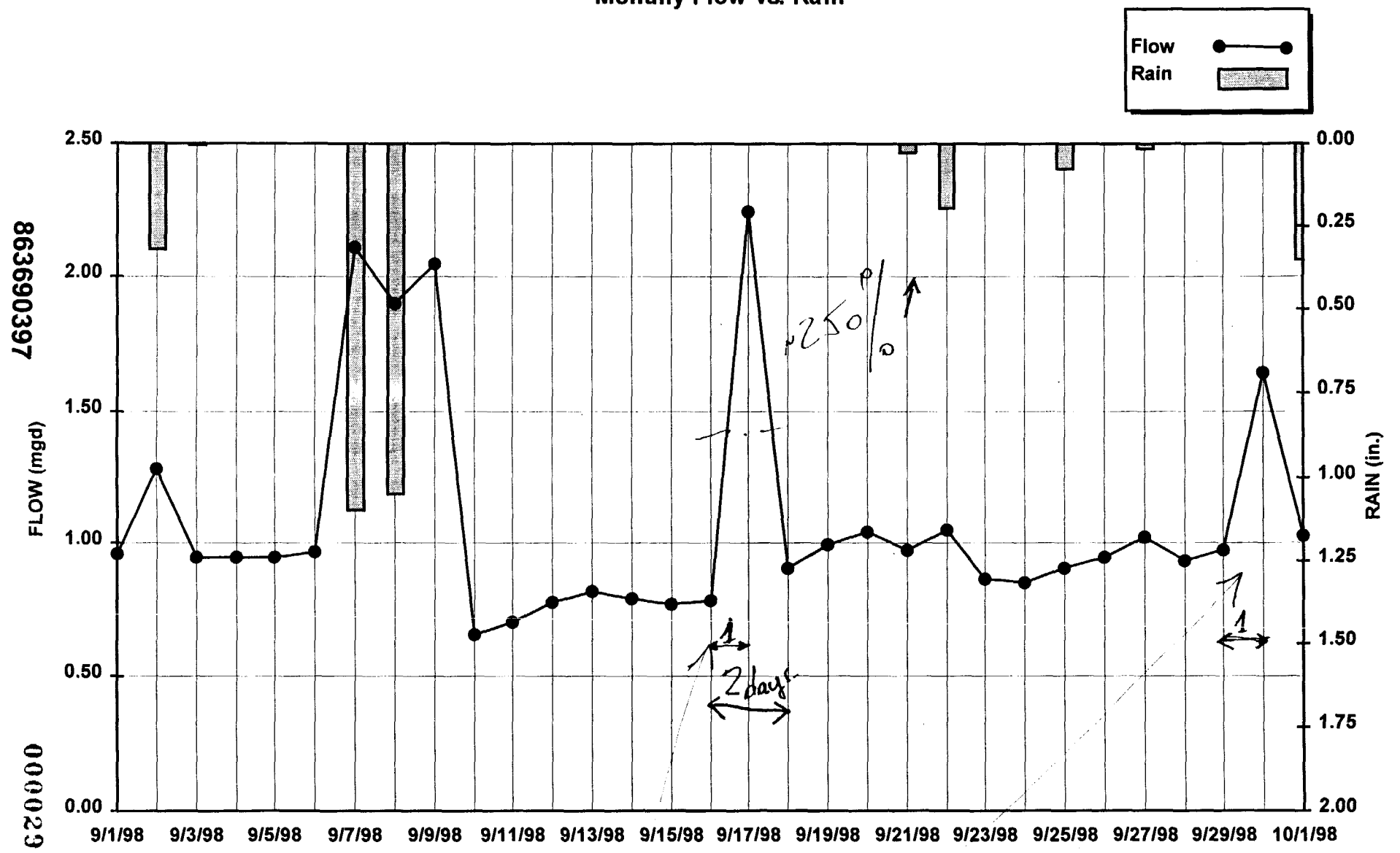
CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690397

000029

CSO 006 - ORIENTAL AVE Influent
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUL

Fire?
Hydrant?

Monthly Flow Report (Flow1)

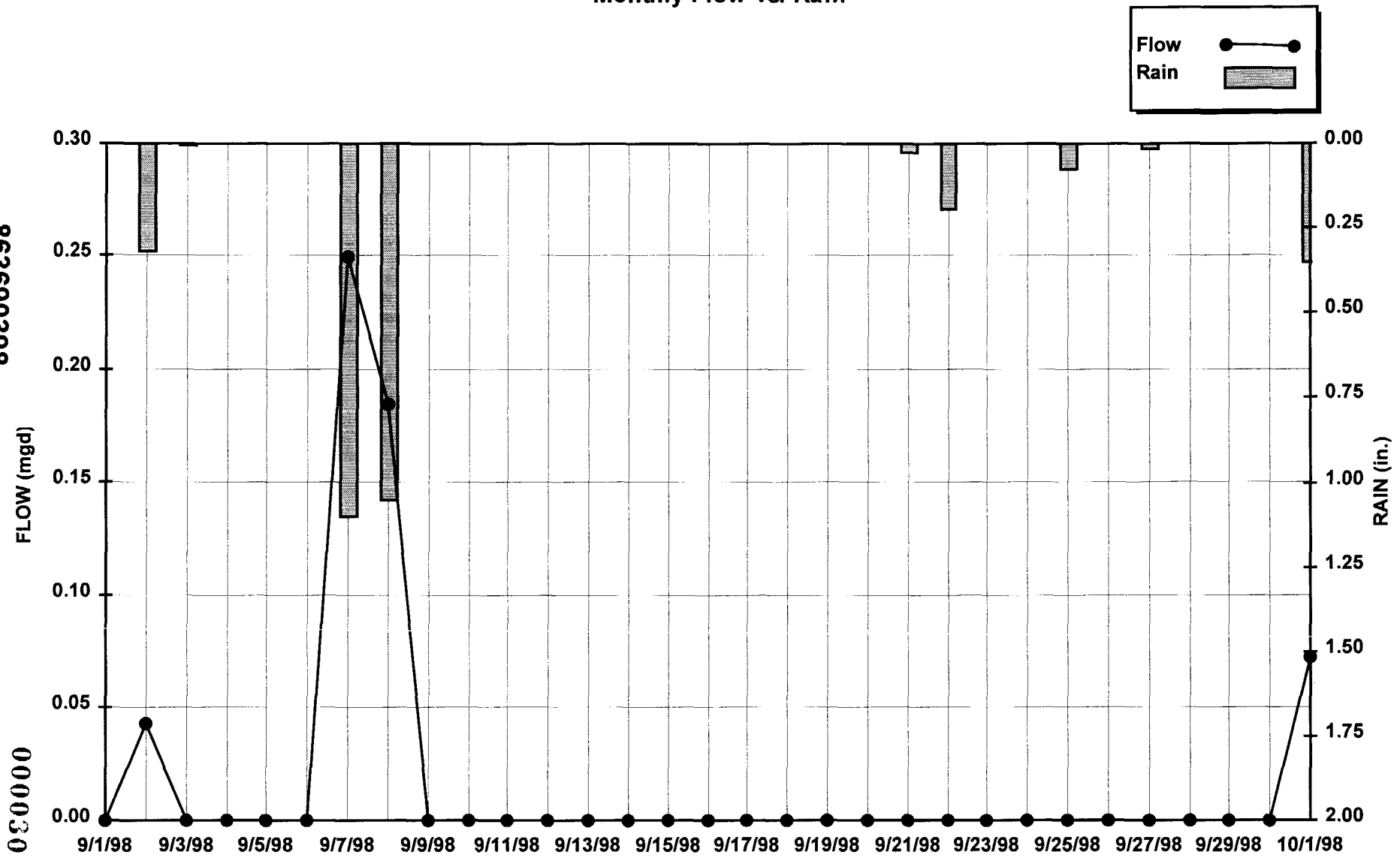
12/10/1998 1:00:43 PM

No.

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690398

0000030

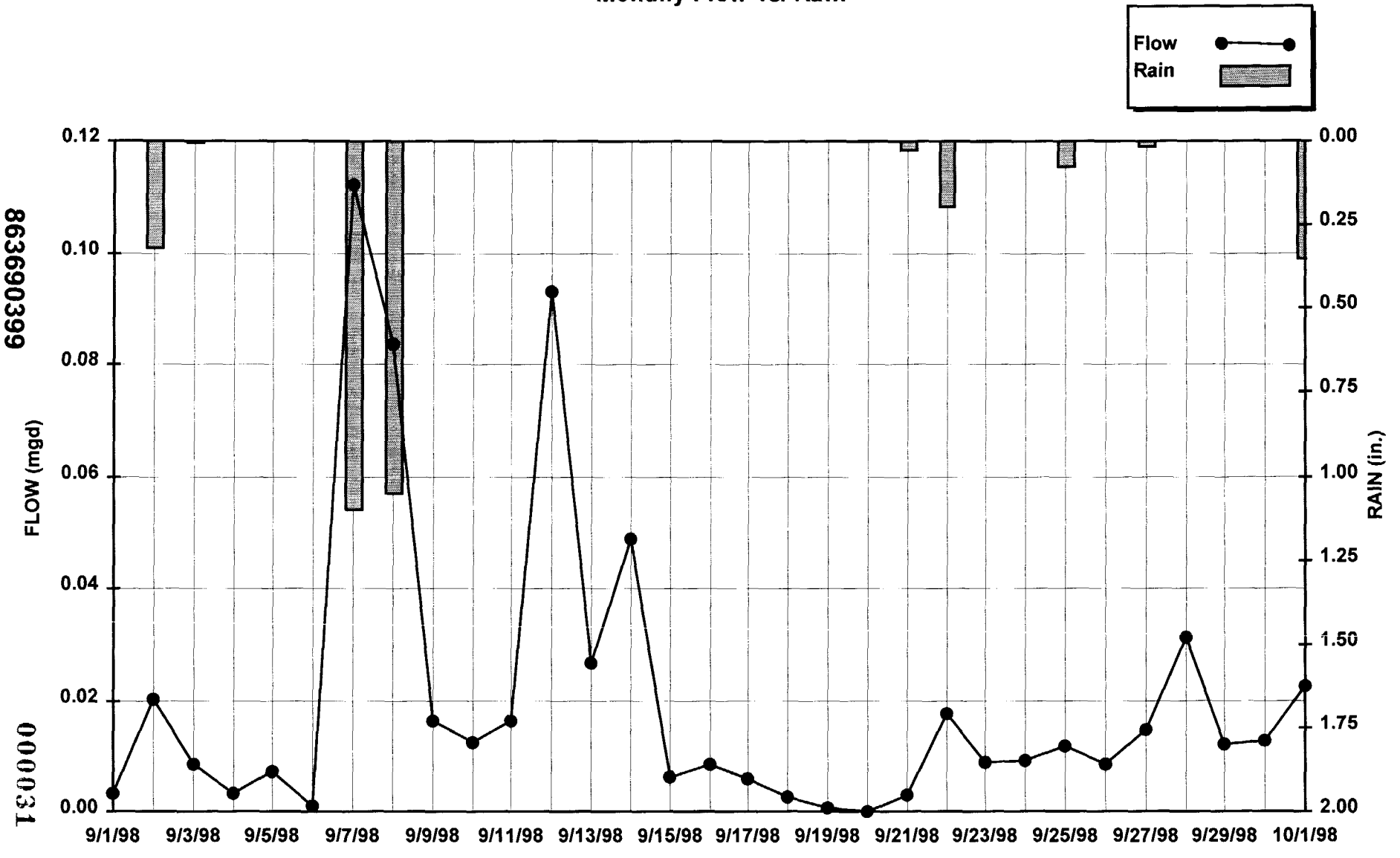
CSO 006 - ORIENTAL AVE Overflow
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUJ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690399

000031

CSO 007 - THIRD AVE
Address: Third Ave. and Passaic St.

Influent [illegible]

920 F.M. VERSION: 1.02
Serial#: QR6

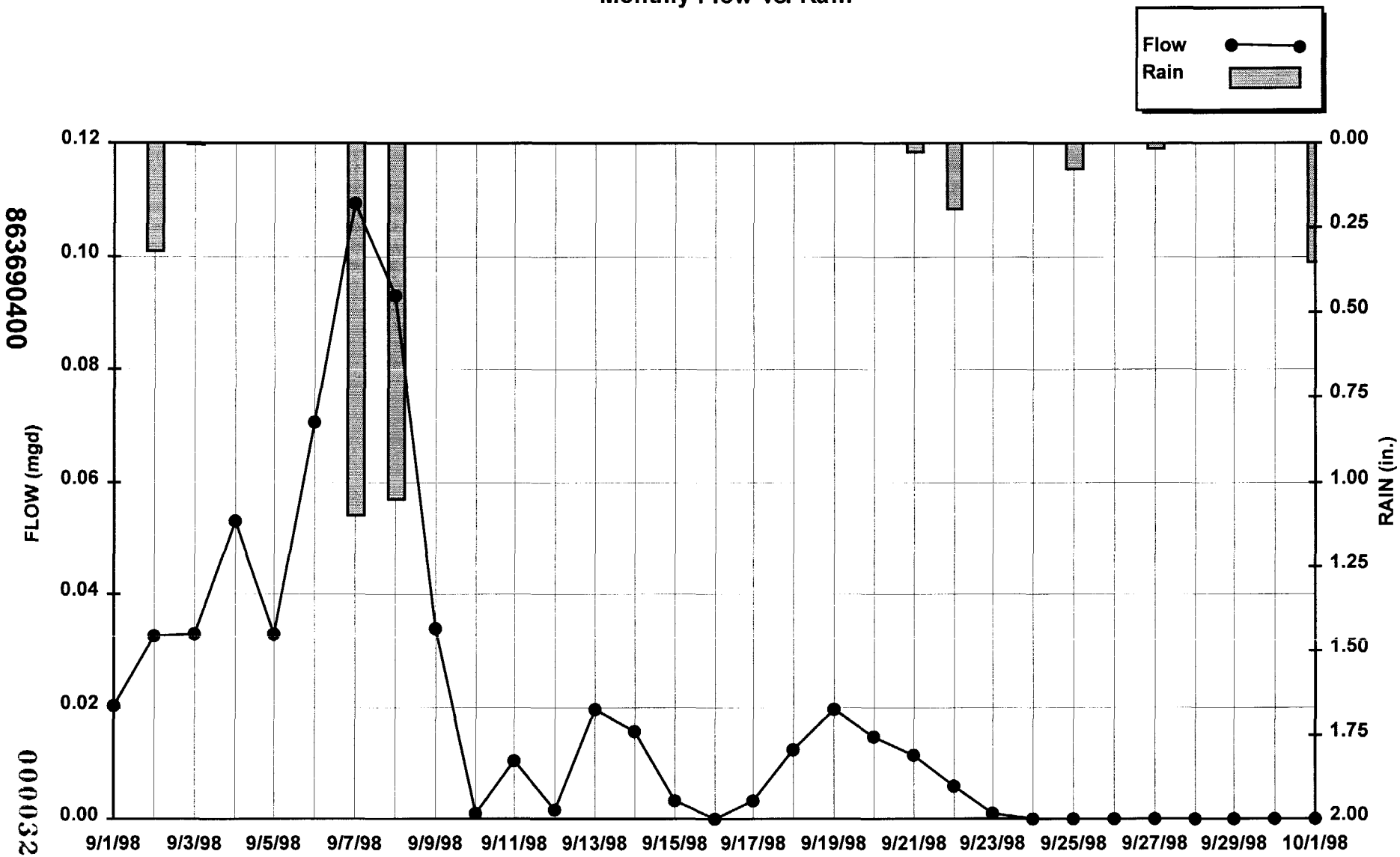
Monthly Flow Report (Flow1)

12/10/1998 12:58:02 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690400

000032

CSO 007 - THIRD AVE
Address: Third Ave. and Passaic St.

~~[illegible]~~ Over flow.

920 F.M. VERSION: 1.02
Serial#: QR6

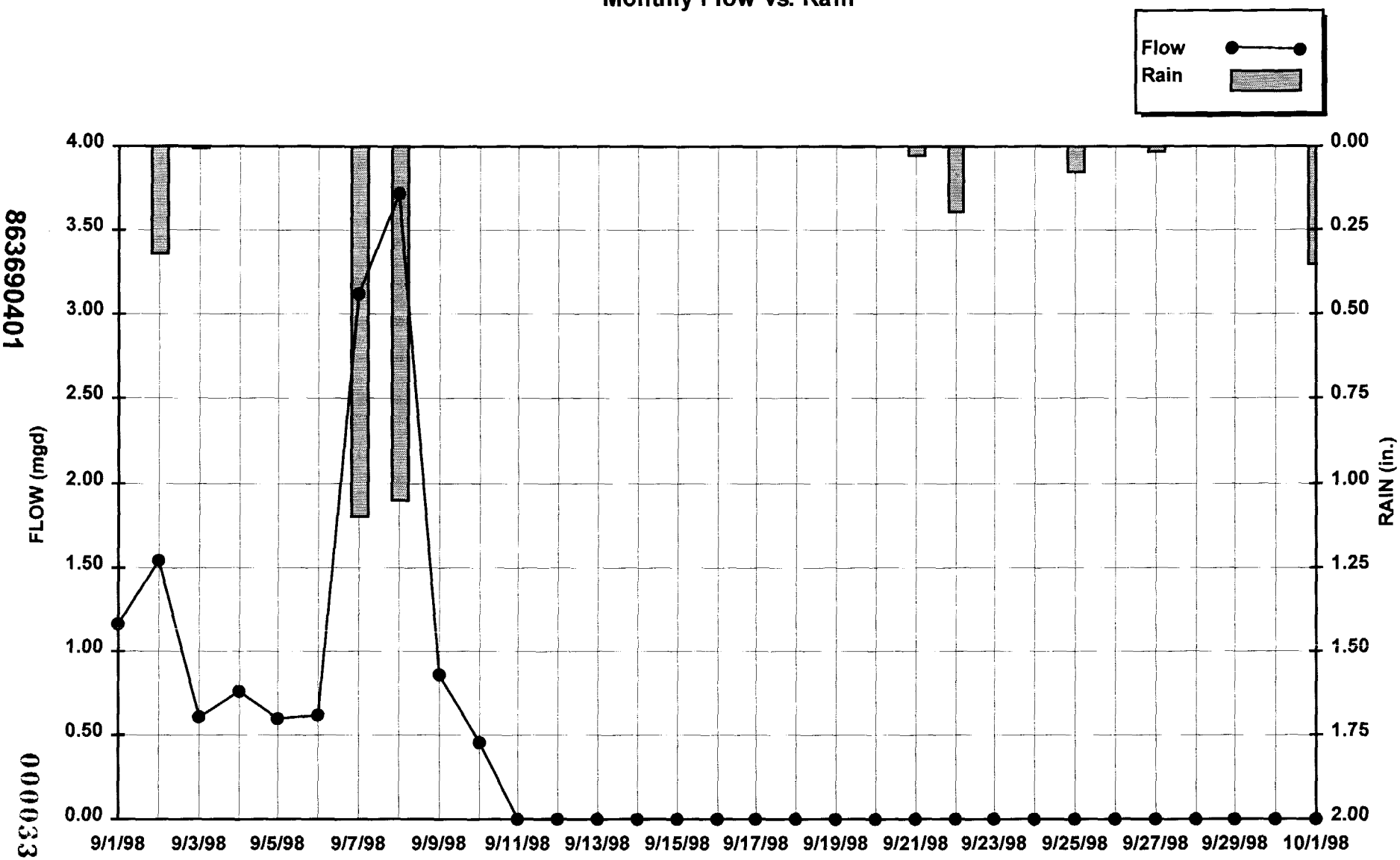
Monthly Flow Report (Flow2)

12/10/1998 1:12:34 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690401

000033

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

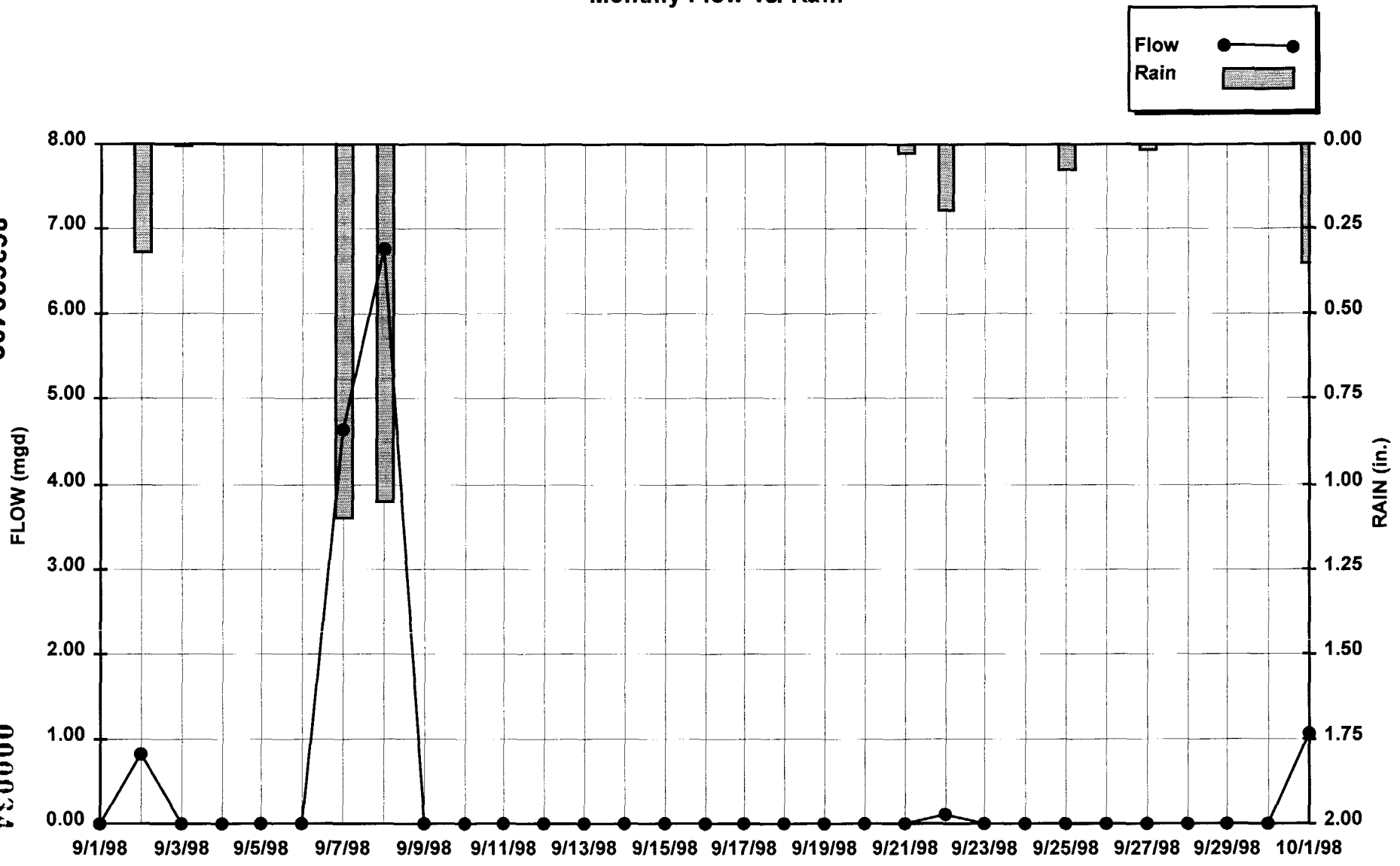
Monthly Flow Report (Flow3) (Flow 3) not in the Key.

12/10/1998 1:21:11 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690402

000034

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

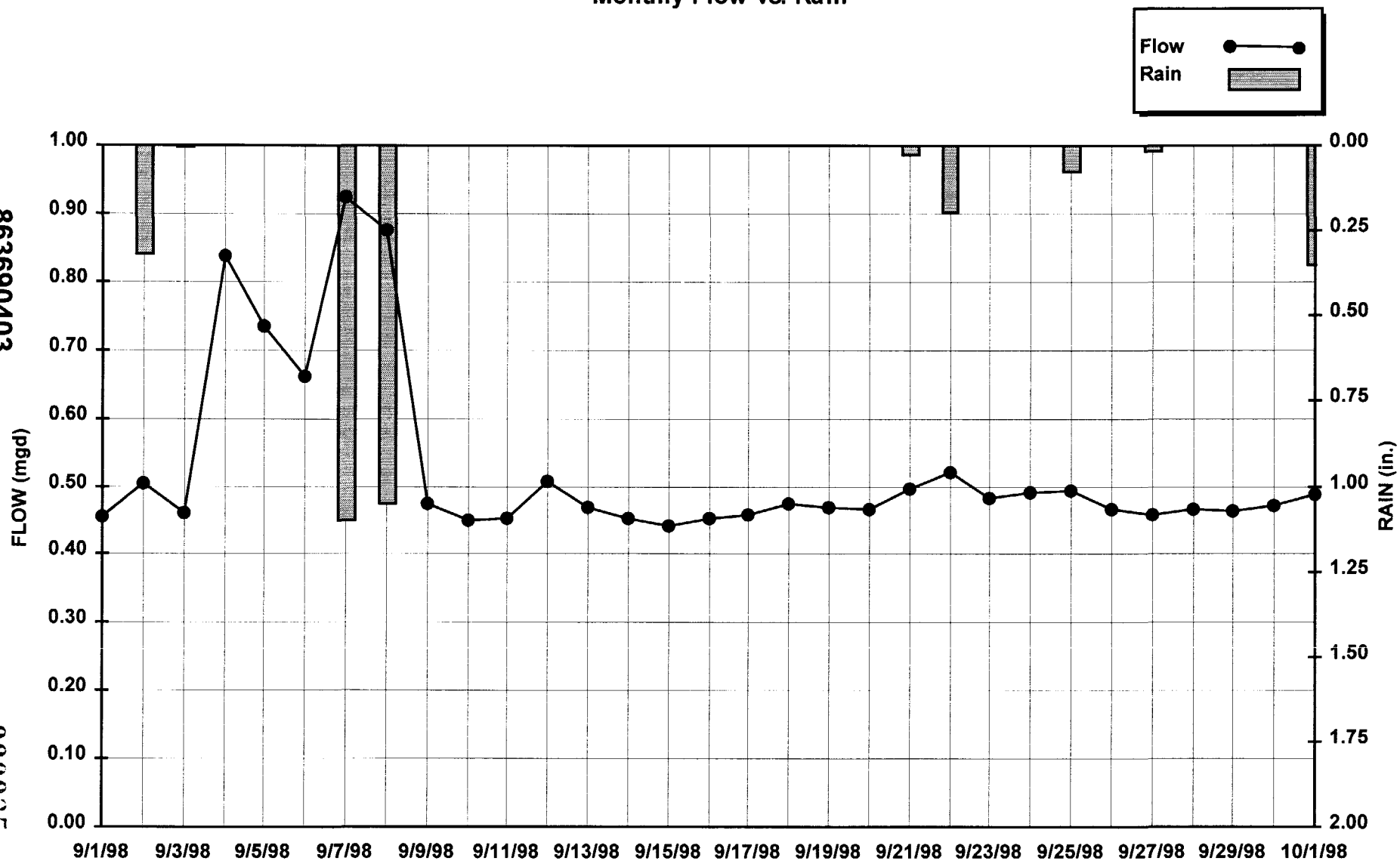
920 F.M. VERSION: 1.02

Serial#: QQD

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690403

0000035

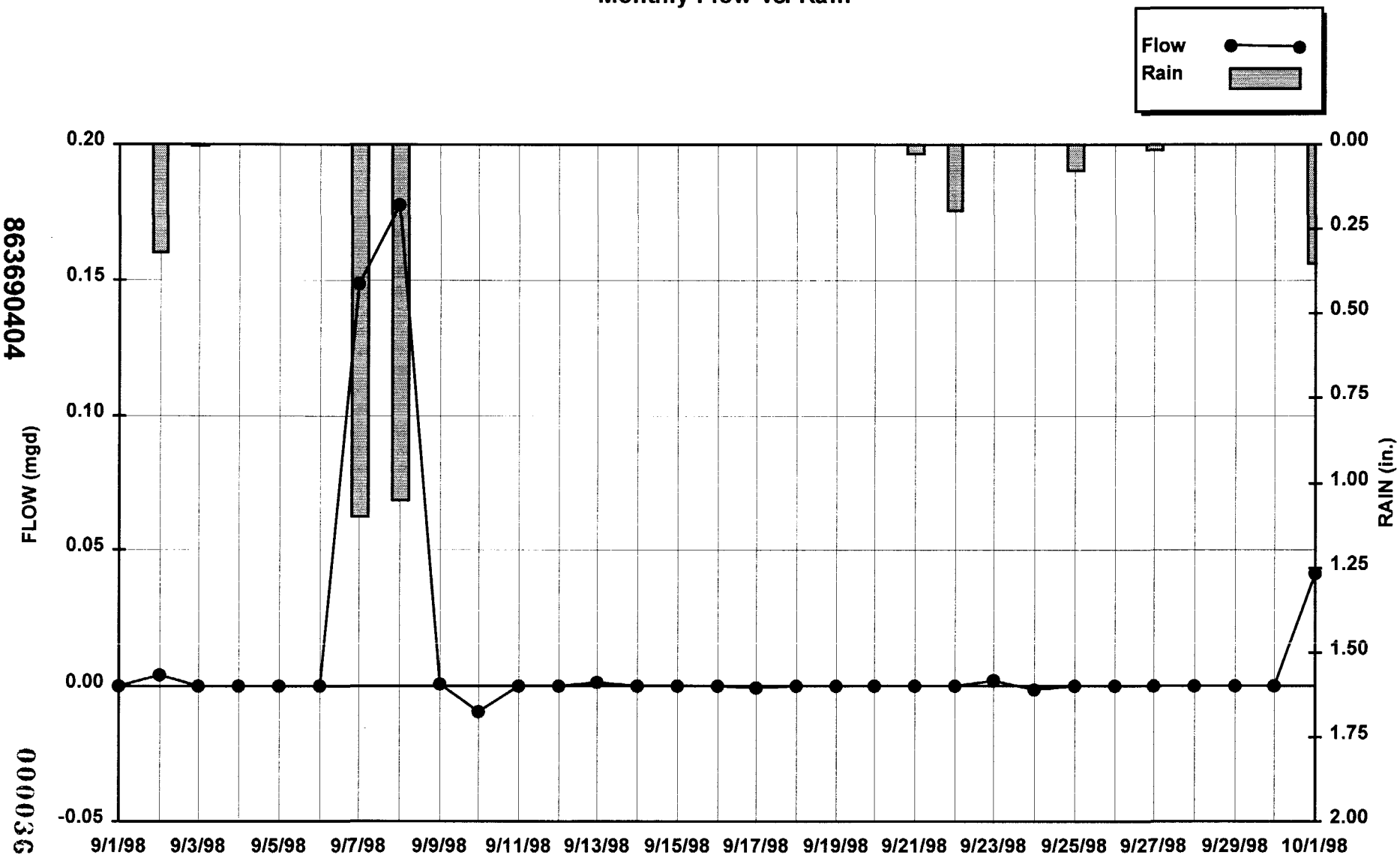
CSO 009B - CLAY ST Influent
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QRG

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Overflow
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QU3

Monthly Flow Report (Flow1)

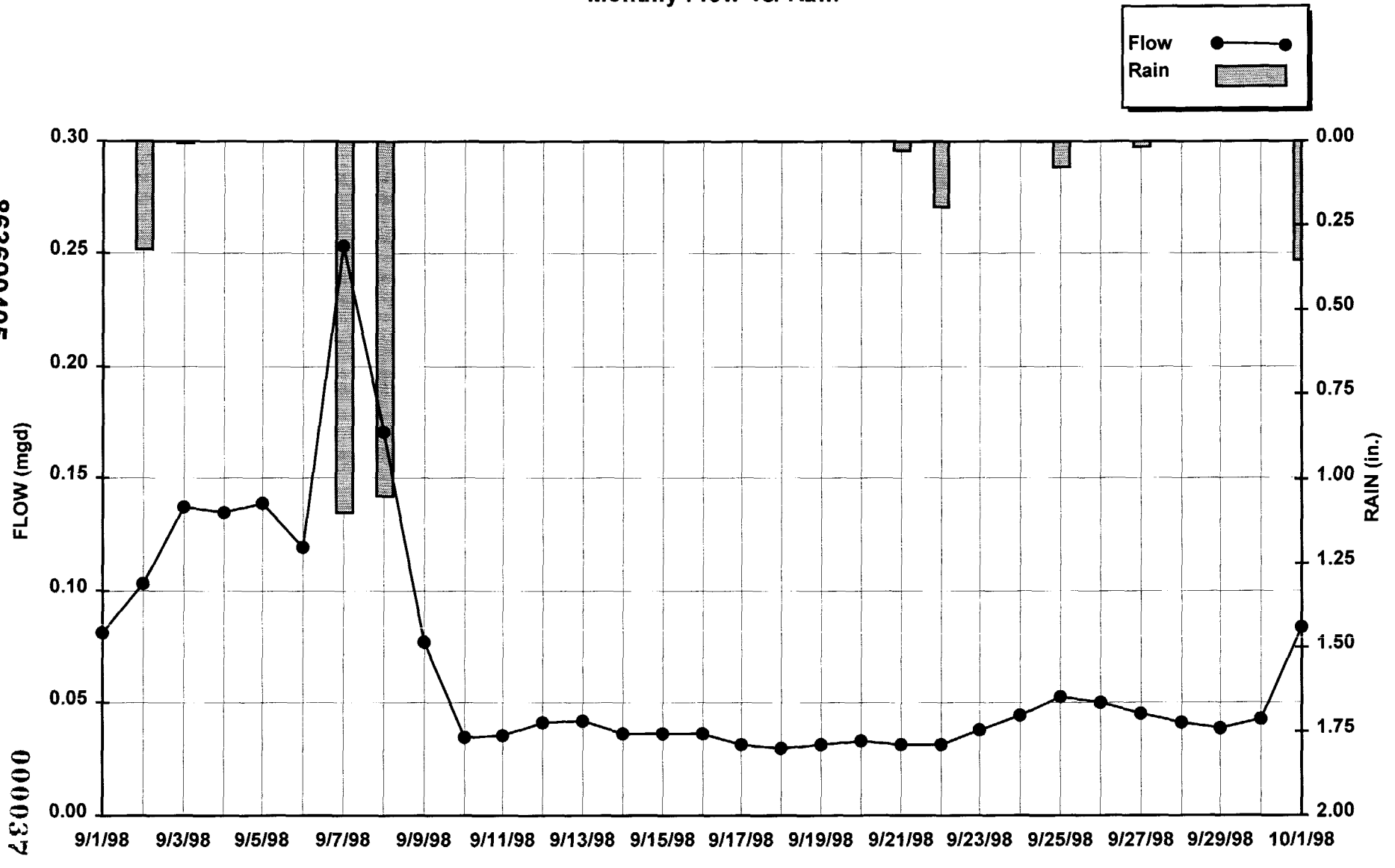
12/10/1998 12:57:22 PM

863690404
000036

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690405

000037

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

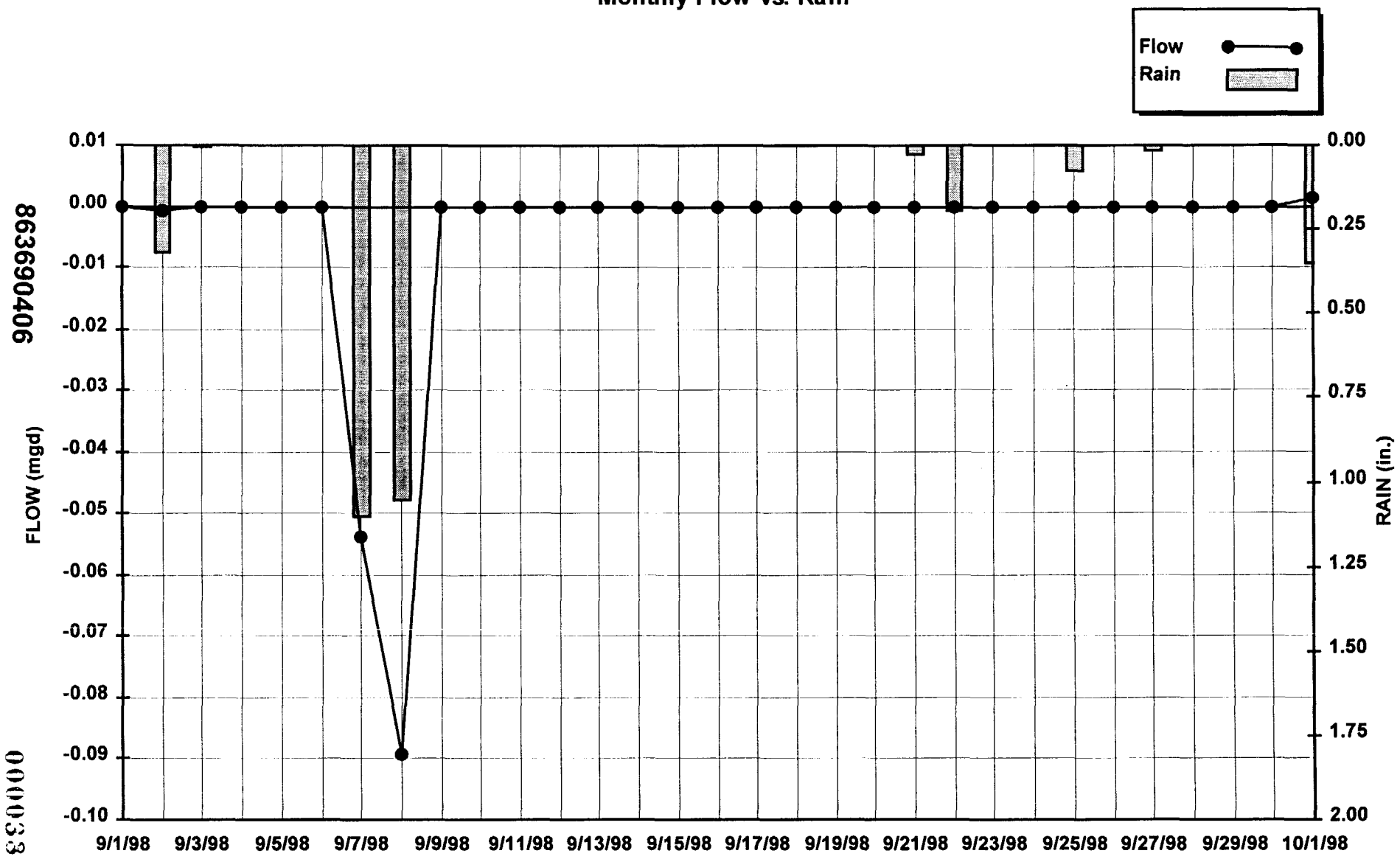
Monthly Flow Report (Flow1) Influent.

12/10/1998 1:04:55 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690406

000038

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

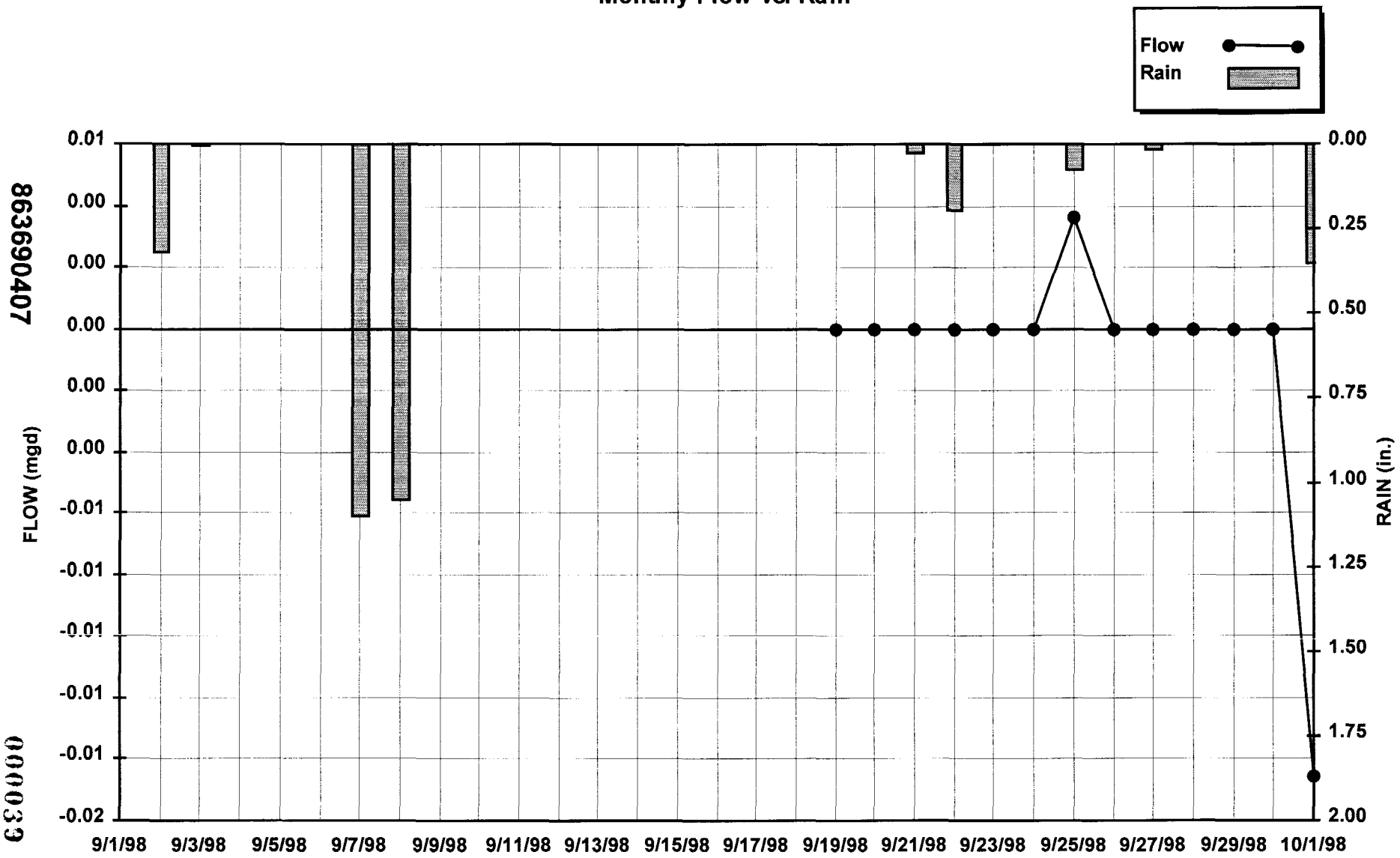
Monthly Flow Report (Flow2) Overflow

12/10/1998 1:18:41 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690407

000039

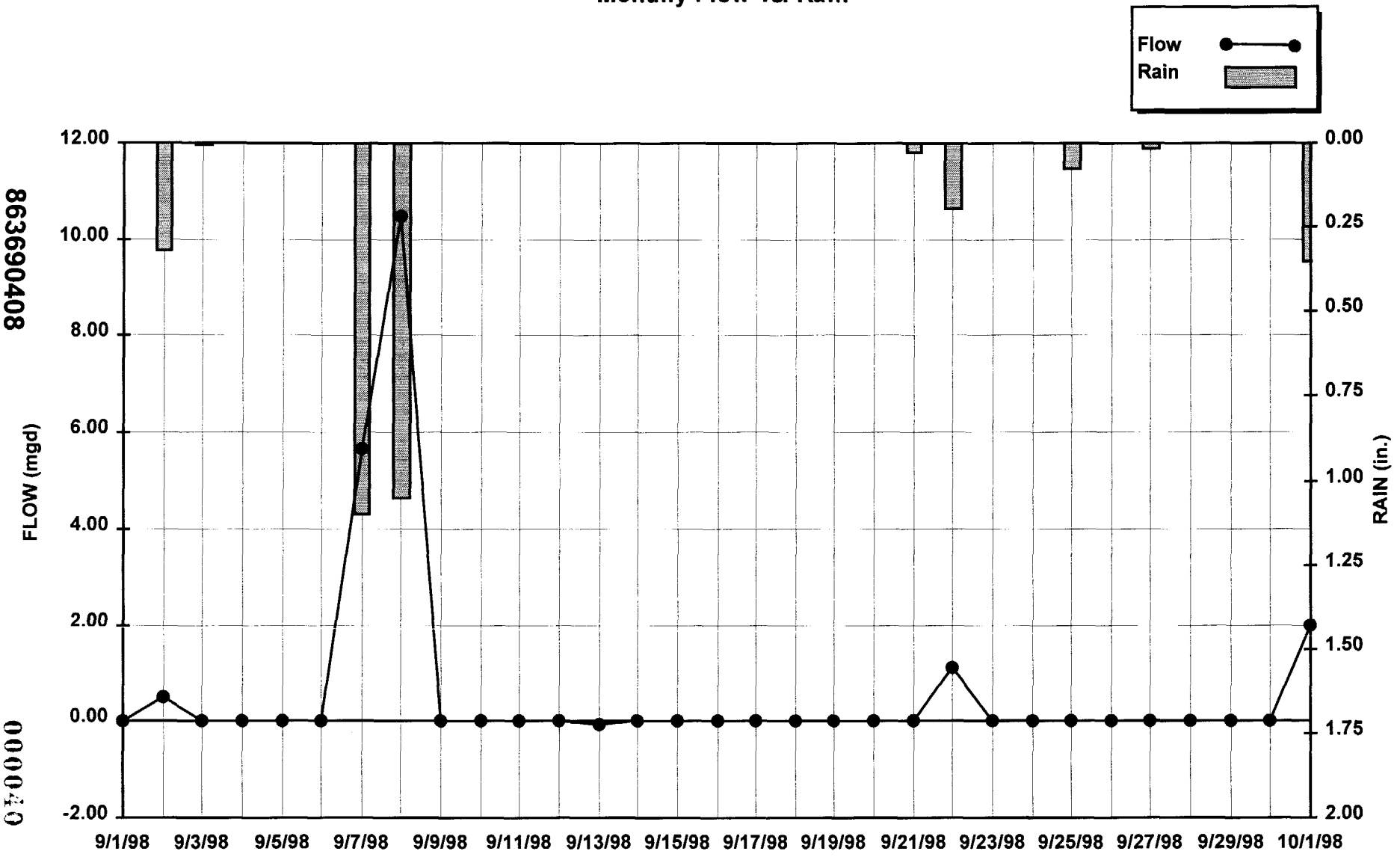
CSO 010 - CLAY ST Influents
Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTR

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690408

000040

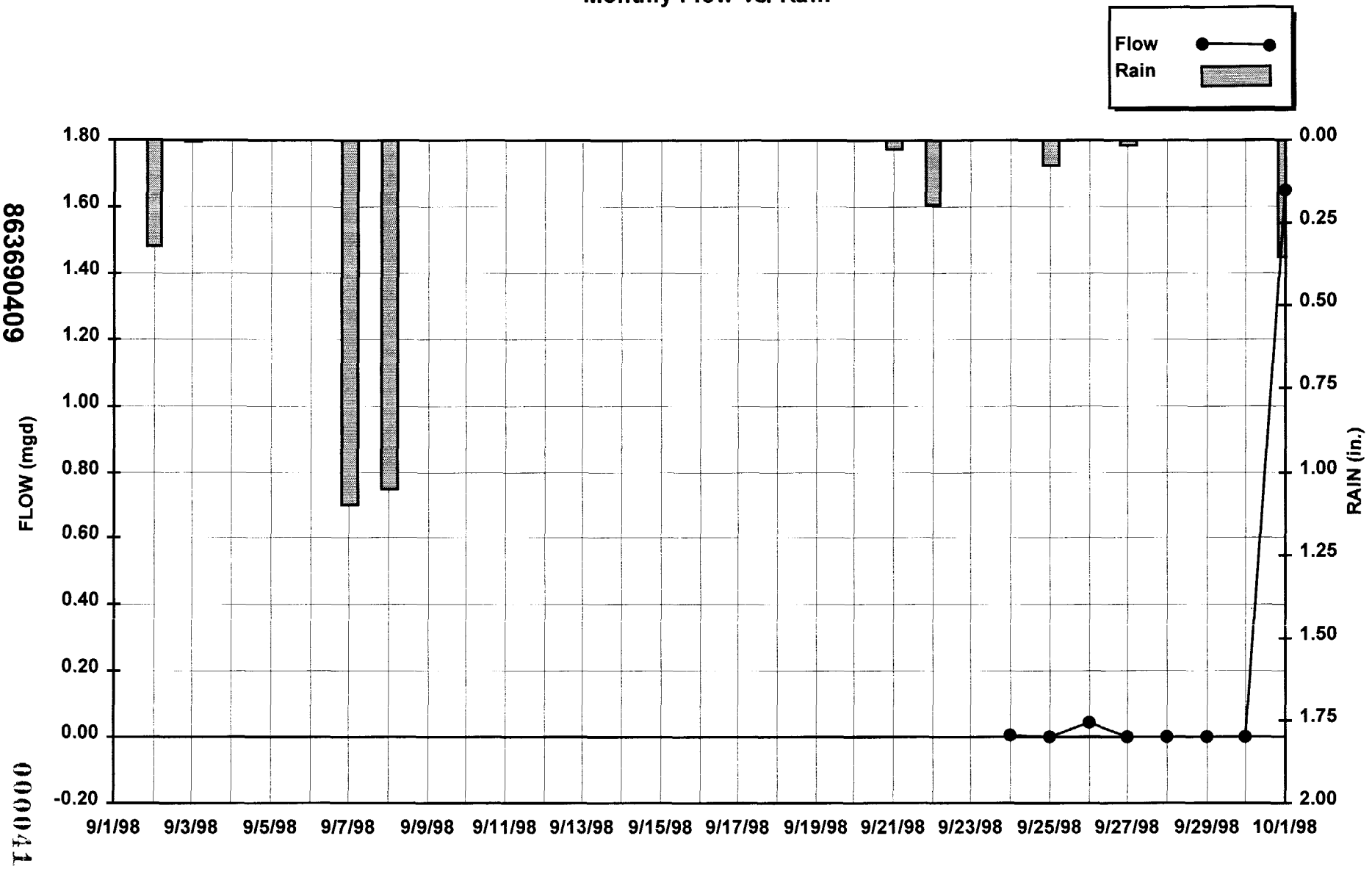
CSO 010 - CLAY ST Overflow North Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QPS

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690409

000041

CSO 010 - CLAY ST Overflow South Pipe

Address: Clay St. at Passaic St.

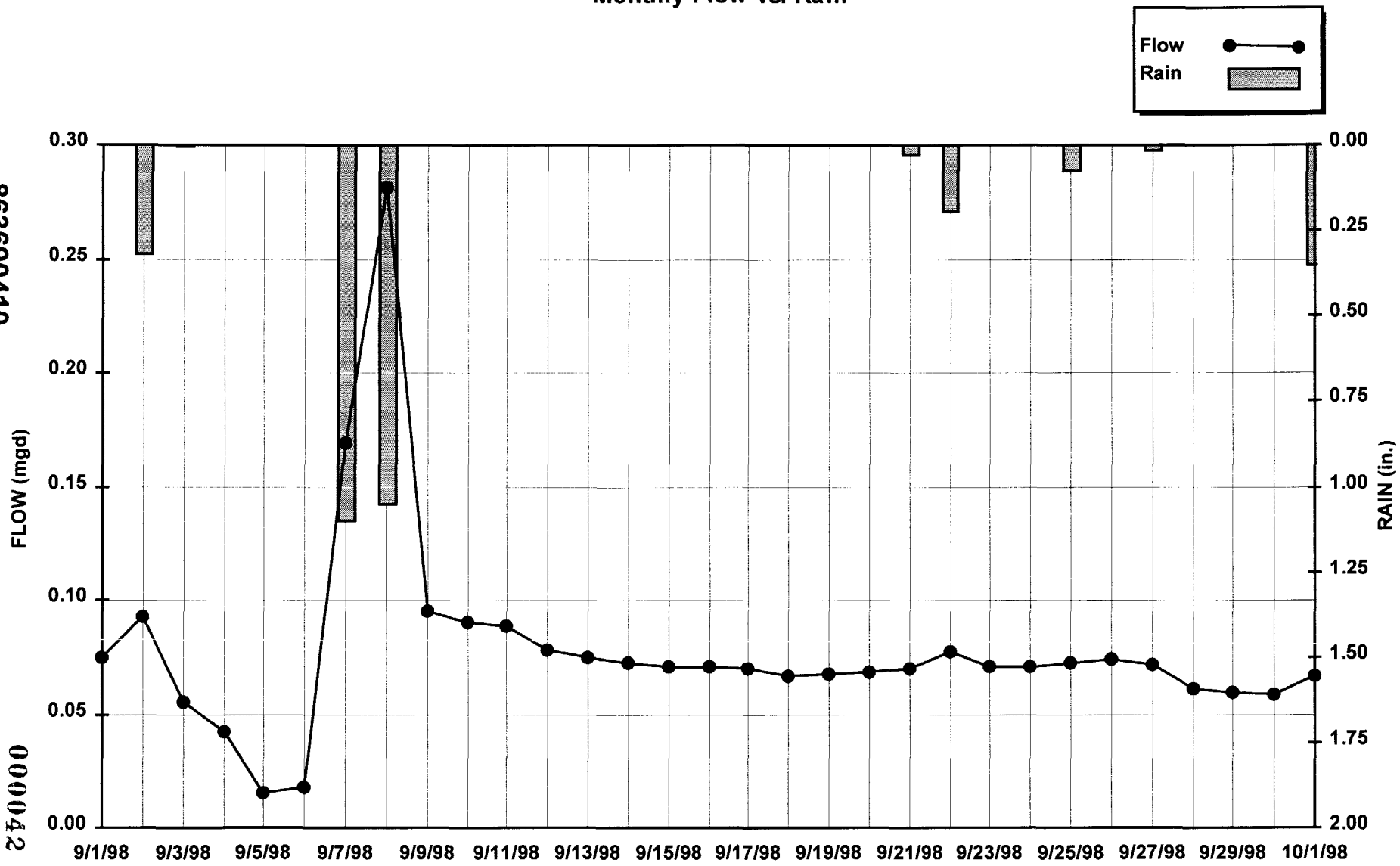
910 F.M. VERSION: 1.02

Serial#: QT2

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690410

0000042

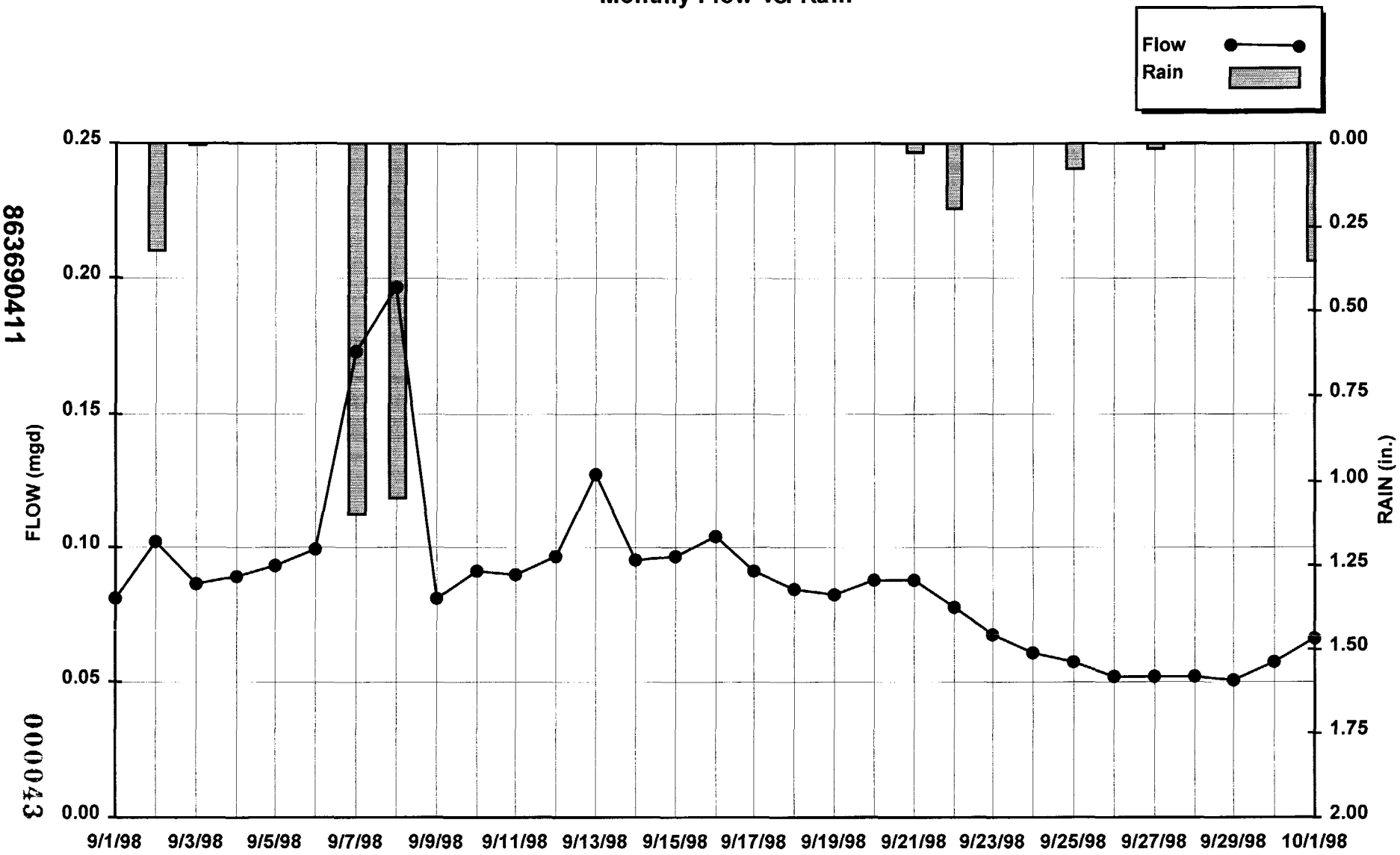
CSO 011 - ORANGE ST Influent
Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02
Serial#: QRF

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690411

000043

CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRZ

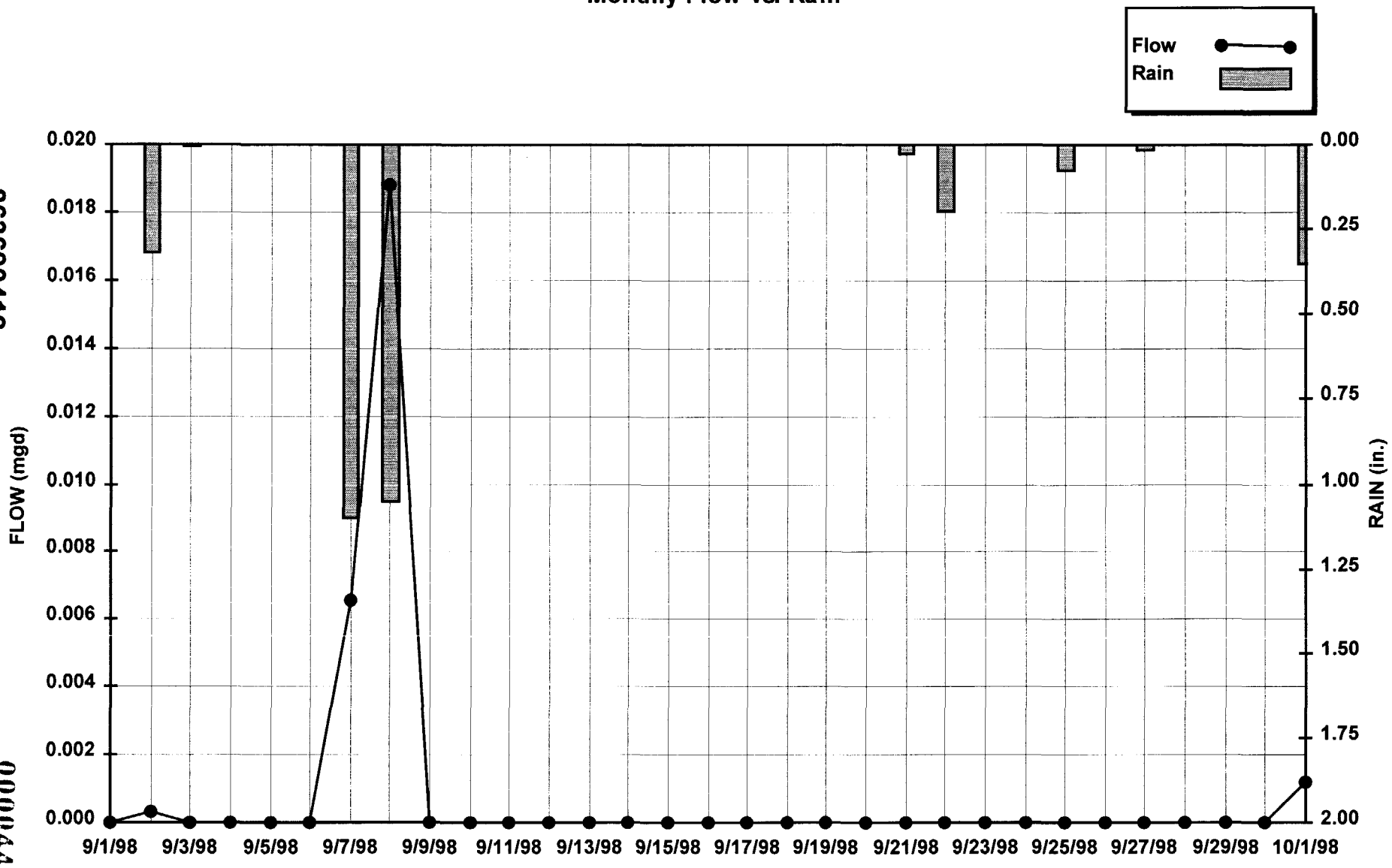
Monthly Flow Report (Flow1)

12/10/1998 12:59:02 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690412

000044

CSO 011 - ORANGE ST influent and overflow

Address: Orange St. and McCarter Hwy

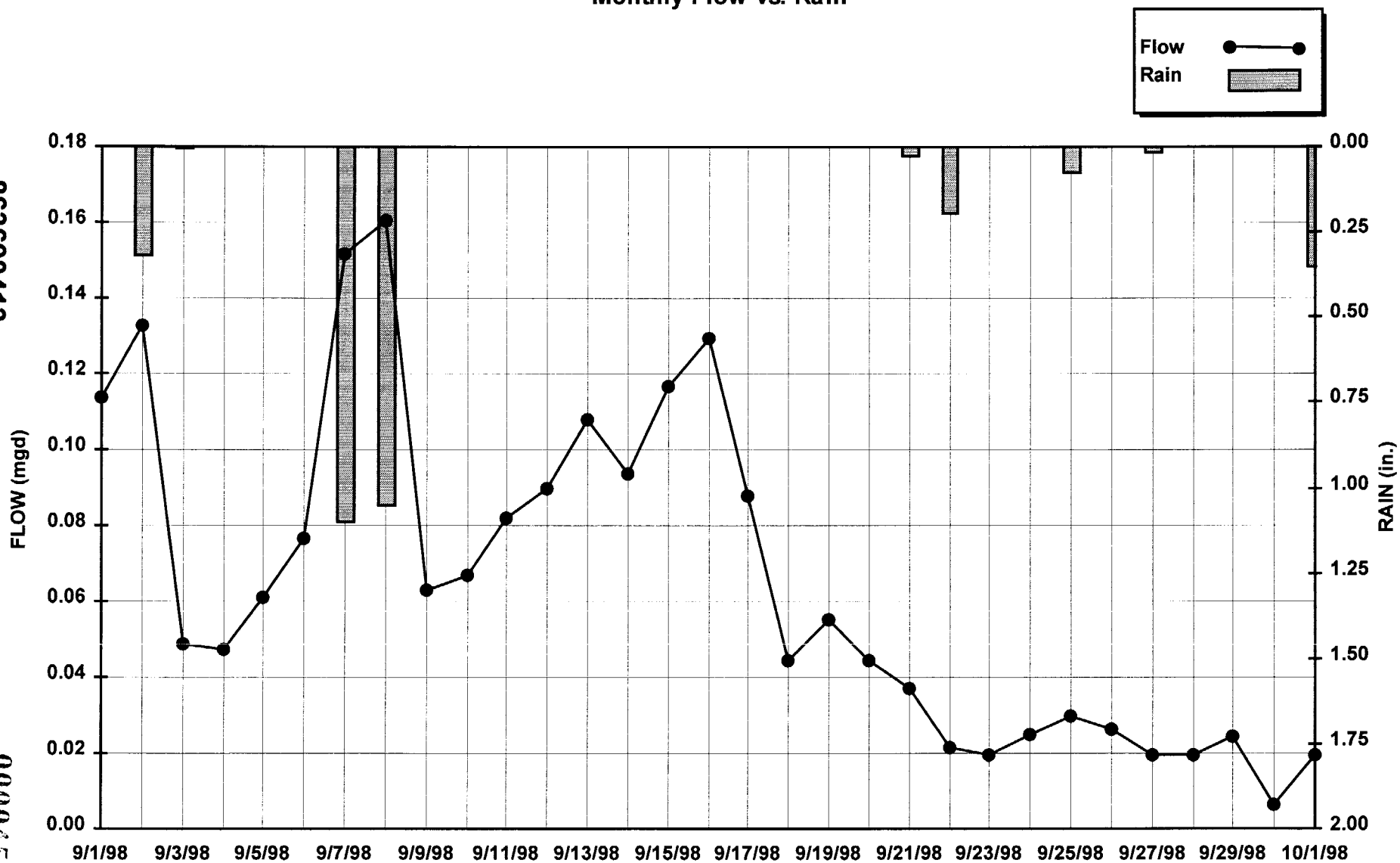
920 F.M. VERSION: 1.02

Serial#: QRZ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690413

000045

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

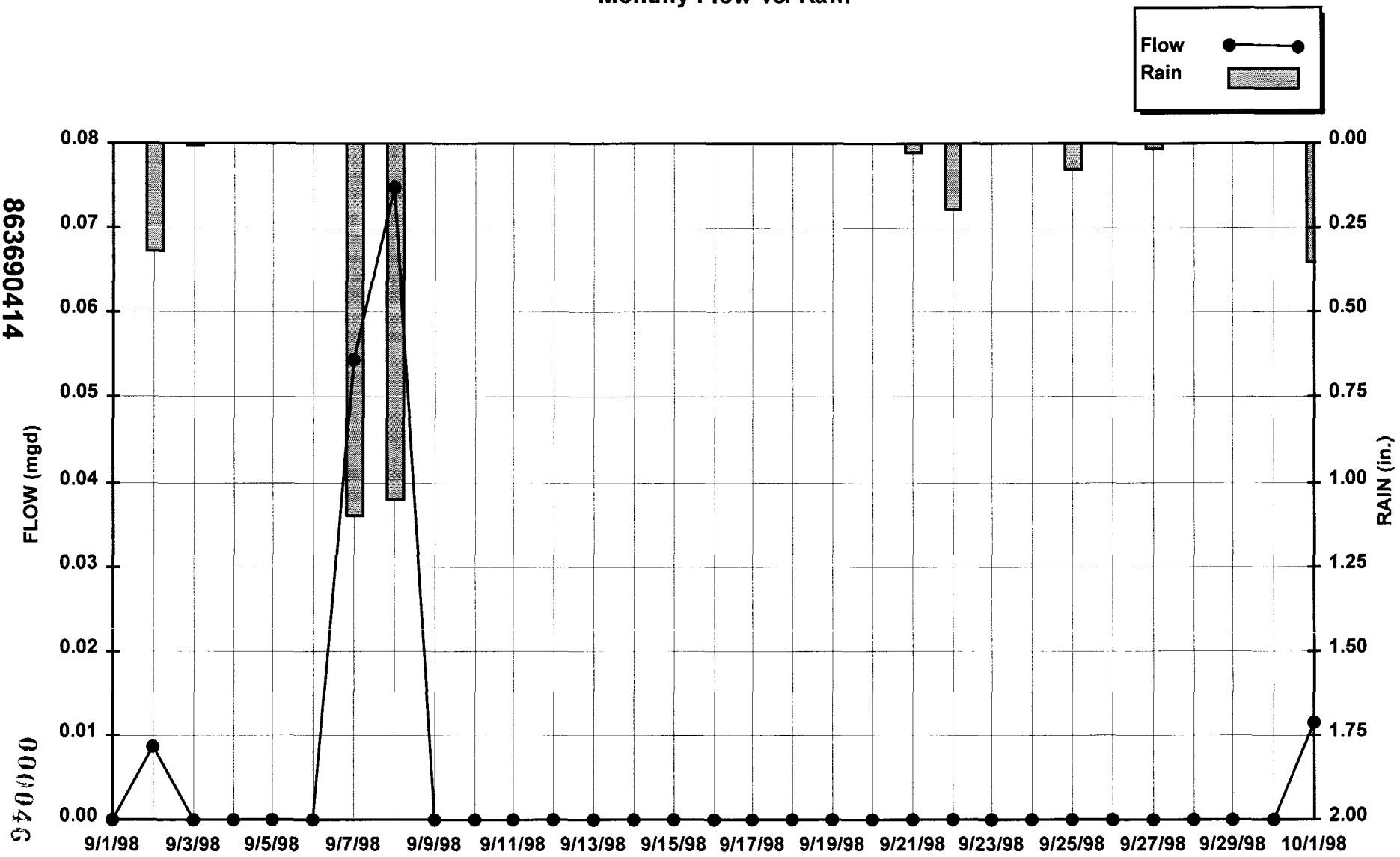
Monthly Flow Report (Flow1)

12/10/1998 1:05:16 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690414

000046

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

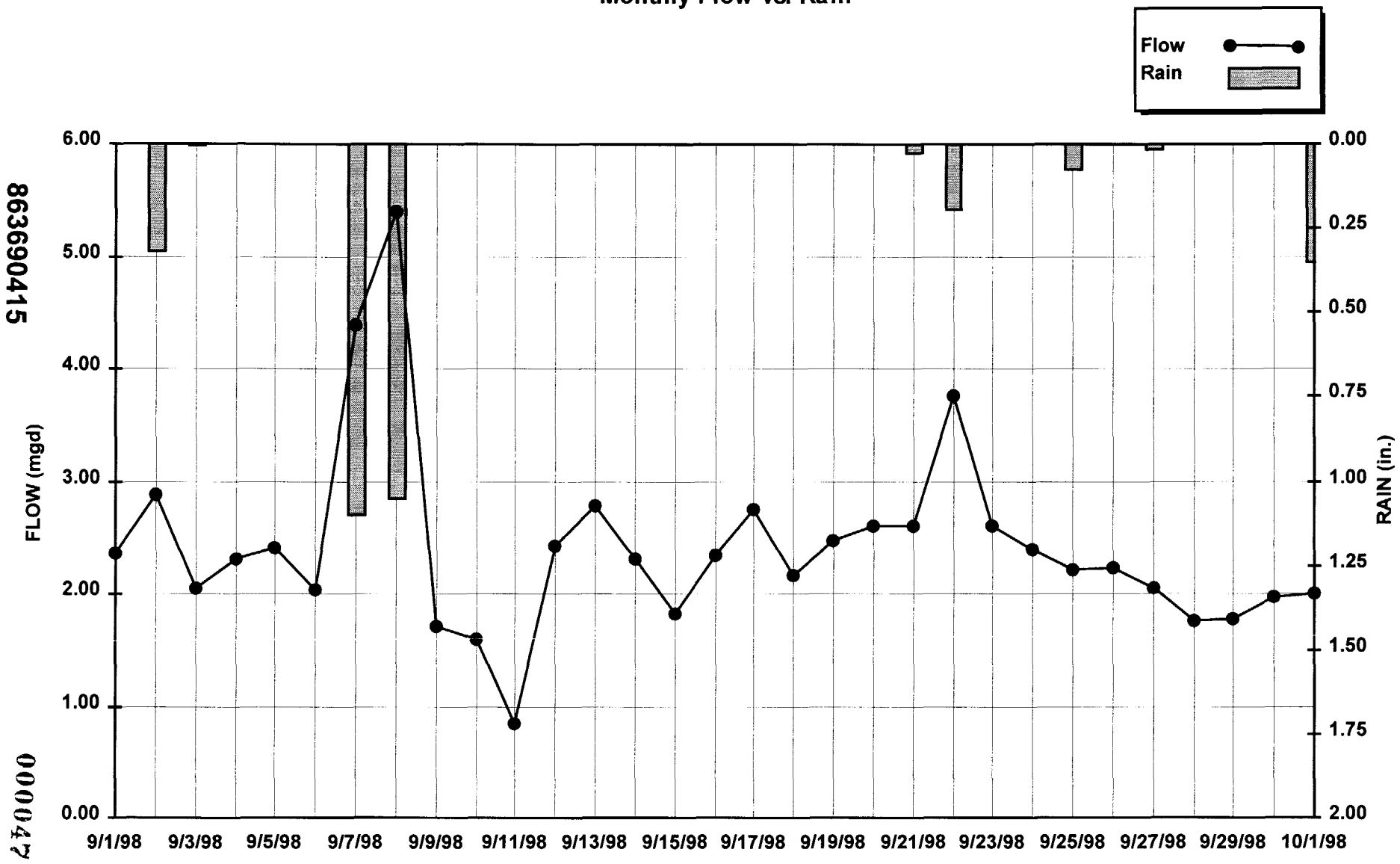
920 F.M. VERSION: 1.02

Serial#: QR7

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Monthly Flow Report (Flow1)

12/10/1998 12:57:02 PM

863690415

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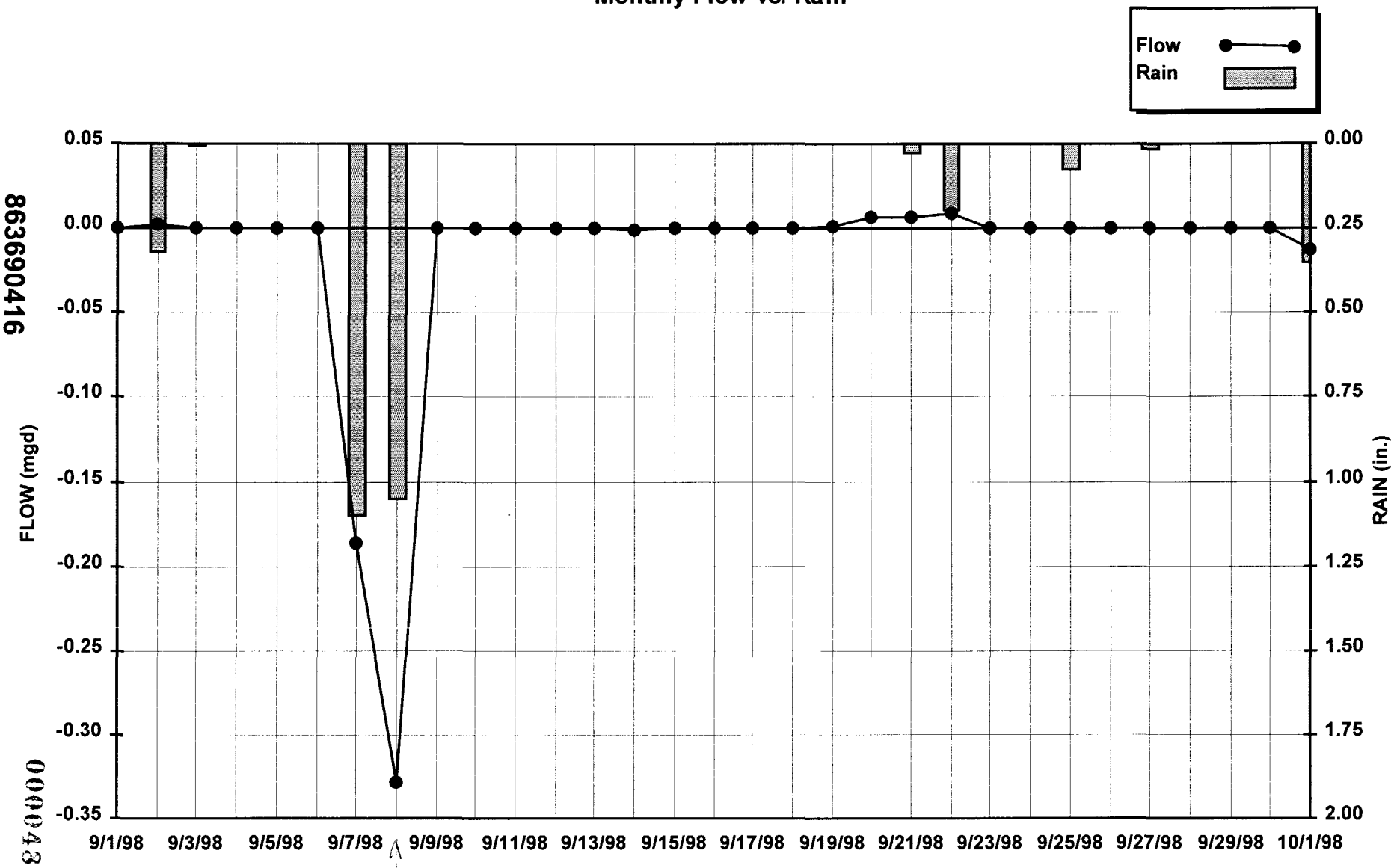
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690416

000048

CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

From 014 →

930 F.M. VERSION: 1.02
Serial#: QUY

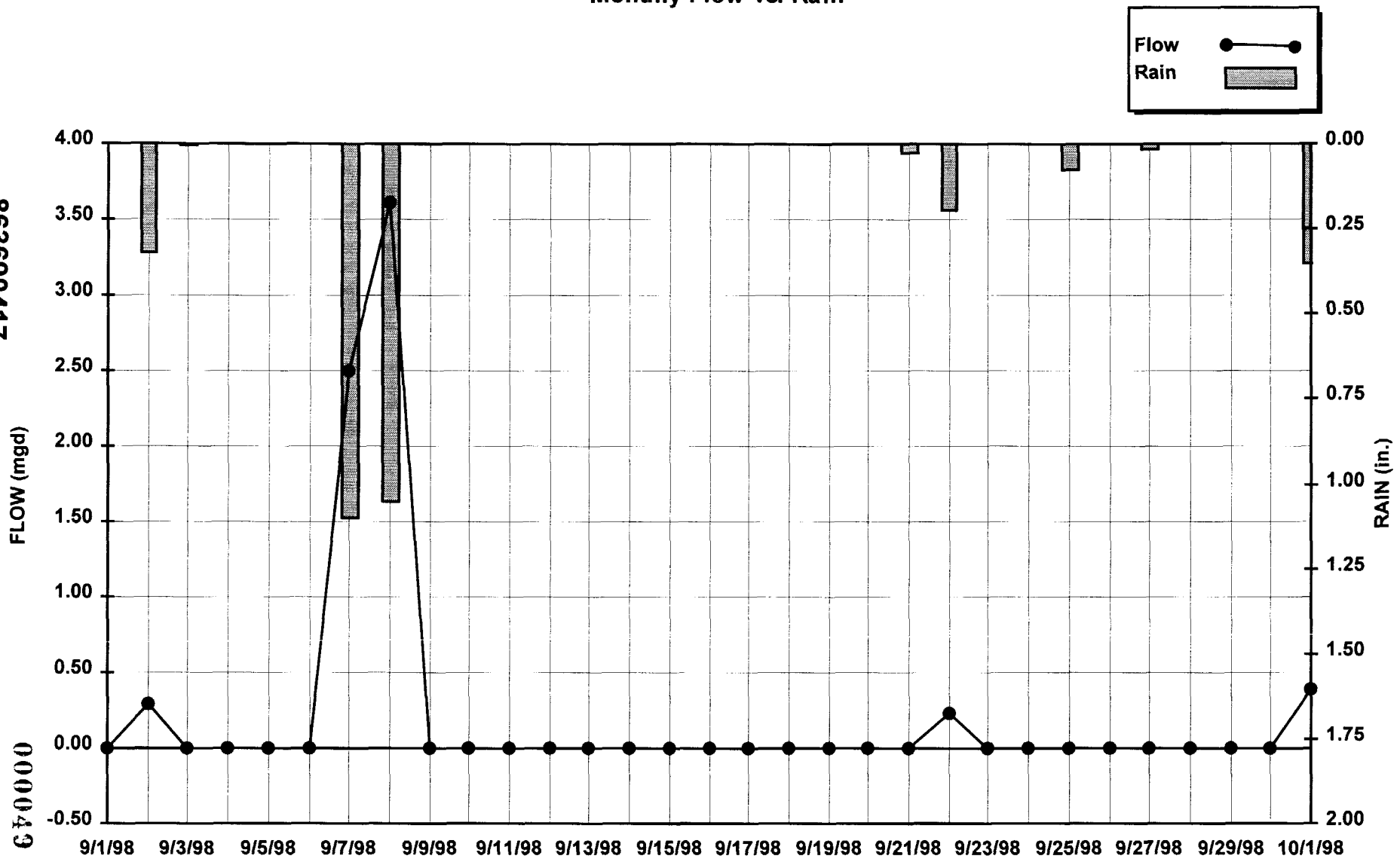
Monthly Flow Report (Flow2)

12/10/1998 1:11:49 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690417

000049

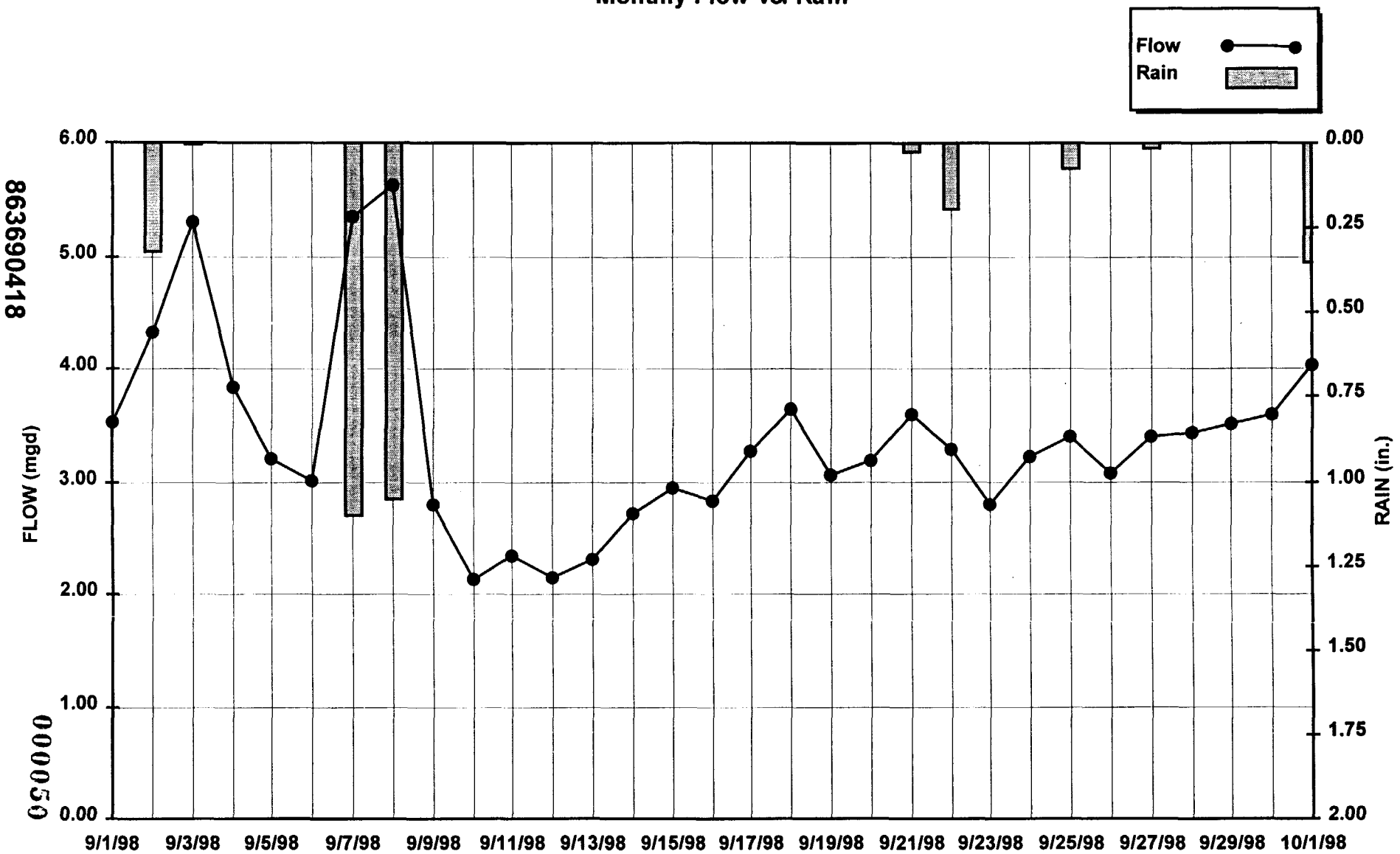
CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUY

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690418

000050

CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

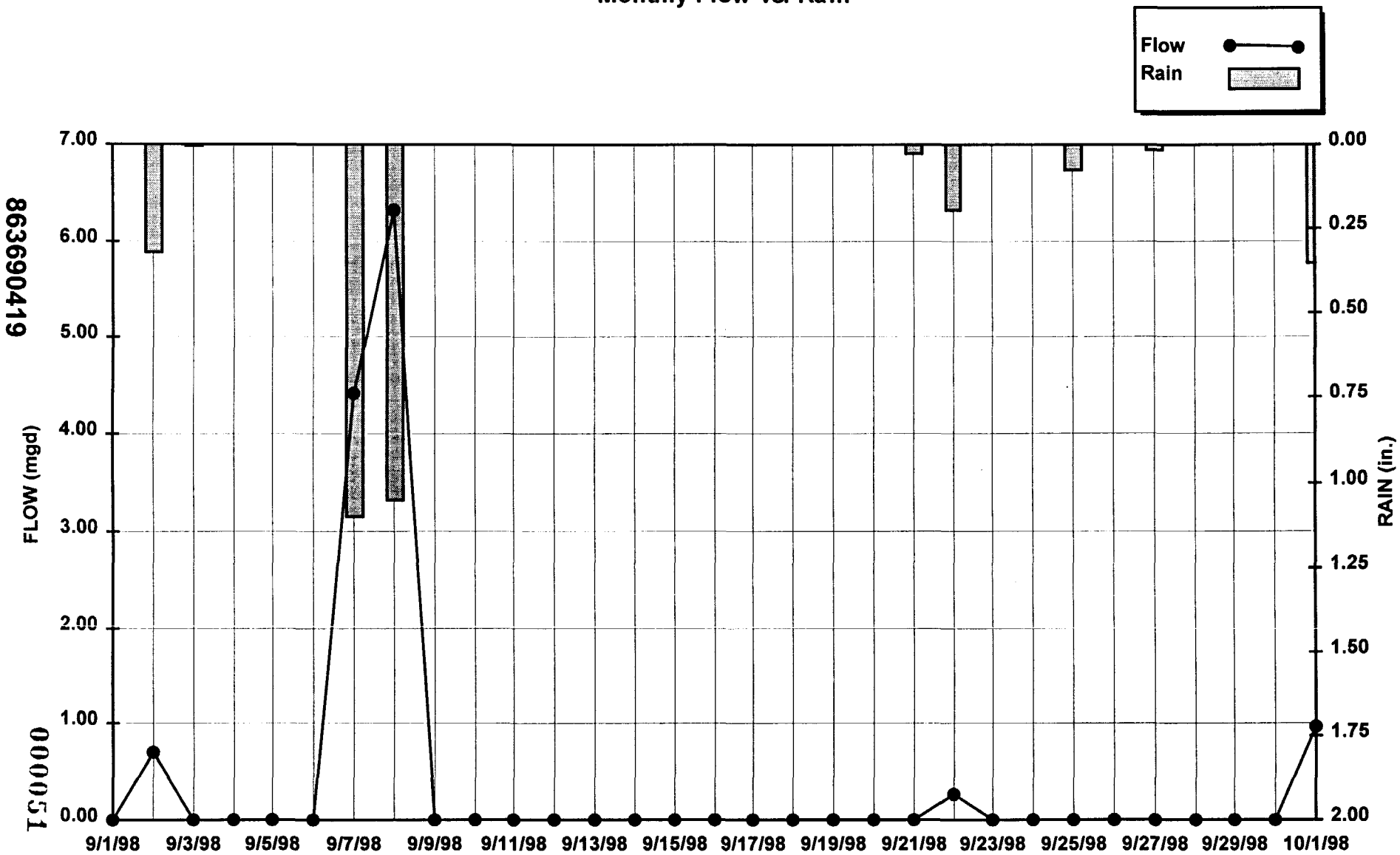
Monthly Flow Report (Flow3) 2 ?

12/10/1998 1:21:33 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690419

0000051

CSO 014 - SAYBROOK PL Influent and Overflow

Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRV

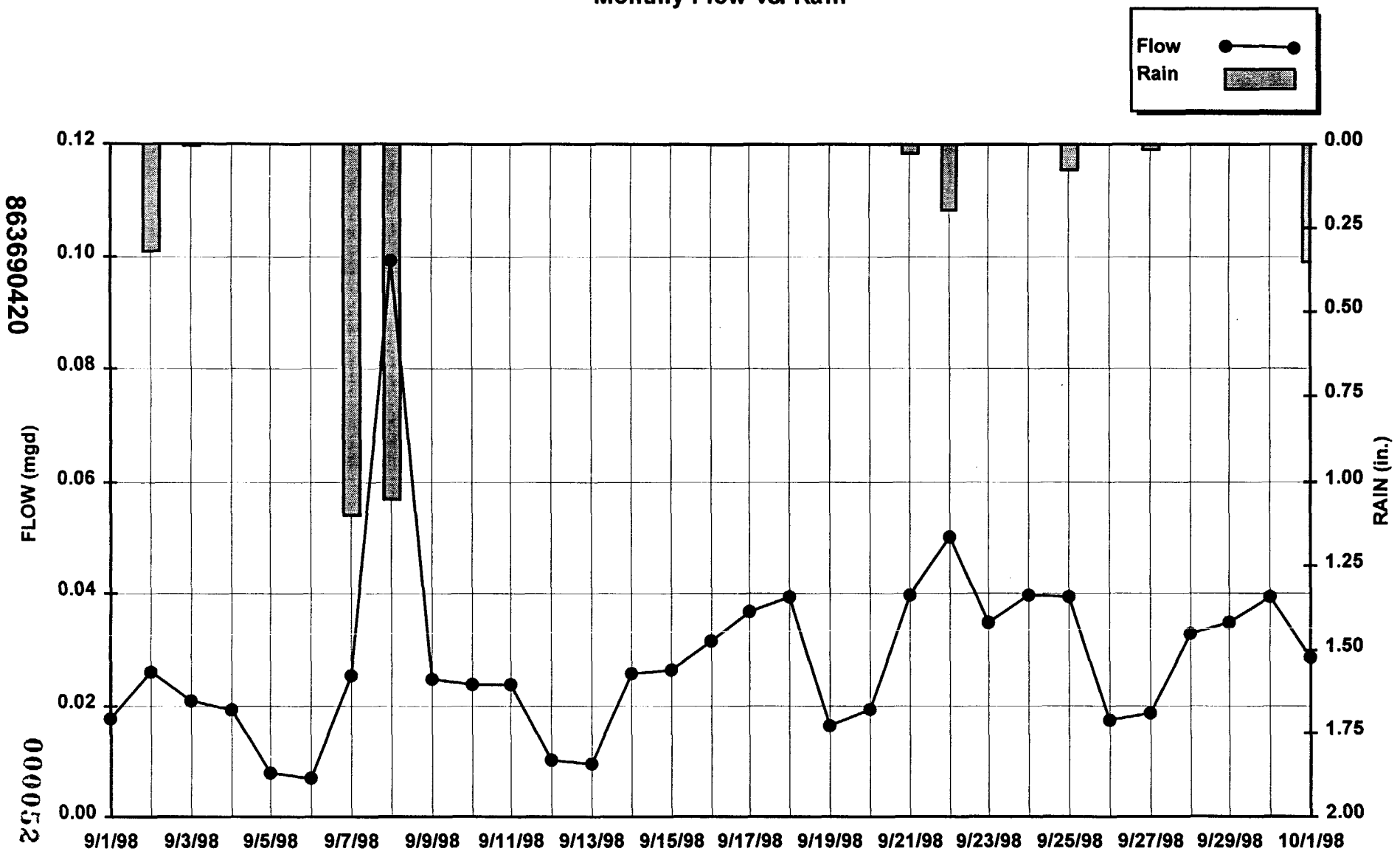
Monthly Flow Report (Flow2)

12/10/1998 1:13:18 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690420

000052

CSO 015 - CITY DOCK Influent1
Address: Raymond Plaza near Raymond Blvd.

Map w. FM locations and influent lines sizes.

910 F.M. VERSION: 1.02
Serial#: QQT

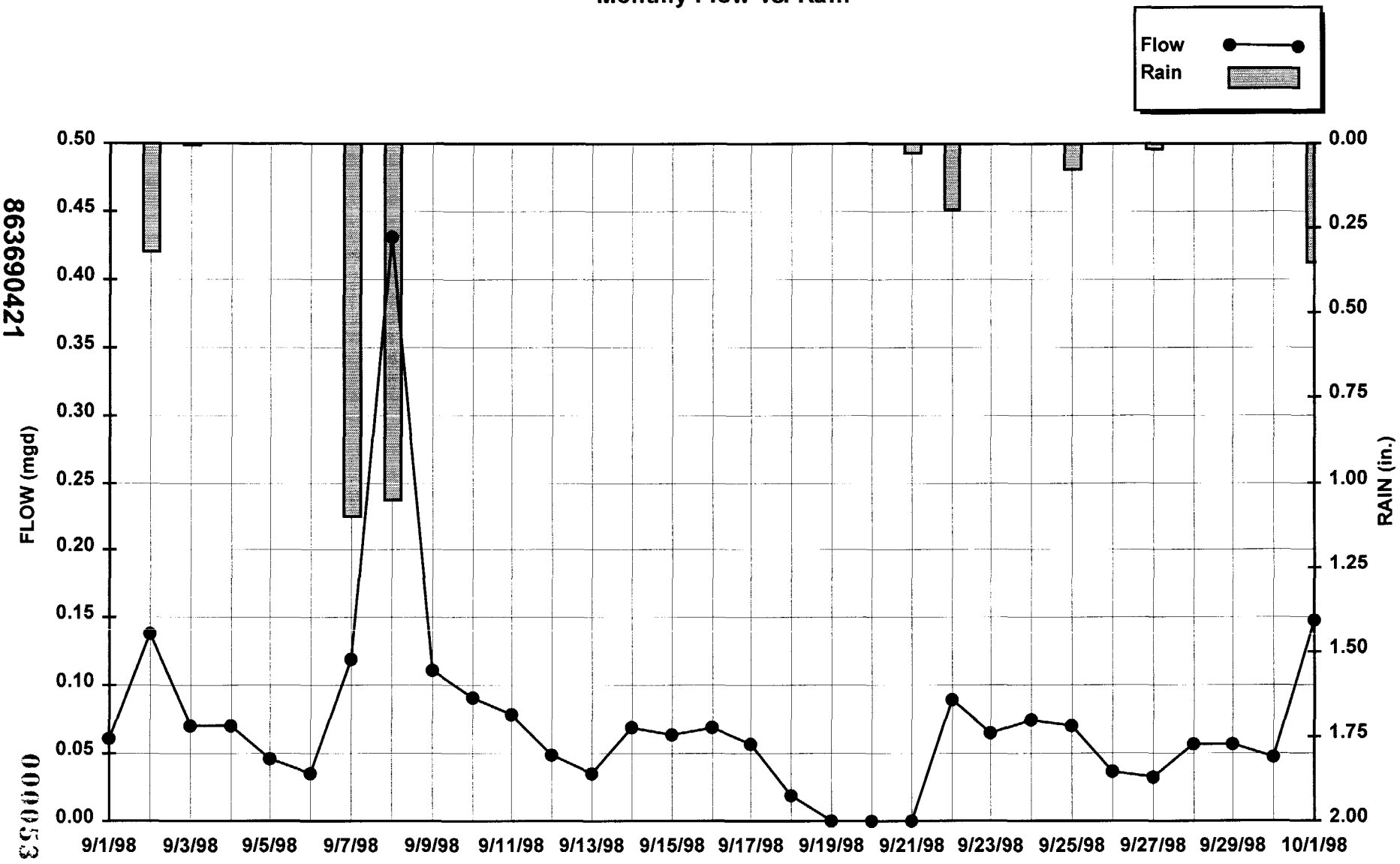
Monthly Flow Report (Flow1)

12/10/1998 1:01:03 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690421

0000053

CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near Raymond Blvd.

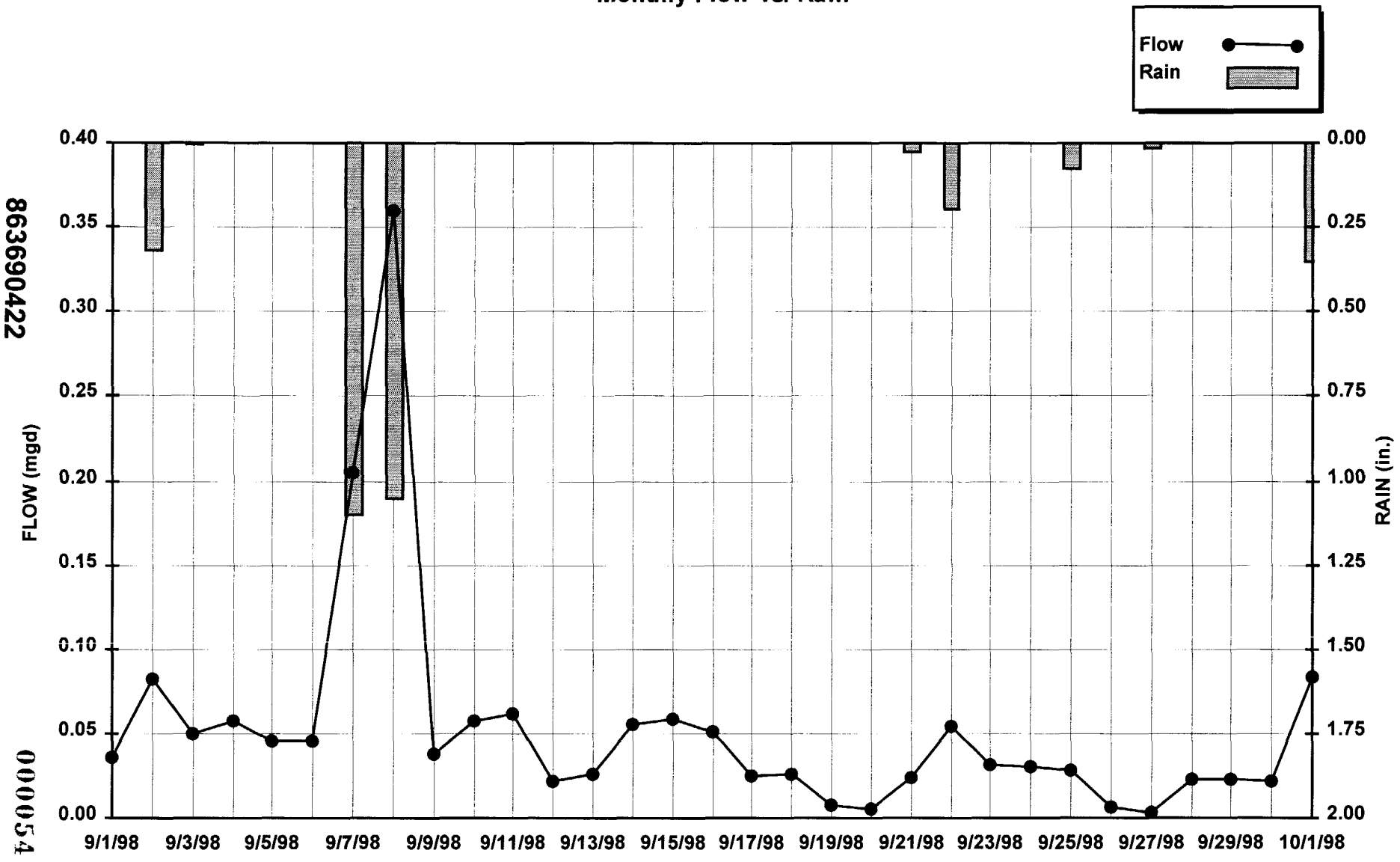
910 F.M. VERSION: 1.02

Serial#: QU2

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690422

000054

CSO 015 - CITY DOCK Influent3

Address: Raymond Plaza East near Raymond Blvd.

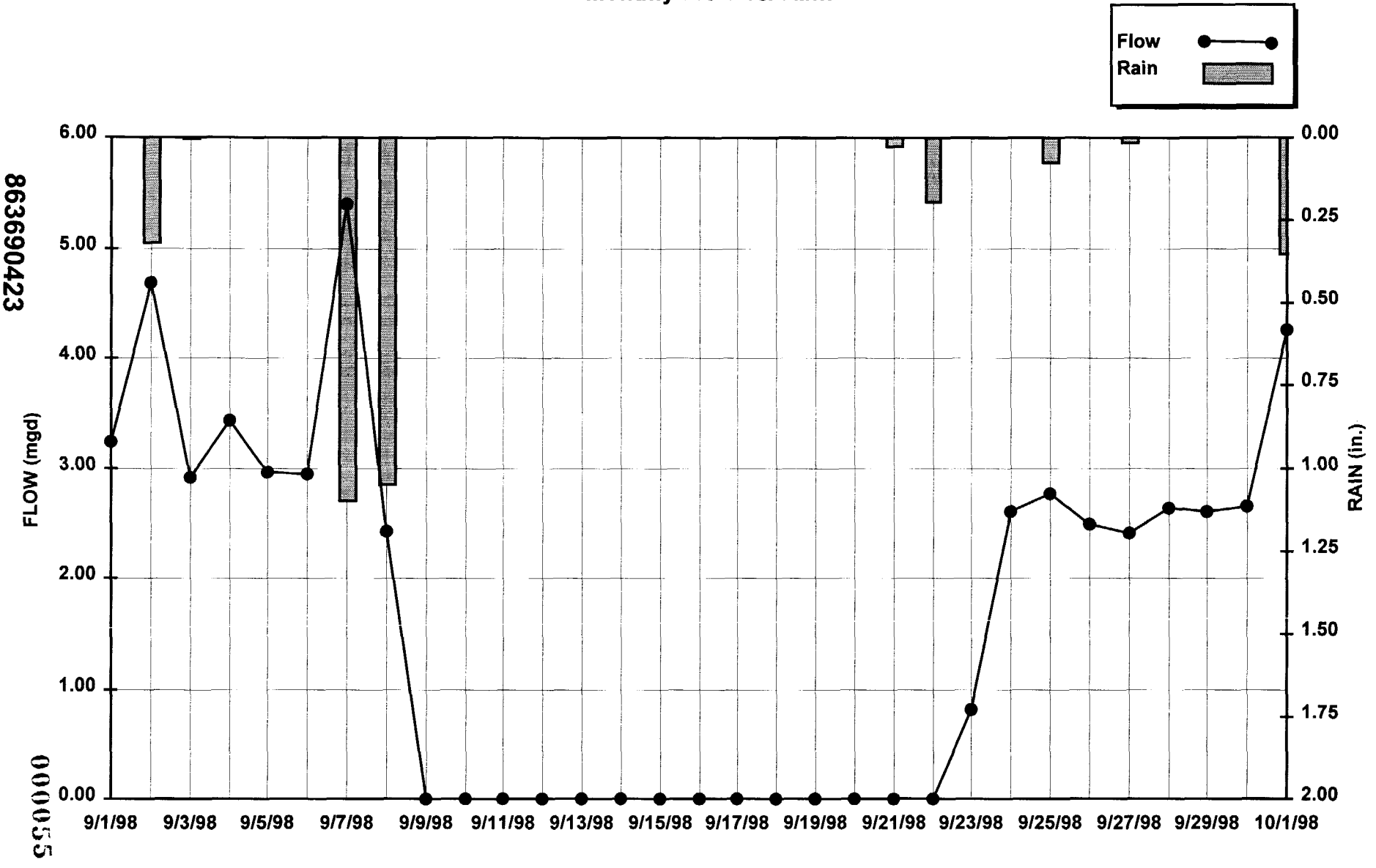
910 F.M. VERSION: 1.02

Serial#: QPV

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690423

000055

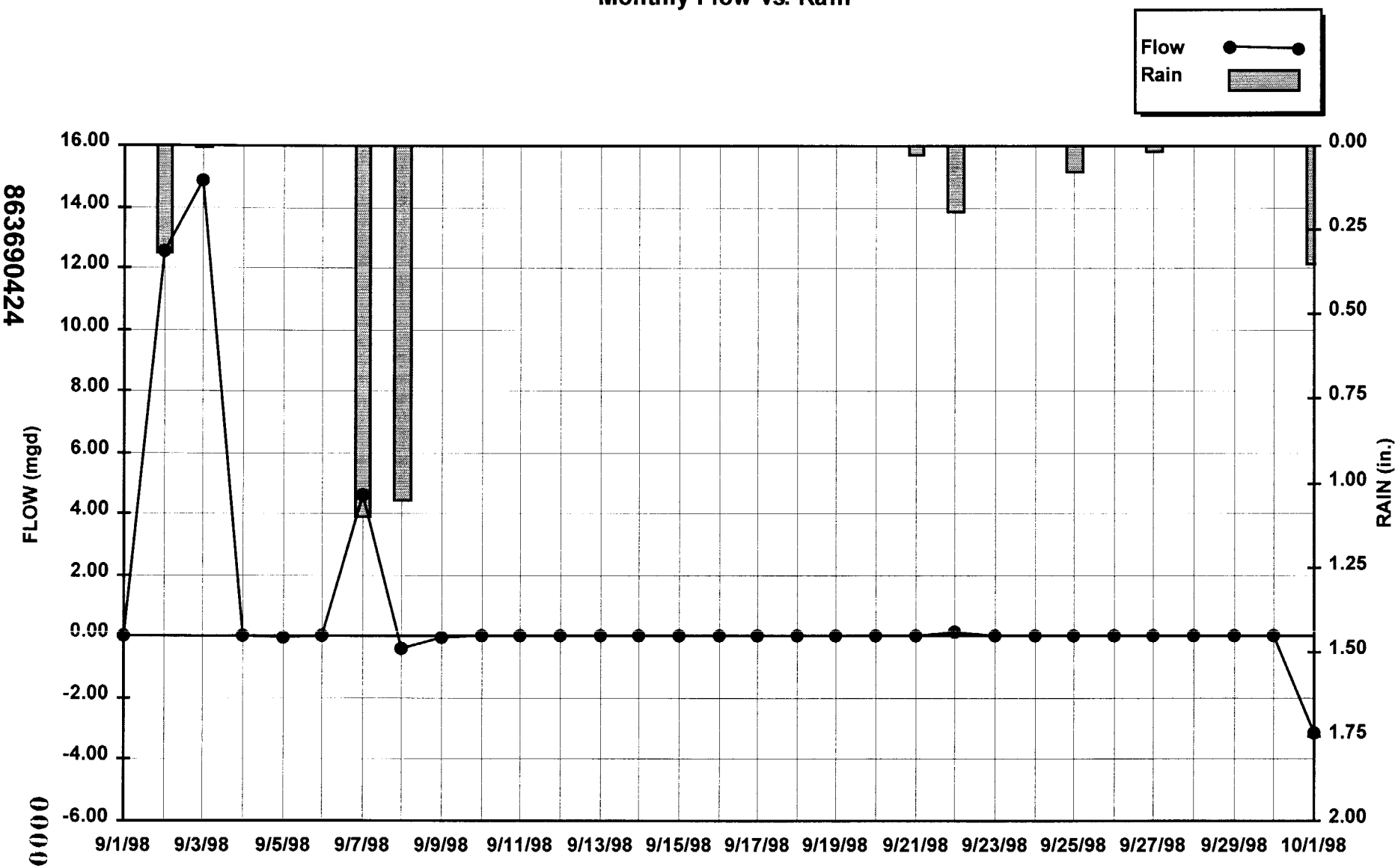
CSO 015 - CITY DOCK influent4
Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QPQ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690424

CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near Raymond Blvd.

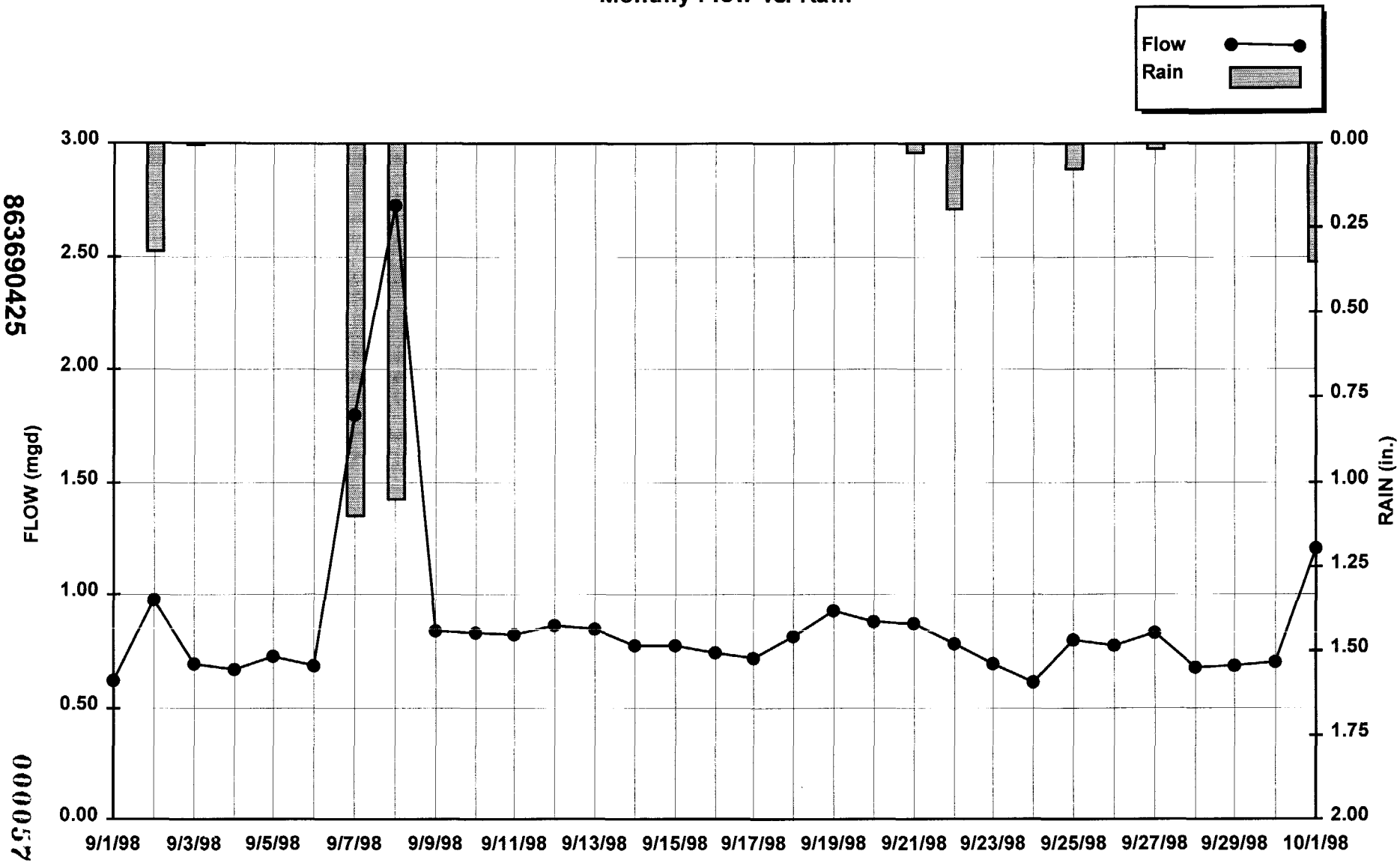
910 F.M. VERSION: 1.02

Serial#: QLK

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690425

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CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

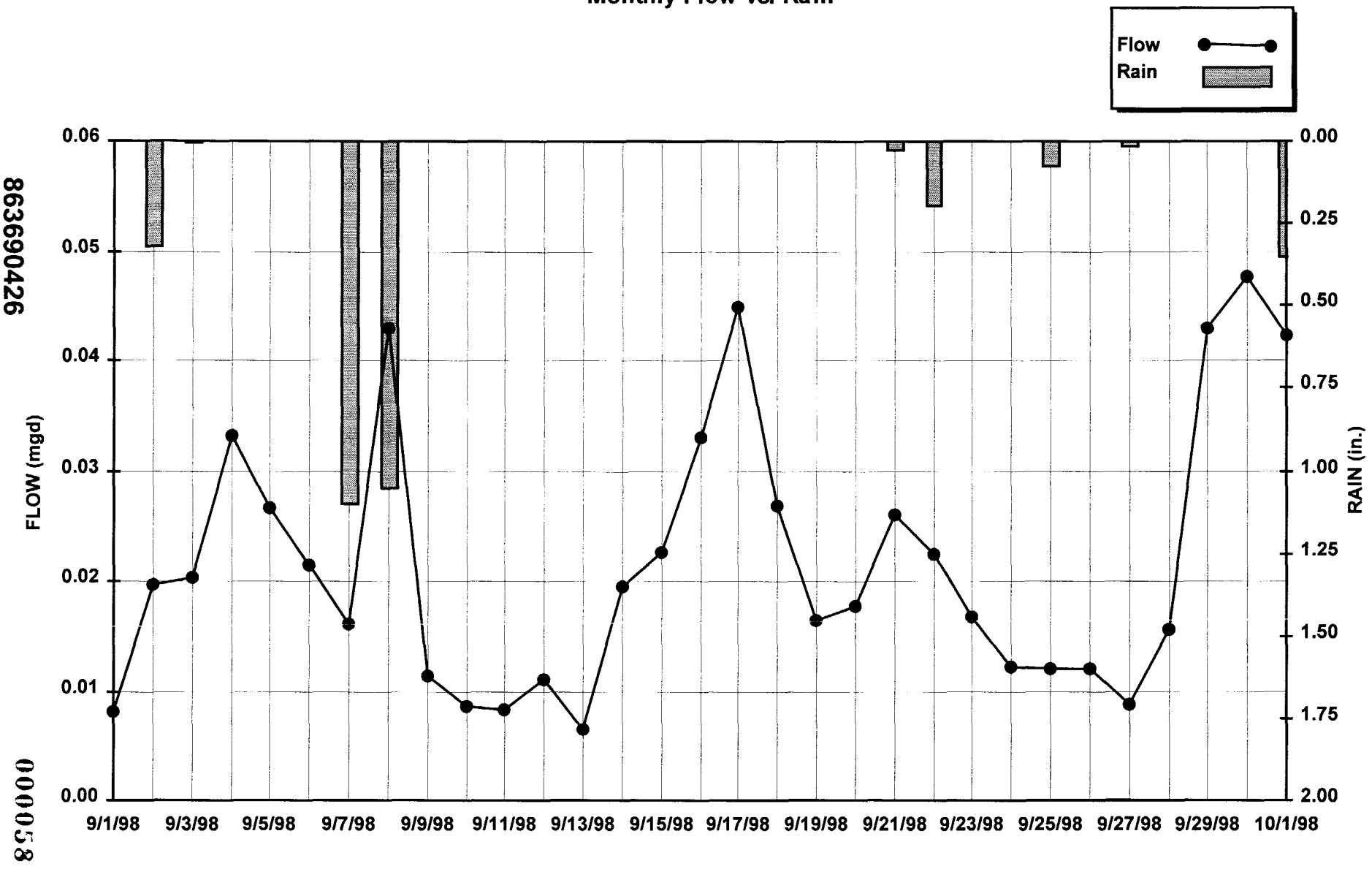
930 F.M. VERSION: 1.02

Serial#: QTO

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690426

0000058

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

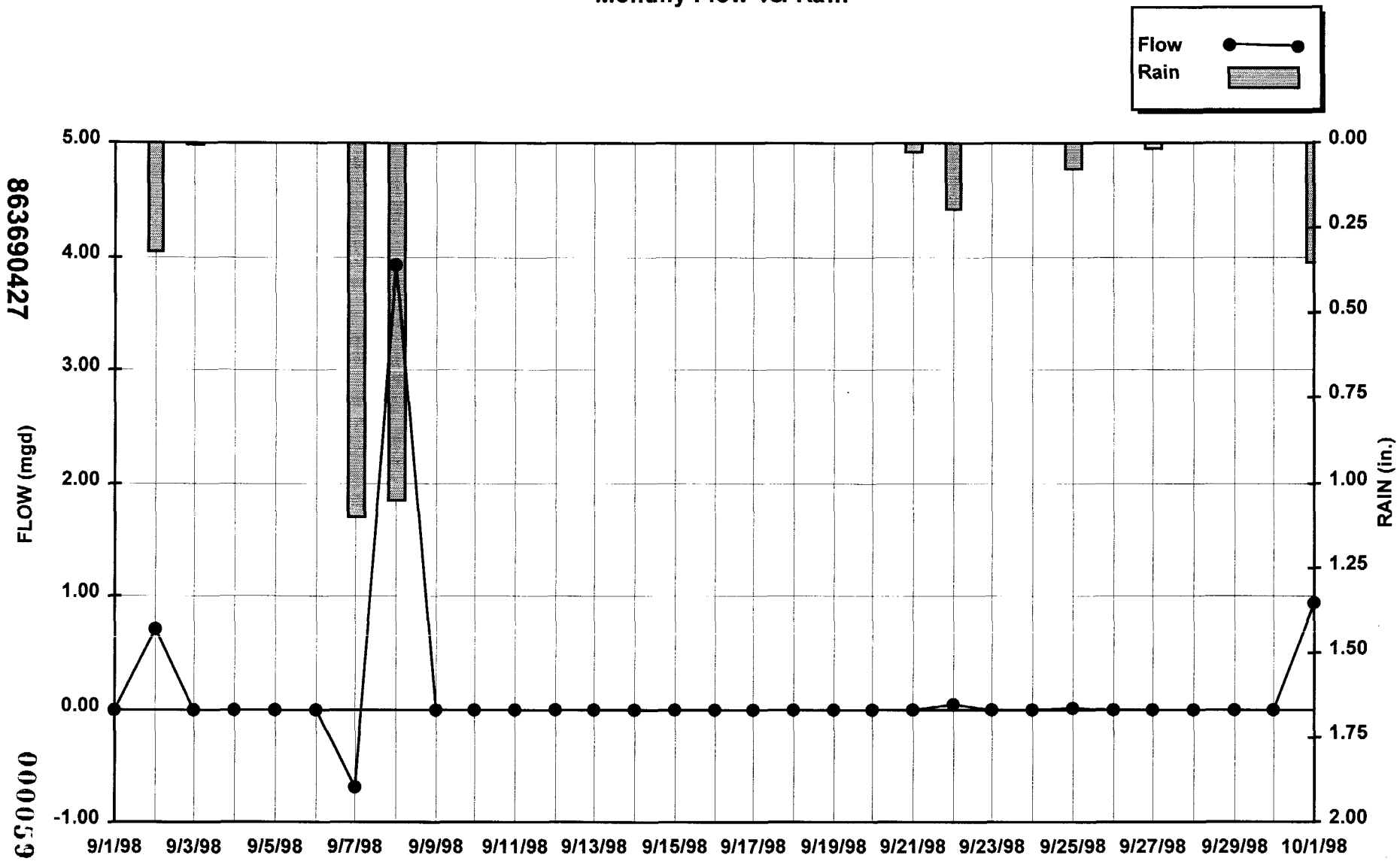
930 F.M. VERSION: 1.02

Serial#: QTO

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690427

000059

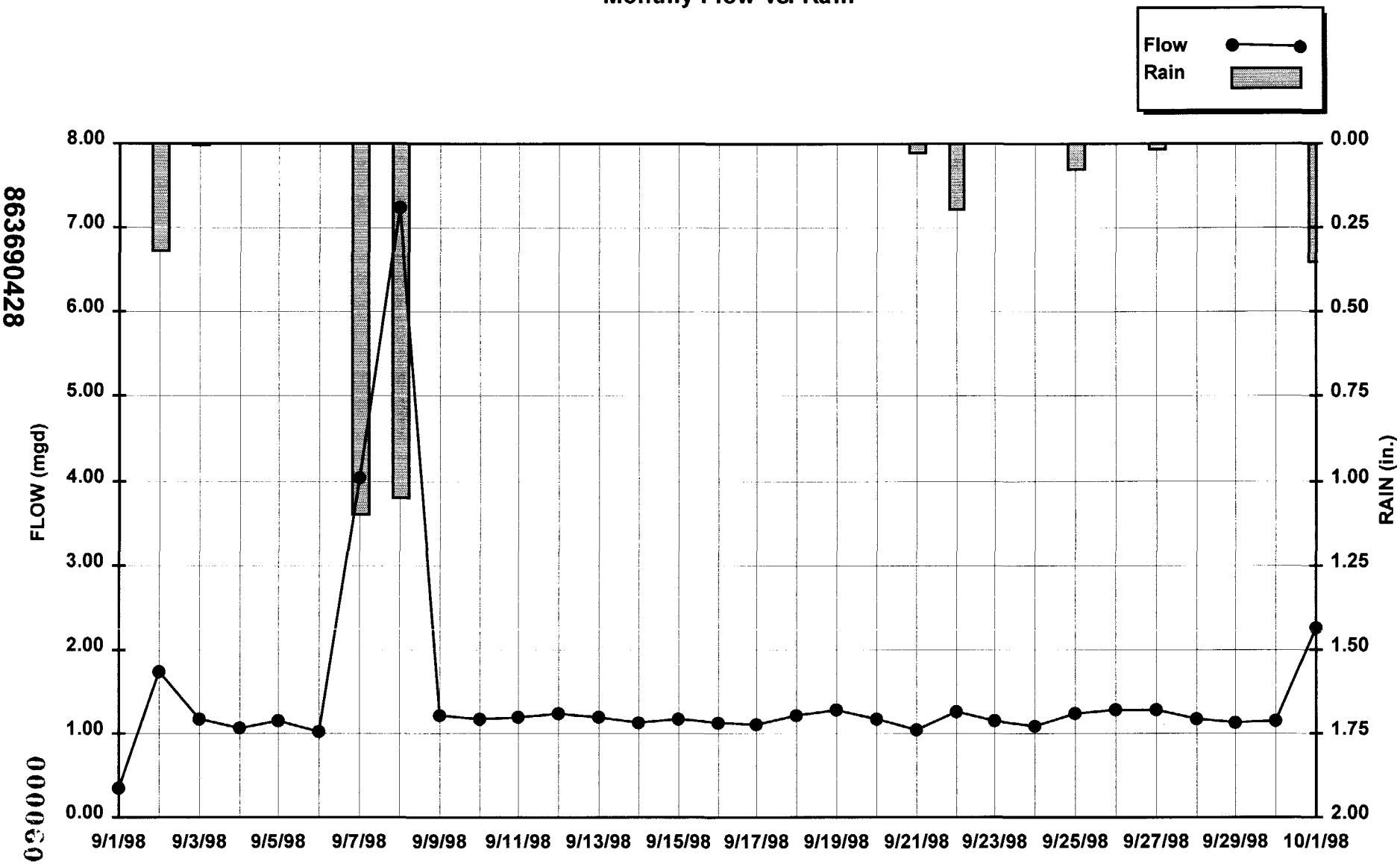
CSO 016 - JACKSON ST
Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02
Serial#: QTO

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690428

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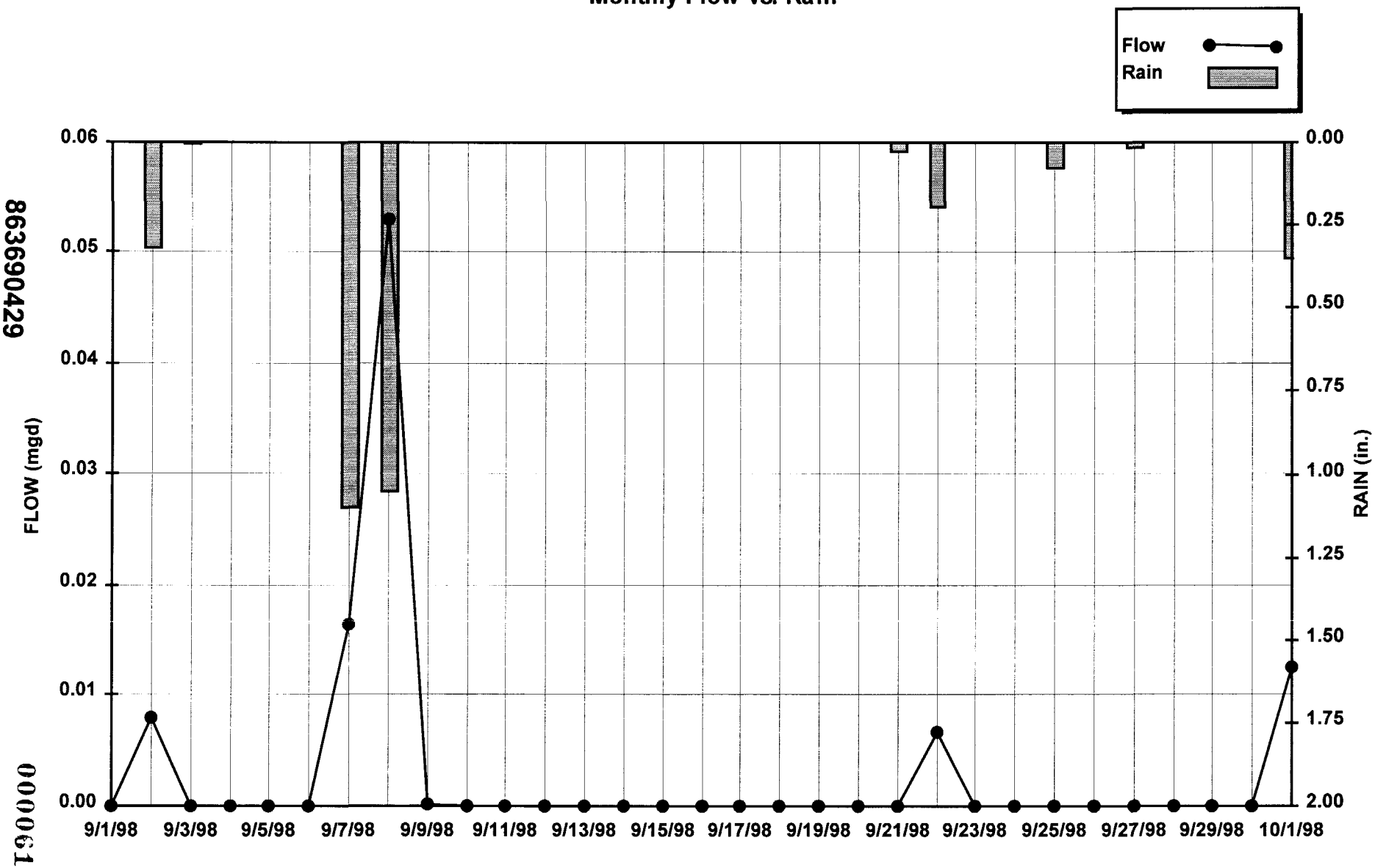
CSO 017 - POLK ST
Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUG

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690429

000061

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

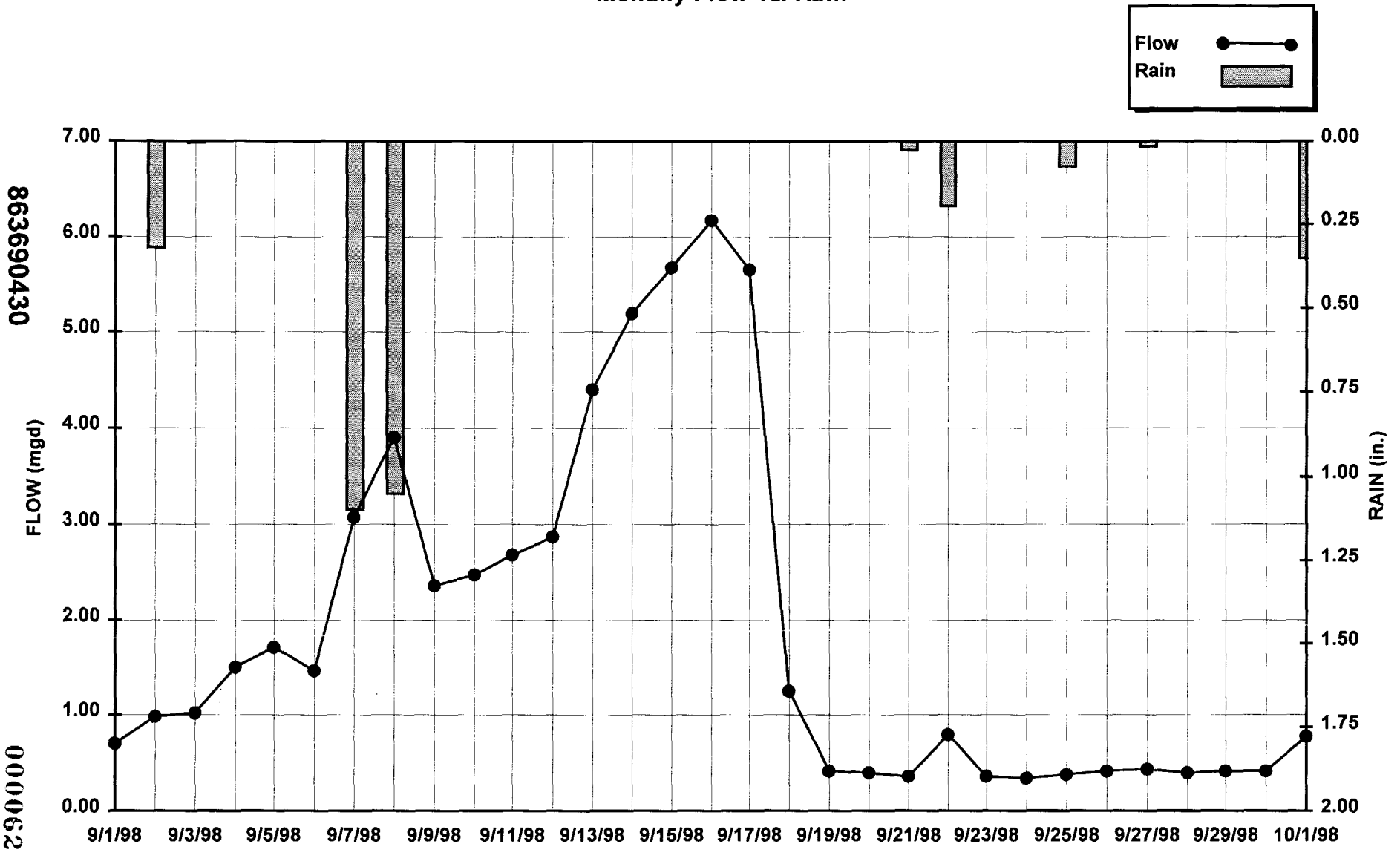
920 F.M. VERSION: 1.02

Serial#: QUG

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690430

000062

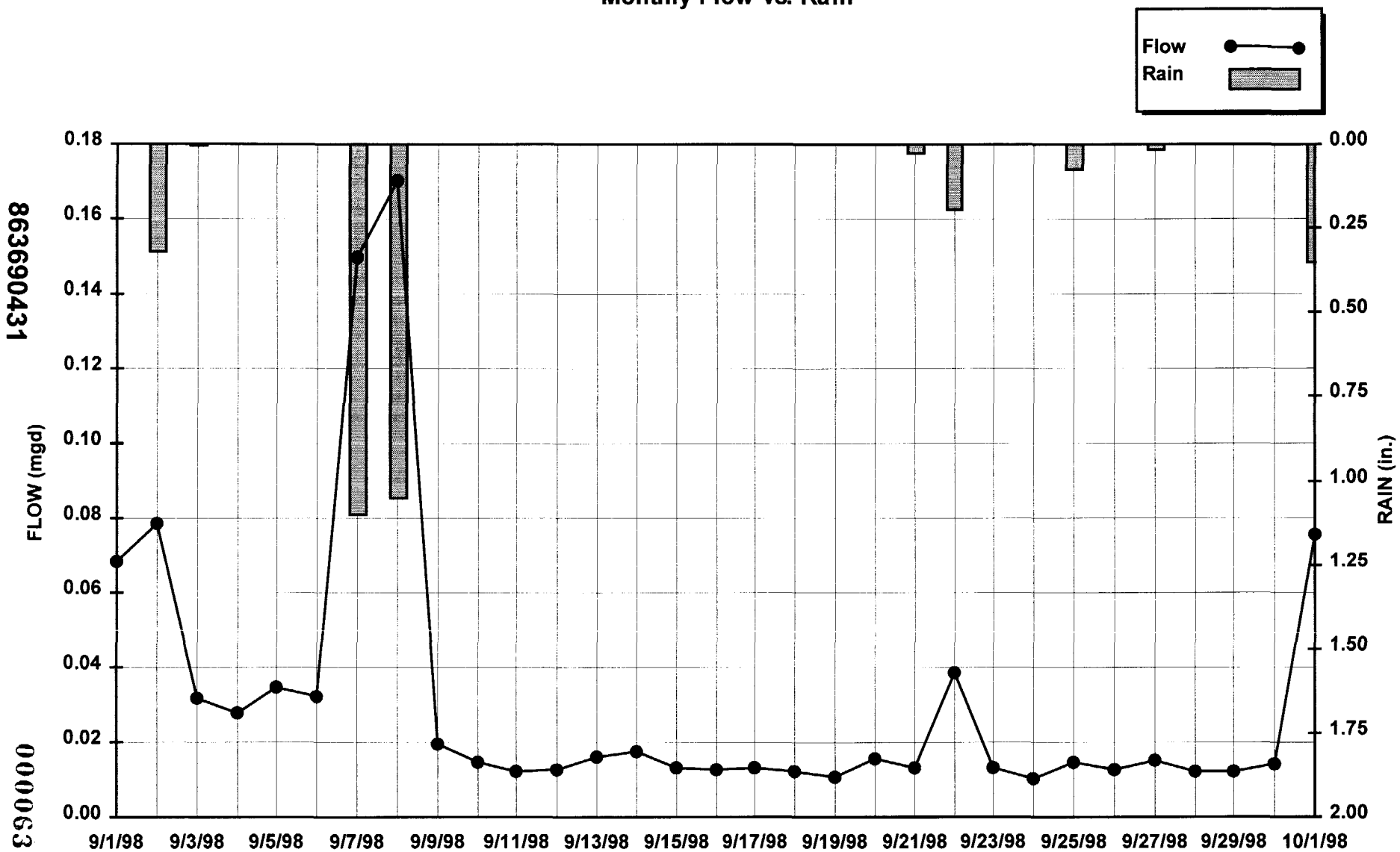
CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Monthly Flow Report (Flow2)

12/10/1998 1:18:20 PM

863690431
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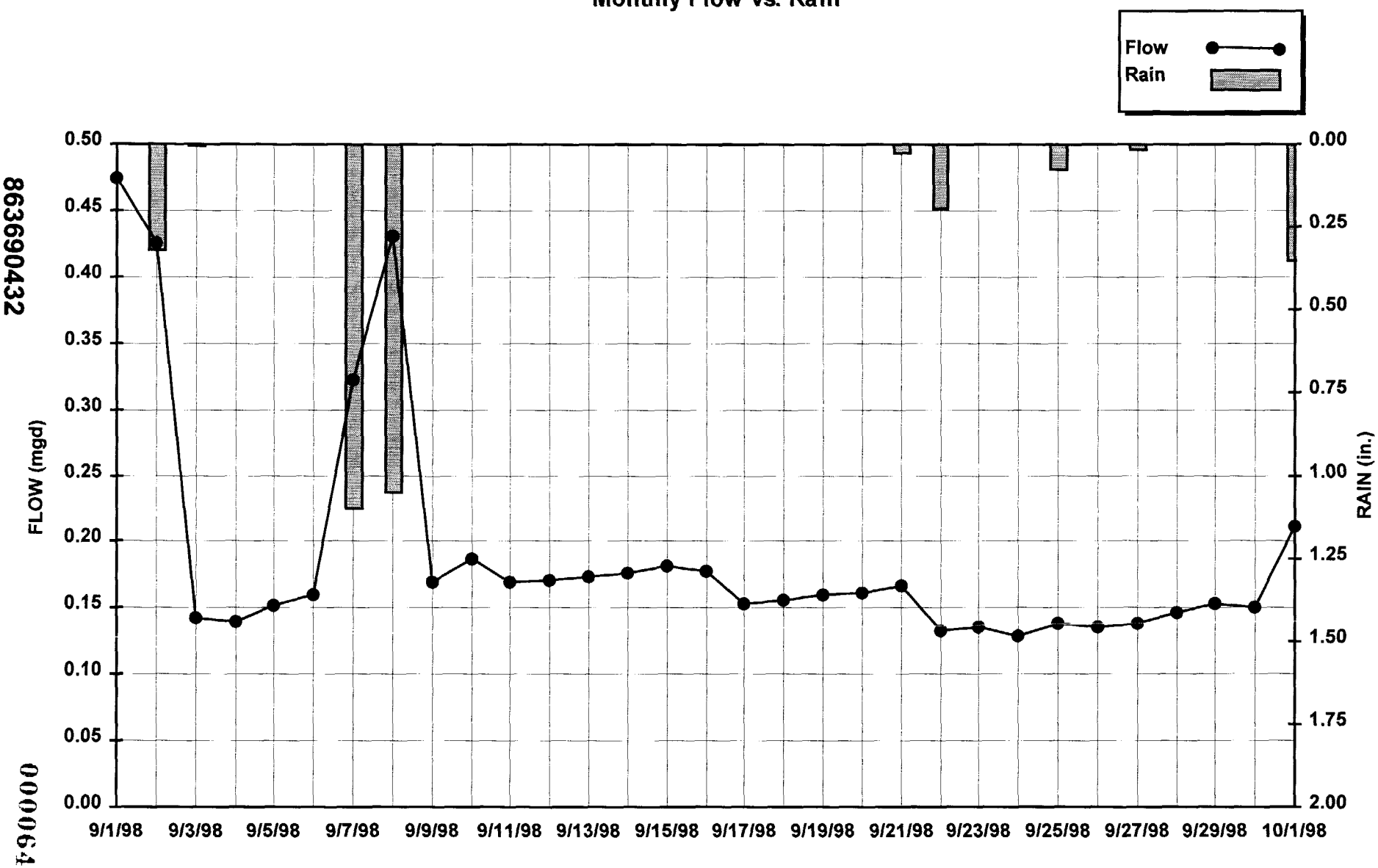
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690432

000064

CSO 018 - FREEMAN ST Influent&Overflow

Address: Freeman St. and Raymond Blvd.

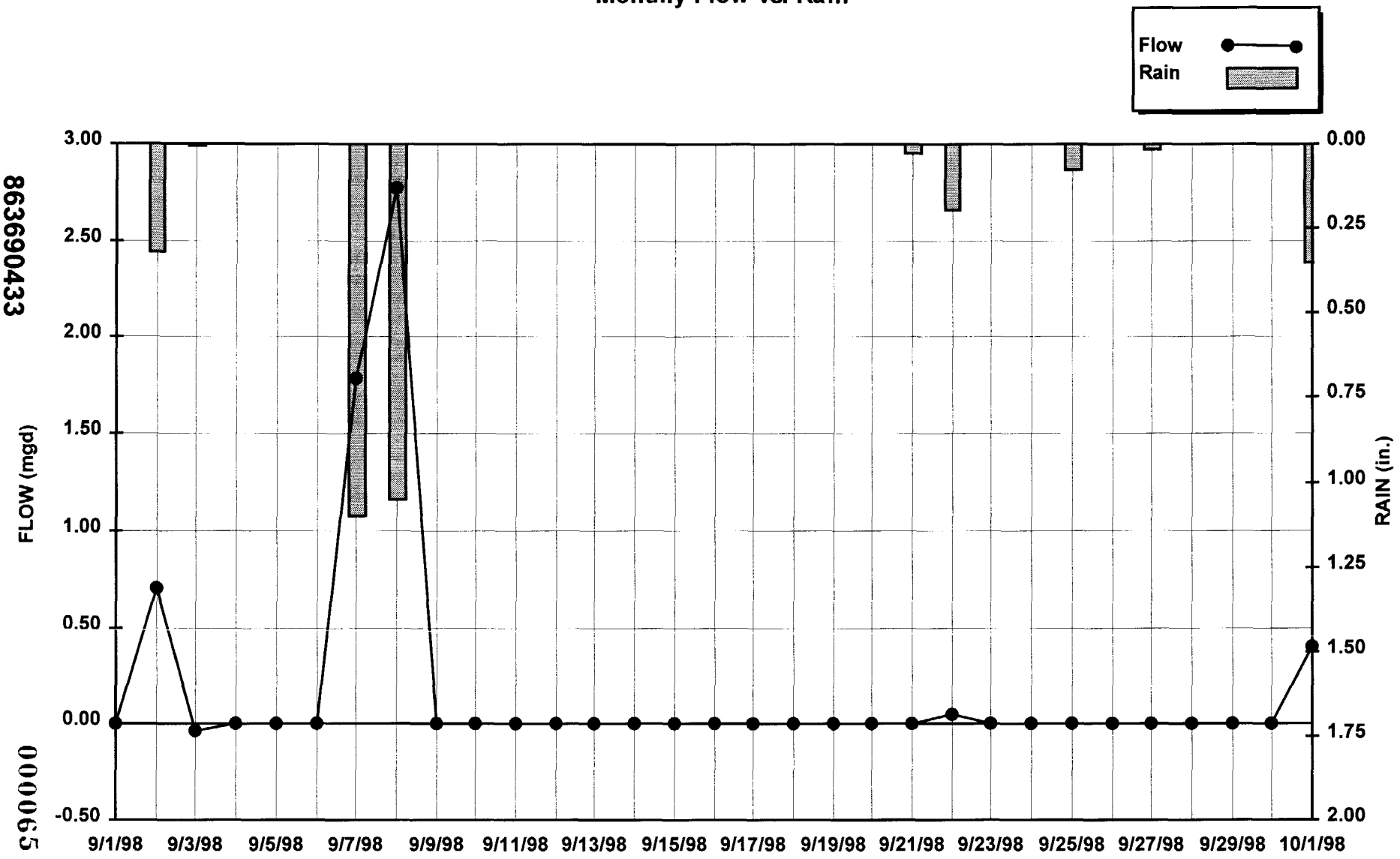
920 F.M. VERSION: 1.02

Serial#: QU0

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690433

000065

CSO 018 - FREEMAN ST Influent&Overflow

Address: Freeman St. and Raymond Blvd.

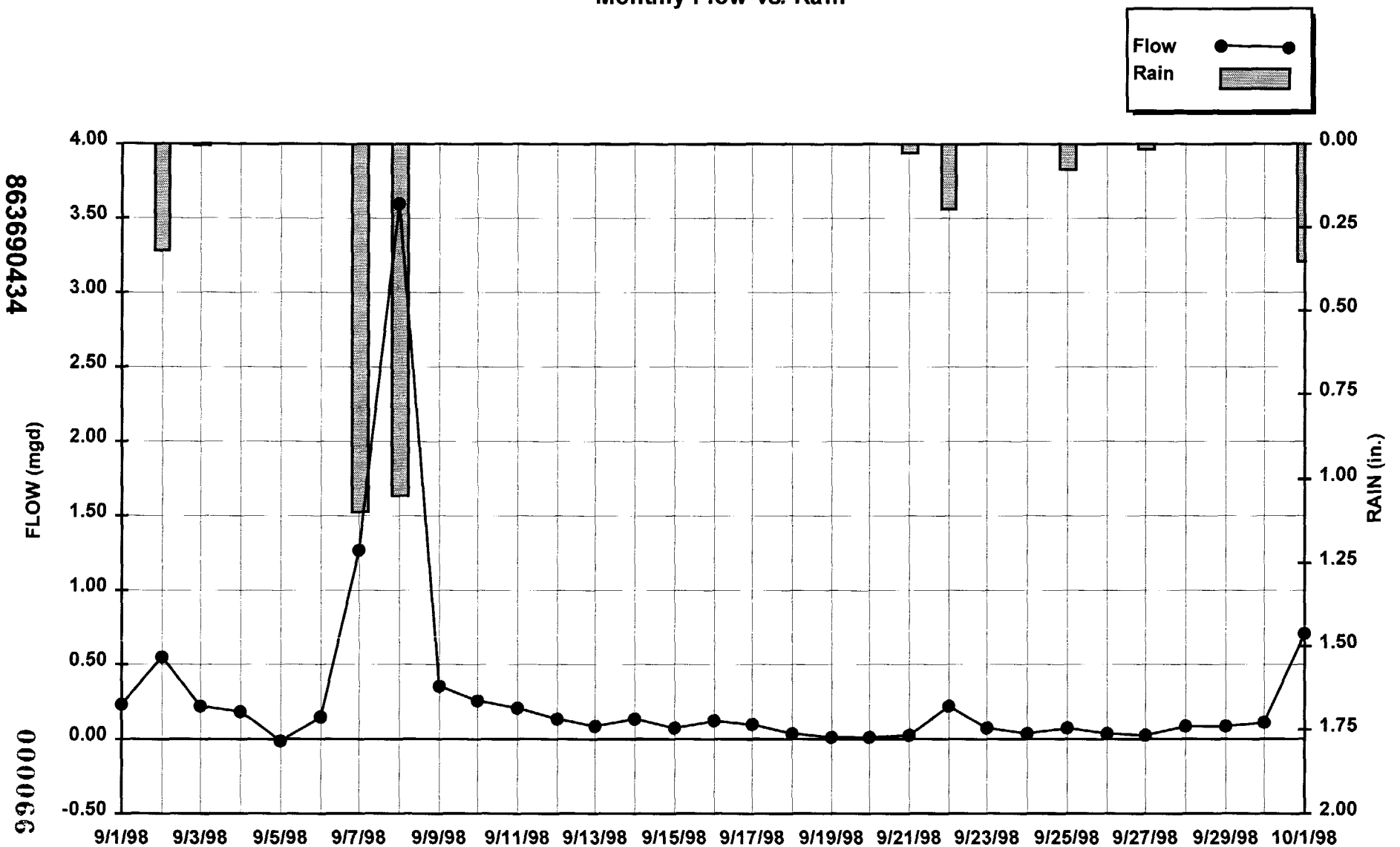
920 F.M. VERSION: 1.02

Serial#: QU0

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690434

990000

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

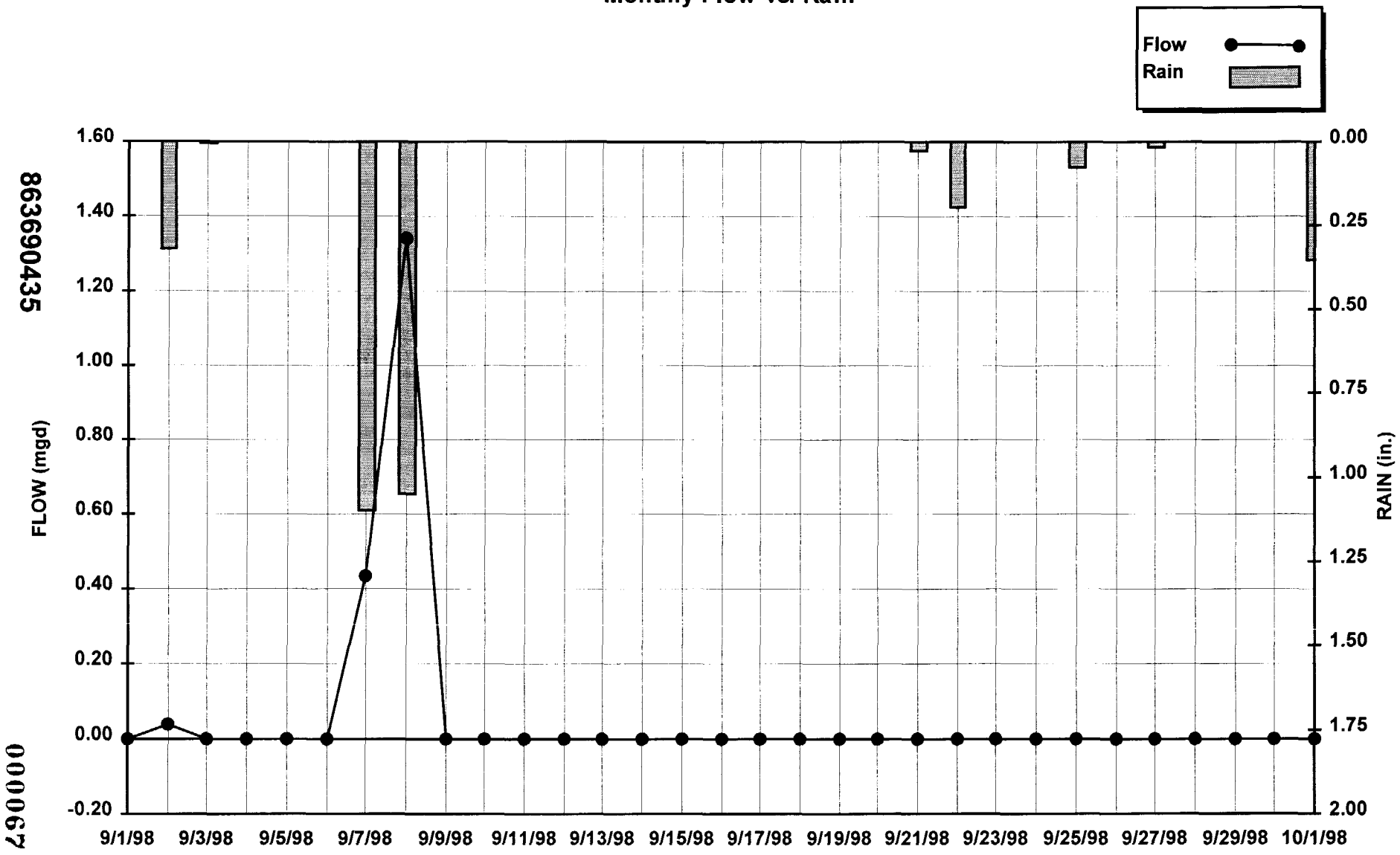
920 F.M. VERSION: 1.02

Serial#: QUZ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690435

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CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

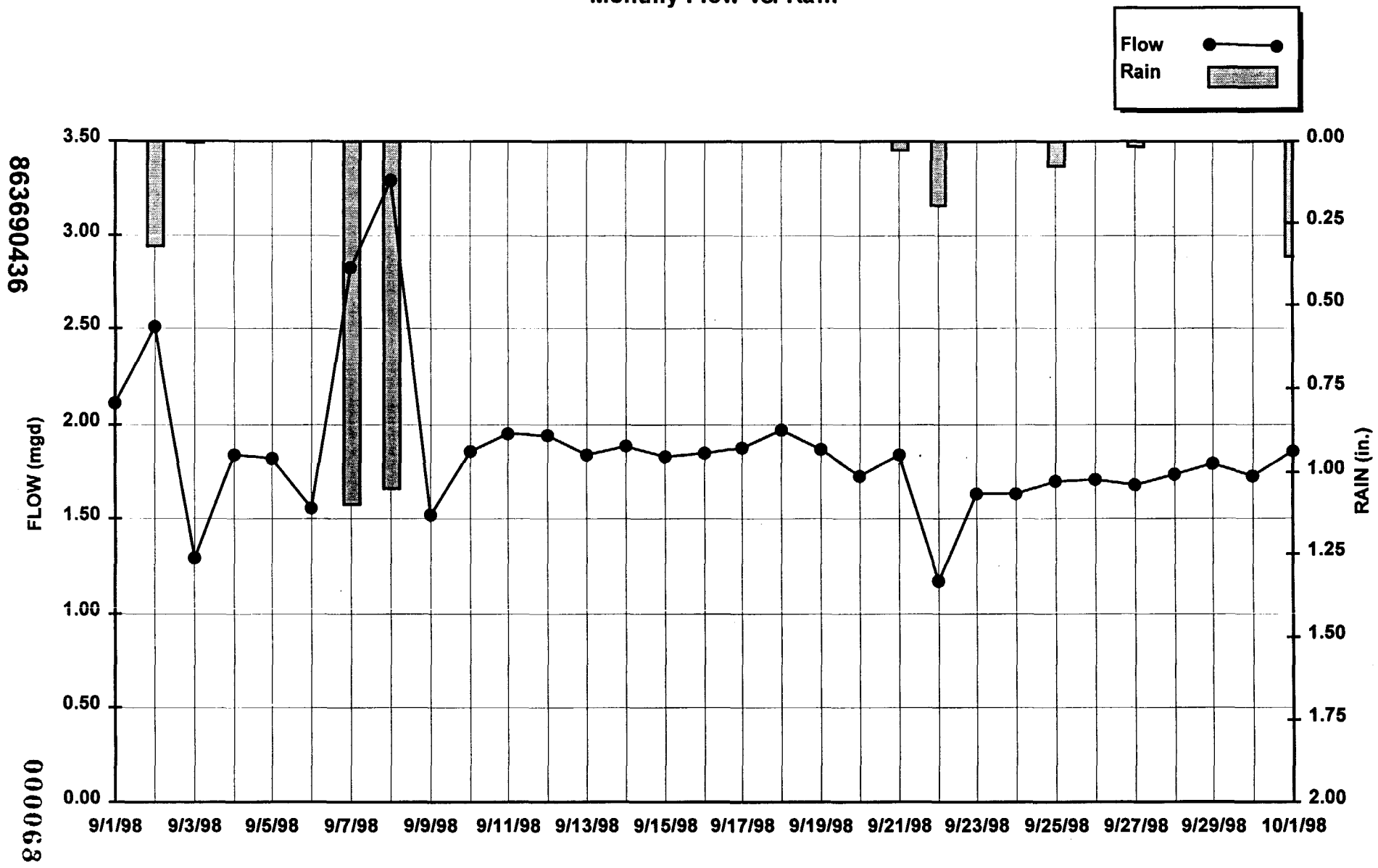
920 F.M. VERSION: 1.02

Serial#: QUZ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690436

0000068

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

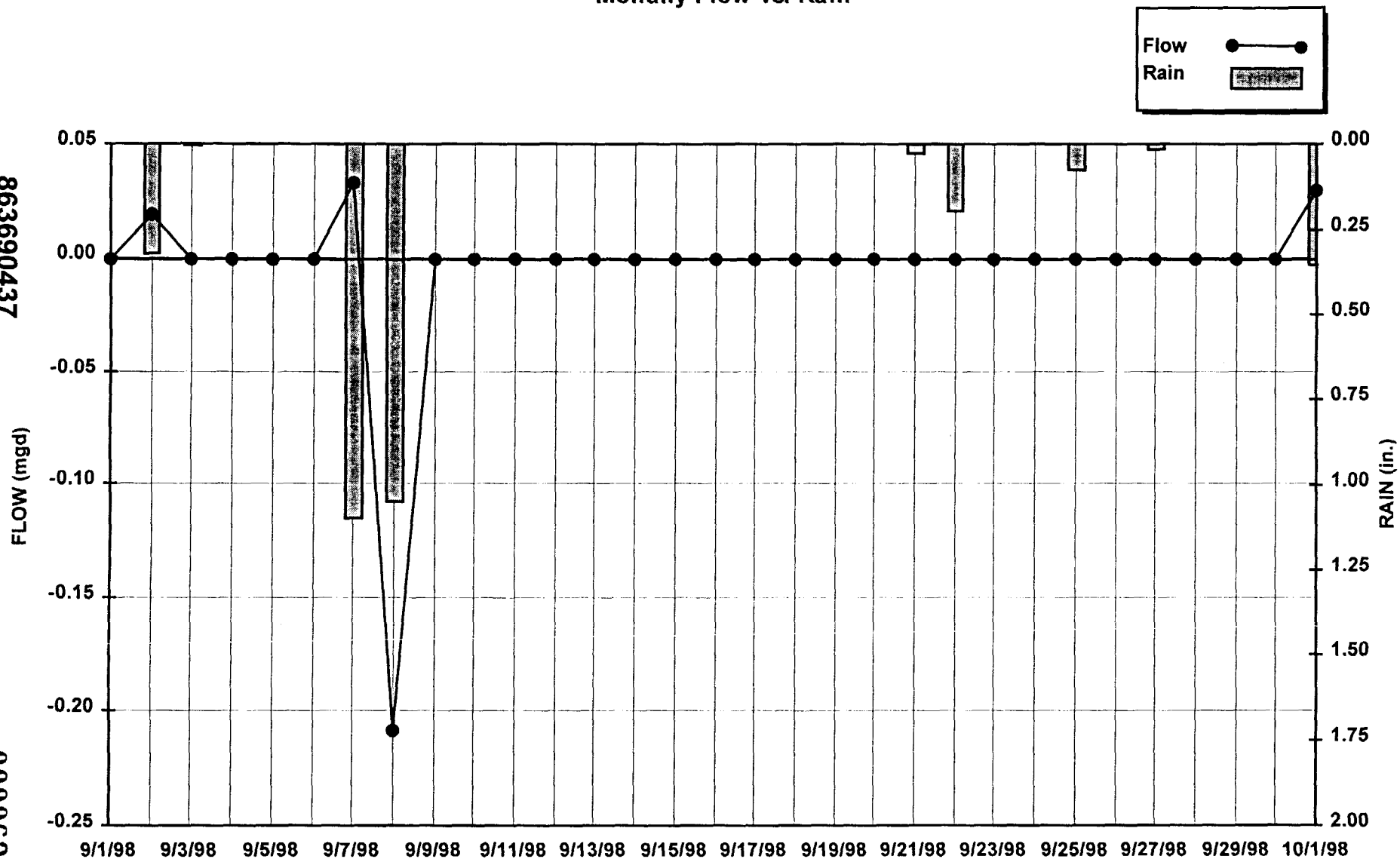
Monthly Flow Report (Flow3) — Not in the FMR Key.

12/10/1998 1:20:28 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690437

000069

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

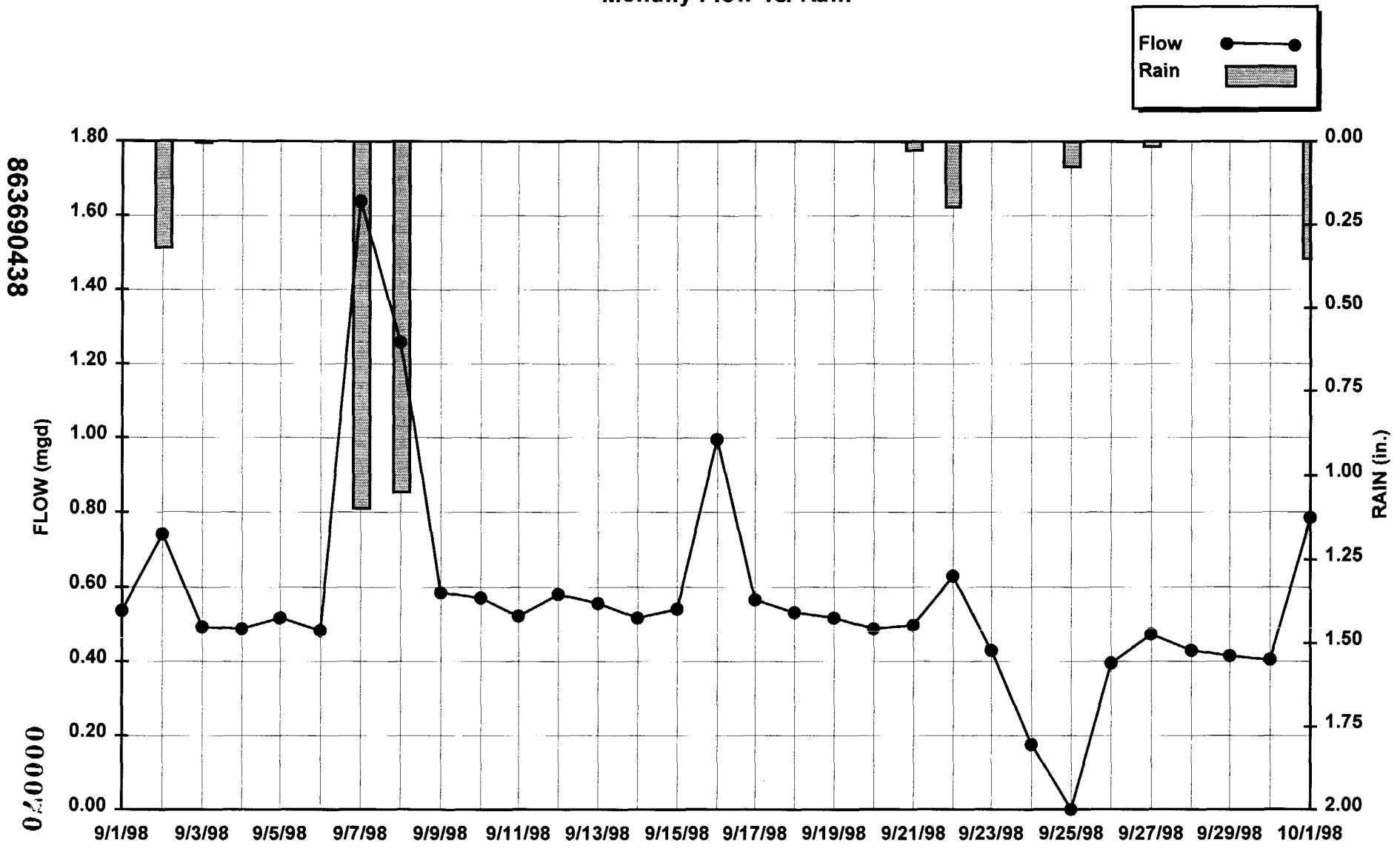
920 F.M. VERSION: 1.02

Serial#: QR4

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023b - ADAMS ST. influent
Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02
Serial#: QO4

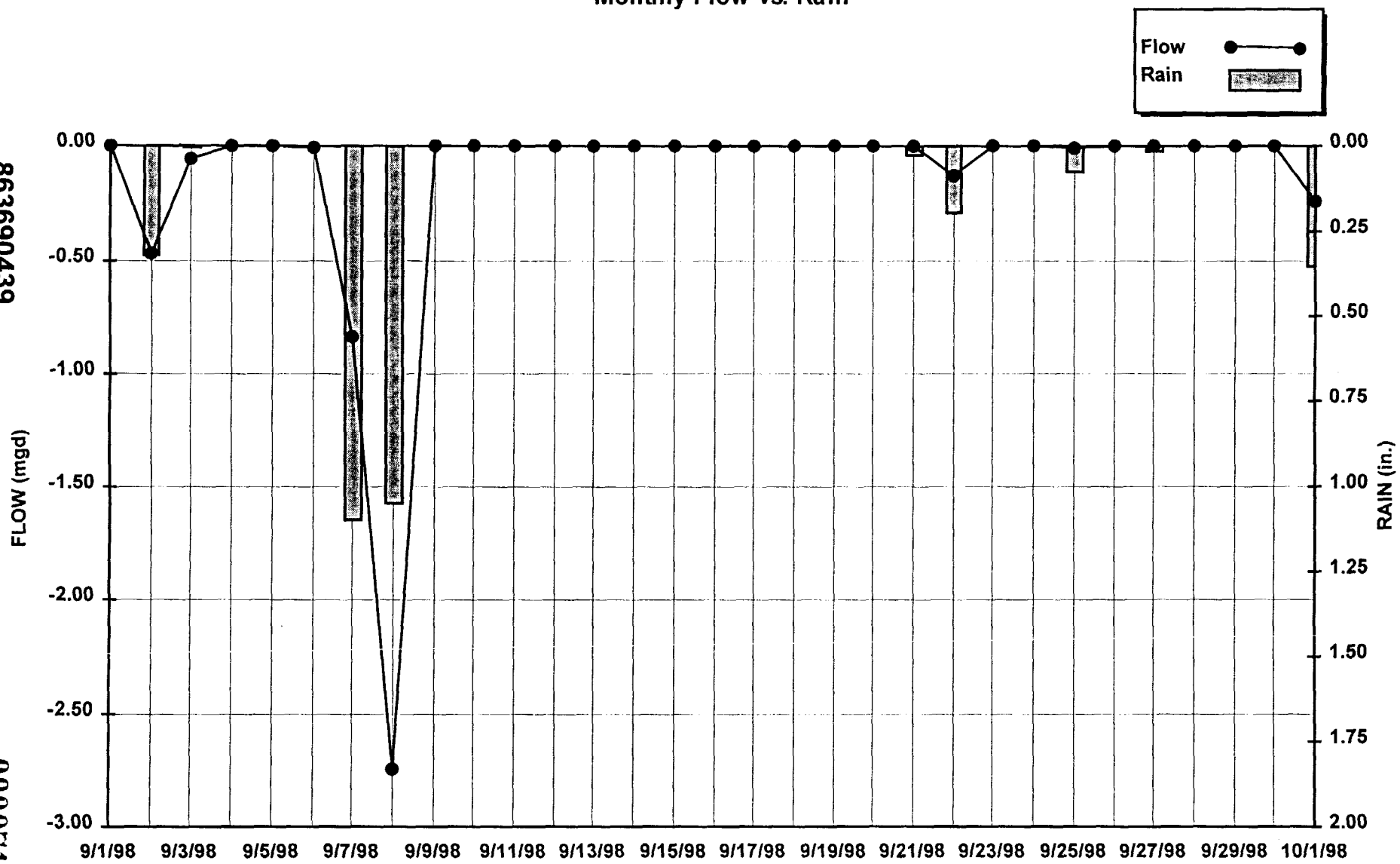
863690438

020000

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690439

000071

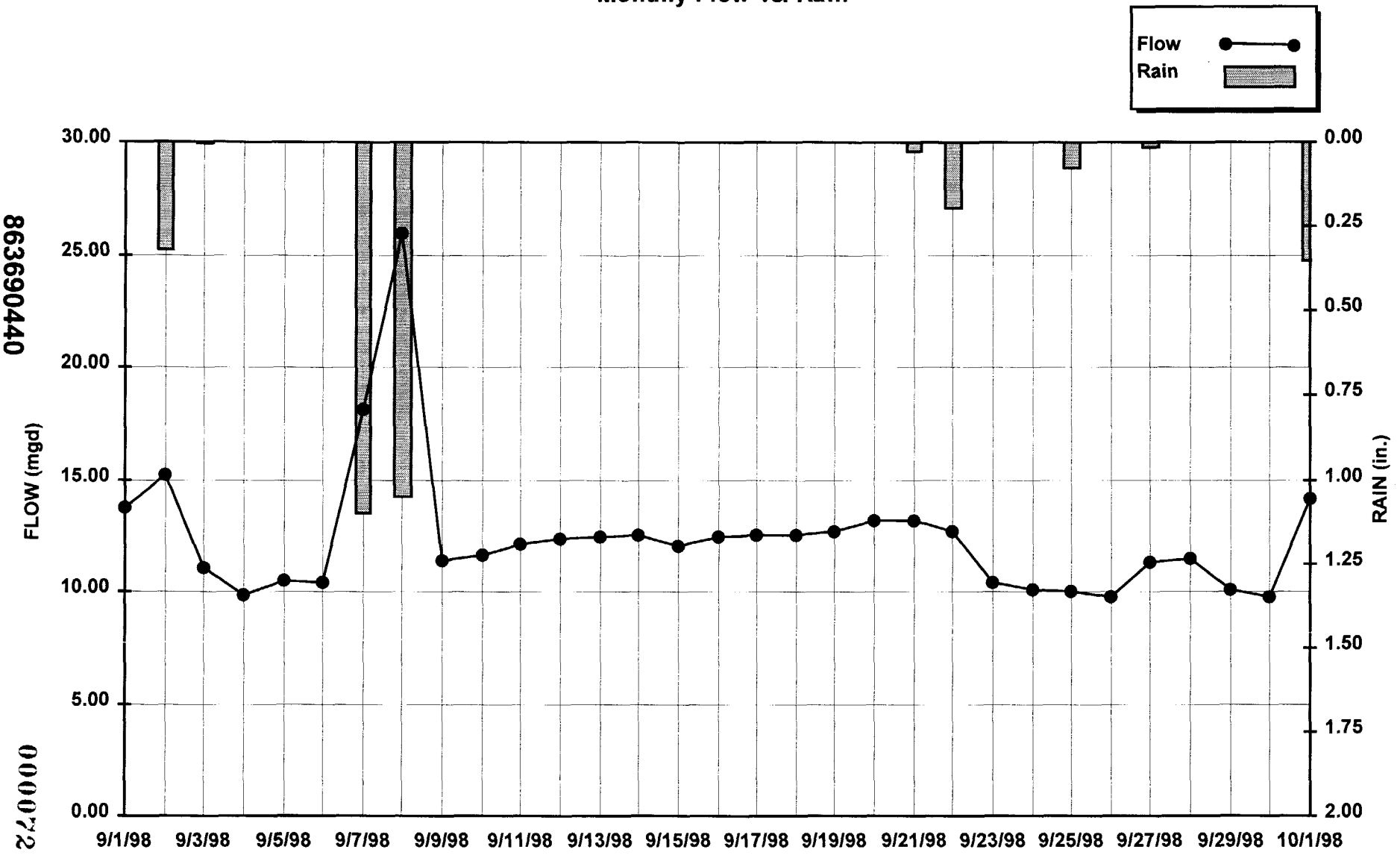
CSO 023B - ADAMS ST. overflow
Address: South St. and Jefferson St

910 F.M. VERSION: 1.02
Serial#: QPP

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690440

000072

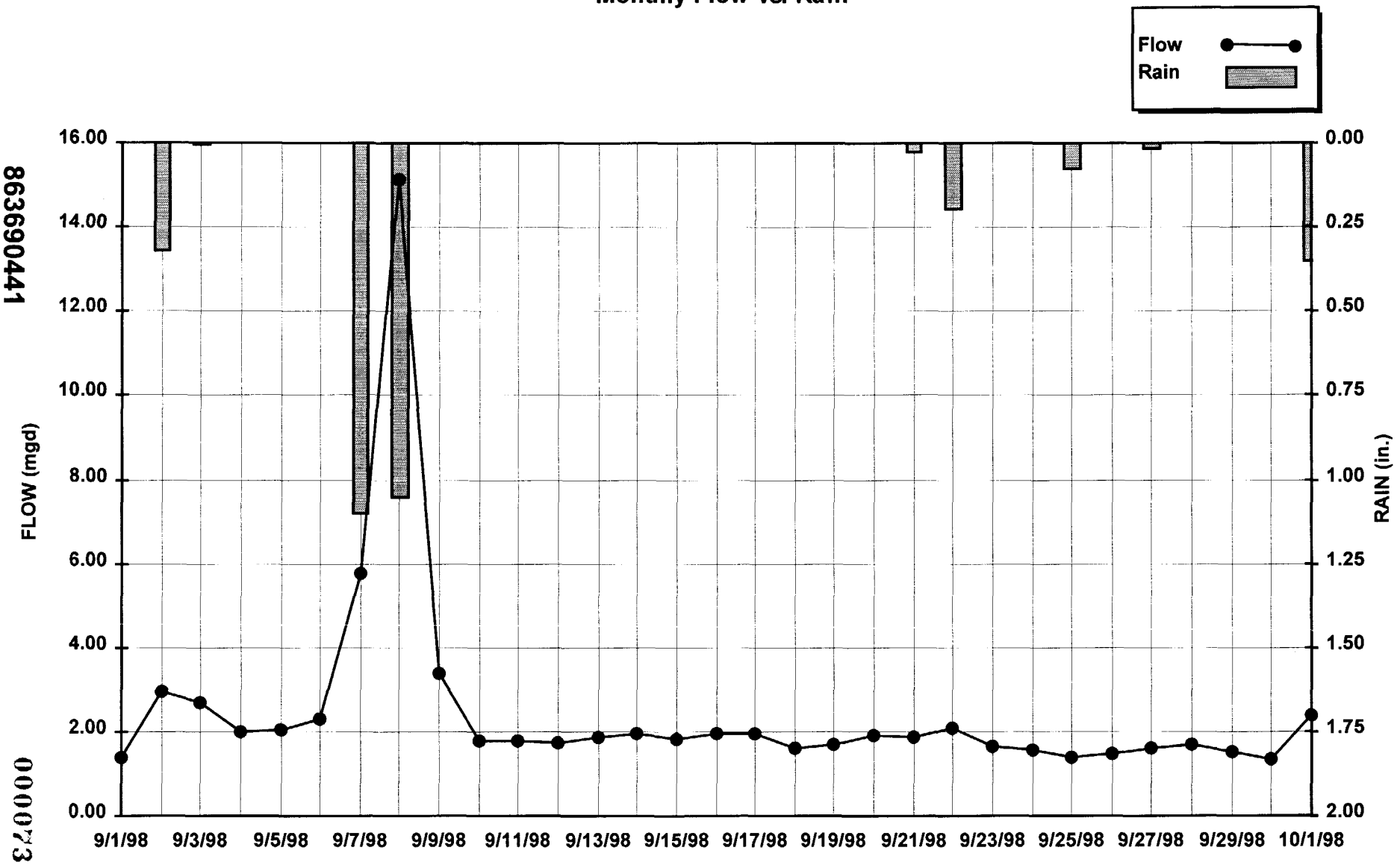
CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690441

0000073

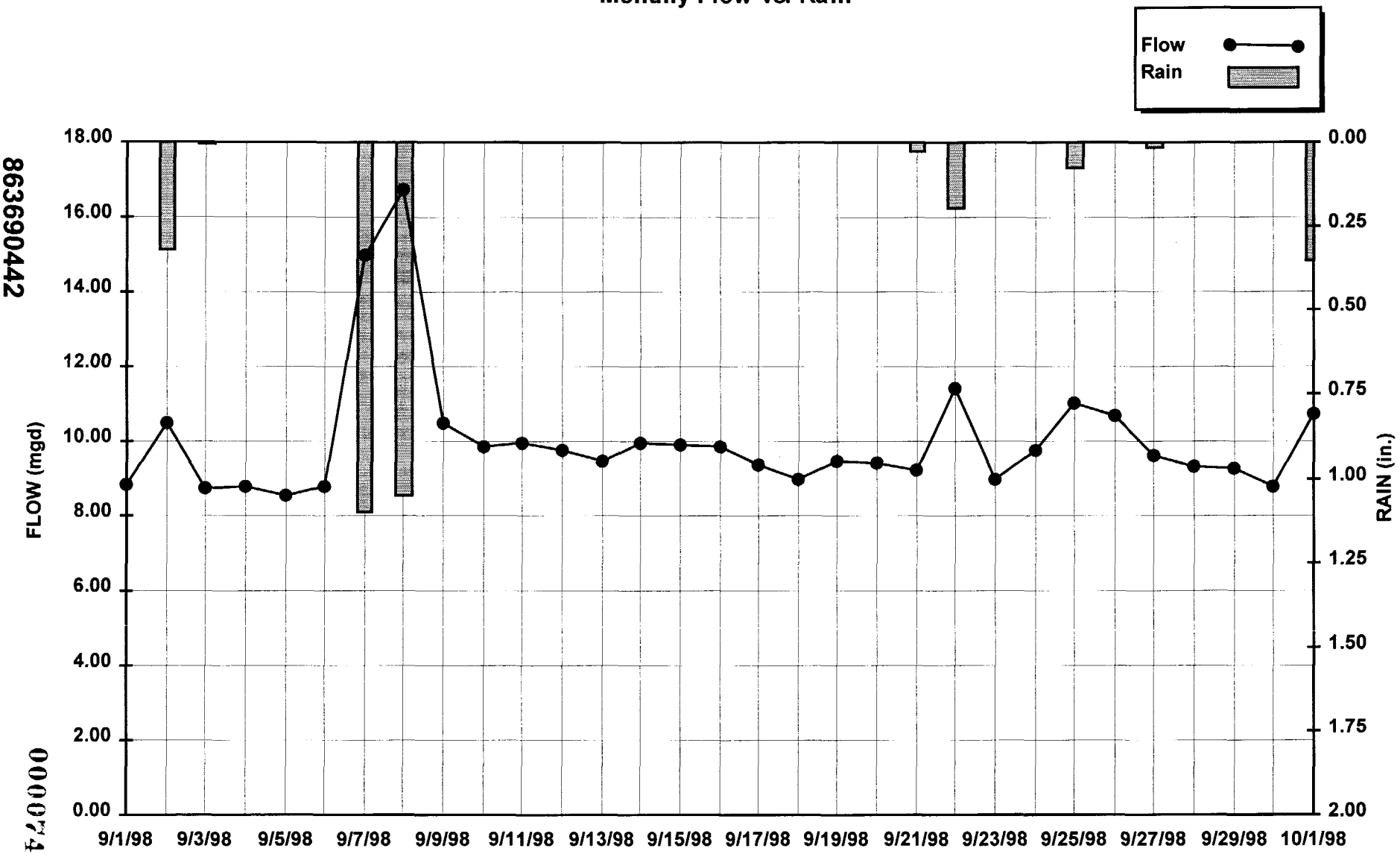
CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690442

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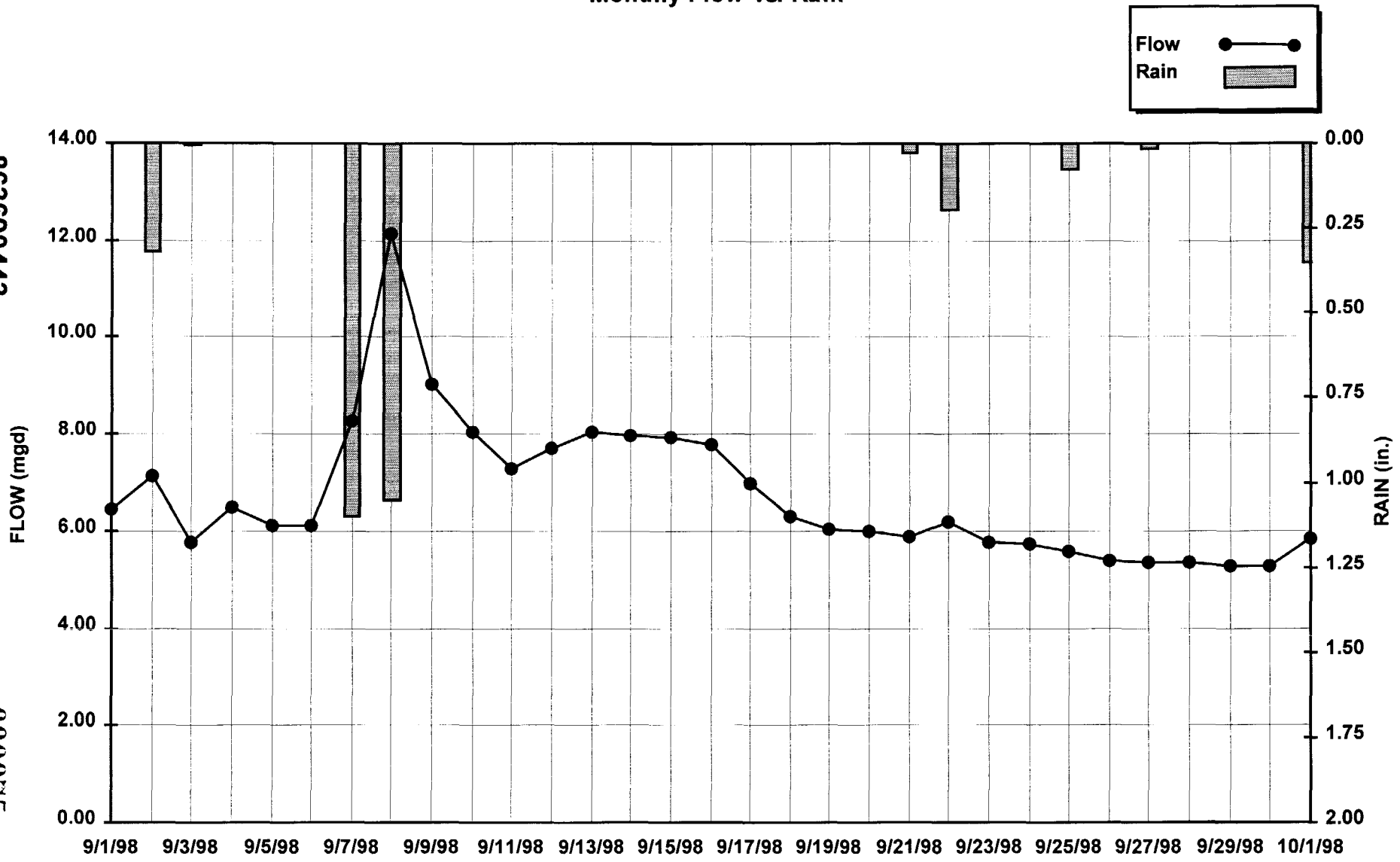
CSO 025 Peddie St regulated
Address: Peddie Ditch

910 F.M. VERSION: 1.02
Serial#: QO7

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690443

000075

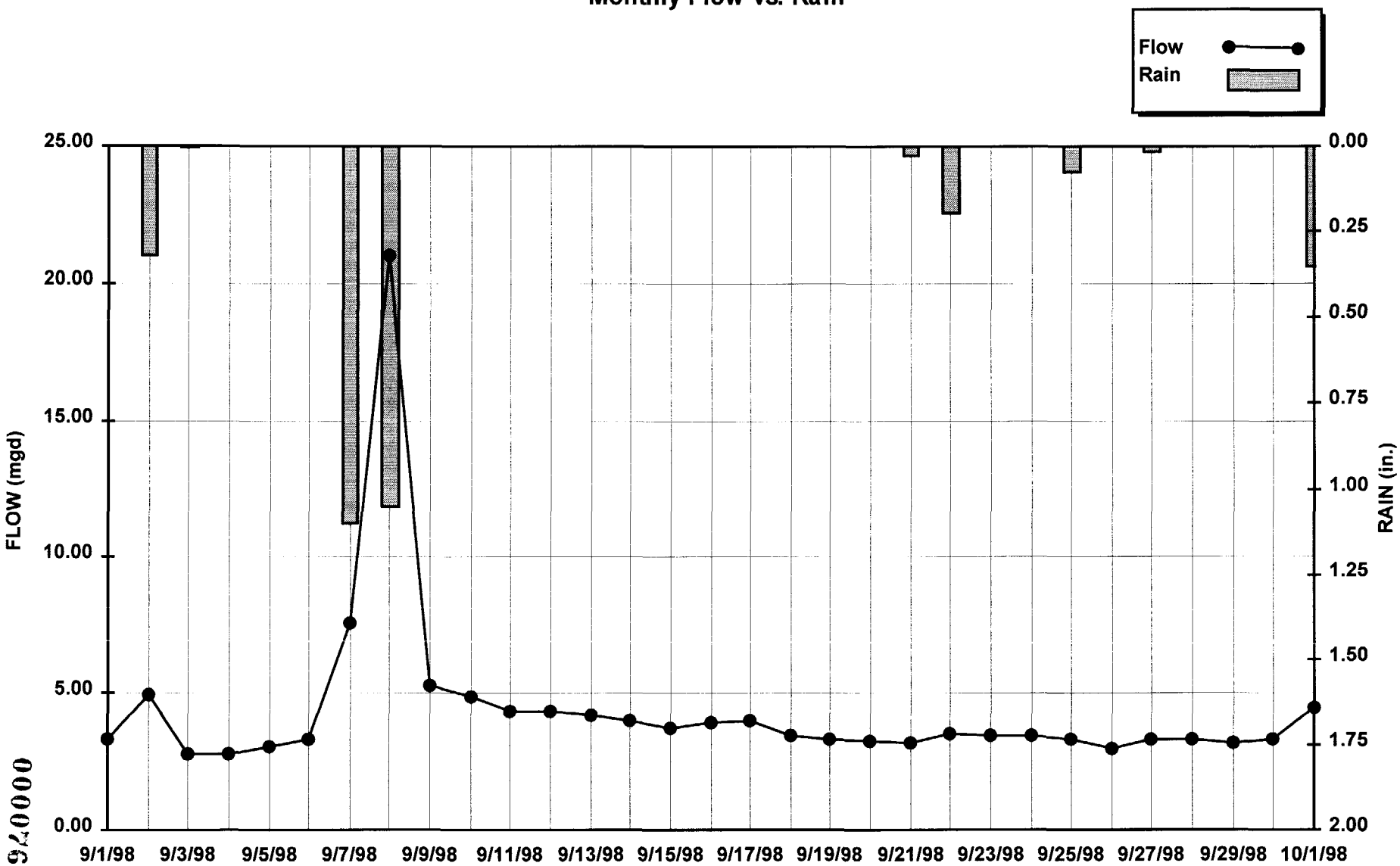
CSO 026 - QUEEN unregulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQU

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690444

920000

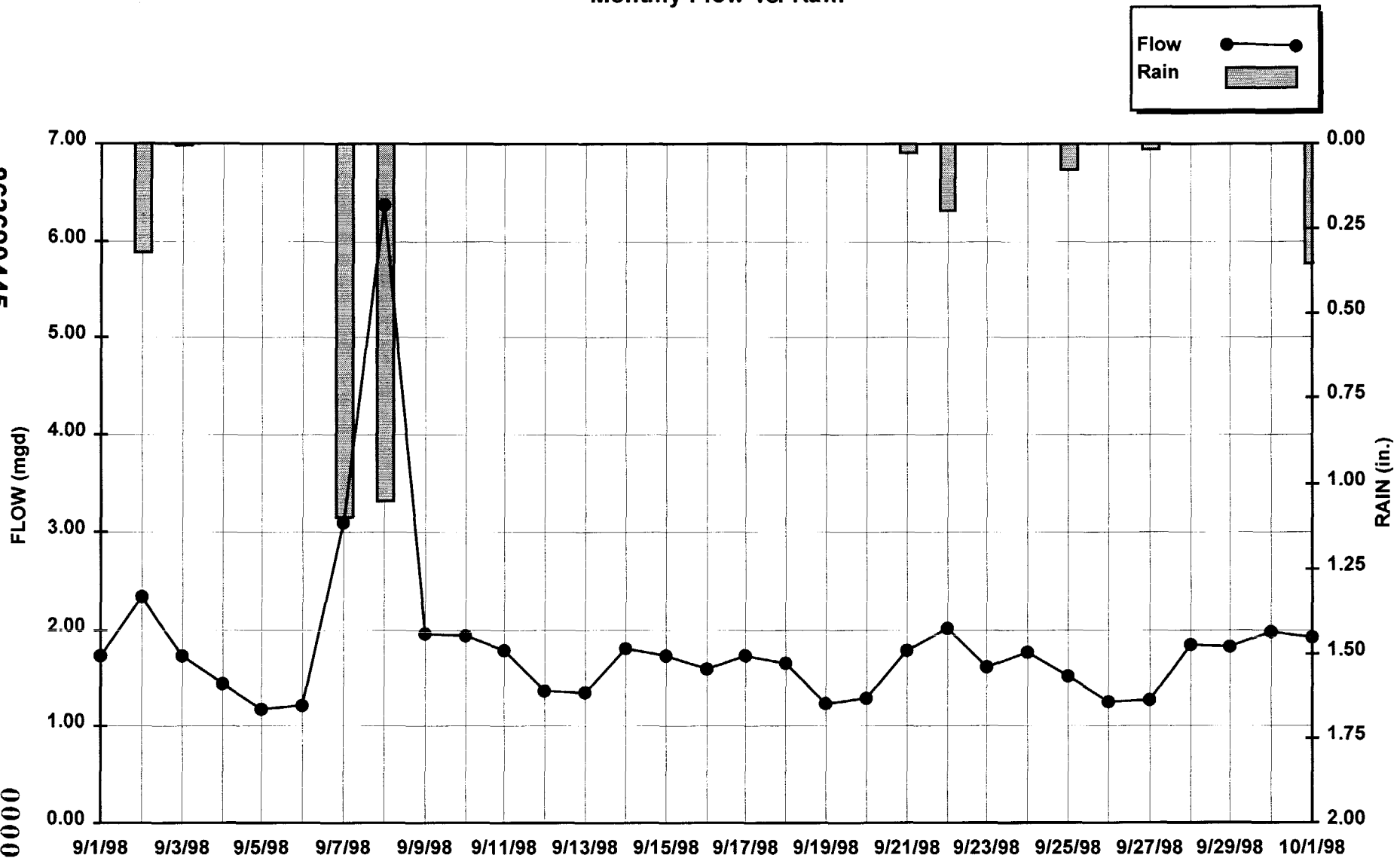
CSO 026 - QUEEN regulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQV

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690445

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CSO 027 - WAVERLY

Address: Anheuser-Busch

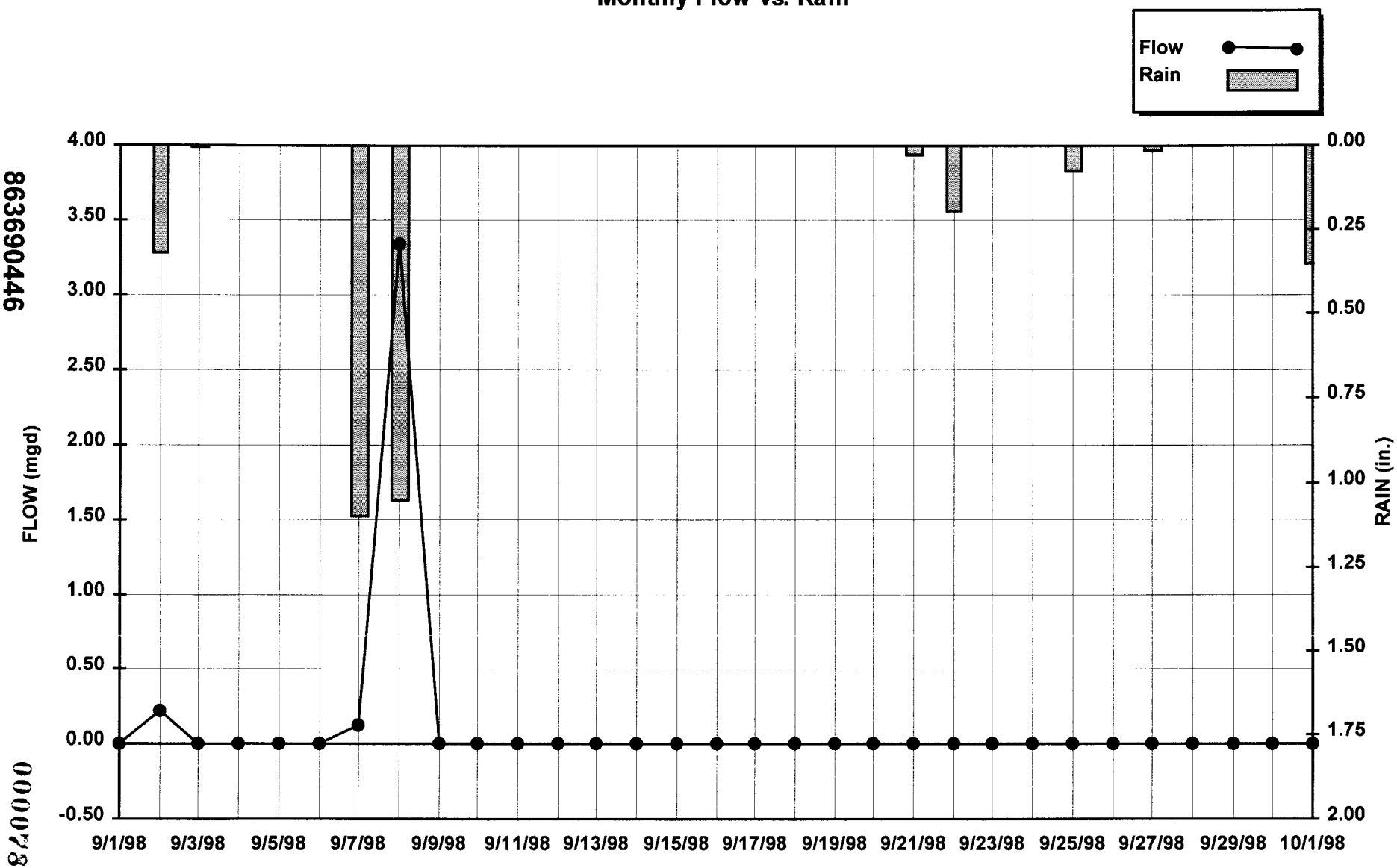
920 F.M. VERSION: 1.02

Serial#: QRY

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690446

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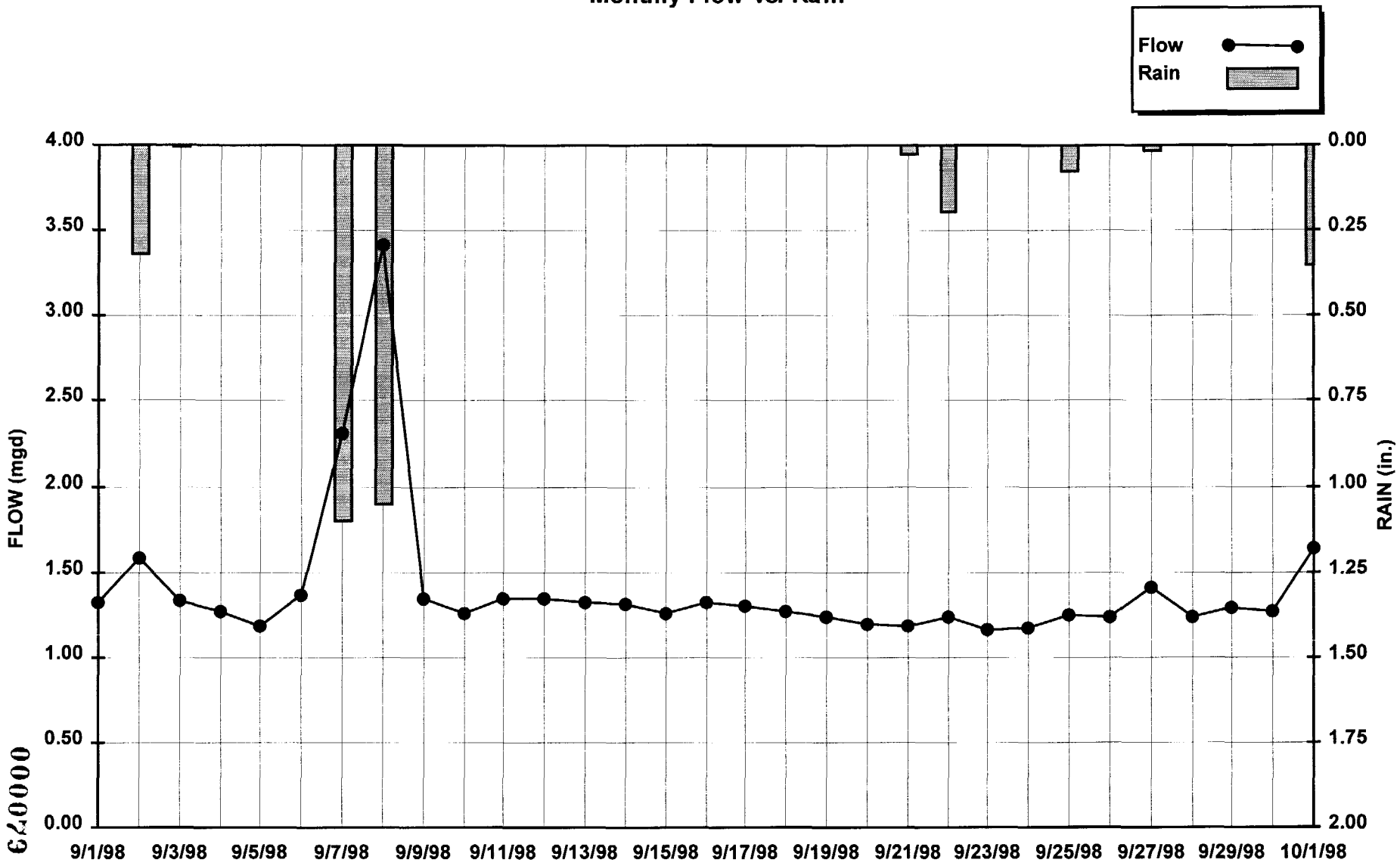
CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

863690447

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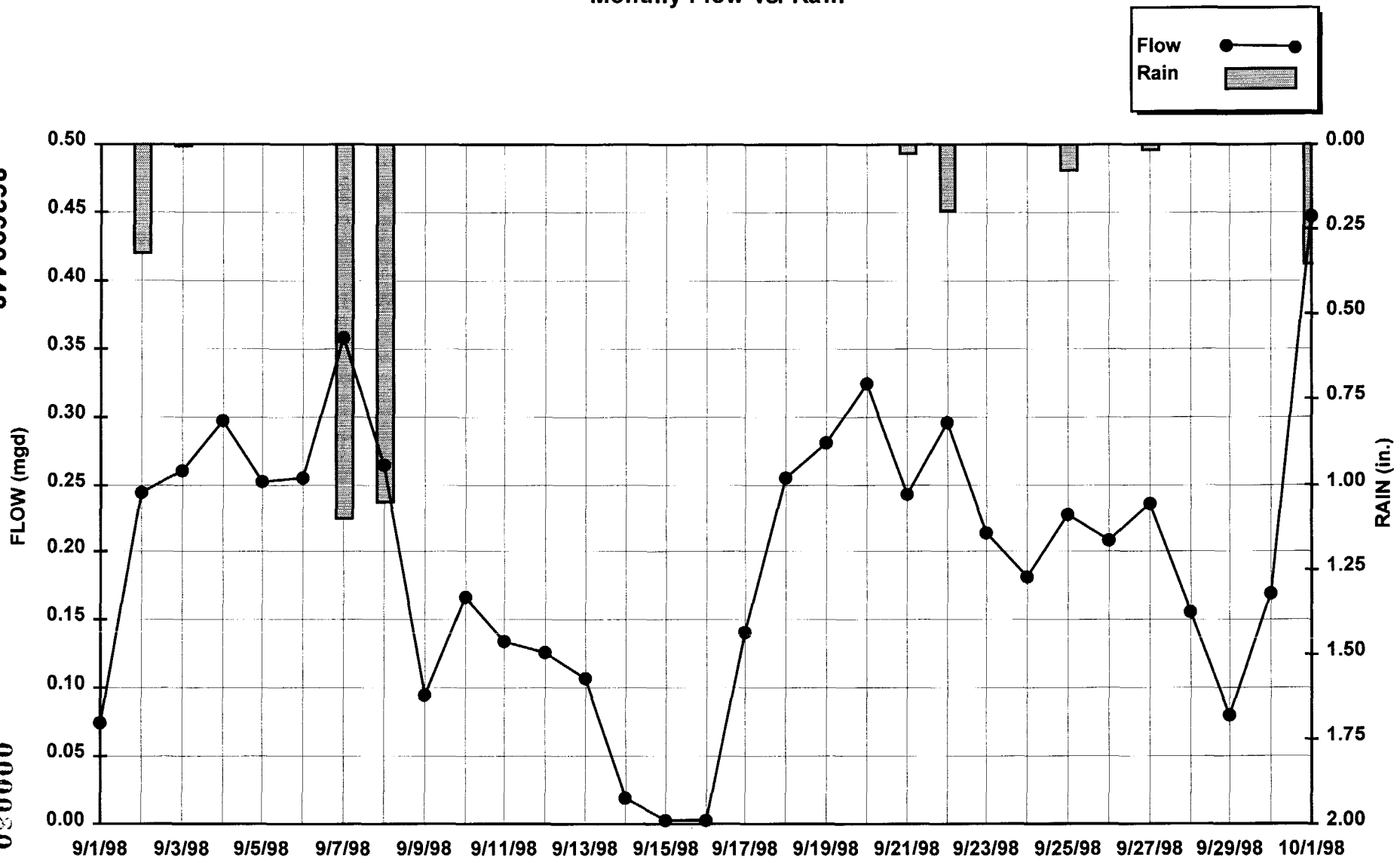
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690448

020000

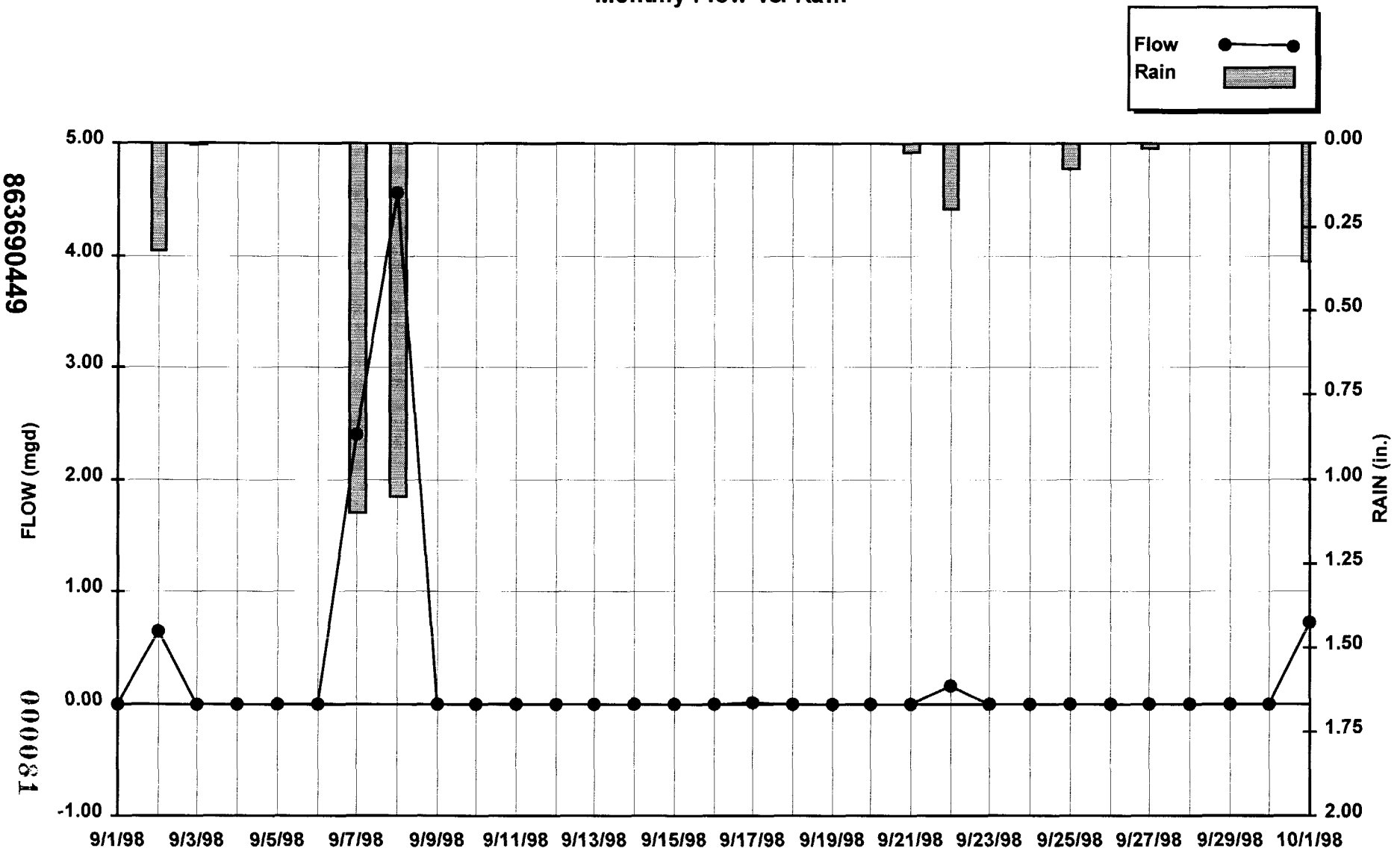
CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Monthly Flow Report (Flow3)

12/10/1998 1:22:17 PM

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Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 1 — Rain Gauge

Address: Central Ave. and 15th St. — RG-3, Water Supply Central Ave

49.25" H x 32.75" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	.27	.00
09/02/98	.41	.26
09/03/98	.22	.00
09/04/98	.18	.00
09/05/98	.17	.00
09/06/98	.18	.00
09/07/98	.69	1.67
09/08/98	.92	1.45
09/09/98	.22	.00
09/10/98	.19	.00
09/11/98	.20	.00
09/12/98	.20	.00
09/13/98	.21	.00
09/14/98	.24	.00
09/15/98	.22	.00
09/16/98	.22	.00
09/17/98	.22	.00
09/18/98	.22	.00
09/19/98	.20	.00
09/20/98	.20	.00
09/21/98	.20	.03
09/22/98	.20	.20
09/23/98	.14	.00
09/24/98	.12	.00
09/25/98	.19	.07
09/26/98	.18	.00
09/27/98	.18	.01
09/28/98	.16	.00
09/29/98	.16	.00
09/30/98	.16	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 2 | Rain Gauge

Address: 9th Ave. and 15th St. | RG-3, Water Supply Central Ave

48.8" H x 33.4" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	.00	.00
09/02/98	.04	.26
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.31	1.67
09/08/98	.40	1.45
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.03
09/22/98	.01	.20
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.01	.07
09/26/98	.00	.00
09/27/98	.00	.01
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 3 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

33" Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	.00	.00
09/02/98	.02	.38
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.02	.00
09/07/98	.21	.09
09/08/98	.24	.00
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.09	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.01	.00
09/15/98	.01	.00
09/16/98	.01	.01
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.01	.00
09/21/98	.01	.02
09/22/98	.03	.16
09/23/98	.00	.00
09/24/98	.01	.00
09/25/98	.01	.06
09/26/98	.00	.00
09/27/98	.00	.01
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.01	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 4 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

12" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	.16	.00
09/02/98	.14	.38
09/03/98	.13	.00
09/04/98	.15	.00
09/05/98	.17	.00
09/06/98	.17	.00
09/07/98	.17	.09
09/08/98	.14	.00
09/09/98	.09	.00
09/10/98	.07	.00
09/11/98	.07	.00
09/12/98	.08	.00
09/13/98	.07	.00
09/14/98	.10	.00
09/15/98	.12	.00
09/16/98	.13	.01
09/17/98	.11	.00
09/18/98	.12	.00
09/19/98	.13	.00
09/20/98	.13	.00
09/21/98	.14	.02
09/22/98	.14	.16
09/23/98	.13	.00
09/24/98	.14	.00
09/25/98	.11	.06
09/26/98	.15	.00
09/27/98	.16	.01
09/28/98	.15	.00
09/29/98	.12	.00
09/30/98	.12	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 Rain Gauge

Address: 14TH ST. & HEDDEN PL. RG-1, Roberto Clemente School

33" RCP Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	.00	.00
09/02/98	.04	.38
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.24	.09
09/08/98	.23	.00
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.01
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	-.01	.16
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.06
09/26/98	.00	.00
09/27/98	.00	.01
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 Rain Gauge

Address: 14TH ST. & HEDDEN PL. RG-1, Roberto Clemente School

18.75" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	.00	.00
09/02/98	.08	.38
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.01	.00
09/07/98	.71	.09
09/08/98	.71	.00
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.01
09/17/98	.01	.00
09/18/98	.05	.00
09/19/98	.04	.00
09/20/98	.03	.00
09/21/98	.01	.02
09/22/98	.00	.16
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.06
09/26/98	.00	.00
09/27/98	.00	.01
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 7 | Rain Gauge

Address: 6TH ST. & 13TH ST. | RG-1, Roberto Clemente School

30" RCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	1.71	.00
09/02/98	1.74	.38
09/03/98	1.69	.00
09/04/98	1.66	.00
09/05/98	1.69	.00
09/06/98	1.65	.00
09/07/98	1.64	.09
09/08/98	1.88	.00
09/09/98	1.58	.00
09/10/98	1.59	.00
09/11/98	1.59	.00
09/12/98	1.66	.00
09/13/98	1.64	.00
09/14/98	1.57	.00
09/15/98	1.57	.00
09/16/98	1.59	.01
09/17/98	1.41	.00
09/18/98	1.40	.00
09/19/98	1.52	.00
09/20/98	1.51	.00
09/21/98	1.50	.02
09/22/98	1.51	.16
09/23/98	1.44	.00
09/24/98	1.44	.00
09/25/98	1.50	.06
09/26/98	1.47	.00
09/27/98	1.37	.01
09/28/98	1.24	.00
09/29/98	1.18	.00
09/30/98	1.15	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

24.25" VCP

Rain Gauge

RG-1, Roberto Clemente School

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
09/01/98	3.76	.00
09/02/98	3.81	.38
09/03/98	3.63	.00
09/04/98	3.77	.00
09/05/98	3.73	.00
09/06/98	3.74	.00
09/07/98	3.88	.09
09/08/98	4.55	.00
09/09/98	3.69	.00
09/10/98	3.66	.00
09/11/98	3.65	.00
09/12/98	3.91	.00
09/13/98	3.95	.00
09/14/98	3.69	.00
09/15/98	3.50	.00
09/16/98	3.44	.01
09/17/98	3.27	.00
09/18/98	3.35	.00
09/19/98	3.46	.00
09/20/98	3.52	.00
09/21/98	3.39	.02
09/22/98	3.39	.16
09/23/98	3.28	.00
09/24/98	3.19	.00
09/25/98	3.10	.06
09/26/98	3.32	.00
09/27/98	3.42	.01
09/28/98	3.22	.00
09/29/98	3.23	.00
09/30/98	3.08	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 1

Address: Elizabeth Ave. near Mapes Ave.

910 F.M. VERSION: 1.02

Serial#: QLL

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.24	.00
09/02/98	1.30	.32
09/03/98	1.14	.00
09/04/98	1.03	.00
09/05/98	1.05	.00
09/06/98	1.03	.00
09/07/98	1.26	1.10
09/08/98	1.42	1.05
09/09/98	1.07	.00
09/10/98	.96	.00
09/11/98	.92	.00
09/12/98	.91	.00
09/13/98	.97	.00
09/14/98	1.10	.00
09/15/98	1.33	.00
09/16/98	1.33	.00
09/17/98	1.30	.00
09/18/98	1.31	.00
09/19/98	1.39	.00
09/20/98	1.37	.00
09/21/98	1.33	.02
09/22/98	1.54	.19
09/23/98	1.47	.00
09/24/98	1.39	.00
09/25/98	1.35	.08
09/26/98	1.33	.00
09/27/98	1.40	.02
09/28/98	1.40	.00
09/29/98	1.44	.00
09/30/98	1.35	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 2 | 910 F.M. VERSION: 1.02

Address: Weequahic Park | Serial#: QUN

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.26	.00
09/02/98	.06	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.00	1.10
09/08/98	.02	1.05
09/09/98	.25	.00
09/10/98	.53	.00
09/11/98	.15	.00
09/12/98	.01	.00
09/13/98	.01	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 3 | 910 F.M. VERSION: 1.02

Address: Jabez Ave. near Backus St. | Serial#: QTZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	3.49	.00
09/02/98	3.96	.32
09/03/98	3.05	.00
09/04/98	3.16	.00
09/05/98	2.74	.00
09/06/98	2.90	.00
09/07/98	2.87	1.10
09/08/98	4.14	1.05
09/09/98	2.06	.00
09/10/98	2.31	.00
09/11/98	2.41	.00
09/12/98	2.44	.00
09/13/98	2.53	.00
09/14/98	2.63	.00
09/15/98	2.71	.00
09/16/98	2.77	.00
09/17/98	2.72	.00
09/18/98	2.67	.00
09/19/98	2.59	.00
09/20/98	2.76	.00
09/21/98	2.70	.02
09/22/98	2.84	.19
09/23/98	2.87	.00
09/24/98	2.87	.00
09/25/98	2.85	.08
09/26/98	2.75	.00
09/27/98	2.89	.02
09/28/98	2.61	.00
09/29/98	2.66	.00
09/30/98	2.79	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4 | 910 F.M. VERSION: 1.02

Address: Wilson and Ave. P | Serial#: QT1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98		.00
09/02/98		.32
09/03/98		.00
09/04/98		.00
09/05/98		.00
09/06/98		.00
09/07/98		1.10
09/08/98		1.05
09/09/98		.00
09/10/98		.00
09/11/98		.00
09/12/98		.00
09/13/98		.00
09/14/98		.00
09/15/98		.00
09/16/98		.00
09/17/98		.00
09/18/98		.00
09/19/98		.00
09/20/98		.00
09/21/98		.02
09/22/98		.19
09/23/98		.00
09/24/98		.00
09/25/98		.08
09/26/98		.00
09/27/98		.02
09/28/98		.00
09/29/98		.00
09/30/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 5

Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02

Serial#: QUO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.38	.00
09/02/98	.41	.32
09/03/98	.31	.00
09/04/98	.32	.00
09/05/98	.30	.00
09/06/98	.33	.00
09/07/98	.40	1.10
09/08/98	.59	1.05
09/09/98	.45	.00
09/10/98	.42	.00
09/11/98	.42	.00
09/12/98	.34	.00
09/13/98	.34	.00
09/14/98	.38	.00
09/15/98	.29	.00
09/16/98	.41	.00
09/17/98	.44	.00
09/18/98	.37	.00
09/19/98	.31	.00
09/20/98	.28	.00
09/21/98	.34	.02
09/22/98	.44	.19
09/23/98	.45	.00
09/24/98	.43	.00
09/25/98	.40	.08
09/26/98	.34	.00
09/27/98	.32	.02
09/28/98	.41	.00
09/29/98	.45	.00
09/30/98	.36	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 6 | 910 F.M. VERSION: 1.02

Address: Near 355 5th St. | Serial#: QU1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	3.64	.00
09/02/98	3.71	.32
09/03/98	3.52	.00
09/04/98	3.61	.00
09/05/98	3.57	.00
09/06/98	3.52	.00
09/07/98	3.90	1.10
09/08/98	4.79	1.05
09/09/98	3.59	.00
09/10/98	3.55	.00
09/11/98	3.54	.00
09/12/98	3.75	.00
09/13/98	3.82	.00
09/14/98	3.95	.00
09/15/98	4.15	.00
09/16/98	4.14	.00
09/17/98	3.92	.00
09/18/98	3.96	.00
09/19/98	4.08	.00
09/20/98	4.11	.00
09/21/98	3.93	.02
09/22/98	3.93	.19
09/23/98	3.84	.00
09/24/98	3.74	.00
09/25/98	3.71	.08
09/26/98	3.94	.00
09/27/98	3.98	.02
09/28/98	3.75	.00
09/29/98	3.85	.00
09/30/98	3.76	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 7 | 910 F.M. VERSION: 1.02

Address: Verona St. near Broadway | Serial#: QUK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.26	.00
09/02/98	.34	.32
09/03/98	.25	.00
09/04/98	.24	.00
09/05/98	.25	.00
09/06/98	.24	.00
09/07/98	.43	1.10
09/08/98	.46	1.05
09/09/98	.29	.00
09/10/98	.32	.00
09/11/98	.31	.00
09/12/98	.34	.00
09/13/98	.35	.00
09/14/98	.32	.00
09/15/98	.34	.00
09/16/98	.32	.00
09/17/98	.31	.00
09/18/98	.30	.00
09/19/98	.35	.00
09/20/98	.36	.00
09/21/98	.34	.02
09/22/98	.37	.19
09/23/98	.32	.00
09/24/98	.33	.00
09/25/98	.34	.08
09/26/98	.37	.00
09/27/98	.38	.02
09/28/98	.33	.00
09/29/98	.34	.00
09/30/98	.26	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 8 | 910 F.M. VERSION: 1.02

Address: Earl and Frelinghuysen | Serial#: QT3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.04	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.10	1.10
09/08/98	.28	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 9

910 F.M. VERSION: 1.02

Address: Branch Brook Park Lake Overflow

Serial#: QLF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.00	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.04	1.10
09/08/98	1.69	1.05
09/09/98	.44	.00
09/10/98	.14	.00
09/11/98	.05	.00
09/12/98	.03	.00
09/13/98	.01	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.01	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.04	.19
09/23/98	.02	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.01	.02
09/28/98	.01	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 10

910 F.M. VERSION: 1.02

Address: Weequahic Park Lake Overflow

Serial#: QUX

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	2.36	.00
09/02/98	2.42	.32
09/03/98	2.98	.00
09/04/98	2.79	.00
09/05/98	2.69	.00
09/06/98	2.52	.00
09/07/98	2.84	1.10
09/08/98	5.21	1.05
09/09/98	6.98	.00
09/10/98	4.98	.00
09/11/98	3.84	.00
09/12/98	3.42	.00
09/13/98	3.09	.00
09/14/98	2.99	.00
09/15/98	3.14	.00
09/16/98	3.38	.00
09/17/98	3.33	.00
09/18/98	3.22	.00
09/19/98	3.10	.00
09/20/98	2.84	.00
09/21/98	2.87	.02
09/22/98	2.61	.19
09/23/98	2.69	.00
09/24/98	2.63	.00
09/25/98	2.58	.08
09/26/98	2.68	.00
09/27/98	2.52	.02
09/28/98	2.54	.00
09/29/98	2.52	.00
09/30/98	2.57	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

910 F.M. VERSION: 1.02

Serial#: QQ7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.46	.00
09/02/98	.48	.32
09/03/98	.48	.00
09/04/98	.49	.00
09/05/98	.51	.00
09/06/98	.50	.00
09/07/98	.53	1.10
09/08/98	.62	1.05
09/09/98	.51	.00
09/10/98	.48	.00
09/11/98	.50	.00
09/12/98	.54	.00
09/13/98	.58	.00
09/14/98	.48	.00
09/15/98	.53	.00
09/16/98	.55	.00
09/17/98	.53	.00
09/18/98	.47	.00
09/19/98	.49	.00
09/20/98	.54	.00
09/21/98	.51	.02
09/22/98	.51	.19
09/23/98	.55	.00
09/24/98	.54	.00
09/25/98	.53	.08
09/26/98	.55	.00
09/27/98	.54	.02
09/28/98	.54	.00
09/29/98	.57	.00
09/30/98	.57	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 2 | 910 F.M. VERSION: 1.02

Address: Unity and Valley St. | Serial#: QQ2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.89	.00
09/02/98	.89	.32
09/03/98	.91	.00
09/04/98	.90	.00
09/05/98	.94	.00
09/06/98	.96	.00
09/07/98	1.03	1.10
09/08/98	1.27	1.05
09/09/98	.98	.00
09/10/98	.79	.00
09/11/98	.62	.00
09/12/98	.75	.00
09/13/98	.75	.00
09/14/98	.70	.00
09/15/98	.71	.00
09/16/98	.73	.00
09/17/98	.70	.00
09/18/98	.65	.00
09/19/98	.69	.00
09/20/98	.66	.00
09/21/98	.67	.02
09/22/98	.68	.19
09/23/98	.64	.00
09/24/98	.63	.00
09/25/98	.63	.08
09/26/98	.69	.00
09/27/98	.71	.02
09/28/98	.61	.00
09/29/98	.57	.00
09/30/98	.58	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 3

910 F.M. VERSION: 1.02

Address: Fabyan Pl. near Exit Ramp of I-78

Serial#: QRD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.41	.00
09/02/98	.41	.32
09/03/98	.30	.00
09/04/98	.36	.00
09/05/98	.39	.00
09/06/98	.36	.00
09/07/98	.56	1.10
09/08/98	.60	1.05
09/09/98	.41	.00
09/10/98	.39	.00
09/11/98	.38	.00
09/12/98	.40	.00
09/13/98	.41	.00
09/14/98	.41	.00
09/15/98	.43	.00
09/16/98	.43	.00
09/17/98	.44	.00
09/18/98	.39	.00
09/19/98	.47	.00
09/20/98	.49	.00
09/21/98	.44	.02
09/22/98	.48	.19
09/23/98	.44	.00
09/24/98	.44	.00
09/25/98	.42	.08
09/26/98	.48	.00
09/27/98	.56	.02
09/28/98	.48	.00
09/29/98	.45	.00
09/30/98	.44	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 4

910 F.M. VERSION: 1.02

Address: N. Lindon Ln between House # 63 and 65

Serial#: QUI

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.34	.00
09/02/98	1.41	.32
09/03/98	1.36	.00
09/04/98	1.39	.00
09/05/98	1.48	.00
09/06/98	1.46	.00
09/07/98	1.74	1.10
09/08/98	1.98	1.05
09/09/98	1.42	.00
09/10/98	1.44	.00
09/11/98	1.42	.00
09/12/98	1.50	.00
09/13/98	1.48	.00
09/14/98	1.37	.00
09/15/98	1.45	.00
09/16/98	1.49	.00
09/17/98	1.46	.00
09/18/98	1.43	.00
09/19/98	1.50	.00
09/20/98	1.52	.00
09/21/98	1.44	.02
09/22/98	1.46	.19
09/23/98	1.45	.00
09/24/98	1.47	.00
09/25/98	1.45	.08
09/26/98	1.52	.00
09/27/98	1.60	.02
09/28/98	1.50	.00
09/29/98	1.49	.00
09/30/98	1.49	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

920 F.M. VERSION: 1.02

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.10	.00
09/02/98	2.39	.32
09/03/98	.54	.00
09/04/98	.57	.00
09/05/98	.85	.00
09/06/98	.79	.00
09/07/98	3.50	1.10
09/08/98	3.09	1.05
09/09/98	1.33	.00
09/10/98	.75	.00
09/11/98	.51	.00
09/12/98	.76	.00
09/13/98	.95	.00
09/14/98	.65	.00
09/15/98	.86	.00
09/16/98	.70	.00
09/17/98	.80	.00
09/18/98	.96	.00
09/19/98	1.02	.00
09/20/98	.98	.00
09/21/98	.81	.02
09/22/98	.80	.19
09/23/98	.65	.00
09/24/98	.76	.00
09/25/98	.71	.08
09/26/98	.70	.00
09/27/98	1.06	.02
09/28/98	1.18	.00
09/29/98	.97	.00
09/30/98	.99	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

920 F.M. VERSION: 1.02

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.94	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	2.50	1.10
09/08/98	1.05	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent | 920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy | Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.91	.00
09/02/98	2.91	.32
09/03/98	1.98	.00
09/04/98	1.93	.00
09/05/98	1.98	.00
09/06/98	1.98	.00
09/07/98	4.54	1.10
09/08/98	5.34	1.05
09/09/98	1.24	.00
09/10/98	1.21	.00
09/11/98	1.09	.00
09/12/98	.92	.00
09/13/98	1.03	.00
09/14/98	1.11	.00
09/15/98	1.18	.00
09/16/98	1.01	.00
09/17/98	.86	.00
09/18/98	.81	.00
09/19/98	.86	.00
09/20/98	.89	.00
09/21/98	.84	.02
09/22/98	1.03	.19
09/23/98	.81	.00
09/24/98	.59	.00
09/25/98	.69	.08
09/26/98	.58	.00
09/27/98	.72	.02
09/28/98	.70	.00
09/29/98	.68	.00
09/30/98	.63	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.21	.32
09/03/98	-.02	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	1.51	1.10
09/08/98	1.15	1.05
09/09/98	.00	.00
09/10/98	.05	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.13	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.01	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.06	.00
09/02/98	.12	.32
09/03/98	.07	.00
09/04/98	.06	.00
09/05/98	.05	.00
09/06/98	.05	.00
09/07/98	.15	1.10
09/08/98	.07	1.05
09/09/98	.06	.00
09/10/98	.05	.00
09/11/98	.06	.00
09/12/98	.05	.00
09/13/98	.05	.00
09/14/98	.05	.00
09/15/98	.05	.00
09/16/98	.04	.00
09/17/98	.03	.00
09/18/98	.03	.00
09/19/98	.03	.00
09/20/98	.03	.00
09/21/98	.03	.02
09/22/98	.04	.19
09/23/98	.03	.00
09/24/98	.03	.00
09/25/98	.03	.08
09/26/98	.02	.00
09/27/98	.03	.02
09/28/98	.02	.00
09/29/98	.02	.00
09/30/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.71	.32
09/03/98	.01	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	2.35	1.10
09/08/98	2.20	1.05
09/09/98	.00	.00
09/10/98	.01	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.10	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Influent | 910 F.M. VERSION: 1.02

Address: Broadway and Second St. | Serial#: QUL

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.96	.00
09/02/98	1.28	.32
09/03/98	.95	.00
09/04/98	.95	.00
09/05/98	.95	.00
09/06/98	.97	.00
09/07/98	2.11	1.10
09/08/98	1.90	1.05
09/09/98	2.05	.00
09/10/98	.65	.00
09/11/98	.71	.00
09/12/98	.78	.00
09/13/98	.82	.00
09/14/98	.79	.00
09/15/98	.77	.00
09/16/98	.78	.00
09/17/98	2.24	.00
09/18/98	.91	.00
09/19/98	1.00	.00
09/20/98	1.04	.00
09/21/98	.97	.02
09/22/98	1.05	.19
09/23/98	.86	.00
09/24/98	.85	.00
09/25/98	.91	.08
09/26/98	.95	.00
09/27/98	1.03	.02
09/28/98	.94	.00
09/29/98	.98	.00
09/30/98	1.64	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Overflow | 910 F.M. VERSION: 1.02

Address: Broadway and Second St. | Serial#: QUJ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.04	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.25	1.10
09/08/98	.18	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.02	.32
09/03/98	.01	.00
09/04/98	.00	.00
09/05/98	.01	.00
09/06/98	.00	.00
09/07/98	.11	1.10
09/08/98	.08	1.05
09/09/98	.02	.00
09/10/98	.01	.00
09/11/98	.02	.00
09/12/98	.09	.00
09/13/98	.03	.00
09/14/98	.05	.00
09/15/98	.01	.00
09/16/98	.01	.00
09/17/98	.01	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.02	.19
09/23/98	.01	.00
09/24/98	.01	.00
09/25/98	.01	.08
09/26/98	.01	.00
09/27/98	.01	.02
09/28/98	.03	.00
09/29/98	.01	.00
09/30/98	.01	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE | 920 F.M. VERSION: 1.02

Address: Third Ave. and Passaic St. | Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.02	.00
09/02/98	.03	.32
09/03/98	.03	.00
09/04/98	.05	.00
09/05/98	.03	.00
09/06/98	.07	.00
09/07/98	.11	1.10
09/08/98	.09	1.05
09/09/98	.03	.00
09/10/98	.00	.00
09/11/98	.01	.00
09/12/98	.00	.00
09/13/98	.02	.00
09/14/98	.02	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.01	.00
09/19/98	.02	.00
09/20/98	.01	.00
09/21/98	.01	.02
09/22/98	.01	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE | 920 F.M. VERSION: 1.02

Address: Fourth Ave. and Passaic St. | Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.82	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	4.64	1.10
09/08/98	6.77	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.10	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.16	.00
09/02/98	1.54	.32
09/03/98	.60	.00
09/04/98	.76	.00
09/05/98	.60	.00
09/06/98	.62	.00
09/07/98	3.12	1.10
09/08/98	3.72	1.05
09/09/98	.86	.00
09/10/98	.46	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Influent | 910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St. | Serial#: QRG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.46	.00
09/02/98	.50	.32
09/03/98	.46	.00
09/04/98	.84	.00
09/05/98	.73	.00
09/06/98	.66	.00
09/07/98	.92	1.10
09/08/98	.88	1.05
09/09/98	.47	.00
09/10/98	.45	.00
09/11/98	.45	.00
09/12/98	.51	.00
09/13/98	.47	.00
09/14/98	.45	.00
09/15/98	.44	.00
09/16/98	.45	.00
09/17/98	.46	.00
09/18/98	.47	.00
09/19/98	.47	.00
09/20/98	.47	.00
09/21/98	.50	.02
09/22/98	.52	.19
09/23/98	.48	.00
09/24/98	.49	.00
09/25/98	.49	.08
09/26/98	.47	.00
09/27/98	.46	.02
09/28/98	.47	.00
09/29/98	.46	.00
09/30/98	.47	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Overflow | 910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St. | Serial#: QU3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.00	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.15	1.10
09/08/98	.18	1.05
09/09/98	.00	.00
09/10/98	-.01	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.08	.00
09/02/98	.10	.32
09/03/98	.14	.00
09/04/98	.13	.00
09/05/98	.14	.00
09/06/98	.12	.00
09/07/98	.25	1.10
09/08/98	.17	1.05
09/09/98	.08	.00
09/10/98	.04	.00
09/11/98	.04	.00
09/12/98	.04	.00
09/13/98	.04	.00
09/14/98	.04	.00
09/15/98	.04	.00
09/16/98	.04	.00
09/17/98	.03	.00
09/18/98	.03	.00
09/19/98	.03	.00
09/20/98	.03	.00
09/21/98	.03	.02
09/22/98	.03	.19
09/23/98	.04	.00
09/24/98	.04	.00
09/25/98	.05	.08
09/26/98	.05	.00
09/27/98	.05	.02
09/28/98	.04	.00
09/29/98	.04	.00
09/30/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST | 920 F.M. VERSION: 1.02

Address: Clay St. and McCarter Hwy | Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.00	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	-.05	1.10
09/08/98	-.09	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Influents

Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTR

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98		.00
09/02/98		.32
09/03/98		.00
09/04/98		.00
09/05/98		.00
09/06/98		.00
09/07/98		1.10
09/08/98		1.05
09/09/98		.00
09/10/98		.00
09/11/98		.00
09/12/98		.00
09/13/98		.00
09/14/98		.00
09/15/98		.00
09/16/98		.00
09/17/98		.00
09/18/98		.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow North Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QPS

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.50	.32
09/03/98	.01	.00
09/04/98	.02	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	5.66	1.10
09/08/98	10.47	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	-.08	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	1.12	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow South Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QT2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98		.00
09/02/98		.32
09/03/98		.00
09/04/98		.00
09/05/98		.00
09/06/98		.00
09/07/98		1.10
09/08/98		1.05
09/09/98		.00
09/10/98		.00
09/11/98		.00
09/12/98		.00
09/13/98		.00
09/14/98		.00
09/15/98		.00
09/16/98		.00
09/17/98		.00
09/18/98		.00
09/19/98		.00
09/20/98		.00
09/21/98		.02
09/22/98		.19
09/23/98		.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.05	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST Influent

Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02

Serial#: QRF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.07	.00
09/02/98	.09	.32
09/03/98	.06	.00
09/04/98	.04	.00
09/05/98	.02	.00
09/06/98	.02	.00
09/07/98	.17	1.10
09/08/98	.28	1.05
09/09/98	.09	.00
09/10/98	.09	.00
09/11/98	.09	.00
09/12/98	.08	.00
09/13/98	.08	.00
09/14/98	.07	.00
09/15/98	.07	.00
09/16/98	.07	.00
09/17/98	.07	.00
09/18/98	.07	.00
09/19/98	.07	.00
09/20/98	.07	.00
09/21/98	.07	.02
09/22/98	.08	.19
09/23/98	.07	.00
09/24/98	.07	.00
09/25/98	.07	.08
09/26/98	.07	.00
09/27/98	.07	.02
09/28/98	.06	.00
09/29/98	.06	.00
09/30/98	.06	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.08	.00
09/02/98	.10	.32
09/03/98	.09	.00
09/04/98	.09	.00
09/05/98	.09	.00
09/06/98	.10	.00
09/07/98	.17	1.10
09/08/98	.20	1.05
09/09/98	.08	.00
09/10/98	.09	.00
09/11/98	.09	.00
09/12/98	.10	.00
09/13/98	.13	.00
09/14/98	.10	.00
09/15/98	.10	.00
09/16/98	.10	.00
09/17/98	.09	.00
09/18/98	.08	.00
09/19/98	.08	.00
09/20/98	.09	.00
09/21/98	.09	.02
09/22/98	.08	.19
09/23/98	.07	.00
09/24/98	.06	.00
09/25/98	.06	.08
09/26/98	.05	.00
09/27/98	.05	.02
09/28/98	.05	.00
09/29/98	.05	.00
09/30/98	.06	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.00	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.01	1.10
09/08/98	.02	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.11	.00
09/02/98	.13	.32
09/03/98	.05	.00
09/04/98	.05	.00
09/05/98	.06	.00
09/06/98	.08	.00
09/07/98	.15	1.10
09/08/98	.16	1.05
09/09/98	.06	.00
09/10/98	.07	.00
09/11/98	.08	.00
09/12/98	.09	.00
09/13/98	.11	.00
09/14/98	.09	.00
09/15/98	.12	.00
09/16/98	.13	.00
09/17/98	.09	.00
09/18/98	.04	.00
09/19/98	.05	.00
09/20/98	.04	.00
09/21/98	.04	.02
09/22/98	.02	.19
09/23/98	.02	.00
09/24/98	.03	.00
09/25/98	.03	.08
09/26/98	.03	.00
09/27/98	.02	.02
09/28/98	.02	.00
09/29/98	.02	.00
09/30/98	.01	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.01	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.05	1.10
09/08/98	.07	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	2.36	.00
09/02/98	2.87	.32
09/03/98	2.04	.00
09/04/98	2.32	.00
09/05/98	2.41	.00
09/06/98	2.03	.00
09/07/98	4.40	1.10
09/08/98	5.39	1.05
09/09/98	1.70	.00
09/10/98	1.59	.00
09/11/98	.85	.00
09/12/98	2.42	.00
09/13/98	2.78	.00
09/14/98	2.31	.00
09/15/98	1.82	.00
09/16/98	2.33	.00
09/17/98	2.76	.00
09/18/98	2.17	.00
09/19/98	2.47	.00
09/20/98	2.60	.00
09/21/98	2.60	.02
09/22/98	3.76	.19
09/23/98	2.60	.00
09/24/98	2.39	.00
09/25/98	2.21	.08
09/26/98	2.24	.00
09/27/98	2.05	.02
09/28/98	1.75	.00
09/29/98	1.77	.00
09/30/98	1.96	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.00	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	-.19	1.10
09/08/98	-.33	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.01	.00
09/21/98	.01	.02
09/22/98	.01	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.29	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	2.50	1.10
09/08/98	3.61	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.23	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.70	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	4.43	1.10
09/08/98	6.32	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.26	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	3.53	.00
09/02/98	4.33	.32
09/03/98	5.30	.00
09/04/98	3.83	.00
09/05/98	3.20	.00
09/06/98	3.00	.00
09/07/98	5.34	1.10
09/08/98	5.63	1.05
09/09/98	2.80	.00
09/10/98	2.12	.00
09/11/98	2.35	.00
09/12/98	2.14	.00
09/13/98	2.31	.00
09/14/98	2.71	.00
09/15/98	2.94	.00
09/16/98	2.83	.00
09/17/98	3.26	.00
09/18/98	3.64	.00
09/19/98	3.06	.00
09/20/98	3.19	.00
09/21/98	3.59	.02
09/22/98	3.28	.19
09/23/98	2.80	.00
09/24/98	3.21	.00
09/25/98	3.40	.08
09/26/98	3.08	.00
09/27/98	3.40	.02
09/28/98	3.43	.00
09/29/98	3.51	.00
09/30/98	3.59	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent1

Address: Raymond Plaza near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QQT

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.02	.00
09/02/98	.03	.32
09/03/98	.02	.00
09/04/98	.02	.00
09/05/98	.01	.00
09/06/98	.01	.00
09/07/98	.03	1.10
09/08/98	.10	1.05
09/09/98	.02	.00
09/10/98	.02	.00
09/11/98	.02	.00
09/12/98	.01	.00
09/13/98	.01	.00
09/14/98	.03	.00
09/15/98	.03	.00
09/16/98	.03	.00
09/17/98	.04	.00
09/18/98	.04	.00
09/19/98	.02	.00
09/20/98	.02	.00
09/21/98	.04	.02
09/22/98	.05	.19
09/23/98	.03	.00
09/24/98	.04	.00
09/25/98	.04	.08
09/26/98	.02	.00
09/27/98	.02	.02
09/28/98	.03	.00
09/29/98	.03	.00
09/30/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QU2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.06	.00
09/02/98	.14	.32
09/03/98	.07	.00
09/04/98	.07	.00
09/05/98	.05	.00
09/06/98	.04	.00
09/07/98	.12	1.10
09/08/98	.43	1.05
09/09/98	.11	.00
09/10/98	.09	.00
09/11/98	.08	.00
09/12/98	.05	.00
09/13/98	.04	.00
09/14/98	.07	.00
09/15/98	.06	.00
09/16/98	.07	.00
09/17/98	.06	.00
09/18/98	.02	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.09	.19
09/23/98	.06	.00
09/24/98	.07	.00
09/25/98	.07	.08
09/26/98	.04	.00
09/27/98	.03	.02
09/28/98	.06	.00
09/29/98	.06	.00
09/30/98	.05	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent3

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.04	.00
09/02/98	.08	.32
09/03/98	.05	.00
09/04/98	.06	.00
09/05/98	.05	.00
09/06/98	.05	.00
09/07/98	.20	1.10
09/08/98	.36	1.05
09/09/98	.04	.00
09/10/98	.06	.00
09/11/98	.06	.00
09/12/98	.02	.00
09/13/98	.03	.00
09/14/98	.05	.00
09/15/98	.06	.00
09/16/98	.05	.00
09/17/98	.03	.00
09/18/98	.03	.00
09/19/98	.01	.00
09/20/98	.01	.00
09/21/98	.02	.02
09/22/98	.05	.19
09/23/98	.03	.00
09/24/98	.03	.00
09/25/98	.03	.08
09/26/98	.01	.00
09/27/98	.00	.02
09/28/98	.02	.00
09/29/98	.02	.00
09/30/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent4

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	3.23	.00
09/02/98	4.68	.32
09/03/98	2.92	.00
09/04/98	3.43	.00
09/05/98	2.97	.00
09/06/98	2.94	.00
09/07/98	5.41	1.10
09/08/98	2.42	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.81	.00
09/24/98	2.61	.00
09/25/98	2.77	.08
09/26/98	2.48	.00
09/27/98	2.40	.02
09/28/98	2.64	.00
09/29/98	2.60	.00
09/30/98	2.66	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QLK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	12.51	.32
09/03/98	14.86	.00
09/04/98	.00	.00
09/05/98	-.03	.00
09/06/98	-.01	.00
09/07/98	4.62	1.10
09/08/98	-.40	1.05
09/09/98	-.01	.00
09/10/98	-.01	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.01	.00
09/14/98	.01	.00
09/15/98	-.01	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.14	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.62	.00
09/02/98	.97	.32
09/03/98	.69	.00
09/04/98	.66	.00
09/05/98	.72	.00
09/06/98	.68	.00
09/07/98	1.79	1.10
09/08/98	2.72	1.05
09/09/98	.83	.00
09/10/98	.83	.00
09/11/98	.82	.00
09/12/98	.86	.00
09/13/98	.85	.00
09/14/98	.77	.00
09/15/98	.77	.00
09/16/98	.74	.00
09/17/98	.71	.00
09/18/98	.81	.00
09/19/98	.93	.00
09/20/98	.88	.00
09/21/98	.87	.02
09/22/98	.78	.19
09/23/98	.69	.00
09/24/98	.61	.00
09/25/98	.80	.08
09/26/98	.77	.00
09/27/98	.83	.02
09/28/98	.68	.00
09/29/98	.68	.00
09/30/98	.70	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.01	.00
09/02/98	.02	.32
09/03/98	.02	.00
09/04/98	.03	.00
09/05/98	.03	.00
09/06/98	.02	.00
09/07/98	.02	1.10
09/08/98	.04	1.05
09/09/98	.01	.00
09/10/98	.01	.00
09/11/98	.01	.00
09/12/98	.01	.00
09/13/98	.01	.00
09/14/98	.02	.00
09/15/98	.02	.00
09/16/98	.03	.00
09/17/98	.04	.00
09/18/98	.03	.00
09/19/98	.02	.00
09/20/98	.02	.00
09/21/98	.03	.02
09/22/98	.02	.19
09/23/98	.02	.00
09/24/98	.01	.00
09/25/98	.01	.08
09/26/98	.01	.00
09/27/98	.01	.02
09/28/98	.02	.00
09/29/98	.04	.00
09/30/98	.05	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.71	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	-.70	1.10
09/08/98	3.93	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.05	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.01	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.35	.00
09/02/98	1.73	.32
09/03/98	1.16	.00
09/04/98	1.06	.00
09/05/98	1.14	.00
09/06/98	1.01	.00
09/07/98	4.03	1.10
09/08/98	7.25	1.05
09/09/98	1.21	.00
09/10/98	1.18	.00
09/11/98	1.18	.00
09/12/98	1.23	.00
09/13/98	1.19	.00
09/14/98	1.14	.00
09/15/98	1.17	.00
09/16/98	1.14	.00
09/17/98	1.11	.00
09/18/98	1.21	.00
09/19/98	1.28	.00
09/20/98	1.18	.00
09/21/98	1.05	.02
09/22/98	1.26	.19
09/23/98	1.14	.00
09/24/98	1.08	.00
09/25/98	1.24	.08
09/26/98	1.28	.00
09/27/98	1.28	.02
09/28/98	1.17	.00
09/29/98	1.13	.00
09/30/98	1.15	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.01	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.02	1.10
09/08/98	.05	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.01	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.69	.00
09/02/98	.99	.32
09/03/98	1.02	.00
09/04/98	1.50	.00
09/05/98	1.71	.00
09/06/98	1.46	.00
09/07/98	3.08	1.10
09/08/98	3.92	1.05
09/09/98	2.35	.00
09/10/98	2.47	.00
09/11/98	2.67	.00
09/12/98	2.87	.00
09/13/98	4.40	.00
09/14/98	5.20	.00
09/15/98	5.68	.00
09/16/98	6.17	.00
09/17/98	5.65	.00
09/18/98	1.25	.00
09/19/98	.42	.00
09/20/98	.40	.00
09/21/98	.36	.02
09/22/98	.80	.19
09/23/98	.36	.00
09/24/98	.34	.00
09/25/98	.38	.08
09/26/98	.42	.00
09/27/98	.43	.02
09/28/98	.39	.00
09/29/98	.41	.00
09/30/98	.41	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.47	.00
09/02/98	.43	.32
09/03/98	.14	.00
09/04/98	.14	.00
09/05/98	.15	.00
09/06/98	.16	.00
09/07/98	.32	1.10
09/08/98	.43	1.05
09/09/98	.17	.00
09/10/98	.19	.00
09/11/98	.17	.00
09/12/98	.17	.00
09/13/98	.17	.00
09/14/98	.18	.00
09/15/98	.18	.00
09/16/98	.18	.00
09/17/98	.15	.00
09/18/98	.16	.00
09/19/98	.16	.00
09/20/98	.16	.00
09/21/98	.17	.02
09/22/98	.13	.19
09/23/98	.14	.00
09/24/98	.13	.00
09/25/98	.14	.08
09/26/98	.14	.00
09/27/98	.14	.02
09/28/98	.15	.00
09/29/98	.15	.00
09/30/98	.15	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.07	.00
09/02/98	.08	.32
09/03/98	.03	.00
09/04/98	.03	.00
09/05/98	.03	.00
09/06/98	.03	.00
09/07/98	.15	1.10
09/08/98	.17	1.05
09/09/98	.02	.00
09/10/98	.01	.00
09/11/98	.01	.00
09/12/98	.01	.00
09/13/98	.02	.00
09/14/98	.02	.00
09/15/98	.01	.00
09/16/98	.01	.00
09/17/98	.01	.00
09/18/98	.01	.00
09/19/98	.01	.00
09/20/98	.02	.00
09/21/98	.01	.02
09/22/98	.04	.19
09/23/98	.01	.00
09/24/98	.01	.00
09/25/98	.01	.08
09/26/98	.01	.00
09/27/98	.02	.02
09/28/98	.01	.00
09/29/98	.01	.00
09/30/98	.01	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.71	.32
09/03/98	-.03	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	1.78	1.10
09/08/98	2.78	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.05	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.24	.00
09/02/98	.54	.32
09/03/98	.22	.00
09/04/98	.18	.00
09/05/98	-.01	.00
09/06/98	.14	.00
09/07/98	1.27	1.10
09/08/98	3.60	1.05
09/09/98	.35	.00
09/10/98	.25	.00
09/11/98	.20	.00
09/12/98	.14	.00
09/13/98	.09	.00
09/14/98	.14	.00
09/15/98	.07	.00
09/16/98	.13	.00
09/17/98	.10	.00
09/18/98	.04	.00
09/19/98	.01	.00
09/20/98	.01	.00
09/21/98	.03	.02
09/22/98	.22	.19
09/23/98	.07	.00
09/24/98	.04	.00
09/25/98	.08	.08
09/26/98	.04	.00
09/27/98	.03	.02
09/28/98	.09	.00
09/29/98	.09	.00
09/30/98	.11	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.04	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.43	1.10
09/08/98	1.34	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST | 920 F.M. VERSION: 1.02

Address: South St. near Dawson St. | Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	2.11	.00
09/02/98	2.51	.32
09/03/98	1.29	.00
09/04/98	1.84	.00
09/05/98	1.82	.00
09/06/98	1.55	.00
09/07/98	2.83	1.10
09/08/98	3.29	1.05
09/09/98	1.52	.00
09/10/98	1.86	.00
09/11/98	1.95	.00
09/12/98	1.94	.00
09/13/98	1.84	.00
09/14/98	1.88	.00
09/15/98	1.83	.00
09/16/98	1.85	.00
09/17/98	1.87	.00
09/18/98	1.97	.00
09/19/98	1.87	.00
09/20/98	1.73	.00
09/21/98	1.84	.02
09/22/98	1.16	.19
09/23/98	1.63	.00
09/24/98	1.63	.00
09/25/98	1.70	.08
09/26/98	1.70	.00
09/27/98	1.68	.02
09/28/98	1.73	.00
09/29/98	1.79	.00
09/30/98	1.73	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST | 920 F.M. VERSION: 1.02

Address: South St. near Dawson St. | Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.02	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.03	1.10
09/08/98	-.21	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023b - ADAMS ST. influent | 910 F.M. VERSION: 1.02

Address: South St. and Jefferson St. | Serial#: QO4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.54	.00
09/02/98	.74	.32
09/03/98	.49	.00
09/04/98	.49	.00
09/05/98	.52	.00
09/06/98	.48	.00
09/07/98	1.64	1.10
09/08/98	1.26	1.05
09/09/98	.58	.00
09/10/98	.57	.00
09/11/98	.52	.00
09/12/98	.58	.00
09/13/98	.56	.00
09/14/98	.52	.00
09/15/98	.54	.00
09/16/98	1.00	.00
09/17/98	.57	.00
09/18/98	.53	.00
09/19/98	.52	.00
09/20/98	.49	.00
09/21/98	.50	.02
09/22/98	.63	.19
09/23/98	.43	.00
09/24/98	.18	.00
09/25/98	.00	.08
09/26/98	.39	.00
09/27/98	.48	.02
09/28/98	.43	.00
09/29/98	.41	.00
09/30/98	.41	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

910 F.M. VERSION: 1.02

Serial#: QPP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	-.47	.32
09/03/98	-.06	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	-.01	.00
09/07/98	-.84	1.10
09/08/98	-2.74	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	-.13	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	-.01	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 Peddie St regulated | 910 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QO7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	8.81	.00
09/02/98	10.49	.32
09/03/98	8.71	.00
09/04/98	8.80	.00
09/05/98	8.51	.00
09/06/98	8.77	.00
09/07/98	14.99	1.10
09/08/98	16.74	1.05
09/09/98	10.48	.00
09/10/98	9.84	.00
09/11/98	9.97	.00
09/12/98	9.77	.00
09/13/98	9.46	.00
09/14/98	9.96	.00
09/15/98	9.90	.00
09/16/98	9.85	.00
09/17/98	9.35	.00
09/18/98	8.95	.00
09/19/98	9.46	.00
09/20/98	9.41	.00
09/21/98	9.24	.02
09/22/98	11.43	.19
09/23/98	8.96	.00
09/24/98	9.74	.00
09/25/98	11.02	.08
09/26/98	10.67	.00
09/27/98	9.59	.02
09/28/98	9.31	.00
09/29/98	9.28	.00
09/30/98	8.80	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated | 920 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	13.71	.00
09/02/98	15.18	.32
09/03/98	11.03	.00
09/04/98	9.81	.00
09/05/98	10.49	.00
09/06/98	10.40	.00
09/07/98	18.11	1.10
09/08/98	25.91	1.05
09/09/98	11.36	.00
09/10/98	11.59	.00
09/11/98	12.15	.00
09/12/98	12.38	.00
09/13/98	12.45	.00
09/14/98	12.51	.00
09/15/98	12.05	.00
09/16/98	12.47	.00
09/17/98	12.55	.00
09/18/98	12.56	.00
09/19/98	12.66	.00
09/20/98	13.19	.00
09/21/98	13.14	.02
09/22/98	12.67	.19
09/23/98	10.40	.00
09/24/98	10.11	.00
09/25/98	9.98	.08
09/26/98	9.78	.00
09/27/98	11.29	.02
09/28/98	11.44	.00
09/29/98	10.11	.00
09/30/98	9.76	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated | 920 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.40	.00
09/02/98	2.95	.32
09/03/98	2.71	.00
09/04/98	2.01	.00
09/05/98	2.03	.00
09/06/98	2.28	.00
09/07/98	5.79	1.10
09/08/98	15.15	1.05
09/09/98	3.38	.00
09/10/98	1.79	.00
09/11/98	1.78	.00
09/12/98	1.72	.00
09/13/98	1.85	.00
09/14/98	1.94	.00
09/15/98	1.83	.00
09/16/98	1.93	.00
09/17/98	1.94	.00
09/18/98	1.62	.00
09/19/98	1.71	.00
09/20/98	1.92	.00
09/21/98	1.88	.02
09/22/98	2.07	.19
09/23/98	1.65	.00
09/24/98	1.58	.00
09/25/98	1.38	.08
09/26/98	1.48	.00
09/27/98	1.63	.02
09/28/98	1.68	.00
09/29/98	1.54	.00
09/30/98	1.34	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN regulated | 910 F.M. VERSION: 1.02

Address: Queen Ditch | Serial#: QQV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	3.29	.00
09/02/98	4.92	.32
09/03/98	2.76	.00
09/04/98	2.75	.00
09/05/98	3.03	.00
09/06/98	3.32	.00
09/07/98	7.61	1.10
09/08/98	20.98	1.05
09/09/98	5.28	.00
09/10/98	4.89	.00
09/11/98	4.32	.00
09/12/98	4.31	.00
09/13/98	4.17	.00
09/14/98	3.98	.00
09/15/98	3.72	.00
09/16/98	3.90	.00
09/17/98	4.03	.00
09/18/98	3.46	.00
09/19/98	3.33	.00
09/20/98	3.26	.00
09/21/98	3.19	.02
09/22/98	3.51	.19
09/23/98	3.44	.00
09/24/98	3.42	.00
09/25/98	3.32	.08
09/26/98	2.96	.00
09/27/98	3.32	.02
09/28/98	3.34	.00
09/29/98	3.20	.00
09/30/98	3.30	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN unregulated | 910 F.M. VERSION: 1.02

Address: Queen Ditch | Serial#: QQU

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	6.43	.00
09/02/98	7.14	.32
09/03/98	5.78	.00
09/04/98	6.50	.00
09/05/98	6.11	.00
09/06/98	6.10	.00
09/07/98	8.26	1.10
09/08/98	12.16	1.05
09/09/98	9.04	.00
09/10/98	8.03	.00
09/11/98	7.28	.00
09/12/98	7.69	.00
09/13/98	8.03	.00
09/14/98	7.98	.00
09/15/98	7.93	.00
09/16/98	7.79	.00
09/17/98	6.99	.00
09/18/98	6.29	.00
09/19/98	6.03	.00
09/20/98	6.01	.00
09/21/98	5.88	.02
09/22/98	6.20	.19
09/23/98	5.76	.00
09/24/98	5.72	.00
09/25/98	5.60	.08
09/26/98	5.37	.00
09/27/98	5.36	.02
09/28/98	5.34	.00
09/29/98	5.27	.00
09/30/98	5.26	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY | 920 F.M. VERSION: 1.02

Address: Anheuser-Busch | Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.74	.00
09/02/98	2.34	.32
09/03/98	1.72	.00
09/04/98	1.43	.00
09/05/98	1.17	.00
09/06/98	1.22	.00
09/07/98	3.10	1.10
09/08/98	6.38	1.05
09/09/98	1.96	.00
09/10/98	1.93	.00
09/11/98	1.78	.00
09/12/98	1.36	.00
09/13/98	1.34	.00
09/14/98	1.80	.00
09/15/98	1.73	.00
09/16/98	1.60	.00
09/17/98	1.73	.00
09/18/98	1.64	.00
09/19/98	1.24	.00
09/20/98	1.28	.00
09/21/98	1.79	.02
09/22/98	2.02	.19
09/23/98	1.62	.00
09/24/98	1.76	.00
09/25/98	1.52	.08
09/26/98	1.25	.00
09/27/98	1.27	.02
09/28/98	1.83	.00
09/29/98	1.83	.00
09/30/98	1.96	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY | 920 F.M. VERSION: 1.02

Address: Anheuser-Busch | Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.21	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	.12	1.10
09/08/98	3.34	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.00	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

930 F.M. VERSION: 1.02

Address: Emmet St. and McCarter Hwy

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	1.33	.00
09/02/98	1.58	.32
09/03/98	1.33	.00
09/04/98	1.27	.00
09/05/98	1.18	.00
09/06/98	1.36	.00
09/07/98	2.31	1.10
09/08/98	3.41	1.05
09/09/98	1.34	.00
09/10/98	1.26	.00
09/11/98	1.34	.00
09/12/98	1.35	.00
09/13/98	1.32	.00
09/14/98	1.31	.00
09/15/98	1.26	.00
09/16/98	1.32	.00
09/17/98	1.30	.00
09/18/98	1.27	.00
09/19/98	1.23	.00
09/20/98	1.20	.00
09/21/98	1.18	.02
09/22/98	1.23	.19
09/23/98	1.16	.00
09/24/98	1.18	.00
09/25/98	1.24	.08
09/26/98	1.23	.00
09/27/98	1.41	.02
09/28/98	1.24	.00
09/29/98	1.29	.00
09/30/98	1.27	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

930 F.M. VERSION: 1.02

Address: Emmet St. and McCarter Hwy

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.07	.00
09/02/98	.24	.32
09/03/98	.26	.00
09/04/98	.30	.00
09/05/98	.25	.00
09/06/98	.25	.00
09/07/98	.36	1.10
09/08/98	.26	1.05
09/09/98	.10	.00
09/10/98	.17	.00
09/11/98	.13	.00
09/12/98	.13	.00
09/13/98	.11	.00
09/14/98	.02	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.14	.00
09/18/98	.25	.00
09/19/98	.28	.00
09/20/98	.32	.00
09/21/98	.24	.02
09/22/98	.30	.19
09/23/98	.21	.00
09/24/98	.18	.00
09/25/98	.23	.08
09/26/98	.21	.00
09/27/98	.24	.02
09/28/98	.16	.00
09/29/98	.08	.00
09/30/98	.17	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A | 930 F.M. VERSION: 1.02

Address: Emmet St. and McCarter Hwy | Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
09/01/98	.00	.00
09/02/98	.64	.32
09/03/98	.00	.00
09/04/98	.00	.00
09/05/98	.00	.00
09/06/98	.00	.00
09/07/98	2.39	1.10
09/08/98	4.56	1.05
09/09/98	.00	.00
09/10/98	.00	.00
09/11/98	.00	.00
09/12/98	.00	.00
09/13/98	.00	.00
09/14/98	.00	.00
09/15/98	.00	.00
09/16/98	.00	.00
09/17/98	.00	.00
09/18/98	.00	.00
09/19/98	.00	.00
09/20/98	.00	.00
09/21/98	.00	.02
09/22/98	.15	.19
09/23/98	.00	.00
09/24/98	.00	.00
09/25/98	.00	.08
09/26/98	.00	.00
09/27/98	.00	.02
09/28/98	.00	.00
09/29/98	.00	.00
09/30/98	.00	.00

URS Greiner Woodward Clyde
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December 18, 1998

Mr. Sanjeev Varghese, Project Manager
City of Newark Department of Engineering
Water/Sewer Utility
1294 McBride Avenue
Little Falls, New Jersey 07424

Subject: City of Newark CSO Discharge Characterization Study
Task 5.0 - CSO Monitoring
Flow Monitoring and Rainfall Data, October 1998; November 1998

Dear Mr. Varghese:

Attached for your information is our flow metering data for October 1998 and November 1998. Average daily precipitation quantities are also provided in the summary tables for daily flows.

We are continuing profiling the PVSC Interceptor flow meters; therefore we have not included data for these locations.

Please call me if you have any questions.

Very truly yours,
URS Greiner, Inc.

Michael F. Lorenzo, P.E.
Project Manager

MFL:mfl
Attachments

cc:
URS Greiner: Moutal, Murray
Newark: Sherban

Newark CSO Discharge Characterization Study

October Flow Metering Report

American Sigma flow meters have been installed at 24 CSO locations, 8 incoming sewer lines from East Orange, 4 outgoing sewer lines to surrounding municipalities, 10 internal Newark sewer lines and 4 points of flow on PVSC/Newark Interceptors. The flow meters use Doppler technology and are equipped with one, two or three probes. Each probe is capable of measuring the level and velocity in a single conduit. The level and velocity measurements are then used to calculate the flow rate in each conduit.

At CSO locations, levels and velocities are measured in each sewer line influent to the regulator chamber and at *either* the overflow to the receiving water *or* downstream of the regulator chamber in the sewer line carrying flow to the interceptor. Therefore many CSO locations required the installation of more than one meter with multiple probes.

Each graph/table in this Monthly Flow Metering Report represents the average daily flow rate(s) calculated by a single flow meter probe. The flow rates presented in this report are considered "raw" data, that is it has not yet been adjusted for transient field conditions such as electronic drift, nor has each 10 minute-interval reading been scrutinized. Therefore, because the daily average flow is an average of 144 flow rates calculated using level and velocity readings, a few errant level or velocity readings taken over a 10 to 30 minute period could significantly offset the daily average. These errant readings could be due to debris which has momentarily become entangled in the probe, but clears itself before the field crews arrive for the next routine maintenance visit. The flow data however, will be scrutinized as needed and adjustments will be made during the modeling phase of the project.

The size and type of each flow conduit is listed in the attached Flow Meter Report Key and corresponds to the appropriate flow channel (i.e., Flow1, Flow2 or Flow2) identified in each graph in the lower right-hand corner.

Total daily rainfall is also included in the graphs/tables. This rainfall is the average of four of the five rain gauges located throughout the City. The fifth rain gauge, RG-5, located on the roof of the Lehigh and Bergen Fire Station has been temporarily removed during renovations to the building. The rain gauge will be reinstalled upon completion of construction activities.

Special Notes:

Graphs/tables for flow meters installed on the interceptors are not yet available. This equipment is being fine tuned and flow data will be forthcoming.

Newark CSO Discharge Characterization Study

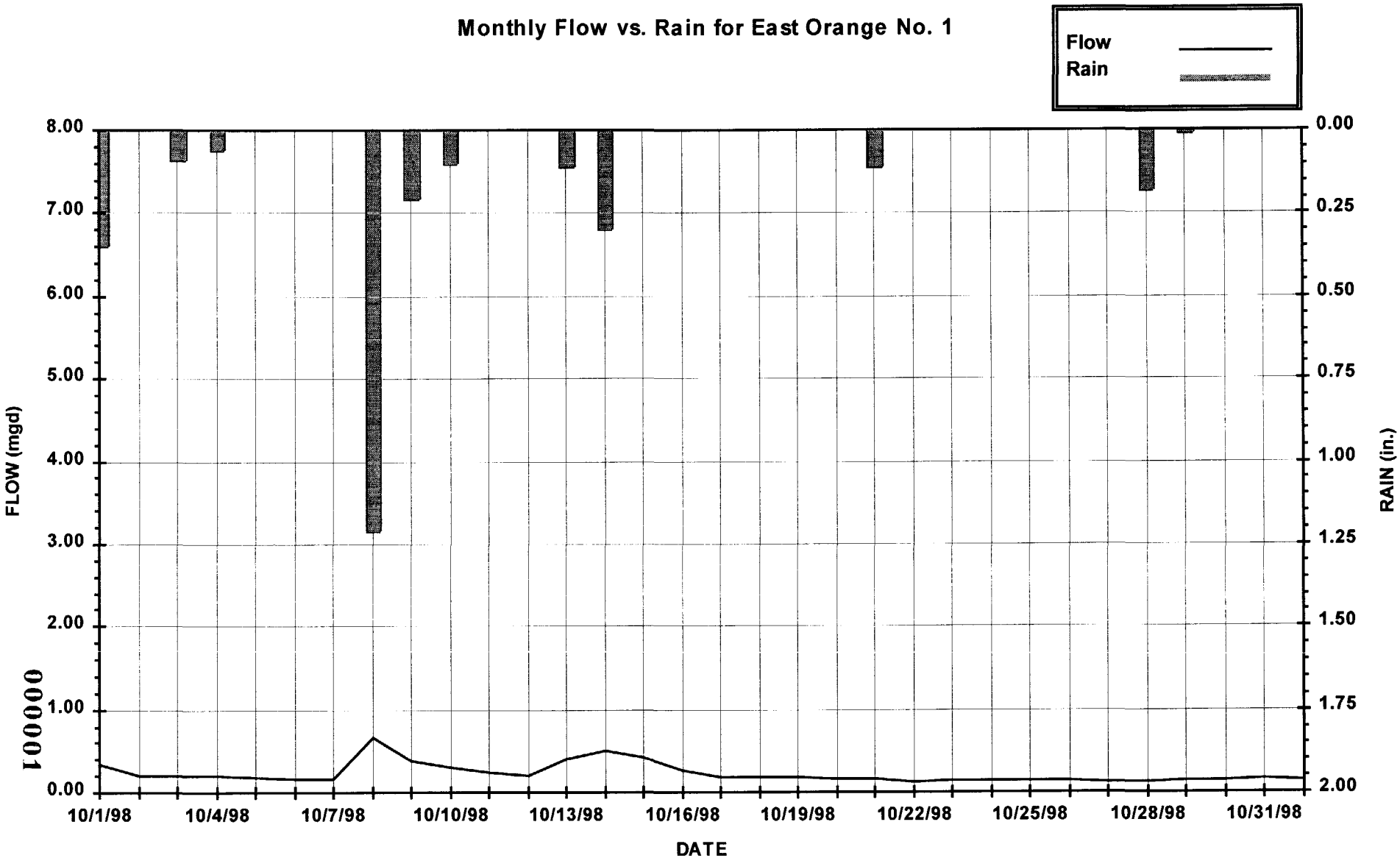
Flow Meter Report Key

Region/Location	*Meter Serial Number*	*Flow1*	*Flow2*	*Flow3*
CSO 002 - Verona Ave	QR8	54.75" Influent	72"W x 58.75"H Overflow	
CSO 004/005 - Herbert Pl. - Influent	QTQ	48" Influent	24" Influent	
CSO 004/005 - Herbert Pl. - Overflows	QTP	51" Overflow	48.5"H x 72.4"W Overflow	
CSO 006 - Oriental Ave Influent	QUL	48" Influent		
CSO 006 - Orentlal Ave Overflow	QUJ	54" Overflow		
CSO 007 - Third Ave	QR6	15" Influent	48"W Overflow Weir	
CSO 008 - Fourth Ave	QQD		72"W x 53"H Overflow	45"H x 25.75"W Influent
CSO 009B - Clay St Influent	QRG	18" Influent		
CSO 009B - Clay St Overflow	QU3	18" Overflow		
CSO 009C - Clay St	QRW	15.2" Influent	15.1" Overflow	
CSO 010 - Clay St Influents	QTR	To Be Profiled	To be Profiled	
CSO 010 - Clay St Overflow North Pipe	QPS		100"W x75.3"H Overflow	
CSO 010 - Clay St Overflow South Pipe	QUM		100"W x75.3"H Overflow	
CSO 011 - Orange St Influent	QRF	15" Influent		
CSO 011 - Orange St influent and overflow	QRZ	18" Influent	22.5" Overflow	
CSO 012 - Bridge St	QR7	15" Influent	48"W Overflow Weir	
CSO 013 - Rector St	QUY	62" Influent	45"W x 54"H Influent	79.5"W x 66.5"H Overflow
CSO 014 - Saybrook Pl Influent and Overflow	QRV		102.5"W x 83"H Overflow	75.75"H x74"W Influent
CSO 015 - City Dock Influent1	QQT	12" Influent		
CSO 015 - City Dock Influent2	QU2	18" Influent		
CSO 015 - City Dock Influent3	QPV	36" Influent		
CSO 015 - City Dock Influent4	QPQ		108"W x 88"H Influent (Siphon)	
CSO 015 - City Dock Overflow	QLK		87"H x 108"W Overflow	
CSO 016 - Jackson St	QTO	56.5" Influent	12" Influent	72"W Overflow Weir
CSO 017 - Polk St	QUG	85" Influent	97" Overflow Weir	
CSO 018 - Freeman St Influent	QUF	28.5" Influent	18.25" Influent	
CSO 018 - Freeman St Influent&Overflow	QU0	24.2" Influent	44"W Overflow Weir	
CSO 022 - Roanoke Ave	QUZ	60" Influent	60" Overflow	
CSO 023a - Adams St	QR4		88"W x 12"H Overflow	64"H x 51.5"W Influent
CSO 023b - Adams St Influent	QO4	48" Influent		
CSO 023b - Adams St overflow	QPP	42" Overflow		
CSO 025 - Peddie St unregulated	QUE	192"W x 80"H Influent	191"W x 85"H Influent	
CSO 025 - Peddie St regulated	QO7	48"H x 48"W Regulated Flow		
CSO 026 - Queen unregulated	QQU	102.5"W x 61"H Influent		
CSO 026 - Queen regulated	QQV	47.3"H x 48.2"W Regulated Flow		
CSO 027 - Waverly	QRY	96" Influent	96" Overflow	
CSO 030 - Wheeler/Ave A	QUD	56" Influent	66" Influent	51.75"H x 11.6"H Overflow
East Orange No. 1	QRH		49.25"H x 32.75"W	
East Orange No. 2	QRM		48.8"H x 33.4"W	
East Orange No. 3	QQZ	33"		
East Orange No. 4	QRC	12"		
East Orange No. 5/6	QR1	33"	18.75"	
East Orange No. 7	QPT	30"		
East Orange No. 8	QO1	24.25"		
Outgoing No. 1	QQ7	12"		
Outgoing No. 2	QQ2	20"		
Outgoing No. 3	QRD	15"		
Outgoing No. 4	QUI	18.25"		
Newark No. 1	QLL	36"		
Newark No. 2	QUN	18.25"		
Newark No. 3	QTZ	47.1"		
Newark No. 4	QT1	45"W x 48"H		
Newark No. 5	QUO	21.1"		
Newark No. 6	QU1	24.5"		
Newark No. 7	QUK	24.4"		
Newark No. 8	QT3	18"		
Newark No. 9	QLF	102"W x 24"H		
Newark No. 10	QUX	2 - 20.5"		

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 1



863690534

000001

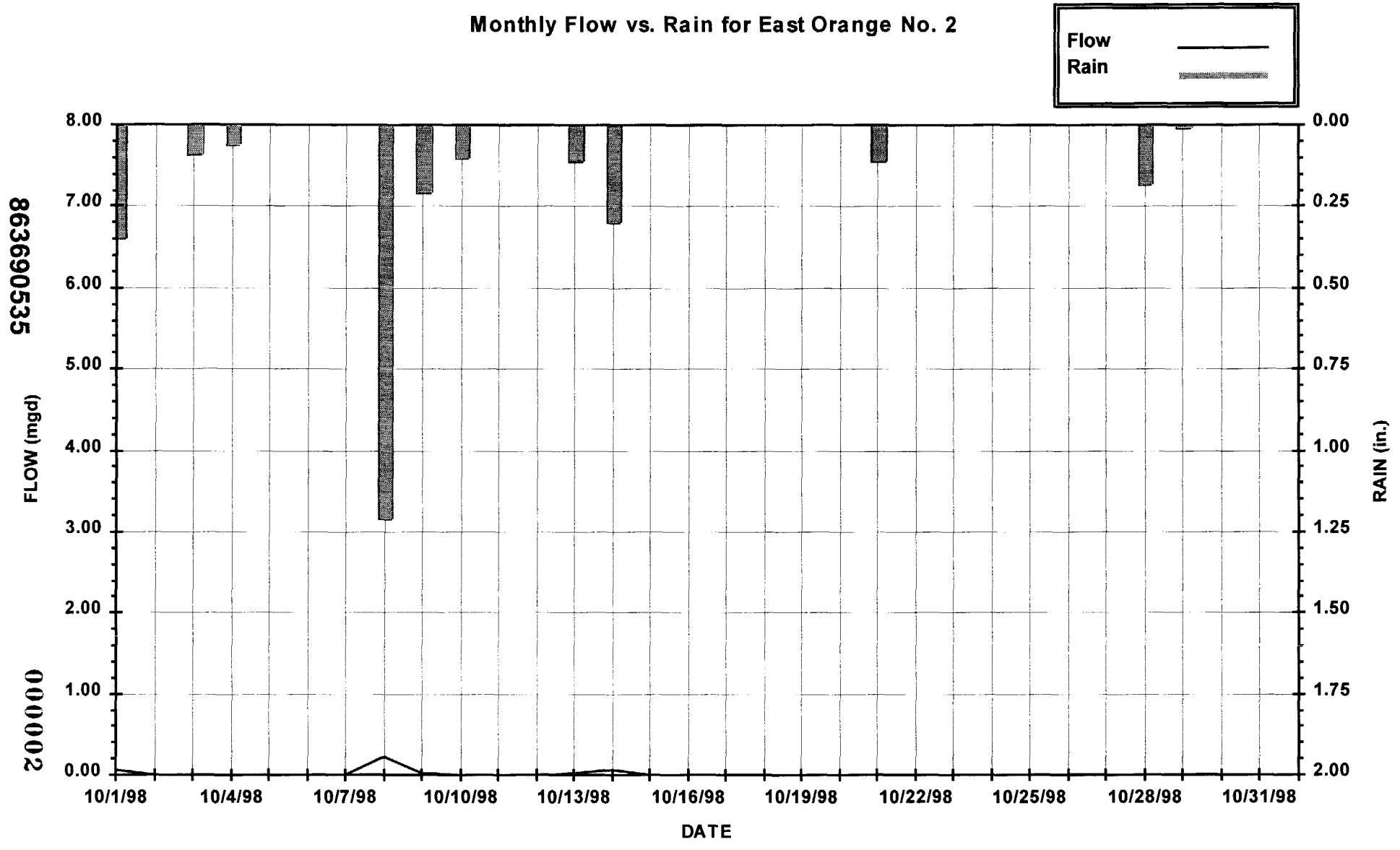
EAST ORANGE NO. 1
Address: Central Ave. and 15th St.
49.25" H x 32.75"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 2



863690535

000002

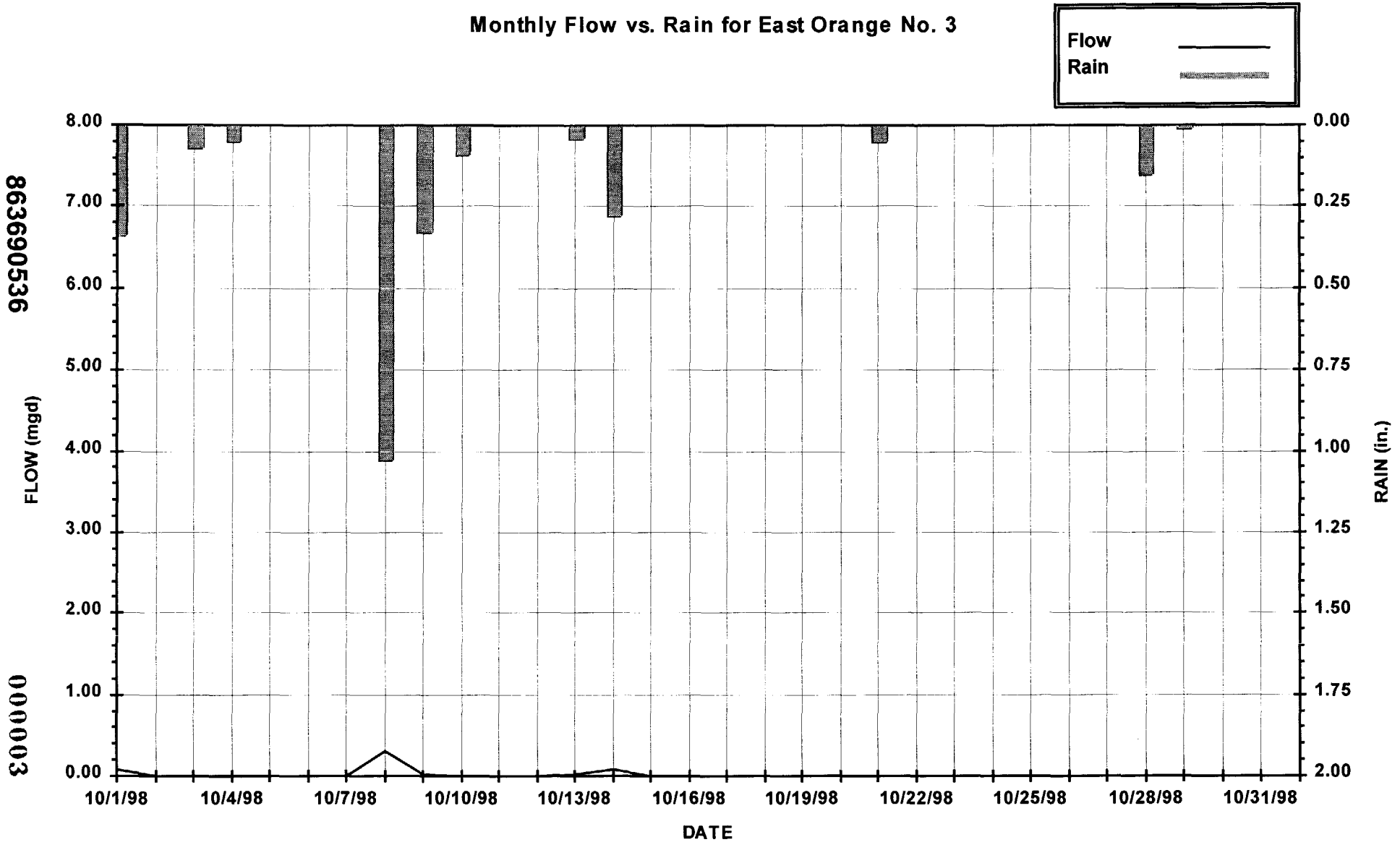
EAST ORANGE NO. 2
Address: 9th Ave. and 15th St.
48.8" H x 33.4"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 3



863690536

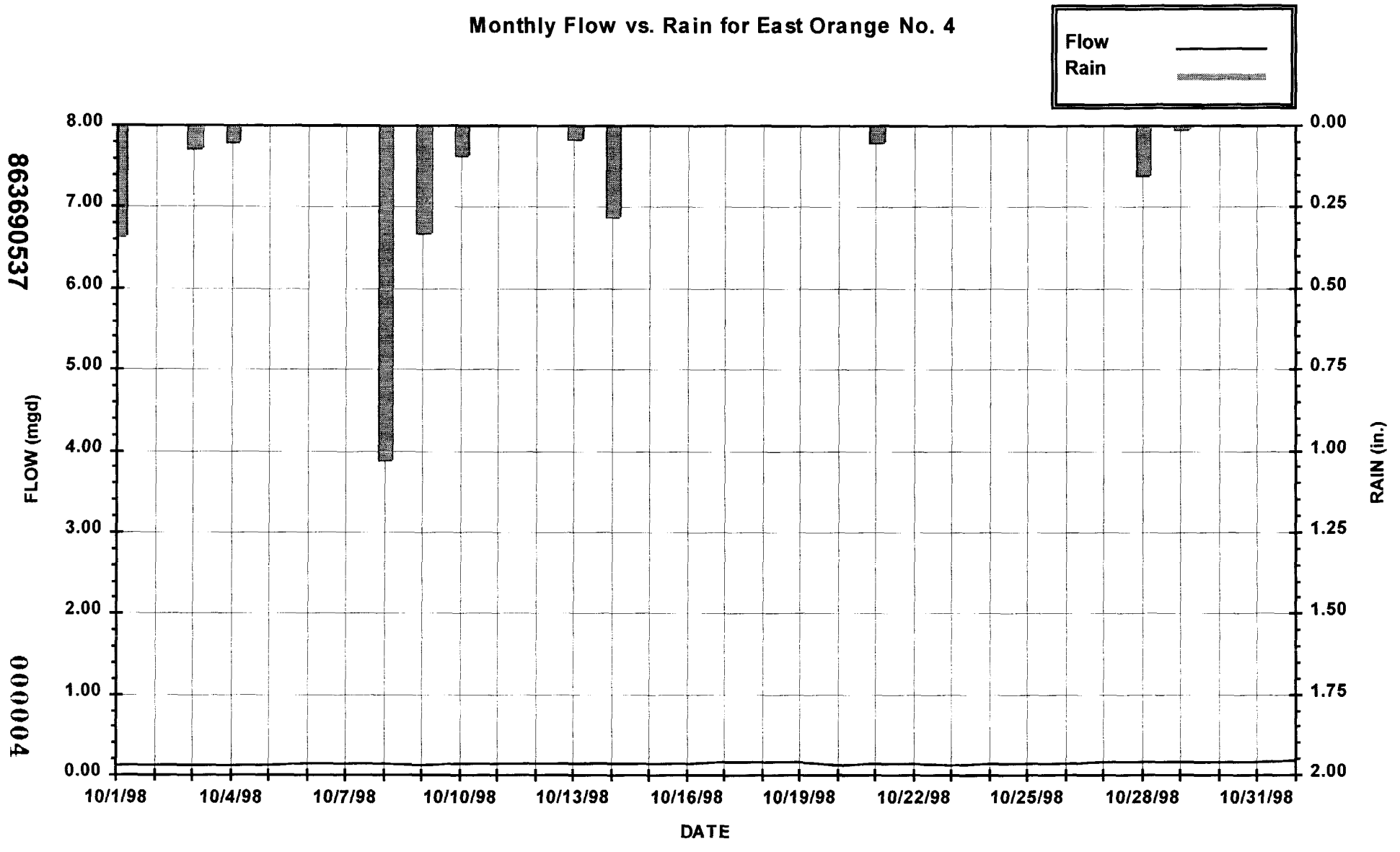
000003

EAST ORANGE NO. 3
Address: Sussex Ave. and 15th St.
33" Storm

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study



863690537

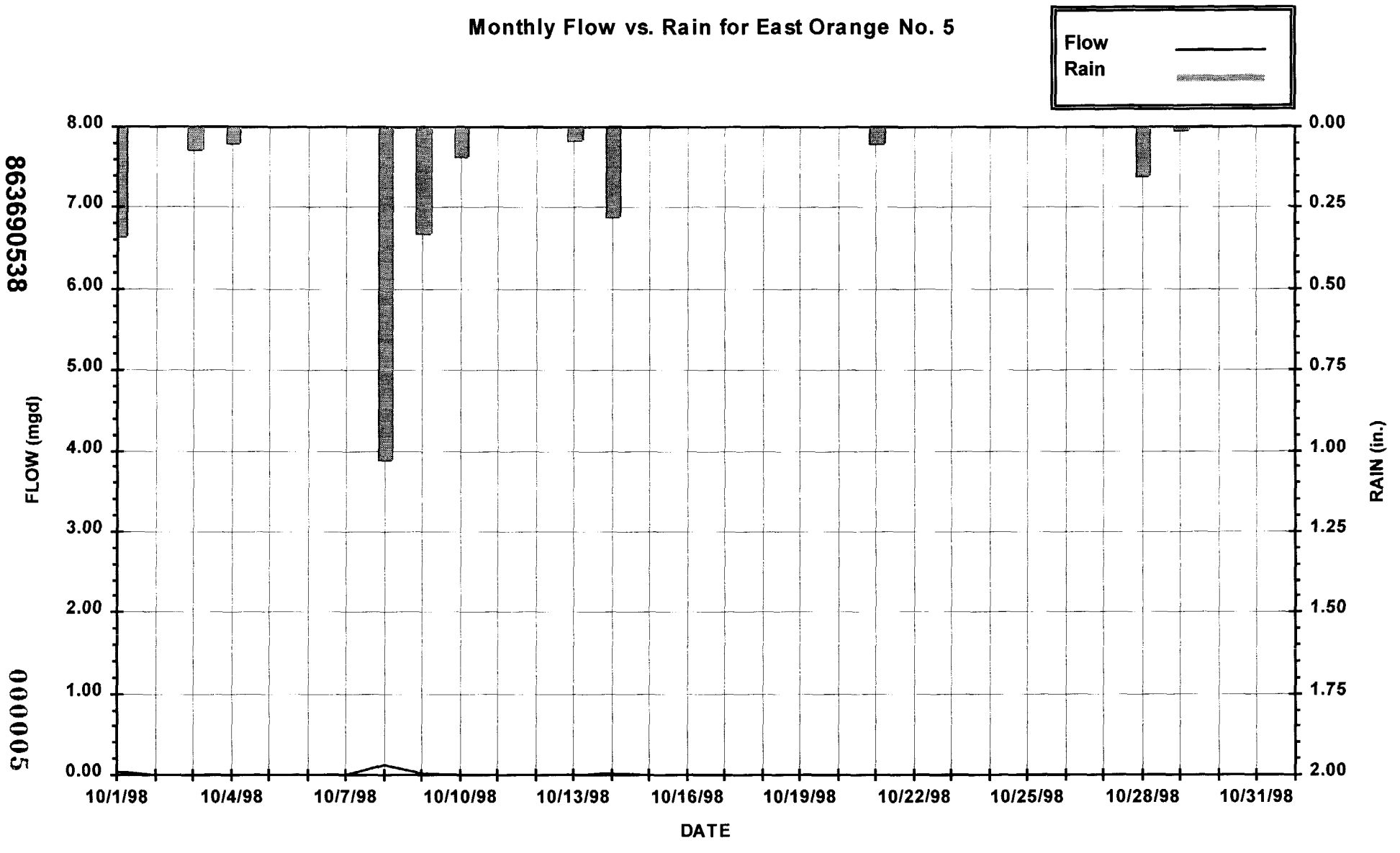
000004

EAST ORANGE NO. 4
Address: Sussex Ave. and 15th St.
12" VCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study



863690538

000005

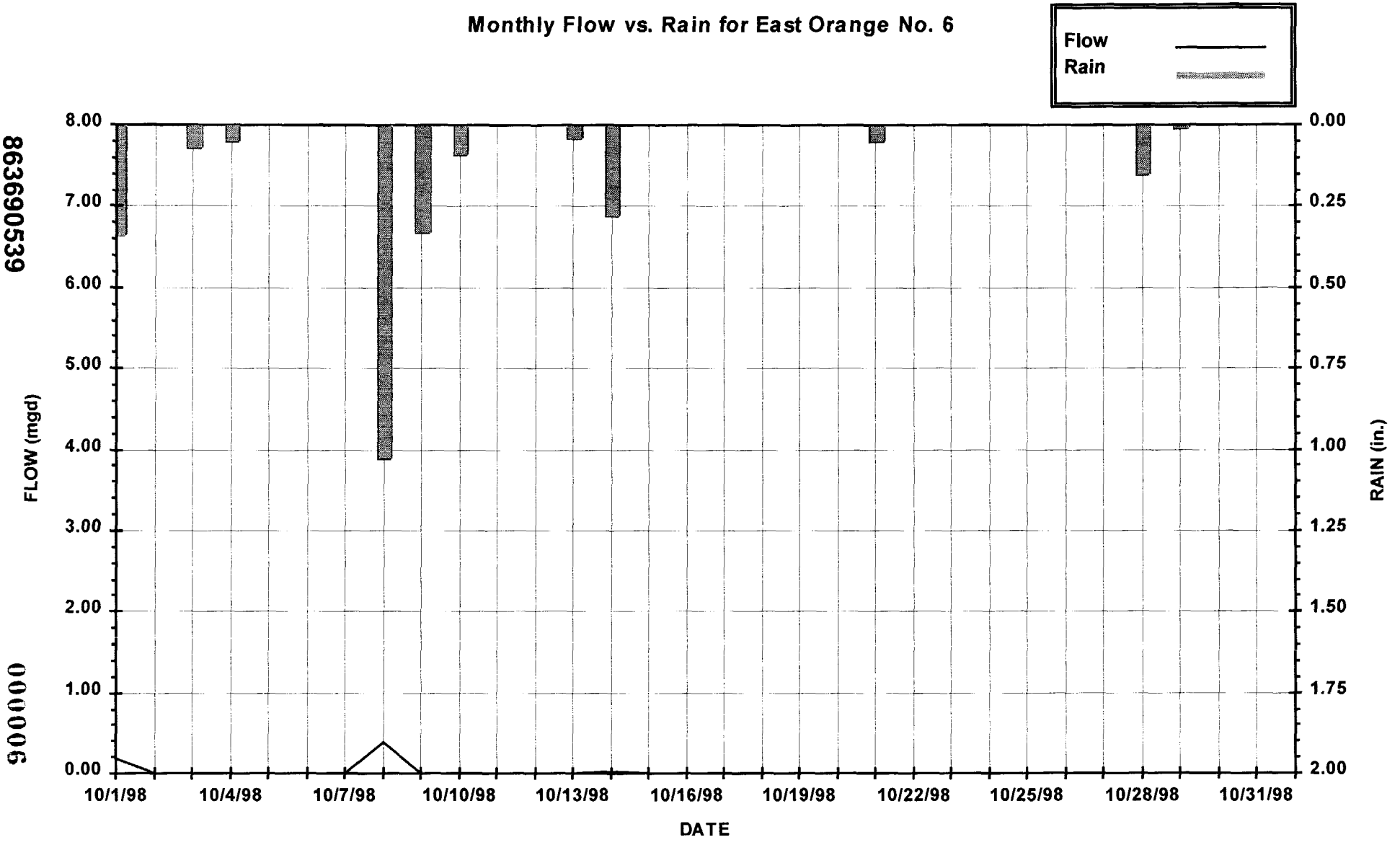
EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
33" RCP Storm

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 6



EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
18.75" VCP

Rain Gauge
RG-1, Roberto Clemente School

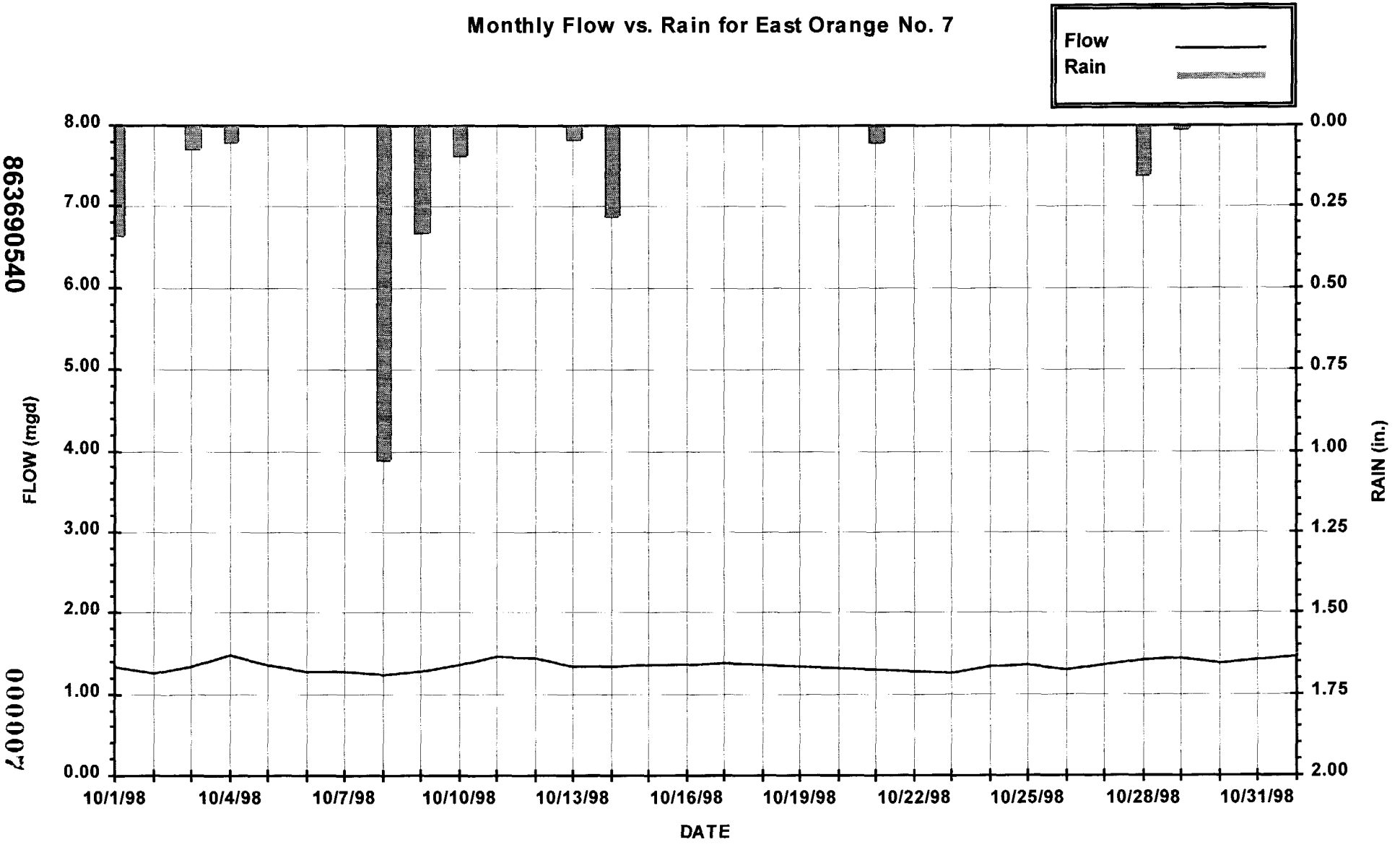
863690539

000006

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 7



863690540

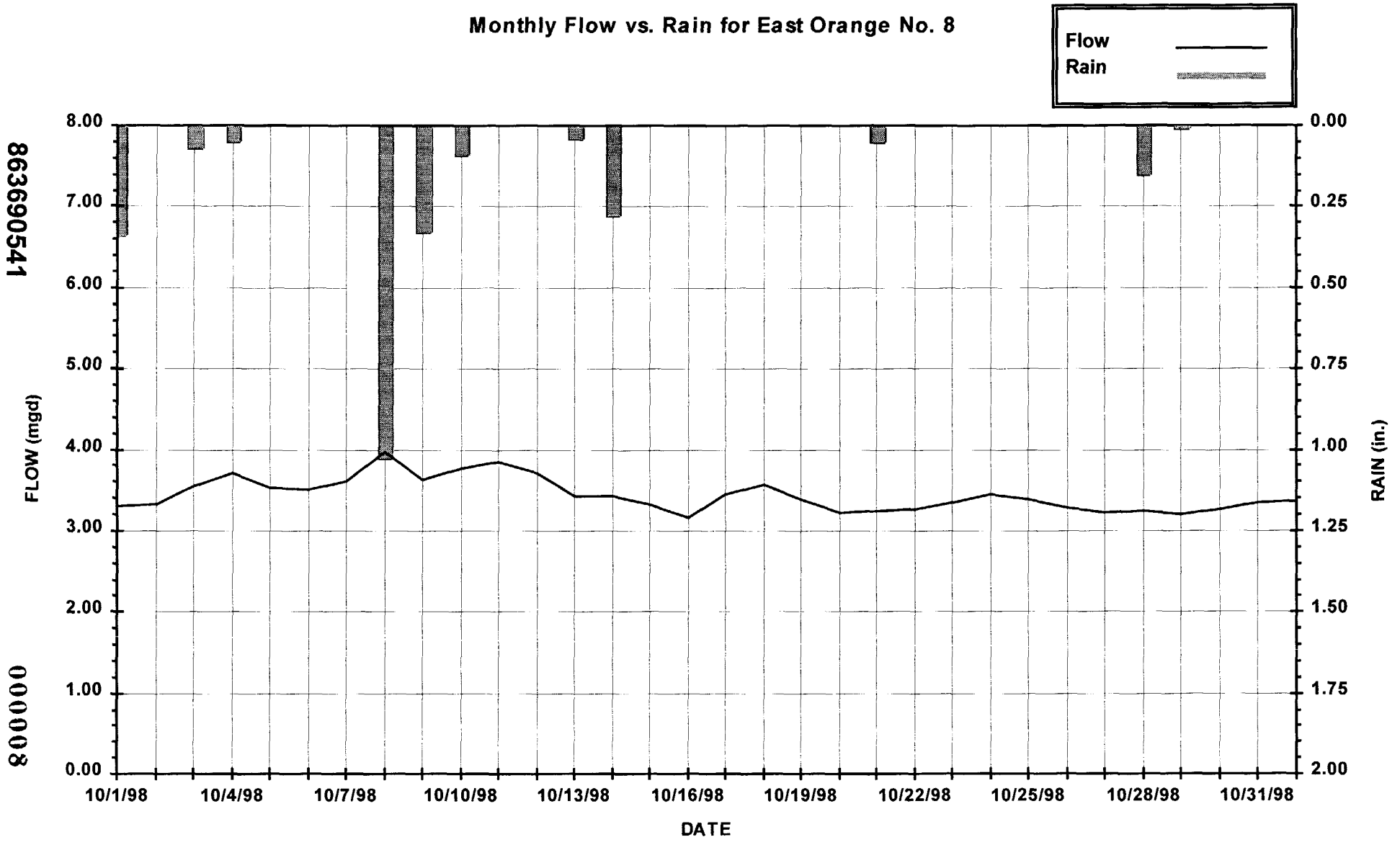
000007

EAST ORANGE NO. 7
Address: 6TH ST. & 13TH ST.
30" RCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study



863690541

000008

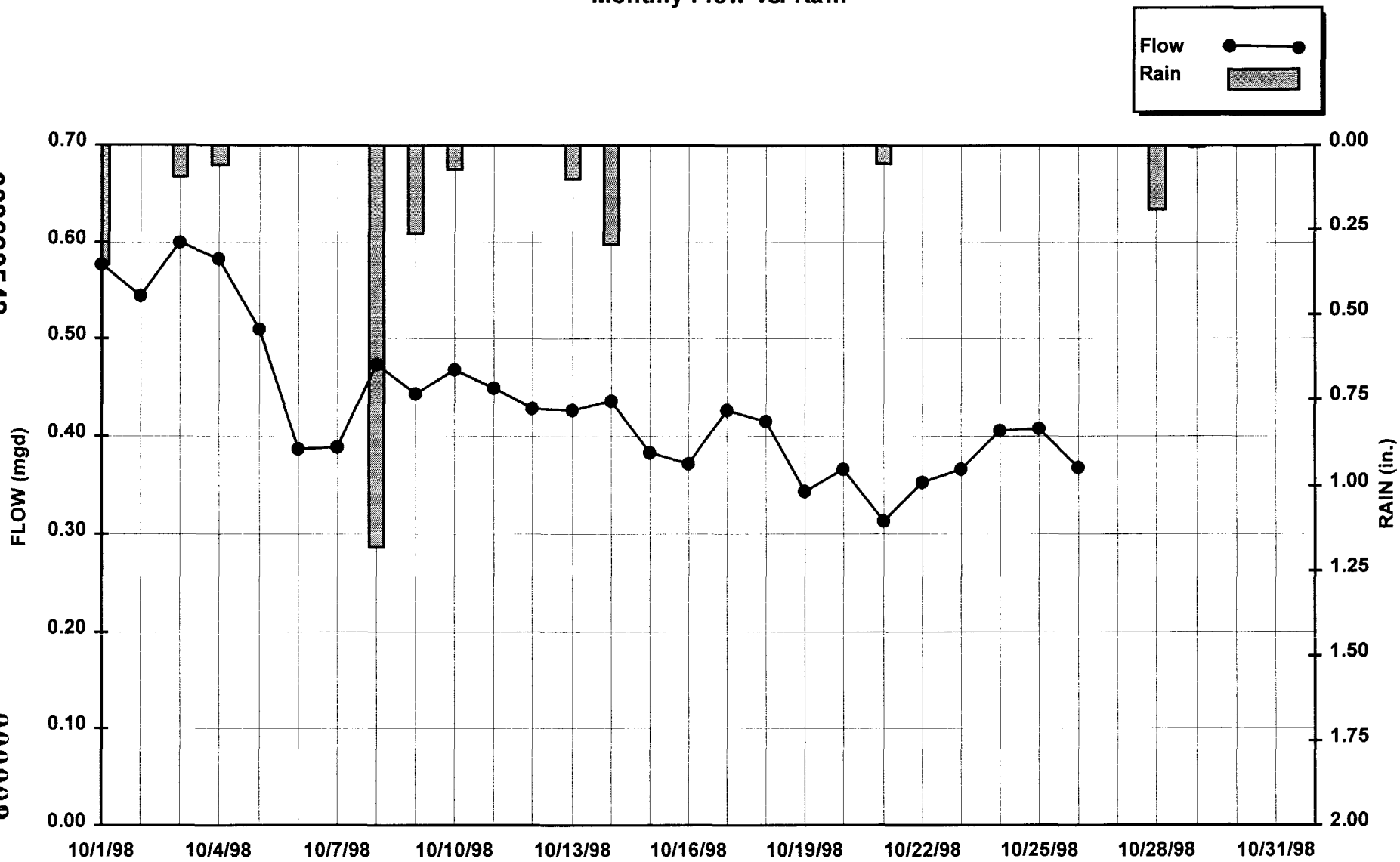
EAST ORANGE NO. 8
Address: 13TH ST. & SPRINGDALE AVE.
24.25" VCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690542

000009

Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

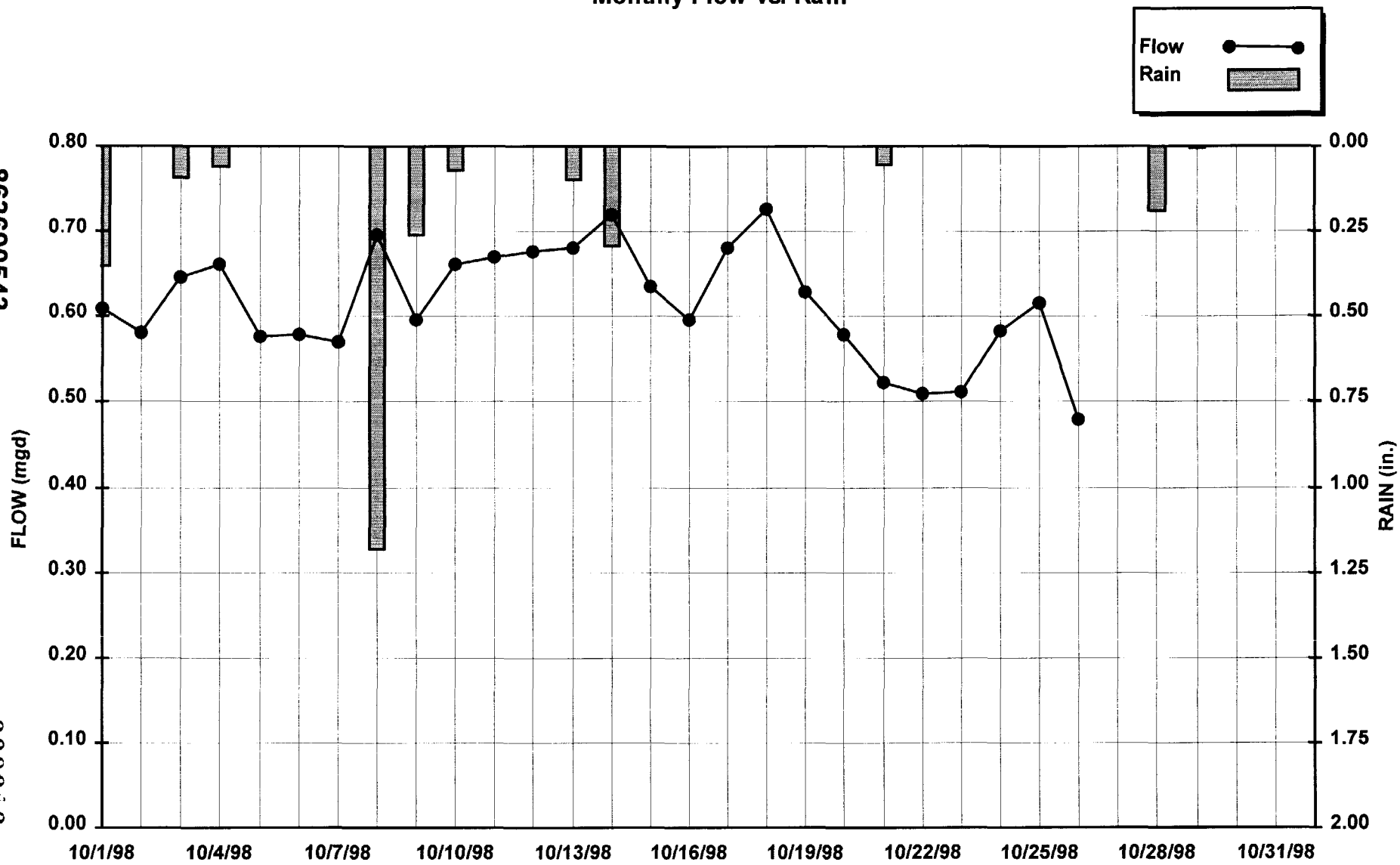
910 F.M. VERSION: 1.02

Serial#: QQ7

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690543

000010

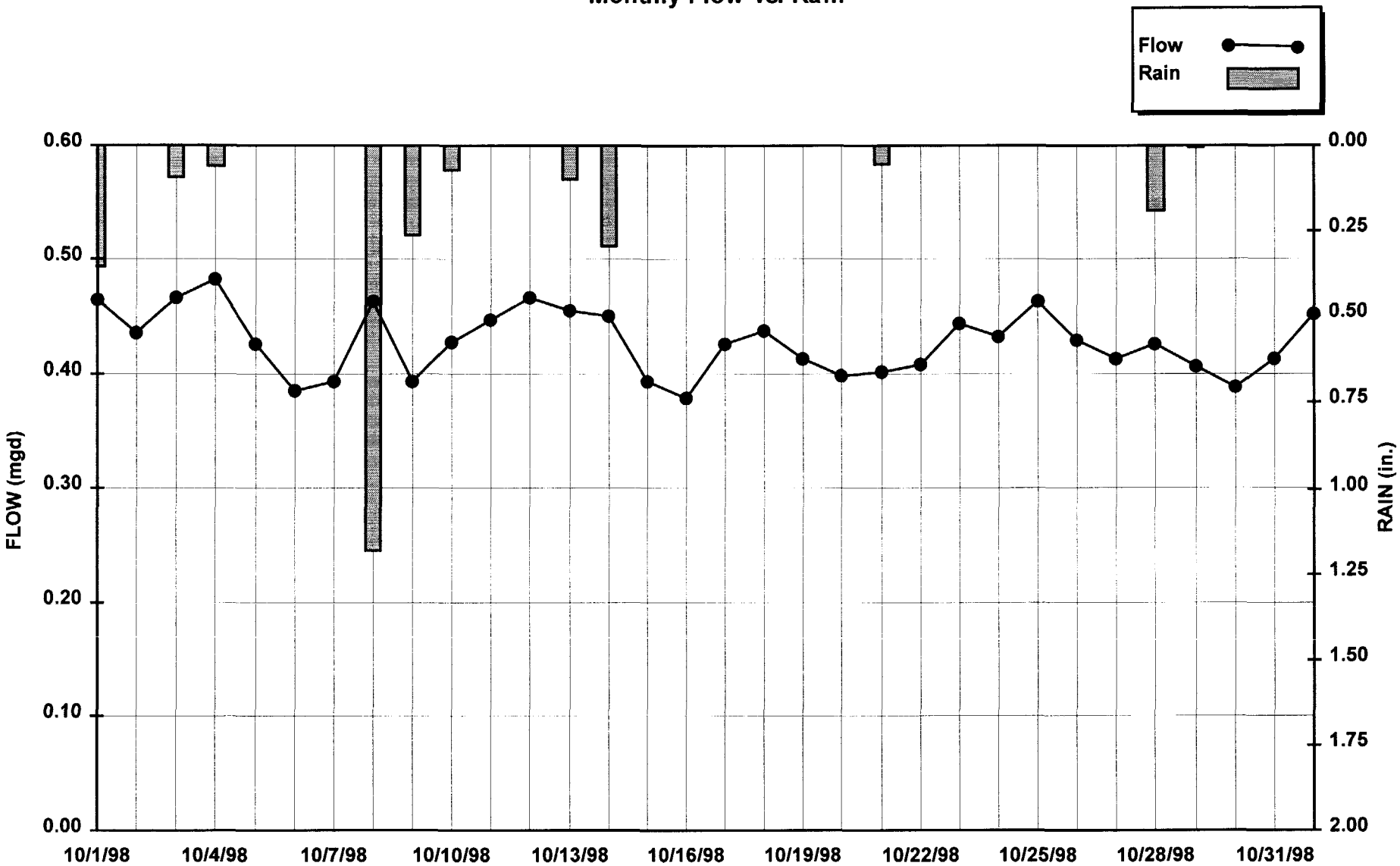
Outgoing No. 2
Address: Unity and Valley St.

910 F.M. VERSION: 1.02
Serial#: QQ2

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690544

000011

Outgoing No. 3

Address: Fabyan Pl. near Exit Ramp of I-78

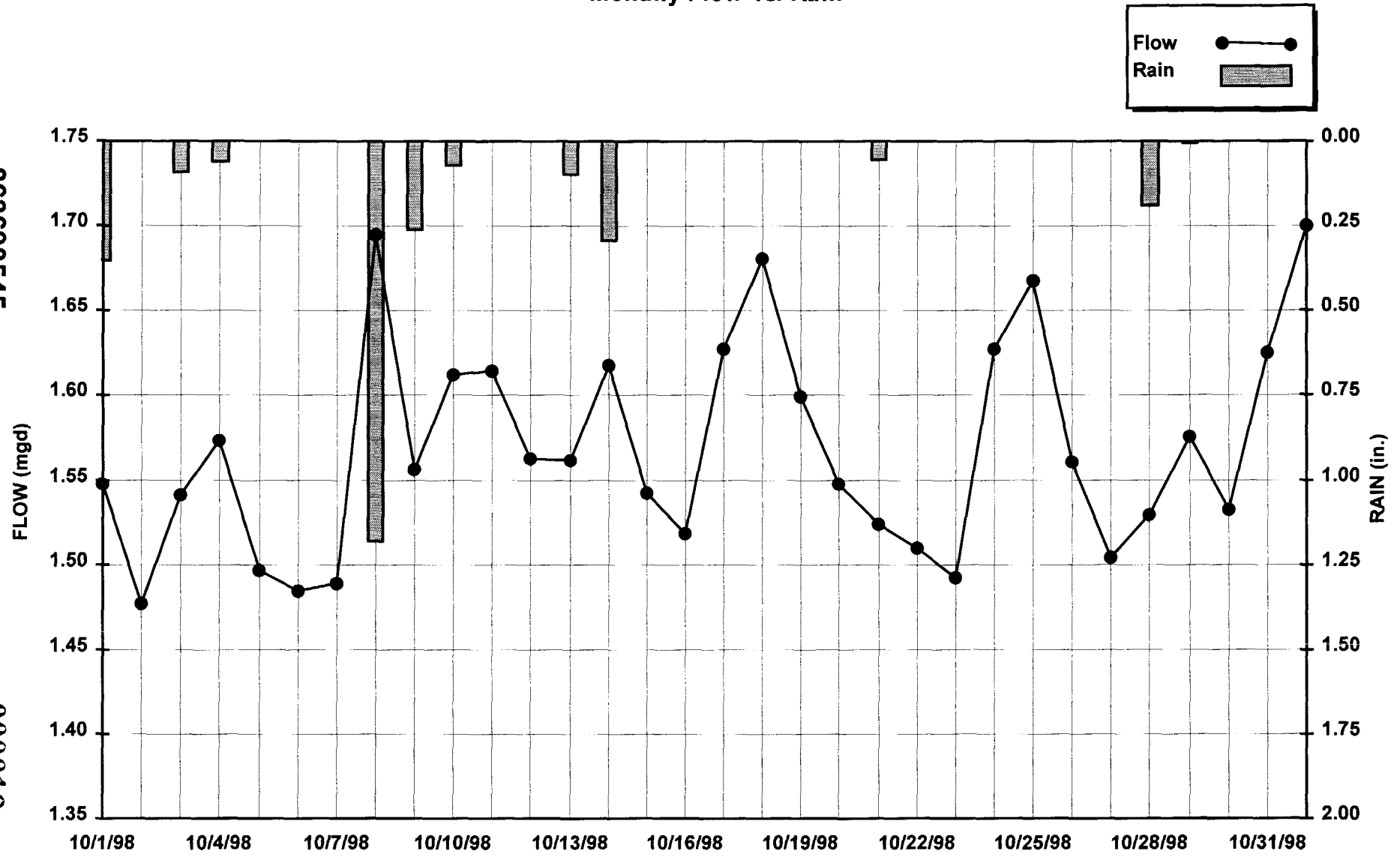
910 F.M. VERSION: 1.02

Serial#: QRD

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690545

000012

Outgoing No. 4

Address: N. Lindon Ln between House # 63 and 65

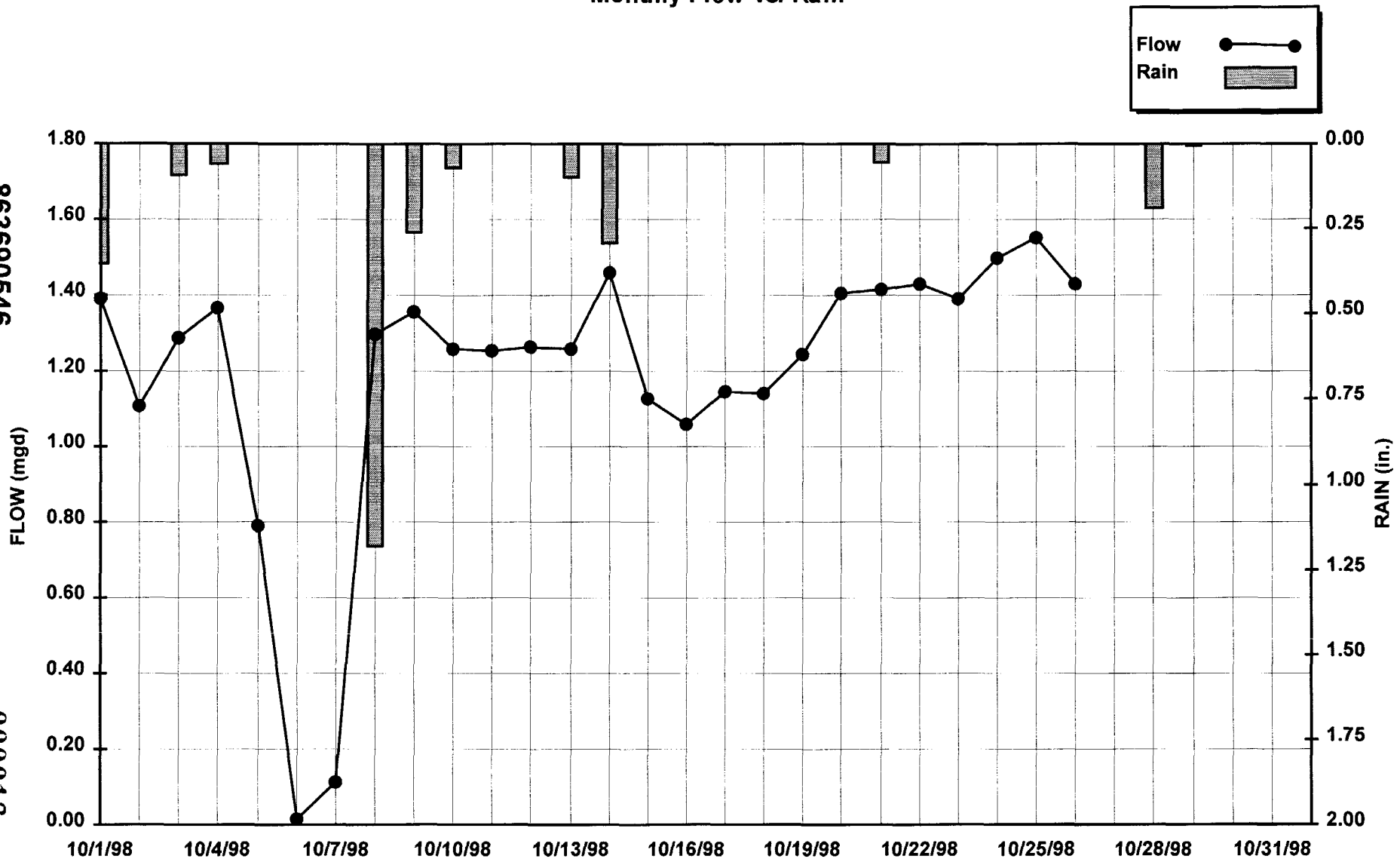
910 F.M. VERSION: 1.02

Serial#: QUI

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 1
Address: Elizabeth Ave. near Mapes Ave.

910 F.M. VERSION: 1.02
Serial#: QLL

Monthly Flow Report (Flow1)

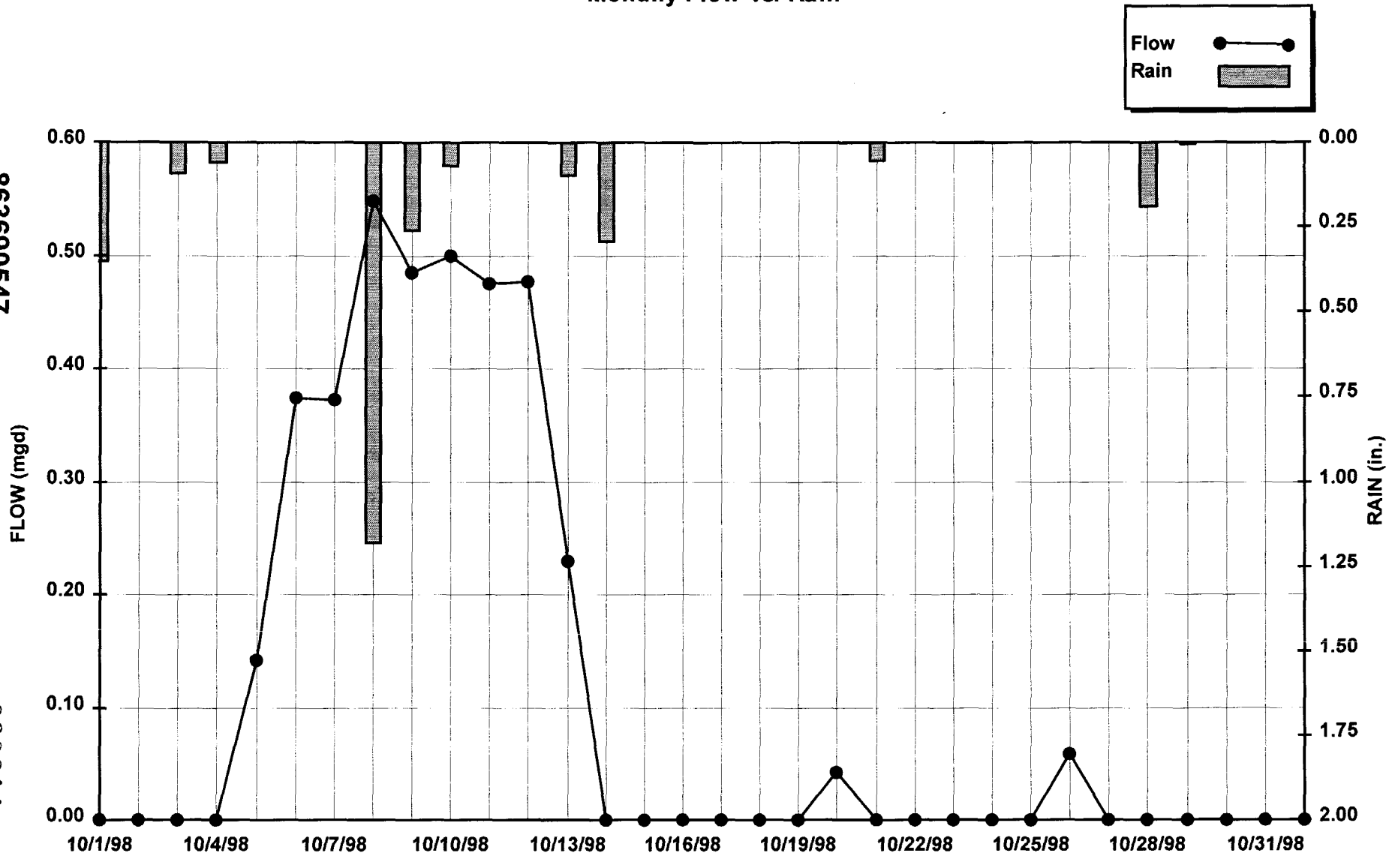
12/22/1998 2:23:38 PM

863690546
000013

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 2
Address: Weequahic Park

910 F.M. VERSION: 1.02
Serial#: QUN

Monthly Flow Report (Flow1)

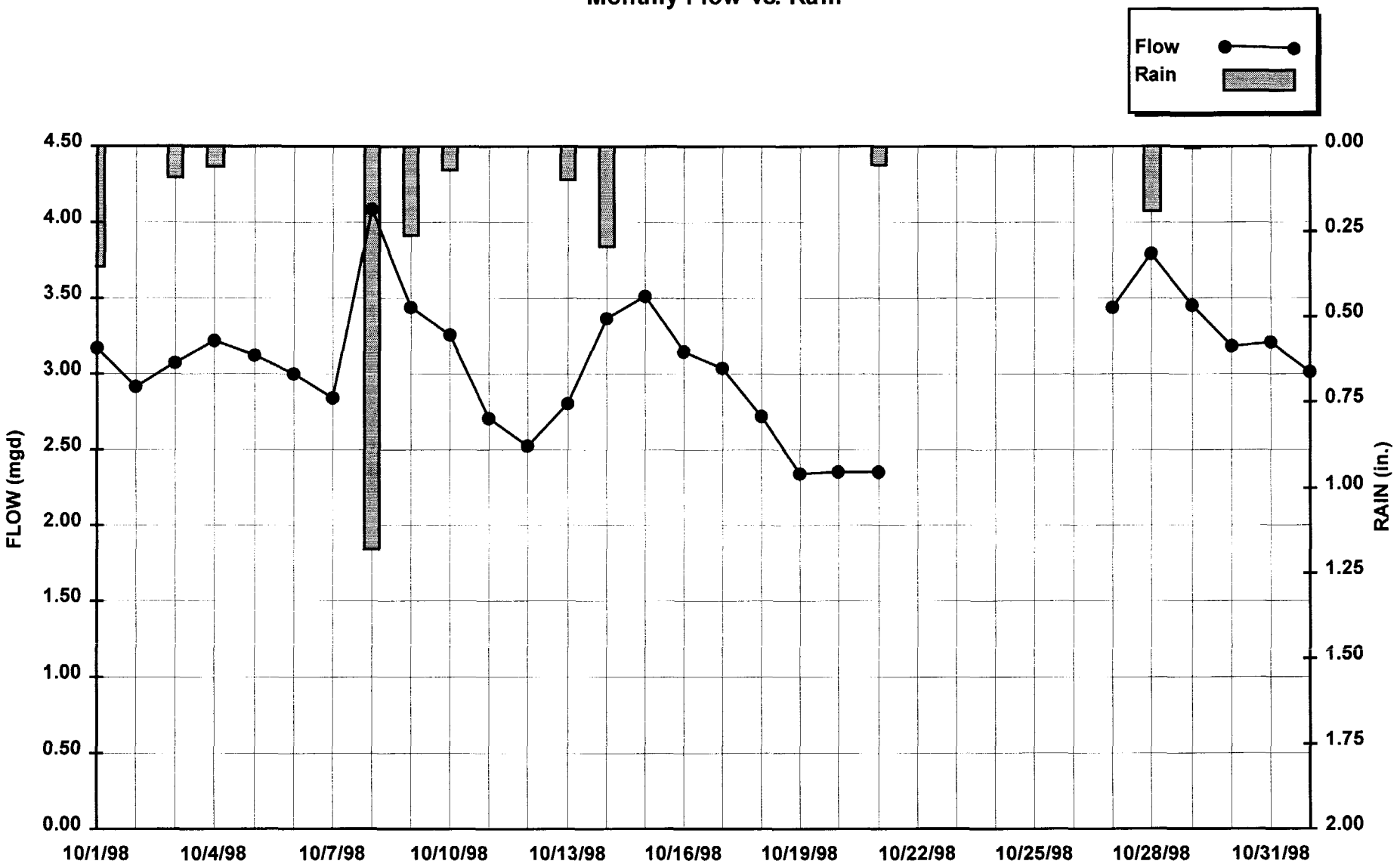
12/22/1998 2:27:49 PM

863690547
000014

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 3
Address: Jabez Ave. near Backus St.

910 F.M. VERSION: 1.02
Serial#: QTZ

Monthly Flow Report (Flow1)

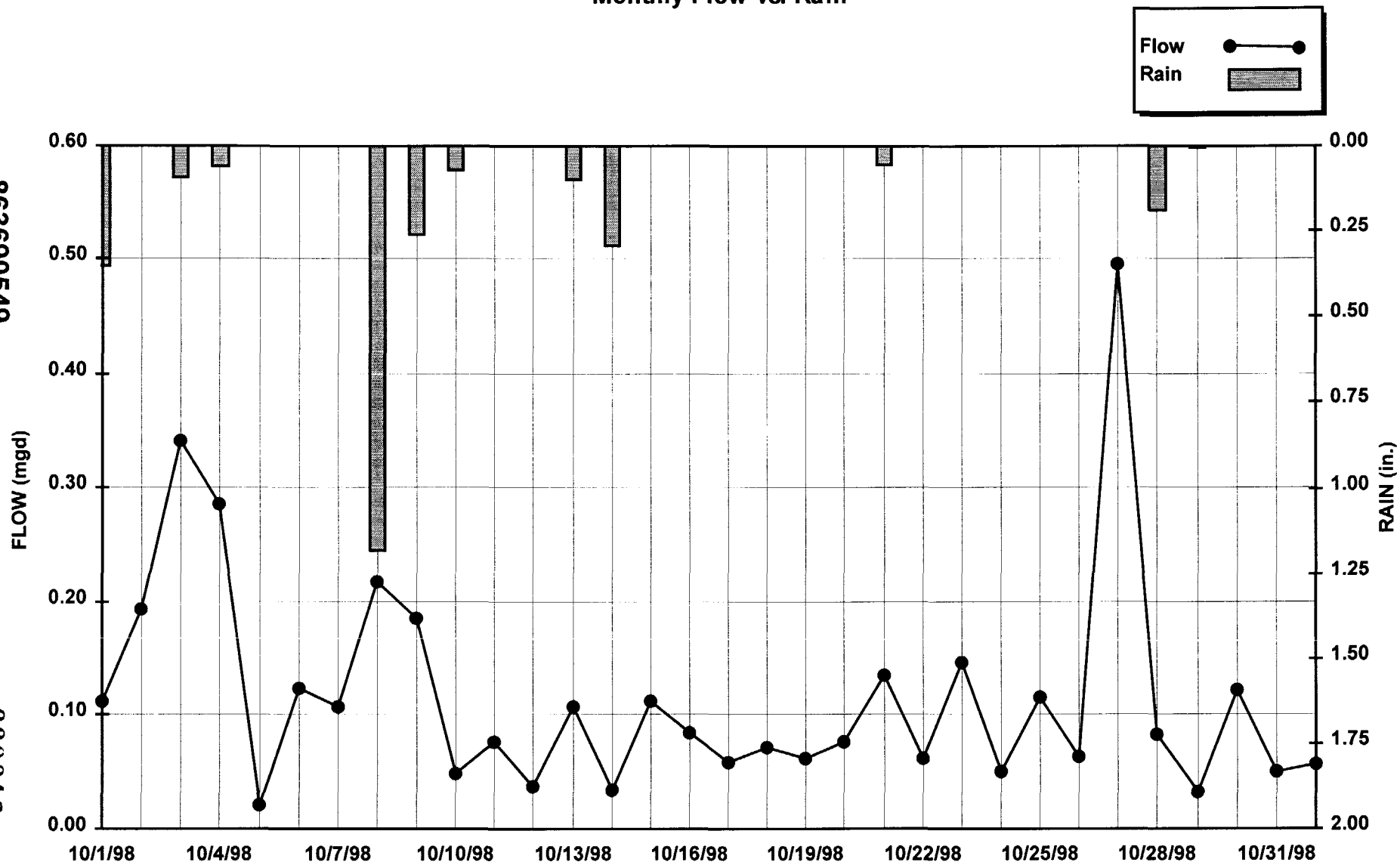
12/22/1998 2:30:23 PM

863690548
000015

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690549

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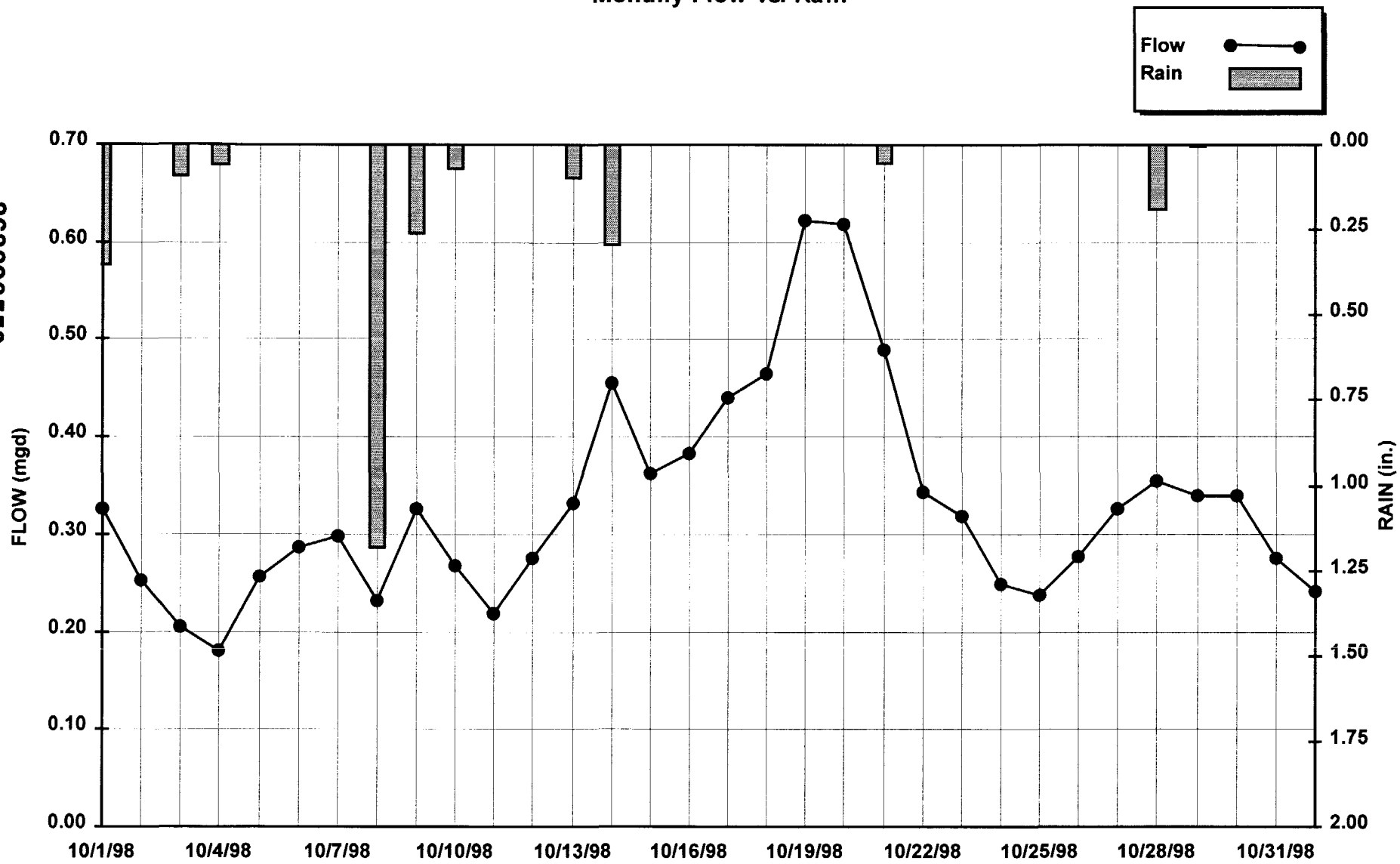
NEWARK No. 4
Address: Wilson and Ave. P

910 F.M. VERSION: 1.02
Serial#: QT1

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 5

Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02

Serial#: QUO

Monthly Flow Report (Flow1)

12/22/1998 2:26:08 PM

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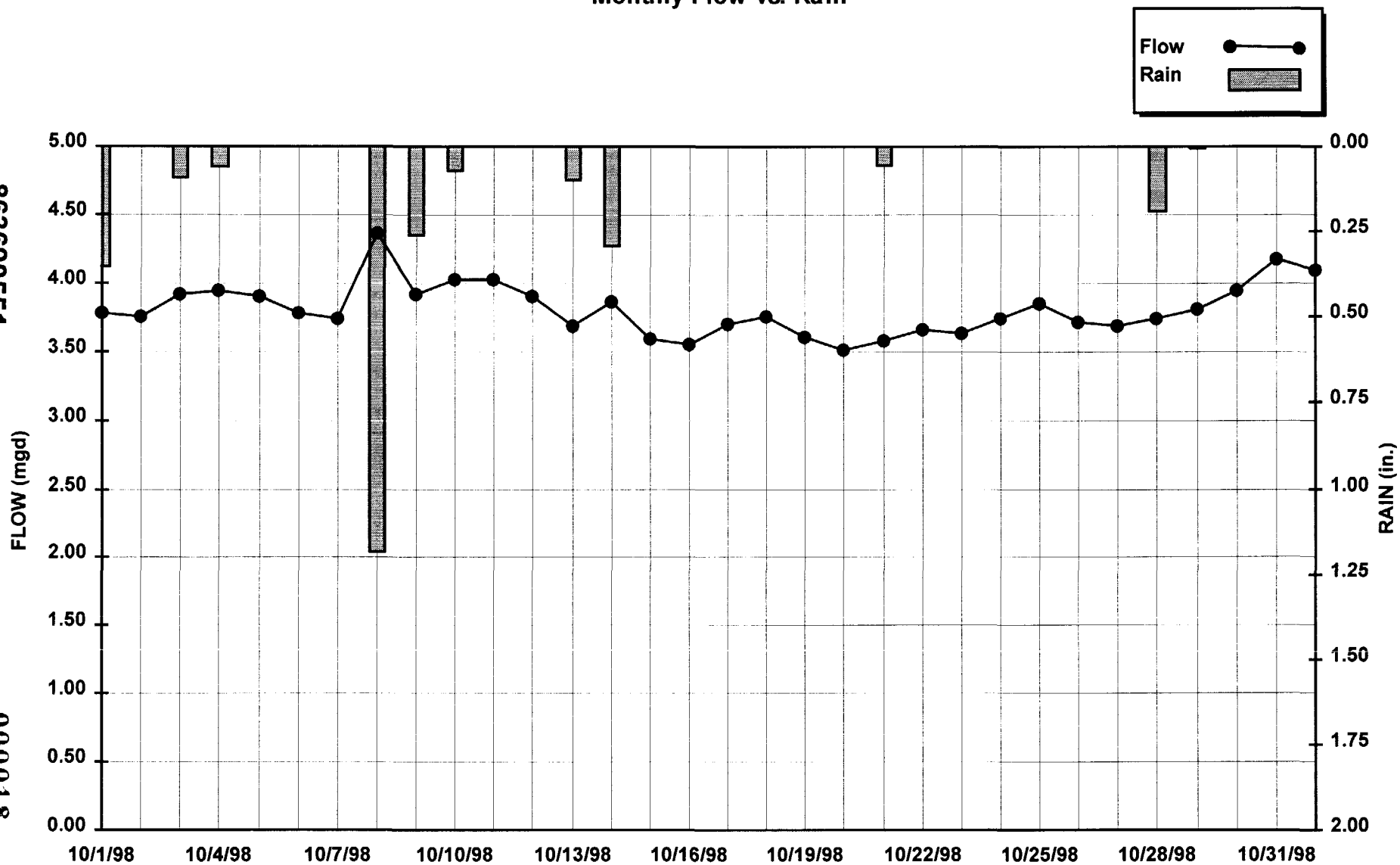
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 6
Address: Near 355 5th St.

910 F.M. VERSION: 1.02
Serial#: QU1

Monthly Flow Report (Flow1)

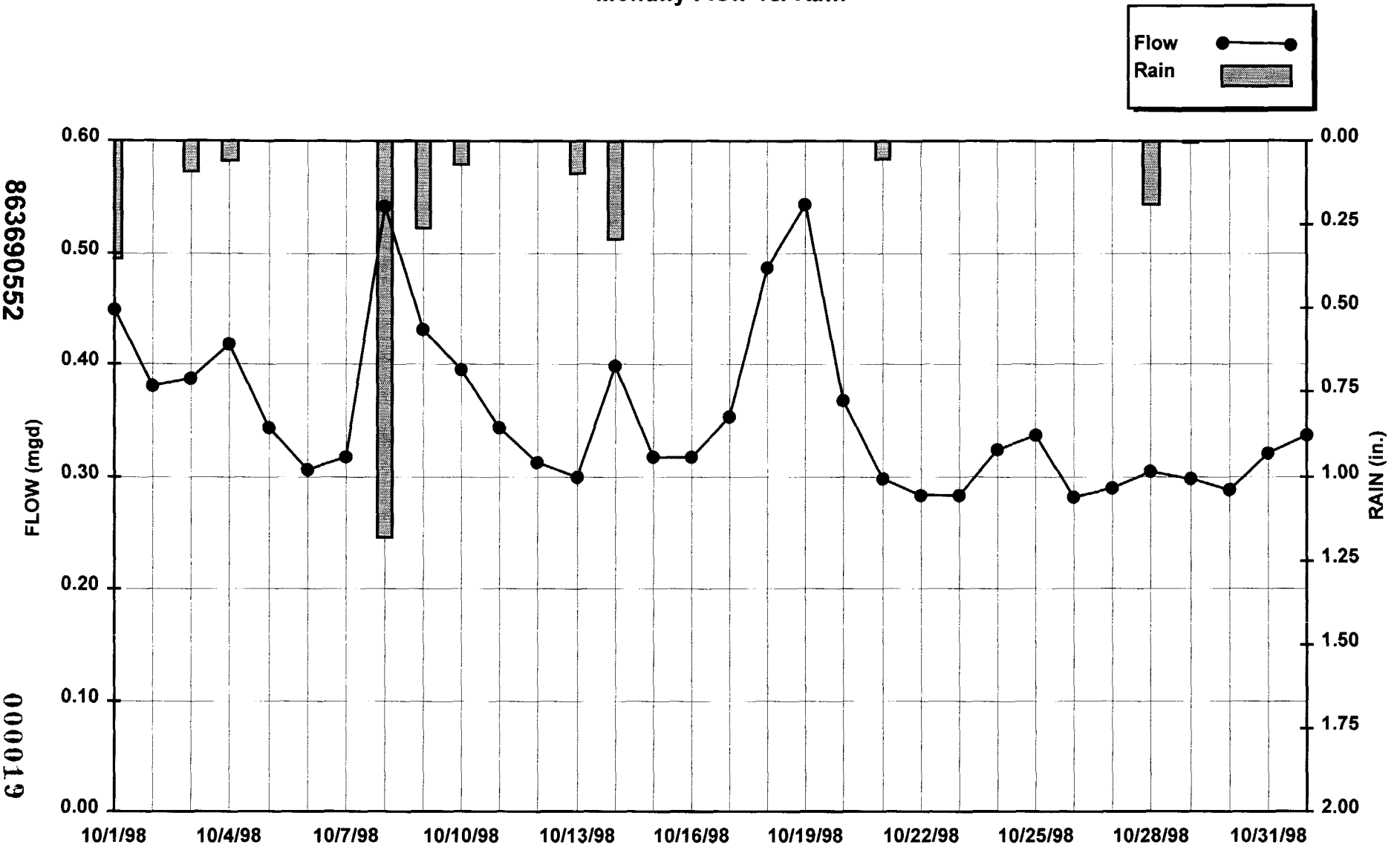
12/22/1998 2:24:29 PM

863690551
000018

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690552

000019

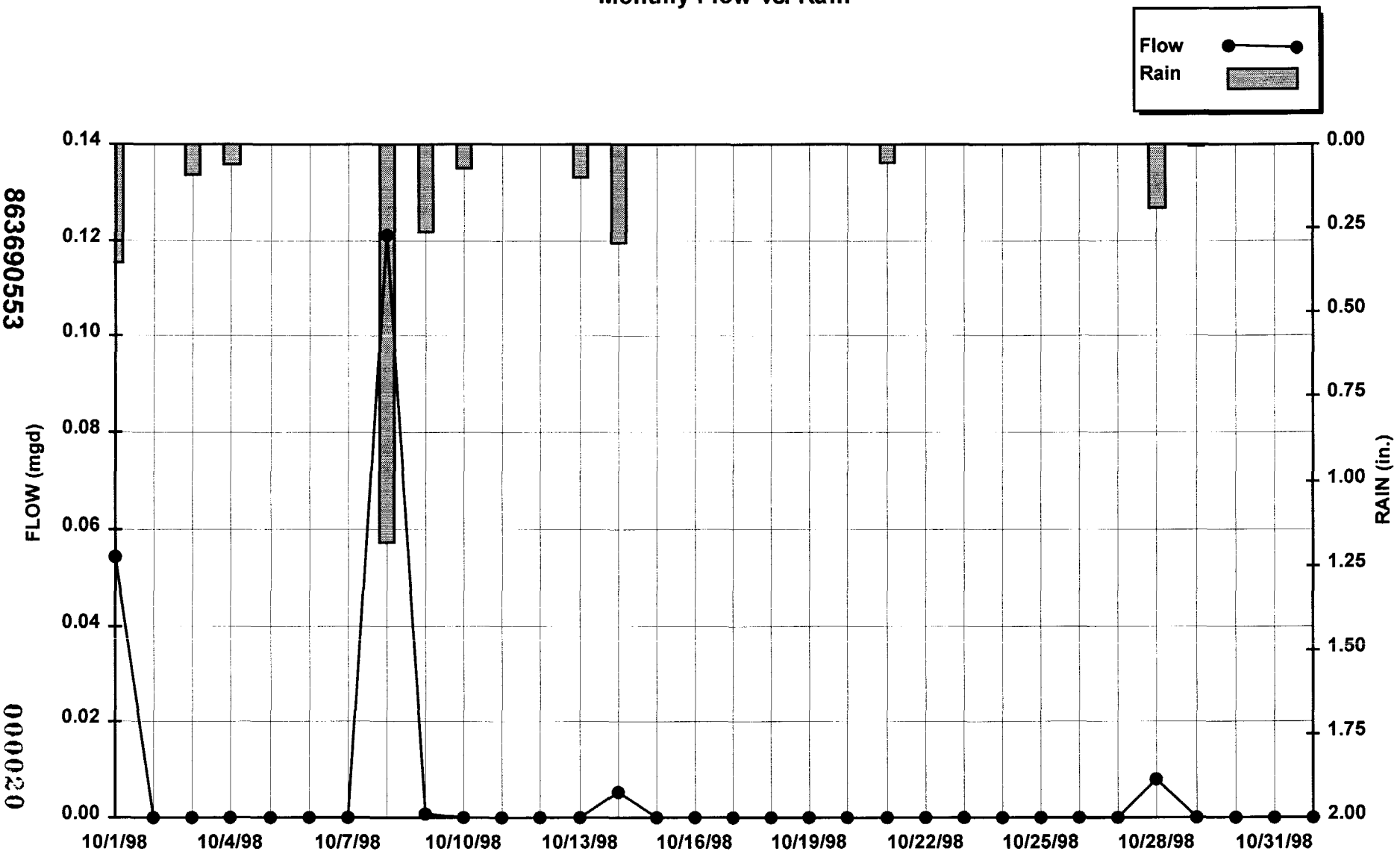
NEWARK No. 7
Address: Verona St. near Broadway

910 F.M. VERSION: 1.02
Serial#: QUK

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690553

000020

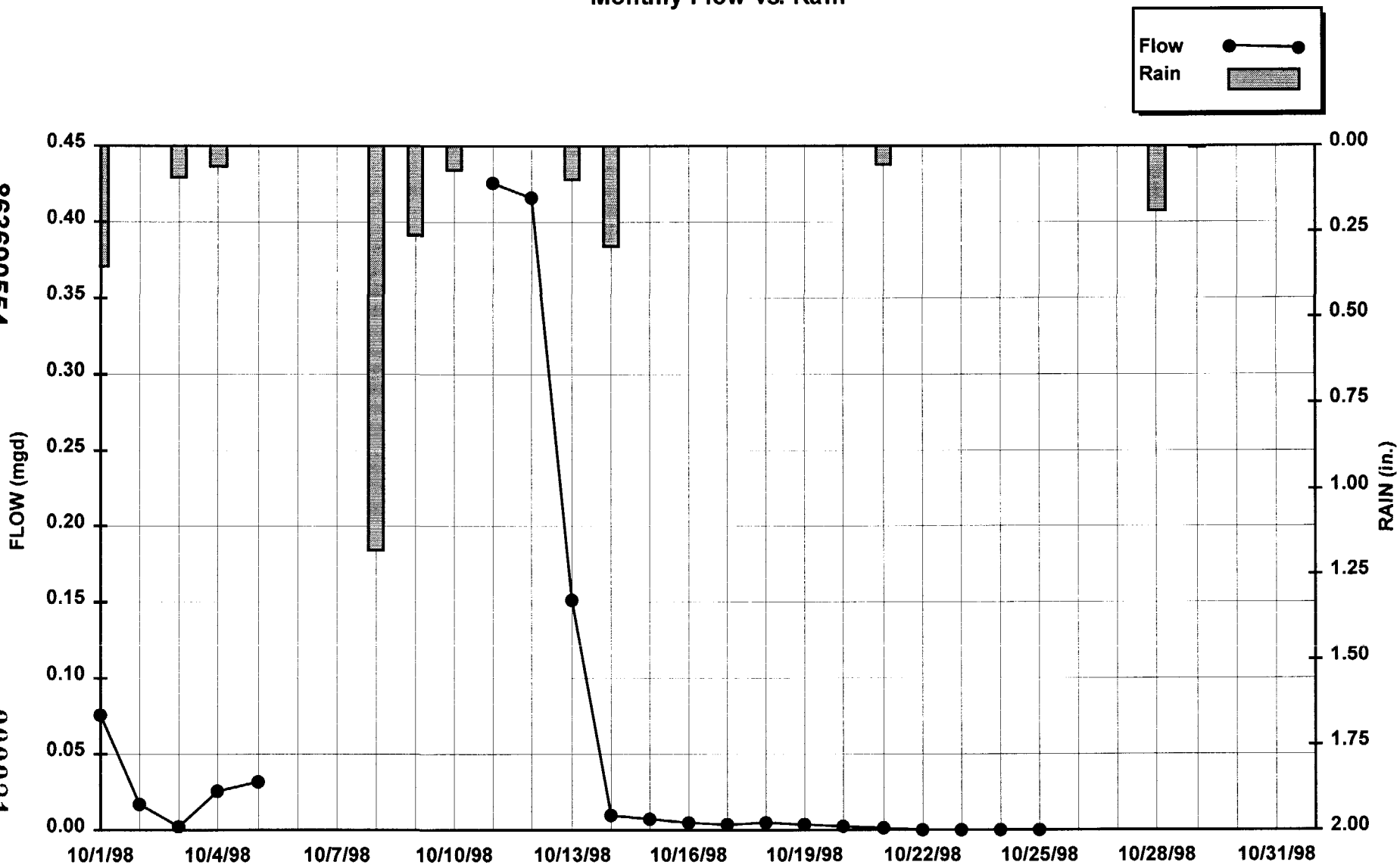
NEWARK No. 8
Address: Earl and Frelinghuysen

910 F.M. VERSION: 1.02
Serial#: QT3

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690554

000021

NEWARK No. 9

Address: Branch Brook Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QLF

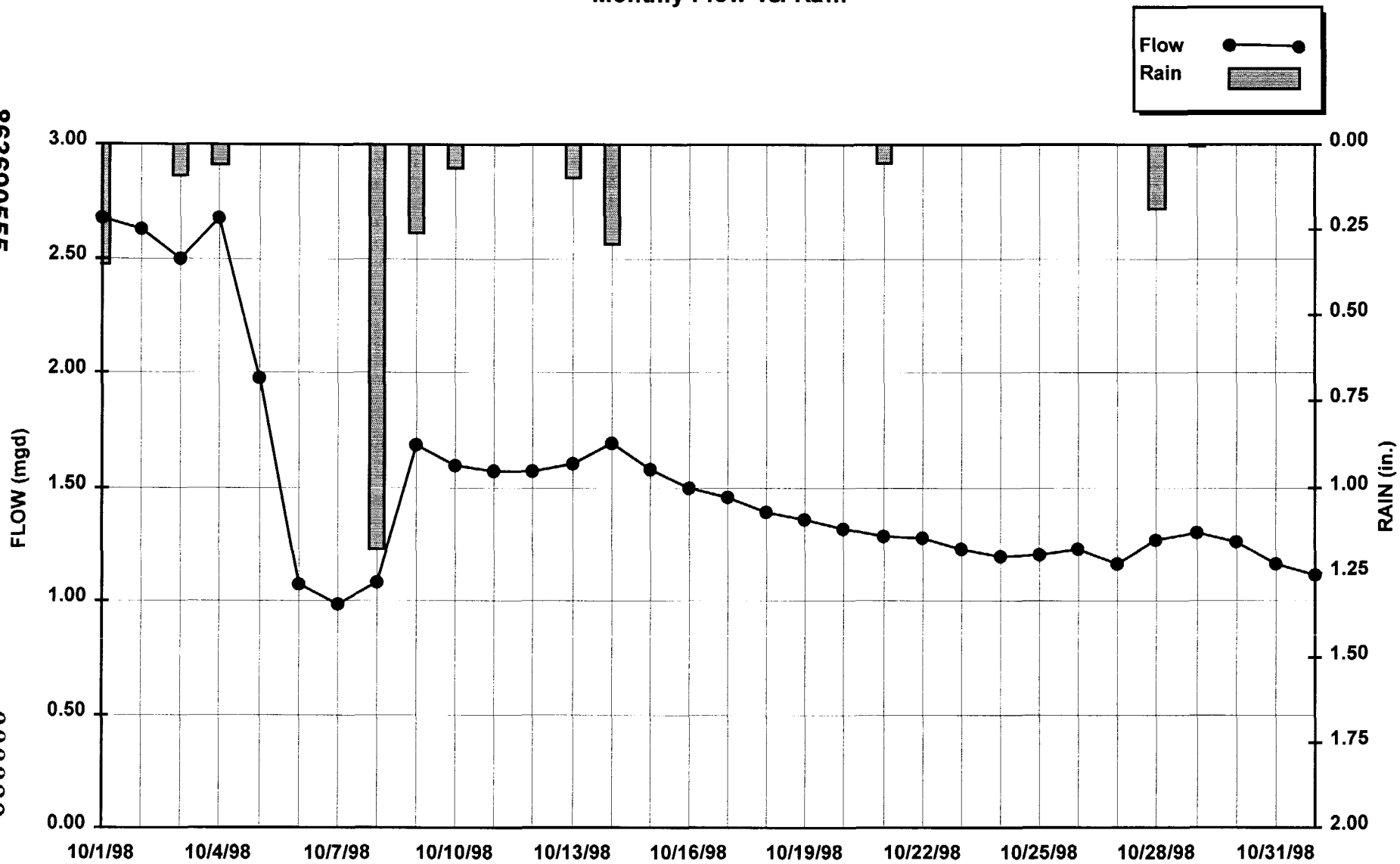
Monthly Flow Report (Flow1)

12/22/1998 2:26:57 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 10

Address: Weequahic Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QUX

Monthly Flow Report (Flow1)

12/22/1998 2:28:42 PM

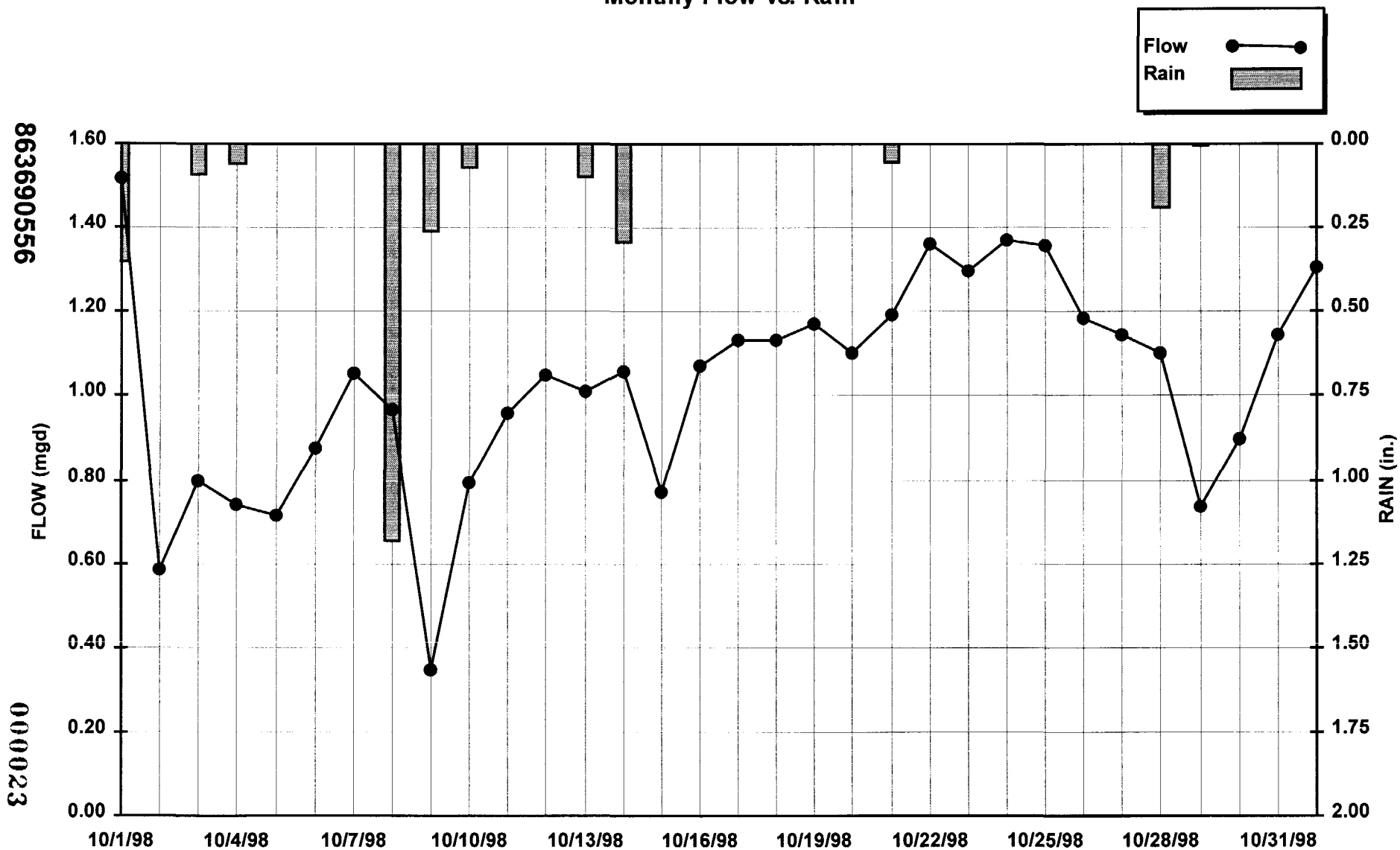
863690555

000022

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

Monthly Flow Report (Flow1)

12/22/1998 2:38:56 PM

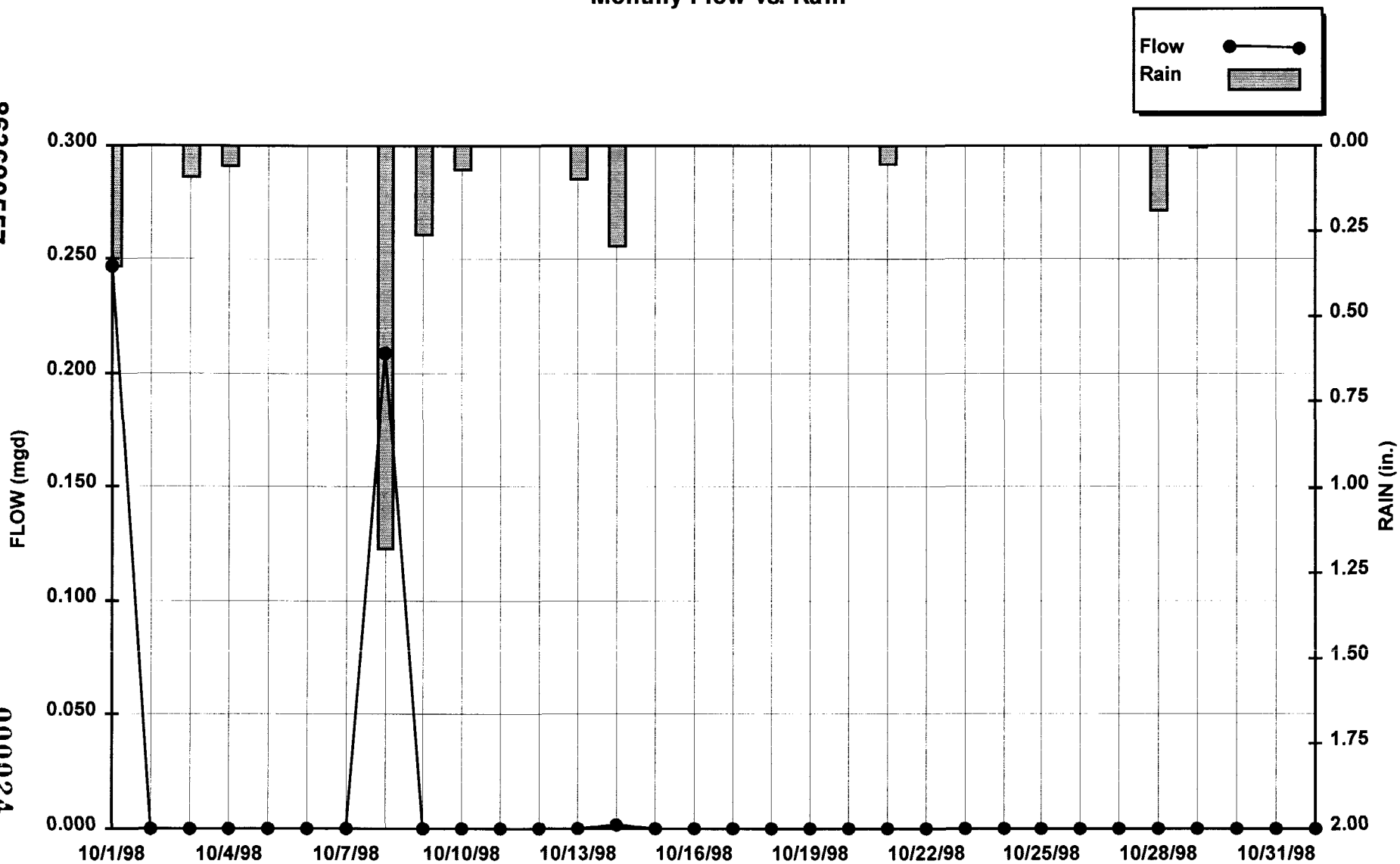
863690556

000023

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690557

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CSO 002 - VERONA AVE
Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR8

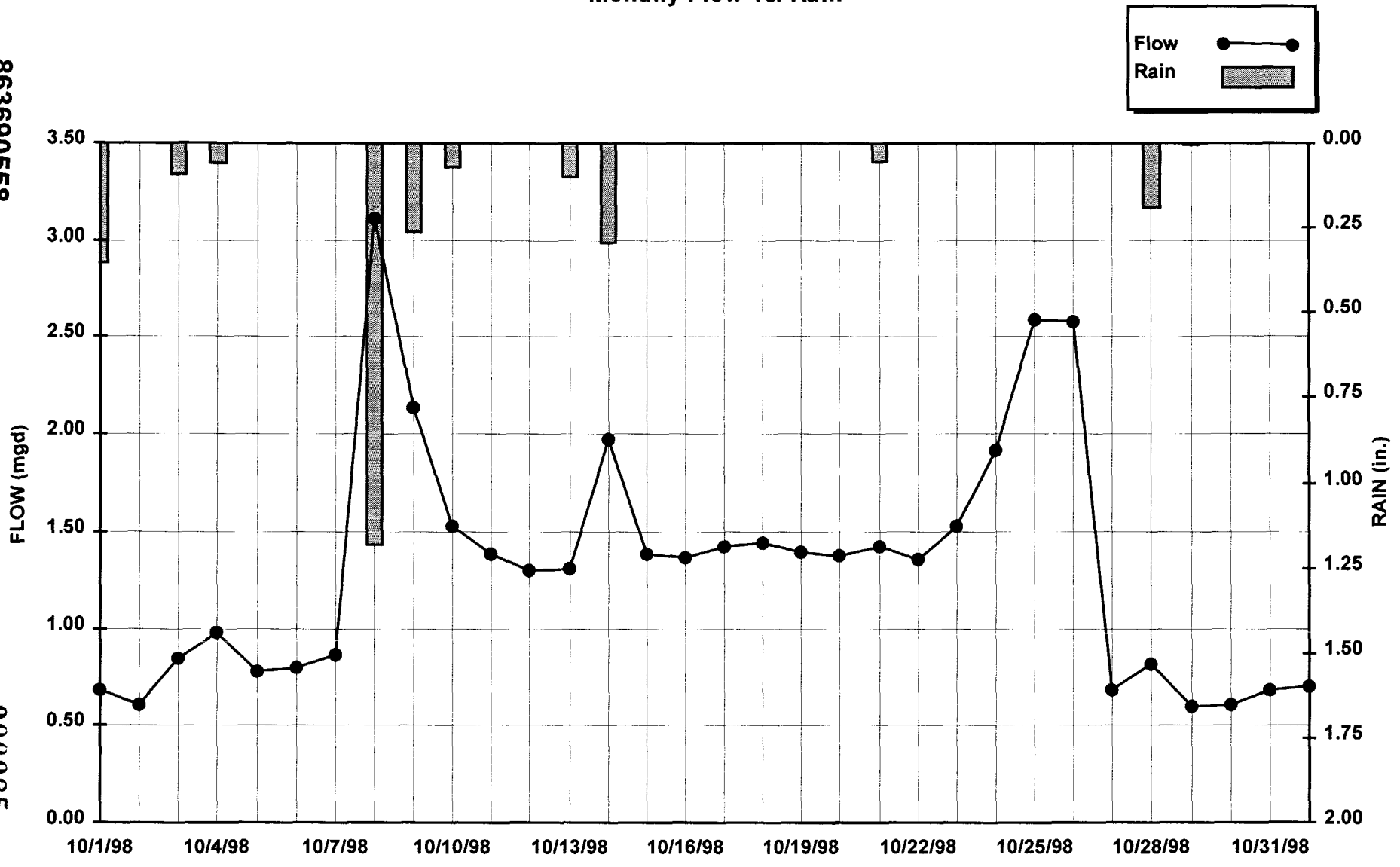
Monthly Flow Report (Flow2)

12/22/1998 3:05:27 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690558

000025

CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTQ

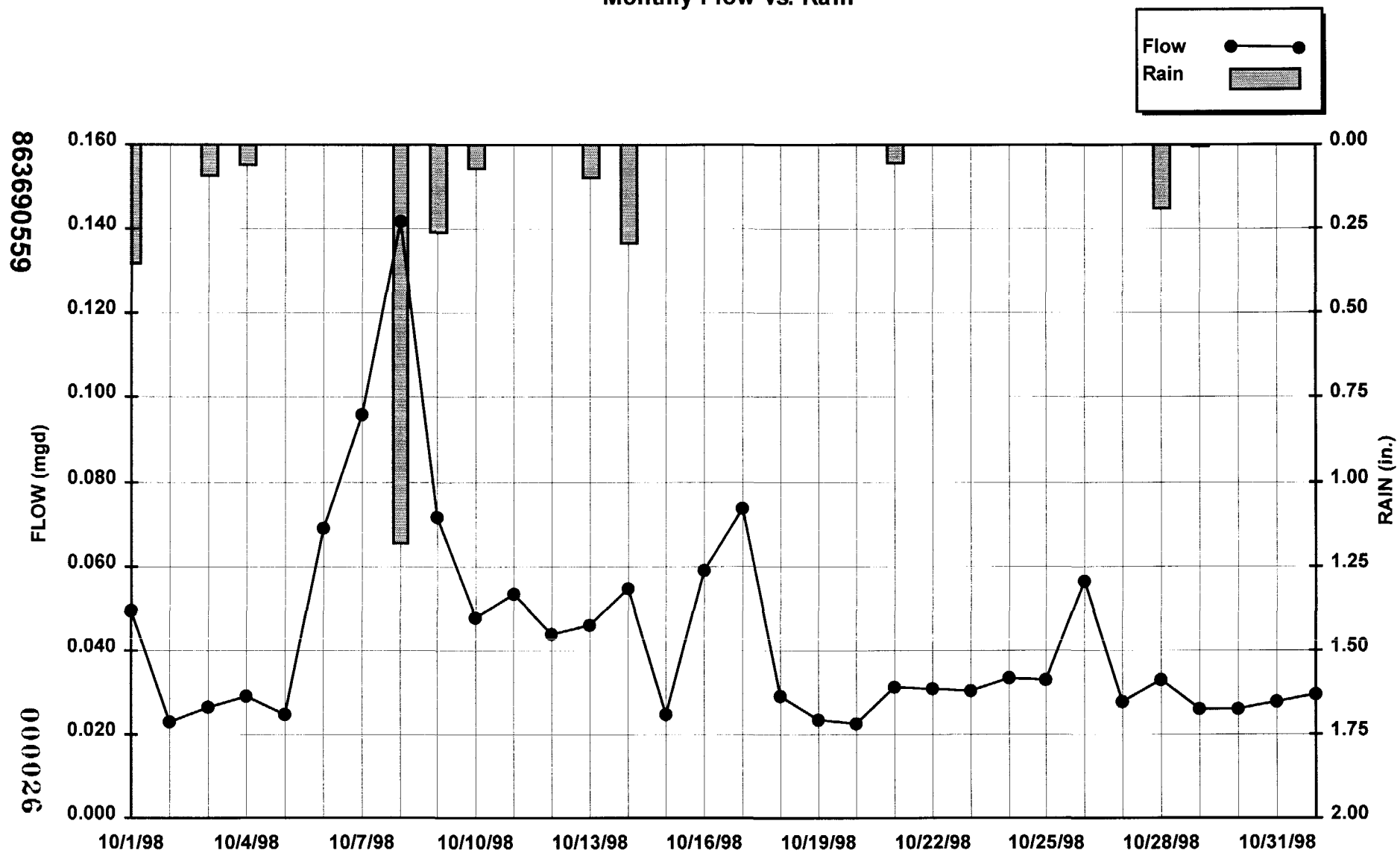
Monthly Flow Report (Flow1)

12/22/1998 2:40:39 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690559
0000026

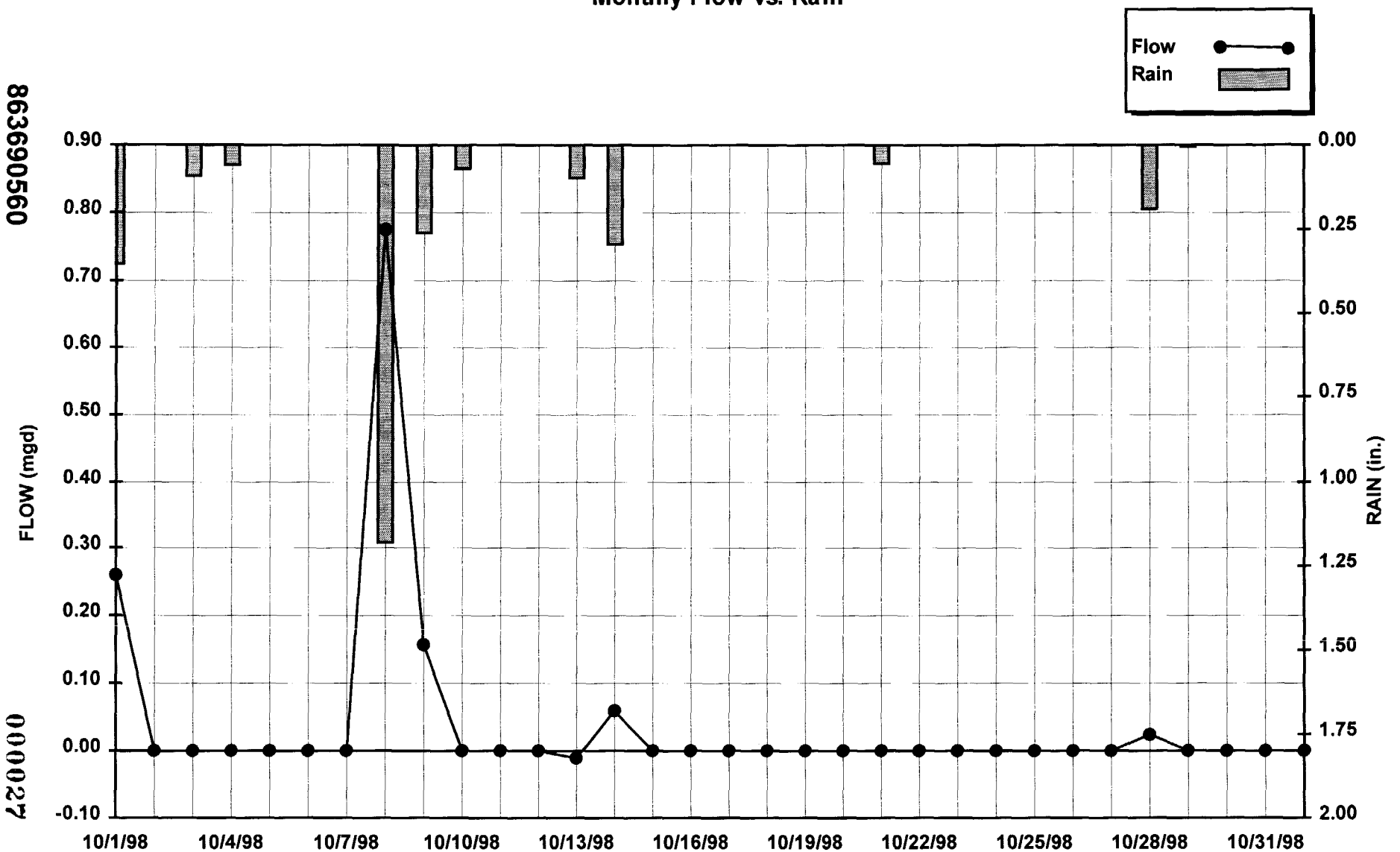
CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTQ

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

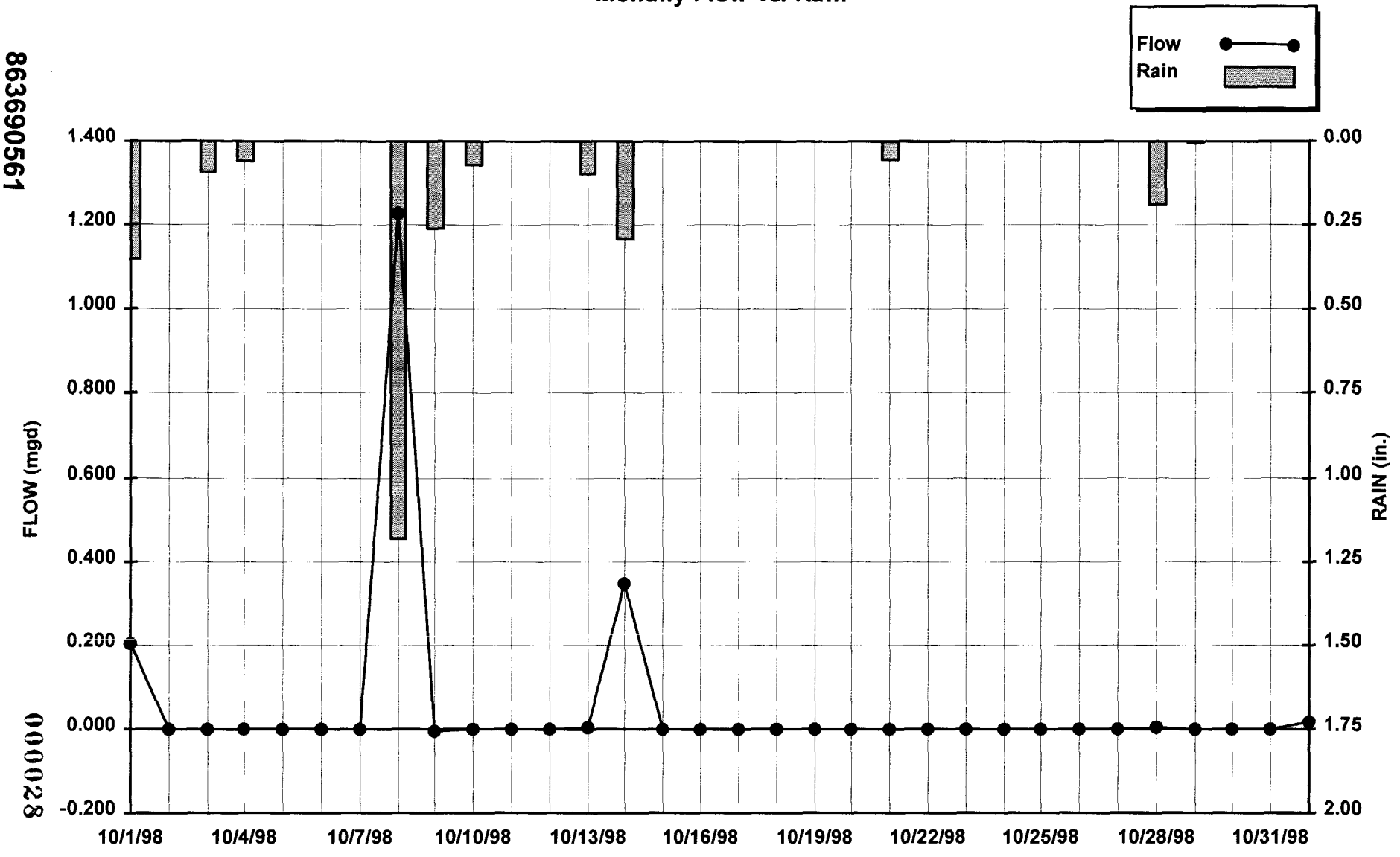
863690560

000027

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690561

0000028

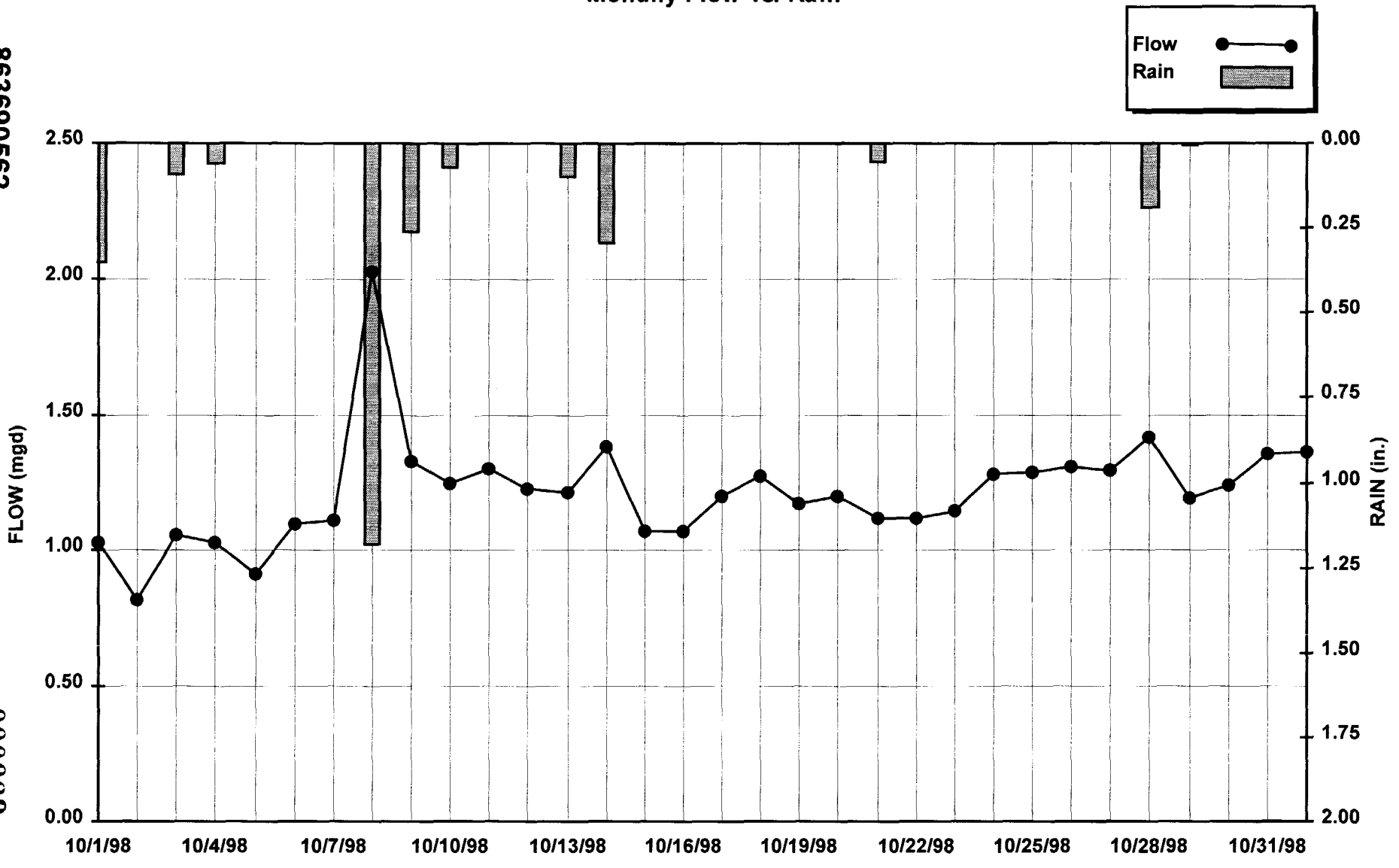
CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Influent
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUL

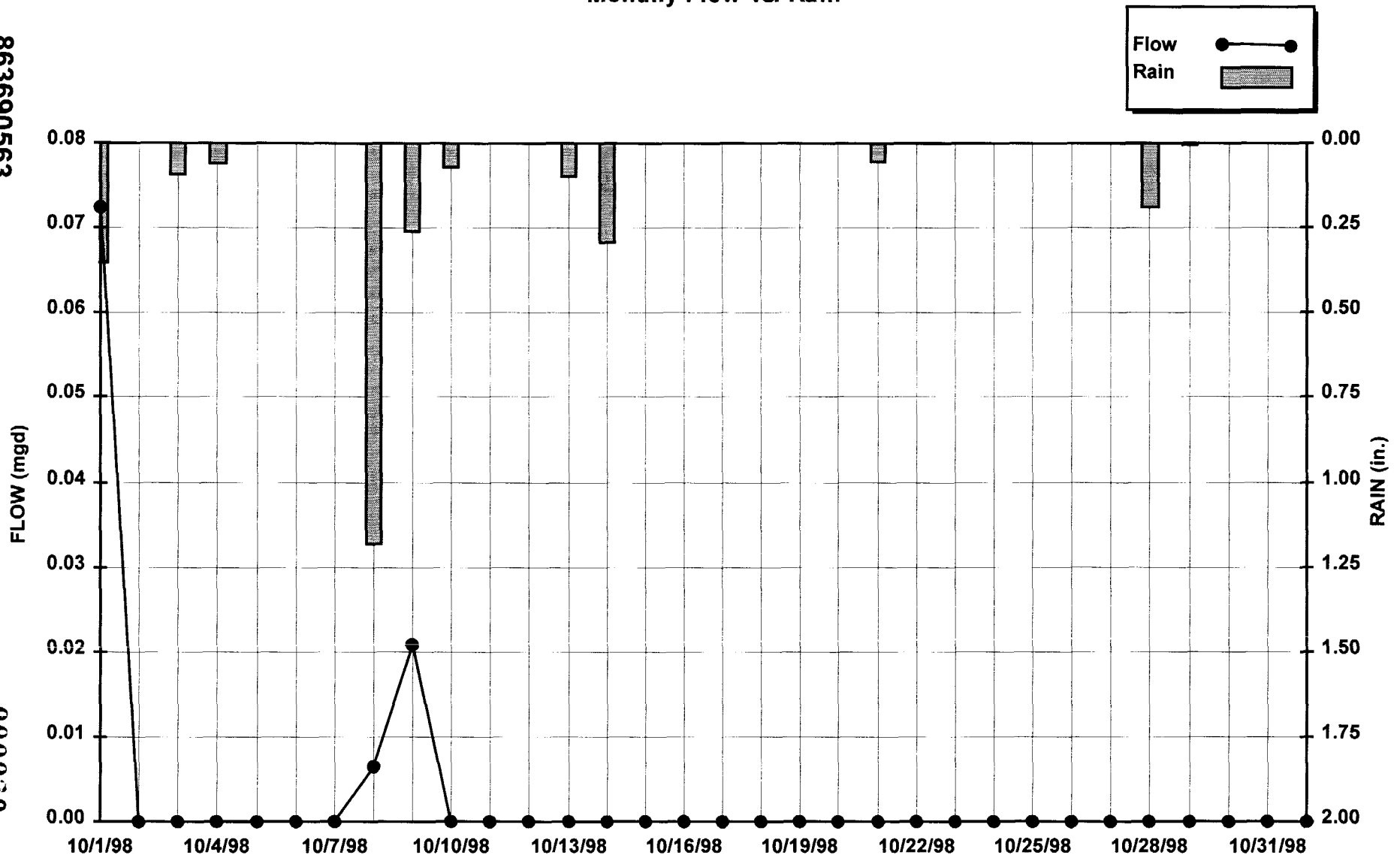
863690562

0000029

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Overflow
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUJ

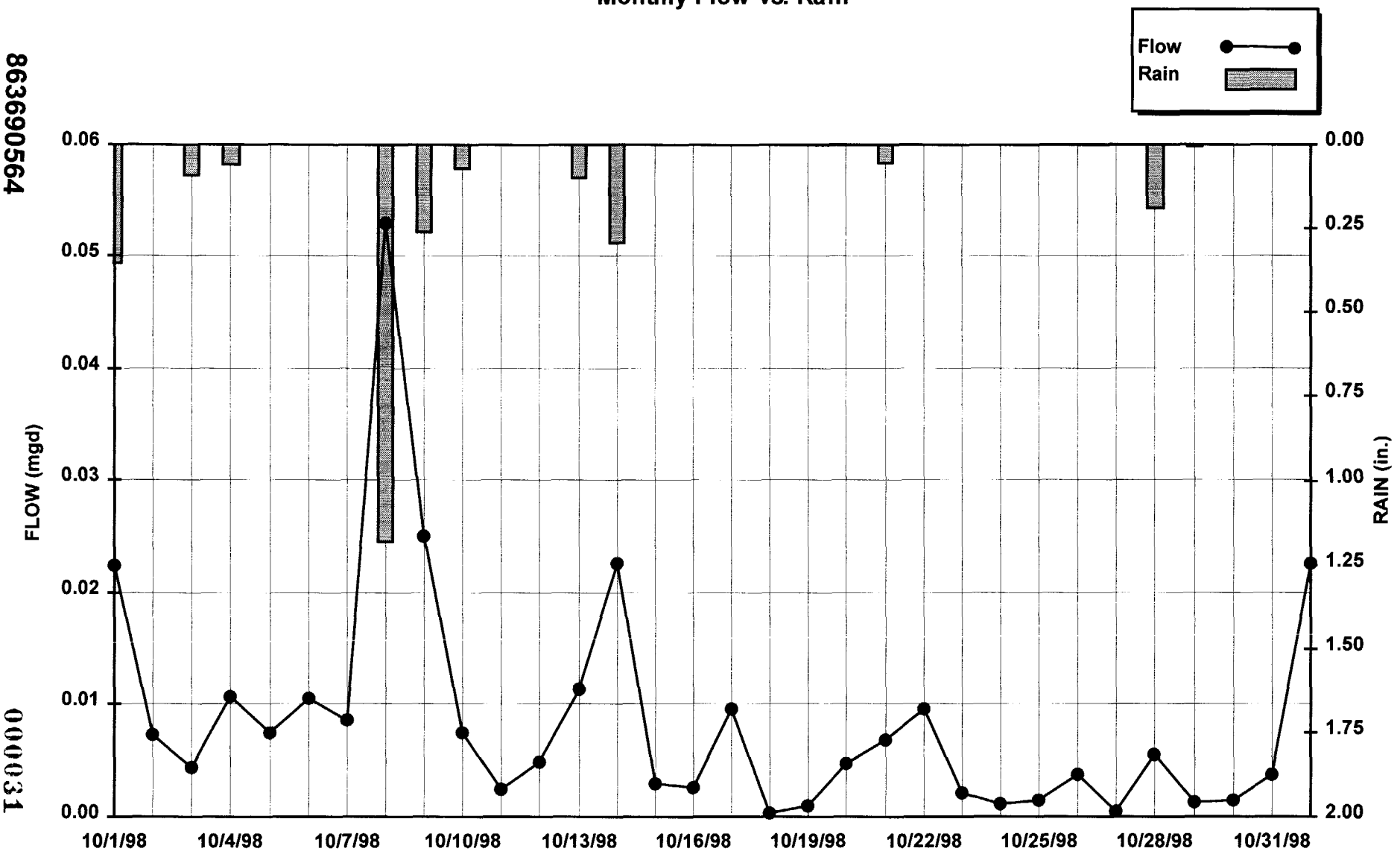
863690563

000030

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Monthly Flow Report (Flow1)

12/22/1998 2:35:35 PM

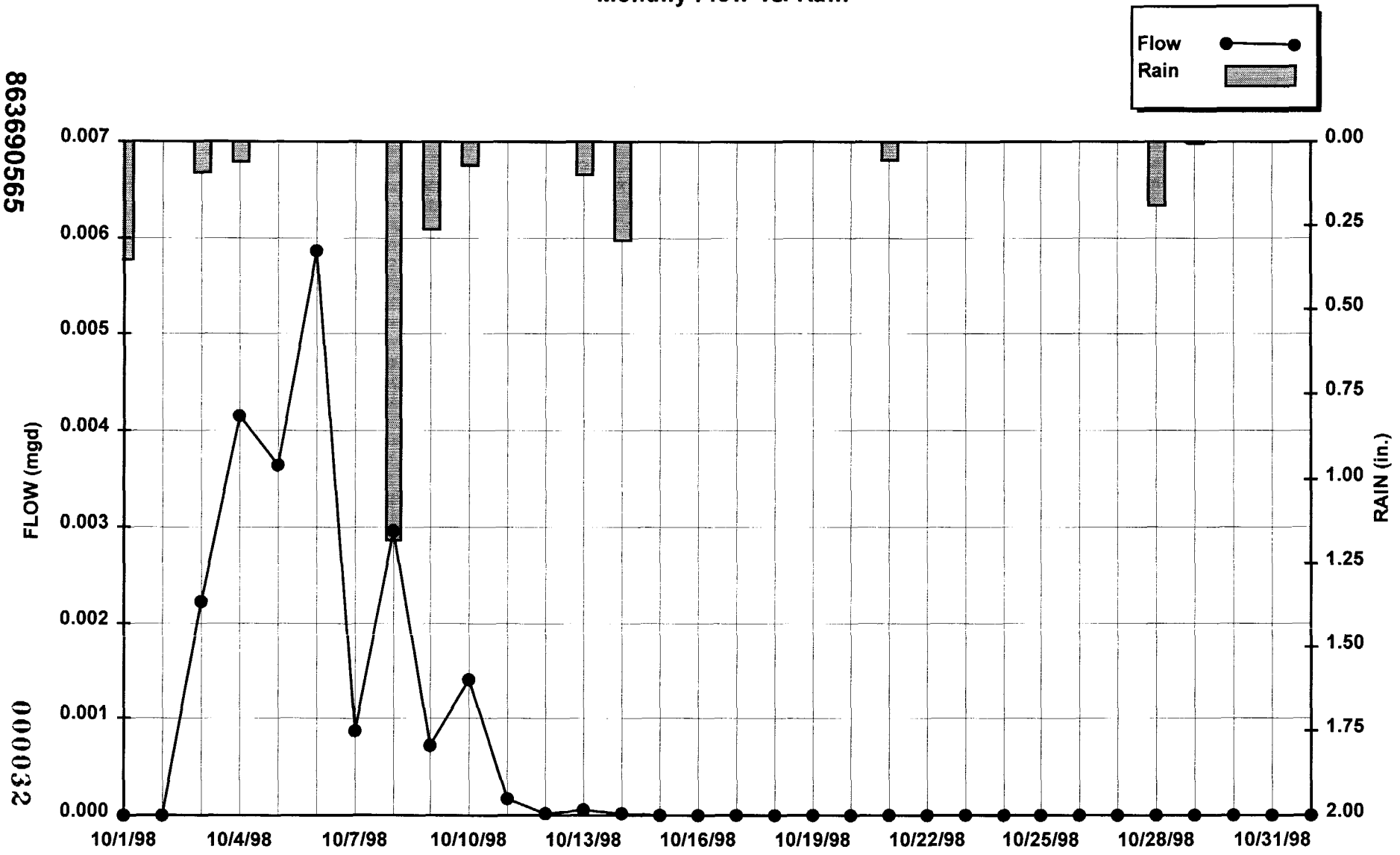
863690564

000031

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 007 - THIRD AVE
Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02
Serial#: QR6

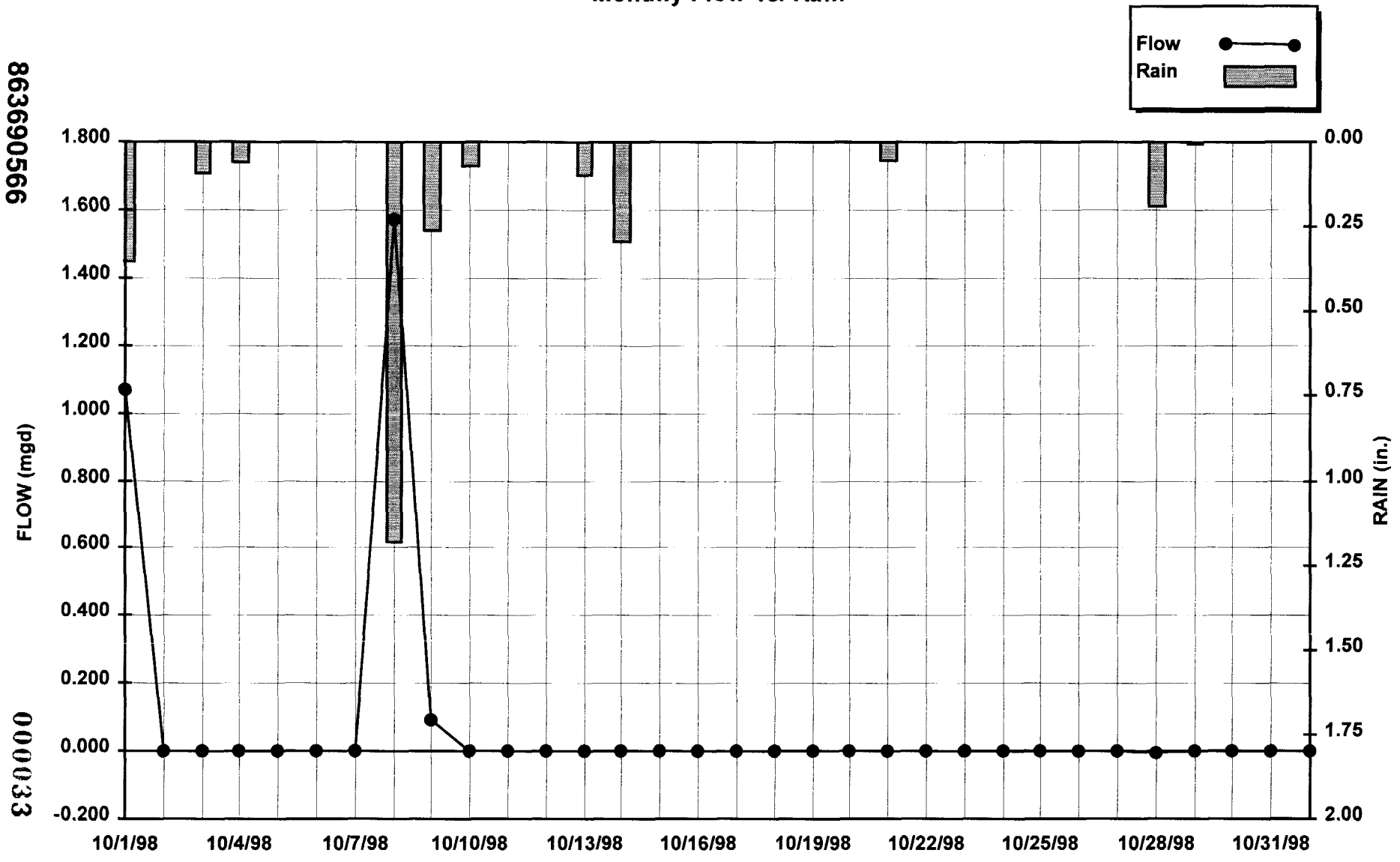
863690565

000032

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690566

000033

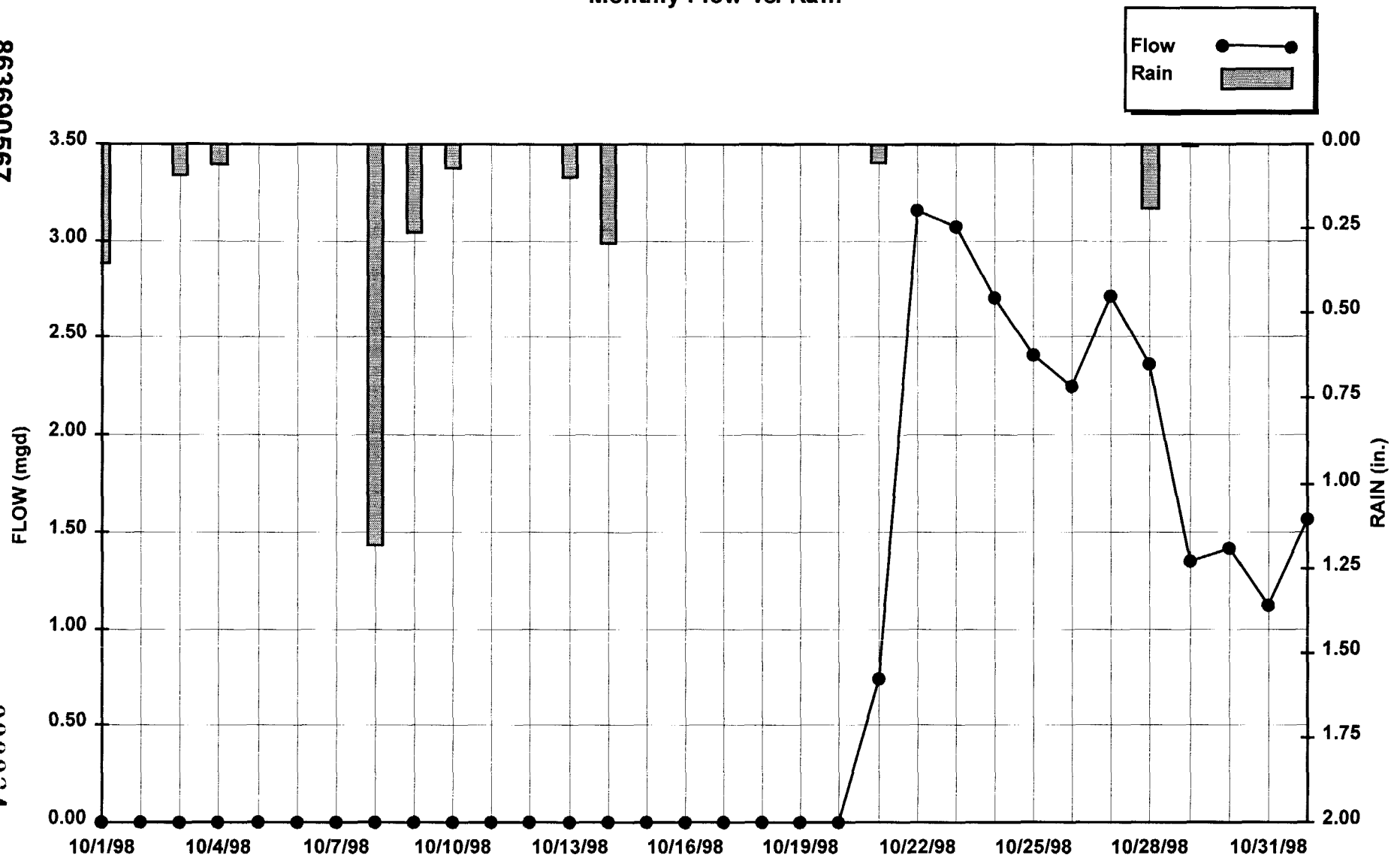
CSO 008 - FOURTH AVE
Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02
Serial#: QQD

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 008 - FOURTH AVE
Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02
Serial#: QQD

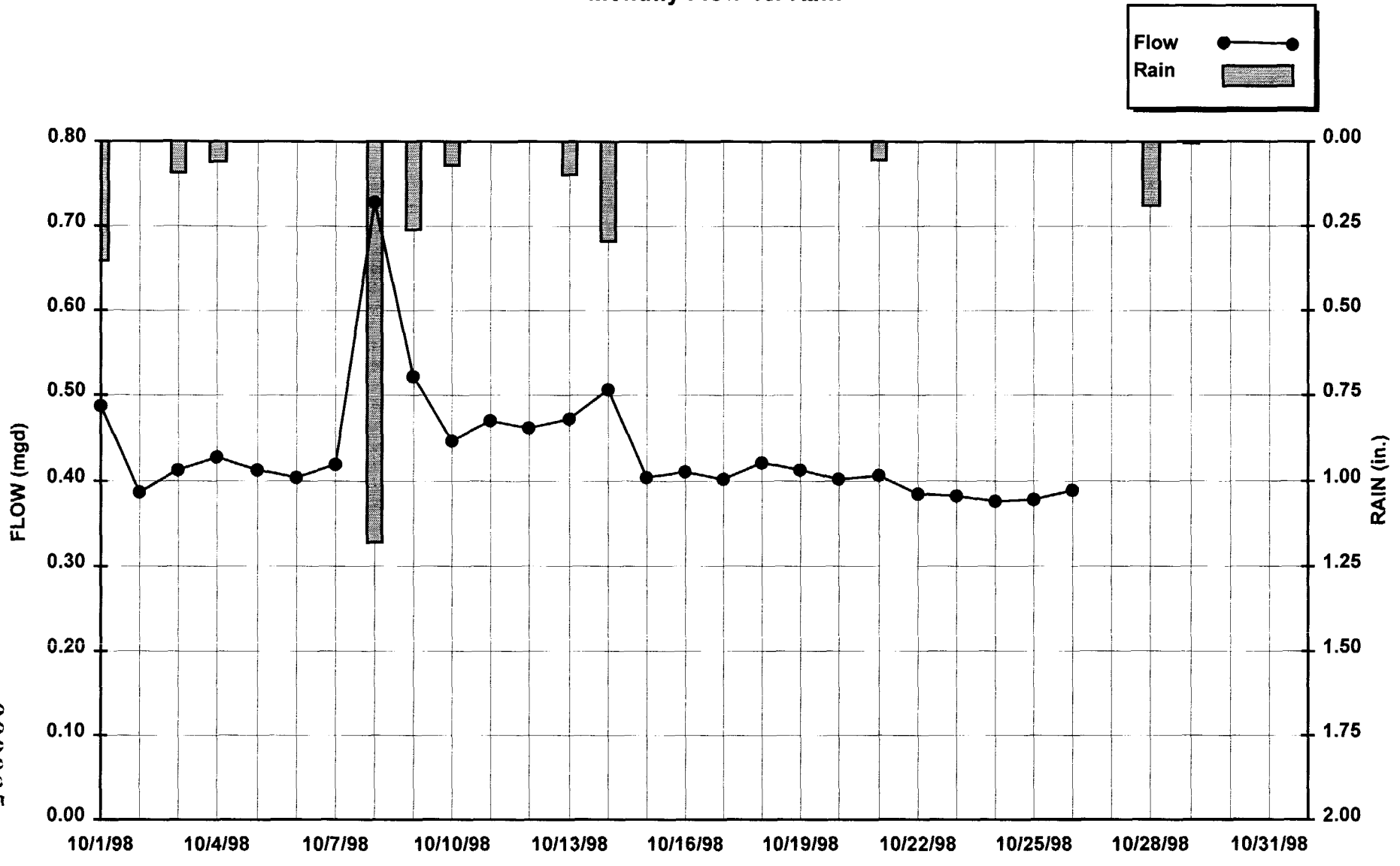
863690567

000034

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Influent
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QRG

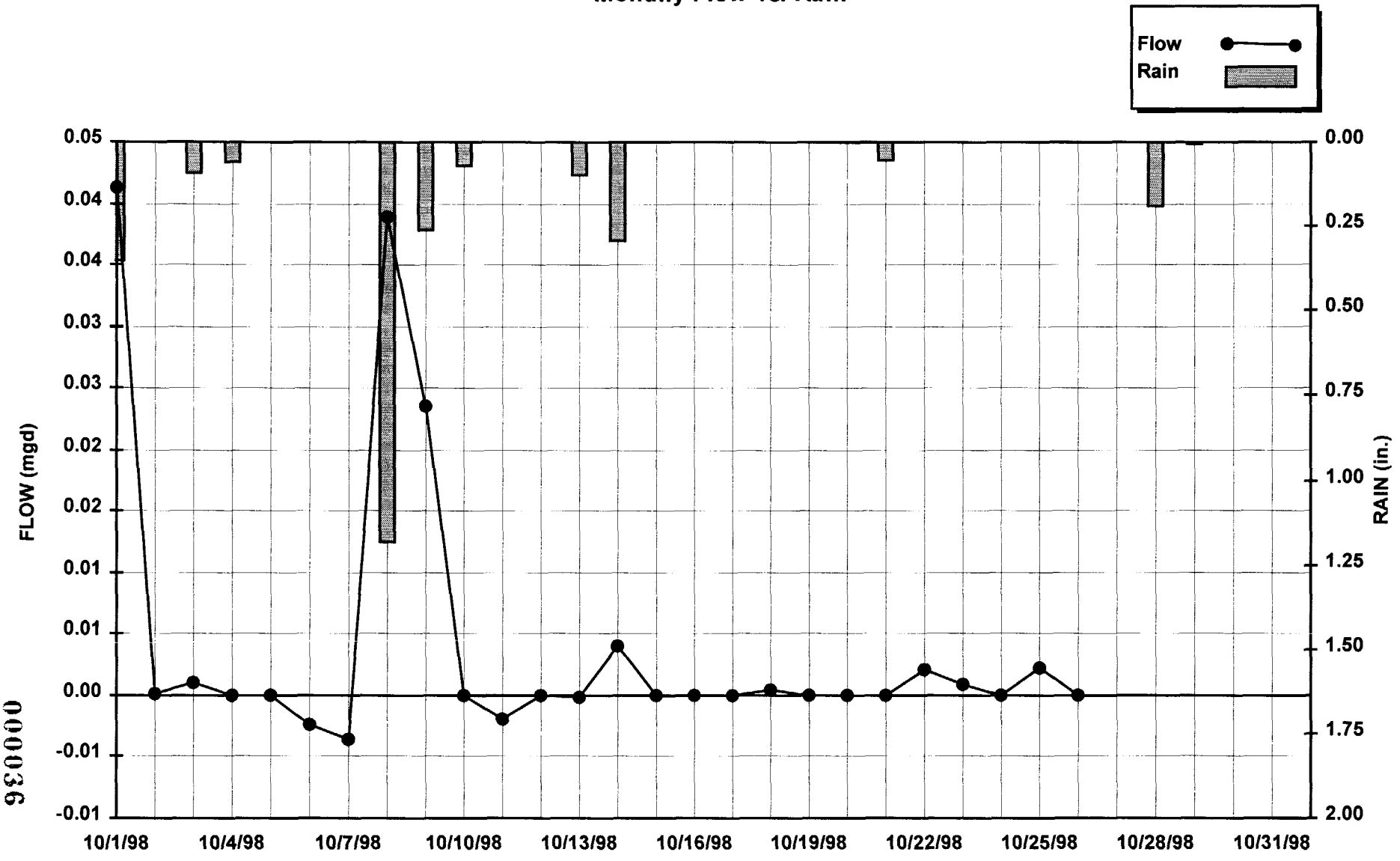
000035

863690568

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Overflow
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QU3

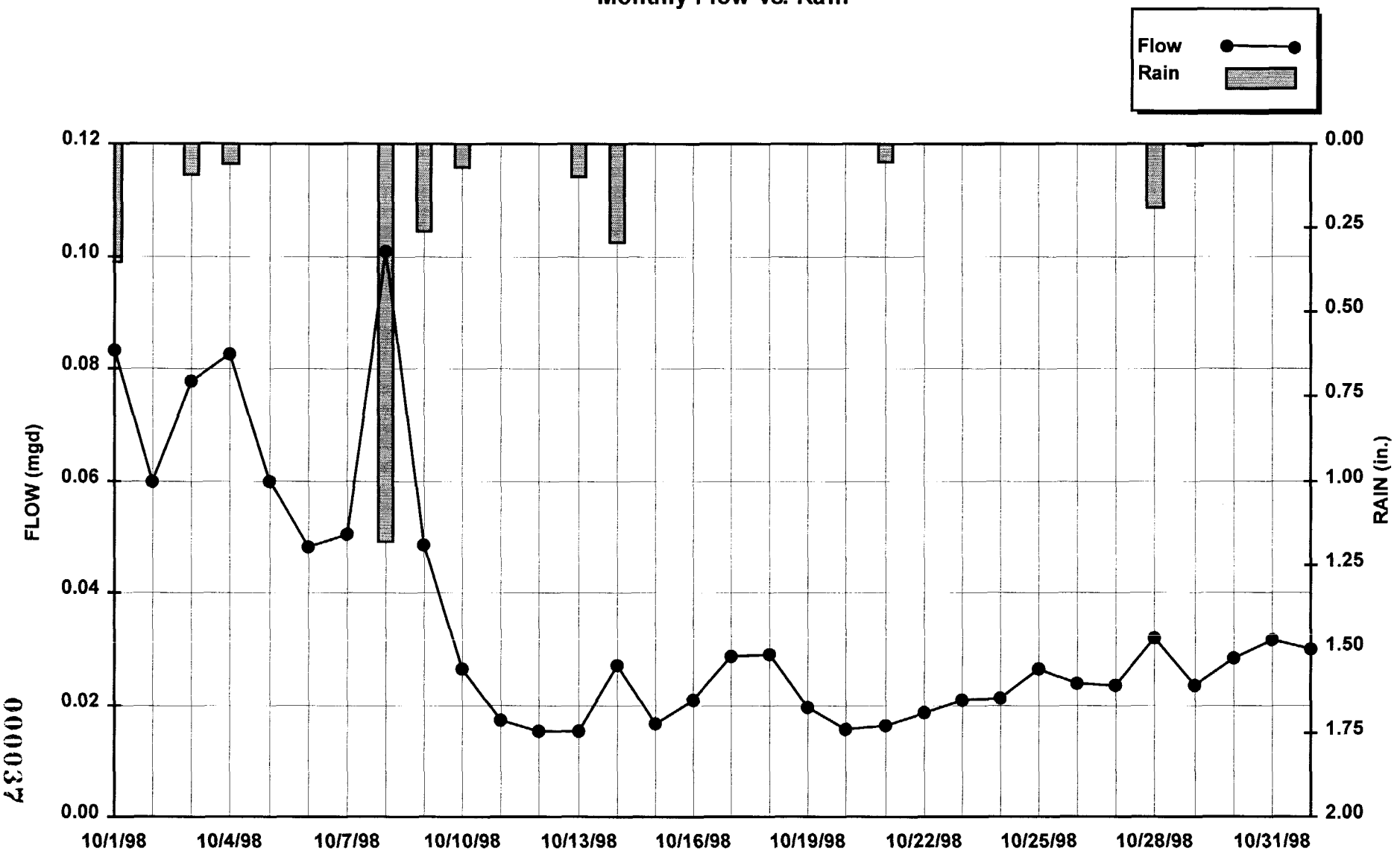
000036

863690569

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

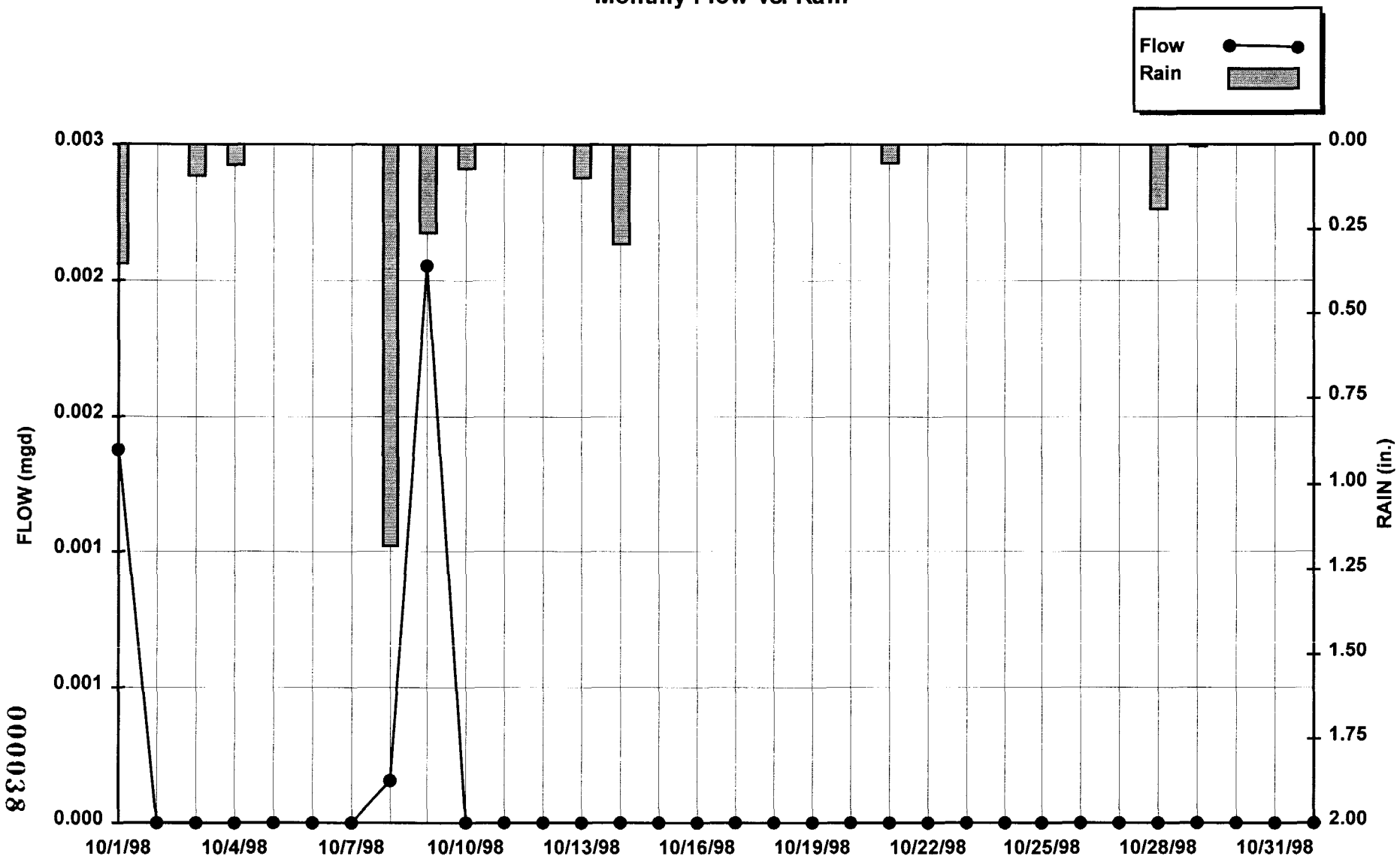
0000037

863690570

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST
Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRW

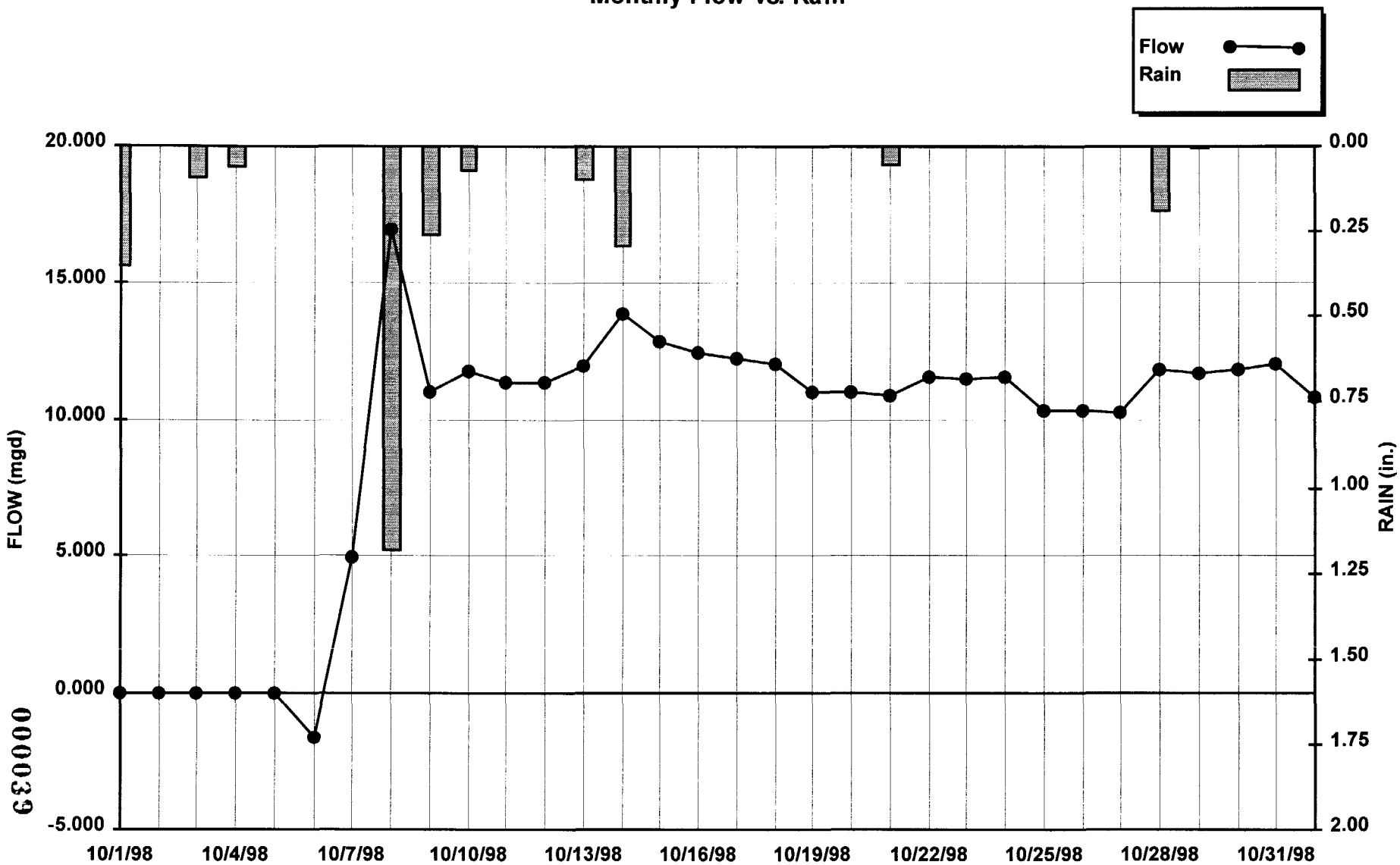
000038

863690571

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Influents
Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTR

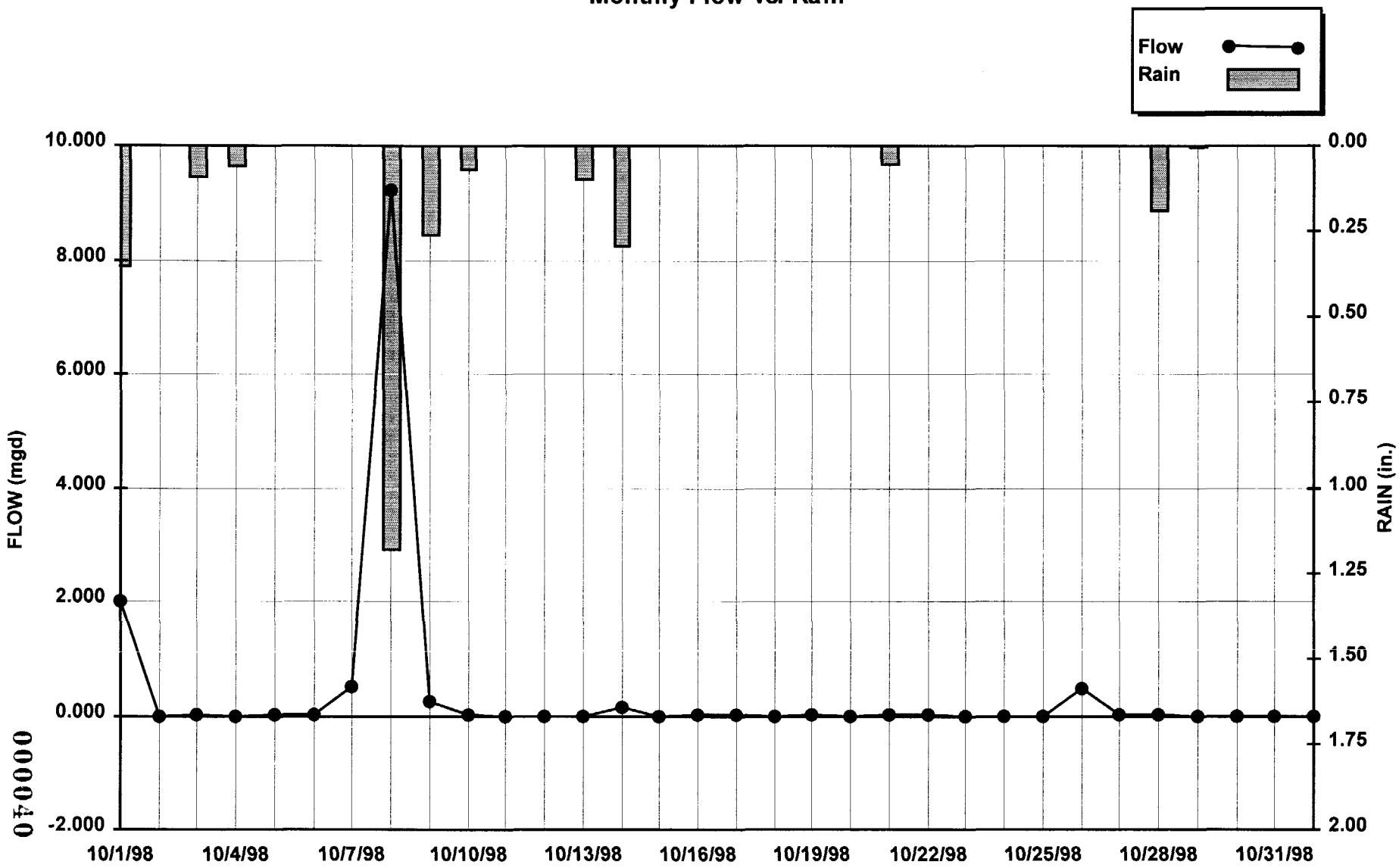
000039

863690572

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow North Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QPS

Monthly Flow Report (Flow2)

12/22/1998 3:02:58 PM

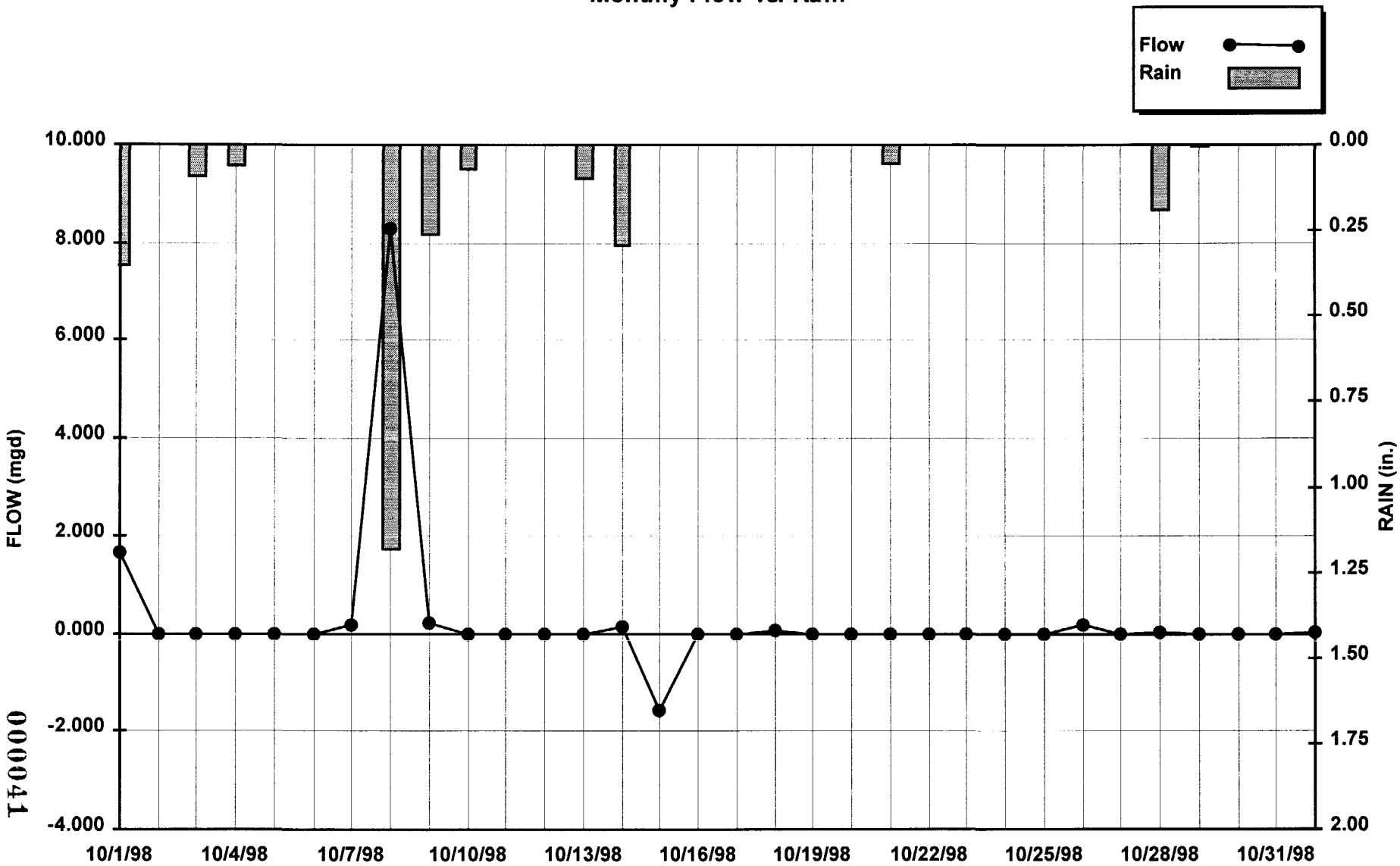
000040

863690573

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow South Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QT2

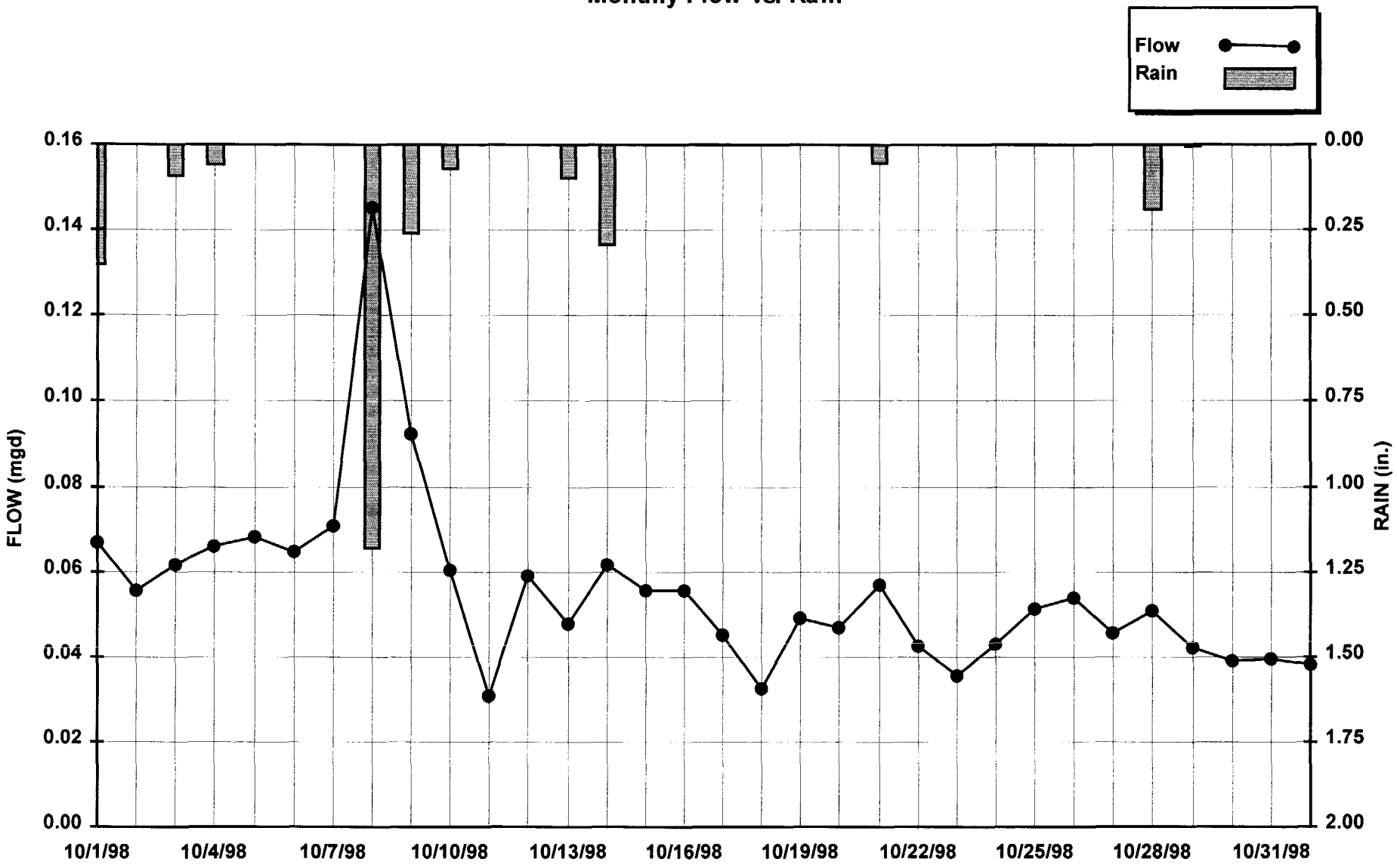
000041

863690574

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST Influent
Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02
Serial#: QRF

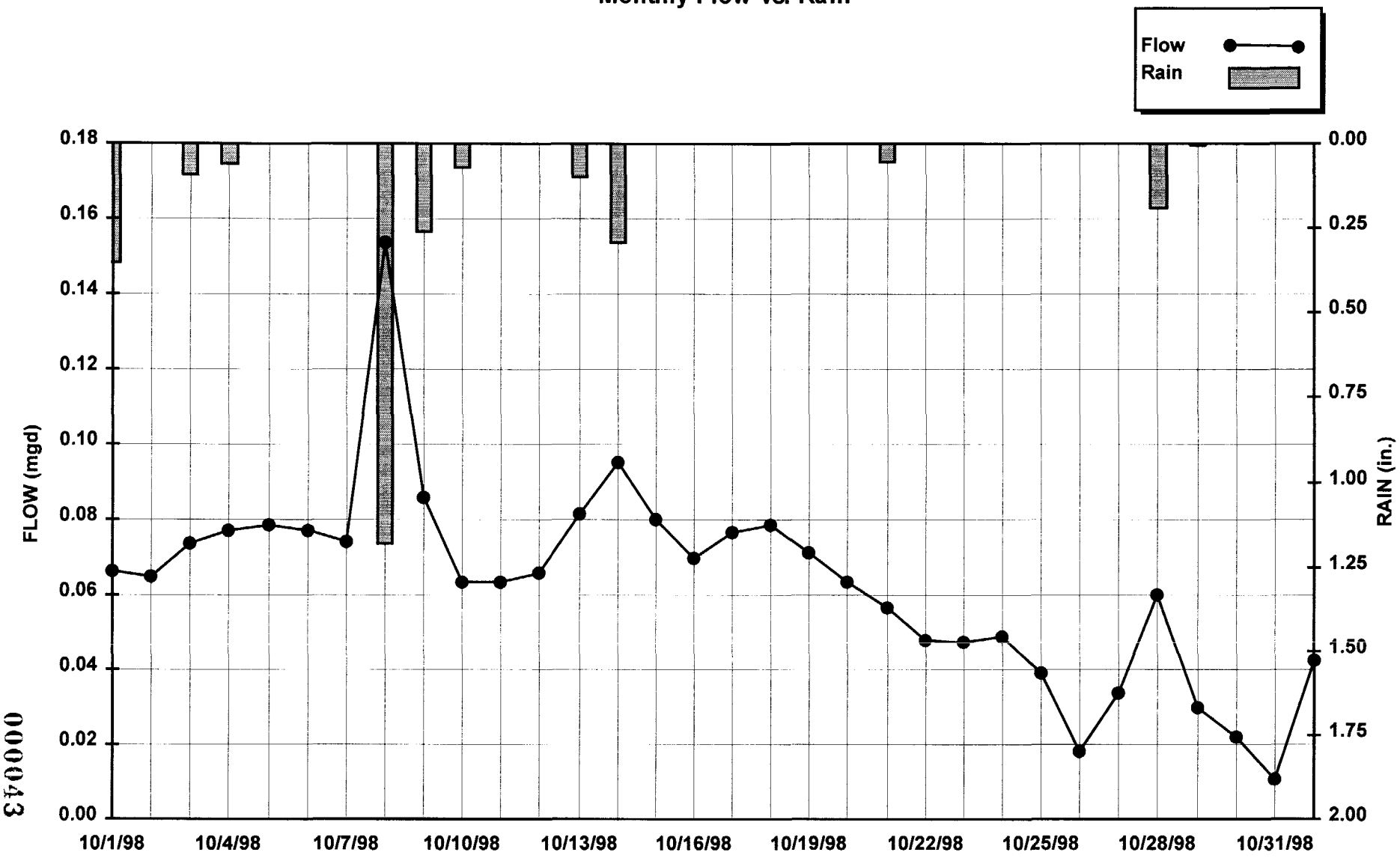
000042

863690575

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST influent and overflow

Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRZ

Monthly Flow Report (Flow1)

12/22/1998 2:37:16 PM

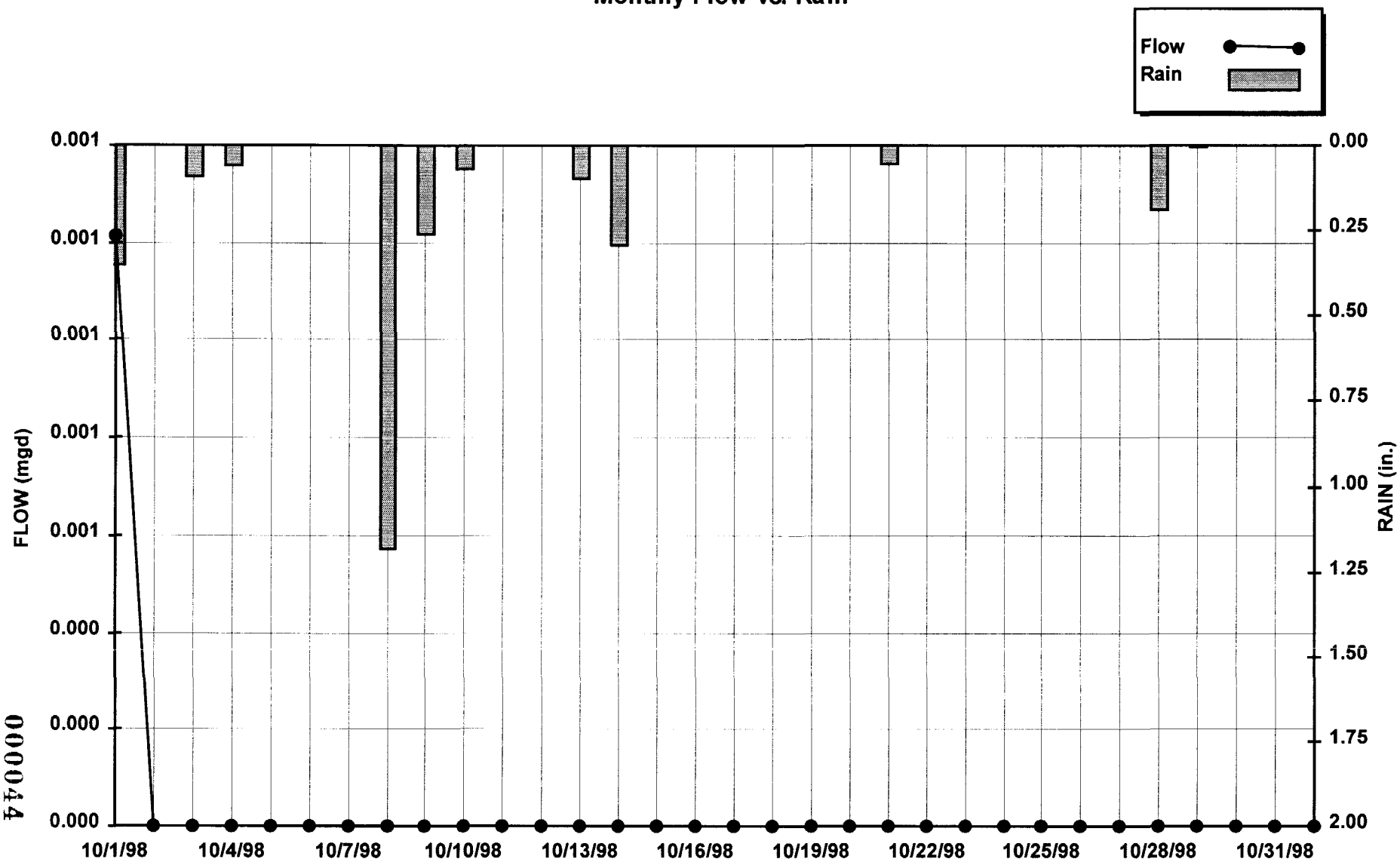
000043

863690576

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRZ

Monthly Flow Report (Flow2)

12/22/1998 3:03:47 PM

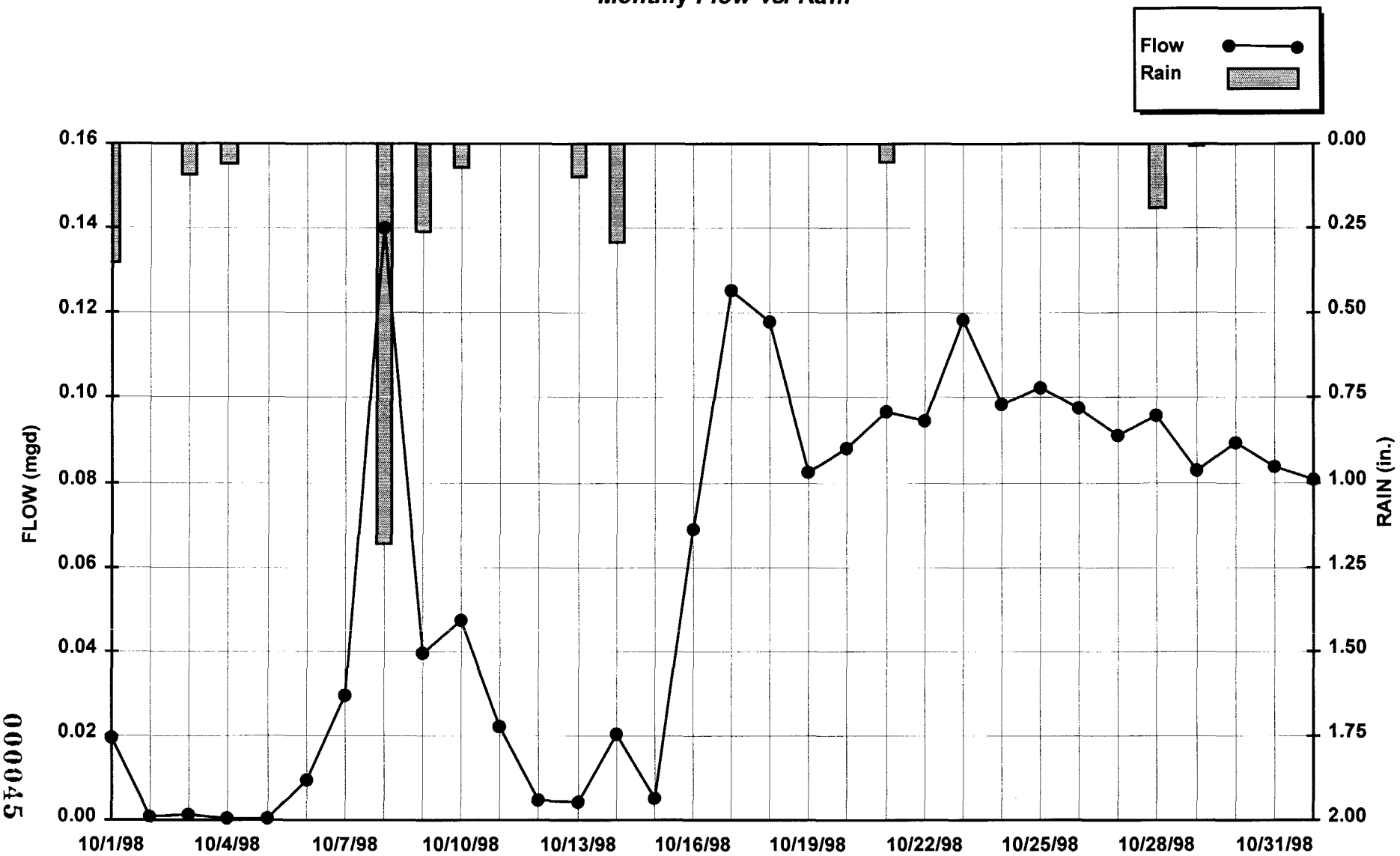
000044

863690577

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR7

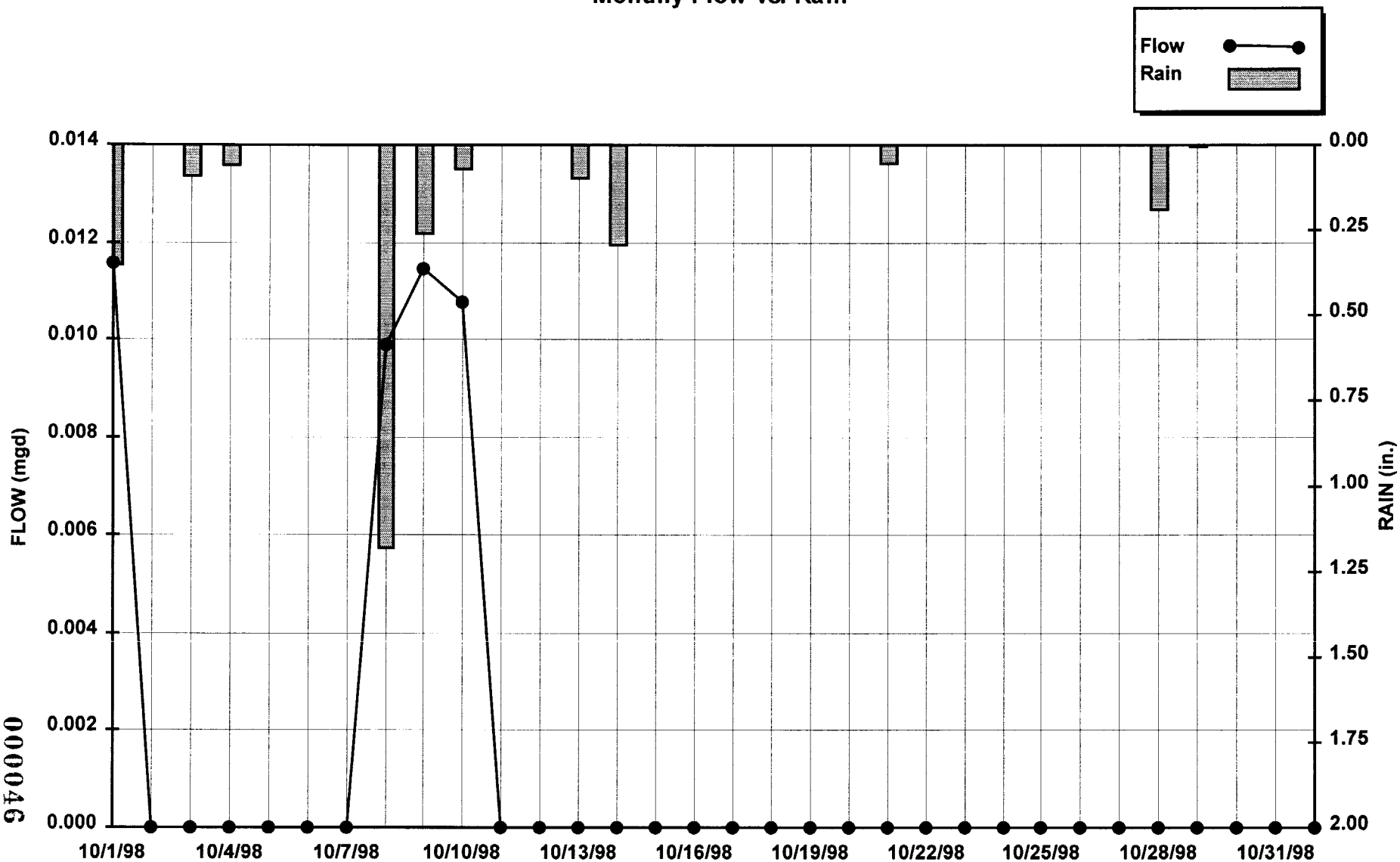
000045

863690578

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR7

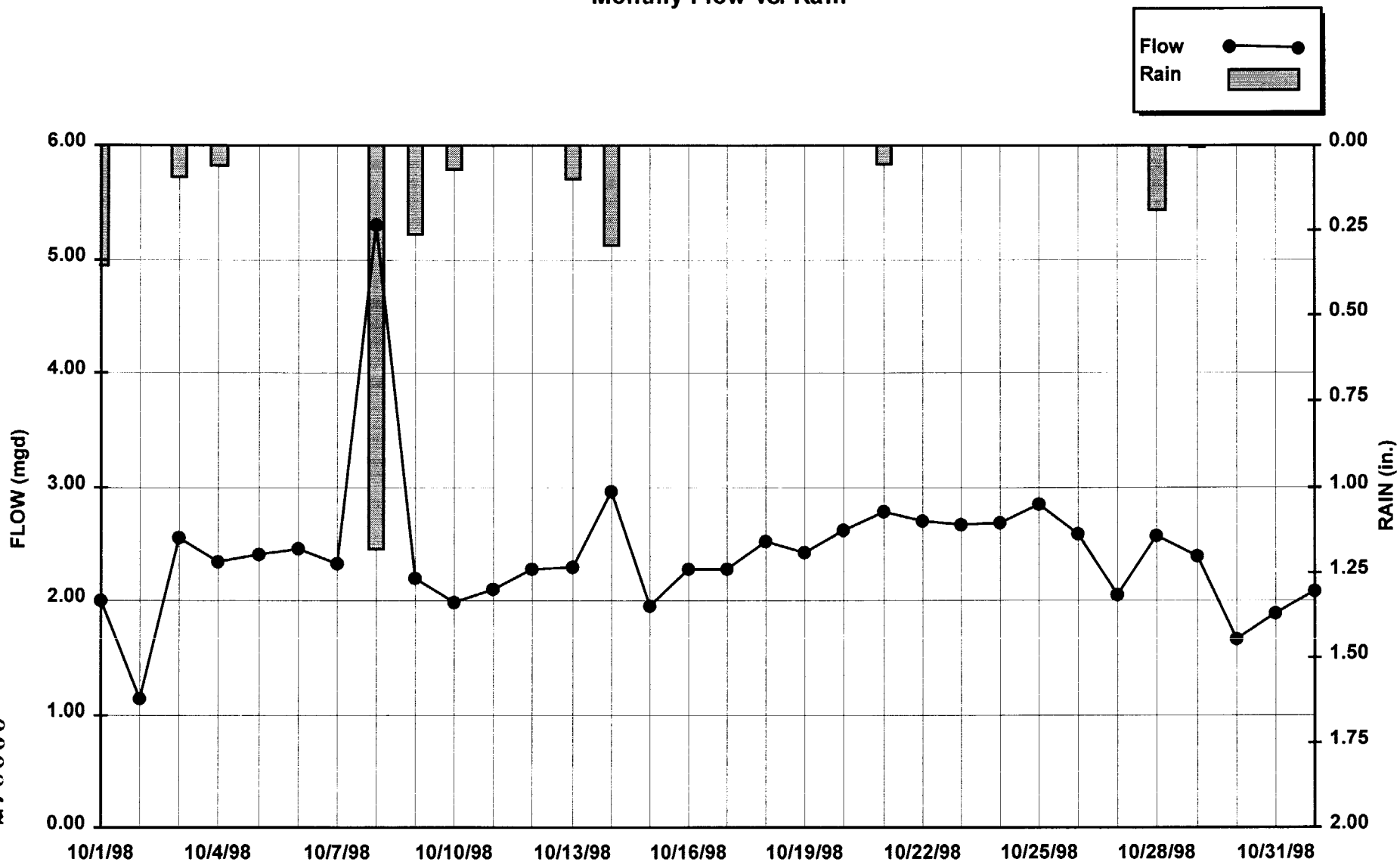
000046

863690579

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUY

Monthly Flow Report (Flow1)

12/22/1998 2:33:02 PM

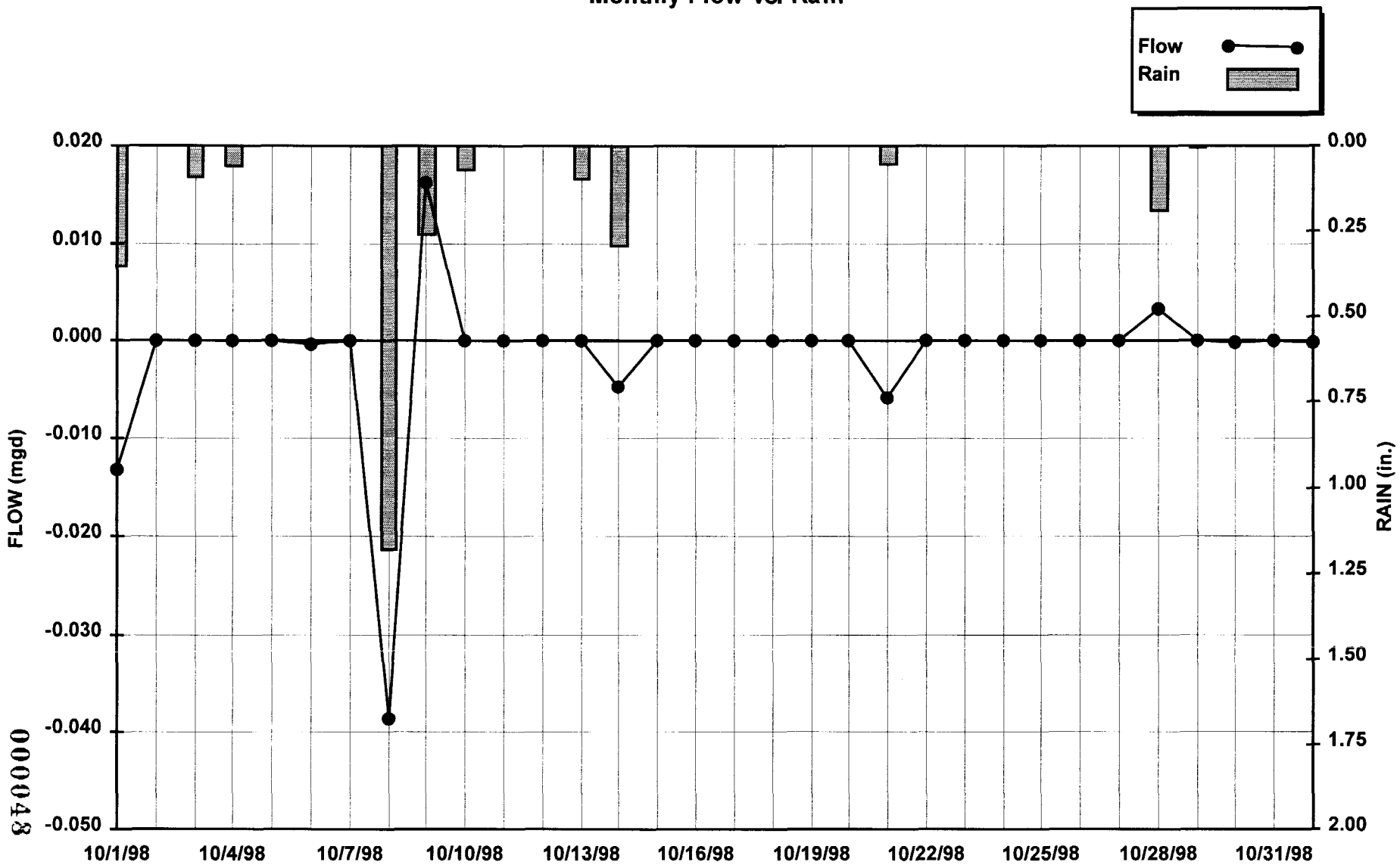
000047

863690580

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000048

863690581

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

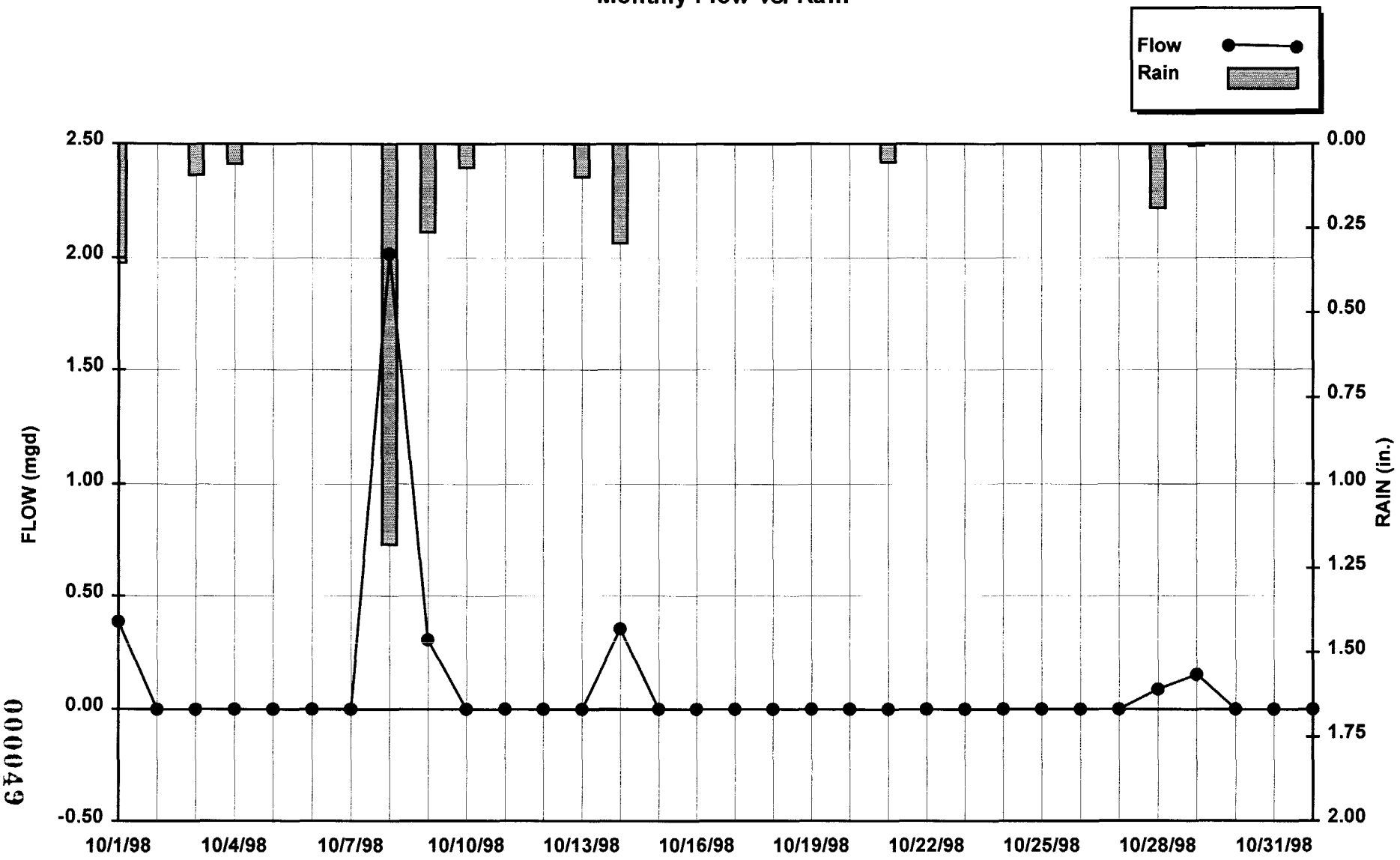
Monthly Flow Report (Flow2)

12/22/1998 2:57:47 PM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUY

Monthly Flow Report (Flow3)

12/22/1998 3:18:59 PM

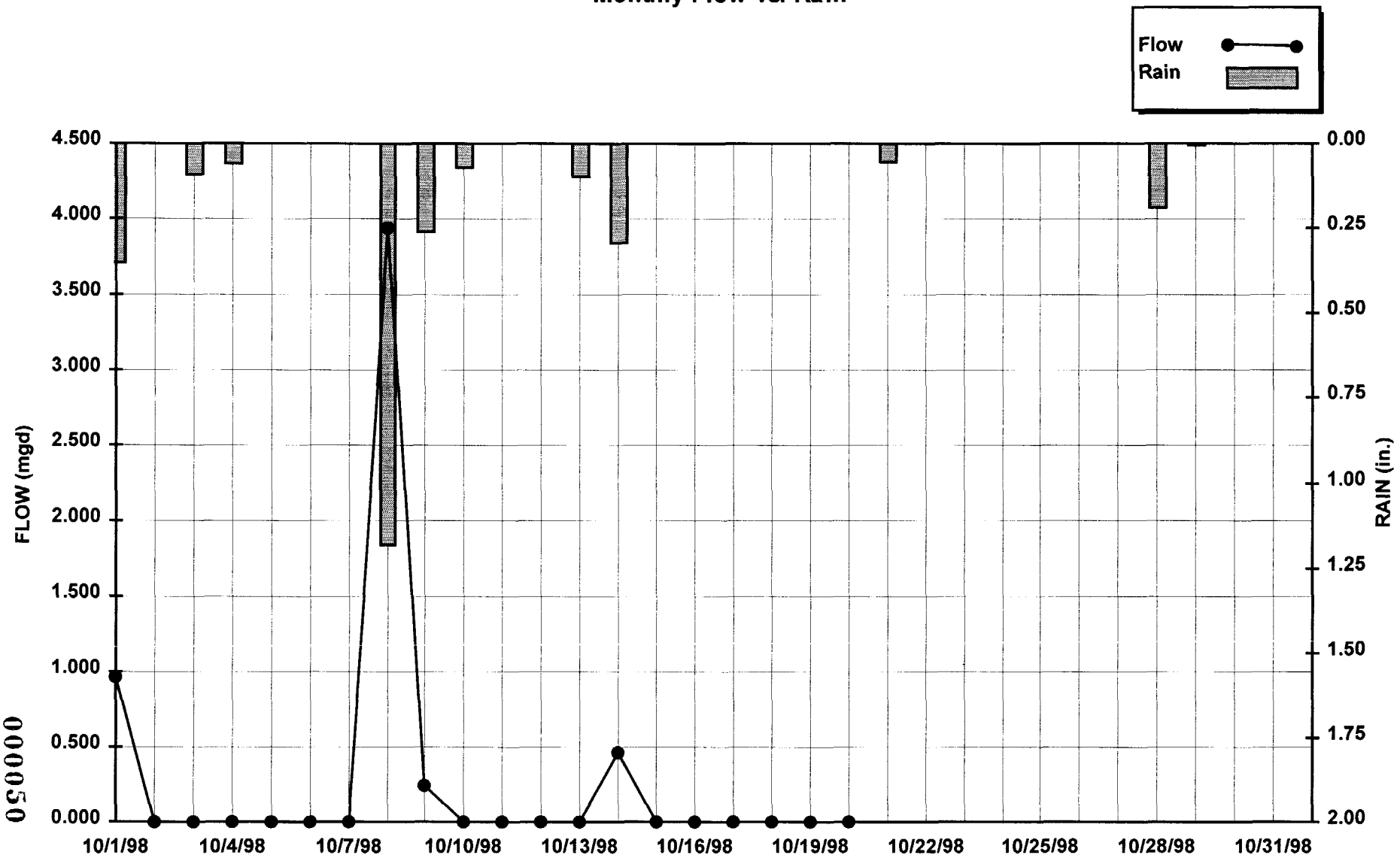
000049

863690582

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

Monthly Flow Report (Flow2)

12/22/1998 3:01:19 PM

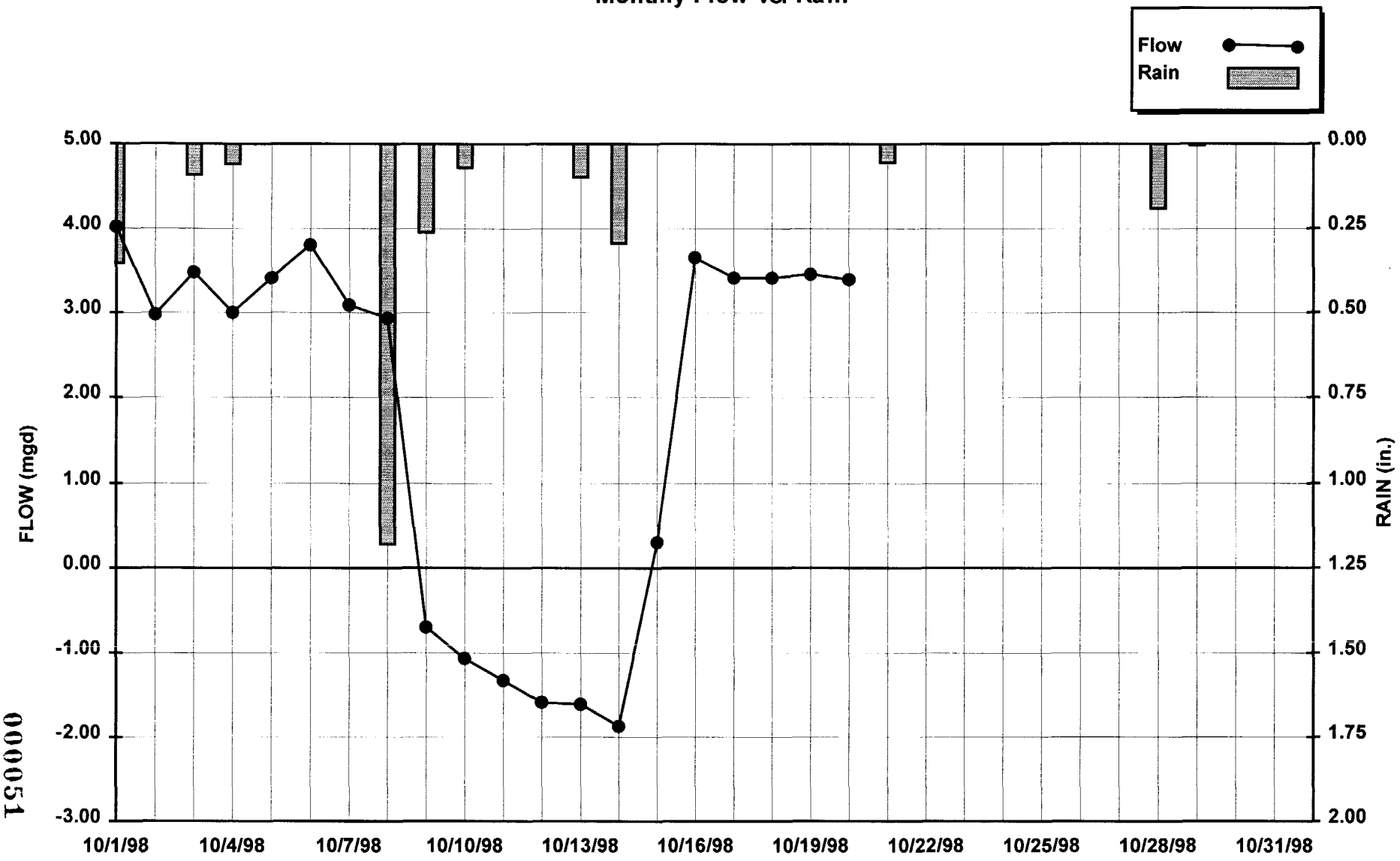
0000030

863690583

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000051

863690584

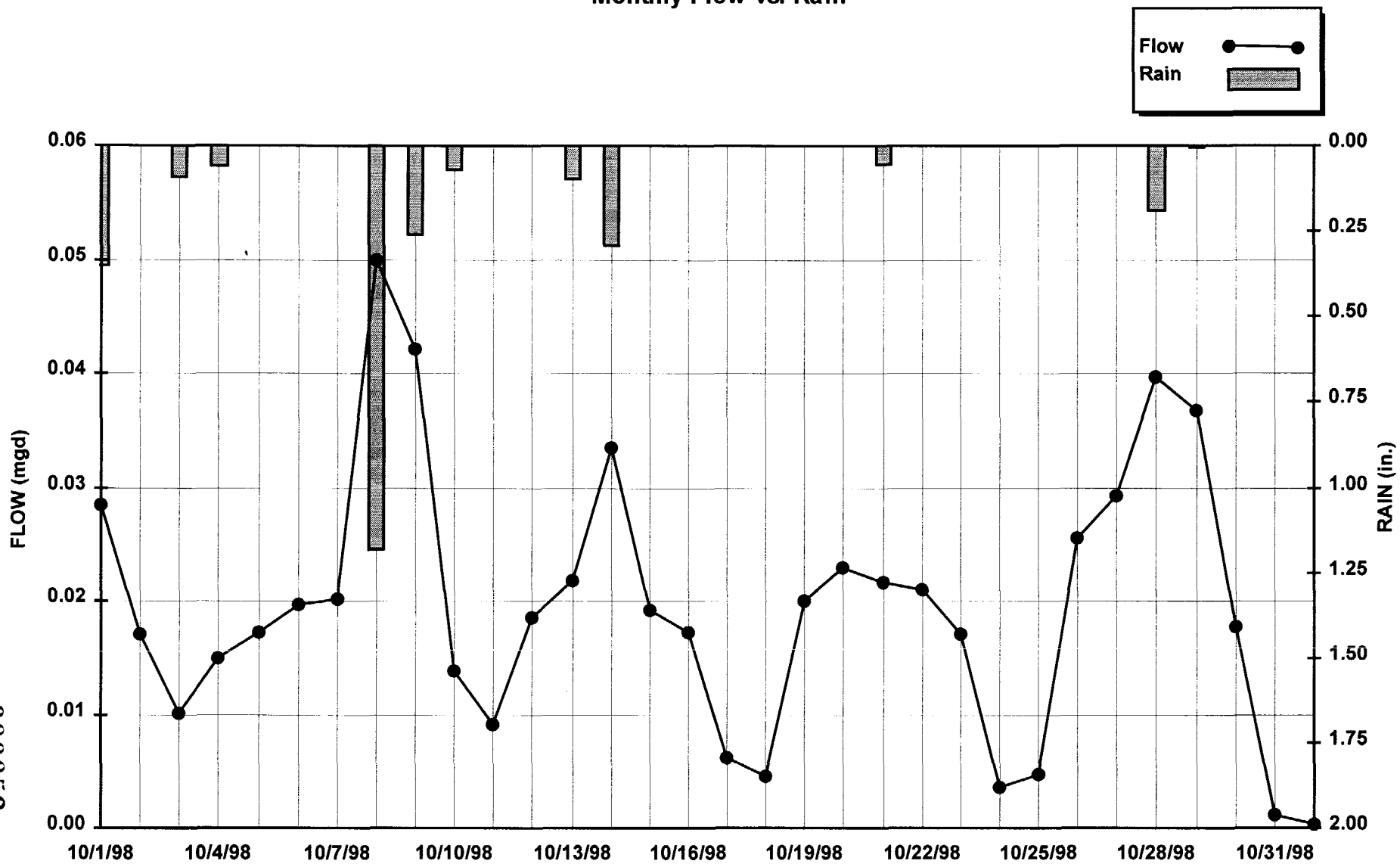
CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent1
Address: Raymond Plaza near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QQT

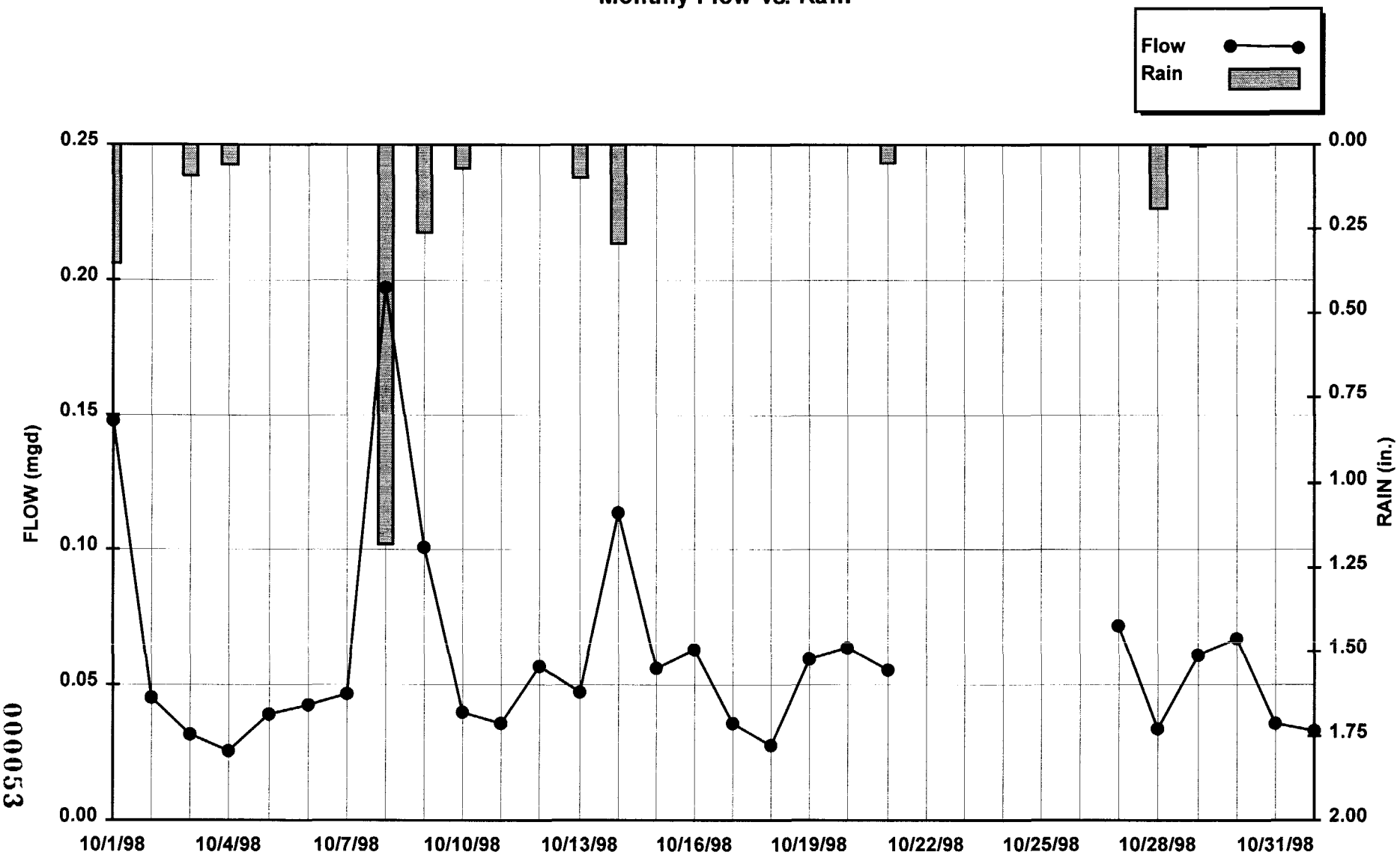
000052

863690585

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent2
Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QU2

Monthly Flow Report (Flow1)

12/22/1998 2:44:52 PM

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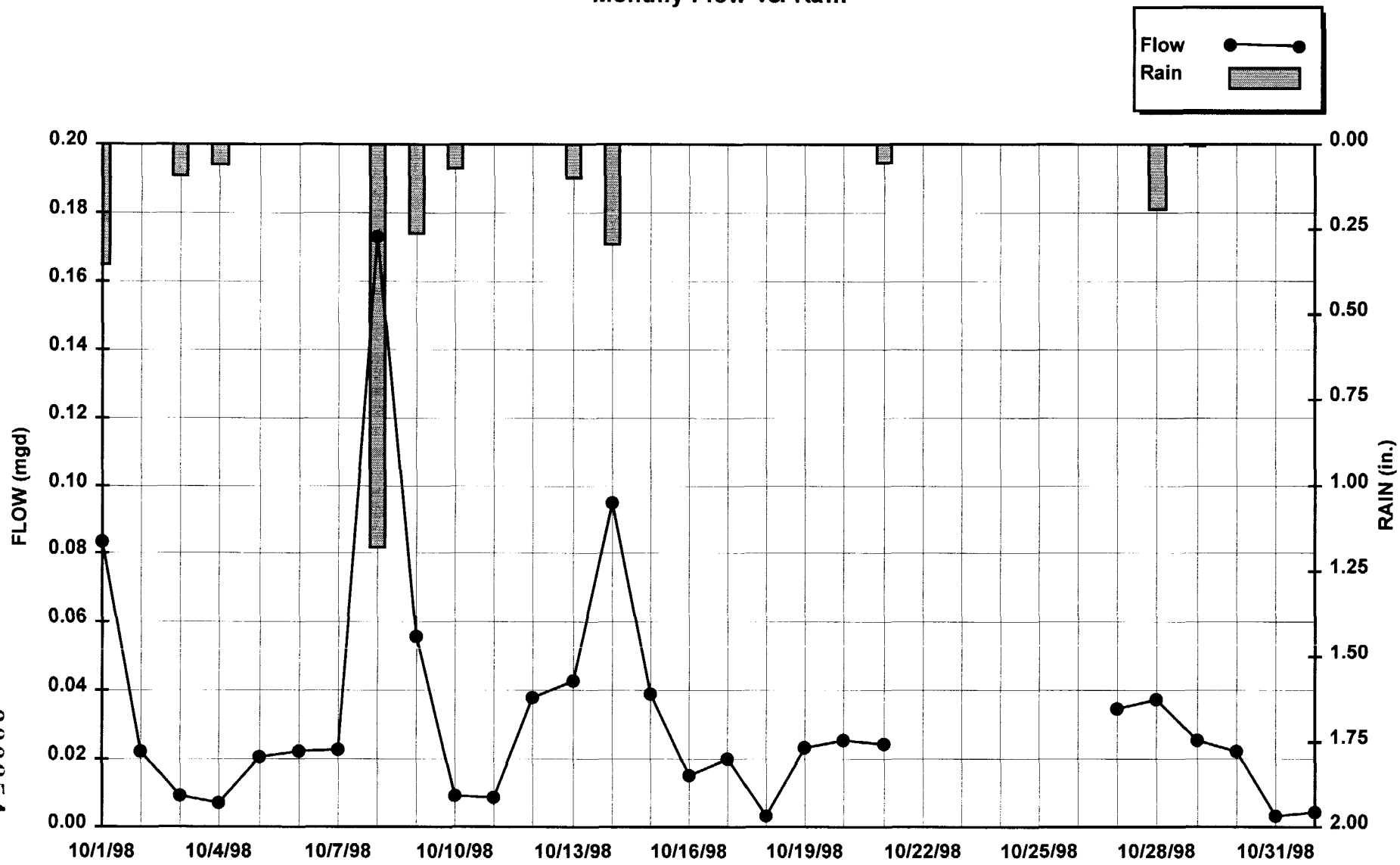
863690586

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent3
Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QPV

Monthly Flow Report (Flow1)

12/22/1998 2:44:01 PM

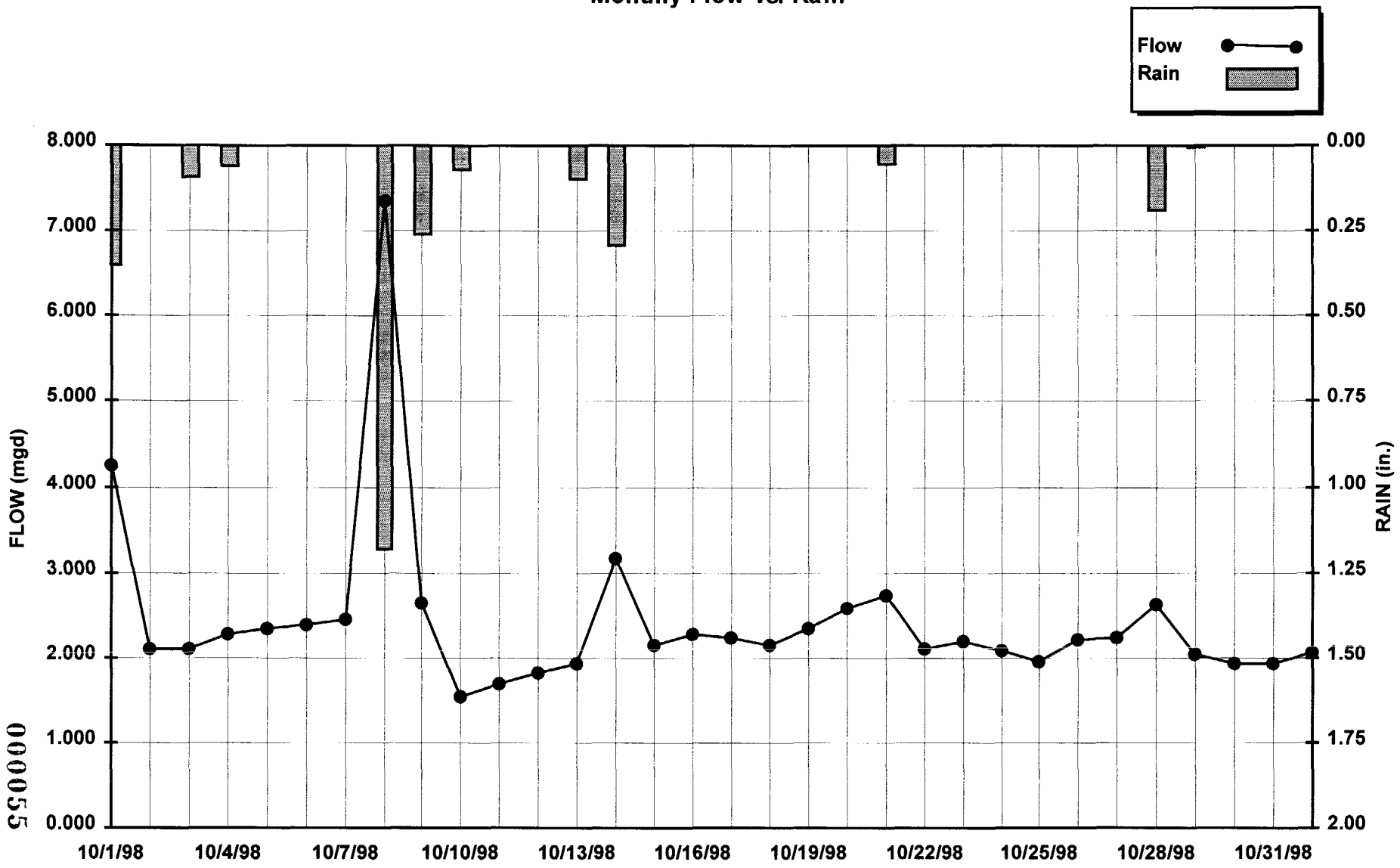
000054

863690587

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent4
Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QPQ

Monthly Flow Report (Flow2)

12/22/1998 3:15:40 PM

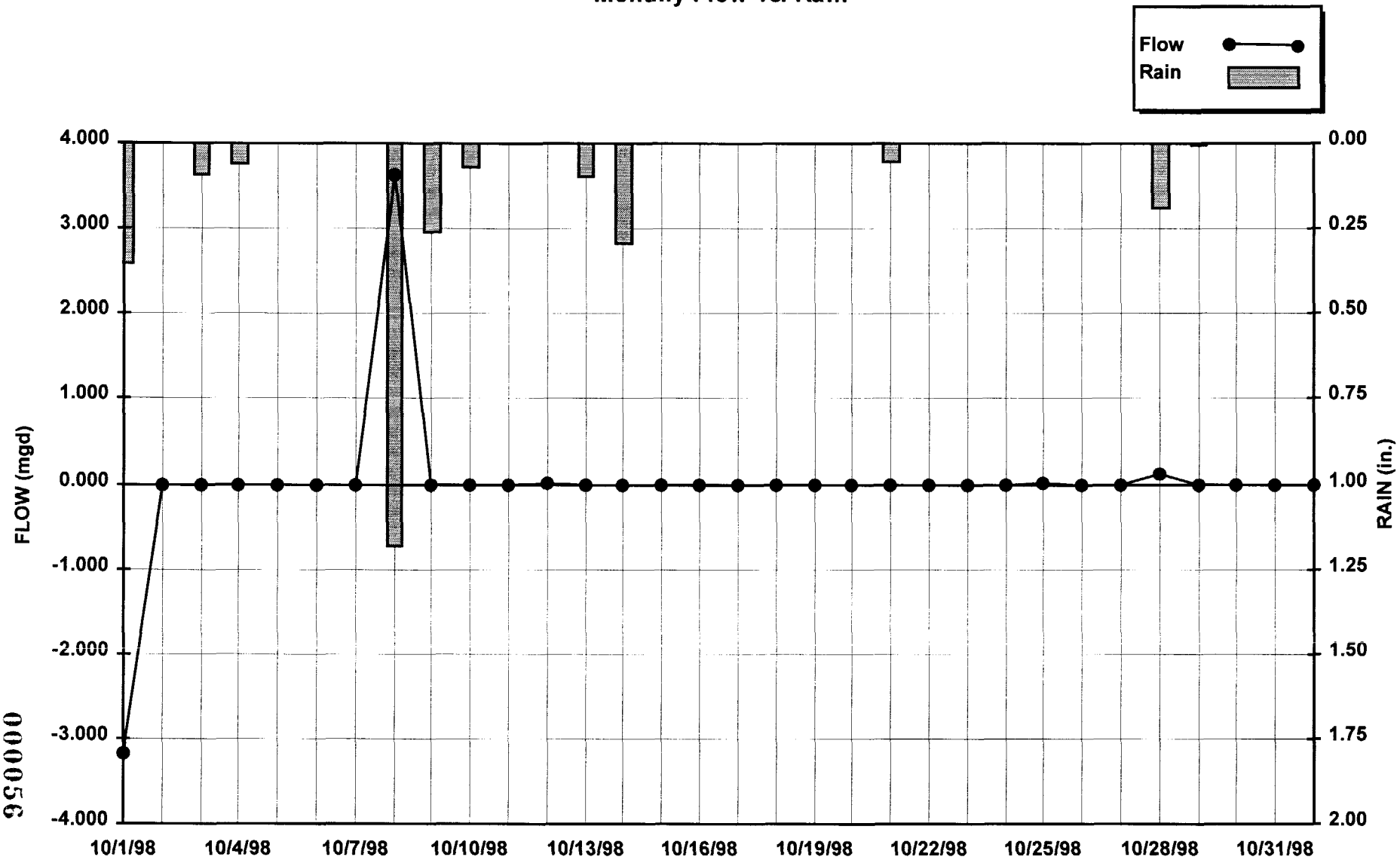
000055

863690588

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Overflow
Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QLK

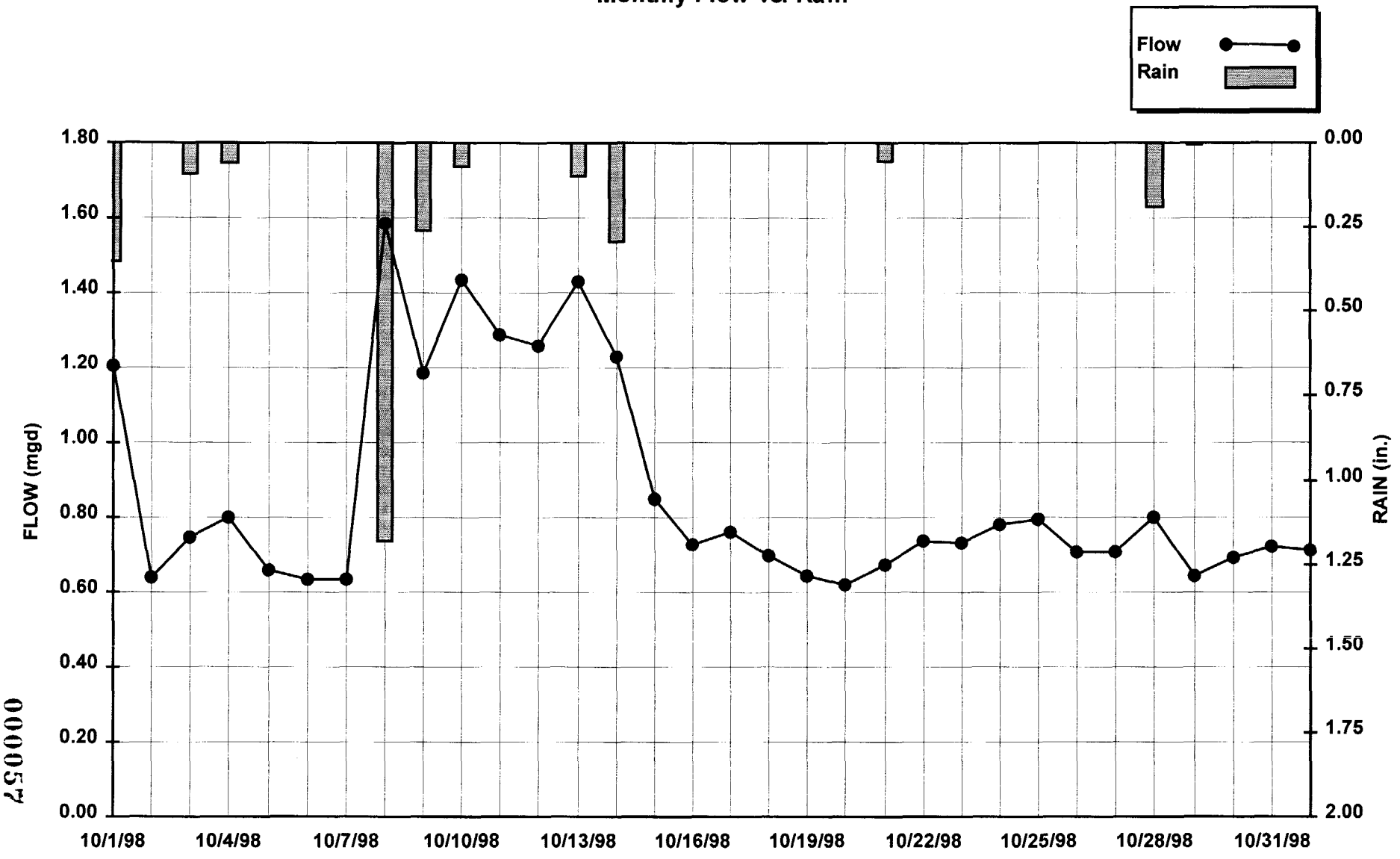
000056

863690589

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST
Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02
Serial#: QTO

Monthly Flow Report (Flow1)

12/22/1998 2:50:19 PM

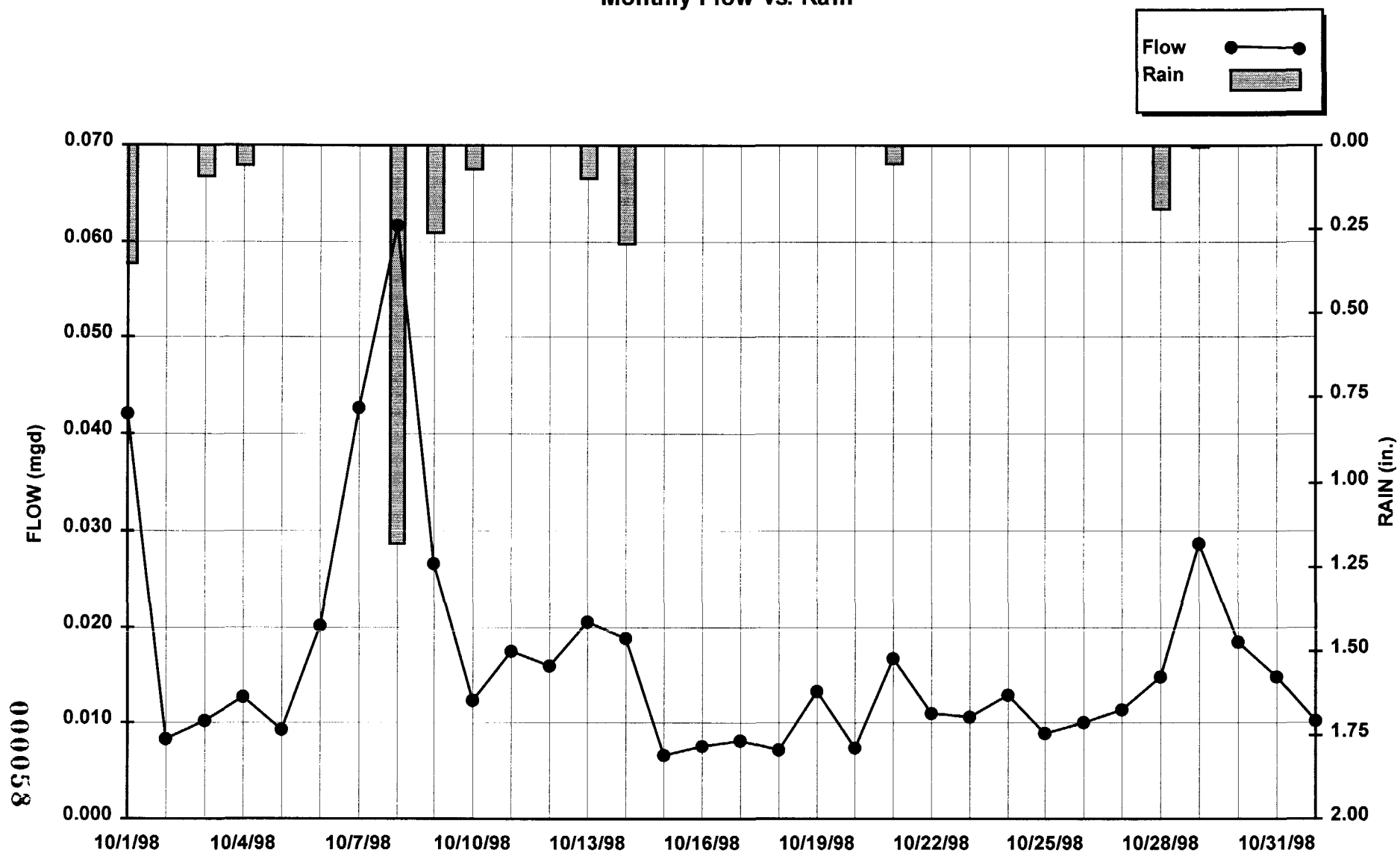
000057

863690590

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000058

863690591

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

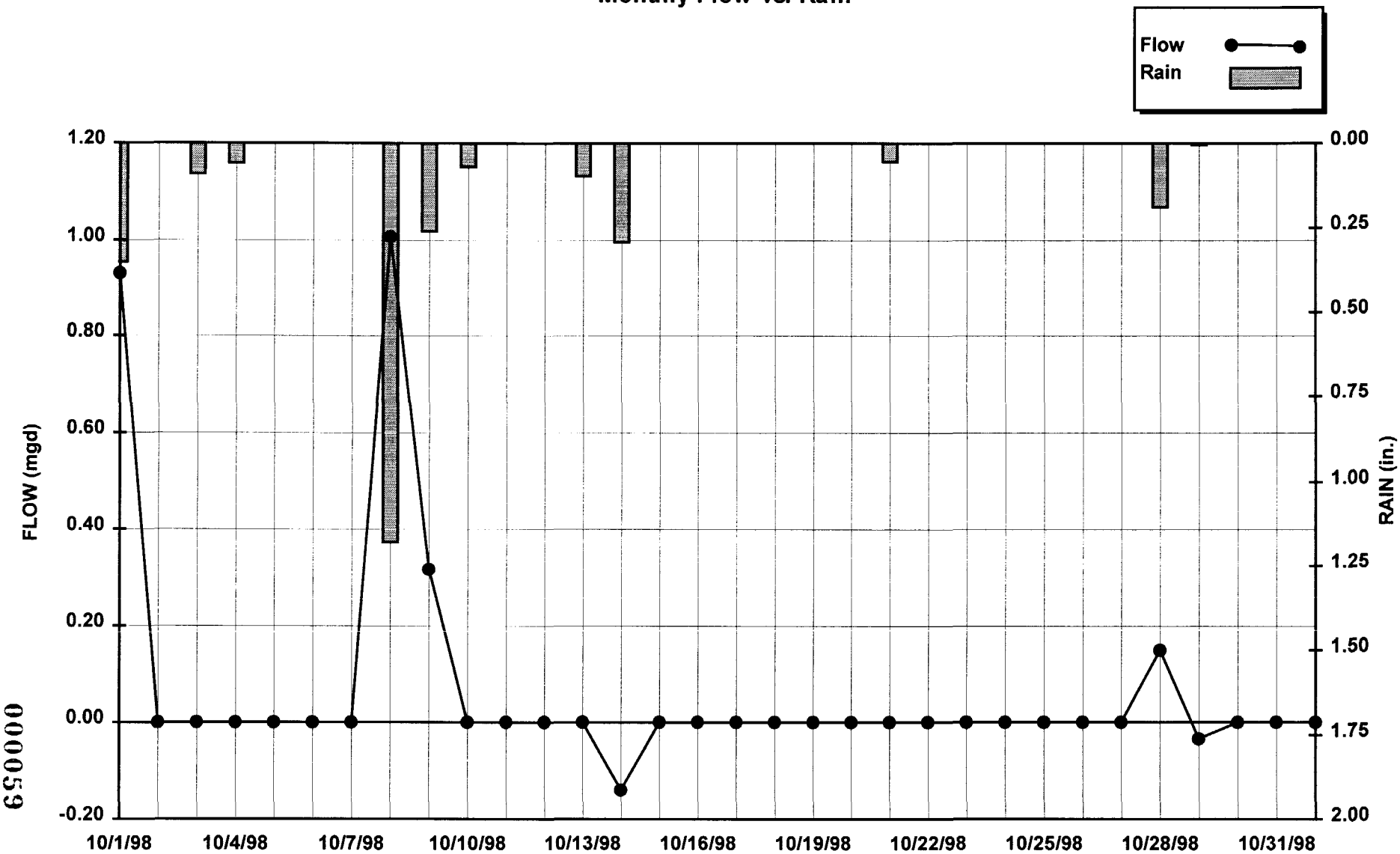
930 F.M. VERSION: 1.02

Serial#: QTO

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Monthly Flow Report (Flow3)

12/22/1998 3:21:51 PM

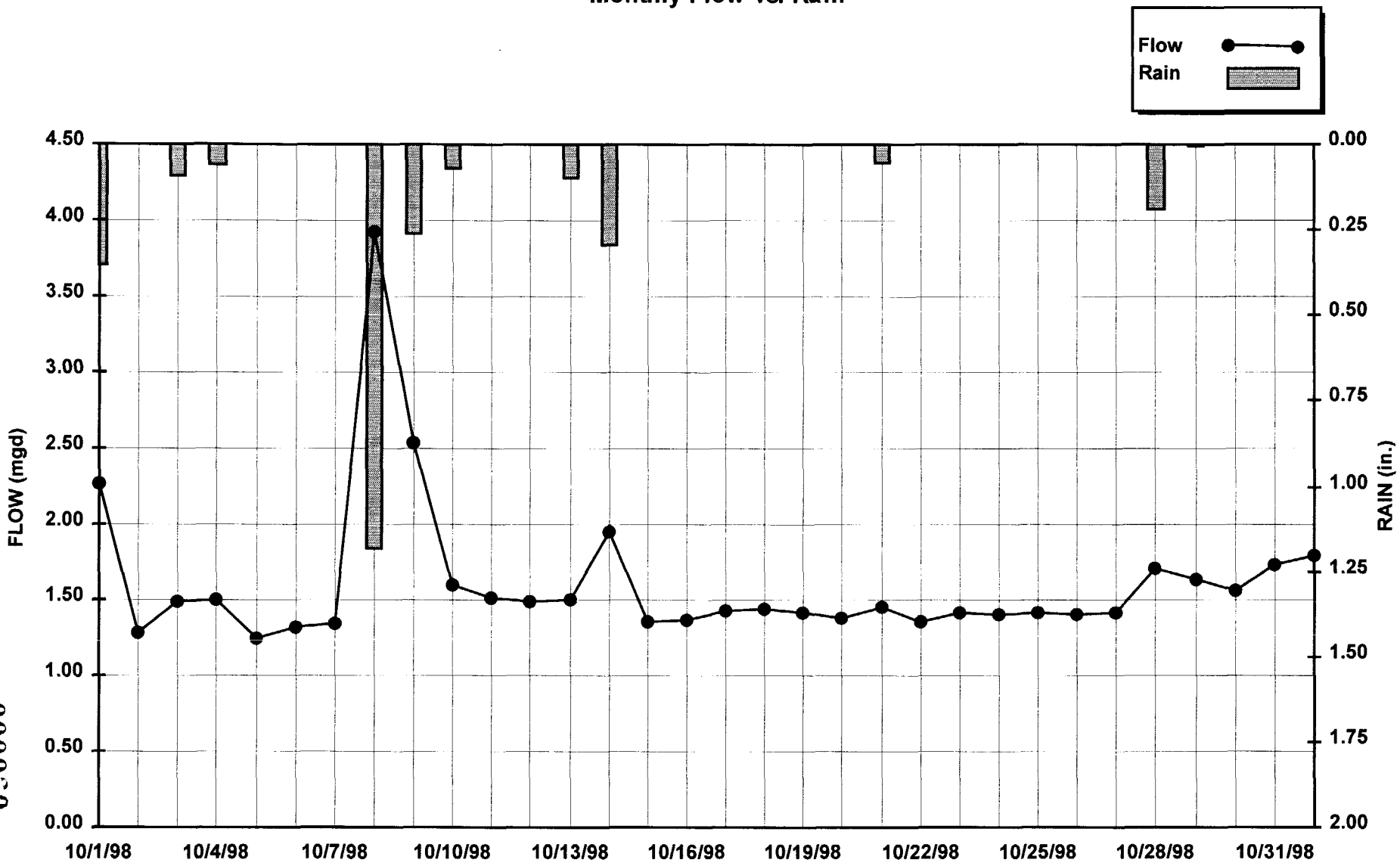
000059

863690592

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Monthly Flow Report (Flow1)

12/22/1998 2:46:38 PM

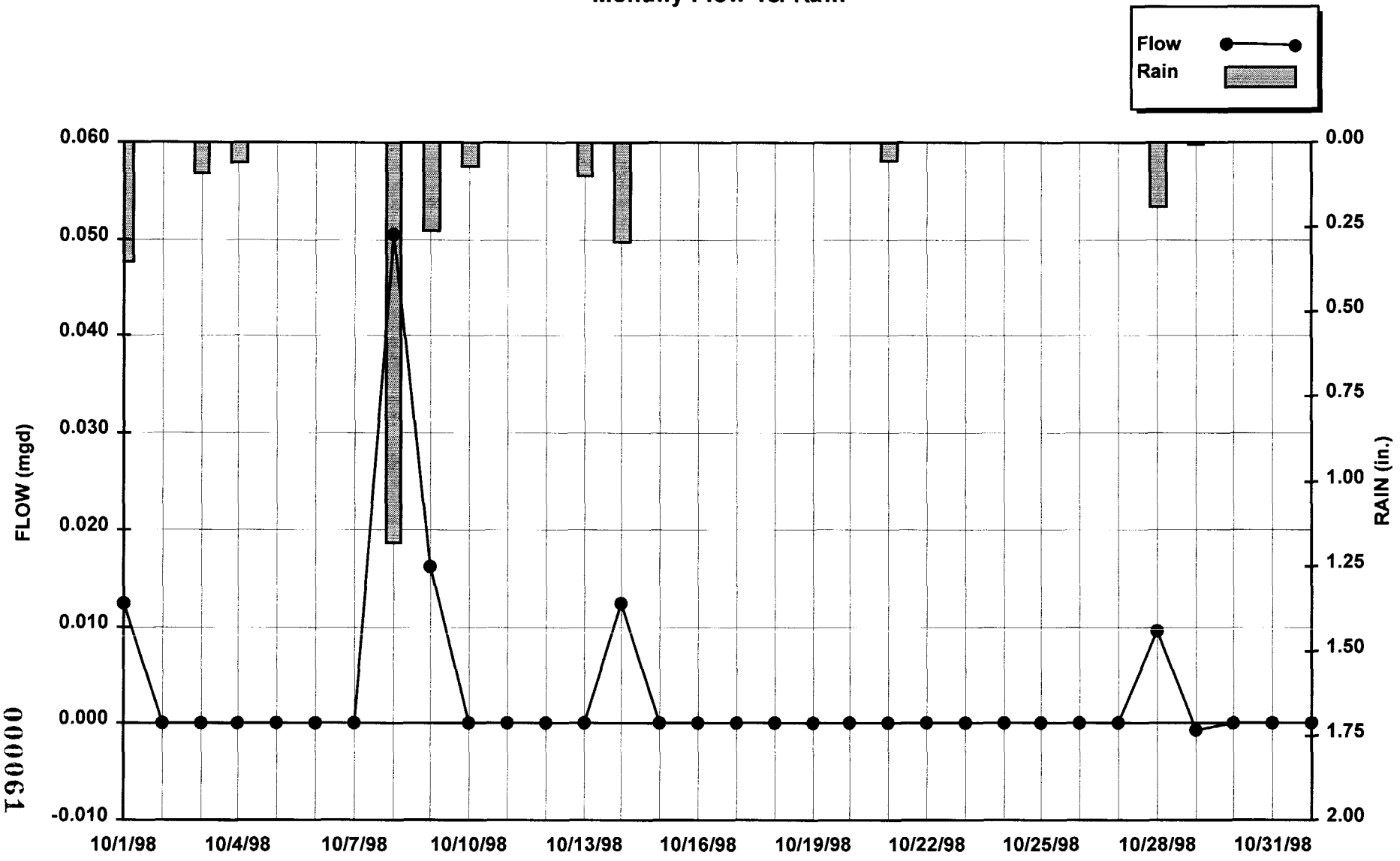
030000

863690593

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

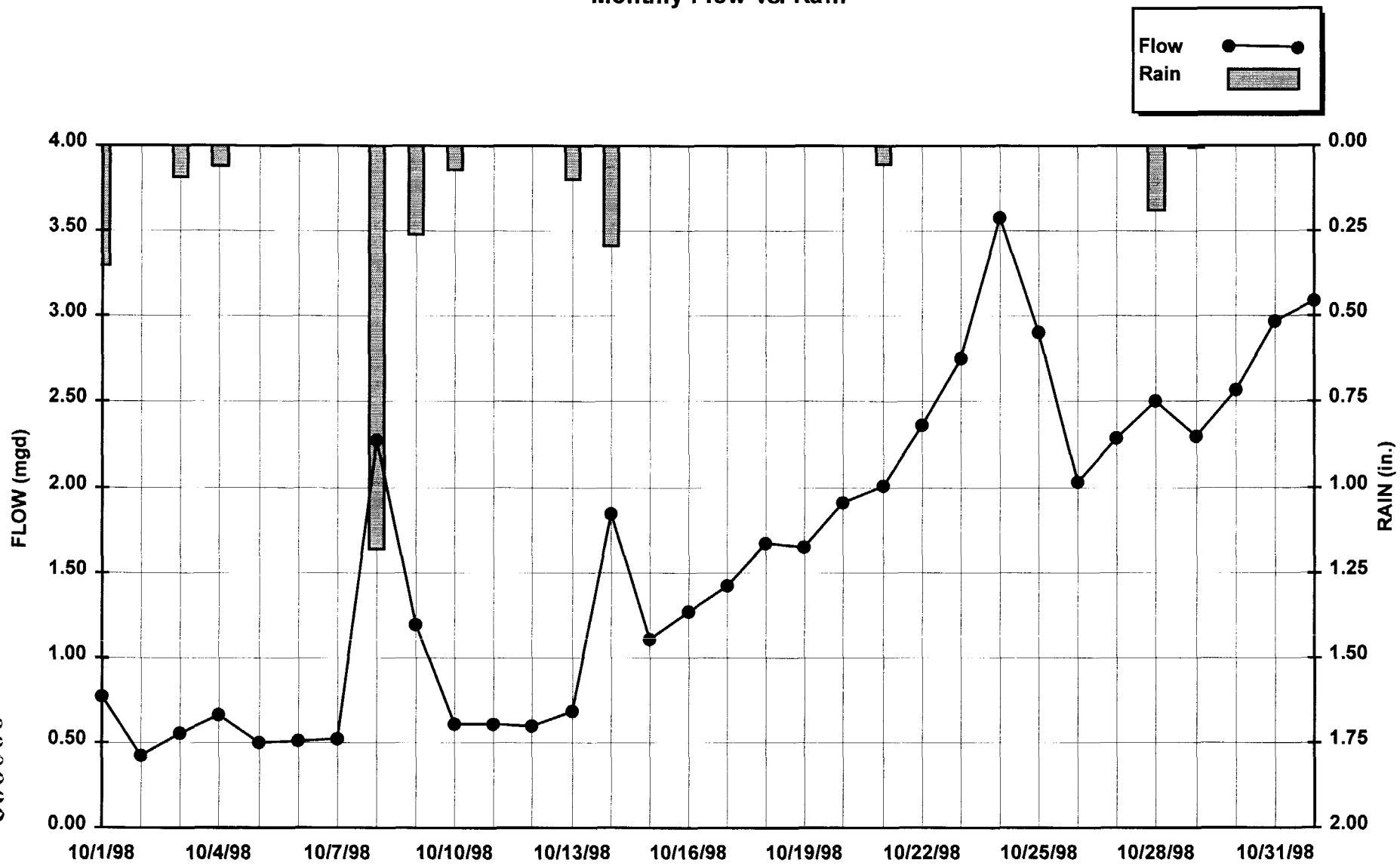
000061

863690594

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Monthly Flow Report (Flow1)

12/22/1998 2:52:35 PM

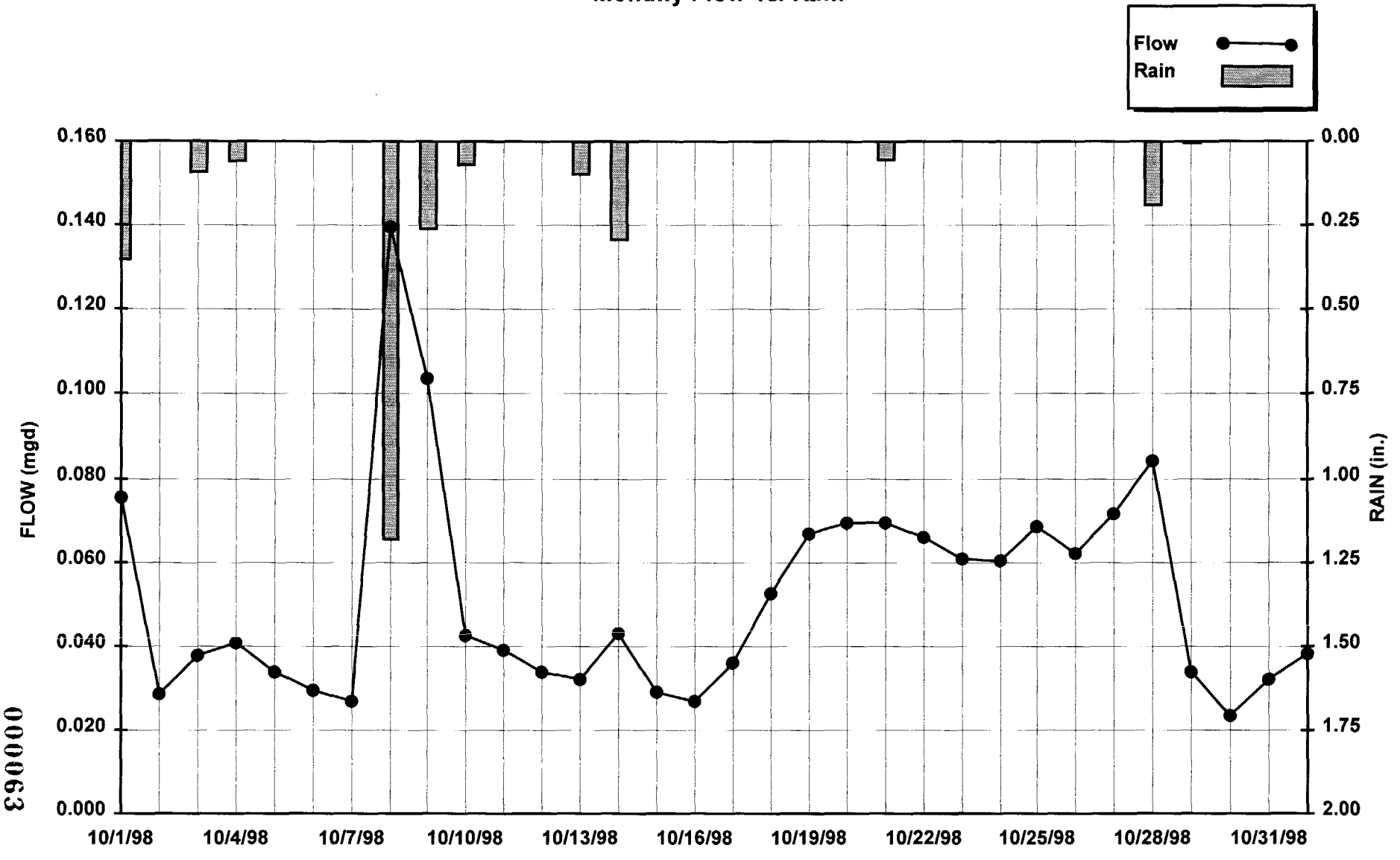
000062

863690595

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Monthly Flow Report (Flow2)

12/22/1998 3:13:07 PM

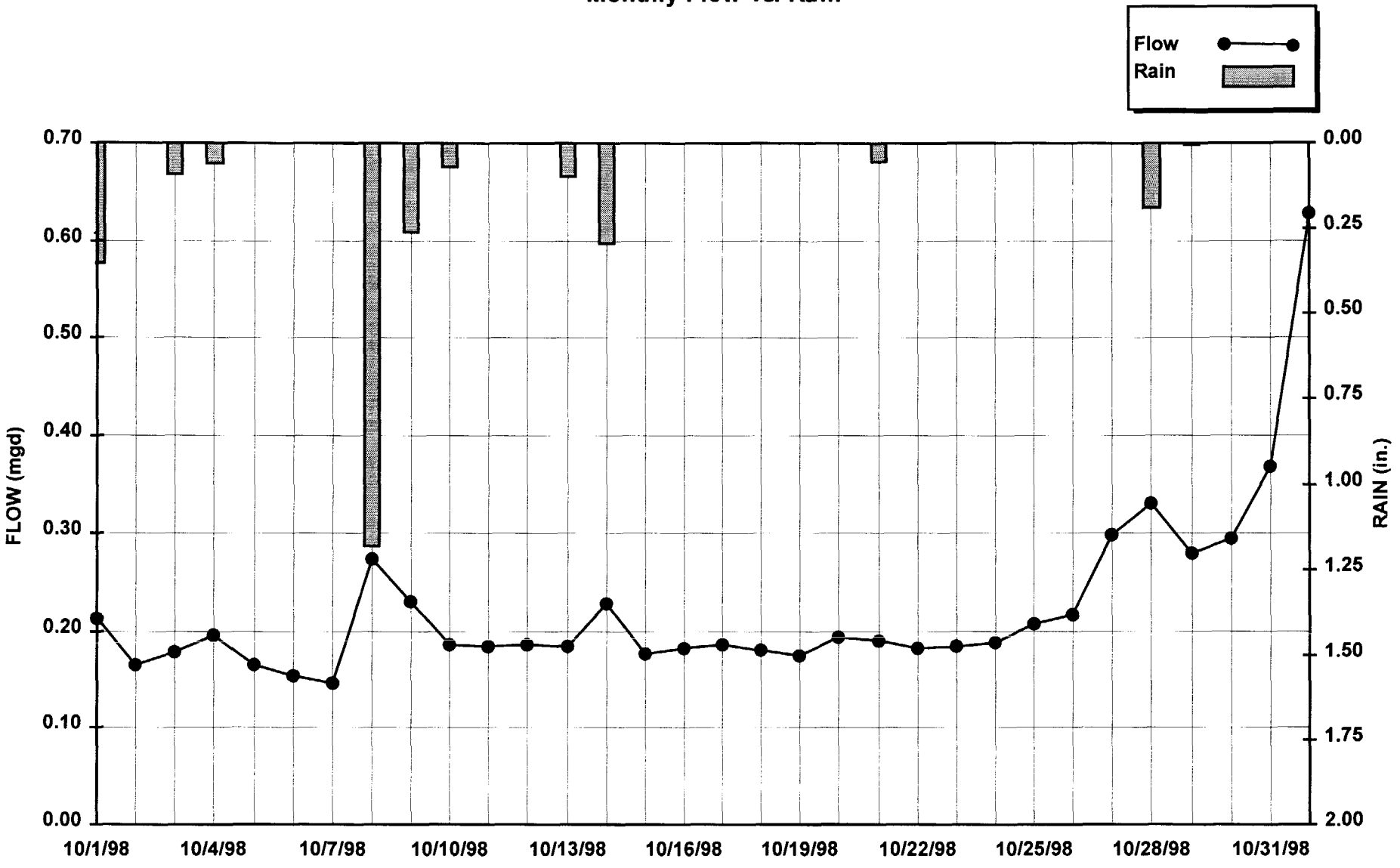
000063

863690596

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QU0

Monthly Flow Report (Flow1)

12/22/1998 2:45:45 PM

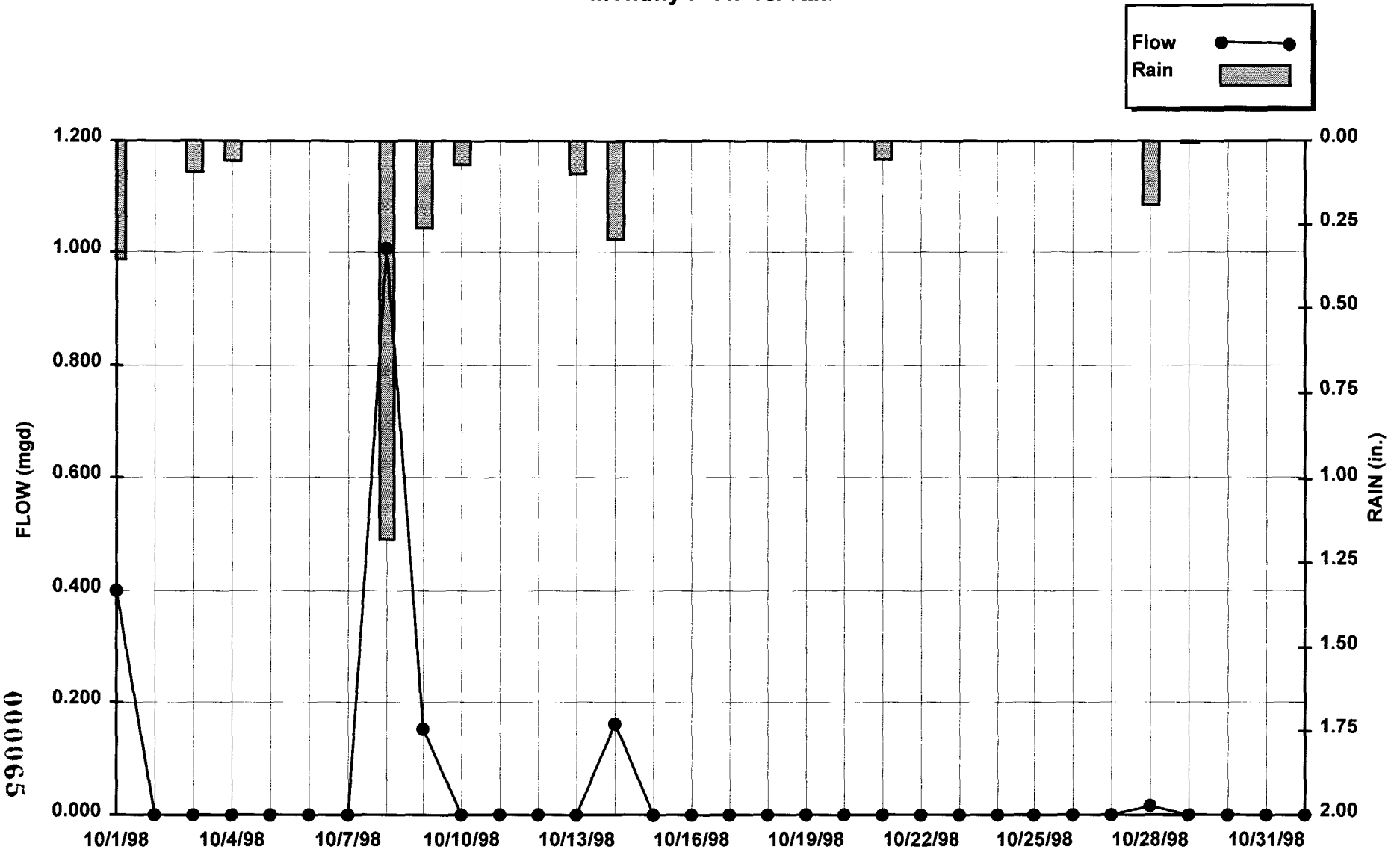
000064

863690597

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QU0

Monthly Flow Report (Flow2)

12/22/1998 3:08:56 PM

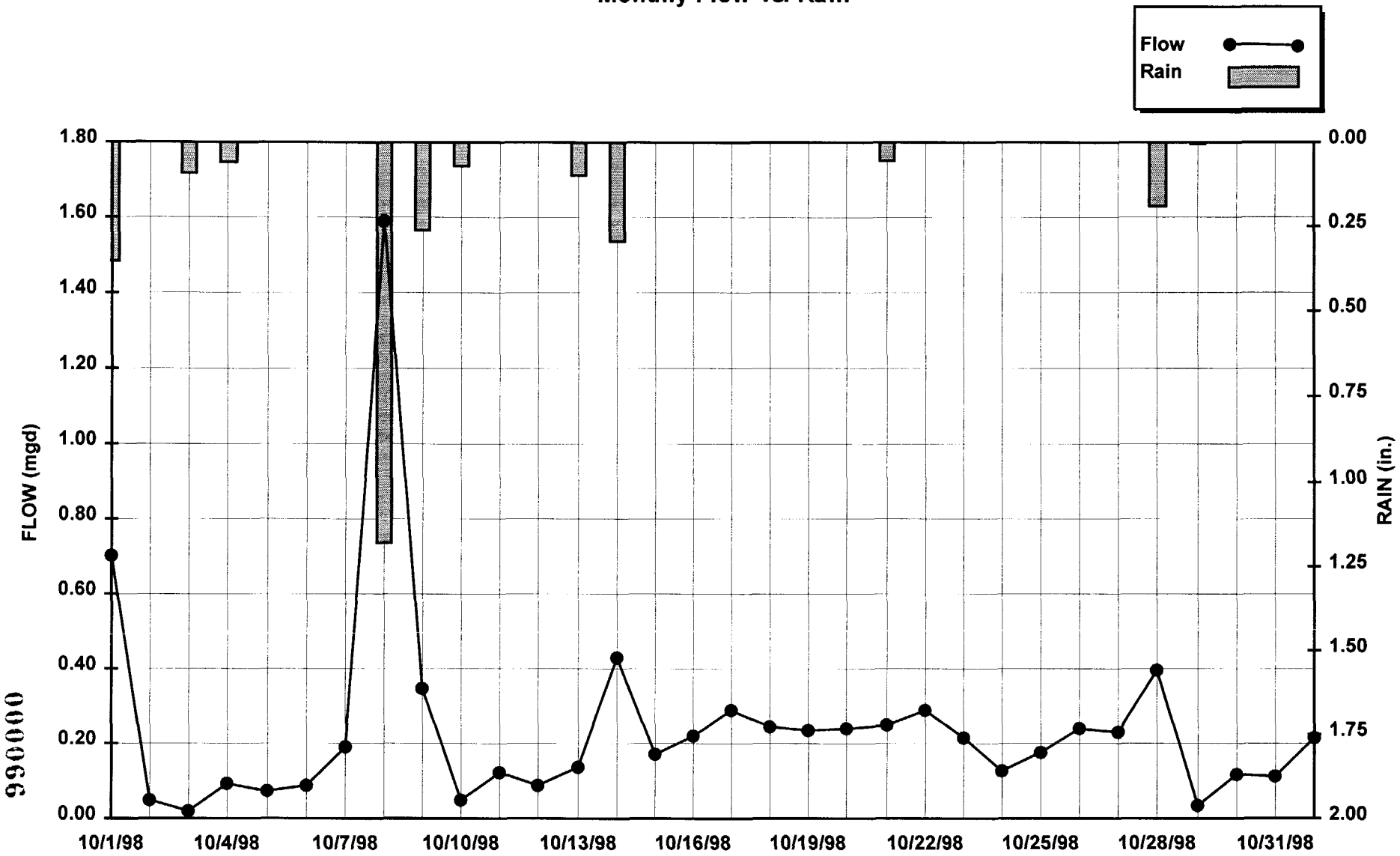
000065

863690598

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 022 - ROANOKE AVE
Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02
Serial#: QUZ

Monthly Flow Report (Flow1)

12/22/1998 2:47:29 PM

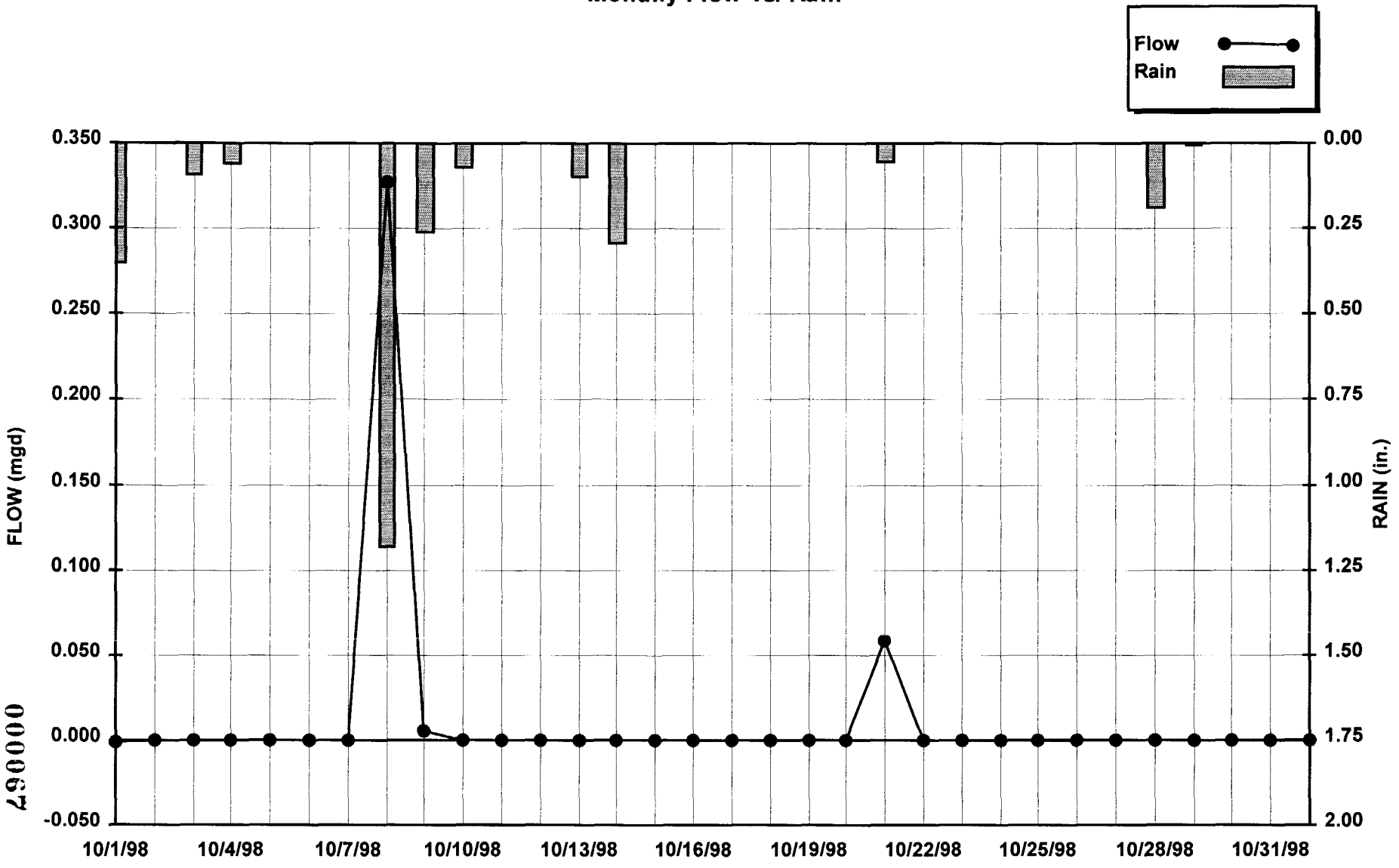
990000

863690599

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

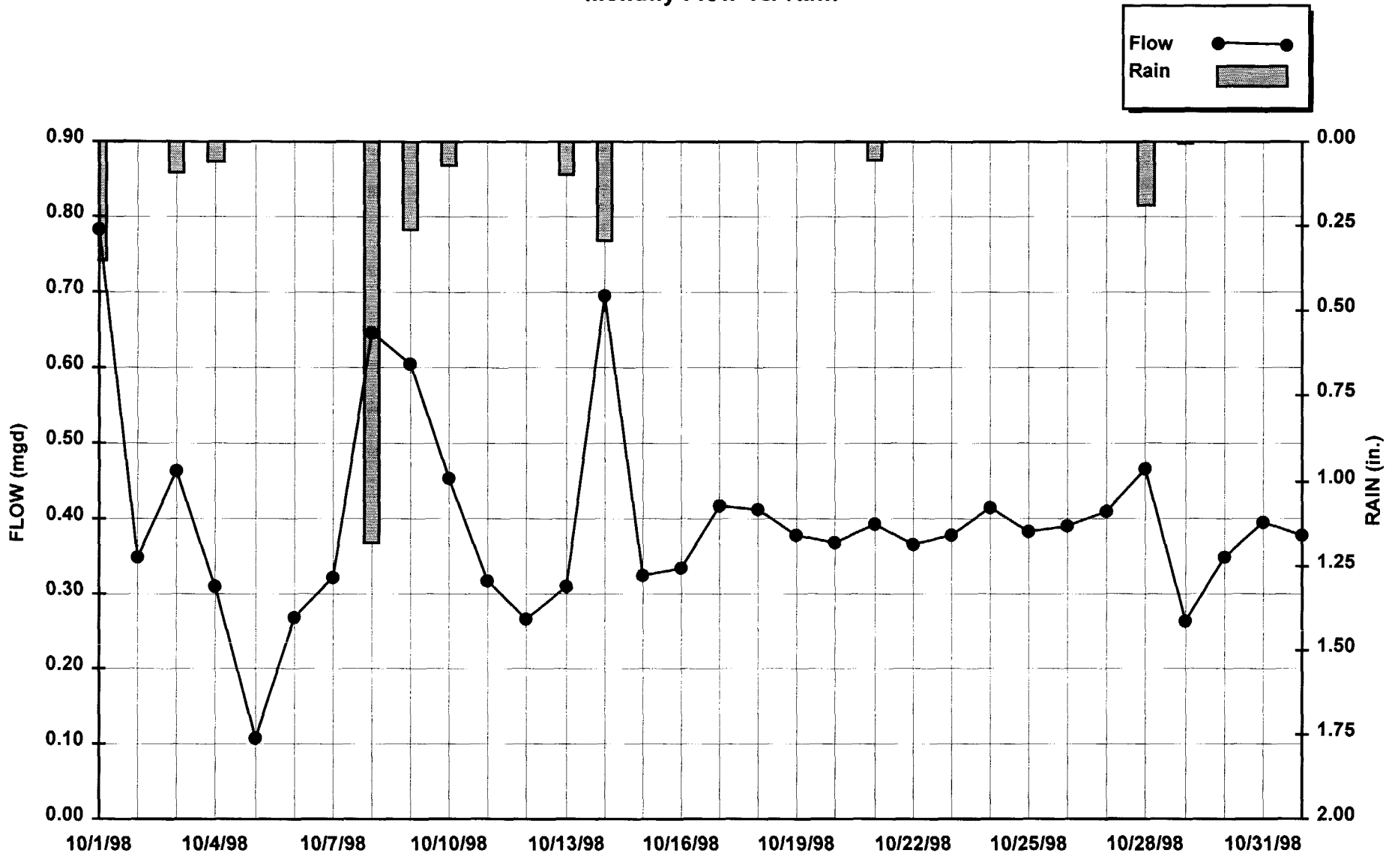
000067

863690600

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023b - ADAMS ST. influent
Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02
Serial#: QO4

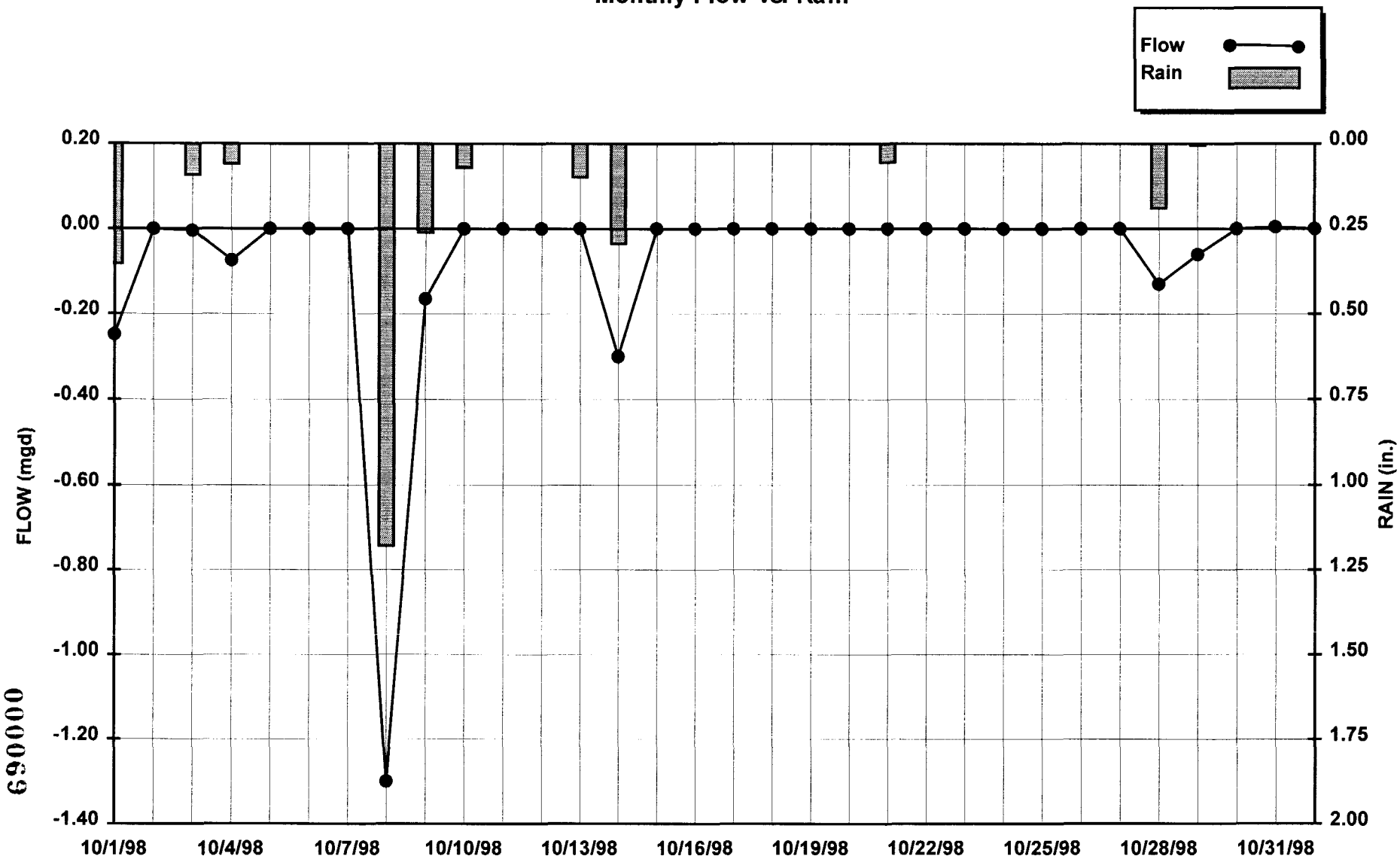
000068

863690601

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

910 F.M. VERSION: 1.02

Serial#: QPP

Monthly Flow Report (Flow1)

12/22/1998 2:31:15 PM

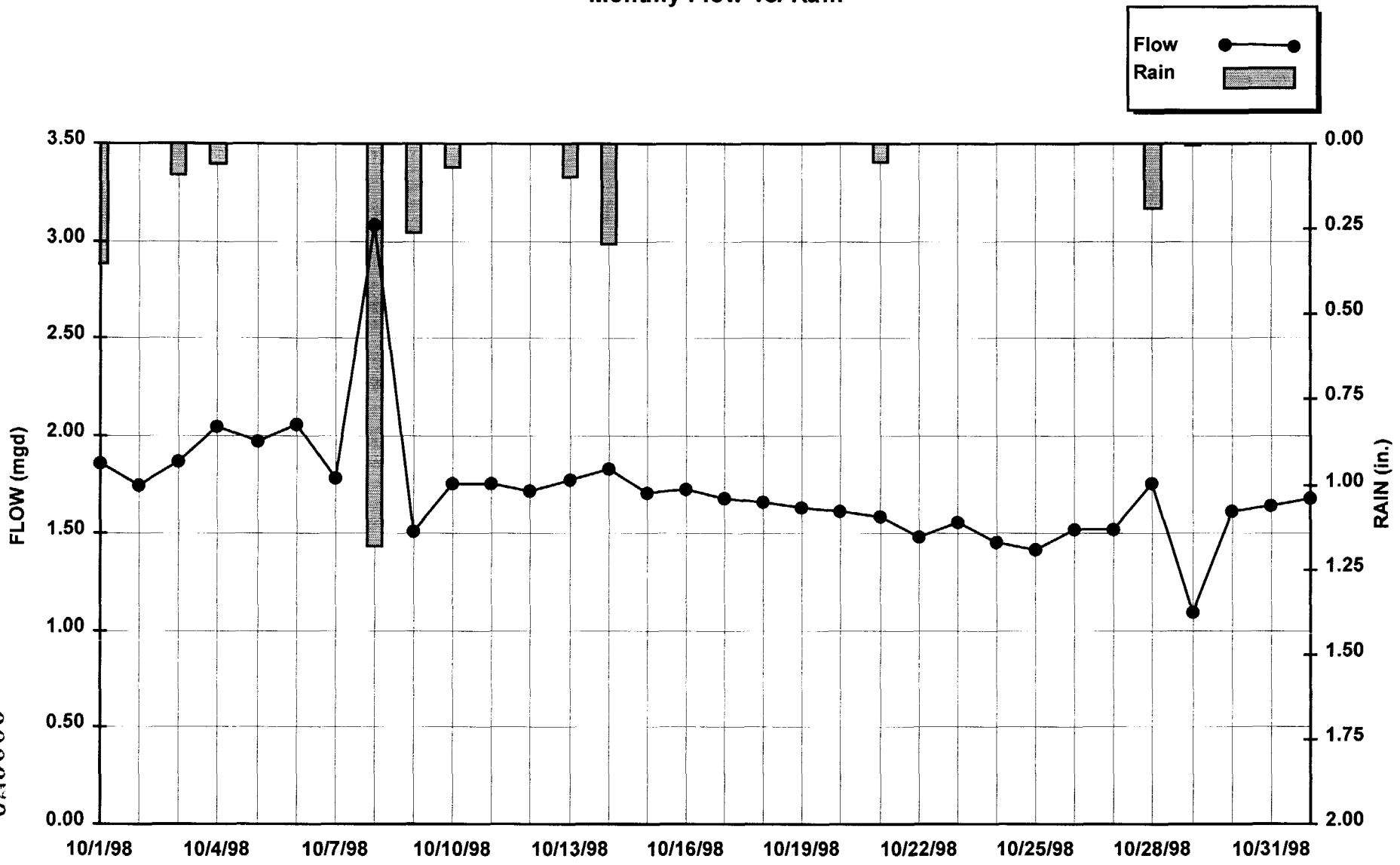
0000069

863690602

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

Monthly Flow Report (Flow3)

12/22/1998 3:18:09 PM

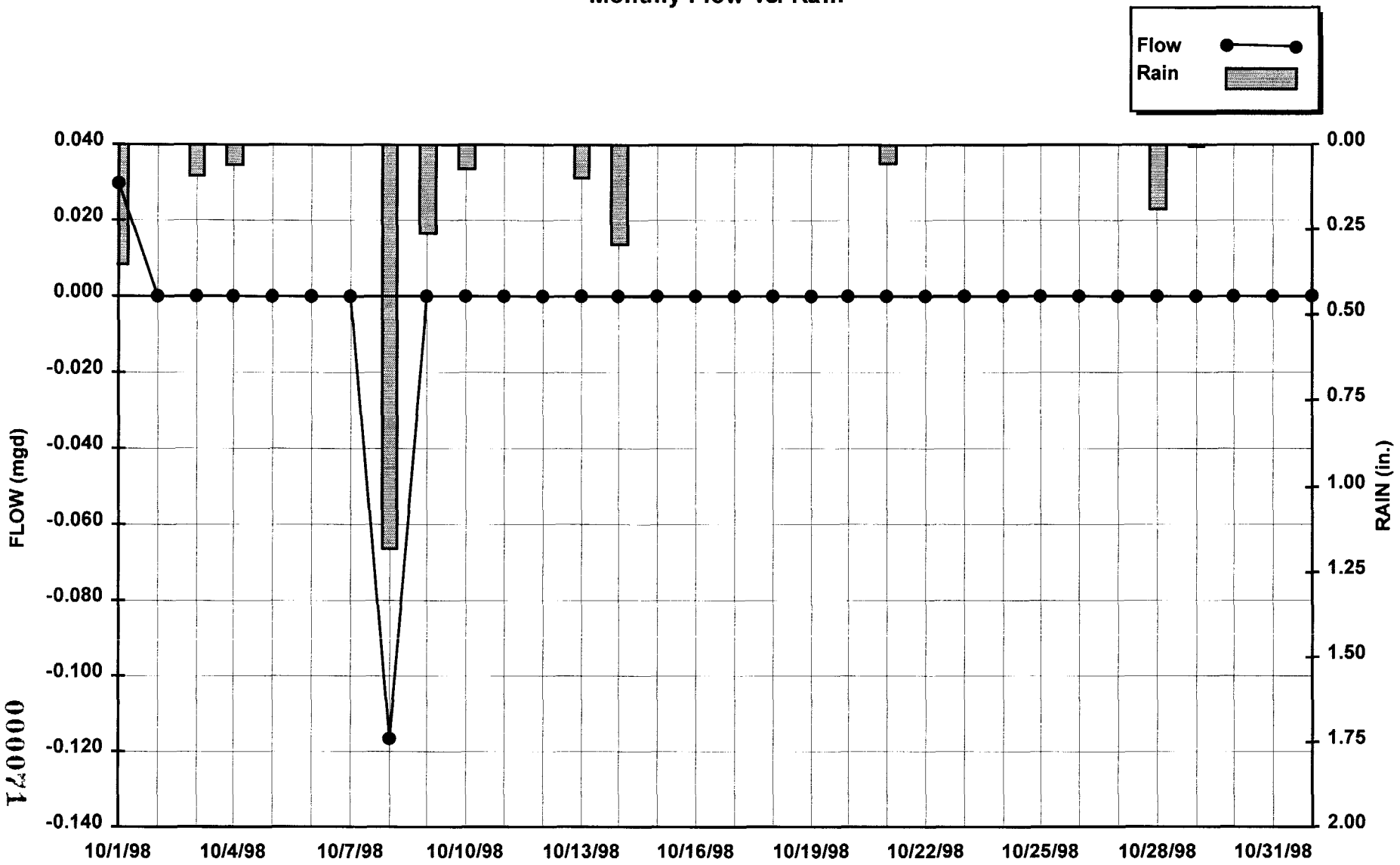
040000

863690603

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST
Address: South St. near Dawson St.

920 F.M. VERSION: 1.02
Serial#: QR4

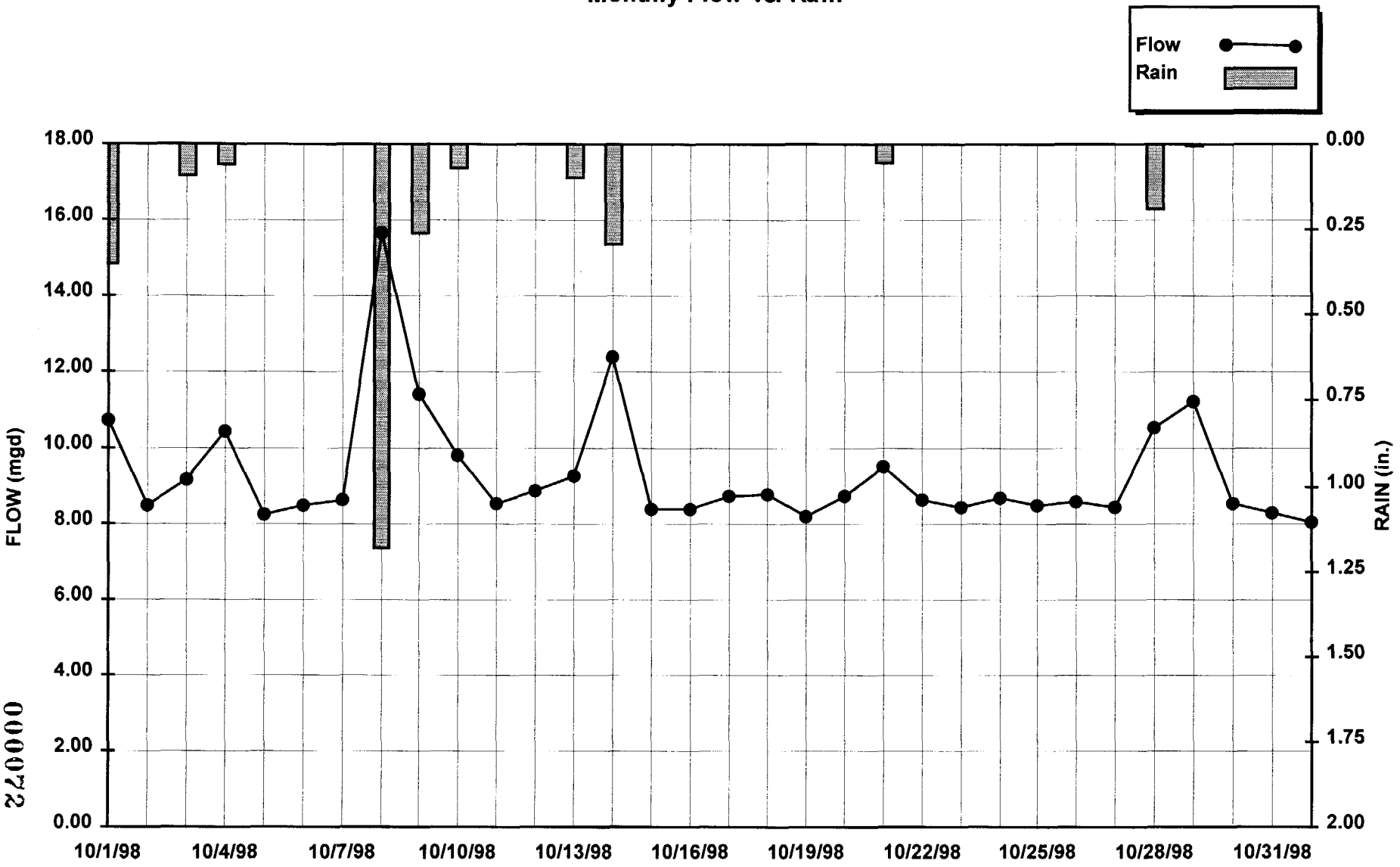
000071

863690604

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 Peddie St regulated
Address: Peddie Ditch

910 F.M. VERSION: 1.02
Serial#: QO7

Monthly Flow Report (Flow1)

12/22/1998 2:56:02 PM

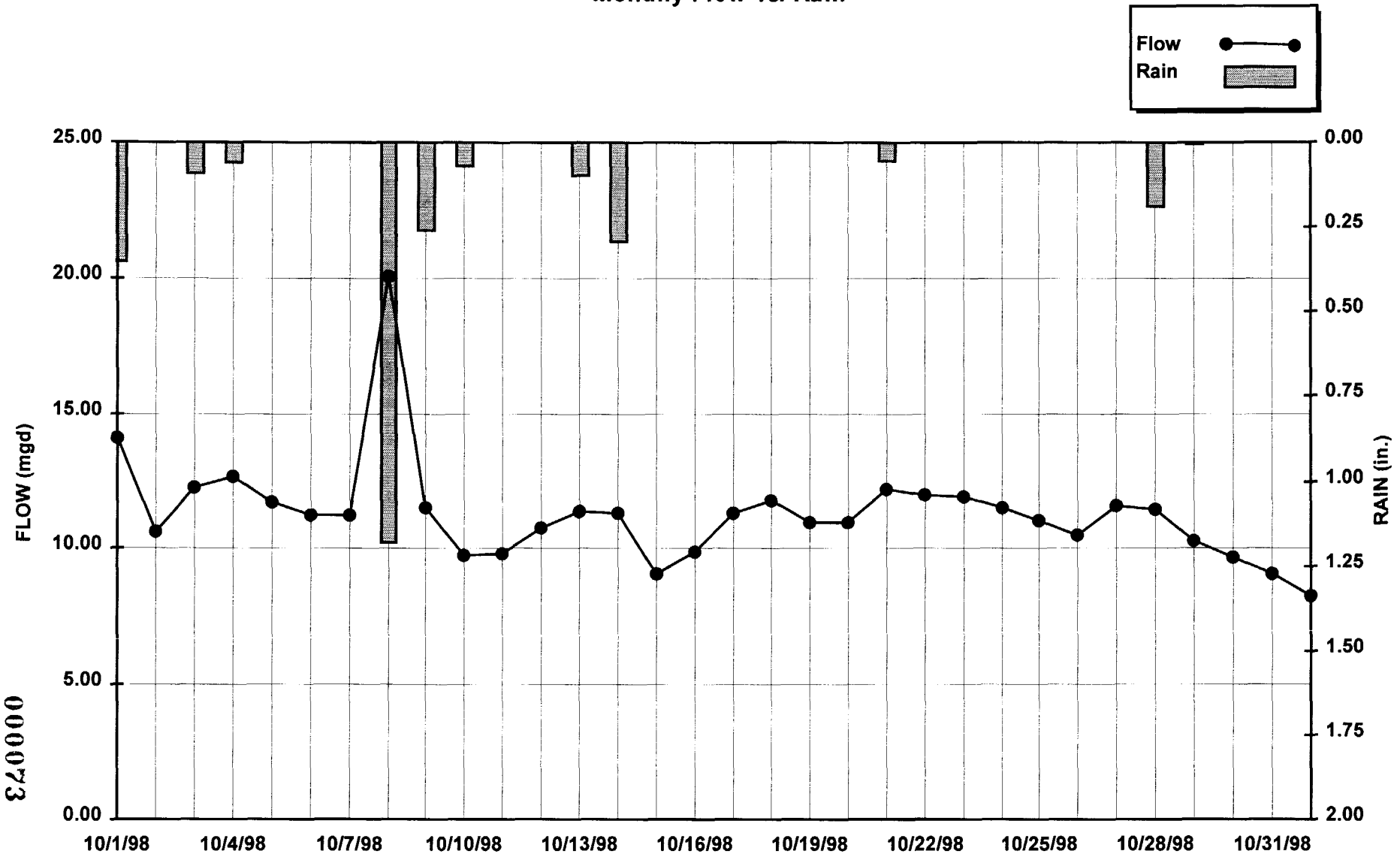
0000022

863690605

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

Monthly Flow Report (Flow1)

12/22/1998 2:55:08 PM

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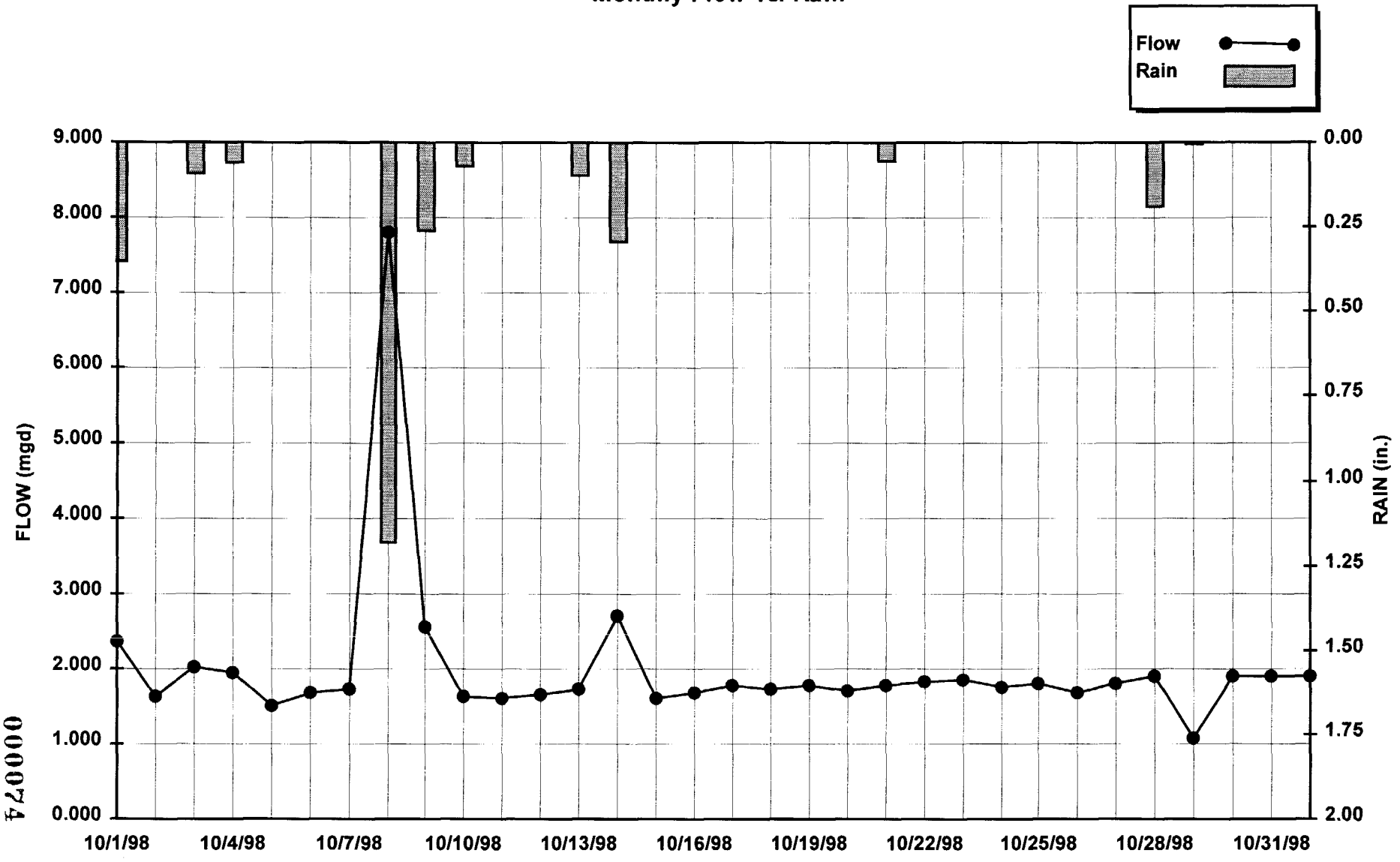
863690606

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

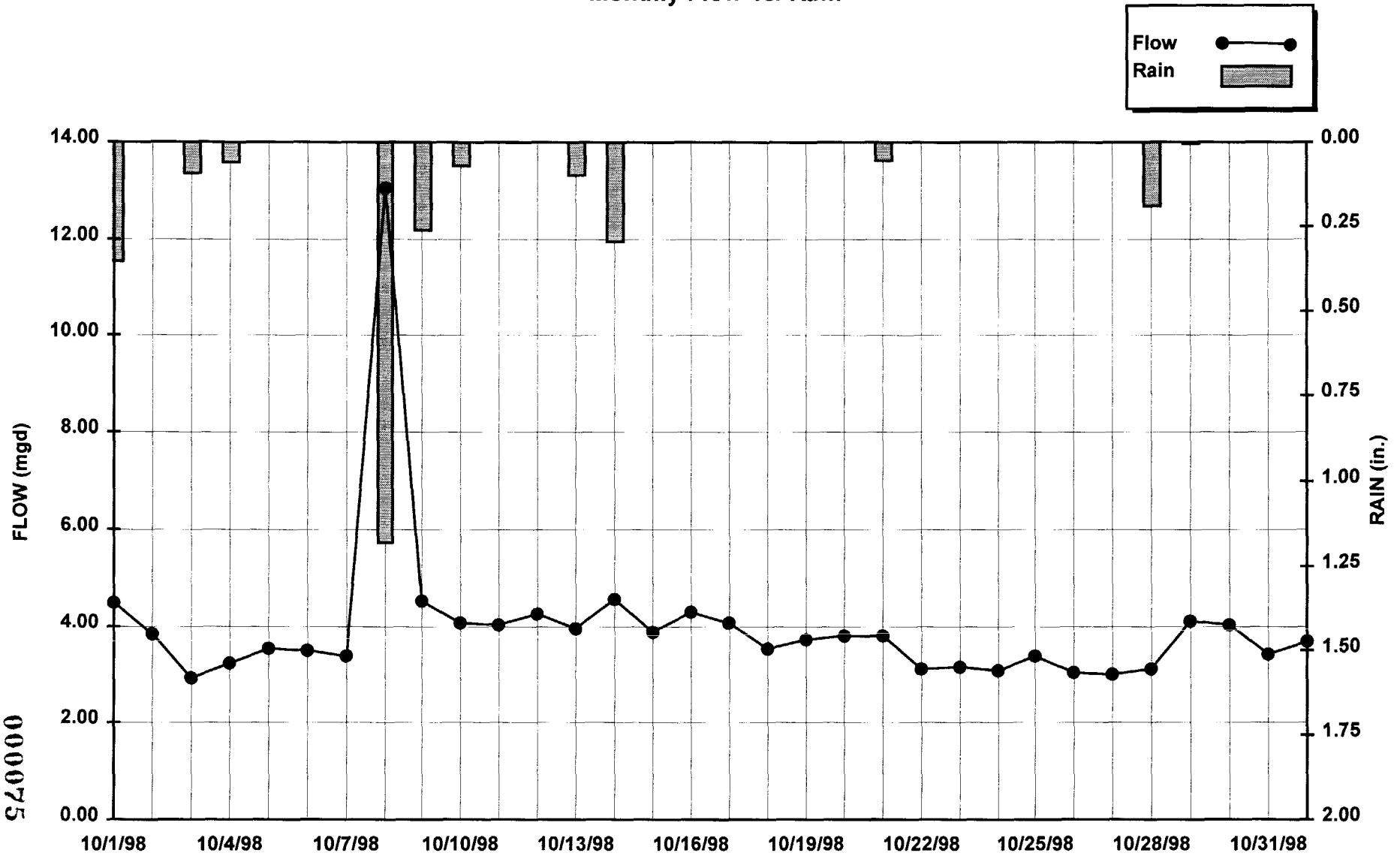
0000074

863690607

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN regulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQV

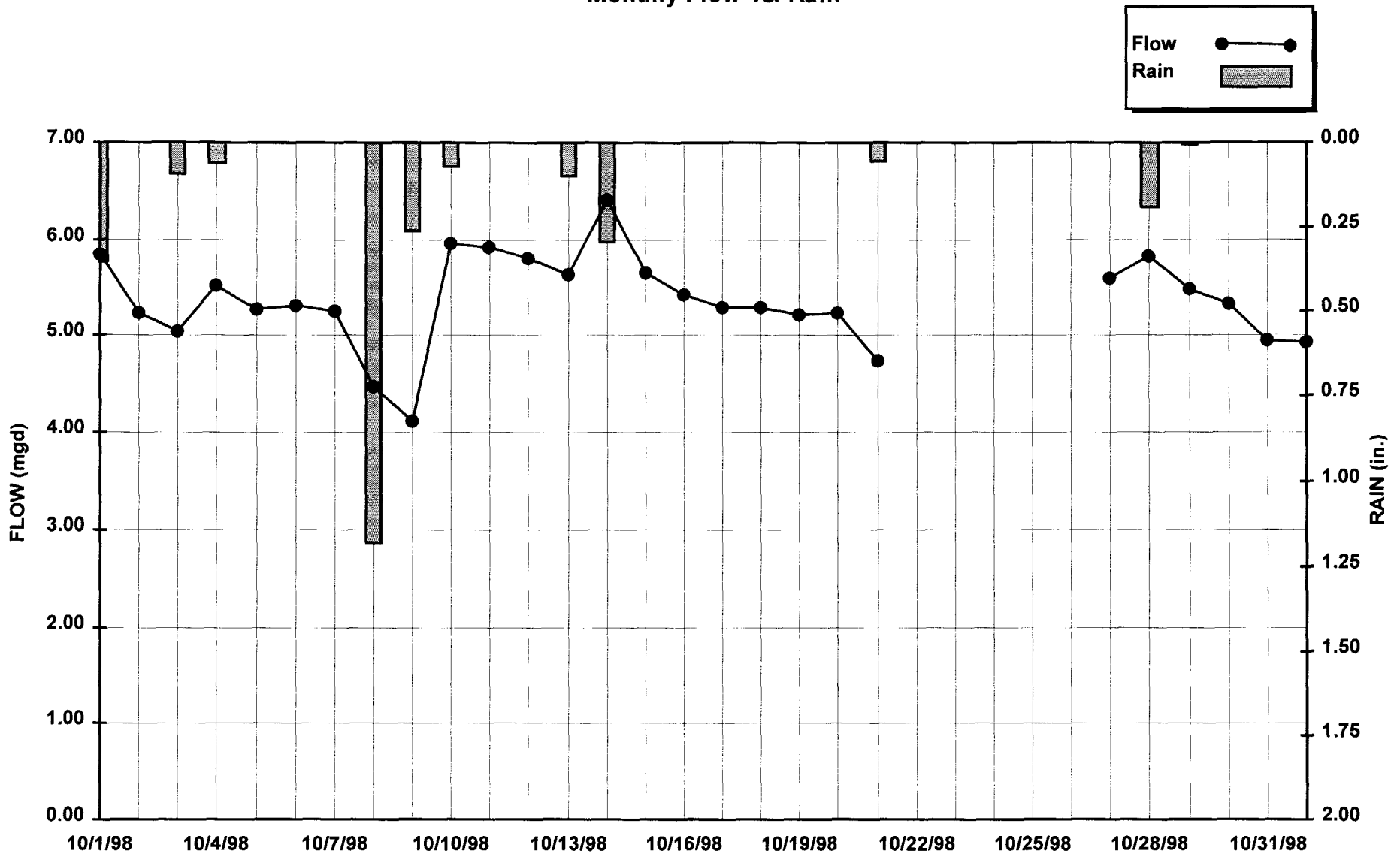
000075

863690608

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN unregulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQU

Monthly Flow Report (Flow1)

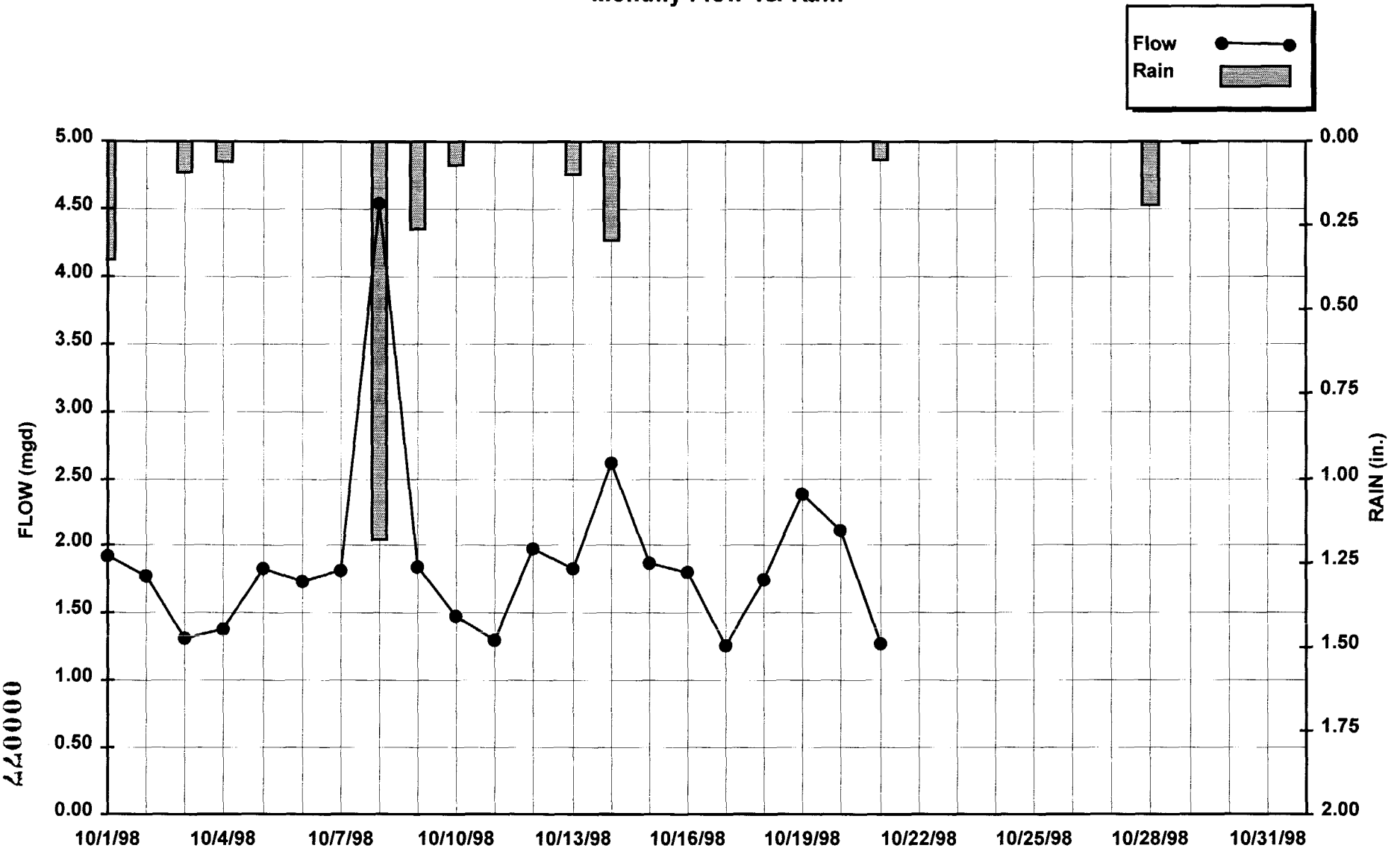
12/22/1998 2:48:19 PM

920000
863690609

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Monthly Flow Report (Flow1)

12/22/1998 2:39:48 PM

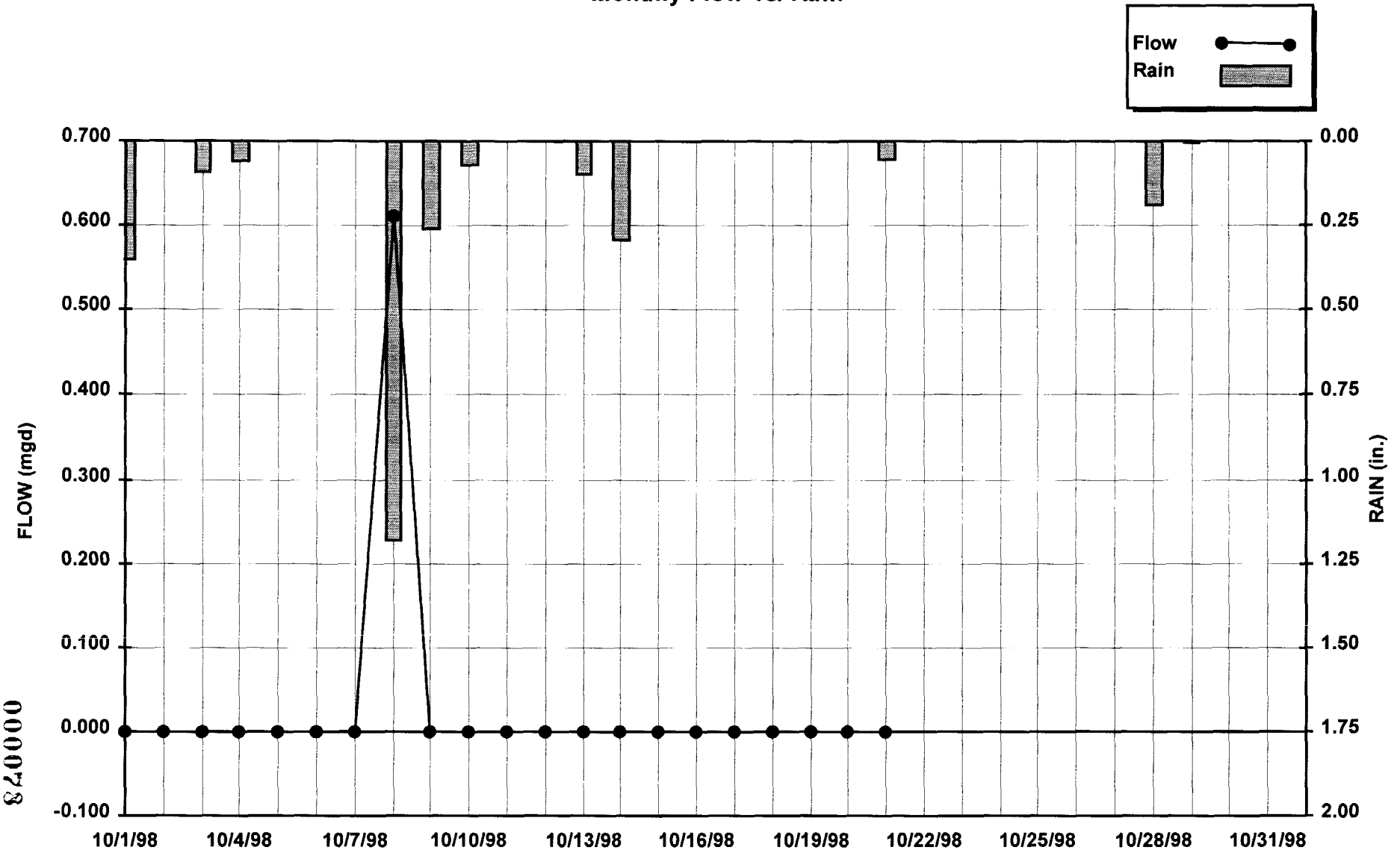
000027

863690610

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Monthly Flow Report (Flow2)

12/22/1998 3:06:16 PM

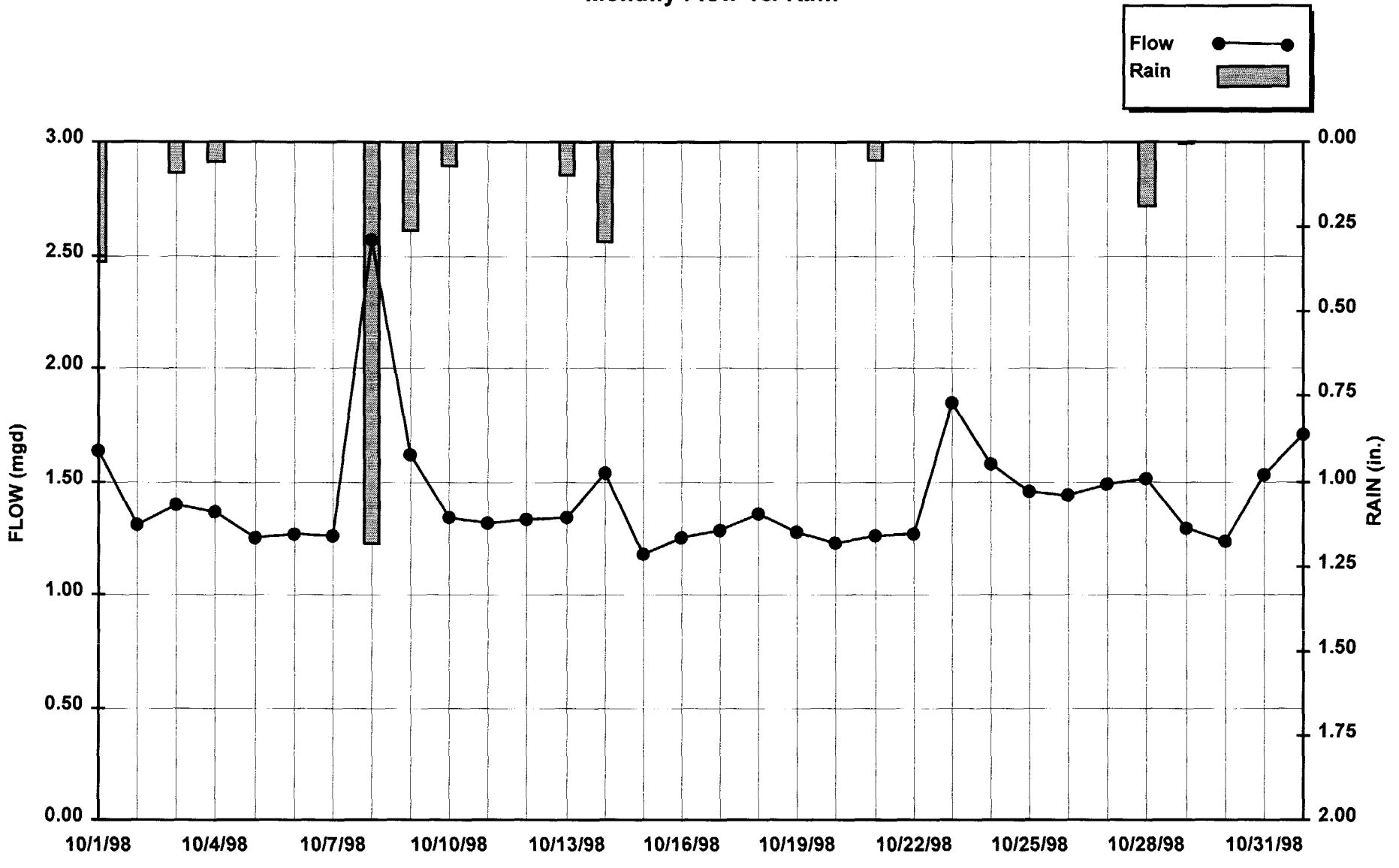
000078

863690611

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

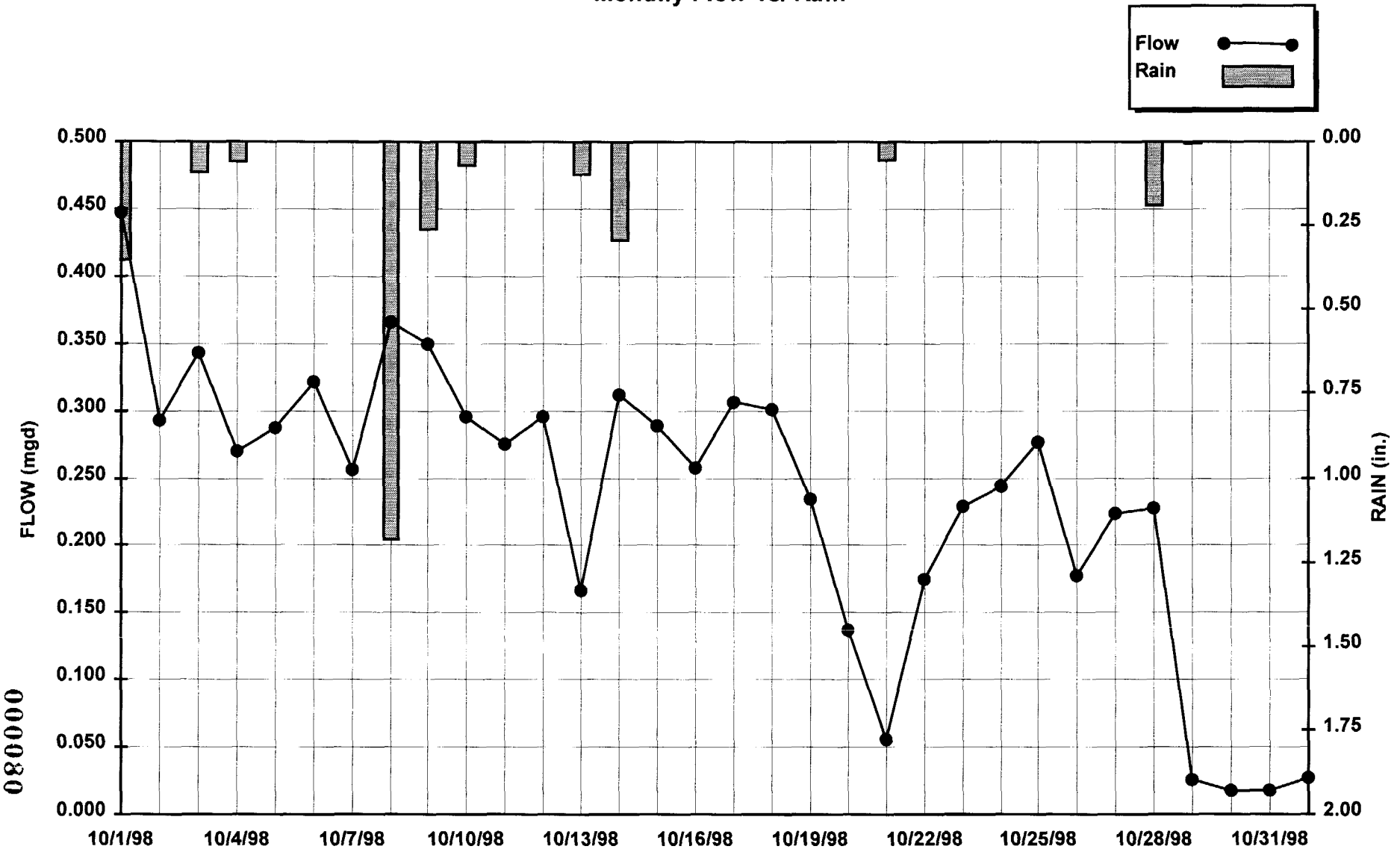
Serial#: QUD

863690612

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

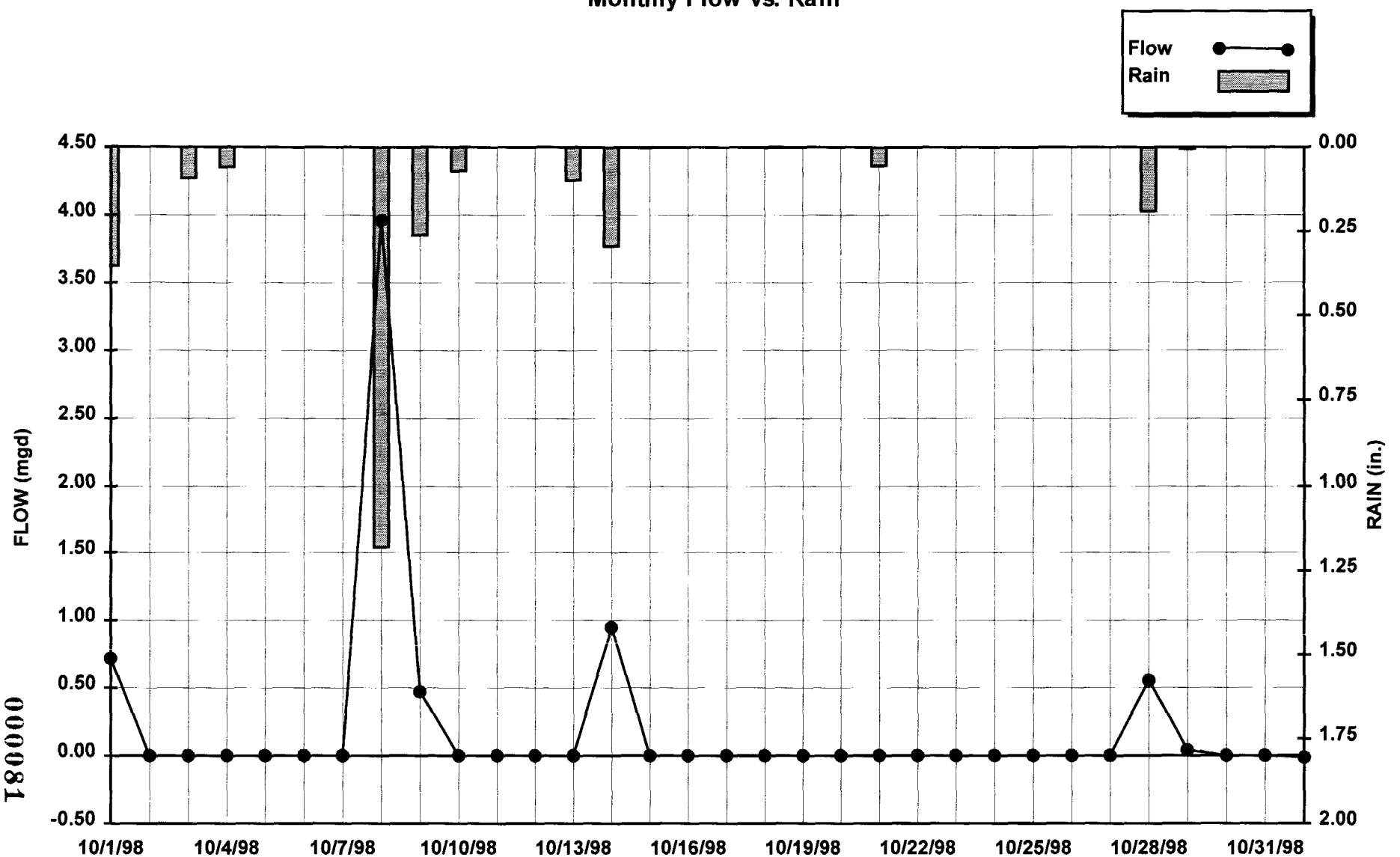
0000080

863690613

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Monthly Flow Report (Flow3)

12/22/1998 3:24:12 PM

000081

863690614

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 1 — Rain Gauge

Address: Central Ave. and 15th St. — RG-3, Water Supply Central Ave

49.25" H x 32.75" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	.35	.35
10/02/98	.20	.00
10/03/98	.20	.09
10/04/98	.21	.06
10/05/98	.17	.00
10/06/98	.17	.00
10/07/98	.17	.00
10/08/98	.68	1.21
10/09/98	.39	.21
10/10/98	.30	.10
10/11/98	.24	.00
10/12/98	.20	.00
10/13/98	.41	.11
10/14/98	.51	.30
10/15/98	.42	.00
10/16/98	.26	.00
10/17/98	.19	.00
10/18/98	.18	.00
10/19/98	.17	.00
10/20/98	.15	.00
10/21/98	.16	.11
10/22/98	.12	.00
10/23/98	.14	.00
10/24/98	.15	.00
10/25/98	.14	.00
10/26/98	.15	.00
10/27/98	.13	.00
10/28/98	.12	.18
10/29/98	.14	.01
10/30/98	.14	.00
10/31/98	.16	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 2 — Rain Gauge

Address: 9th Ave. and 15th St. — RG-3, Water Supply Central Ave

48.8" H x 33.4" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	.07	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.22	1.21
10/09/98	.02	.21
10/10/98	.00	.10
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.01	.11
10/14/98	.06	.30
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.01	.11
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.01	.18
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 3 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

33" Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	.08	.34
10/02/98	.00	.00
10/03/98	.01	.07
10/04/98	.01	.05
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.31	1.03
10/09/98	.03	.33
10/10/98	.01	.09
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.02	.04
10/14/98	.07	.28
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.01	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98		.00
10/28/98		.15
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 4 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

12" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	.12	.34
10/02/98	.13	.00
10/03/98	.12	.07
10/04/98	.12	.05
10/05/98	.12	.00
10/06/98	.14	.00
10/07/98	.14	.00
10/08/98	.14	1.03
10/09/98	.12	.33
10/10/98	.13	.09
10/11/98	.14	.00
10/12/98	.14	.00
10/13/98	.14	.04
10/14/98	.14	.28
10/15/98	.14	.00
10/16/98	.14	.00
10/17/98	.16	.00
10/18/98	.15	.00
10/19/98	.15	.00
10/20/98	.13	.00
10/21/98	.13	.05
10/22/98	.13	.00
10/23/98	.12	.00
10/24/98	.13	.00
10/25/98	.14	.00
10/26/98	.14	.00
10/27/98	.16	.00
10/28/98	.16	.15
10/29/98	.16	.01
10/30/98	.15	.00
10/31/98	.17	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 Rain Gauge

Address: 14TH ST. & HEDDEN PL. RG-1, Roberto Clemente School

33" RCP Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	.04	.34
10/02/98	.00	.00
10/03/98	-.01	.07
10/04/98	-.01	.05
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.12	1.03
10/09/98	.01	.33
10/10/98	.00	.09
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.04
10/14/98	.03	.28
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98		.00
10/28/98		.15
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 — Rain Gauge

Address: 14TH ST. & HEDDEN PL. — RG-1, Roberto Clemente School

18.75" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	.18	.34
10/02/98	.00	.00
10/03/98	.00	.07
10/04/98	.00	.05
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.38	1.03
10/09/98	.00	.33
10/10/98	.00	.09
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.04
10/14/98	.02	.28
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98		.00
10/28/98		.15
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 7 | Rain Gauge

Address: 6TH ST. & 13TH ST. | RG-1, Roberto Clemente School

30" RCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	1.33	.34
10/02/98	1.25	.00
10/03/98	1.34	.07
10/04/98	1.47	.05
10/05/98	1.35	.00
10/06/98	1.27	.00
10/07/98	1.29	.00
10/08/98	1.24	1.03
10/09/98	1.28	.33
10/10/98	1.36	.09
10/11/98	1.46	.00
10/12/98	1.43	.00
10/13/98	1.35	.04
10/14/98	1.34	.28
10/15/98	1.35	.00
10/16/98	1.36	.00
10/17/98	1.38	.00
10/18/98	1.35	.00
10/19/98	1.34	.00
10/20/98	1.31	.00
10/21/98	1.30	.05
10/22/98	1.28	.00
10/23/98	1.25	.00
10/24/98	1.35	.00
10/25/98	1.35	.00
10/26/98	1.29	.00
10/27/98	1.35	.00
10/28/98	1.42	.15
10/29/98	1.44	.01
10/30/98	1.38	.00
10/31/98	1.42	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

24.25" VCP

Rain Gauge

RG-1, Roberto Clemente School

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
10/01/98	3.31	.34
10/02/98	3.33	.00
10/03/98	3.55	.07
10/04/98	3.70	.05
10/05/98	3.52	.00
10/06/98	3.51	.00
10/07/98	3.61	.00
10/08/98	3.98	1.03
10/09/98	3.63	.33
10/10/98	3.76	.09
10/11/98	3.86	.00
10/12/98	3.71	.00
10/13/98	3.42	.04
10/14/98	3.42	.28
10/15/98	3.32	.00
10/16/98	3.15	.00
10/17/98	3.44	.00
10/18/98	3.56	.00
10/19/98	3.38	.00
10/20/98	3.23	.00
10/21/98	3.24	.05
10/22/98	3.25	.00
10/23/98	3.34	.00
10/24/98	3.43	.00
10/25/98	3.39	.00
10/26/98	3.28	.00
10/27/98	3.22	.00
10/28/98	3.23	.15
10/29/98	3.19	.01
10/30/98	3.26	.00
10/31/98	3.33	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 1

910 F.M. VERSION: 1.02

Address: Mt. Vernon St. near Chapman St.

Serial#: QQ7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.58	.35
10/02/98	.54	.00
10/03/98	.60	.09
10/04/98	.58	.06
10/05/98	.51	.00
10/06/98	.39	.00
10/07/98	.39	.00
10/08/98	.47	1.18
10/09/98	.44	.26
10/10/98	.47	.07
10/11/98	.45	.00
10/12/98	.43	.00
10/13/98	.43	.10
10/14/98	.44	.29
10/15/98	.38	.00
10/16/98	.37	.00
10/17/98	.43	.00
10/18/98	.42	.00
10/19/98	.34	.00
10/20/98	.37	.00
10/21/98	.31	.05
10/22/98	.35	.00
10/23/98	.37	.00
10/24/98	.41	.00
10/25/98	.41	.00
10/26/98	.37	.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 2 910 F.M. VERSION: 1.02

Address: Unity and Valley St. Serial#: QQ2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.61	.35
10/02/98	.58	.00
10/03/98	.65	.09
10/04/98	.66	.06
10/05/98	.58	.00
10/06/98	.58	.00
10/07/98	.57	.00
10/08/98	.70	1.18
10/09/98	.60	.26
10/10/98	.66	.07
10/11/98	.67	.00
10/12/98	.68	.00
10/13/98	.68	.10
10/14/98	.72	.29
10/15/98	.64	.00
10/16/98	.60	.00
10/17/98	.68	.00
10/18/98	.73	.00
10/19/98	.63	.00
10/20/98	.58	.00
10/21/98	.52	.05
10/22/98	.51	.00
10/23/98	.51	.00
10/24/98	.58	.00
10/25/98	.62	.00
10/26/98	.48	.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 3

910 F.M. VERSION: 1.02

Address: Fabyan Pl. near Exit Ramp of I-78

Serial#: QRD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.47	.35
10/02/98	.44	.00
10/03/98	.47	.09
10/04/98	.48	.06
10/05/98	.43	.00
10/06/98	.39	.00
10/07/98	.39	.00
10/08/98	.46	1.18
10/09/98	.39	.26
10/10/98	.43	.07
10/11/98	.45	.00
10/12/98	.47	.00
10/13/98	.46	.10
10/14/98	.45	.29
10/15/98	.39	.00
10/16/98	.38	.00
10/17/98	.43	.00
10/18/98	.44	.00
10/19/98	.41	.00
10/20/98	.40	.00
10/21/98	.40	.05
10/22/98	.41	.00
10/23/98	.44	.00
10/24/98	.43	.00
10/25/98	.46	.00
10/26/98	.43	.00
10/27/98	.41	.00
10/28/98	.43	.19
10/29/98	.41	.01
10/30/98	.39	.00
10/31/98	.41	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 4

910 F.M. VERSION: 1.02

Address: N. Lindon Ln between House # 63 and 65

Serial#: QUI

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.55	.35
10/02/98	1.48	.00
10/03/98	1.54	.09
10/04/98	1.57	.06
10/05/98	1.50	.00
10/06/98	1.48	.00
10/07/98	1.49	.00
10/08/98	1.69	1.18
10/09/98	1.56	.26
10/10/98	1.61	.07
10/11/98	1.61	.00
10/12/98	1.56	.00
10/13/98	1.56	.10
10/14/98	1.62	.29
10/15/98	1.54	.00
10/16/98	1.52	.00
10/17/98	1.63	.00
10/18/98	1.68	.00
10/19/98	1.60	.00
10/20/98	1.55	.00
10/21/98	1.52	.05
10/22/98	1.51	.00
10/23/98	1.49	.00
10/24/98	1.63	.00
10/25/98	1.67	.00
10/26/98	1.56	.00
10/27/98	1.50	.00
10/28/98	1.53	.19
10/29/98	1.58	.01
10/30/98	1.53	.00
10/31/98	1.62	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 1

Address: Elizabeth Ave. near Mapes Ave.

910 F.M. VERSION: 1.02

Serial#: QLL

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.39	.35
10/02/98	1.11	.00
10/03/98	1.29	.09
10/04/98	1.37	.06
10/05/98	.79	.00
10/06/98	.01	.00
10/07/98	.11	.00
10/08/98	1.30	1.18
10/09/98	1.35	.26
10/10/98	1.26	.07
10/11/98	1.26	.00
10/12/98	1.26	.00
10/13/98	1.26	.10
10/14/98	1.46	.29
10/15/98	1.13	.00
10/16/98	1.06	.00
10/17/98	1.15	.00
10/18/98	1.14	.00
10/19/98	1.25	.00
10/20/98	1.41	.00
10/21/98	1.41	.05
10/22/98	1.43	.00
10/23/98	1.39	.00
10/24/98	1.50	.00
10/25/98	1.55	.00
10/26/98	1.43	.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 2 | 910 F.M. VERSION: 1.02

Address: Weequahic Park | Serial#: QUN

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.14	.00
10/06/98	.37	.00
10/07/98	.37	.00
10/08/98	.55	1.18
10/09/98	.48	.26
10/10/98	.50	.07
10/11/98	.48	.00
10/12/98	.48	.00
10/13/98	.23	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.04	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.06	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 3 | 910 F.M. VERSION: 1.02

Address: Jabez Ave. near Backus St. | Serial#: QTZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	3.17	.35
10/02/98	2.92	.00
10/03/98	3.08	.09
10/04/98	3.22	.06
10/05/98	3.13	.00
10/06/98	3.00	.00
10/07/98	2.84	.00
10/08/98	4.09	1.18
10/09/98	3.44	.26
10/10/98	3.25	.07
10/11/98	2.70	.00
10/12/98	2.52	.00
10/13/98	2.81	.10
10/14/98	3.37	.29
10/15/98	3.51	.00
10/16/98	3.15	.00
10/17/98	3.04	.00
10/18/98	2.72	.00
10/19/98	2.34	.00
10/20/98	2.35	.00
10/21/98	2.35	.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98	3.44	.00
10/28/98	3.79	.19
10/29/98	3.45	.01
10/30/98	3.19	.00
10/31/98	3.21	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4 | 910 F.M. VERSION: 1.02

Address: Wilson and Ave. P | Serial#: QT1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.11	.35
10/02/98	.19	.00
10/03/98	.34	.09
10/04/98	.29	.06
10/05/98	.02	.00
10/06/98	.12	.00
10/07/98	.11	.00
10/08/98	.22	1.18
10/09/98	.19	.26
10/10/98	.05	.07
10/11/98	.08	.00
10/12/98	.04	.00
10/13/98	.11	.10
10/14/98	.03	.29
10/15/98	.11	.00
10/16/98	.08	.00
10/17/98	.06	.00
10/18/98	.07	.00
10/19/98	.06	.00
10/20/98	.08	.00
10/21/98	.13	.05
10/22/98	.06	.00
10/23/98	.15	.00
10/24/98	.05	.00
10/25/98	.12	.00
10/26/98	.06	.00
10/27/98	.50	.00
10/28/98	.08	.19
10/29/98	.03	.01
10/30/98	.12	.00
10/31/98	.05	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 5

Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02

Serial#: QUO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.33	.35
10/02/98	.25	.00
10/03/98	.20	.09
10/04/98	.18	.06
10/05/98	.26	.00
10/06/98	.29	.00
10/07/98	.30	.00
10/08/98	.23	1.18
10/09/98	.33	.26
10/10/98	.27	.07
10/11/98	.22	.00
10/12/98	.27	.00
10/13/98	.33	.10
10/14/98	.46	.29
10/15/98	.36	.00
10/16/98	.38	.00
10/17/98	.44	.00
10/18/98	.47	.00
10/19/98	.62	.00
10/20/98	.62	.00
10/21/98	.49	.05
10/22/98	.34	.00
10/23/98	.32	.00
10/24/98	.25	.00
10/25/98	.24	.00
10/26/98	.28	.00
10/27/98	.33	.00
10/28/98	.35	.19
10/29/98	.34	.01
10/30/98	.34	.00
10/31/98	.28	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 6 | 910 F.M. VERSION: 1.02

Address: Near 355 5th St. | Serial#: QU1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	3.78	.35
10/02/98	3.75	.00
10/03/98	3.91	.09
10/04/98	3.94	.06
10/05/98	3.90	.00
10/06/98	3.79	.00
10/07/98	3.74	.00
10/08/98	4.36	1.18
10/09/98	3.92	.26
10/10/98	4.02	.07
10/11/98	4.03	.00
10/12/98	3.91	.00
10/13/98	3.68	.10
10/14/98	3.86	.29
10/15/98	3.59	.00
10/16/98	3.55	.00
10/17/98	3.70	.00
10/18/98	3.75	.00
10/19/98	3.61	.00
10/20/98	3.51	.00
10/21/98	3.58	.05
10/22/98	3.66	.00
10/23/98	3.63	.00
10/24/98	3.74	.00
10/25/98	3.85	.00
10/26/98	3.71	.00
10/27/98	3.69	.00
10/28/98	3.75	.19
10/29/98	3.81	.01
10/30/98	3.94	.00
10/31/98	4.18	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 7 | 910 F.M. VERSION: 1.02

Address: Verona St. near Broadway | Serial#: QUK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.45	.35
10/02/98	.38	.00
10/03/98	.39	.09
10/04/98	.42	.06
10/05/98	.34	.00
10/06/98	.31	.00
10/07/98	.32	.00
10/08/98	.54	1.18
10/09/98	.43	.26
10/10/98	.40	.07
10/11/98	.34	.00
10/12/98	.31	.00
10/13/98	.30	.10
10/14/98	.40	.29
10/15/98	.32	.00
10/16/98	.32	.00
10/17/98	.35	.00
10/18/98	.49	.00
10/19/98	.54	.00
10/20/98	.37	.00
10/21/98	.30	.05
10/22/98	.28	.00
10/23/98	.28	.00
10/24/98	.32	.00
10/25/98	.34	.00
10/26/98	.28	.00
10/27/98	.29	.00
10/28/98	.30	.19
10/29/98	.30	.01
10/30/98	.29	.00
10/31/98	.32	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 8 | 910 F.M. VERSION: 1.02

Address: Earl and Frelinghuysen | Serial#: QT3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.05	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.12	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.01	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.01	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 9

Address: Branch Brook Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QLF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.08	.35
10/02/98	.02	.00
10/03/98	.00	.09
10/04/98	.03	.06
10/05/98	.03	.00
10/06/98		.00
10/07/98		.00
10/08/98		1.18
10/09/98		.26
10/10/98		.07
10/11/98	.43	.00
10/12/98	.42	.00
10/13/98	.15	.10
10/14/98	.01	.29
10/15/98	.01	.00
10/16/98	.01	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98		.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 10

910 F.M. VERSION: 1.02

Address: Weequahic Park Lake Overflow

Serial#: QUX

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	2.68	.35
10/02/98	2.63	.00
10/03/98	2.49	.09
10/04/98	2.68	.06
10/05/98	1.98	.00
10/06/98	1.07	.00
10/07/98	.98	.00
10/08/98	1.08	1.18
10/09/98	1.68	.26
10/10/98	1.59	.07
10/11/98	1.57	.00
10/12/98	1.57	.00
10/13/98	1.61	.10
10/14/98	1.69	.29
10/15/98	1.58	.00
10/16/98	1.50	.00
10/17/98	1.46	.00
10/18/98	1.39	.00
10/19/98	1.35	.00
10/20/98	1.31	.00
10/21/98	1.29	.05
10/22/98	1.28	.00
10/23/98	1.23	.00
10/24/98	1.19	.00
10/25/98	1.21	.00
10/26/98	1.23	.00
10/27/98	1.16	.00
10/28/98	1.27	.19
10/29/98	1.30	.01
10/30/98	1.26	.00
10/31/98	1.16	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.52	.35
10/02/98	.59	.00
10/03/98	.80	.09
10/04/98	.74	.06
10/05/98	.71	.00
10/06/98	.88	.00
10/07/98	1.05	.00
10/08/98	.97	1.18
10/09/98	.35	.26
10/10/98	.79	.07
10/11/98	.96	.00
10/12/98	1.05	.00
10/13/98	1.01	.10
10/14/98	1.06	.29
10/15/98	.77	.00
10/16/98	1.07	.00
10/17/98	1.13	.00
10/18/98	1.13	.00
10/19/98	1.17	.00
10/20/98	1.10	.00
10/21/98	1.19	.05
10/22/98	1.36	.00
10/23/98	1.30	.00
10/24/98	1.37	.00
10/25/98	1.36	.00
10/26/98	1.18	.00
10/27/98	1.15	.00
10/28/98	1.10	.19
10/29/98	.74	.01
10/30/98	.90	.00
10/31/98	1.14	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.25	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.21	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.68	.35
10/02/98	.61	.00
10/03/98	.85	.09
10/04/98	.98	.06
10/05/98	.78	.00
10/06/98	.79	.00
10/07/98	.86	.00
10/08/98	3.11	1.18
10/09/98	2.14	.26
10/10/98	1.53	.07
10/11/98	1.39	.00
10/12/98	1.30	.00
10/13/98	1.31	.10
10/14/98	1.97	.29
10/15/98	1.38	.00
10/16/98	1.37	.00
10/17/98	1.43	.00
10/18/98	1.44	.00
10/19/98	1.40	.00
10/20/98	1.37	.00
10/21/98	1.43	.05
10/22/98	1.35	.00
10/23/98	1.53	.00
10/24/98	1.92	.00
10/25/98	2.59	.00
10/26/98	2.58	.00
10/27/98	.68	.00
10/28/98	.82	.19
10/29/98	.59	.01
10/30/98	.61	.00
10/31/98	.68	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.05	.35
10/02/98	.02	.00
10/03/98	.03	.09
10/04/98	.03	.06
10/05/98	.02	.00
10/06/98	.07	.00
10/07/98	.10	.00
10/08/98	.14	1.18
10/09/98	.07	.26
10/10/98	.05	.07
10/11/98	.05	.00
10/12/98	.04	.00
10/13/98	.05	.10
10/14/98	.05	.29
10/15/98	.02	.00
10/16/98	.06	.00
10/17/98	.07	.00
10/18/98	.03	.00
10/19/98	.02	.00
10/20/98	.02	.00
10/21/98	.03	.05
10/22/98	.03	.00
10/23/98	.03	.00
10/24/98	.03	.00
10/25/98	.03	.00
10/26/98	.06	.00
10/27/98	.03	.00
10/28/98	.03	.19
10/29/98	.03	.01
10/30/98	.03	.00
10/31/98	.03	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.26	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.78	1.18
10/09/98	.16	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	-.01	.10
10/14/98	.06	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.02	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.20	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	1.22	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.35	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Influent | 910 F.M. VERSION: 1.02

Address: Broadway and Second St. | Serial#: QUL

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.03	.35
10/02/98	.82	.00
10/03/98	1.06	.09
10/04/98	1.03	.06
10/05/98	.91	.00
10/06/98	1.10	.00
10/07/98	1.11	.00
10/08/98	2.03	1.18
10/09/98	1.33	.26
10/10/98	1.25	.07
10/11/98	1.30	.00
10/12/98	1.23	.00
10/13/98	1.21	.10
10/14/98	1.38	.29
10/15/98	1.07	.00
10/16/98	1.07	.00
10/17/98	1.20	.00
10/18/98	1.28	.00
10/19/98	1.17	.00
10/20/98	1.20	.00
10/21/98	1.12	.05
10/22/98	1.11	.00
10/23/98	1.14	.00
10/24/98	1.28	.00
10/25/98	1.29	.00
10/26/98	1.31	.00
10/27/98	1.29	.00
10/28/98	1.42	.19
10/29/98	1.19	.01
10/30/98	1.24	.00
10/31/98	1.36	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Overflow | 910 F.M. VERSION: 1.02

Address: Broadway and Second St. | Serial#: QUJ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.07	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.01	1.18
10/09/98	.02	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.02	.35
10/02/98	.01	.00
10/03/98	.00	.09
10/04/98	.01	.06
10/05/98	.01	.00
10/06/98	.01	.00
10/07/98	.01	.00
10/08/98	.05	1.18
10/09/98	.02	.26
10/10/98	.01	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.01	.10
10/14/98	.02	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.01	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.01	.05
10/22/98	.01	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.01	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE | 920 F.M. VERSION: 1.02

Address: Third Ave. and Passaic St. | Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.01	.00
10/07/98	.00	.00
10/08/98	.00	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.07	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	1.57	1.18
10/09/98	.09	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.00	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.74	.05
10/22/98	3.16	.00
10/23/98	3.08	.00
10/24/98	2.70	.00
10/25/98	2.40	.00
10/26/98	2.25	.00
10/27/98	2.71	.00
10/28/98	2.36	.19
10/29/98	1.34	.01
10/30/98	1.41	.00
10/31/98	1.12	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Influent

Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02

Serial#: QRG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.49	.35
10/02/98	.39	.00
10/03/98	.41	.09
10/04/98	.43	.06
10/05/98	.41	.00
10/06/98	.40	.00
10/07/98	.42	.00
10/08/98	.73	1.18
10/09/98	.52	.26
10/10/98	.45	.07
10/11/98	.47	.00
10/12/98	.46	.00
10/13/98	.47	.10
10/14/98	.51	.29
10/15/98	.40	.00
10/16/98	.41	.00
10/17/98	.40	.00
10/18/98	.42	.00
10/19/98	.41	.00
10/20/98	.40	.00
10/21/98	.41	.05
10/22/98	.38	.00
10/23/98	.38	.00
10/24/98	.38	.00
10/25/98	.38	.00
10/26/98	.39	.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Overflow | 910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St. | Serial#: QU3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.04	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.04	1.18
10/09/98	.02	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST | 920 F.M. VERSION: 1.02

Address: Clay St. and McCarter Hwy | Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.08	.35
10/02/98	.06	.00
10/03/98	.08	.09
10/04/98	.08	.06
10/05/98	.06	.00
10/06/98	.05	.00
10/07/98	.05	.00
10/08/98	.10	1.18
10/09/98	.05	.26
10/10/98	.03	.07
10/11/98	.02	.00
10/12/98	.02	.00
10/13/98	.02	.10
10/14/98	.03	.29
10/15/98	.02	.00
10/16/98	.02	.00
10/17/98	.03	.00
10/18/98	.03	.00
10/19/98	.02	.00
10/20/98	.02	.00
10/21/98	.02	.05
10/22/98	.02	.00
10/23/98	.02	.00
10/24/98	.02	.00
10/25/98	.03	.00
10/26/98	.02	.00
10/27/98	.02	.00
10/28/98	.03	.19
10/29/98	.02	.01
10/30/98	.03	.00
10/31/98	.03	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST | 920 F.M. VERSION: 1.02

Address: Clay St. and McCarter Hwy | Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.00	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Influents

Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTR

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	-.01	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.01	.06
10/05/98	.00	.00
10/06/98	-1.59	.00
10/07/98	4.93	.00
10/08/98	16.97	1.18
10/09/98	11.00	.26
10/10/98	11.72	.07
10/11/98	11.36	.00
10/12/98	11.35	.00
10/13/98	11.94	.10
10/14/98	13.81	.29
10/15/98	12.85	.00
10/16/98	12.38	.00
10/17/98	12.19	.00
10/18/98	11.99	.00
10/19/98	11.01	.00
10/20/98	11.00	.00
10/21/98	10.82	.05
10/22/98	11.56	.00
10/23/98	11.47	.00
10/24/98	11.54	.00
10/25/98	10.31	.00
10/26/98	10.28	.00
10/27/98	10.21	.00
10/28/98	11.82	.19
10/29/98	11.70	.01
10/30/98	11.77	.00
10/31/98	11.98	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow North Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QPS

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	2.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.02	.00
10/06/98	.01	.00
10/07/98	.52	.00
10/08/98	9.23	1.18
10/09/98	.23	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	-.01	.10
10/14/98	.16	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.02	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.46	.00
10/27/98	.01	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow South Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QT2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.65	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	-.01	.00
10/07/98	.18	.00
10/08/98	8.30	1.18
10/09/98	.20	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.12	.29
10/15/98	-1.56	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.08	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.17	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST Influent

Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02

Serial#: QRF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.07	.35
10/02/98	.06	.00
10/03/98	.06	.09
10/04/98	.07	.06
10/05/98	.07	.00
10/06/98	.06	.00
10/07/98	.07	.00
10/08/98	.15	1.18
10/09/98	.09	.26
10/10/98	.06	.07
10/11/98	.03	.00
10/12/98	.06	.00
10/13/98	.05	.10
10/14/98	.06	.29
10/15/98	.06	.00
10/16/98	.06	.00
10/17/98	.05	.00
10/18/98	.03	.00
10/19/98	.05	.00
10/20/98	.05	.00
10/21/98	.06	.05
10/22/98	.04	.00
10/23/98	.04	.00
10/24/98	.04	.00
10/25/98	.05	.00
10/26/98	.05	.00
10/27/98	.05	.00
10/28/98	.05	.19
10/29/98	.04	.01
10/30/98	.04	.00
10/31/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.07	.35
10/02/98	.07	.00
10/03/98	.07	.09
10/04/98	.08	.06
10/05/98	.08	.00
10/06/98	.08	.00
10/07/98	.07	.00
10/08/98	.15	1.18
10/09/98	.09	.26
10/10/98	.06	.07
10/11/98	.06	.00
10/12/98	.07	.00
10/13/98	.08	.10
10/14/98	.09	.29
10/15/98	.08	.00
10/16/98	.07	.00
10/17/98	.08	.00
10/18/98	.08	.00
10/19/98	.07	.00
10/20/98	.06	.00
10/21/98	.06	.05
10/22/98	.05	.00
10/23/98	.05	.00
10/24/98	.05	.00
10/25/98	.04	.00
10/26/98	.02	.00
10/27/98	.03	.00
10/28/98	.06	.19
10/29/98	.03	.01
10/30/98	.02	.00
10/31/98	.01	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.00	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.02	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.01	.00
10/07/98	.03	.00
10/08/98	.14	1.18
10/09/98	.04	.26
10/10/98	.05	.07
10/11/98	.02	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.02	.29
10/15/98	.01	.00
10/16/98	.07	.00
10/17/98	.13	.00
10/18/98	.12	.00
10/19/98	.08	.00
10/20/98	.09	.00
10/21/98	.10	.05
10/22/98	.09	.00
10/23/98	.12	.00
10/24/98	.10	.00
10/25/98	.10	.00
10/26/98	.10	.00
10/27/98	.09	.00
10/28/98	.10	.19
10/29/98	.08	.01
10/30/98	.09	.00
10/31/98	.08	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.01	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.01	1.18
10/09/98	.01	.26
10/10/98	.01	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	2.00	.35
10/02/98	1.14	.00
10/03/98	2.55	.09
10/04/98	2.34	.06
10/05/98	2.41	.00
10/06/98	2.45	.00
10/07/98	2.33	.00
10/08/98	5.30	1.18
10/09/98	2.19	.26
10/10/98	1.98	.07
10/11/98	2.10	.00
10/12/98	2.27	.00
10/13/98	2.28	.10
10/14/98	2.96	.29
10/15/98	1.95	.00
10/16/98	2.28	.00
10/17/98	2.27	.00
10/18/98	2.53	.00
10/19/98	2.43	.00
10/20/98	2.62	.00
10/21/98	2.78	.05
10/22/98	2.71	.00
10/23/98	2.67	.00
10/24/98	2.69	.00
10/25/98	2.84	.00
10/26/98	2.59	.00
10/27/98	2.05	.00
10/28/98	2.56	.19
10/29/98	2.39	.01
10/30/98	1.66	.00
10/31/98	1.89	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	-.01	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	-.04	1.18
10/09/98	.02	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	-.01	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.39	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	2.01	1.18
10/09/98	.31	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.35	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.09	.19
10/29/98	.15	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.96	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	3.93	1.18
10/09/98	.25	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.46	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98		.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	4.02	.35
10/02/98	2.98	.00
10/03/98	3.48	.09
10/04/98	3.01	.06
10/05/98	3.41	.00
10/06/98	3.80	.00
10/07/98	3.10	.00
10/08/98	2.93	1.18
10/09/98	-.70	.26
10/10/98	-1.07	.07
10/11/98	-1.34	.00
10/12/98	-1.58	.00
10/13/98	-1.62	.10
10/14/98	-1.87	.29
10/15/98	.29	.00
10/16/98	3.65	.00
10/17/98	3.42	.00
10/18/98	3.42	.00
10/19/98	3.45	.00
10/20/98	3.41	.00
10/21/98		.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent1

910 F.M. VERSION: 1.02

Address: Raymond Plaza near Raymond Blvd.

Serial#: QQT

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.03	.35
10/02/98	.02	.00
10/03/98	.01	.09
10/04/98	.01	.06
10/05/98	.02	.00
10/06/98	.02	.00
10/07/98	.02	.00
10/08/98	.05	1.18
10/09/98	.04	.26
10/10/98	.01	.07
10/11/98	.01	.00
10/12/98	.02	.00
10/13/98	.02	.10
10/14/98	.03	.29
10/15/98	.02	.00
10/16/98	.02	.00
10/17/98	.01	.00
10/18/98	.00	.00
10/19/98	.02	.00
10/20/98	.02	.00
10/21/98	.02	.05
10/22/98	.02	.00
10/23/98	.02	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.03	.00
10/27/98	.03	.00
10/28/98	.04	.19
10/29/98	.04	.01
10/30/98	.02	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent2

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QU2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.15	.35
10/02/98	.05	.00
10/03/98	.03	.09
10/04/98	.03	.06
10/05/98	.04	.00
10/06/98	.04	.00
10/07/98	.05	.00
10/08/98	.20	1.18
10/09/98	.10	.26
10/10/98	.04	.07
10/11/98	.04	.00
10/12/98	.06	.00
10/13/98	.05	.10
10/14/98	.11	.29
10/15/98	.06	.00
10/16/98	.06	.00
10/17/98	.04	.00
10/18/98	.03	.00
10/19/98	.06	.00
10/20/98	.06	.00
10/21/98	.06	.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98	.07	.00
10/28/98	.03	.19
10/29/98	.06	.01
10/30/98	.07	.00
10/31/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent3

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.08	.35
10/02/98	.02	.00
10/03/98	.01	.09
10/04/98	.01	.06
10/05/98	.02	.00
10/06/98	.02	.00
10/07/98	.02	.00
10/08/98	.17	1.18
10/09/98	.06	.26
10/10/98	.01	.07
10/11/98	.01	.00
10/12/98	.04	.00
10/13/98	.04	.10
10/14/98	.09	.29
10/15/98	.04	.00
10/16/98	.02	.00
10/17/98	.02	.00
10/18/98	.00	.00
10/19/98	.02	.00
10/20/98	.03	.00
10/21/98	.02	.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98	.03	.00
10/28/98	.04	.19
10/29/98	.03	.01
10/30/98	.02	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	4.26	.35
10/02/98	2.11	.00
10/03/98	2.09	.09
10/04/98	2.27	.06
10/05/98	2.33	.00
10/06/98	2.37	.00
10/07/98	2.44	.00
10/08/98	7.36	1.18
10/09/98	2.65	.26
10/10/98	1.54	.07
10/11/98	1.70	.00
10/12/98	1.81	.00
10/13/98	1.93	.10
10/14/98	3.17	.29
10/15/98	2.15	.00
10/16/98	2.28	.00
10/17/98	2.24	.00
10/18/98	2.14	.00
10/19/98	2.34	.00
10/20/98	2.57	.00
10/21/98	2.74	.05
10/22/98	2.11	.00
10/23/98	2.18	.00
10/24/98	2.07	.00
10/25/98	1.95	.00
10/26/98	2.20	.00
10/27/98	2.23	.00
10/28/98	2.62	.19
10/29/98	2.03	.01
10/30/98	1.92	.00
10/31/98	1.94	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Overflow

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QLK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	-3.17	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	-.01	.00
10/07/98	.00	.00
10/08/98	3.64	1.18
10/09/98	-.02	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	-.02	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.02	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.11	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.21	.35
10/02/98	.64	.00
10/03/98	.75	.09
10/04/98	.80	.06
10/05/98	.66	.00
10/06/98	.63	.00
10/07/98	.63	.00
10/08/98	1.59	1.18
10/09/98	1.18	.26
10/10/98	1.43	.07
10/11/98	1.29	.00
10/12/98	1.26	.00
10/13/98	1.43	.10
10/14/98	1.23	.29
10/15/98	.85	.00
10/16/98	.72	.00
10/17/98	.76	.00
10/18/98	.70	.00
10/19/98	.64	.00
10/20/98	.62	.00
10/21/98	.67	.05
10/22/98	.74	.00
10/23/98	.73	.00
10/24/98	.78	.00
10/25/98	.79	.00
10/26/98	.71	.00
10/27/98	.71	.00
10/28/98	.80	.19
10/29/98	.65	.01
10/30/98	.69	.00
10/31/98	.72	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.04	.35
10/02/98	.01	.00
10/03/98	.01	.09
10/04/98	.01	.06
10/05/98	.01	.00
10/06/98	.02	.00
10/07/98	.04	.00
10/08/98	.06	1.18
10/09/98	.03	.26
10/10/98	.01	.07
10/11/98	.02	.00
10/12/98	.02	.00
10/13/98	.02	.10
10/14/98	.02	.29
10/15/98	.01	.00
10/16/98	.01	.00
10/17/98	.01	.00
10/18/98	.01	.00
10/19/98	.01	.00
10/20/98	.01	.00
10/21/98	.02	.05
10/22/98	.01	.00
10/23/98	.01	.00
10/24/98	.01	.00
10/25/98	.01	.00
10/26/98	.01	.00
10/27/98	.01	.00
10/28/98	.01	.19
10/29/98	.03	.01
10/30/98	.02	.00
10/31/98	.01	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.93	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	1.01	1.18
10/09/98	.32	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	-.14	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.15	.19
10/29/98	-.03	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	2.27	.35
10/02/98	1.27	.00
10/03/98	1.48	.09
10/04/98	1.50	.06
10/05/98	1.25	.00
10/06/98	1.32	.00
10/07/98	1.34	.00
10/08/98	3.93	1.18
10/09/98	2.53	.26
10/10/98	1.59	.07
10/11/98	1.51	.00
10/12/98	1.49	.00
10/13/98	1.50	.10
10/14/98	1.95	.29
10/15/98	1.36	.00
10/16/98	1.37	.00
10/17/98	1.43	.00
10/18/98	1.44	.00
10/19/98	1.42	.00
10/20/98	1.38	.00
10/21/98	1.46	.05
10/22/98	1.36	.00
10/23/98	1.42	.00
10/24/98	1.41	.00
10/25/98	1.42	.00
10/26/98	1.40	.00
10/27/98	1.41	.00
10/28/98	1.71	.19
10/29/98	1.63	.01
10/30/98	1.56	.00
10/31/98	1.74	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.01	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.05	1.18
10/09/98	.02	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.01	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.01	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.77	.35
10/02/98	.42	.00
10/03/98	.56	.09
10/04/98	.66	.06
10/05/98	.50	.00
10/06/98	.51	.00
10/07/98	.52	.00
10/08/98	2.27	1.18
10/09/98	1.19	.26
10/10/98	.61	.07
10/11/98	.60	.00
10/12/98	.60	.00
10/13/98	.69	.10
10/14/98	1.85	.29
10/15/98	1.11	.00
10/16/98	1.27	.00
10/17/98	1.41	.00
10/18/98	1.67	.00
10/19/98	1.65	.00
10/20/98	1.91	.00
10/21/98	2.01	.05
10/22/98	2.36	.00
10/23/98	2.76	.00
10/24/98	3.58	.00
10/25/98	2.91	.00
10/26/98	2.03	.00
10/27/98	2.29	.00
10/28/98	2.51	.19
10/29/98	2.30	.01
10/30/98	2.57	.00
10/31/98	2.97	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.08	.35
10/02/98	.03	.00
10/03/98	.04	.09
10/04/98	.04	.06
10/05/98	.03	.00
10/06/98	.03	.00
10/07/98	.03	.00
10/08/98	.14	1.18
10/09/98	.10	.26
10/10/98	.04	.07
10/11/98	.04	.00
10/12/98	.03	.00
10/13/98	.03	.10
10/14/98	.04	.29
10/15/98	.03	.00
10/16/98	.03	.00
10/17/98	.04	.00
10/18/98	.05	.00
10/19/98	.07	.00
10/20/98	.07	.00
10/21/98	.07	.05
10/22/98	.07	.00
10/23/98	.06	.00
10/24/98	.06	.00
10/25/98	.07	.00
10/26/98	.06	.00
10/27/98	.07	.00
10/28/98	.08	.19
10/29/98	.03	.01
10/30/98	.02	.00
10/31/98	.03	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.21	.35
10/02/98	.16	.00
10/03/98	.18	.09
10/04/98	.20	.06
10/05/98	.17	.00
10/06/98	.15	.00
10/07/98	.15	.00
10/08/98	.27	1.18
10/09/98	.23	.26
10/10/98	.19	.07
10/11/98	.18	.00
10/12/98	.19	.00
10/13/98	.18	.10
10/14/98	.23	.29
10/15/98	.18	.00
10/16/98	.18	.00
10/17/98	.19	.00
10/18/98	.18	.00
10/19/98	.18	.00
10/20/98	.19	.00
10/21/98	.19	.05
10/22/98	.18	.00
10/23/98	.18	.00
10/24/98	.19	.00
10/25/98	.21	.00
10/26/98	.22	.00
10/27/98	.30	.00
10/28/98	.33	.19
10/29/98	.28	.01
10/30/98	.29	.00
10/31/98	.37	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.40	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	1.01	1.18
10/09/98	.15	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.16	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.02	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

920 F.M. VERSION: 1.02

Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.70	.35
10/02/98	.05	.00
10/03/98	.02	.09
10/04/98	.09	.06
10/05/98	.08	.00
10/06/98	.09	.00
10/07/98	.19	.00
10/08/98	1.59	1.18
10/09/98	.35	.26
10/10/98	.05	.07
10/11/98	.12	.00
10/12/98	.09	.00
10/13/98	.14	.10
10/14/98	.43	.29
10/15/98	.17	.00
10/16/98	.22	.00
10/17/98	.29	.00
10/18/98	.24	.00
10/19/98	.23	.00
10/20/98	.24	.00
10/21/98	.25	.05
10/22/98	.29	.00
10/23/98	.21	.00
10/24/98	.13	.00
10/25/98	.18	.00
10/26/98	.24	.00
10/27/98	.23	.00
10/28/98	.39	.19
10/29/98	.03	.01
10/30/98	.12	.00
10/31/98	.11	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

920 F.M. VERSION: 1.02

Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.33	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.06	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02

Serial#: QO4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.78	.35
10/02/98	.35	.00
10/03/98	.46	.09
10/04/98	.31	.06
10/05/98	.11	.00
10/06/98	.27	.00
10/07/98	.32	.00
10/08/98	.65	1.18
10/09/98	.60	.26
10/10/98	.45	.07
10/11/98	.32	.00
10/12/98	.27	.00
10/13/98	.31	.10
10/14/98	.69	.29
10/15/98	.32	.00
10/16/98	.33	.00
10/17/98	.42	.00
10/18/98	.41	.00
10/19/98	.38	.00
10/20/98	.37	.00
10/21/98	.39	.05
10/22/98	.37	.00
10/23/98	.38	.00
10/24/98	.41	.00
10/25/98	.38	.00
10/26/98	.39	.00
10/27/98	.41	.00
10/28/98	.47	.19
10/29/98	.26	.01
10/30/98	.35	.00
10/31/98	.40	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

910 F.M. VERSION: 1.02

Serial#: QPP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	-.25	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	-.07	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	-1.30	1.18
10/09/98	-.16	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	-.30	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	-.13	.19
10/29/98	-.06	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.86	.35
10/02/98	1.75	.00
10/03/98	1.87	.09
10/04/98	2.04	.06
10/05/98	1.97	.00
10/06/98	2.06	.00
10/07/98	1.79	.00
10/08/98	3.09	1.18
10/09/98	1.51	.26
10/10/98	1.75	.07
10/11/98	1.76	.00
10/12/98	1.72	.00
10/13/98	1.77	.10
10/14/98	1.83	.29
10/15/98	1.71	.00
10/16/98	1.72	.00
10/17/98	1.67	.00
10/18/98	1.66	.00
10/19/98	1.63	.00
10/20/98	1.61	.00
10/21/98	1.58	.05
10/22/98	1.48	.00
10/23/98	1.55	.00
10/24/98	1.46	.00
10/25/98	1.42	.00
10/26/98	1.52	.00
10/27/98	1.51	.00
10/28/98	1.75	.19
10/29/98	1.09	.01
10/30/98	1.61	.00
10/31/98	1.64	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.03	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	-.12	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.00	.19
10/29/98	.00	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 Peddie St regulated | 910 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QO7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	10.73	.35
10/02/98	8.48	.00
10/03/98	9.17	.09
10/04/98	10.44	.06
10/05/98	8.24	.00
10/06/98	8.51	.00
10/07/98	8.63	.00
10/08/98	15.64	1.18
10/09/98	11.41	.26
10/10/98	9.79	.07
10/11/98	8.52	.00
10/12/98	8.89	.00
10/13/98	9.28	.10
10/14/98	12.38	.29
10/15/98	8.39	.00
10/16/98	8.40	.00
10/17/98	8.71	.00
10/18/98	8.76	.00
10/19/98	8.20	.00
10/20/98	8.75	.00
10/21/98	9.52	.05
10/22/98	8.63	.00
10/23/98	8.45	.00
10/24/98	8.70	.00
10/25/98	8.48	.00
10/26/98	8.60	.00
10/27/98	8.45	.00
10/28/98	10.53	.19
10/29/98	11.22	.01
10/30/98	8.52	.00
10/31/98	8.31	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated | 920 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	14.12	.35
10/02/98	10.60	.00
10/03/98	12.26	.09
10/04/98	12.65	.06
10/05/98	11.75	.00
10/06/98	11.25	.00
10/07/98	11.26	.00
10/08/98	20.08	1.18
10/09/98	11.55	.26
10/10/98	9.79	.07
10/11/98	9.81	.00
10/12/98	10.77	.00
10/13/98	11.36	.10
10/14/98	11.28	.29
10/15/98	9.05	.00
10/16/98	9.86	.00
10/17/98	11.28	.00
10/18/98	11.78	.00
10/19/98	10.99	.00
10/20/98	11.00	.00
10/21/98	12.21	.05
10/22/98	11.99	.00
10/23/98	11.92	.00
10/24/98	11.54	.00
10/25/98	11.01	.00
10/26/98	10.51	.00
10/27/98	11.56	.00
10/28/98	11.47	.19
10/29/98	10.27	.01
10/30/98	9.71	.00
10/31/98	9.07	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated | 920 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	2.37	.35
10/02/98	1.63	.00
10/03/98	2.02	.09
10/04/98	1.94	.06
10/05/98	1.51	.00
10/06/98	1.69	.00
10/07/98	1.74	.00
10/08/98	7.80	1.18
10/09/98	2.55	.26
10/10/98	1.64	.07
10/11/98	1.61	.00
10/12/98	1.66	.00
10/13/98	1.73	.10
10/14/98	2.70	.29
10/15/98	1.61	.00
10/16/98	1.68	.00
10/17/98	1.77	.00
10/18/98	1.74	.00
10/19/98	1.78	.00
10/20/98	1.71	.00
10/21/98	1.78	.05
10/22/98	1.83	.00
10/23/98	1.84	.00
10/24/98	1.75	.00
10/25/98	1.79	.00
10/26/98	1.68	.00
10/27/98	1.79	.00
10/28/98	1.91	.19
10/29/98	1.07	.01
10/30/98	1.89	.00
10/31/98	1.91	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN regulated | 910 F.M. VERSION: 1.02

Address: Queen Ditch | Serial#: QQV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	4.48	.35
10/02/98	3.82	.00
10/03/98	2.91	.09
10/04/98	3.22	.06
10/05/98	3.51	.00
10/06/98	3.50	.00
10/07/98	3.39	.00
10/08/98	13.07	1.18
10/09/98	4.50	.26
10/10/98	4.07	.07
10/11/98	4.02	.00
10/12/98	4.24	.00
10/13/98	3.94	.10
10/14/98	4.56	.29
10/15/98	3.87	.00
10/16/98	4.28	.00
10/17/98	4.06	.00
10/18/98	3.51	.00
10/19/98	3.71	.00
10/20/98	3.80	.00
10/21/98	3.79	.05
10/22/98	3.10	.00
10/23/98	3.17	.00
10/24/98	3.07	.00
10/25/98	3.36	.00
10/26/98	3.04	.00
10/27/98	2.99	.00
10/28/98	3.10	.19
10/29/98	4.10	.01
10/30/98	4.01	.00
10/31/98	3.40	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN unregulated | 910 F.M. VERSION: 1.02

Address: Queen Ditch | Serial#: QQU

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	5.85	.35
10/02/98	5.24	.00
10/03/98	5.05	.09
10/04/98	5.52	.06
10/05/98	5.28	.00
10/06/98	5.31	.00
10/07/98	5.25	.00
10/08/98	4.48	1.18
10/09/98	4.12	.26
10/10/98	5.95	.07
10/11/98	5.91	.00
10/12/98	5.80	.00
10/13/98	5.63	.10
10/14/98	6.42	.29
10/15/98	5.66	.00
10/16/98	5.42	.00
10/17/98	5.29	.00
10/18/98	5.29	.00
10/19/98	5.23	.00
10/20/98	5.24	.00
10/21/98	4.74	.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98	5.59	.00
10/28/98	5.83	.19
10/29/98	5.47	.01
10/30/98	5.33	.00
10/31/98	4.95	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

920 F.M. VERSION: 1.02

Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.92	.35
10/02/98	1.78	.00
10/03/98	1.32	.09
10/04/98	1.38	.06
10/05/98	1.83	.00
10/06/98	1.74	.00
10/07/98	1.81	.00
10/08/98	4.53	1.18
10/09/98	1.85	.26
10/10/98	1.47	.07
10/11/98	1.31	.00
10/12/98	1.97	.00
10/13/98	1.82	.10
10/14/98	2.61	.29
10/15/98	1.87	.00
10/16/98	1.80	.00
10/17/98	1.26	.00
10/18/98	1.75	.00
10/19/98	2.39	.00
10/20/98	2.11	.00
10/21/98	1.28	.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

920 F.M. VERSION: 1.02

Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.00	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	.61	1.18
10/09/98	.00	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.00	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98		.00
10/23/98		.00
10/24/98		.00
10/25/98		.00
10/26/98		.00
10/27/98		.00
10/28/98		.19
10/29/98		.01
10/30/98		.00
10/31/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	1.64	.35
10/02/98	1.31	.00
10/03/98	1.40	.09
10/04/98	1.37	.06
10/05/98	1.25	.00
10/06/98	1.26	.00
10/07/98	1.26	.00
10/08/98	2.57	1.18
10/09/98	1.62	.26
10/10/98	1.34	.07
10/11/98	1.32	.00
10/12/98	1.33	.00
10/13/98	1.34	.10
10/14/98	1.53	.29
10/15/98	1.18	.00
10/16/98	1.25	.00
10/17/98	1.28	.00
10/18/98	1.36	.00
10/19/98	1.28	.00
10/20/98	1.22	.00
10/21/98	1.26	.05
10/22/98	1.27	.00
10/23/98	1.84	.00
10/24/98	1.57	.00
10/25/98	1.46	.00
10/26/98	1.44	.00
10/27/98	1.49	.00
10/28/98	1.51	.19
10/29/98	1.30	.01
10/30/98	1.24	.00
10/31/98	1.53	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.45	.35
10/02/98	.29	.00
10/03/98	.34	.09
10/04/98	.27	.06
10/05/98	.29	.00
10/06/98	.32	.00
10/07/98	.26	.00
10/08/98	.37	1.18
10/09/98	.35	.26
10/10/98	.30	.07
10/11/98	.27	.00
10/12/98	.29	.00
10/13/98	.17	.10
10/14/98	.31	.29
10/15/98	.29	.00
10/16/98	.26	.00
10/17/98	.31	.00
10/18/98	.30	.00
10/19/98	.23	.00
10/20/98	.14	.00
10/21/98	.06	.05
10/22/98	.17	.00
10/23/98	.23	.00
10/24/98	.24	.00
10/25/98	.28	.00
10/26/98	.18	.00
10/27/98	.22	.00
10/28/98	.23	.19
10/29/98	.03	.01
10/30/98	.02	.00
10/31/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

930 F.M. VERSION: 1.02

Address: Emmet St. and McCarter Hwy

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
10/01/98	.72	.35
10/02/98	.00	.00
10/03/98	.00	.09
10/04/98	.00	.06
10/05/98	.00	.00
10/06/98	.00	.00
10/07/98	.00	.00
10/08/98	3.96	1.18
10/09/98	.48	.26
10/10/98	.00	.07
10/11/98	.00	.00
10/12/98	.00	.00
10/13/98	.00	.10
10/14/98	.95	.29
10/15/98	.00	.00
10/16/98	.00	.00
10/17/98	.00	.00
10/18/98	.00	.00
10/19/98	.00	.00
10/20/98	.00	.00
10/21/98	.00	.05
10/22/98	.00	.00
10/23/98	.00	.00
10/24/98	.00	.00
10/25/98	.00	.00
10/26/98	.00	.00
10/27/98	.00	.00
10/28/98	.56	.19
10/29/98	.05	.01
10/30/98	.00	.00
10/31/98	.00	.00

Newark CSO Discharge Characterization Study

November Flow Metering Report

American Sigma flow meters have been installed at 24 CSO locations, 8 incoming sewer lines from East Orange, 4 outgoing sewer lines to surrounding municipalities, 10 internal Newark sewer lines and 4 points of flow on PVSC/Newark Interceptors. The flow meters use Doppler technology and are equipped with one, two or three probes. Each probe is capable of measuring the level and velocity in a single conduit. The level and velocity measurements are then used to calculate the flow rate in each conduit.

At CSO locations, levels and velocities are measured in each sewer line influent to the regulator chamber and at *either* the overflow to the receiving water *or* downstream of the regulator chamber in the sewer line carrying flow to the interceptor. Therefore many CSO locations required the installation of more than one meter with multiple probes.

Each graph/table in this Monthly Flow Metering Report represents the average daily flow rate(s) calculated by a single flow meter probe. The flow rates presented in this report are considered "raw" data, that is it has not yet been adjusted for transient field conditions such as electronic drift, nor has each 10 minute-interval reading been scrutinized. Therefore, because the daily average flow is an average of 144 flow rates calculated using level and velocity readings, a few errant level or velocity readings taken over a 10 to 30 minute period could significantly offset the daily average. These errant readings could be due to debris which has momentarily become entangled in the probe, but clears itself before the field crews arrive for the next routine maintenance visit. The flow data however, will be scrutinized as needed and adjustments will be made during the modeling phase of the project.

The size and type of each flow conduit is listed in the attached Flow Meter Report Key and corresponds to the appropriate flow channel (i.e., Flow1, Flow2 or Flow2) identified in each graph in the lower right-hand corner.

Total daily rainfall is also included in the graphs/tables. This rainfall is the average of four of the five rain gauges located throughout the City. The fifth rain gauge, RG-5, located on the roof of the Lehigh and Bergen Fire Station has been temporarily removed during renovations to the building. The rain gauge will be reinstalled upon completion of construction activities.

Special Notes:

Graphs/tables for flow meters installed on the interceptors are not yet available. This equipment is being fine tuned and flow data will be forthcoming.

Newark CSO Discharge Characterization Study

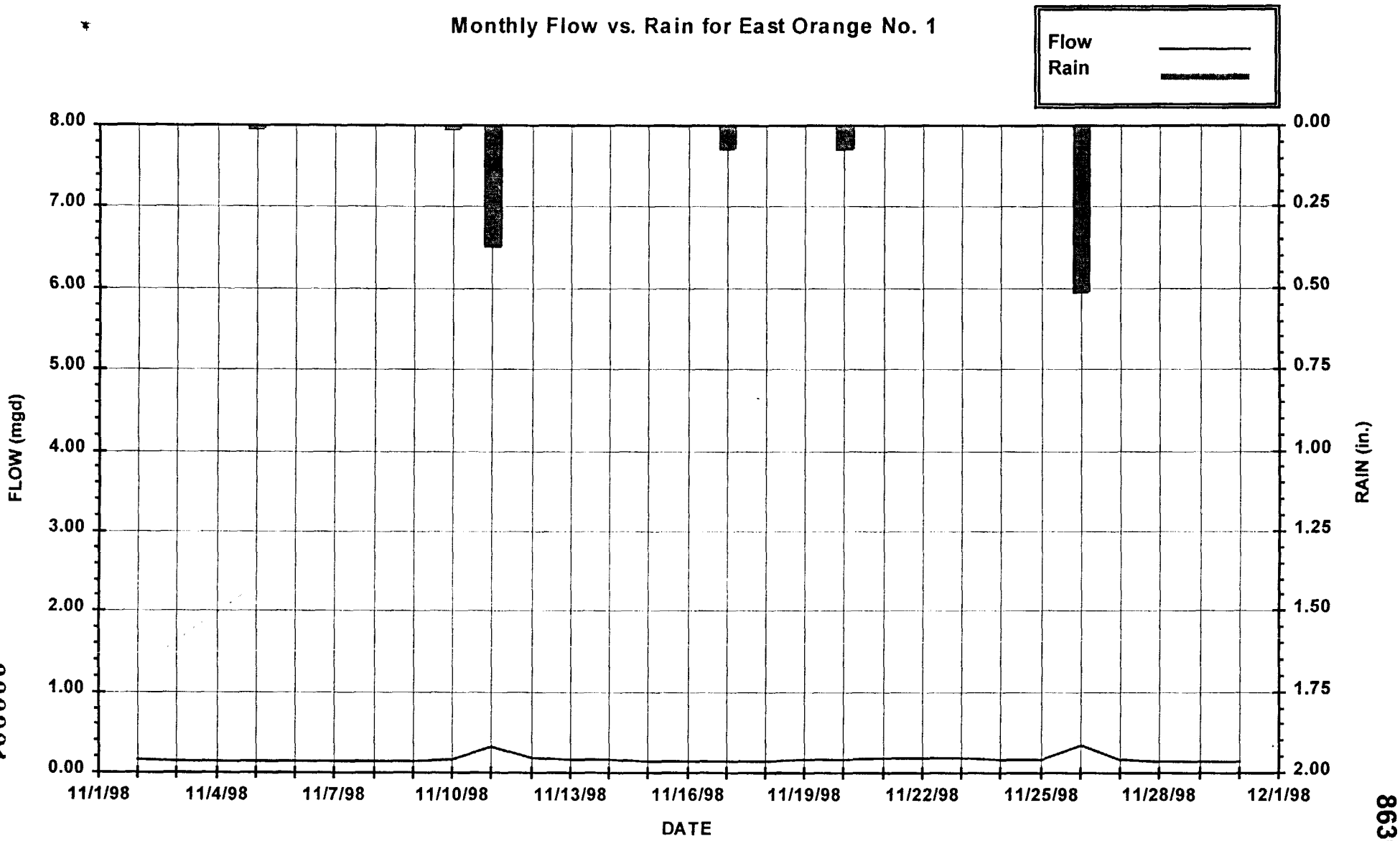
Flow Meter Report Key

Region/Location	*Meter Serial Number*	*Flow1*	*Flow2*	*Flow3*
CSO 002 - Verona Ave	QR8	54.75" Influent	72"W x 58.75"H Overflow	
CSO 004/005 - Herbert Pl. - Influent	QTQ	48" Influent	24" Influent	
CSO 004/005 - Herbert Pl. - Overflows	QTP	51" Overflow	48.5"H x 72.4"W Overflow	
CSO 006 - Oriental Ave Influent	QUL	48" Influent		
CSO 006 - Orential Ave Overflow	QUJ	54" Overflow		
CSO 007 - Third Ave	QR6	15" Influent	48"W Overflow Weir	
CSO 008 - Fourth Ave	QQD		72"W x 53"H Overflow	45"H x 25.75"W Influent
CSO 009B - Clay St Influent	QRG	18" Influent		
CSO 009B - Clay St Overflow	QU3	18" Overflow		
CSO 009C - Clay St	QRW	15.2" Influent	15.1" Overflow	
CSO 010 - Clay St Influents	QTR	To Be Profiled	To be Profiled	
CSO 010 - Clay St Overflow North Pipe	QPS		100"W x75.3"H Overflow	
CSO 010 - Clay St Overflow South Pipe	QUM		100"W x75.3"H Overflow	
CSO 011 - Orange St Influent	QRF	15" Influent		
CSO 011 - Orange St influent and overflow	QRZ	18" Influent	22.5" Overflow	
CSO 012 - Bridge St	QR7	15" Influent	48"W Overflow Weir	
CSO 013 - Rector St	QUY	62" Influent	45"W x 54"H Influent	79.5"W x 66.5"H Overflow
CSO 014 - Saybrook Pl Influent and Overflow	QRV		102.5"W x 83"H Overflow	75.75"H x74"W Influent
CSO 015 - City Dock Influent1	QQT	12" Influent		
CSO 015 - City Dock Influent2	QU2	18" Influent		
CSO 015 - City Dock Influent3	QPV	36" Influent		
CSO 015 - City Dock Influent4	QPQ		108"W x 88"H Influent (Siphon)	
CSO 015 - City Dock Overflow	QLK		87"H x 108"W Overflow	
CSO 016 - Jackson St	QTO	56.5" Influent	12" Influent	72"W Overflow Weir
CSO 017 - Polk St	QUG	85" Influent	97" Overflow Weir	
CSO 018 - Freeman St Influent	QUF	28.5" Influent	18.25" Influent	
CSO 018 - Freeman St Influent&Overflow	QU0	24.2" Influent	44"W Overflow Weir	
CSO 022 - Roanoke Ave	QUZ	60" Influent	60" Overflow	
CSO 023a - Adams St	QR4		88"W x 12"H Overflow	64"H x 51.5"W Influent
CSO 023b - Adams St Influent	QO4	48" Influent		
CSO 023b - Adams St overflow	QPP	42" Overflow		
CSO 025 - Peddie St unregulated	QUE	192"W x 80"H Influent	191"W x 85"H Influent	
CSO 025 - Peddie St regulated	QO7	48"H x 48"W Regulated Flow		
CSO 026 - Queen unregulated	QQU	102.5"W x 61"H Influent		
CSO 026 - Queen regulated	QQV	47.3"H x 48.2"W Regulated Flow		
CSO 027 - Waverly	QRY	96" Influent	96" Overflow	
CSO 030 - Wheeler/Ave A	QUD	56" Influent	66" Influent	51.75"H x 11.6"H Overflow
East Orange No. 1	QRH		49.25"H x 32.75"W	
East Orange No. 2	QRM		46.8"H x 33.4"W	
East Orange No. 3	QQZ	33"		
East Orange No. 4	QRC	12"		
East Orange No. 5/6	QR1	33"	18.75"	
East Orange No. 7	QPT	30"		
East Orange No. 8	QO1	24.25"		
Outgoing No. 1	QQ7	12"		
Outgoing No. 2	QQ2	20"		
Outgoing No. 3	QRD	15"		
Outgoing No. 4	QUI	18.25"		
Newark No. 1	QLL	36"		
Newark No. 2	QUN	18.25"		
Newark No. 3	QTZ	47.1"		
Newark No. 4	QT1	45"W x 48"H		
Newark No. 5	QUO	21.1"		
Newark No. 6	QU1	24.5"		
Newark No. 7	QUK	24.4"		
Newark No. 8	QT3	18"		
Newark No. 9	QLF	102"W x 24"H		
Newark No. 10	QUX	2 - 20.5"		

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 1



EAST ORANGE NO. 1
Address: Central Ave. and 15th St.
49.25" H x 32.75"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

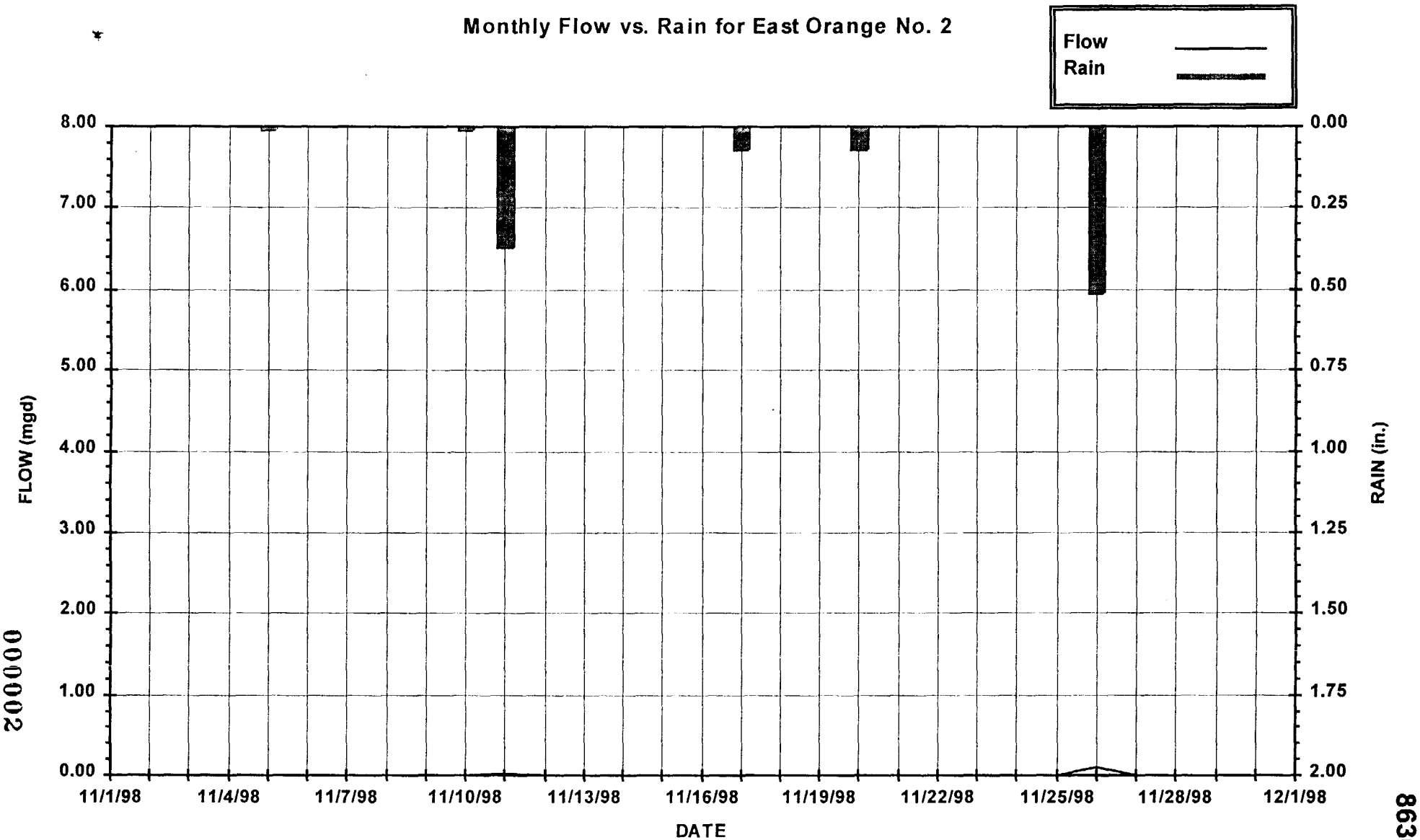
000001

863690698

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 2



EAST ORANGE NO. 2
Address: 9th Ave. and 15th St.
48.8" H x 33.4"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

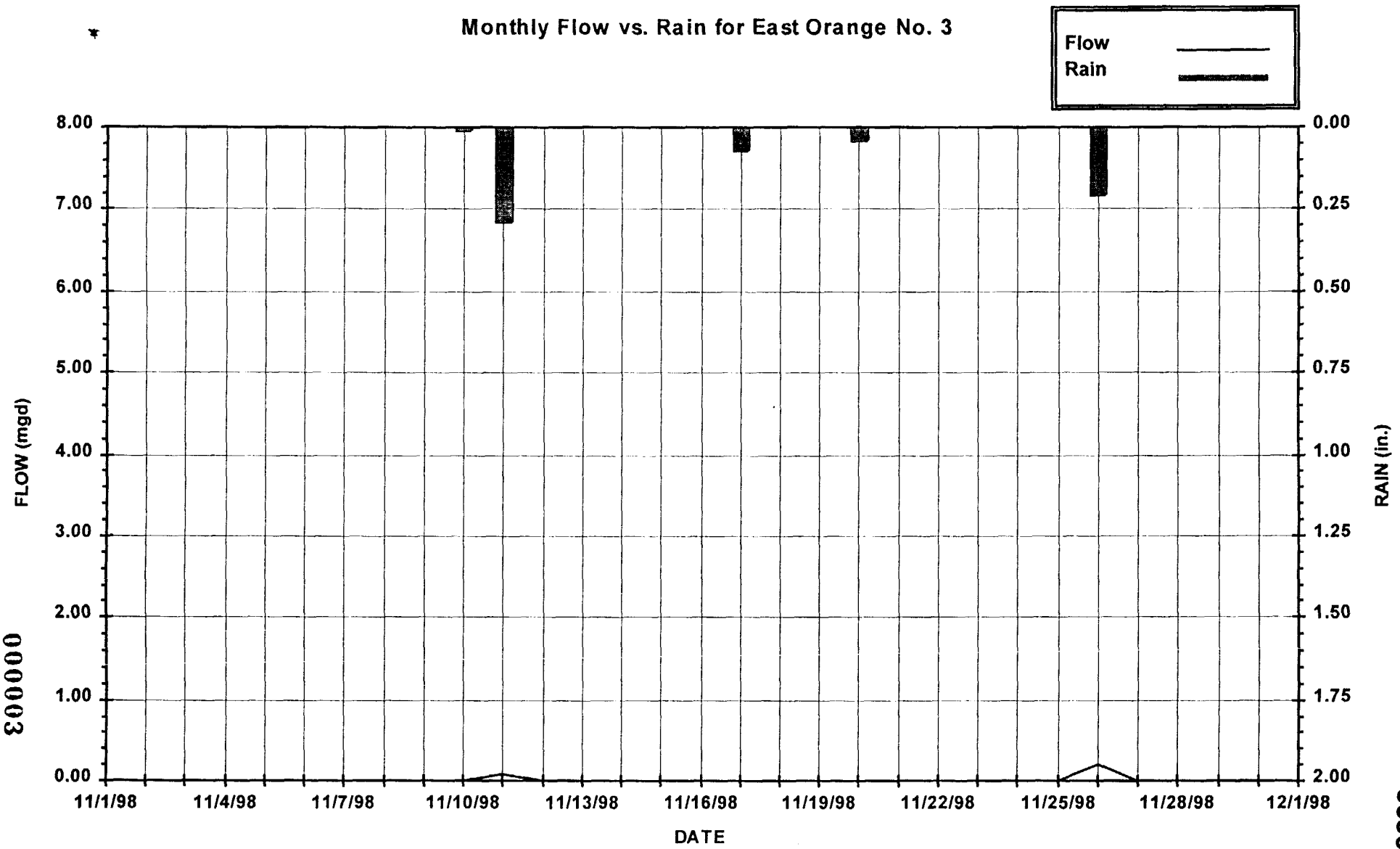
000002

863690699

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 3



000003

863690700

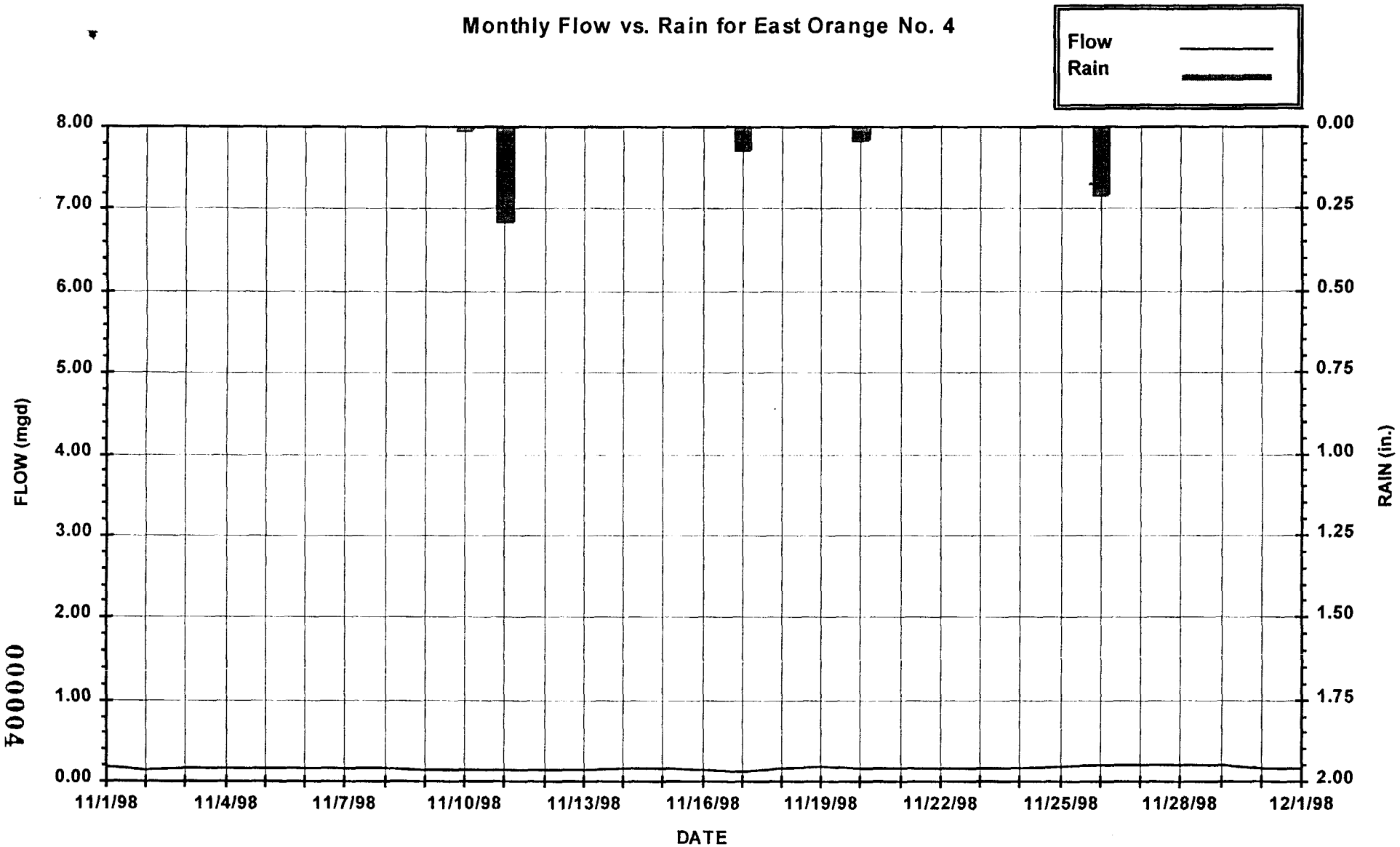
EAST ORANGE NO. 3
Address: Sussex Ave. and 15th St.
33" Storm

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 4



EAST ORANGE NO. 4
Address: Sussex Ave. and 15th St.
12" VCP

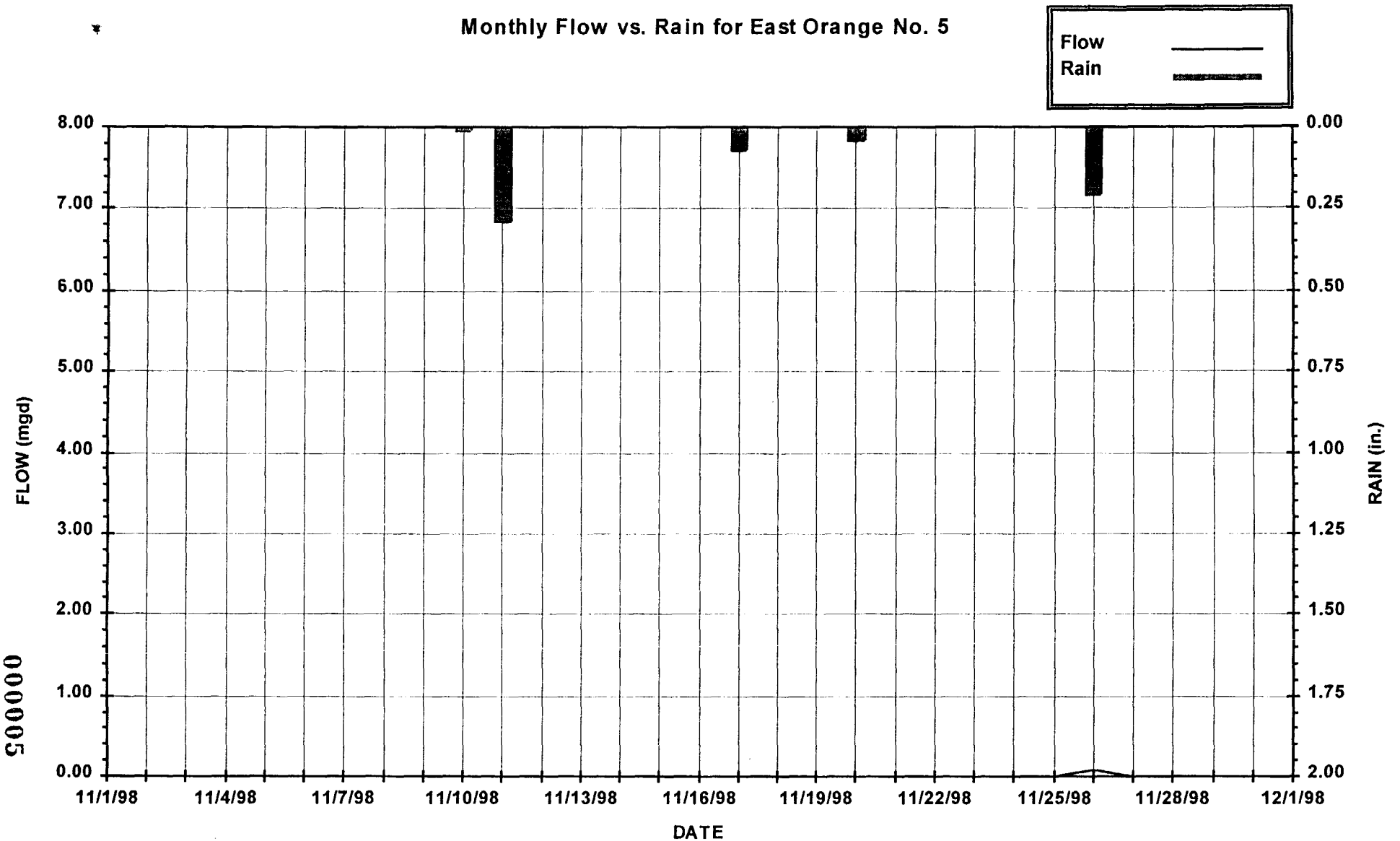
Rain Gauge
RG-1, Roberto Clemente School

000004

863690701

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study



EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
33" RCP Storm

Rain Gauge
RG-1, Roberto Clemente School

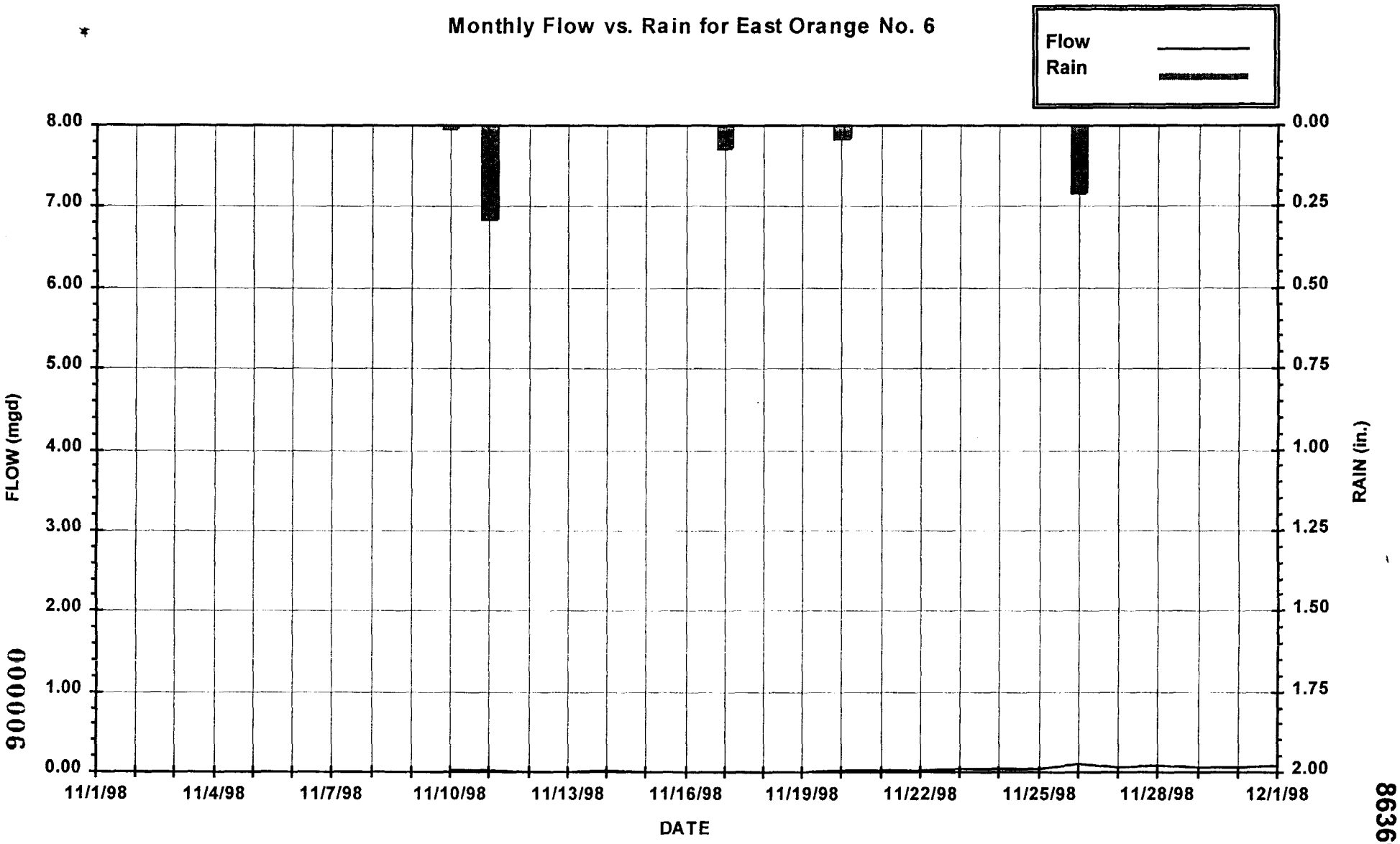
000005

863690702

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 6



900000

863690703

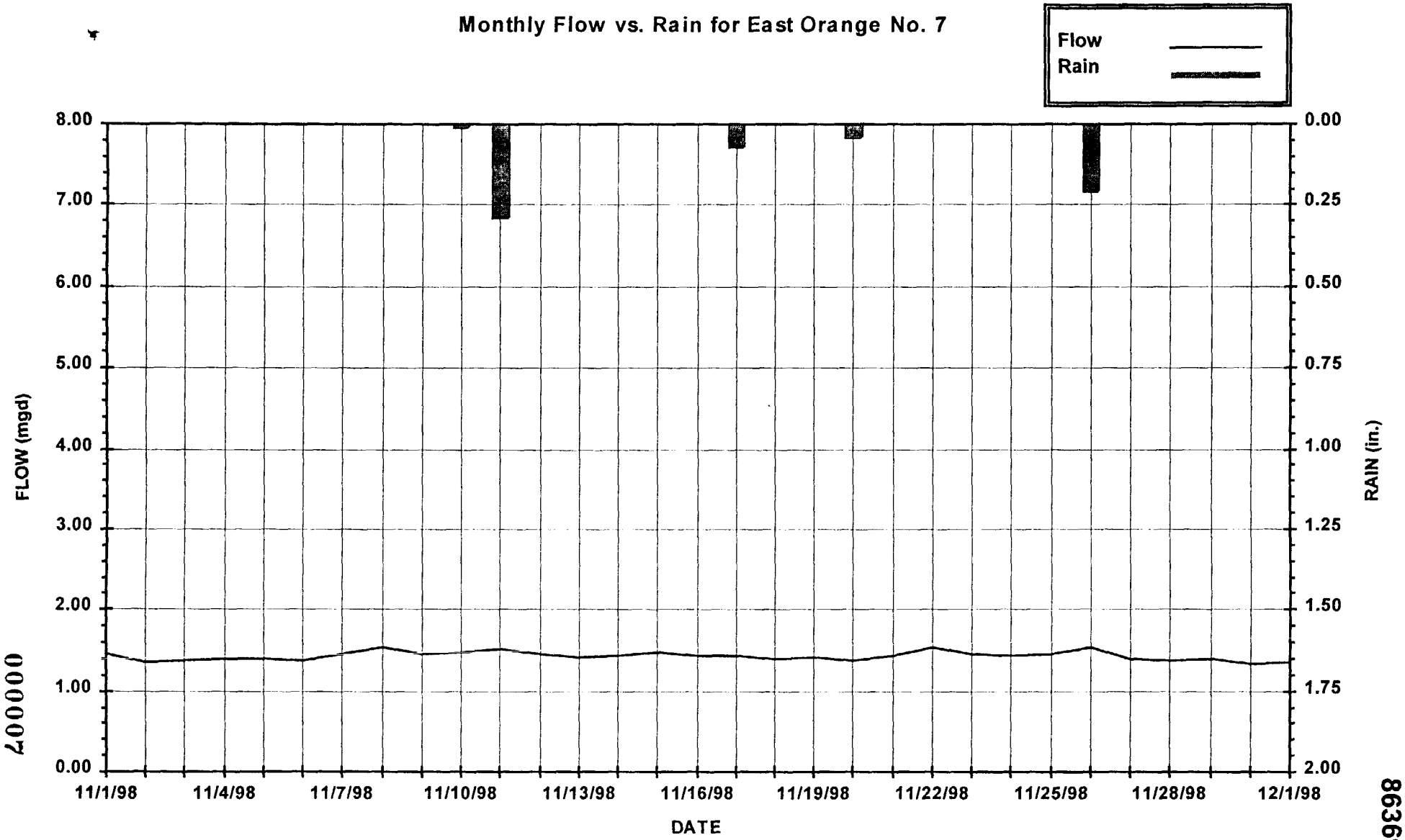
EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
18.75" VCP

Rain Gauge
RG-1, Roberto Clemente School

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 7



EAST ORANGE NO. 7
Address: 6TH ST. & 13TH ST.
30" RCP

Rain Gauge
RG-1, Roberto Clemente School

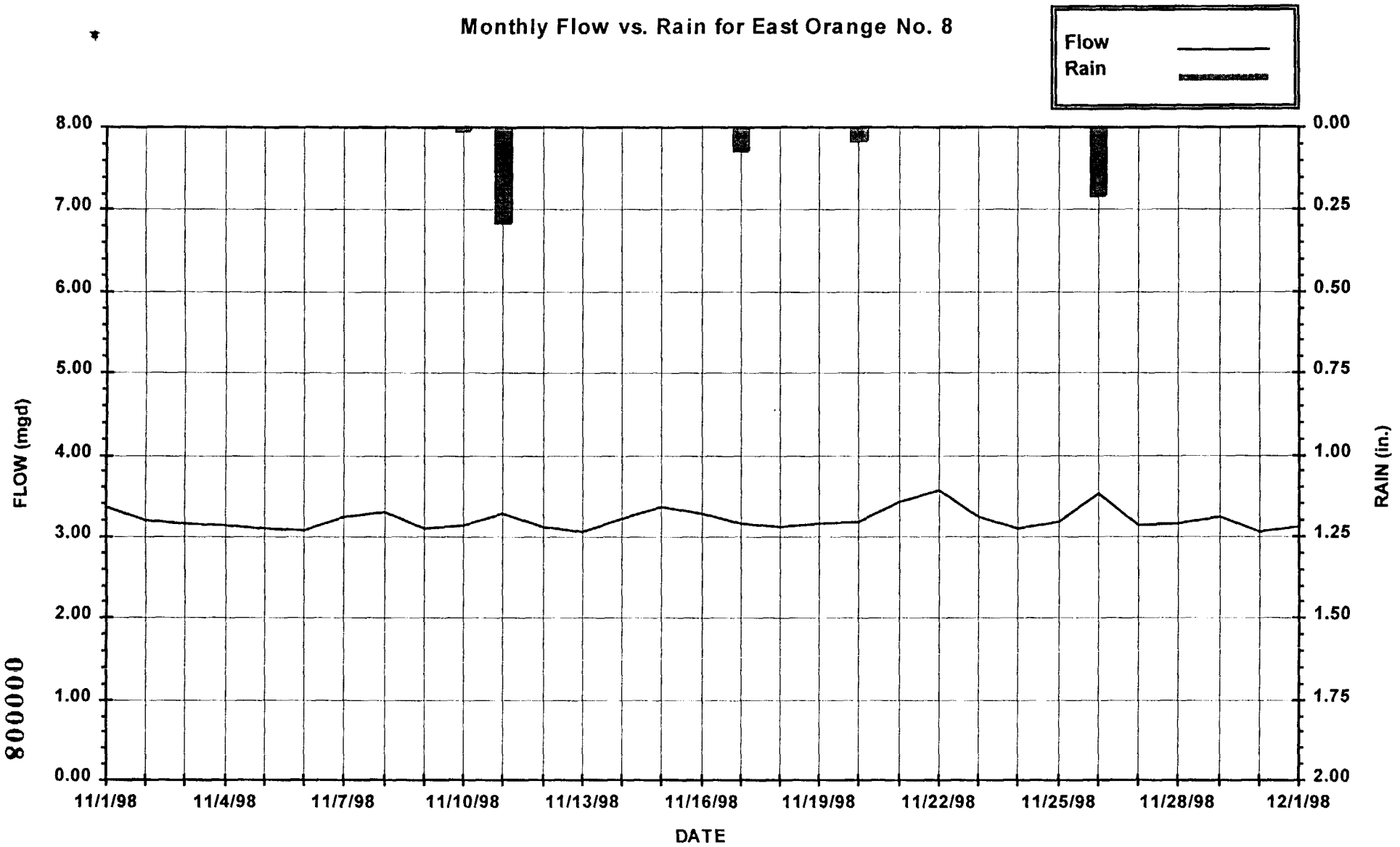
000007

863690704

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 8



EAST ORANGE NO. 8
Address: 13TH ST. & SPRINGDALE AVE.
24.25" VCP

Rain Gauge
RG-1, Roberto Clemente School

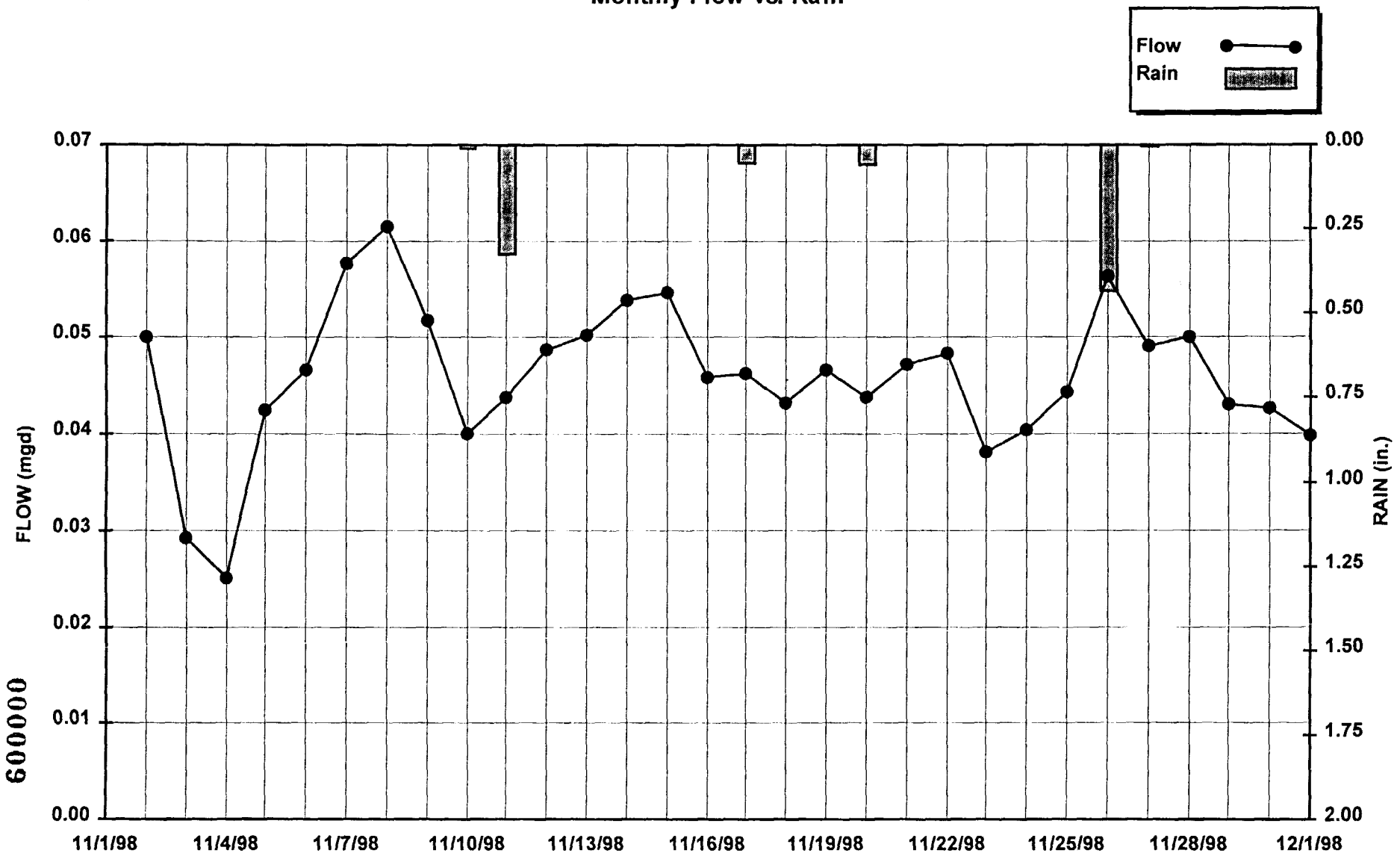
800000

863690705

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

910 F.M. VERSION: 1.02

Serial#: QQ7

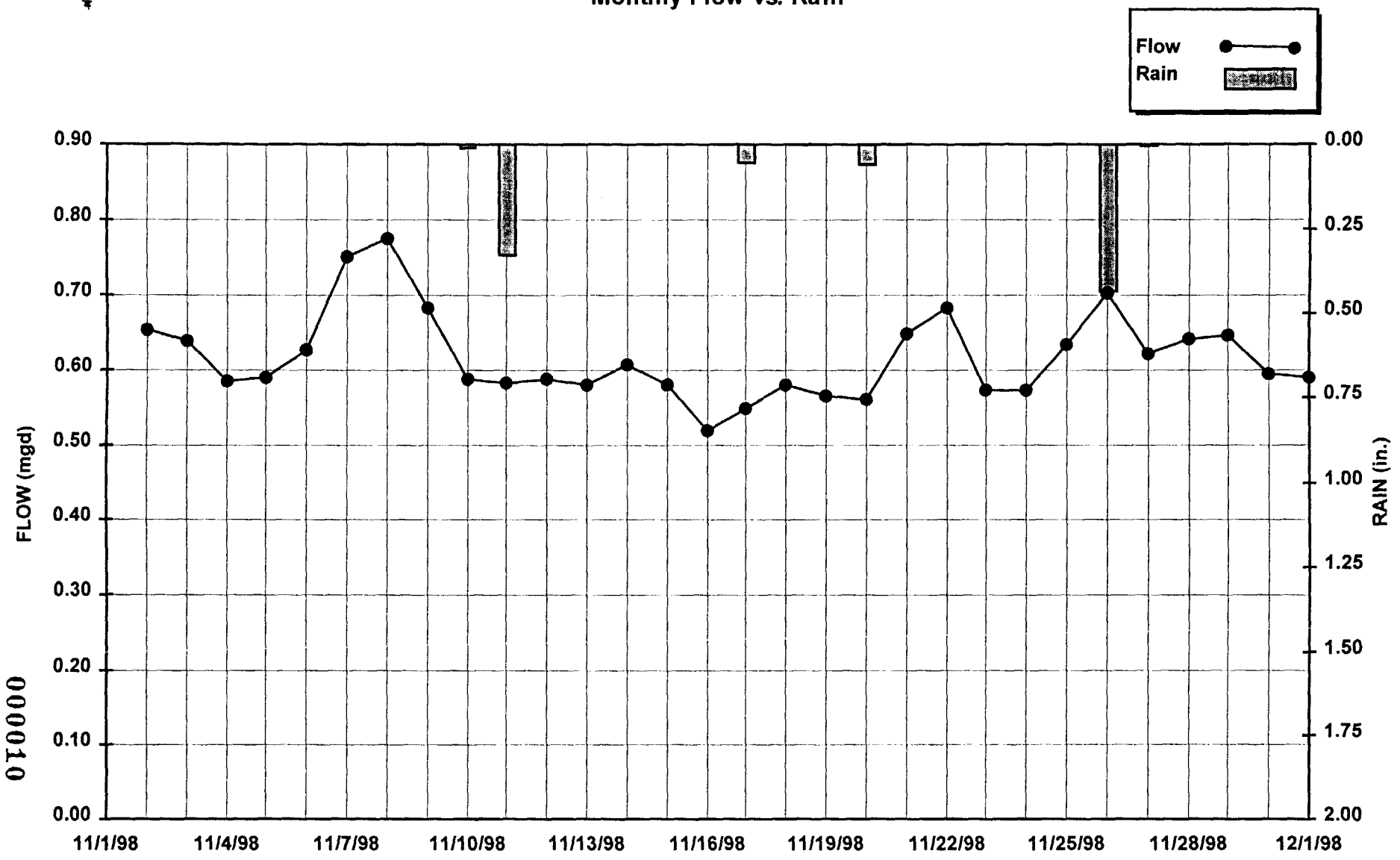
600000

863690706

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 2
Address: Unity and Valley St.

910 F.M. VERSION: 1.02
Serial#: QQ2

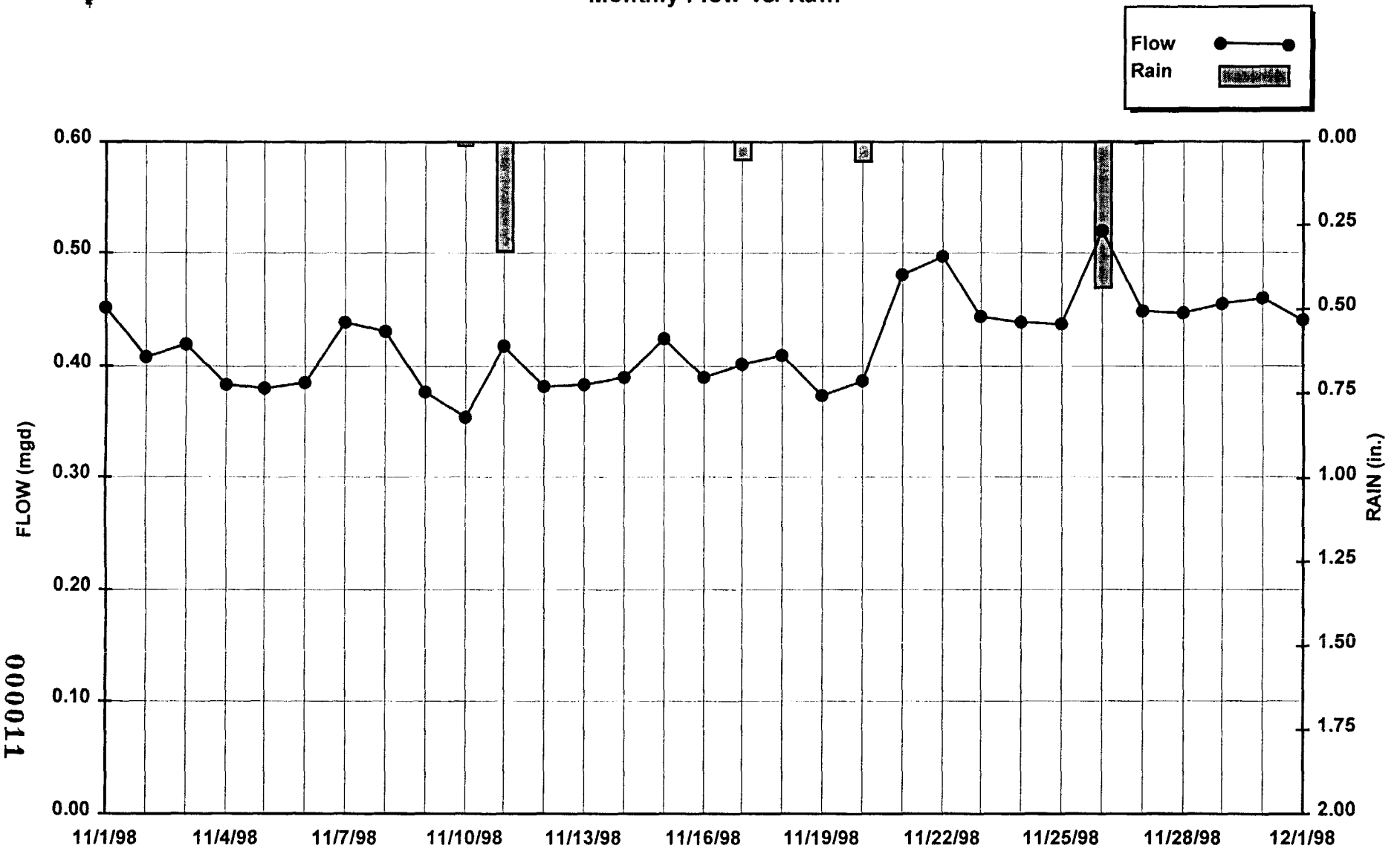
000010

863690707

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 3
Address: Fabyan Pl. near Exit Ramp of I-78

910 F.M. VERSION: 1.02
Serial#: QRD

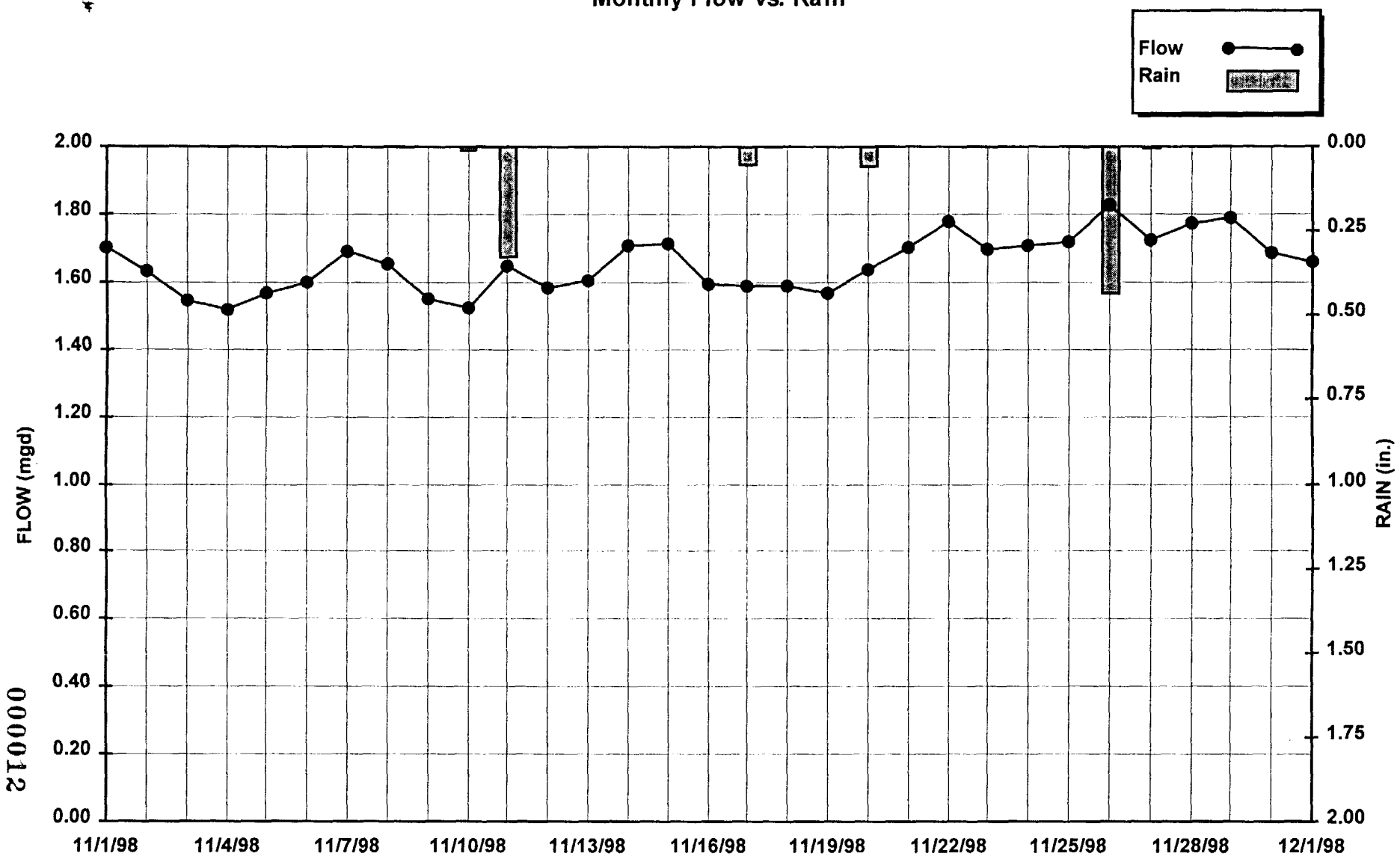
000011

863690708

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 4

Address: N. Lindon Ln between House # 63 and 65

910 F.M. VERSION: 1.02

Serial#: QUI

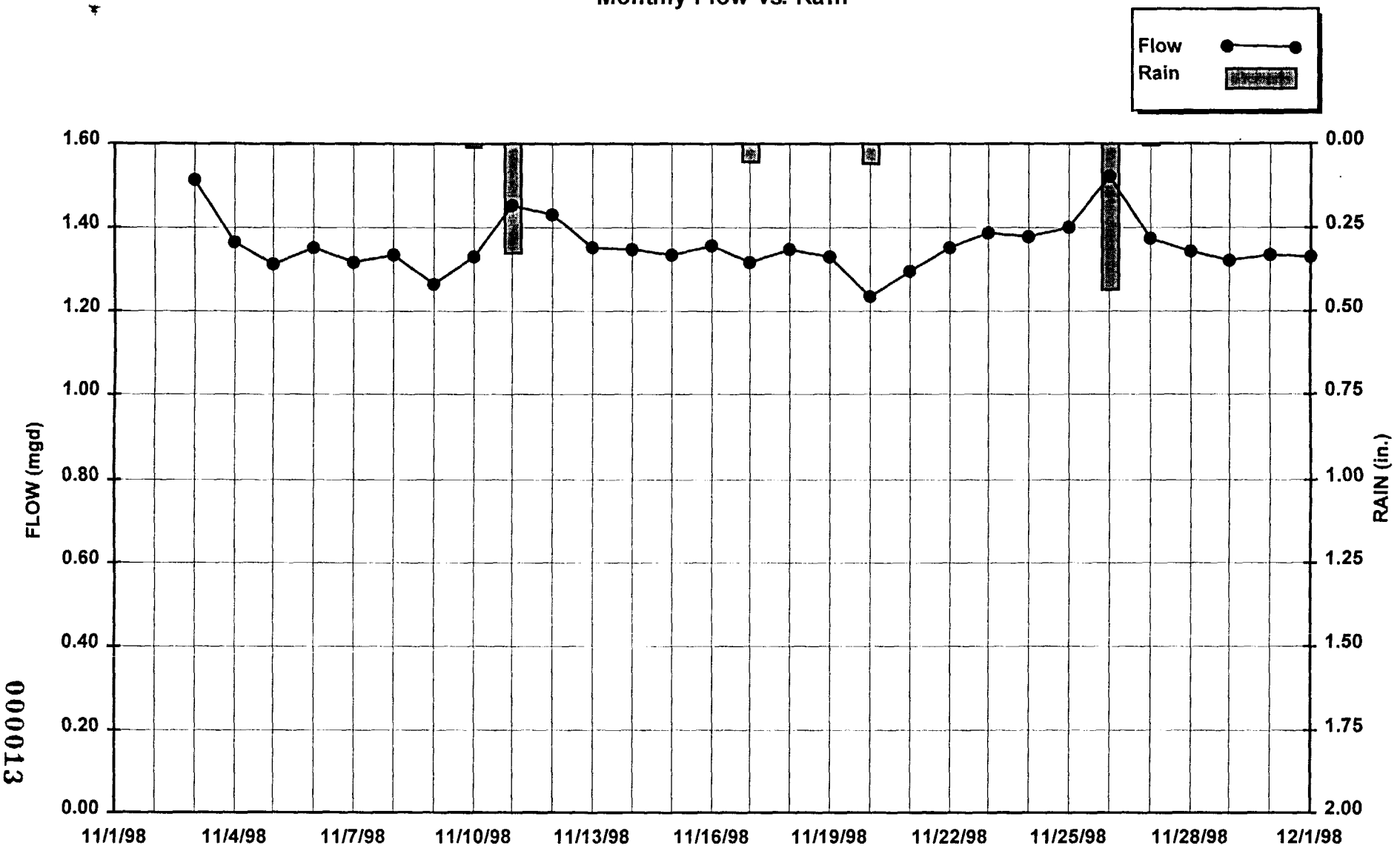
000012

863690709

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Newark 1
Address:

910 F.M. VERSION: 1.02
Serial#: QXF

Monthly Flow Report (Flow1)

1/11/1999 4:19:33 PM

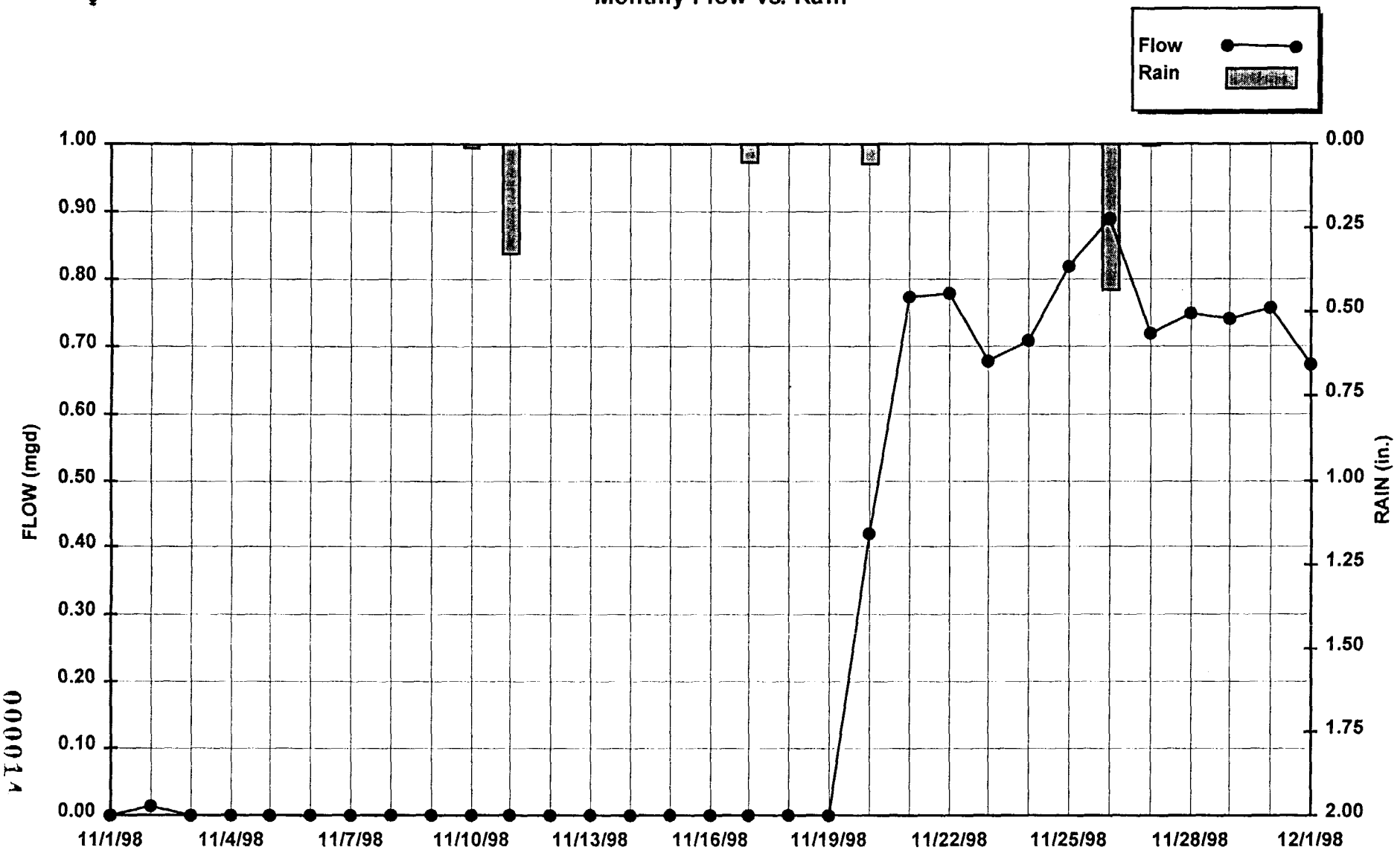
000013

863690710

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 2
Address: Weequahic Park

910 F.M. VERSION: 1.02
Serial#: QUN

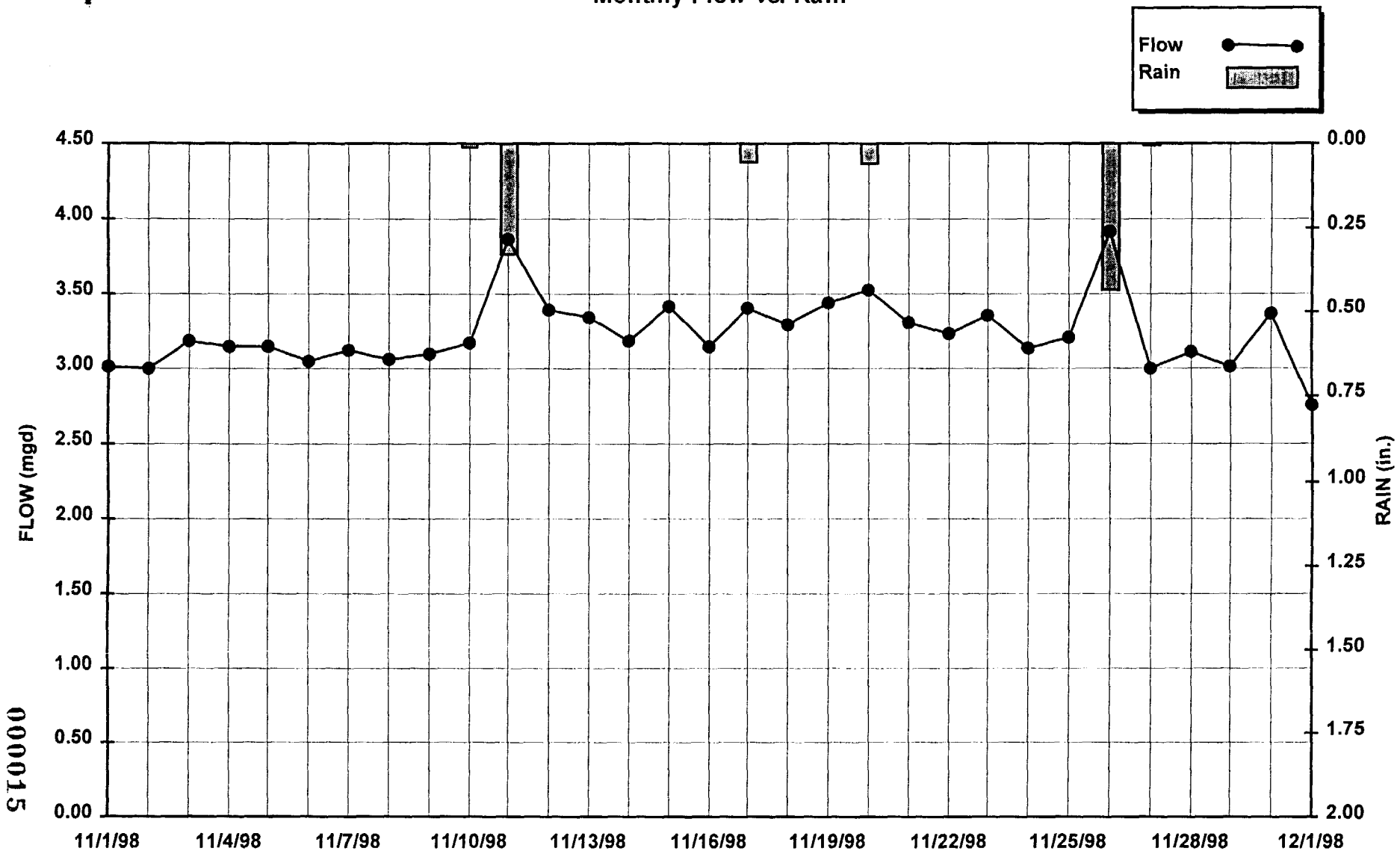
000014

863690711

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 3
Address: Jabez Ave. near Backus St.

910 F.M. VERSION: 1.02
Serial#: QTZ

Monthly Flow Report (Flow1)

12/28/1998 8:50:05 AM

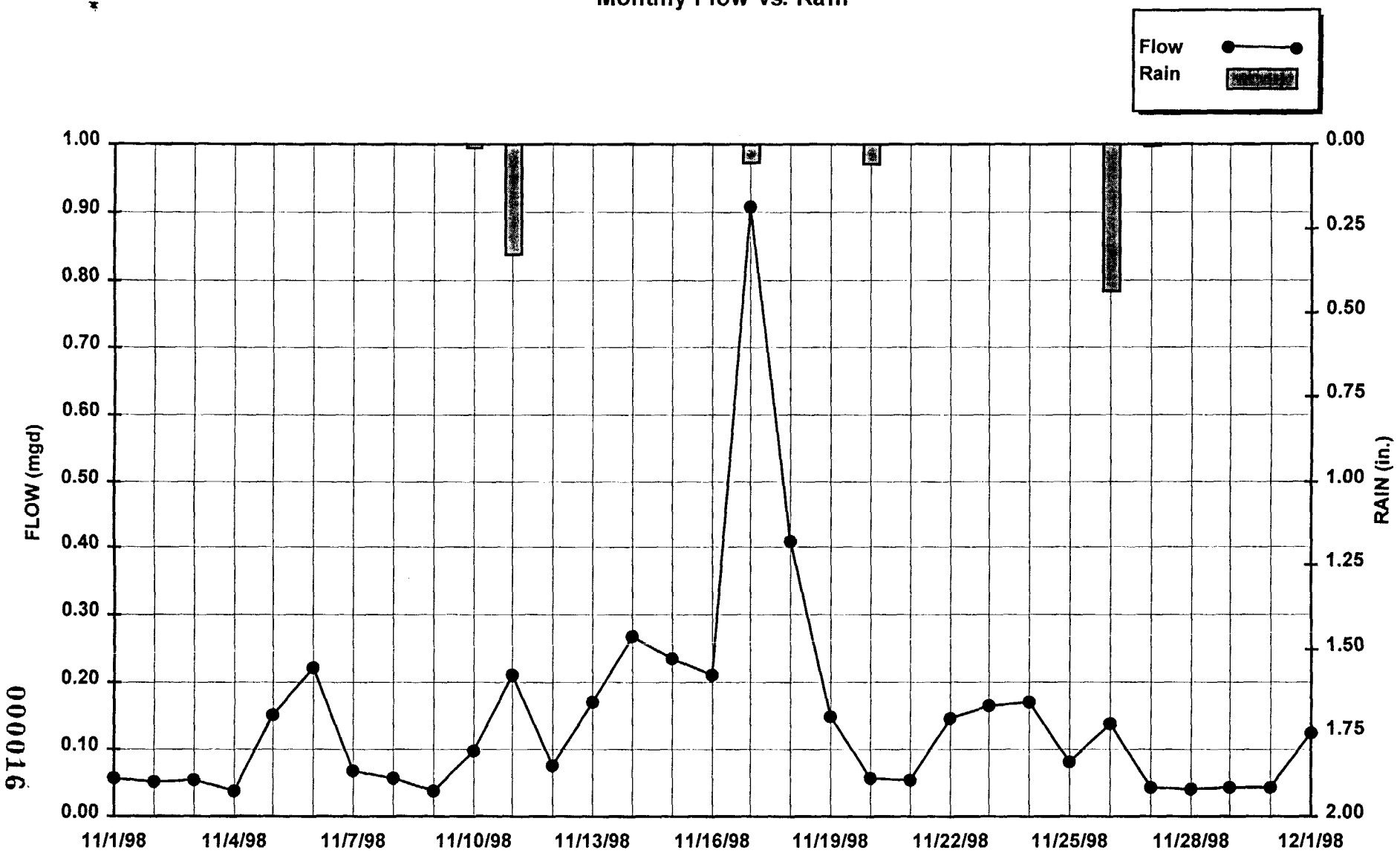
000015

863690712

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 4
Address: Wilson and Ave. P

910 F.M. VERSION: 1.02
Serial#: QT1

Monthly Flow Report (Flow1)

1/11/1999 4:20:12 PM

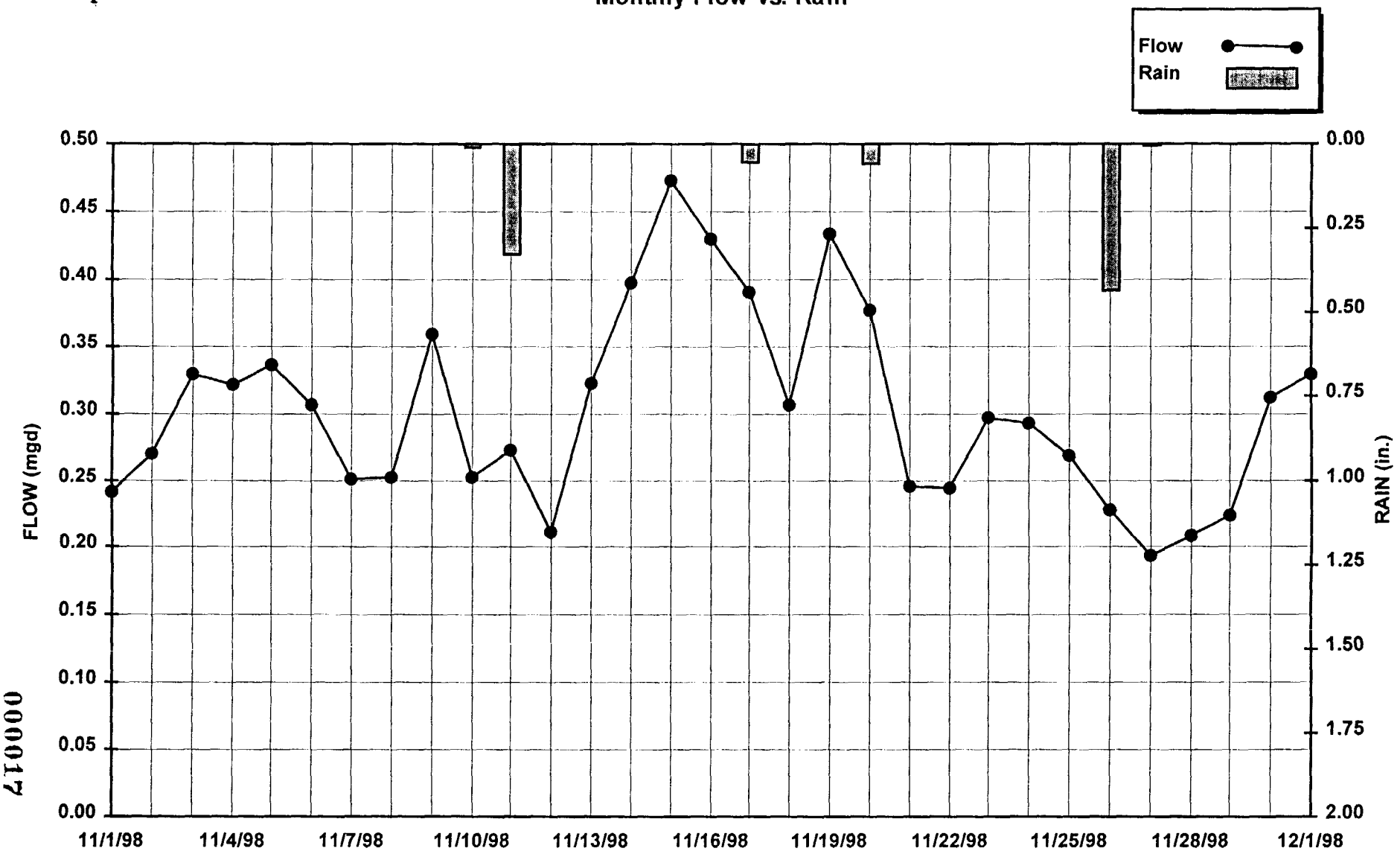
000016

863690713

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 5
Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02
Serial#: QUO

Monthly Flow Report (Flow1)

12/28/1998 8:45:42 AM

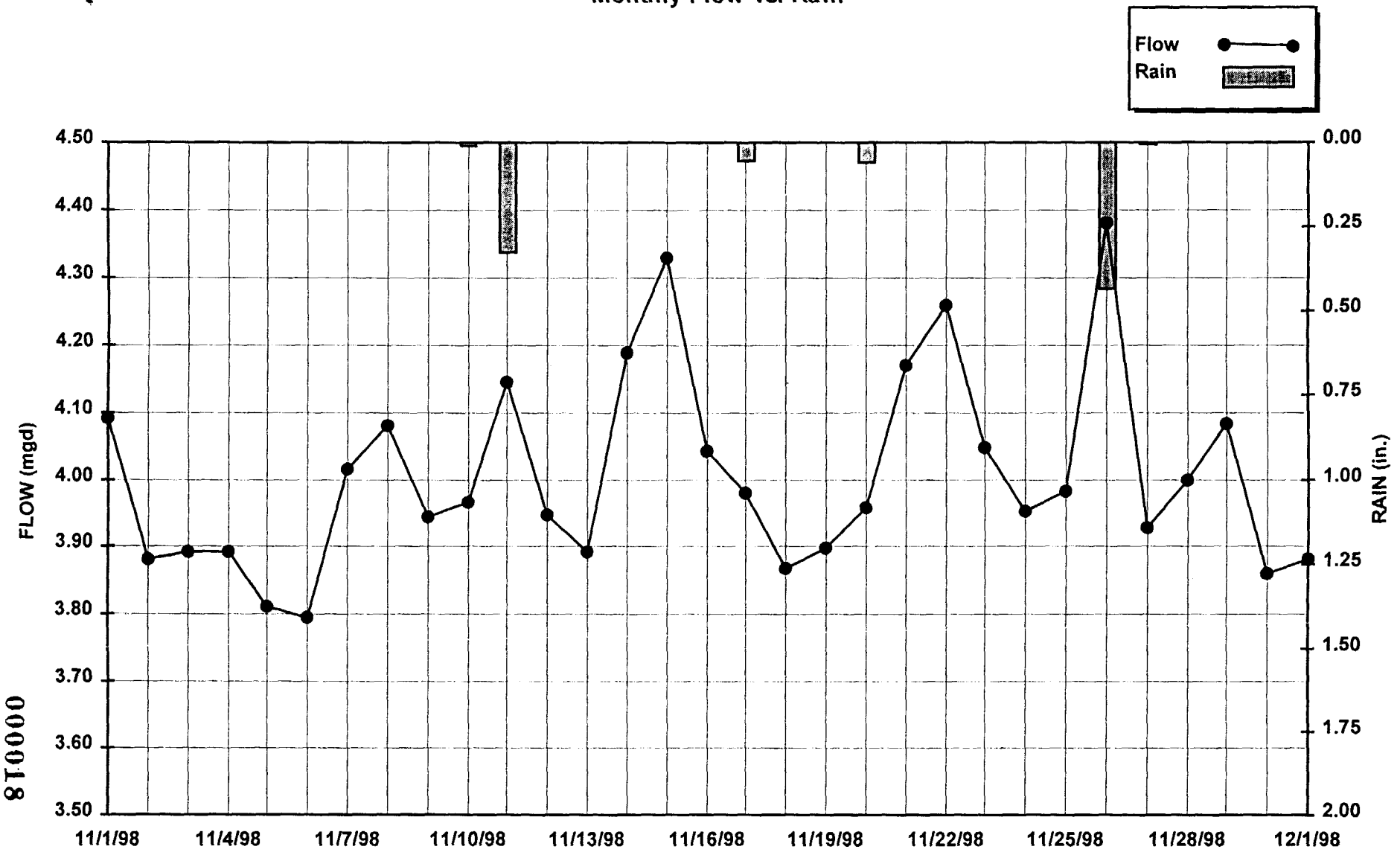
000017

863690714

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 6
Address: Near 355 5th St.

910 F.M. VERSION: 1.02
Serial#: QU1

Monthly Flow Report (Flow1)

12/28/1998 8:43:57 AM

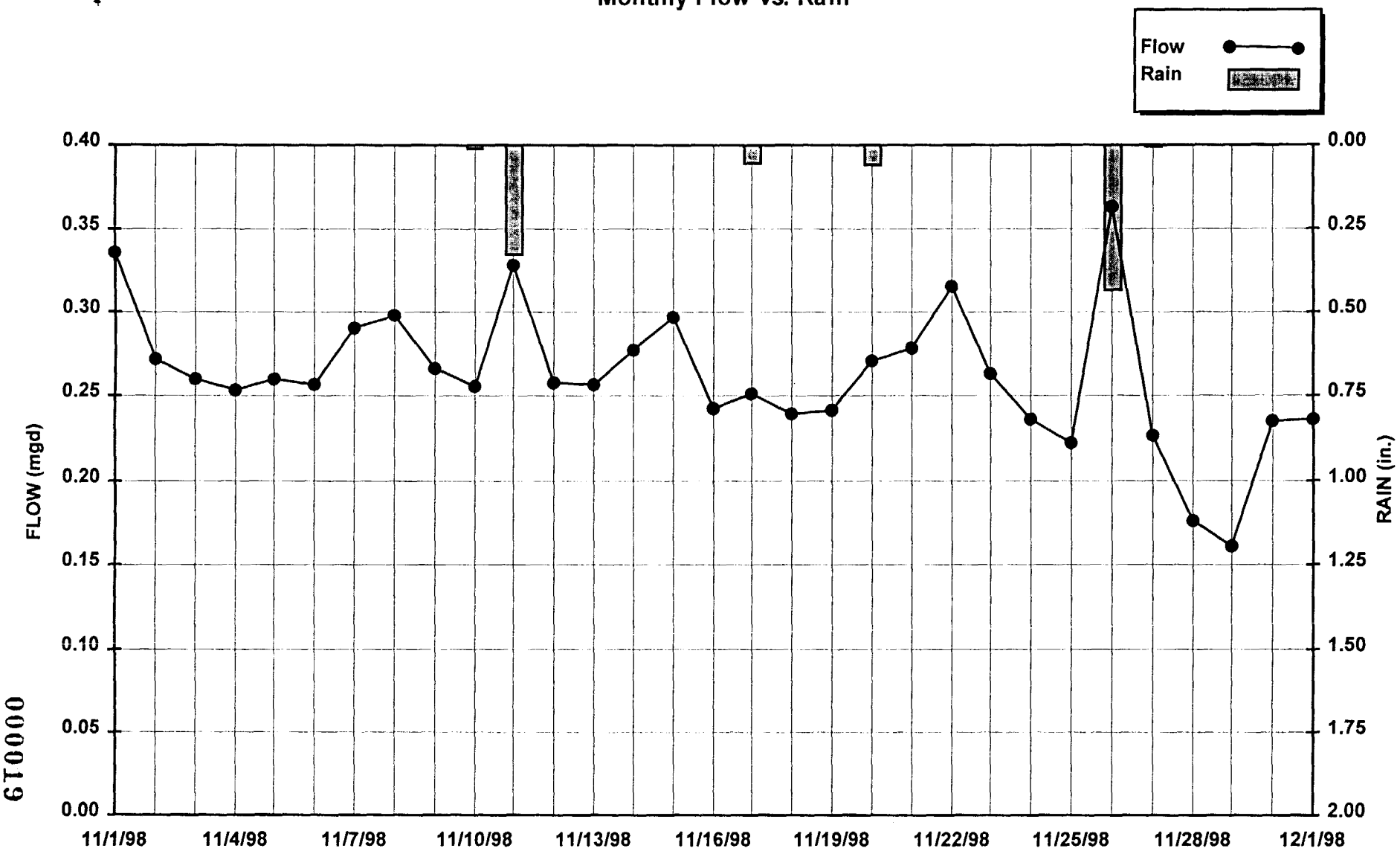
000018

863690715

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 7
Address: Verona St. near Broadway

910 F.M. VERSION: 1.02
Serial#: QUK

Monthly Flow Report (Flow1)

12/28/1998 8:44:50 AM

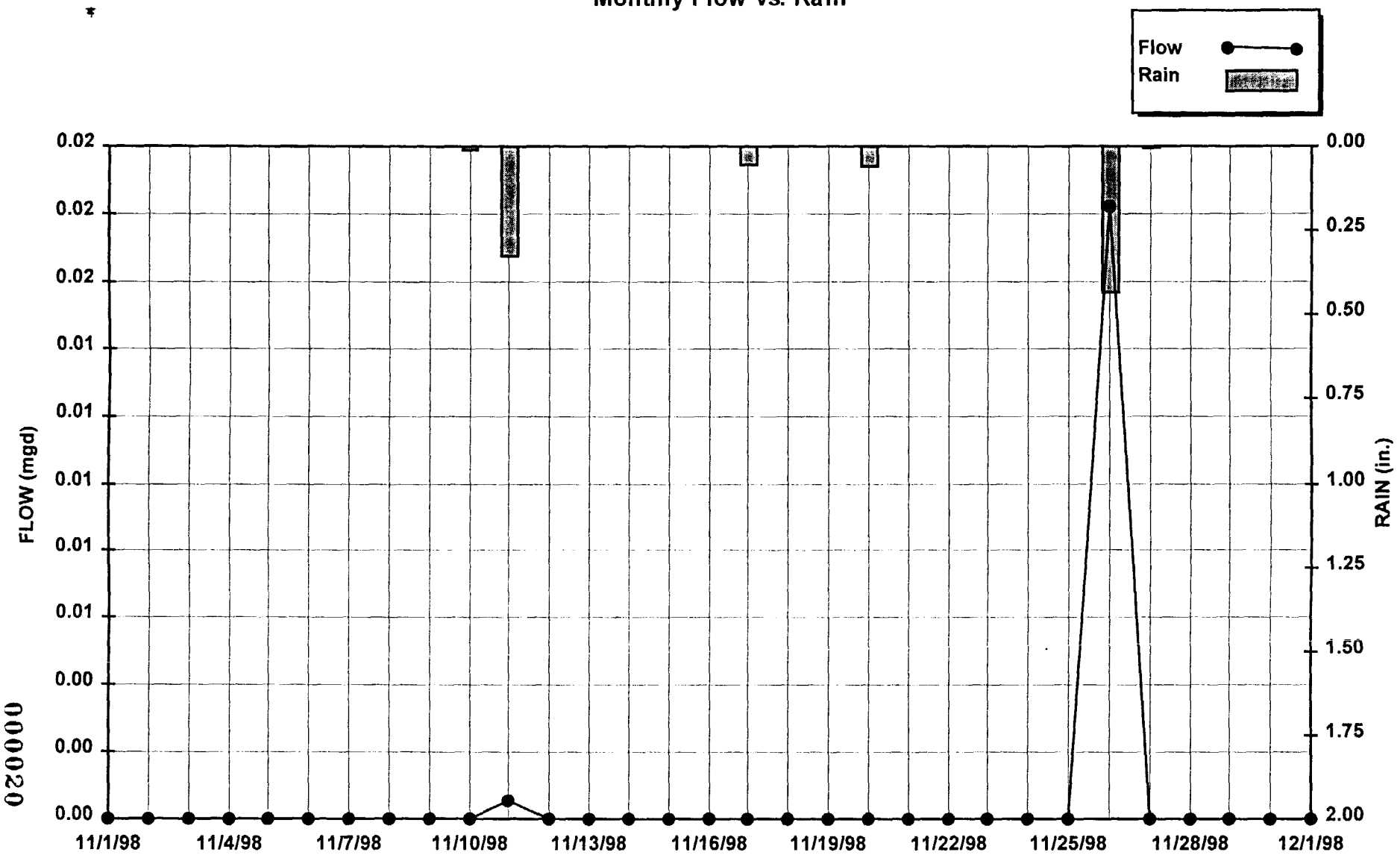
000019

863690716

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 8
Address: Earl and Frelinghuysen

910 F.M. VERSION: 1.02
Serial#: QT3

Monthly Flow Report (Flow1)

12/28/1998 8:49:12 AM

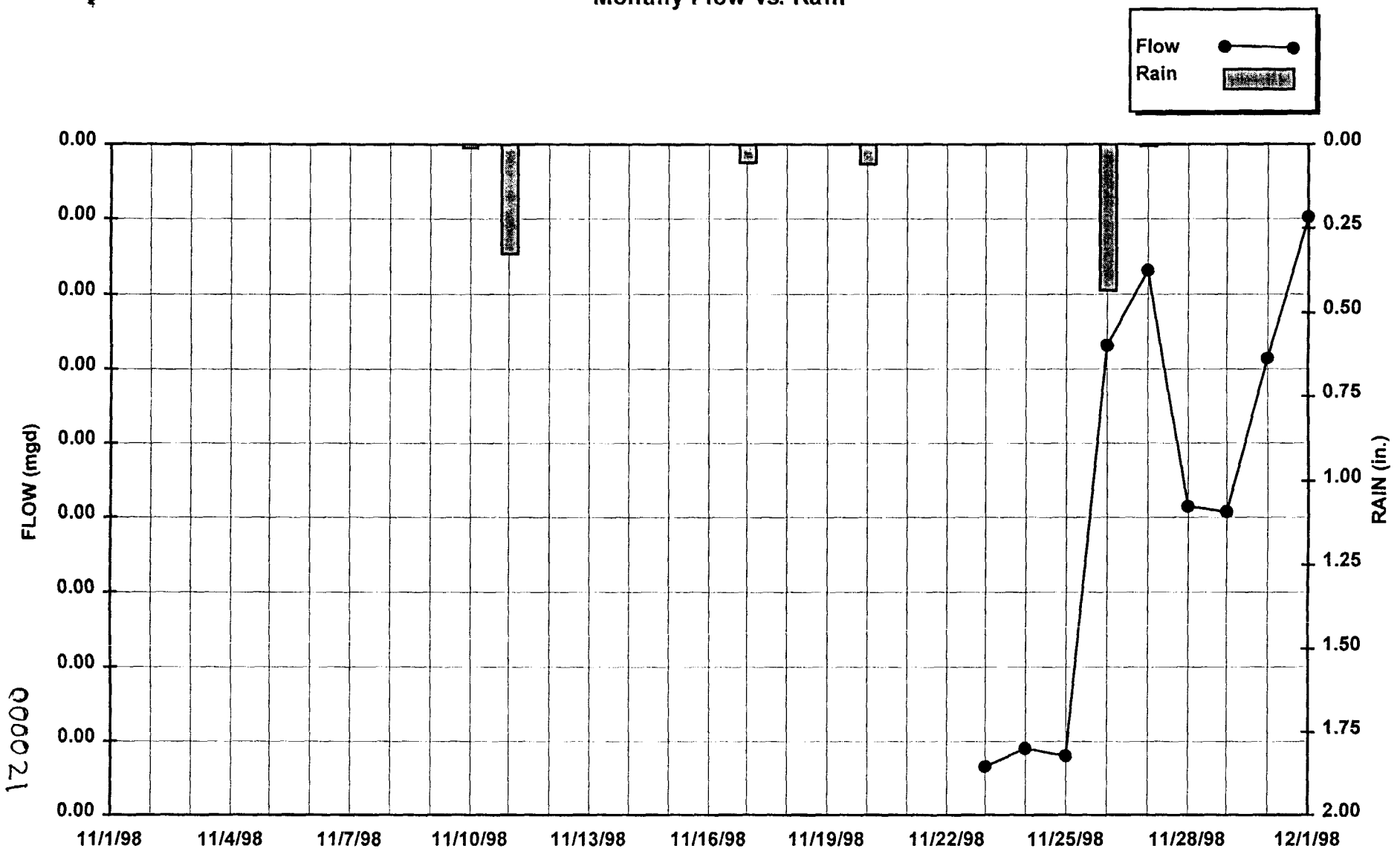
000020

863690717

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 9

Address: Branch Brook Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QLF

Monthly Flow Report (Flow1)

12/28/1998 8:46:33 AM

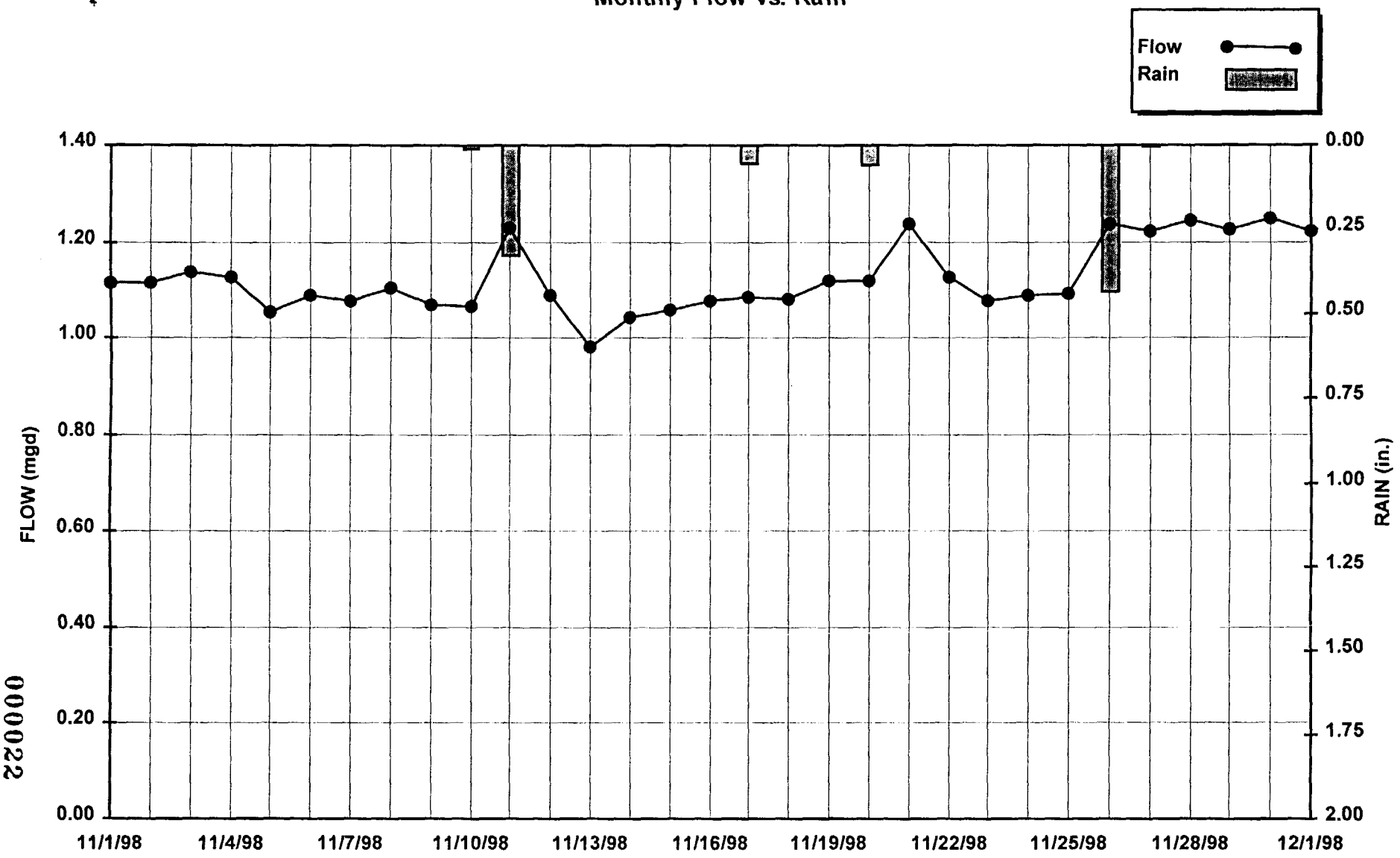
000021

863690718

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 10
Address: Weequahic Park Lake Overflow

910 F.M. VERSION: 1.02
Serial#: QUX

Monthly Flow Report (Flow1)

12/28/1998 8:48:19 AM

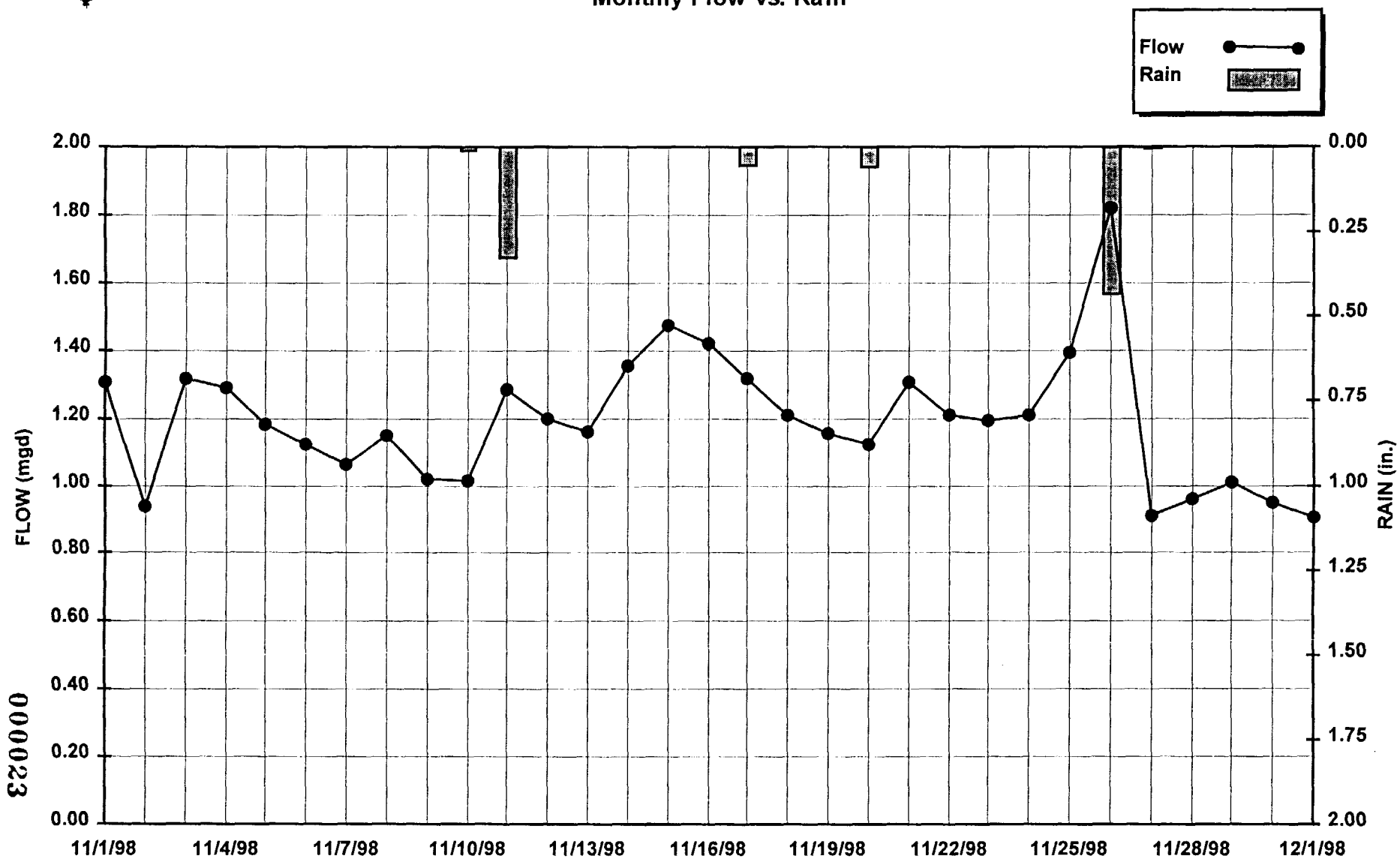
000022

863690719

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

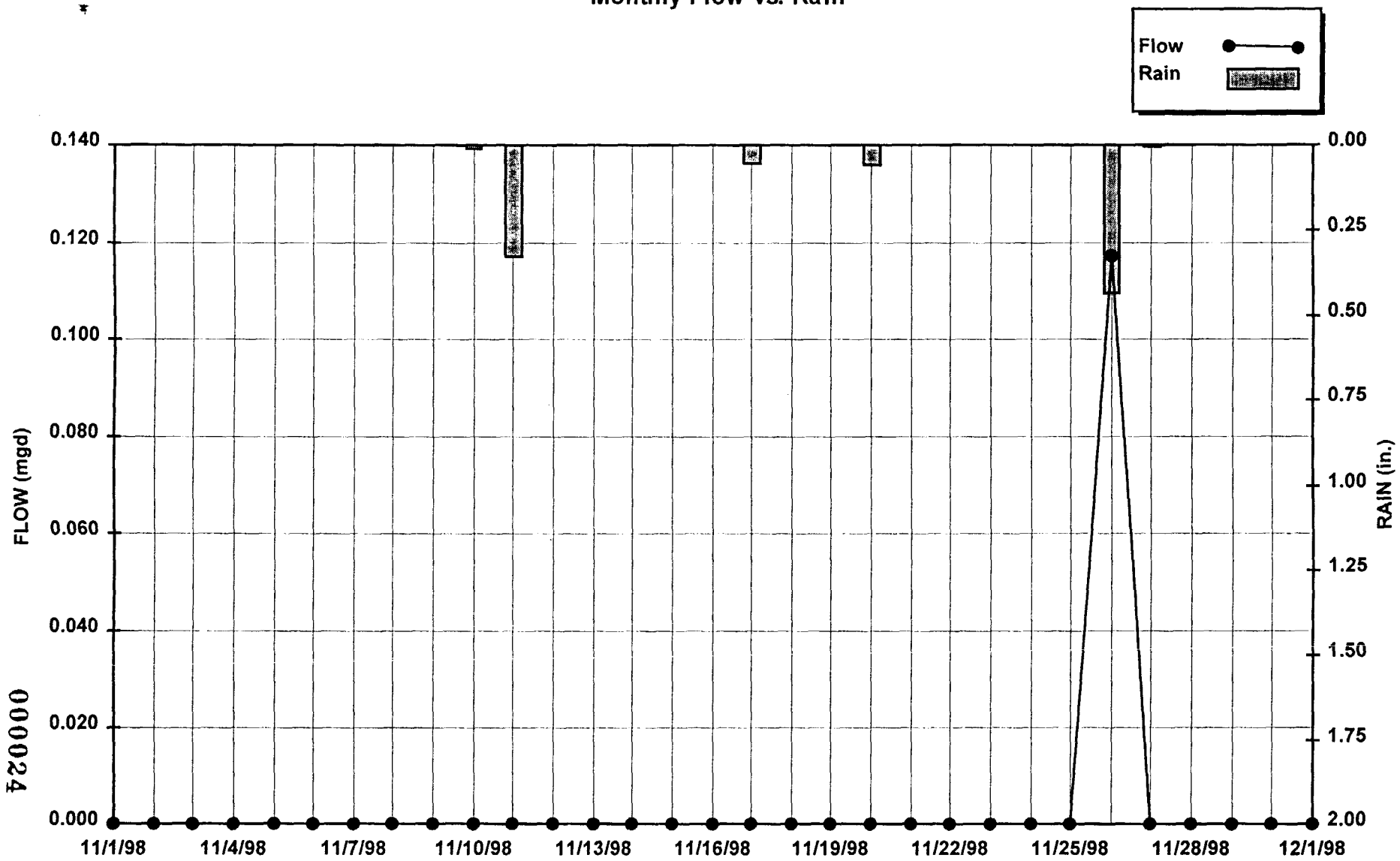
000023

863690720

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

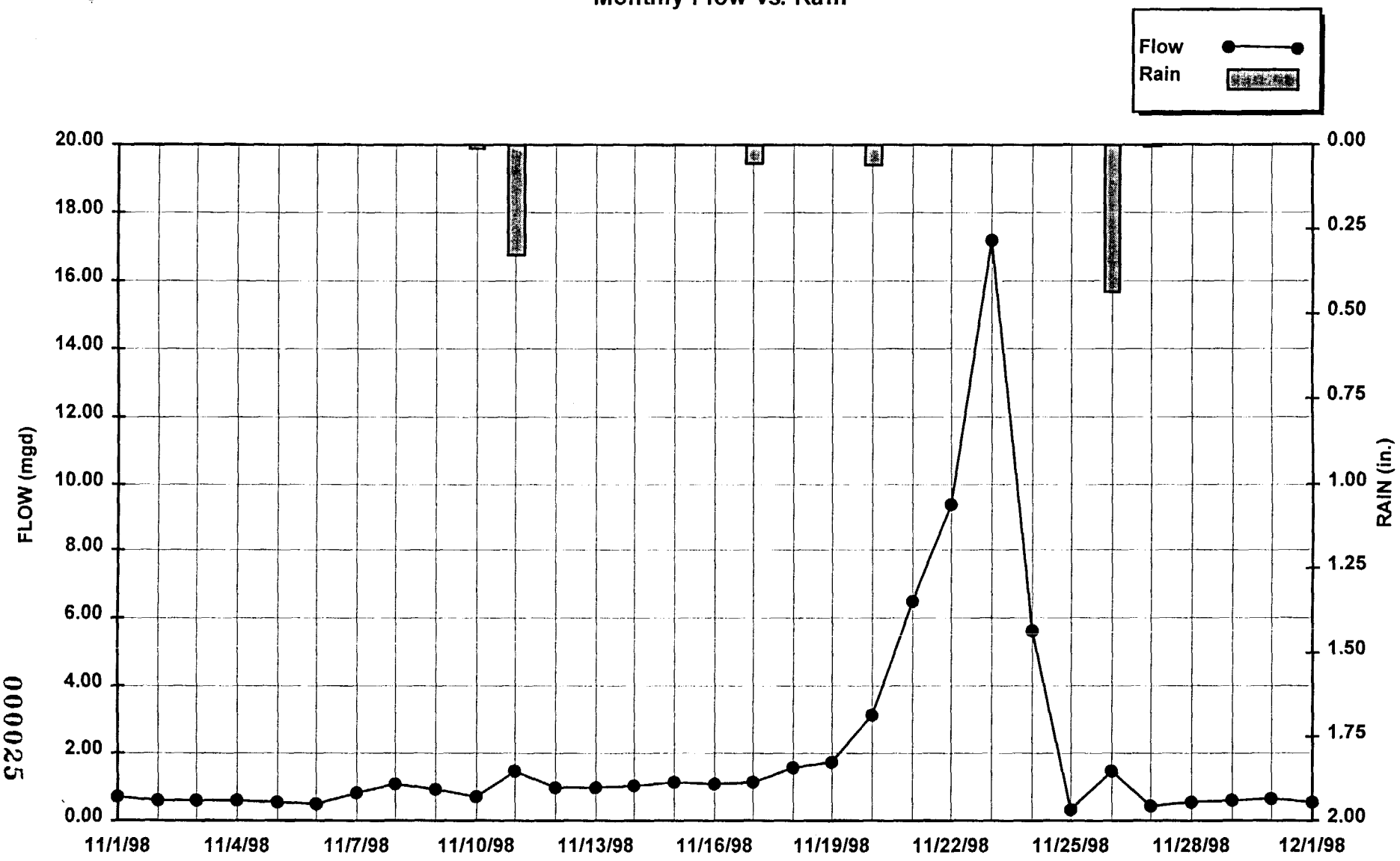
000024

863690721

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTQ

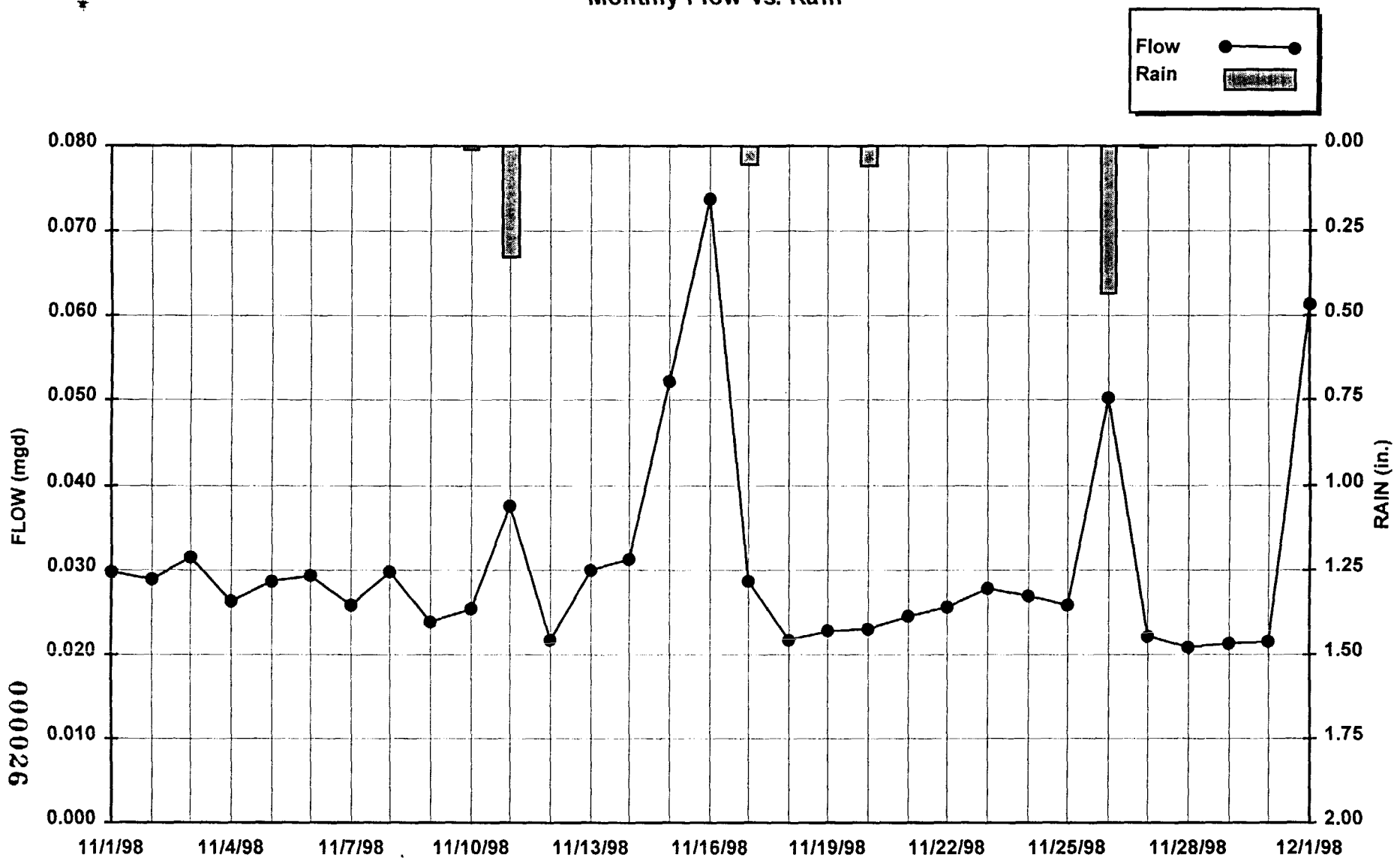
000025

863690722

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTQ

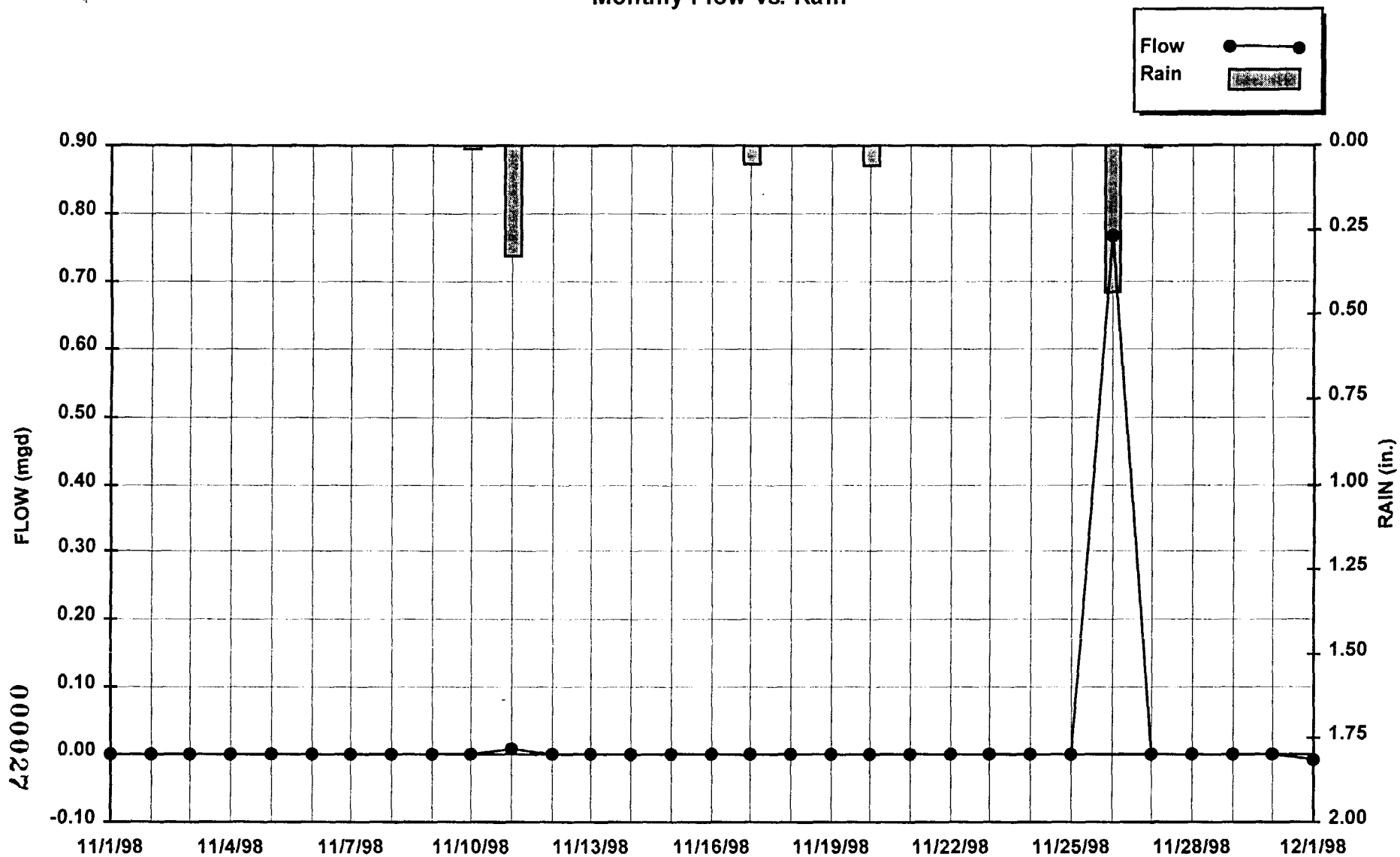
920000

863690723

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

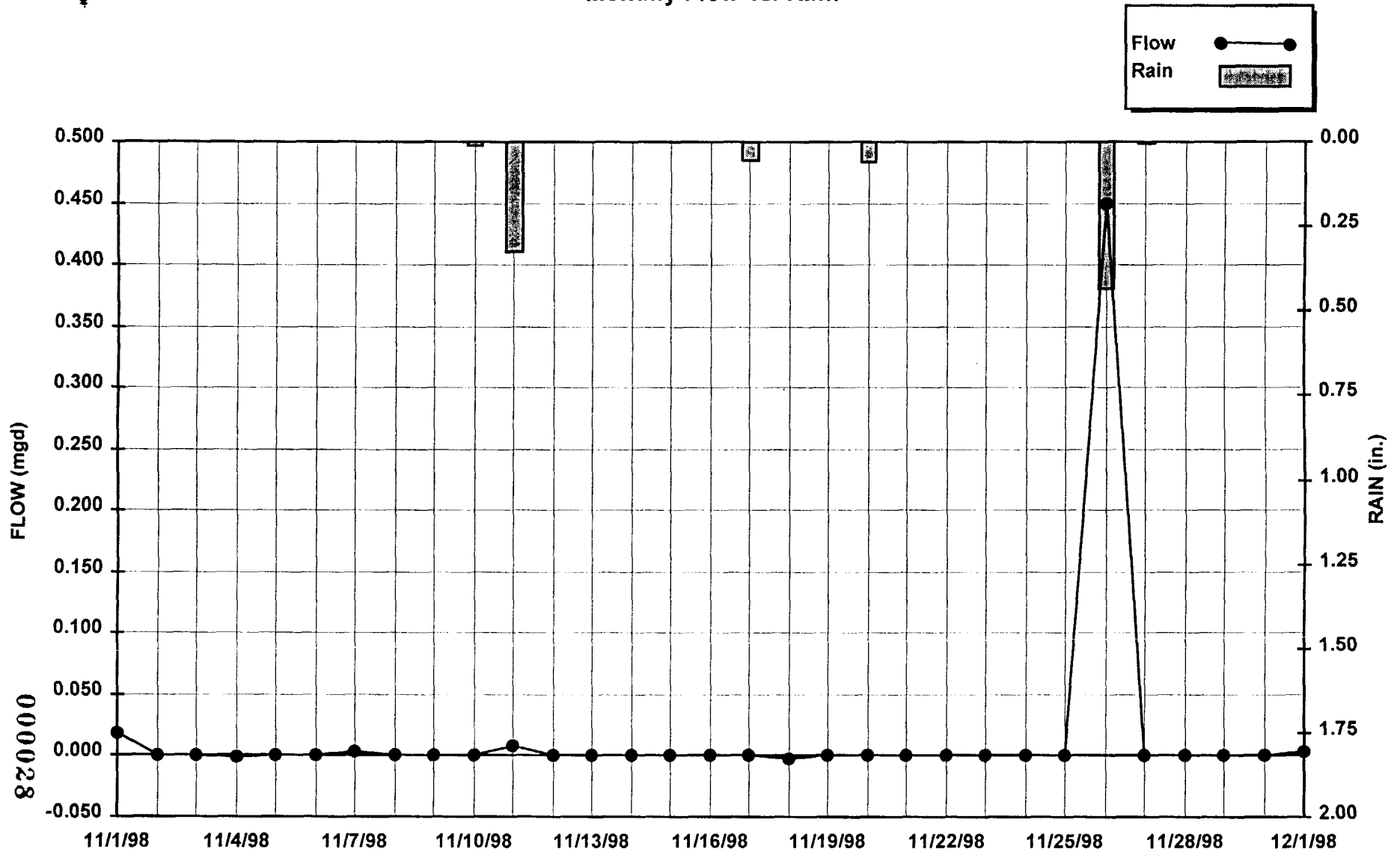
000027

863690724

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

Monthly Flow Report (Flow2)

12/28/1998 9:25:54 AM

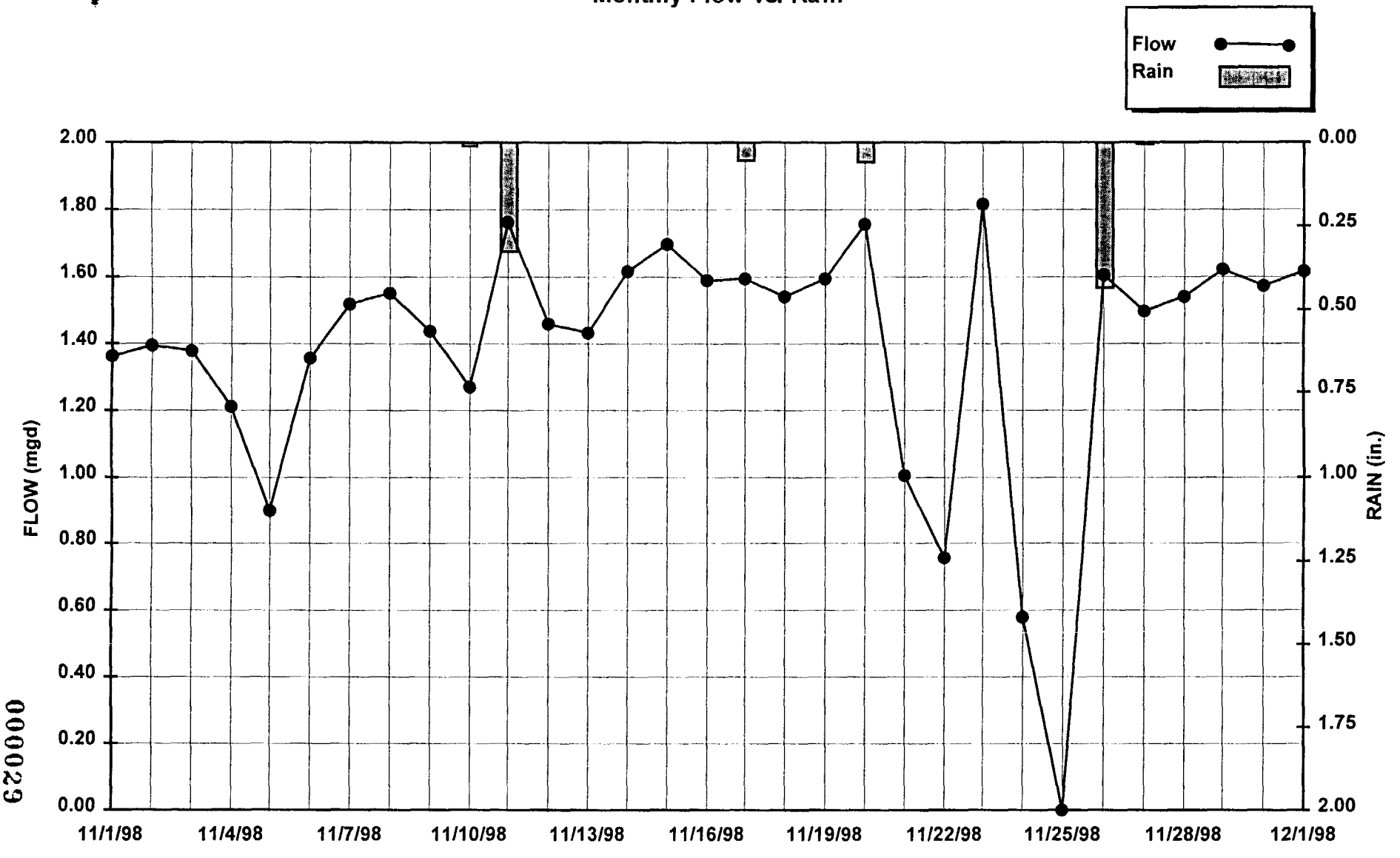
0000028

863690725

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Influent
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUL

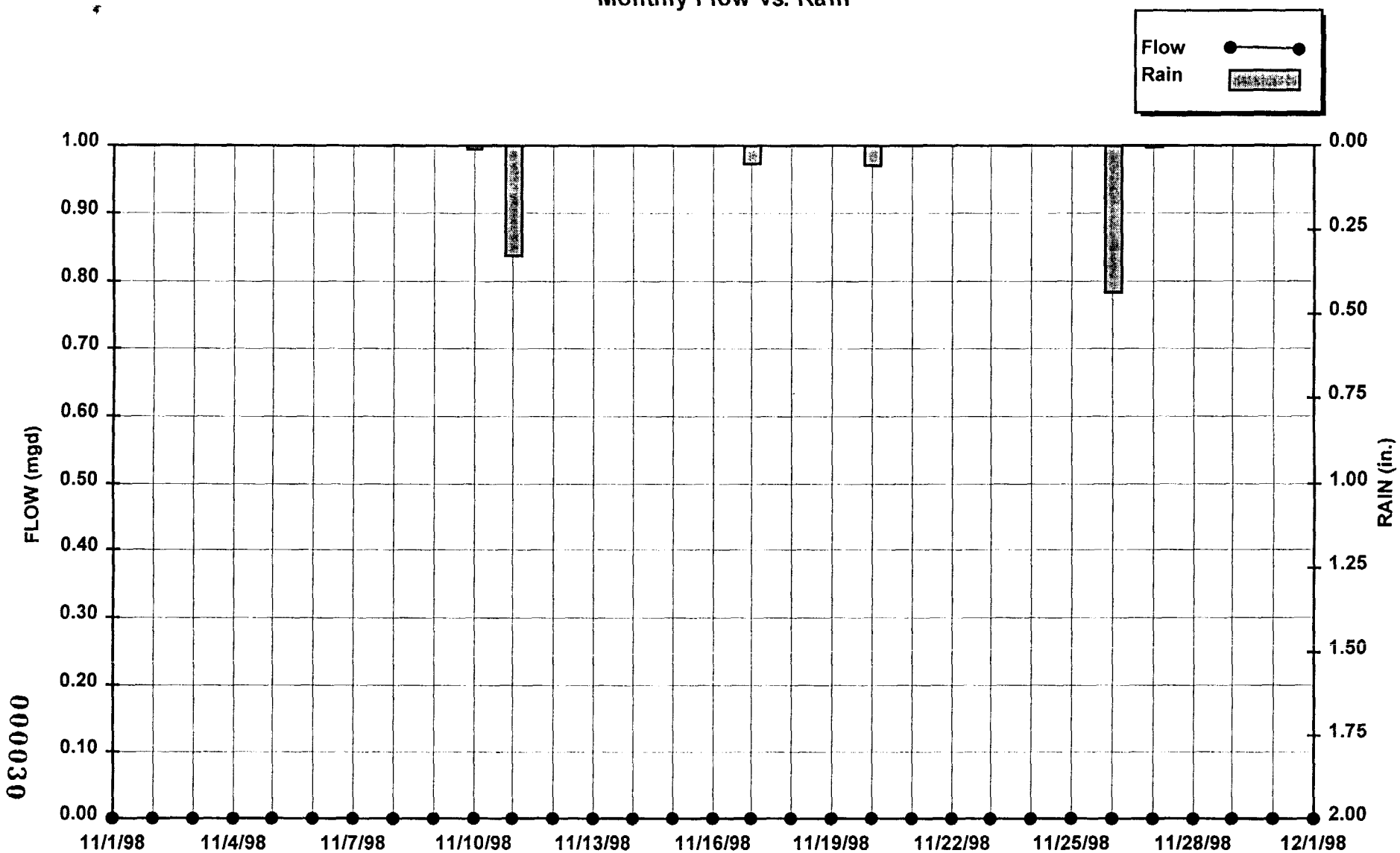
000029

863690726

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Overflow
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUJ

Monthly Flow Report (Flow1)

12/28/1998 9:02:02 AM

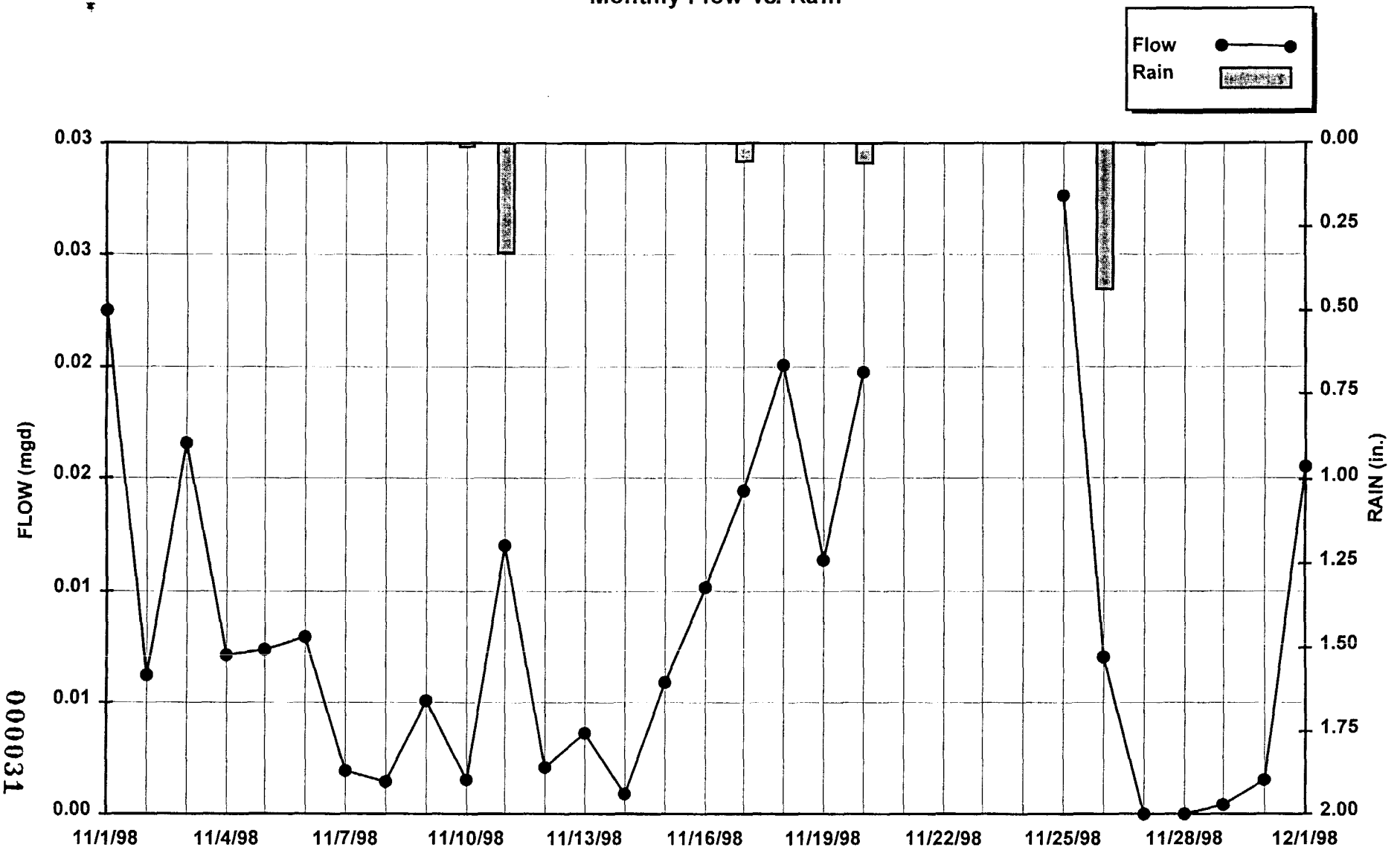
000030

863690727

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Monthly Flow Report (Flow1)

12/28/1998 8:55:43 AM

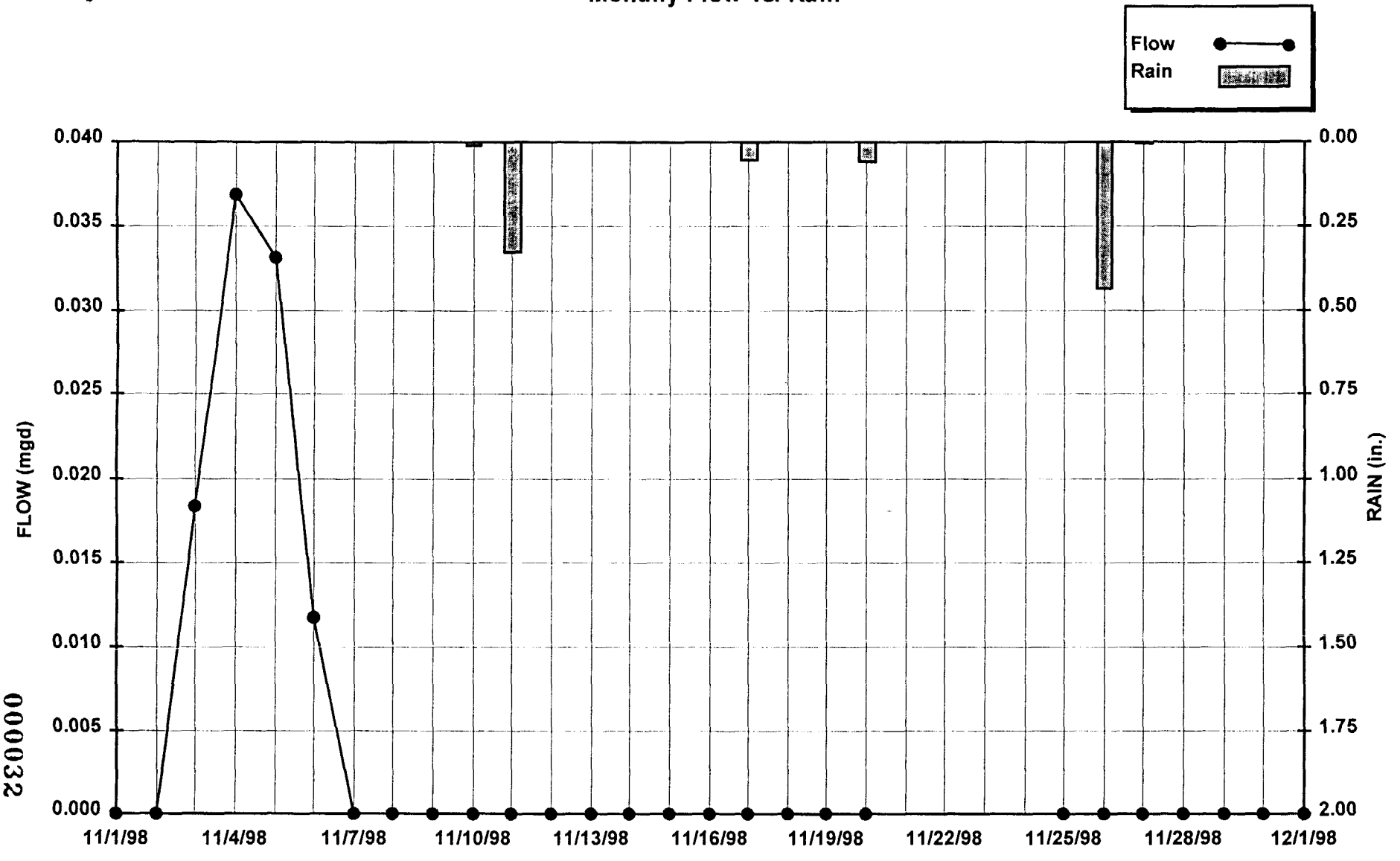
000031

863690728

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



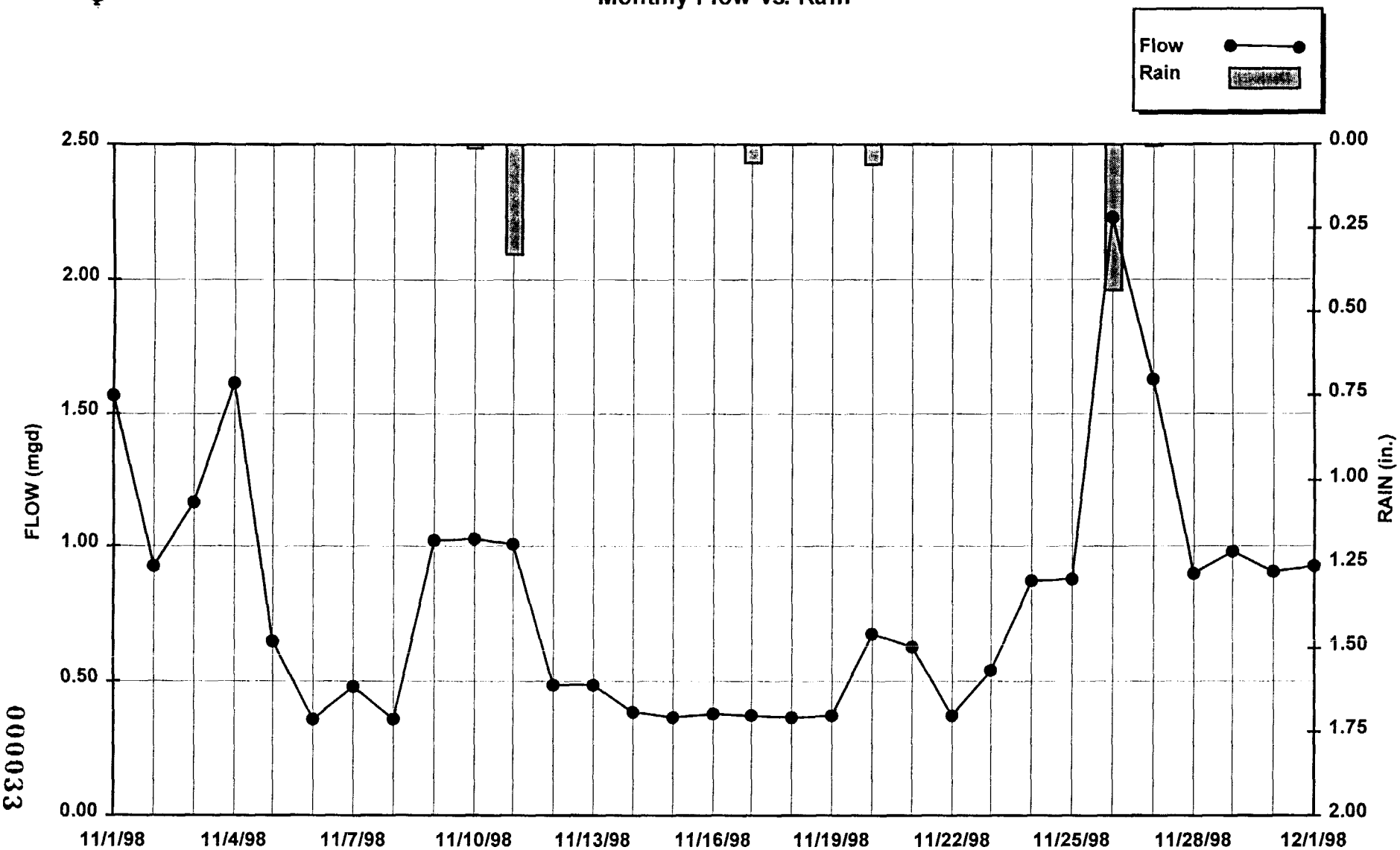
CSO 007 - THIRD AVE
Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02
Serial#: QR6

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

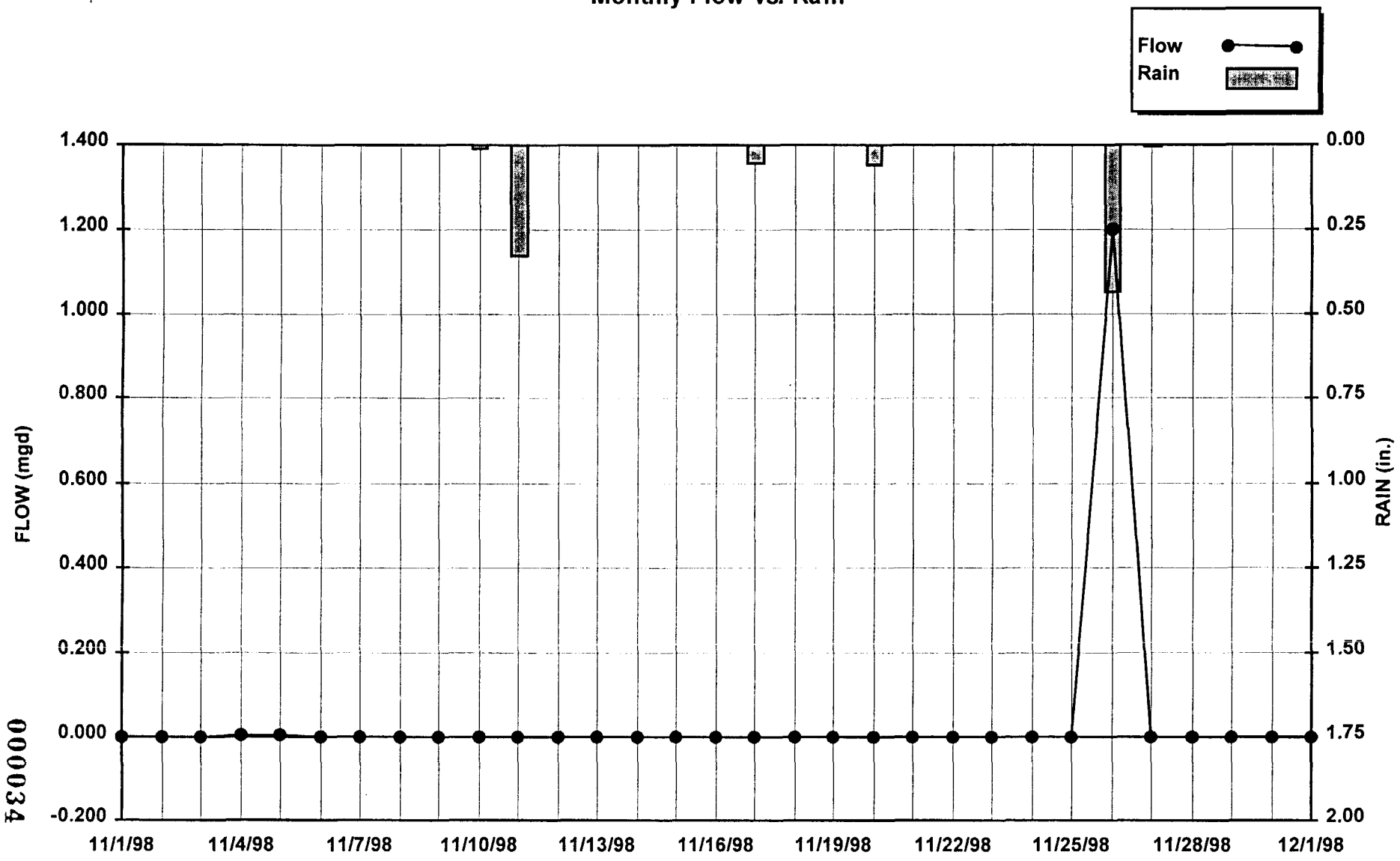
000033

863690730

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000034

863690731

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

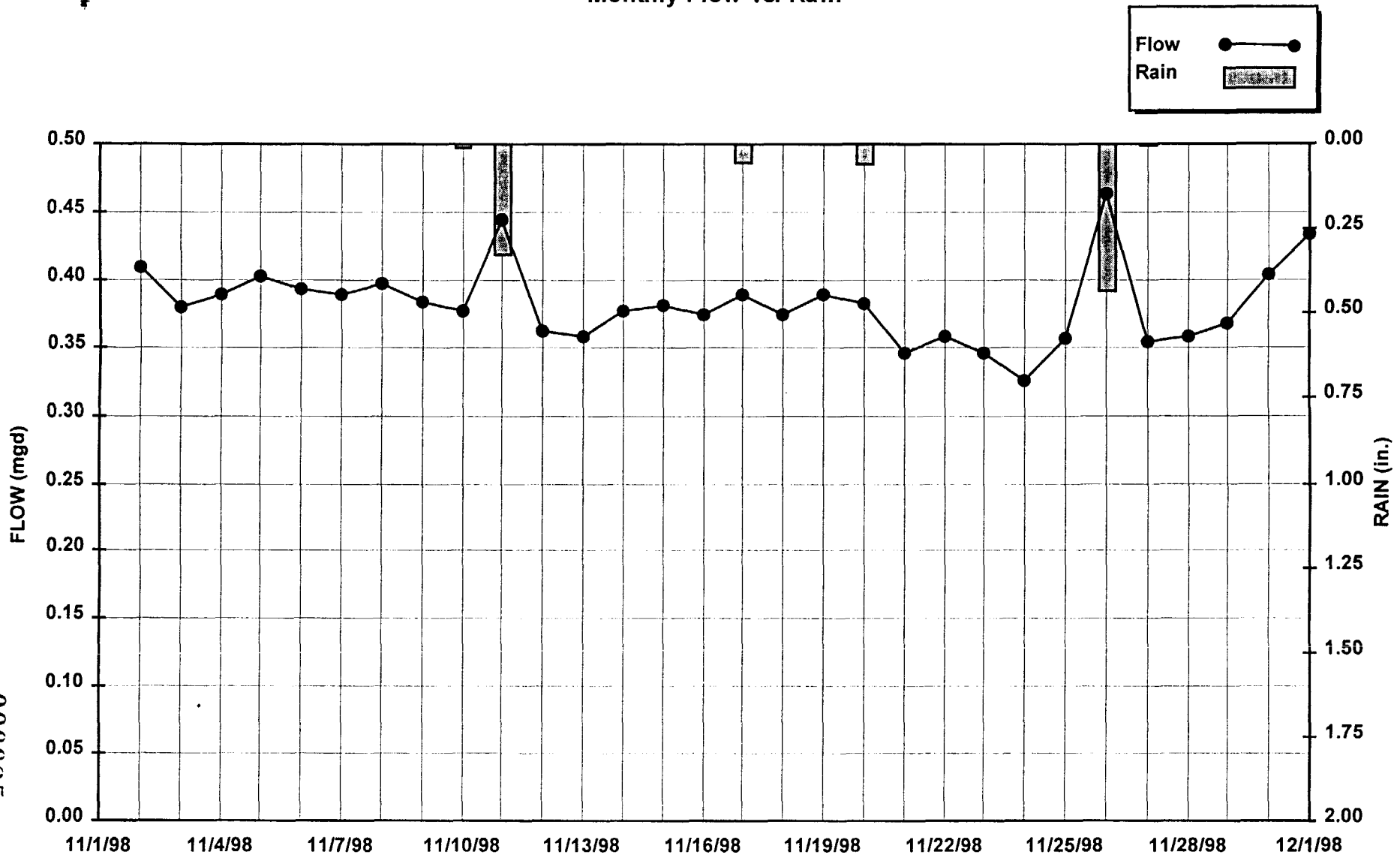
920 F.M. VERSION: 1.02

Serial#: QQD

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Influent
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QRG

Monthly Flow Report (Flow1)

12/28/1998 8:54:46 AM

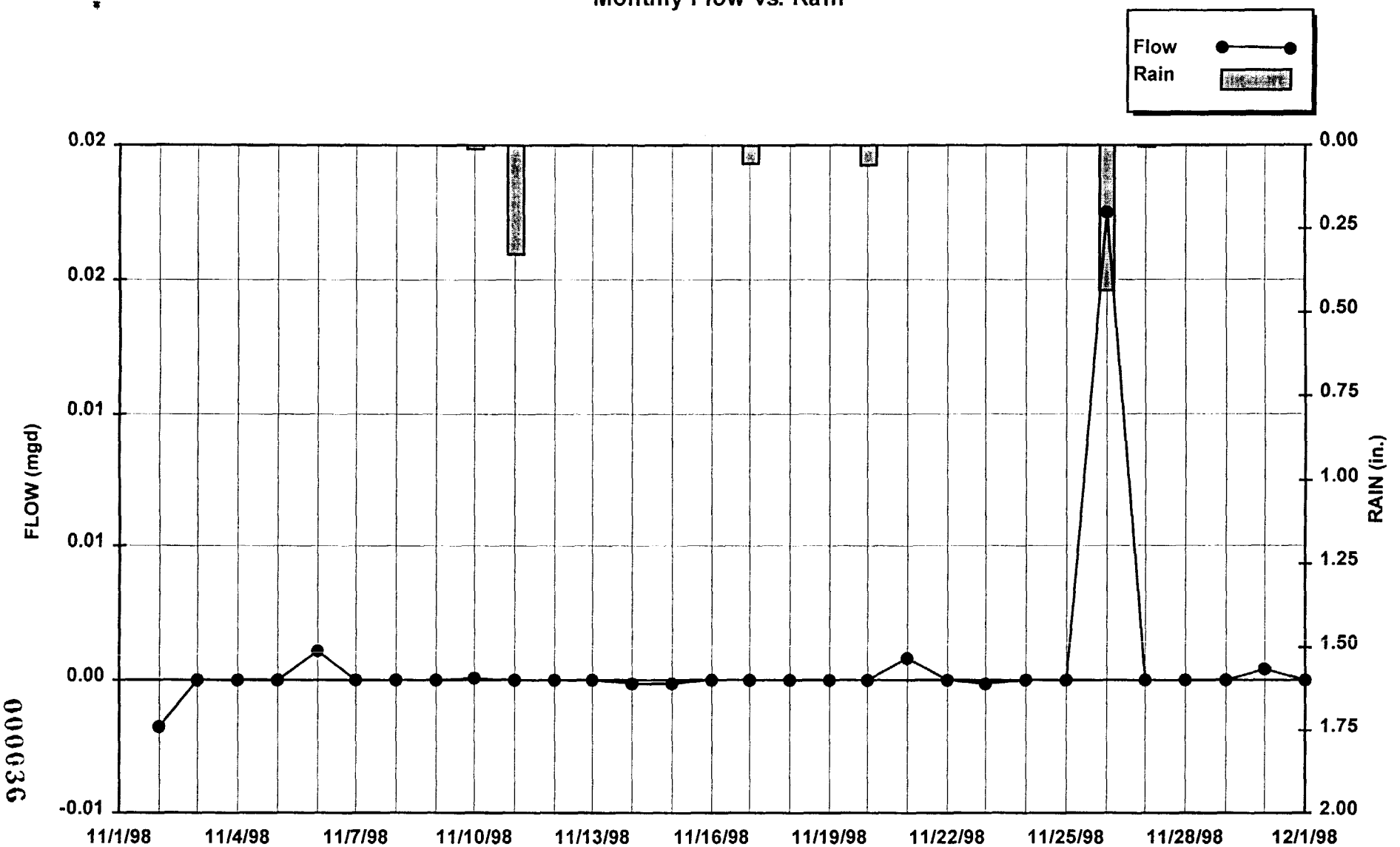
000035

863690732

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Overflow
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QU3

Monthly Flow Report (Flow1)

12/28/1998 8:53:47 AM

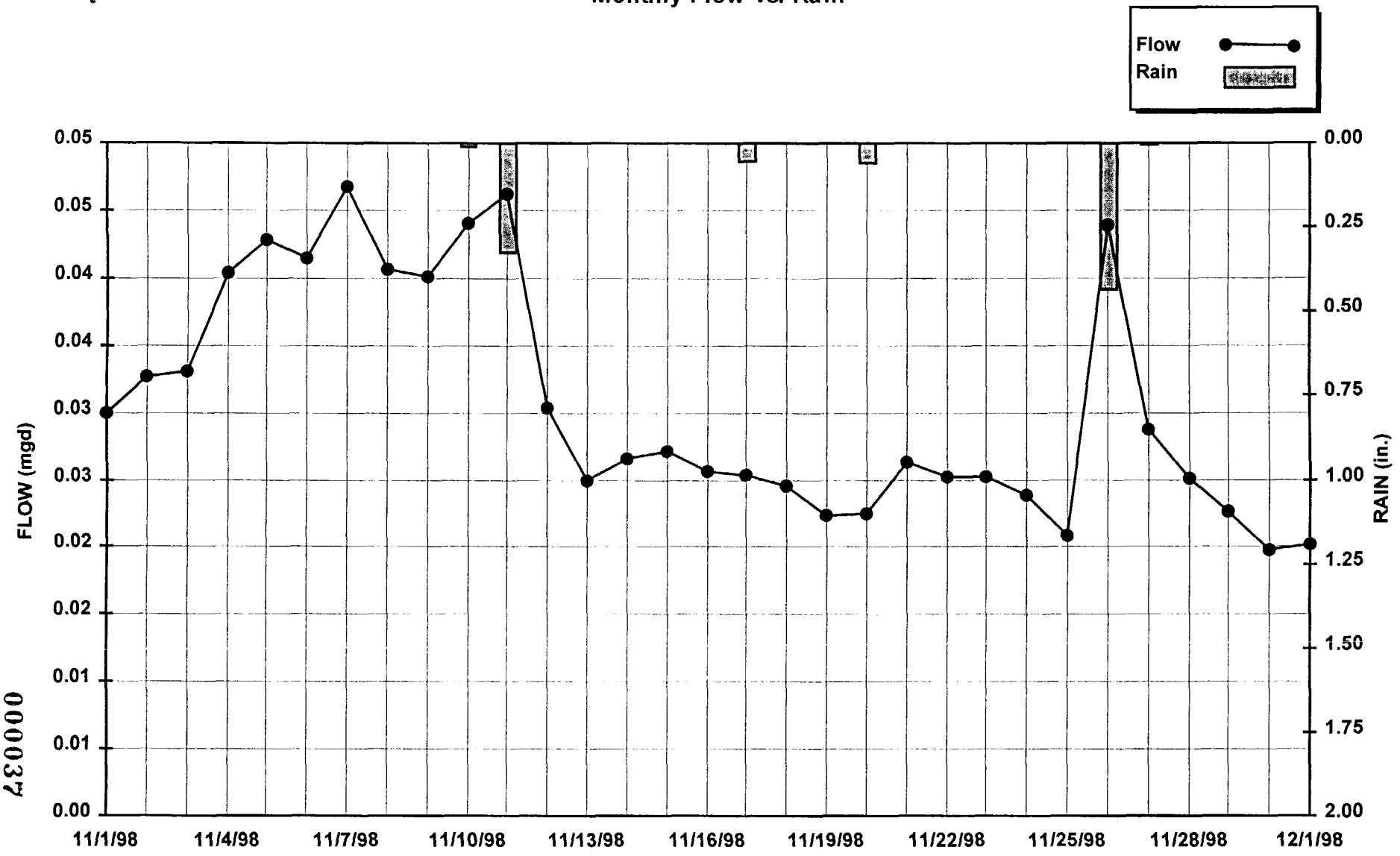
000036

863690733

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

Monthly Flow Report (Flow1)

12/28/1998 9:16:58 AM

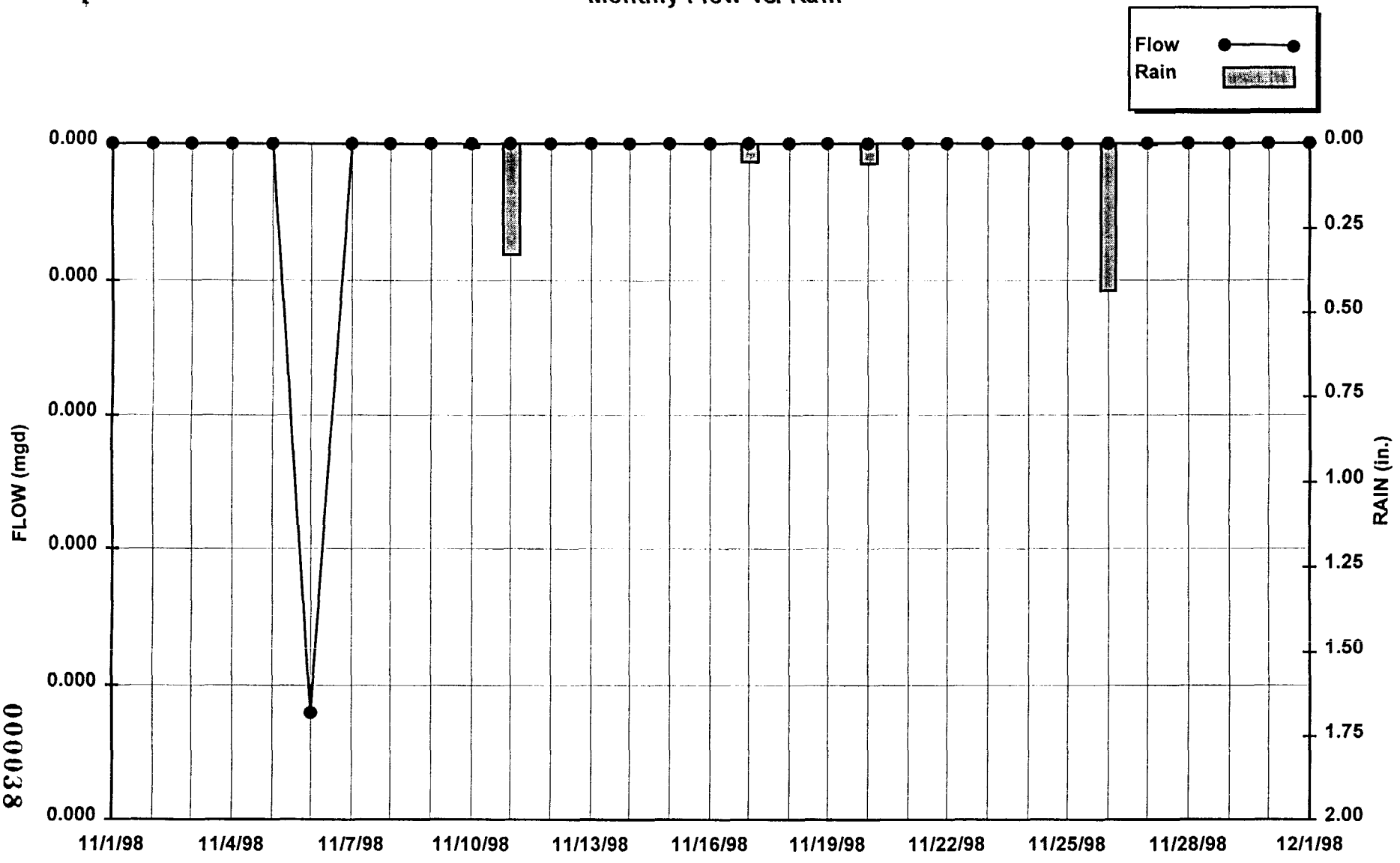
000037

863690734

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

Monthly Flow Report (Flow2)

12/28/1998 9:48:26 AM

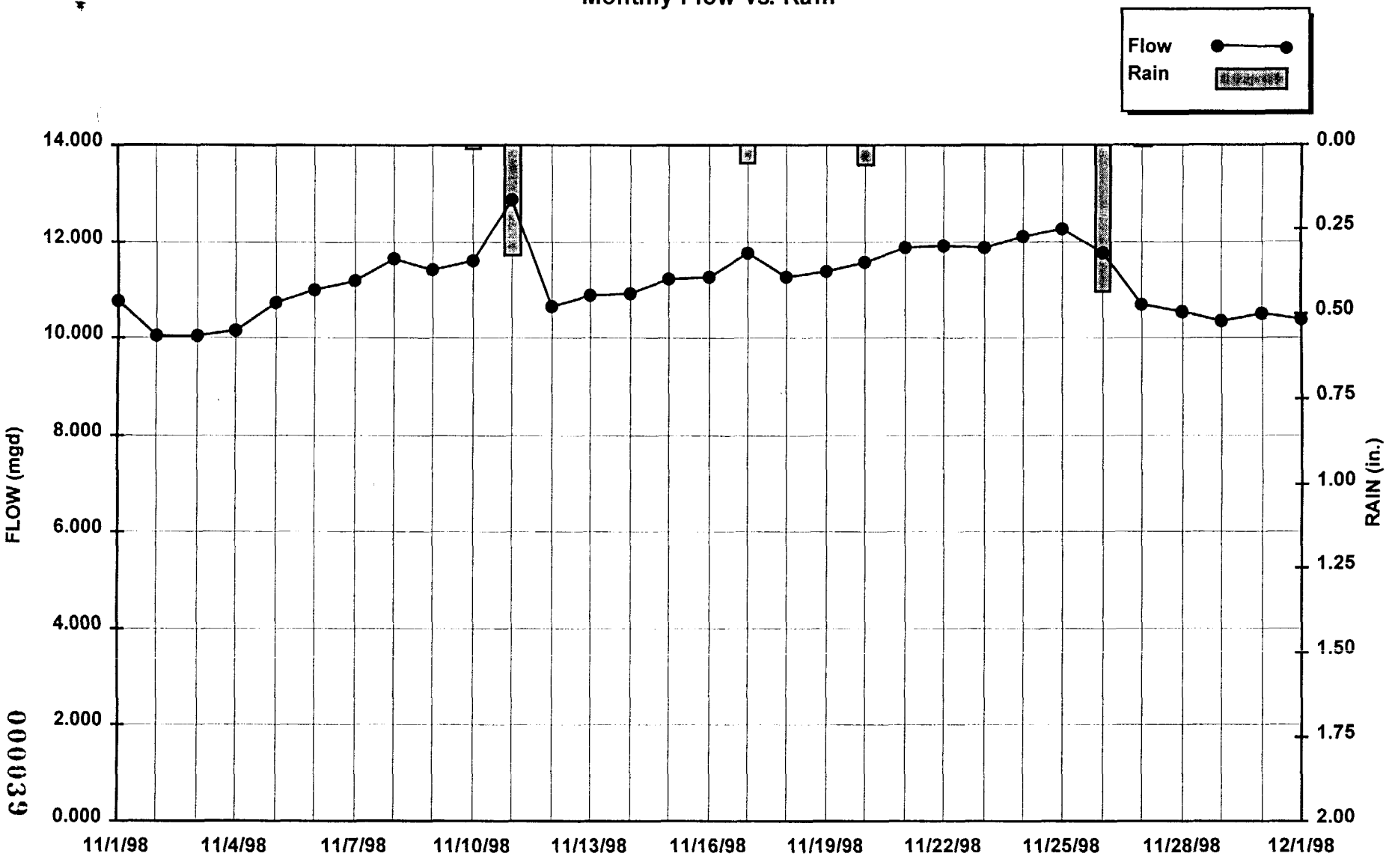
000038

863690735

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Influents
Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTR

Monthly Flow Report (Flow2)

12/28/1998 9:31:25 AM

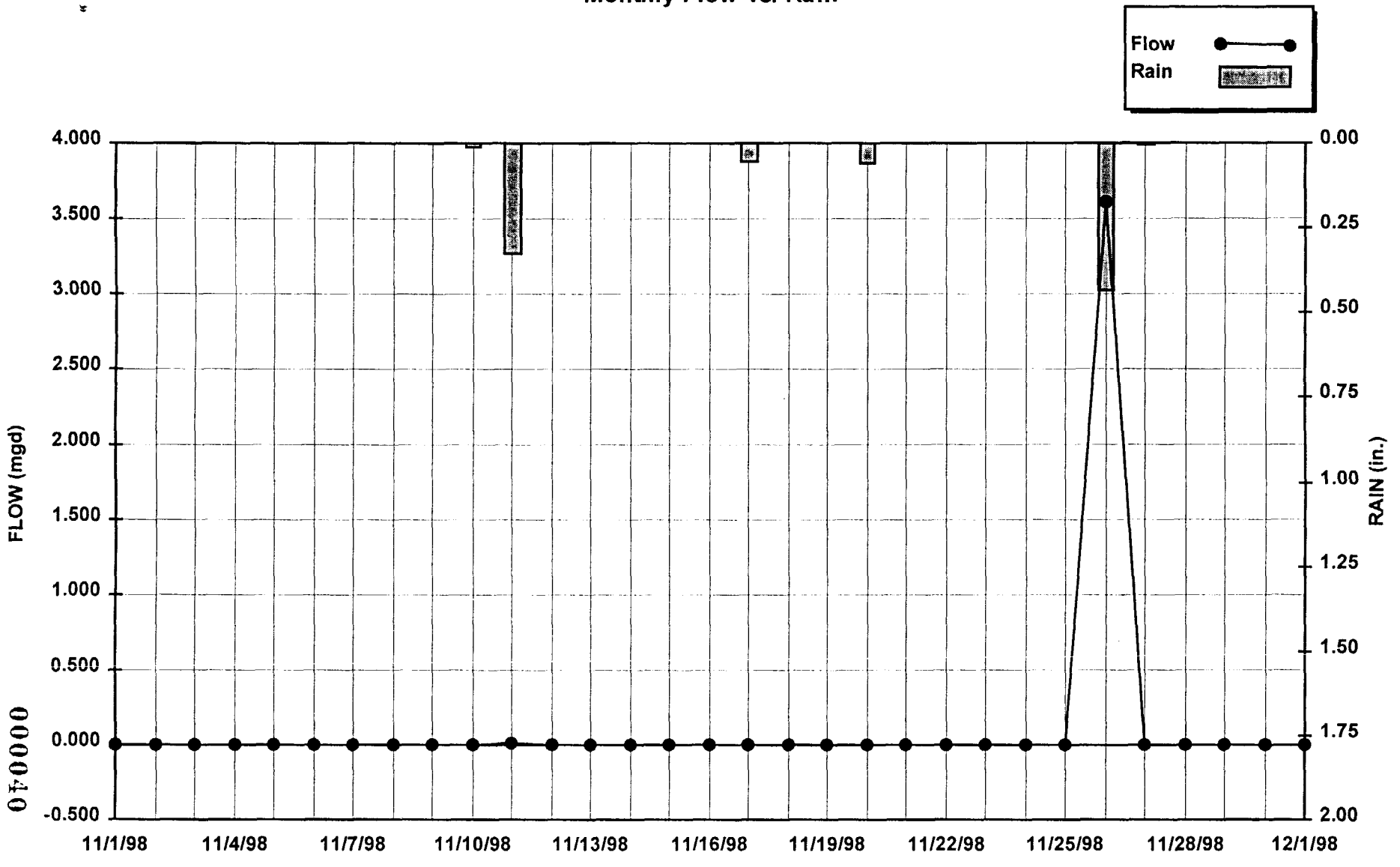
000039

863690736

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow North Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QPS

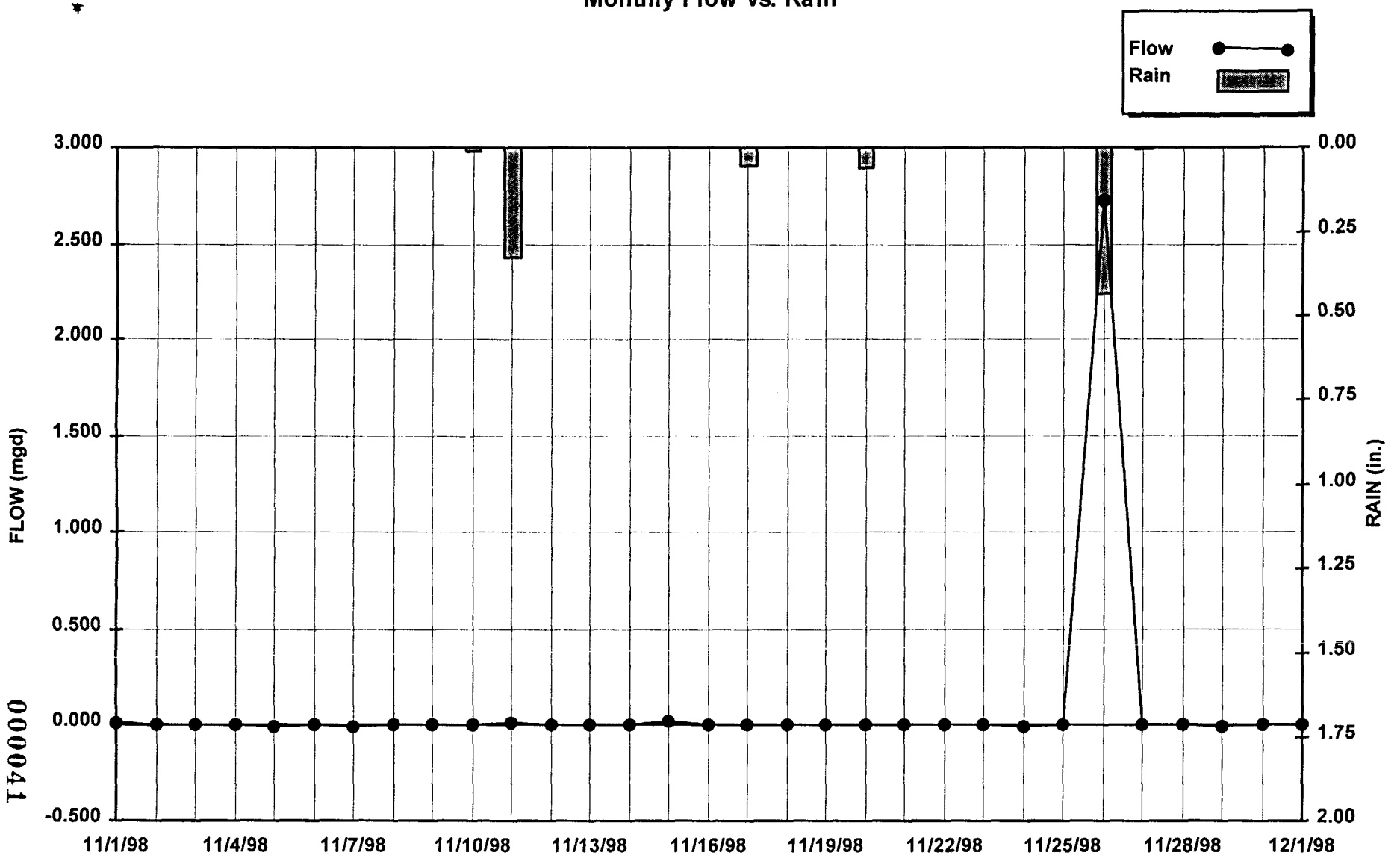
000040

863690737

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow South Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QT2

Monthly Flow Report (Flow2)

12/30/1998 3:23:58 PM

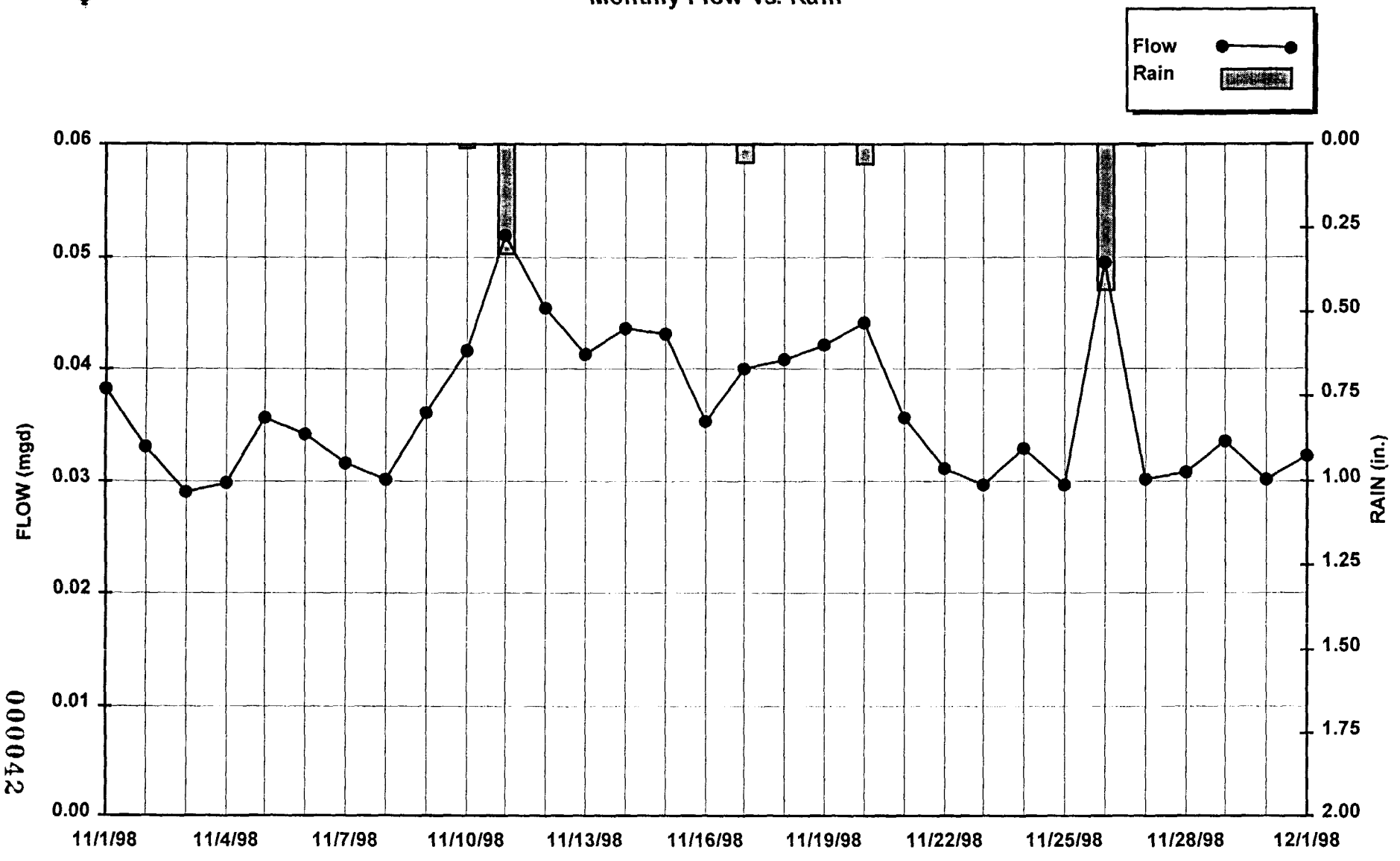
000041

863690738

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000042

863690739

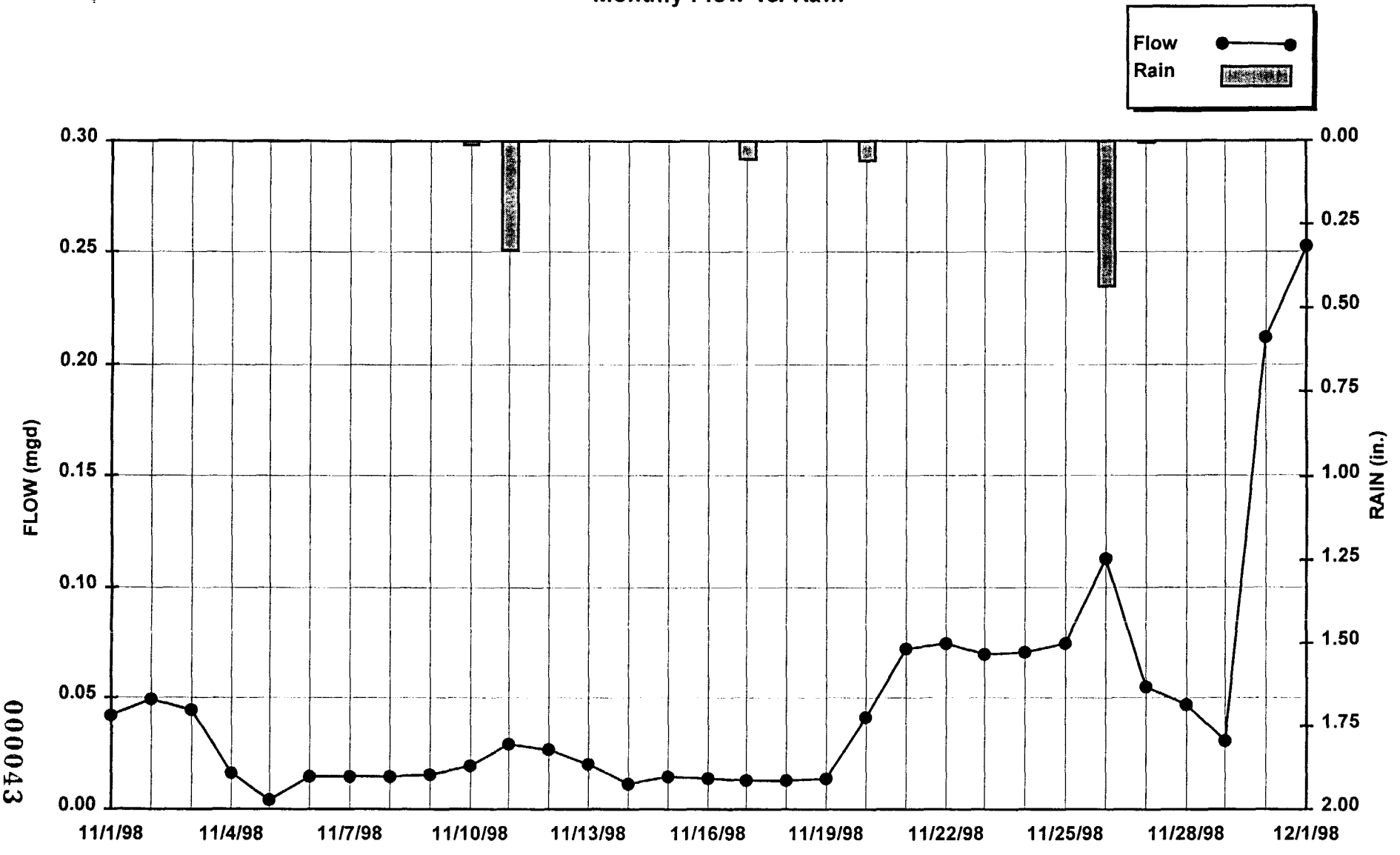
CSO 011 - ORANGE ST Influent
Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02
Serial#: QRF

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRZ

Monthly Flow Report (Flow1)

12/28/1998 8:57:39 AM

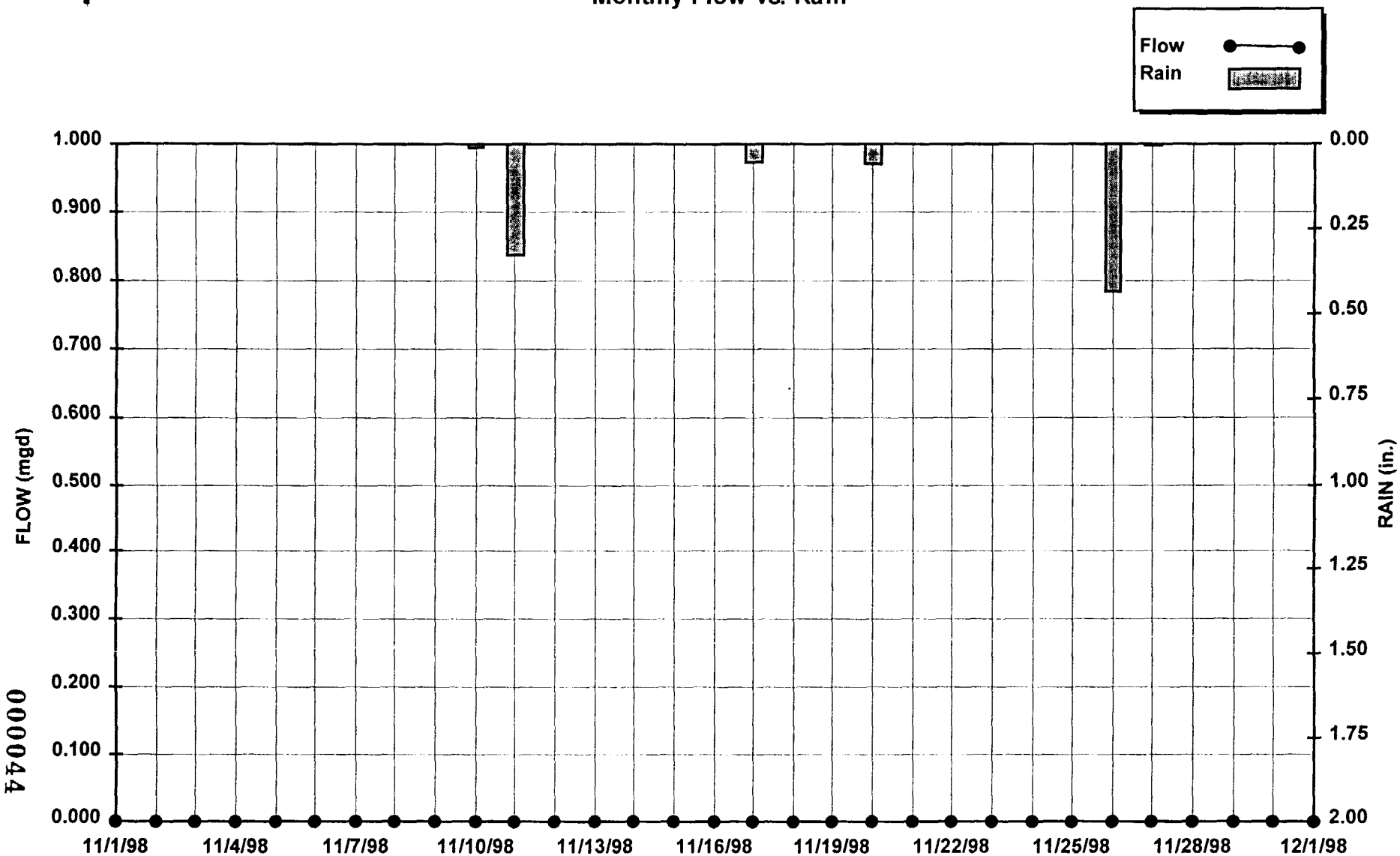
000043

863690740

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRZ

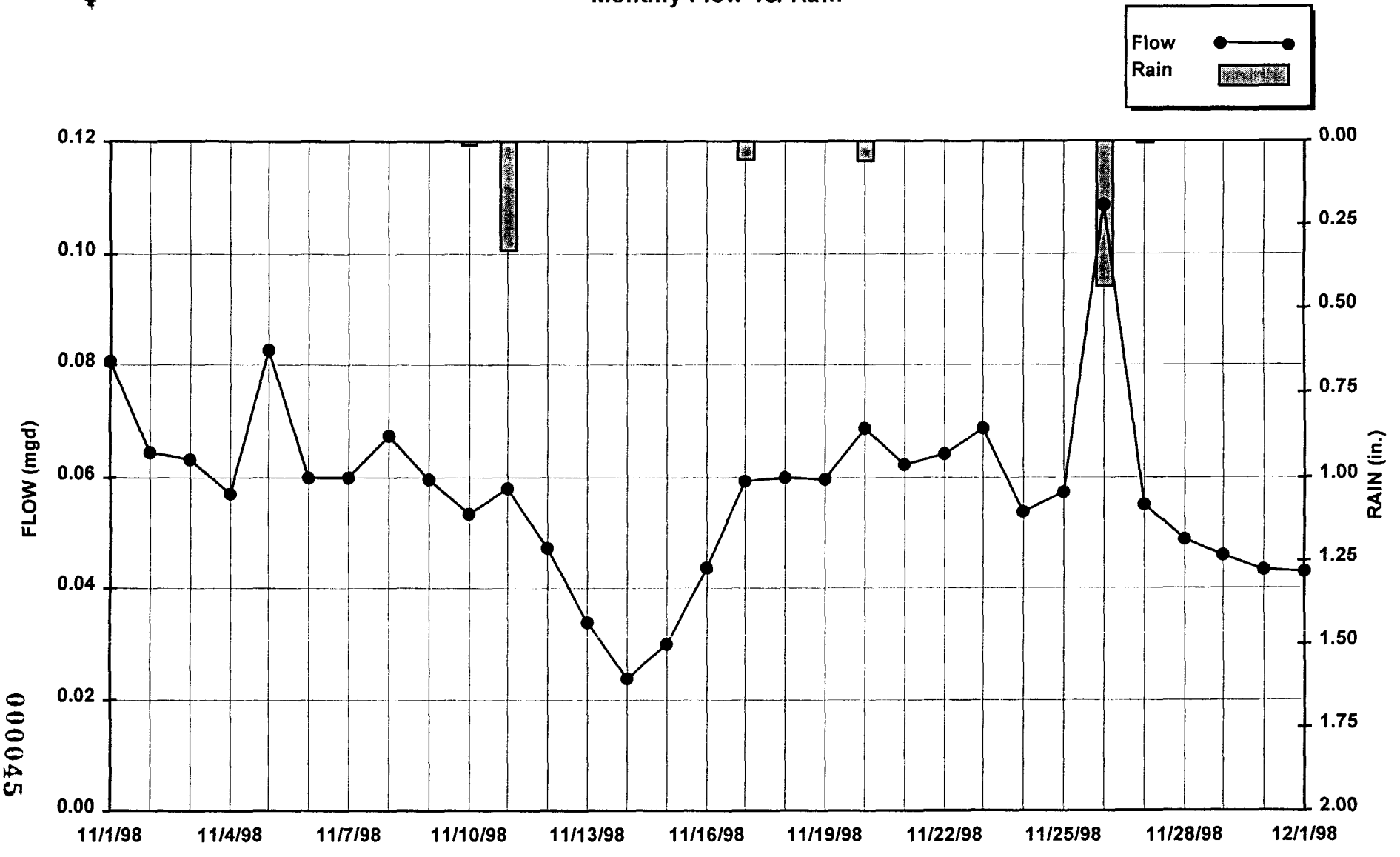
000044

863690741

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR7

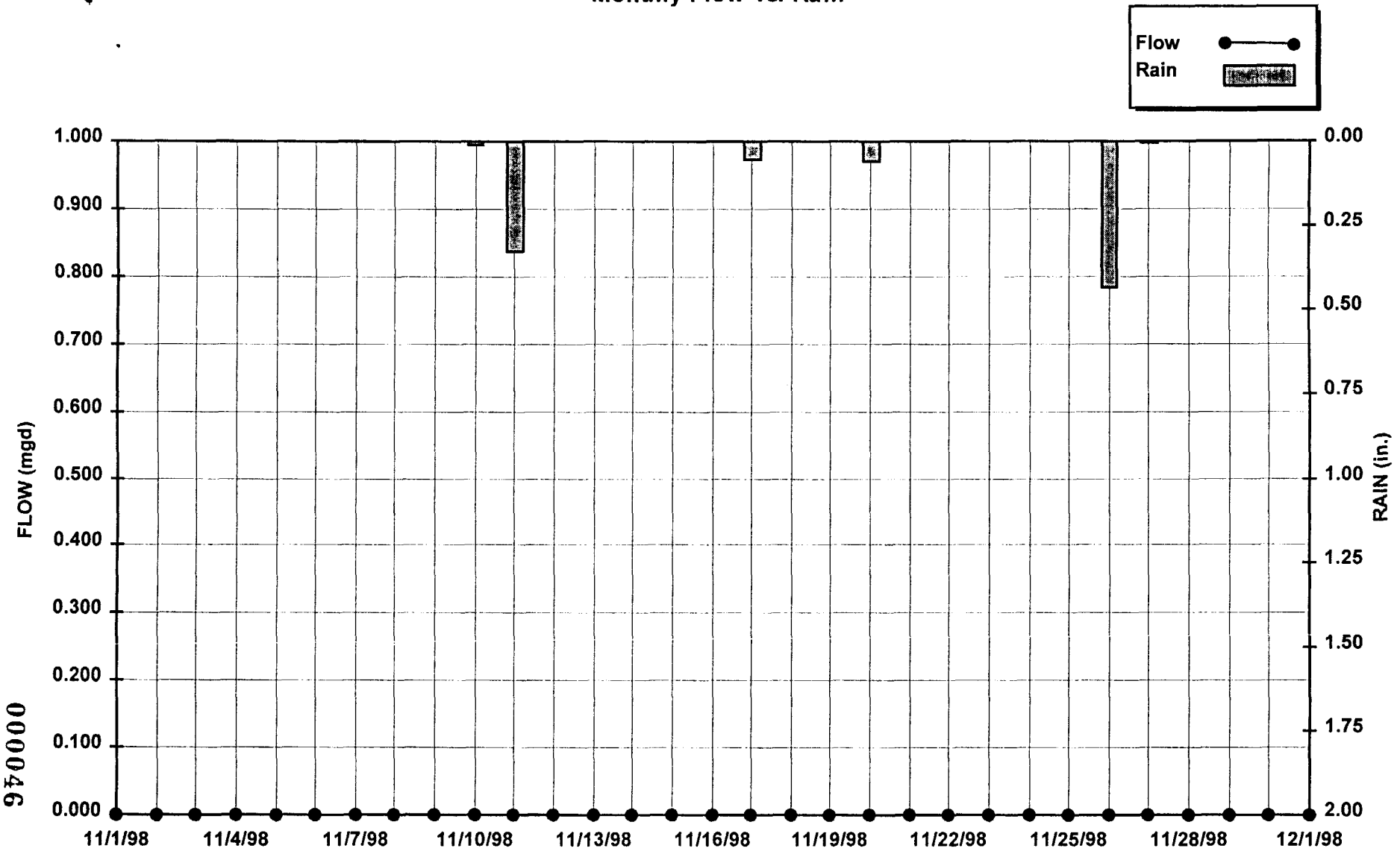
000045

863690742

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR7

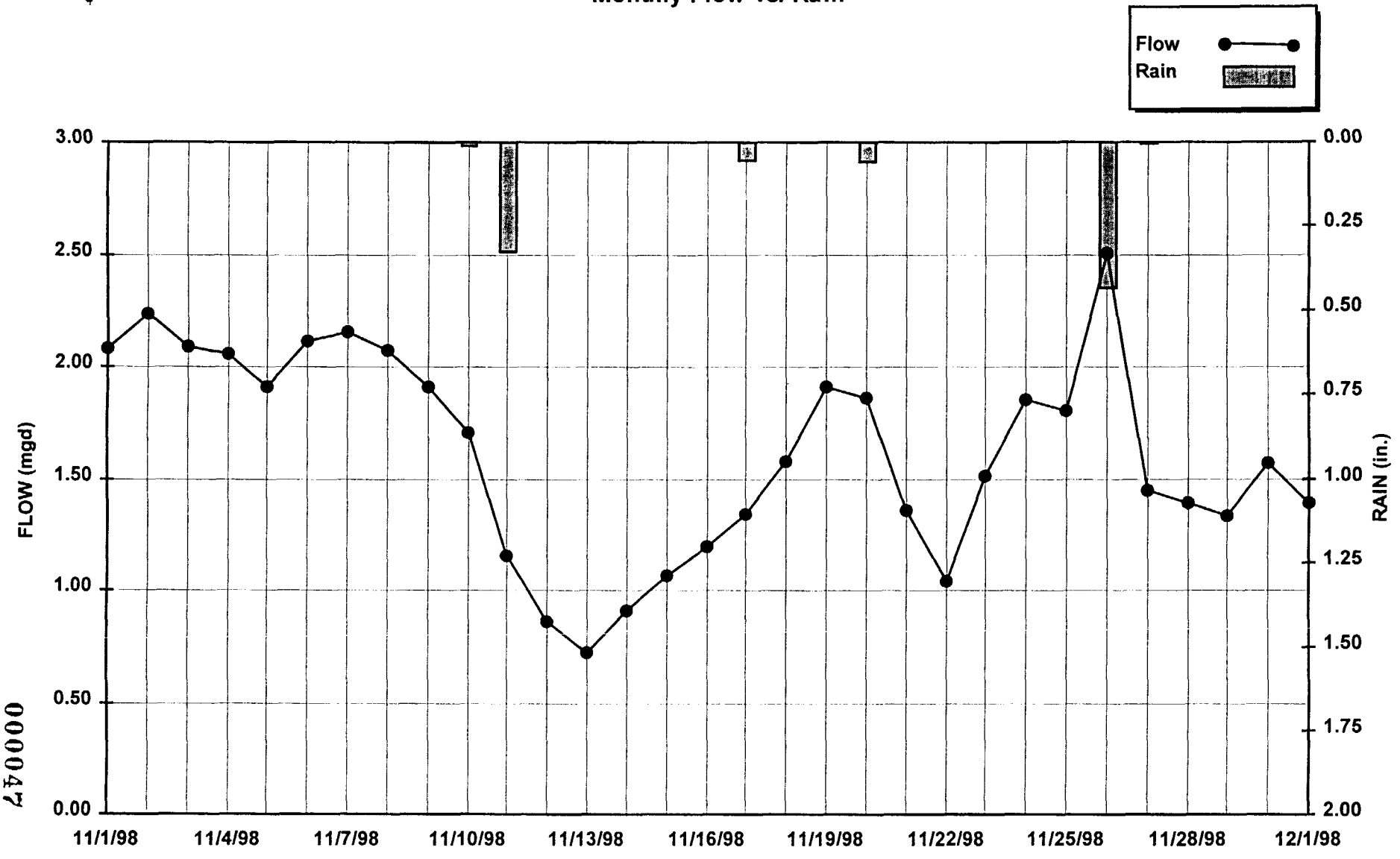
000046

863690743

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUY

Monthly Flow Report (Flow1)

12/28/1998 8:52:50 AM

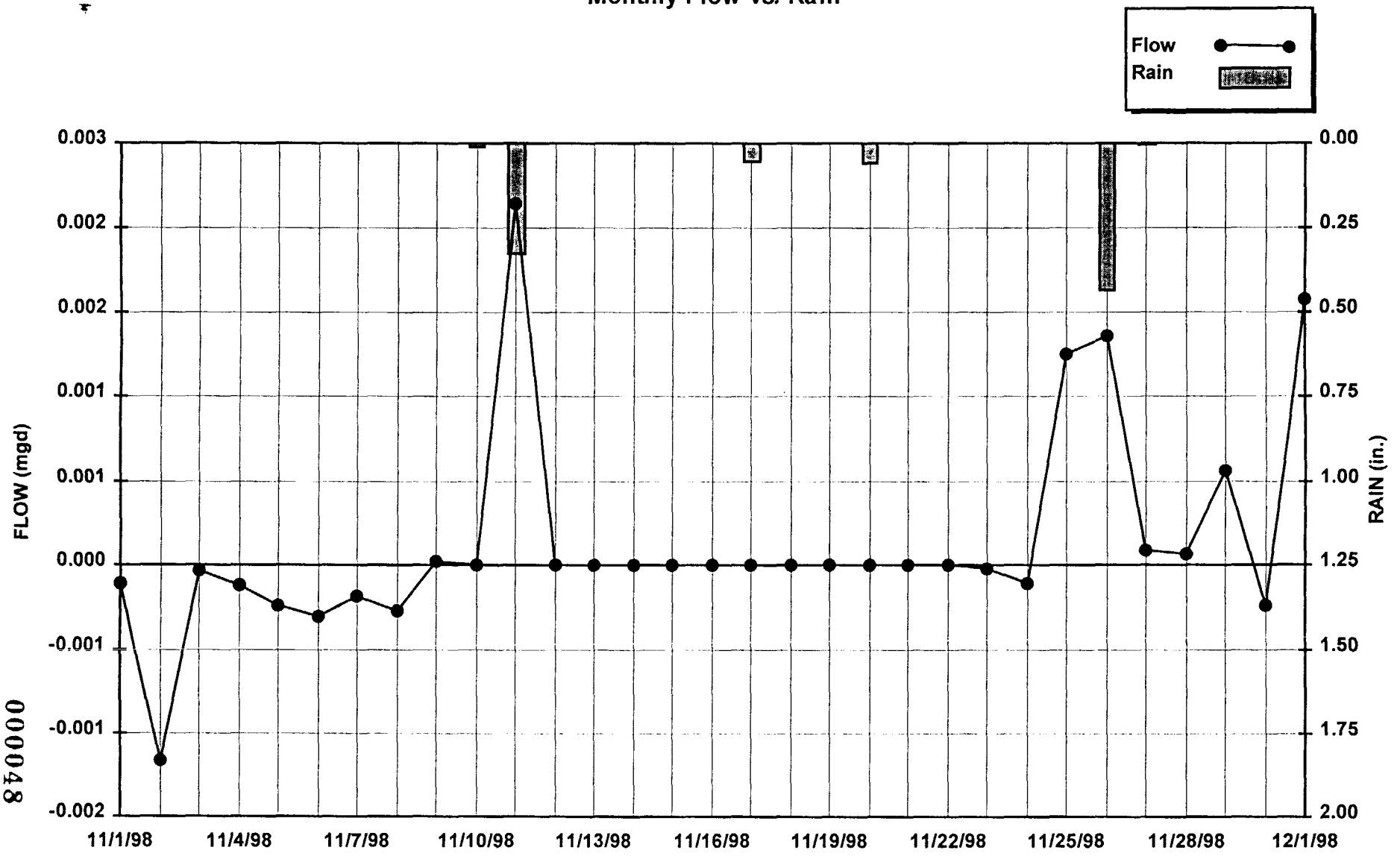
000047

863690744

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

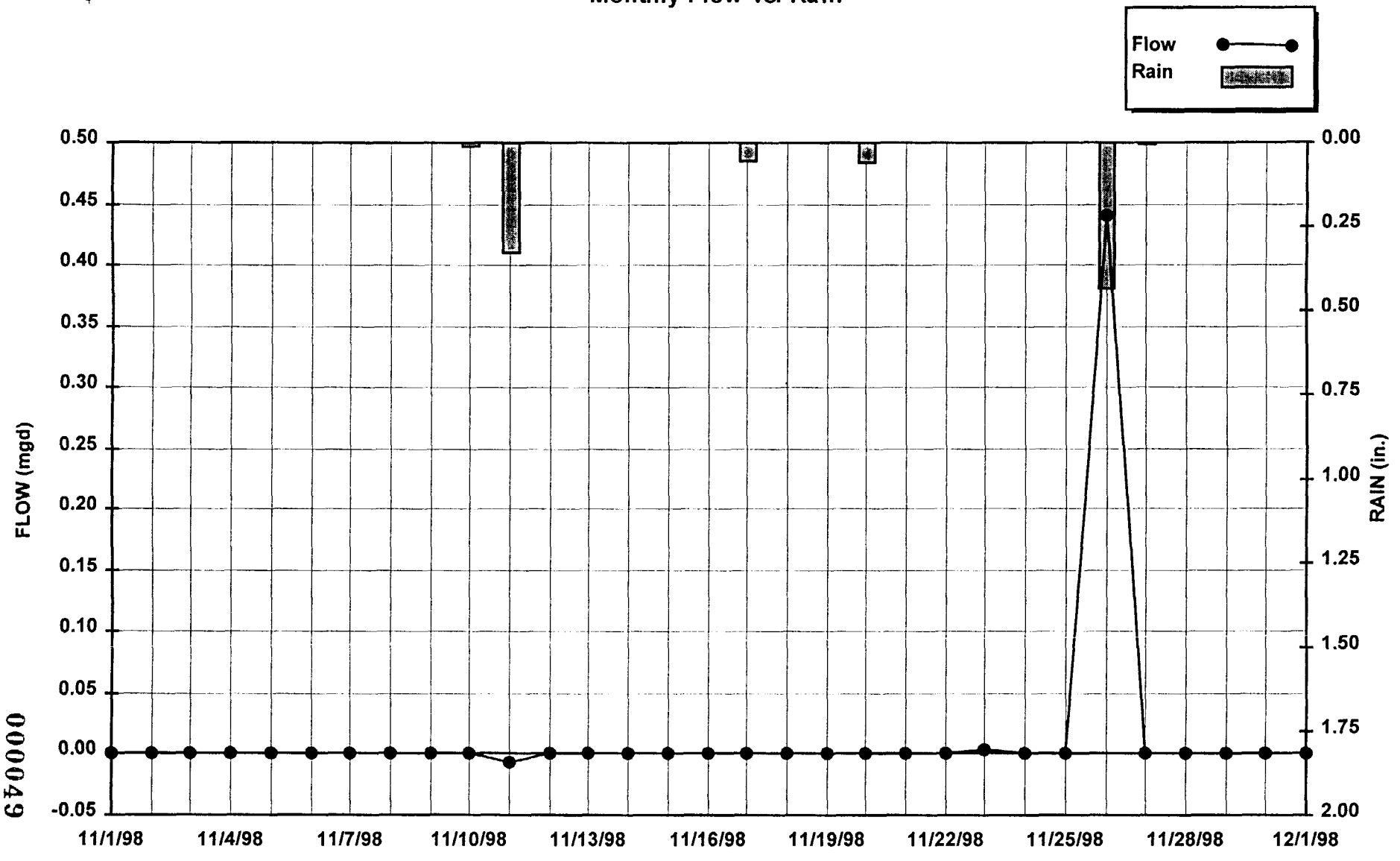
000048

863690745

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Monthly Flow Report (Flow3)

12/28/1998 10:08:17 AM

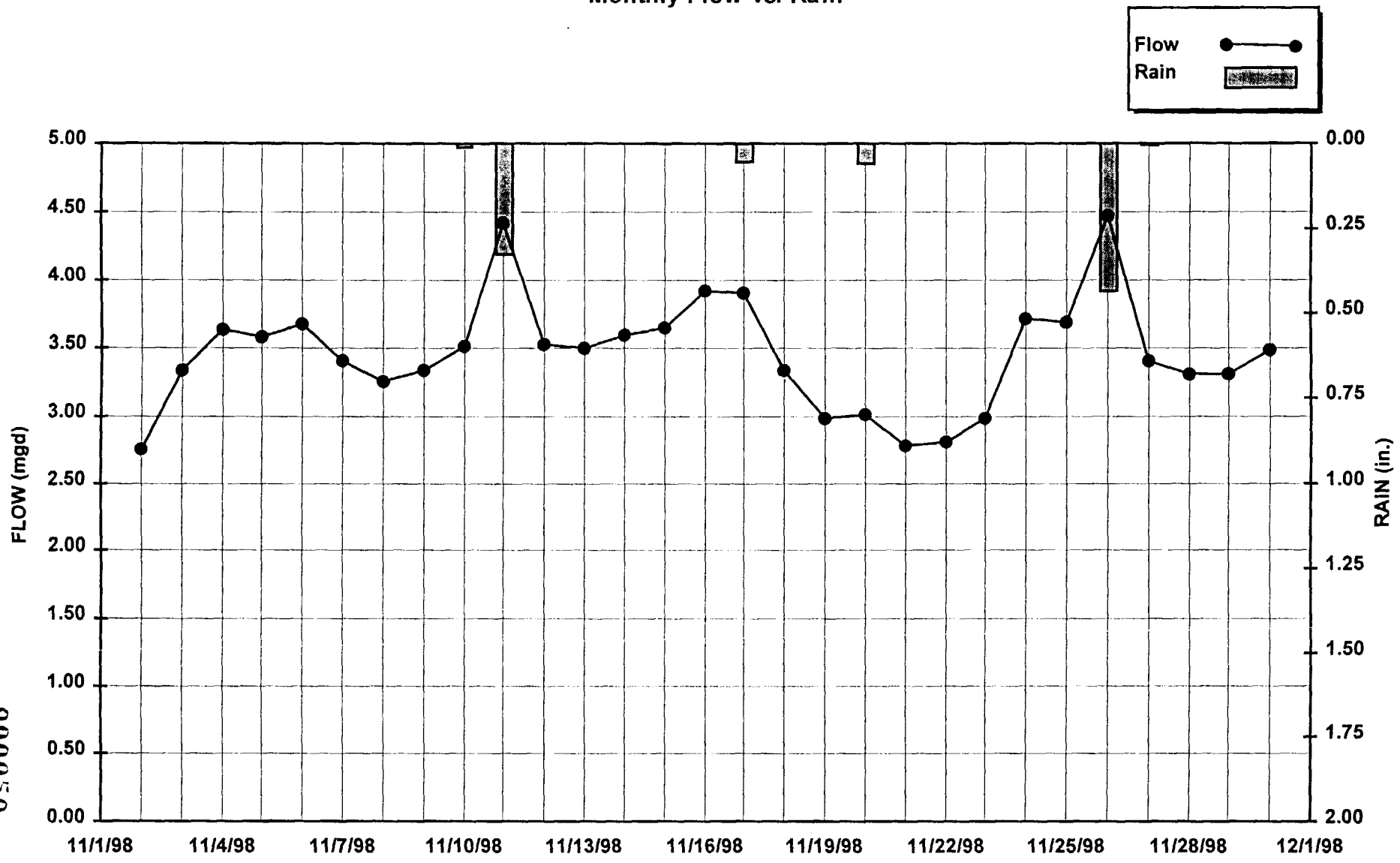
000049

863690746

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

Monthly Flow Report (Flow3)

12/28/1998 10:14:55 AM

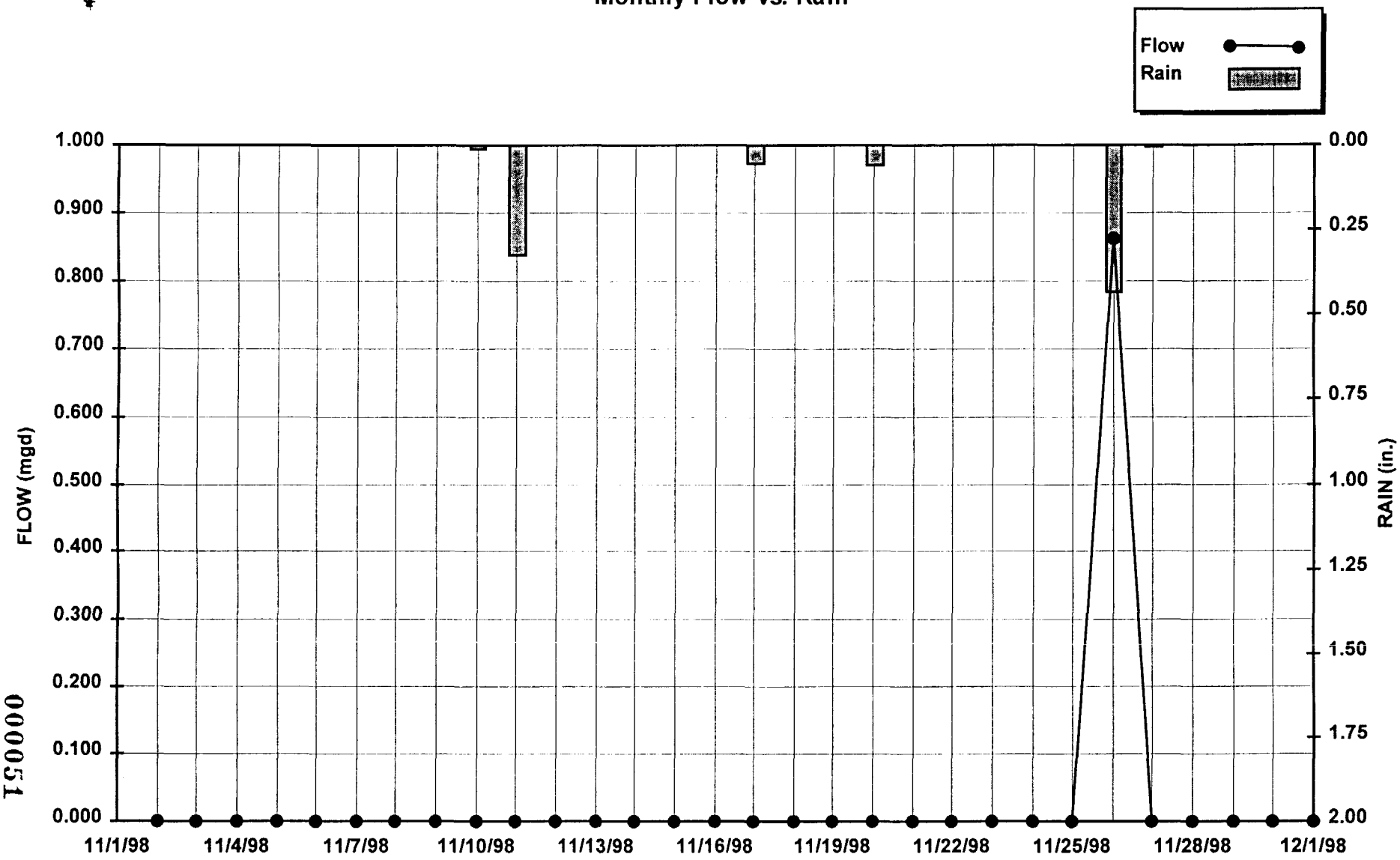
000050

863690747

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL *Influent and Overflow*
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

Monthly Flow Report (Flow2)

12/28/1998 9:27:03 AM

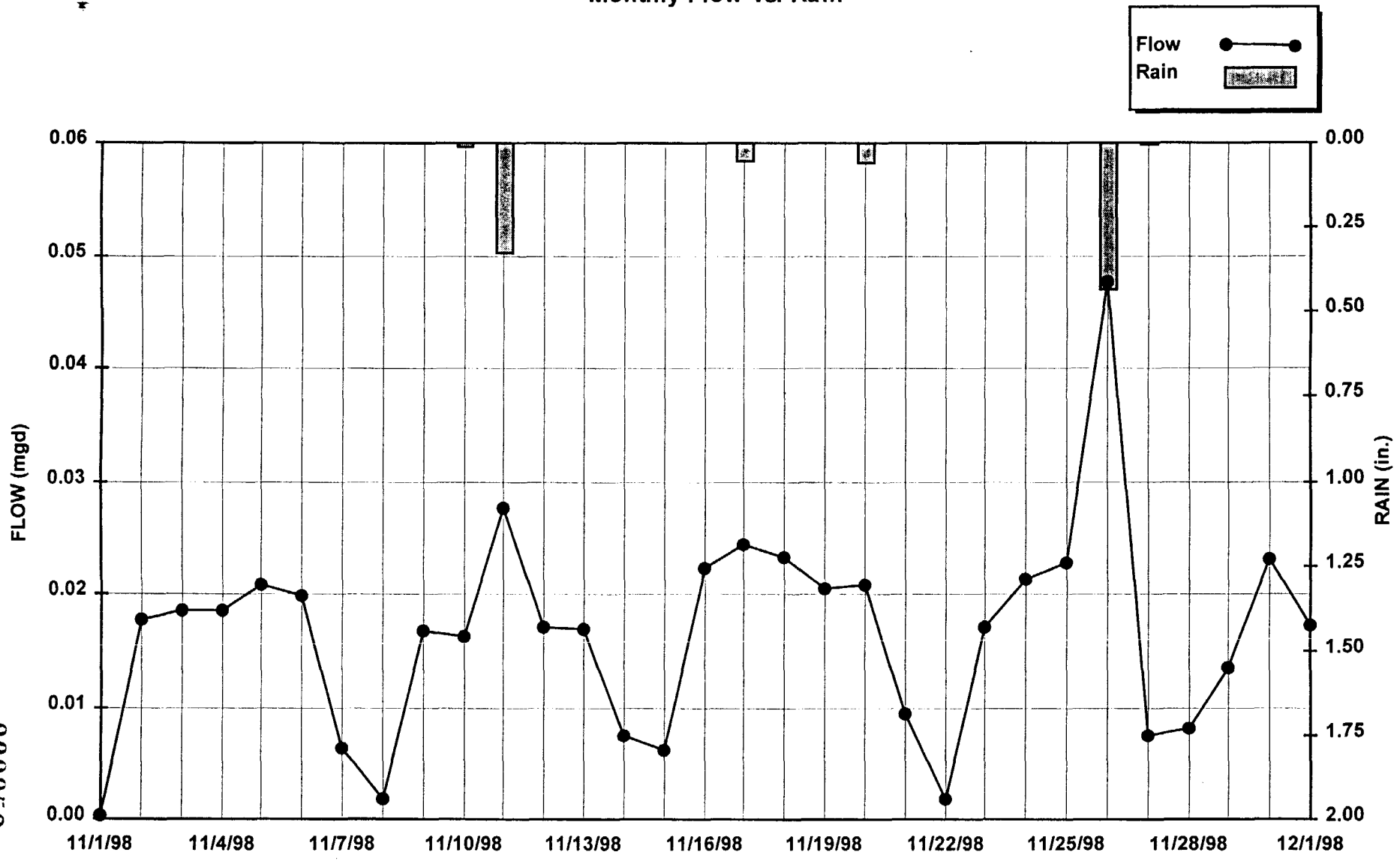
000051

863690748

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent1
Address: Raymond Plaza near Raymond Blvd.

910 F.M. VERSION: 1.02
Serial#: QQT

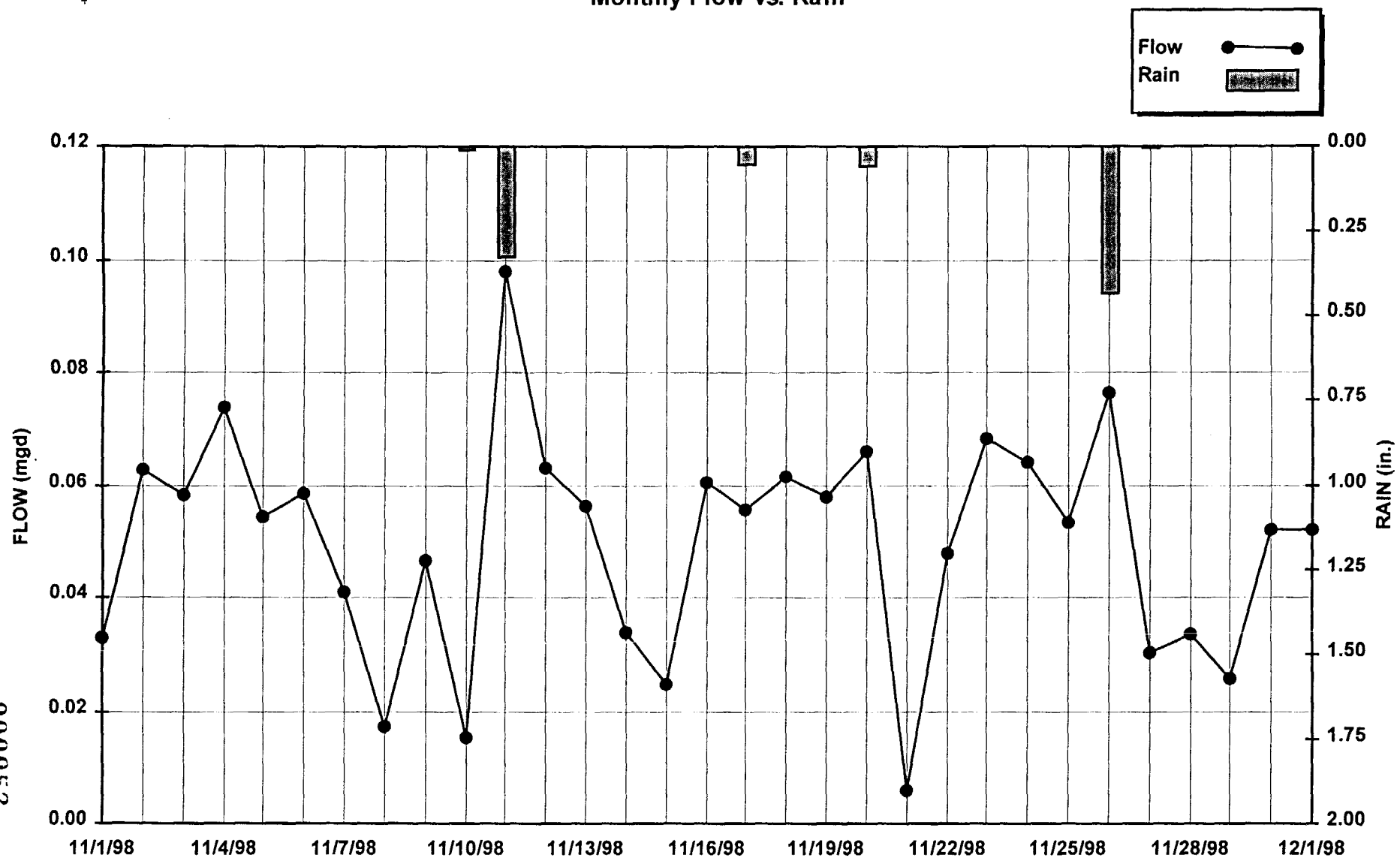
000052

863690749

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QU2

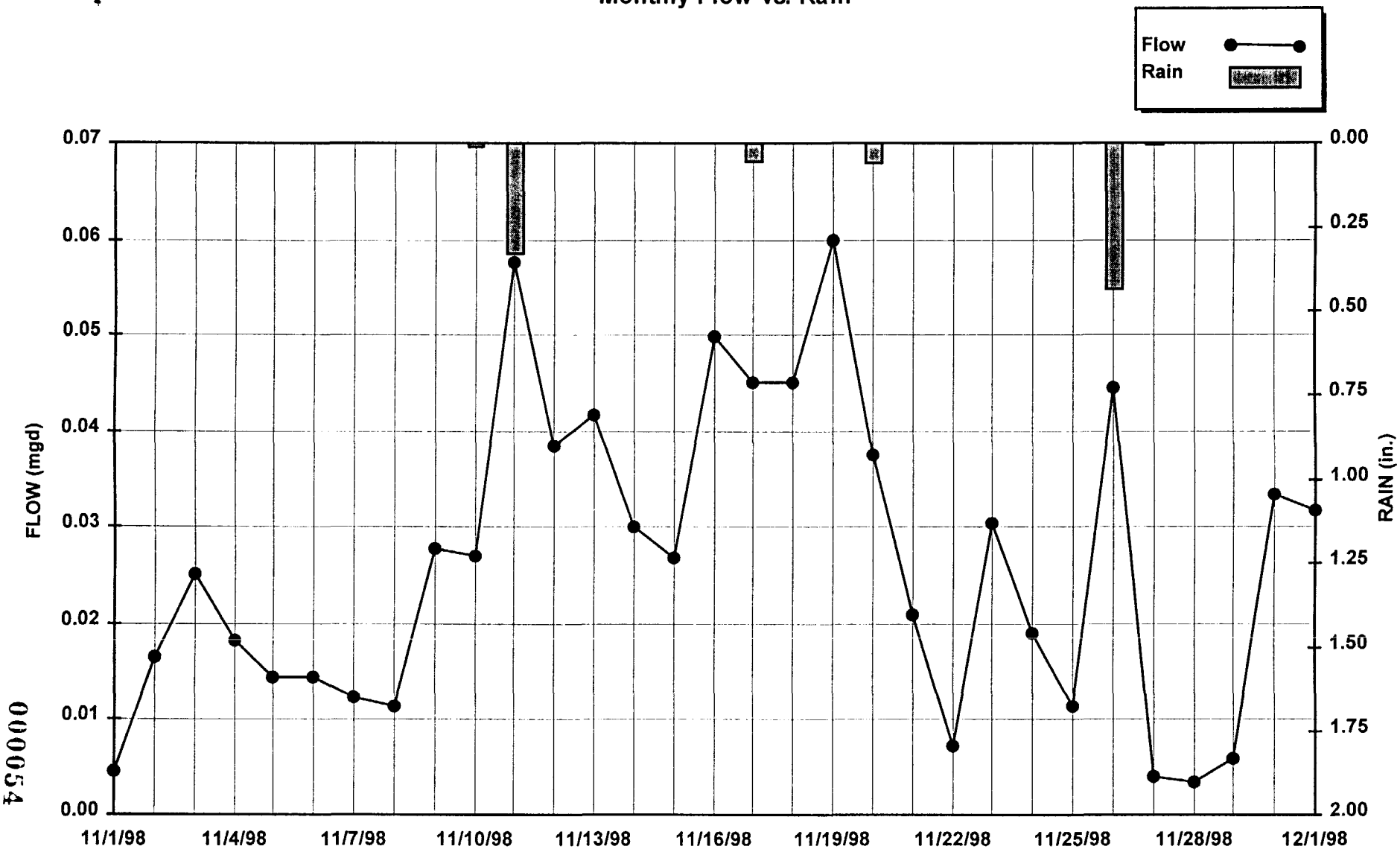
000053

863690750

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent3

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPV

Monthly Flow Report (Flow1)

12/28/1998 9:04:39 AM

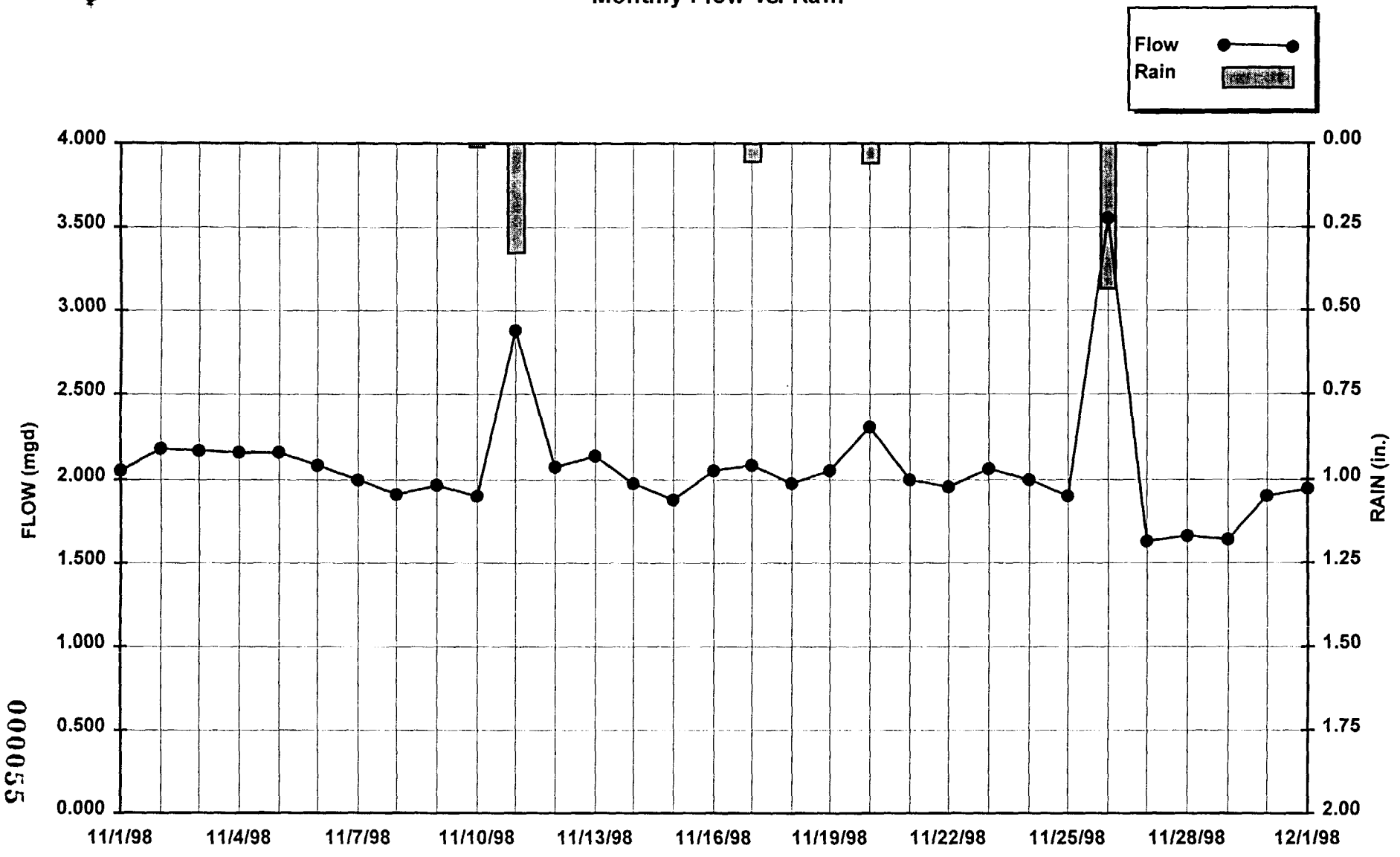
000054

863690751

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPQ

Monthly Flow Report (Flow2)

12/28/1998 9:55:07 AM

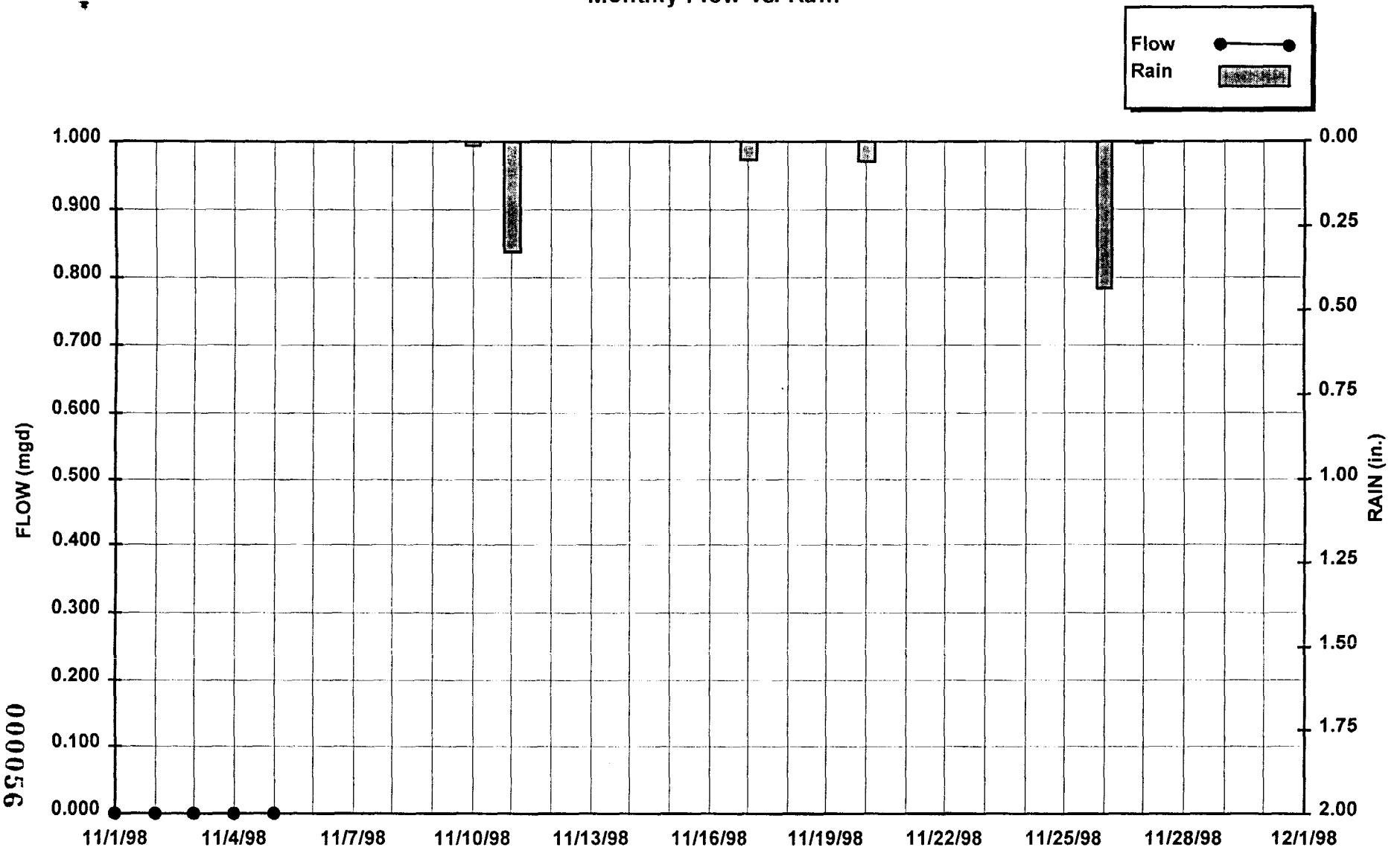
000055

863690752

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QLK

Monthly Flow Report (Flow2)

12/28/1998 9:35:50 AM

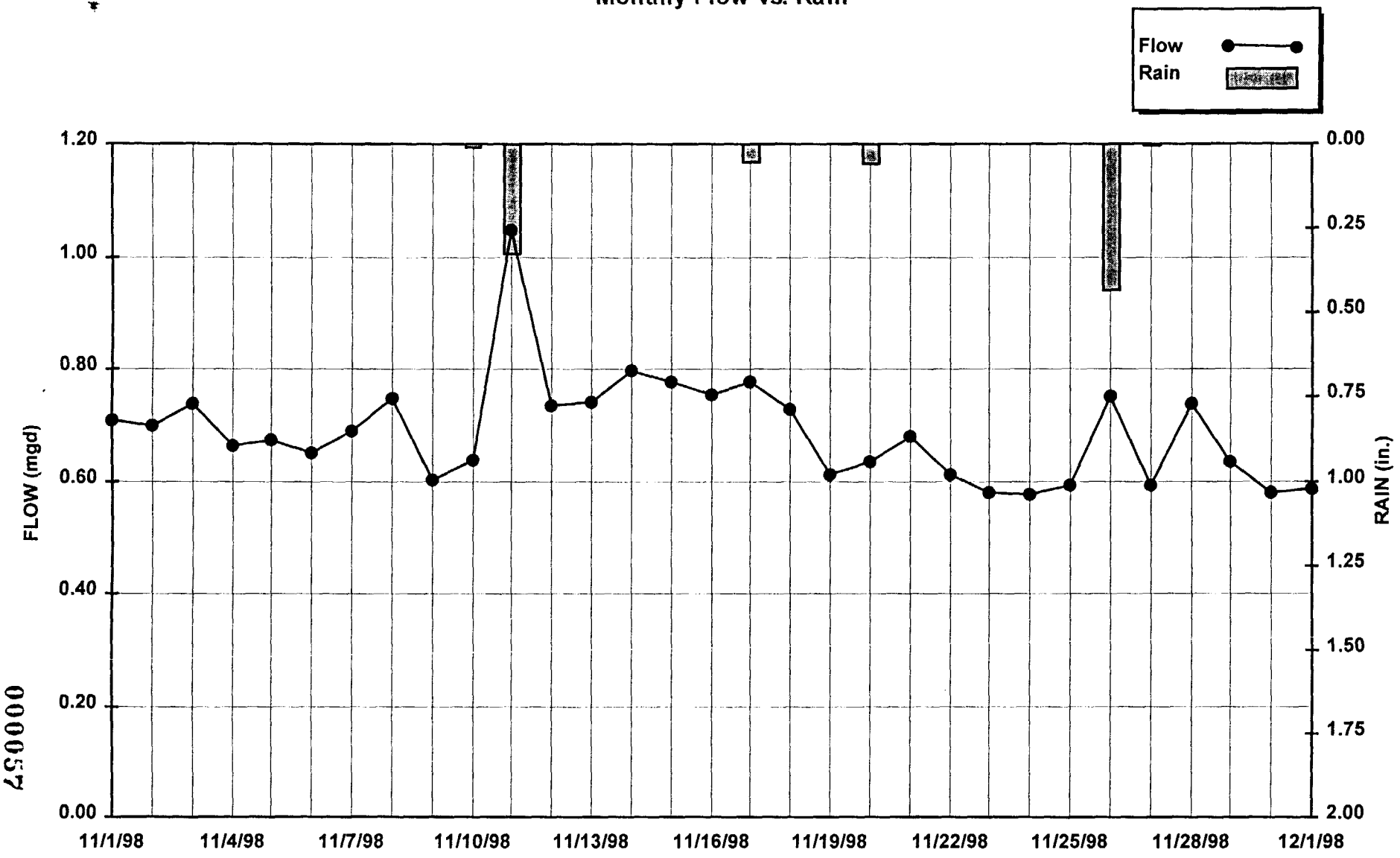
000056

863690753

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST
Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02
Serial#: QTO

Monthly Flow Report (Flow1)

12/28/1998 9:13:41 AM

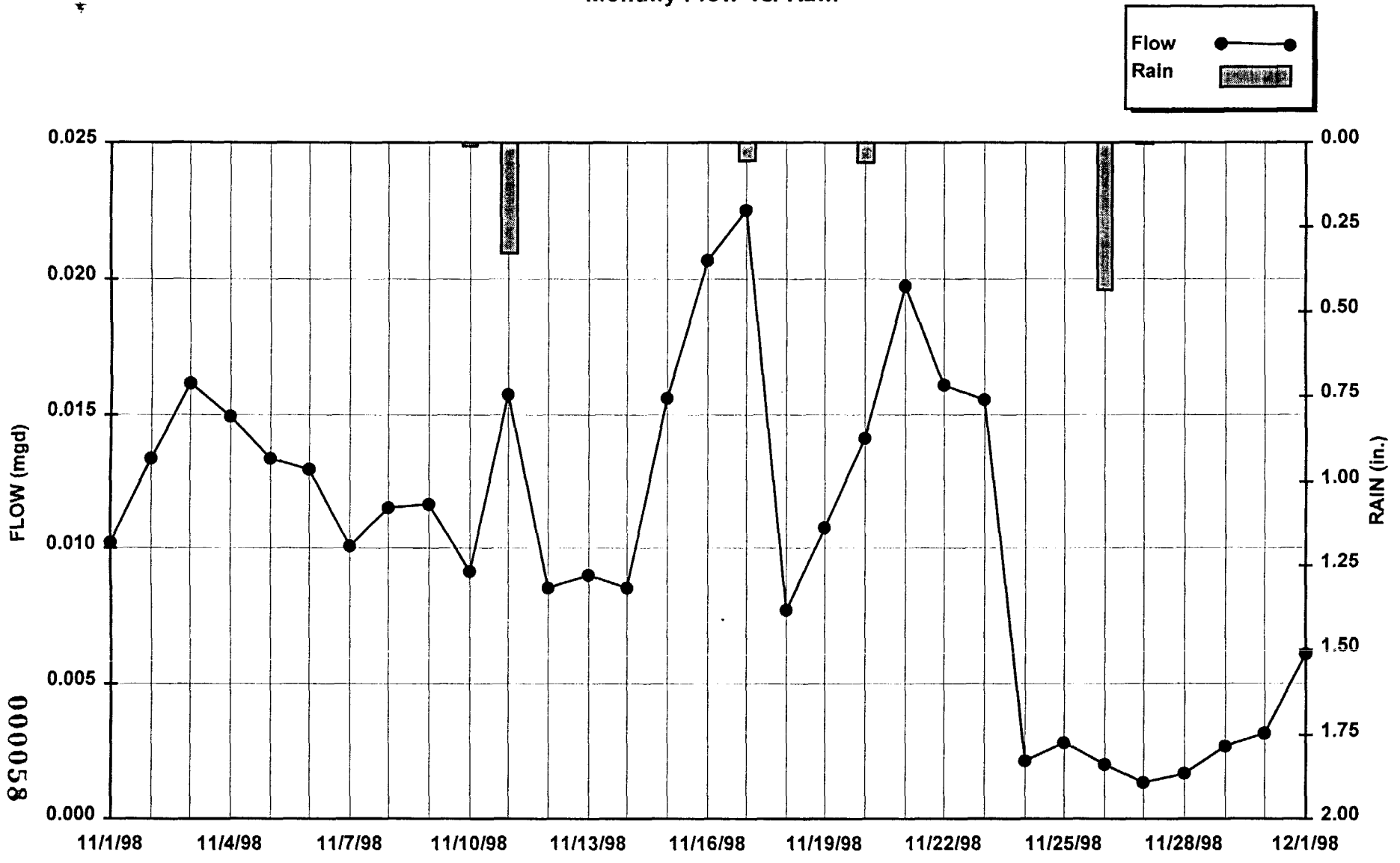
000057

863690754

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Monthly Flow Report (Flow2)

12/28/1998 9:40:18 AM

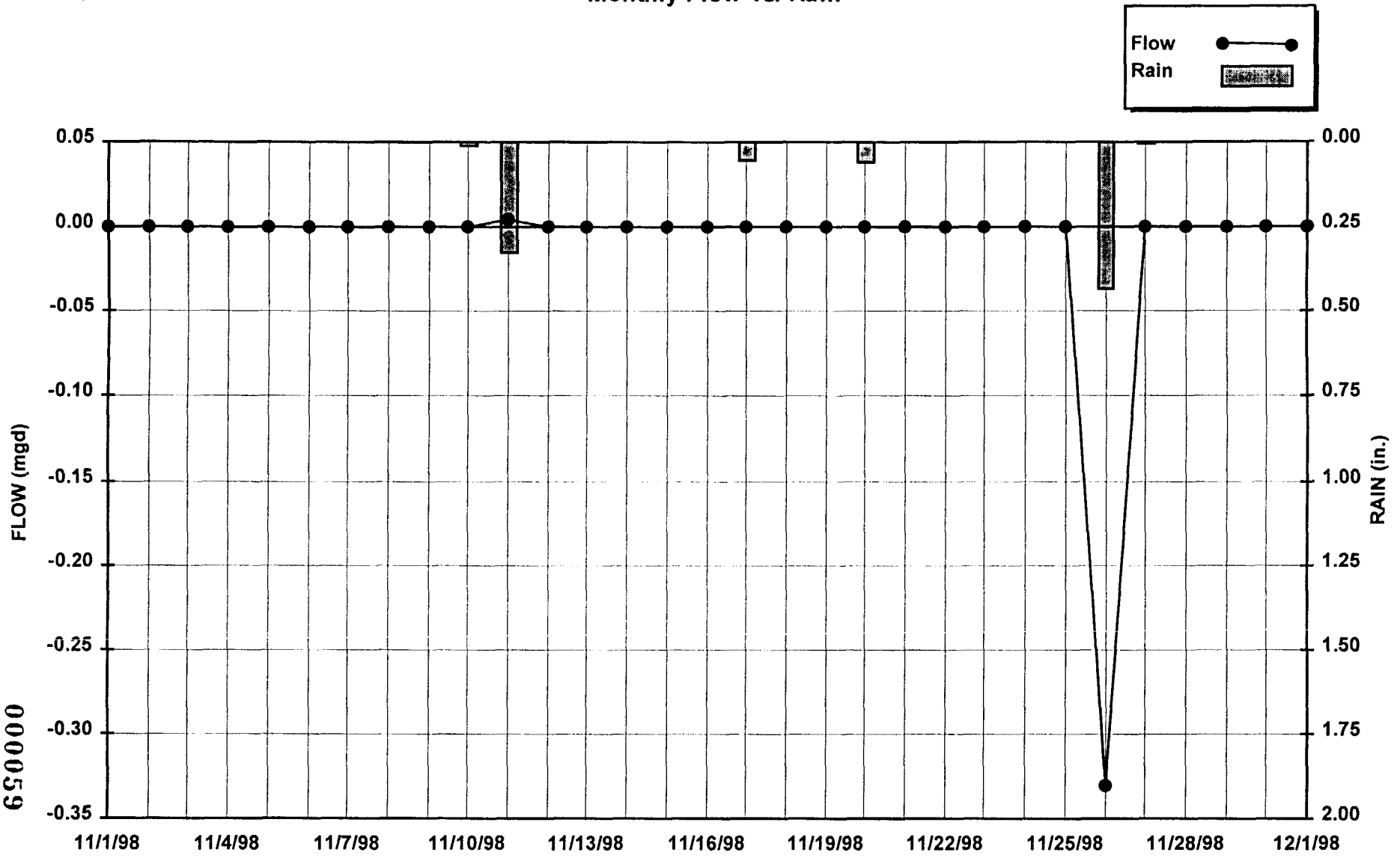
0000058

863690755

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST
Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02
Serial#: QTO

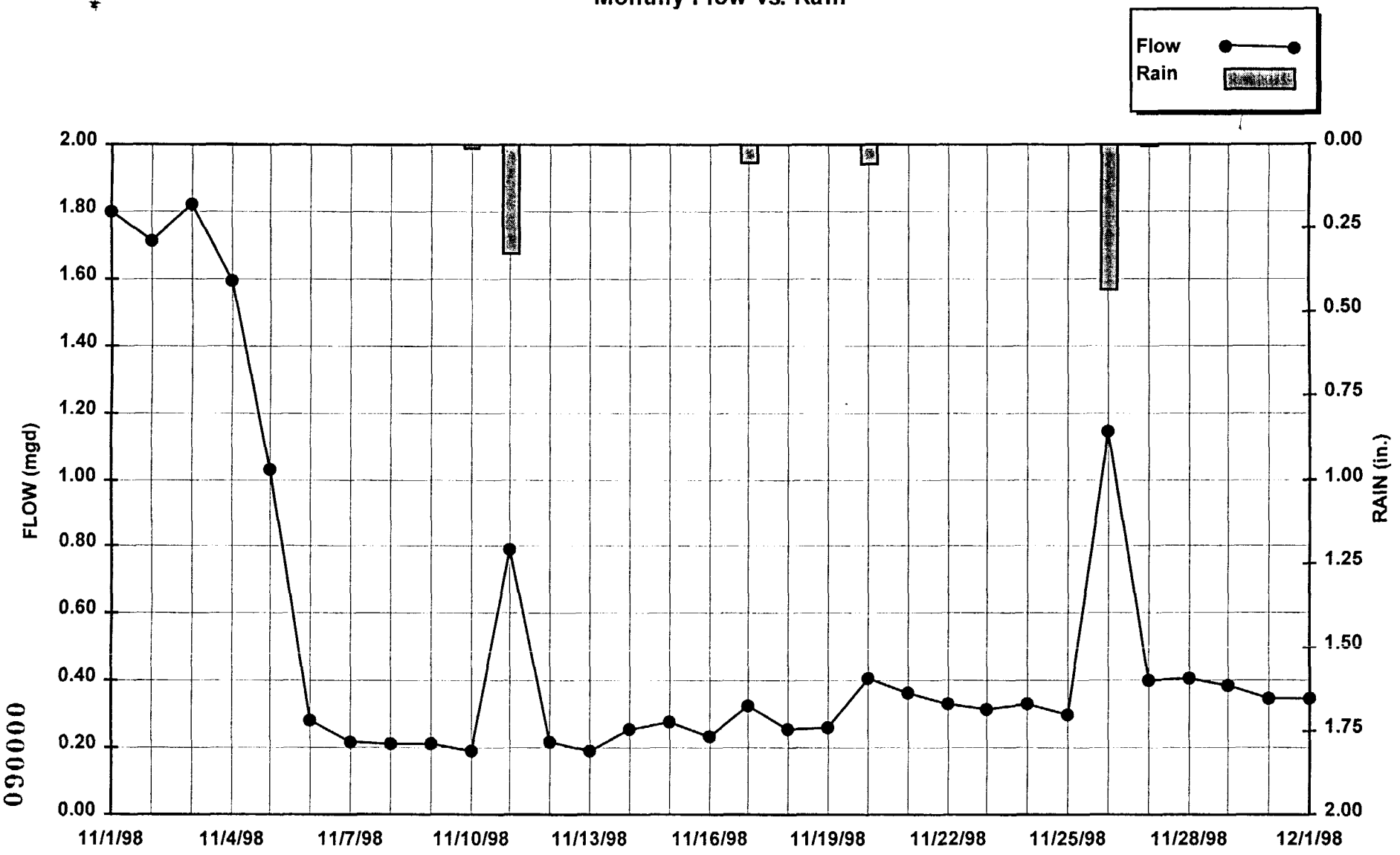
0000059

863690756

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Monthly Flow Report (Flow1)

12/28/1998 9:07:41 AM

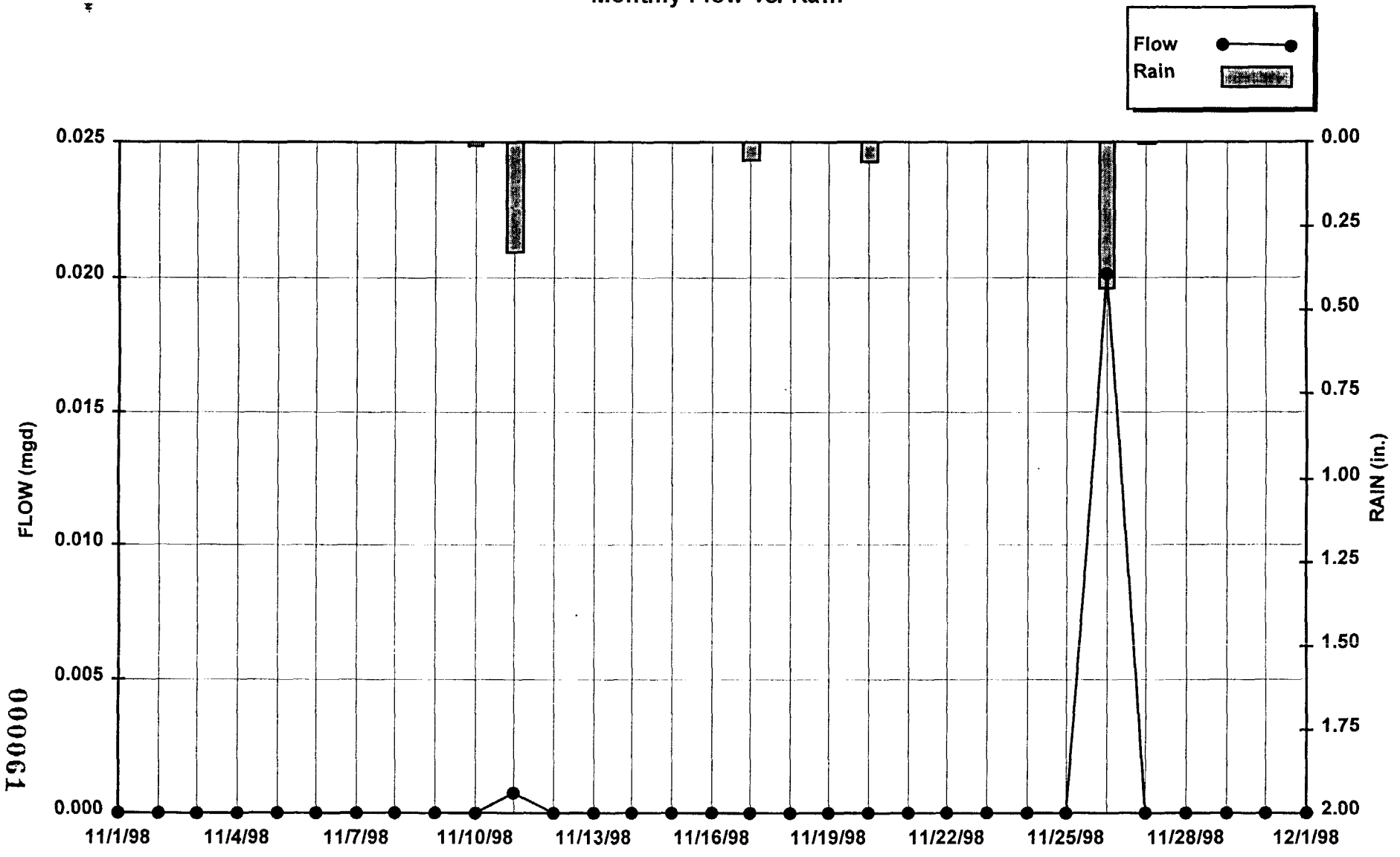
000060

863690757

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



000061

863690758

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

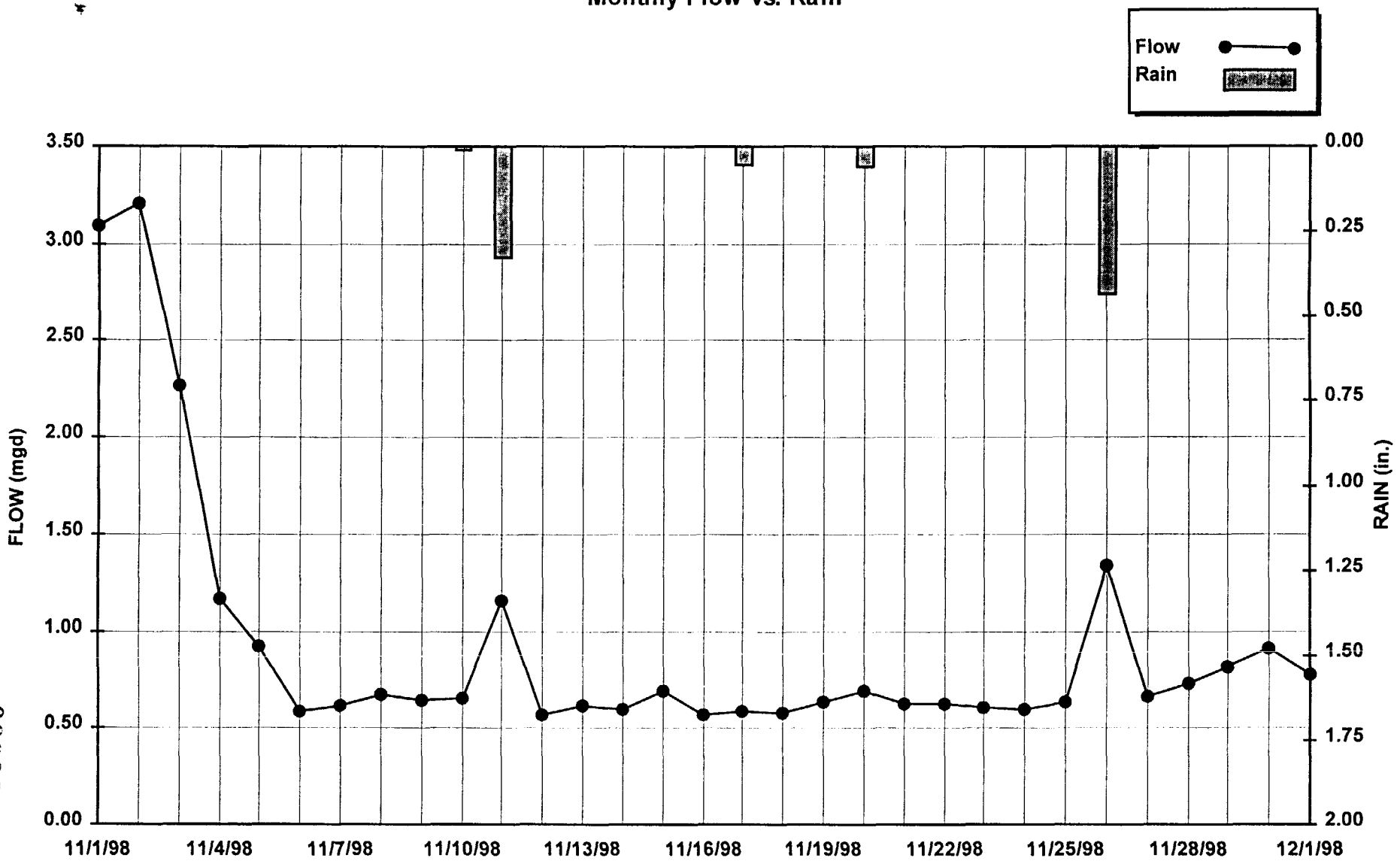
Monthly Flow Report (Flow2)

12/28/1998 9:38:06 AM

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Monthly Flow Report (Flow1)

12/28/1998 9:15:53 AM

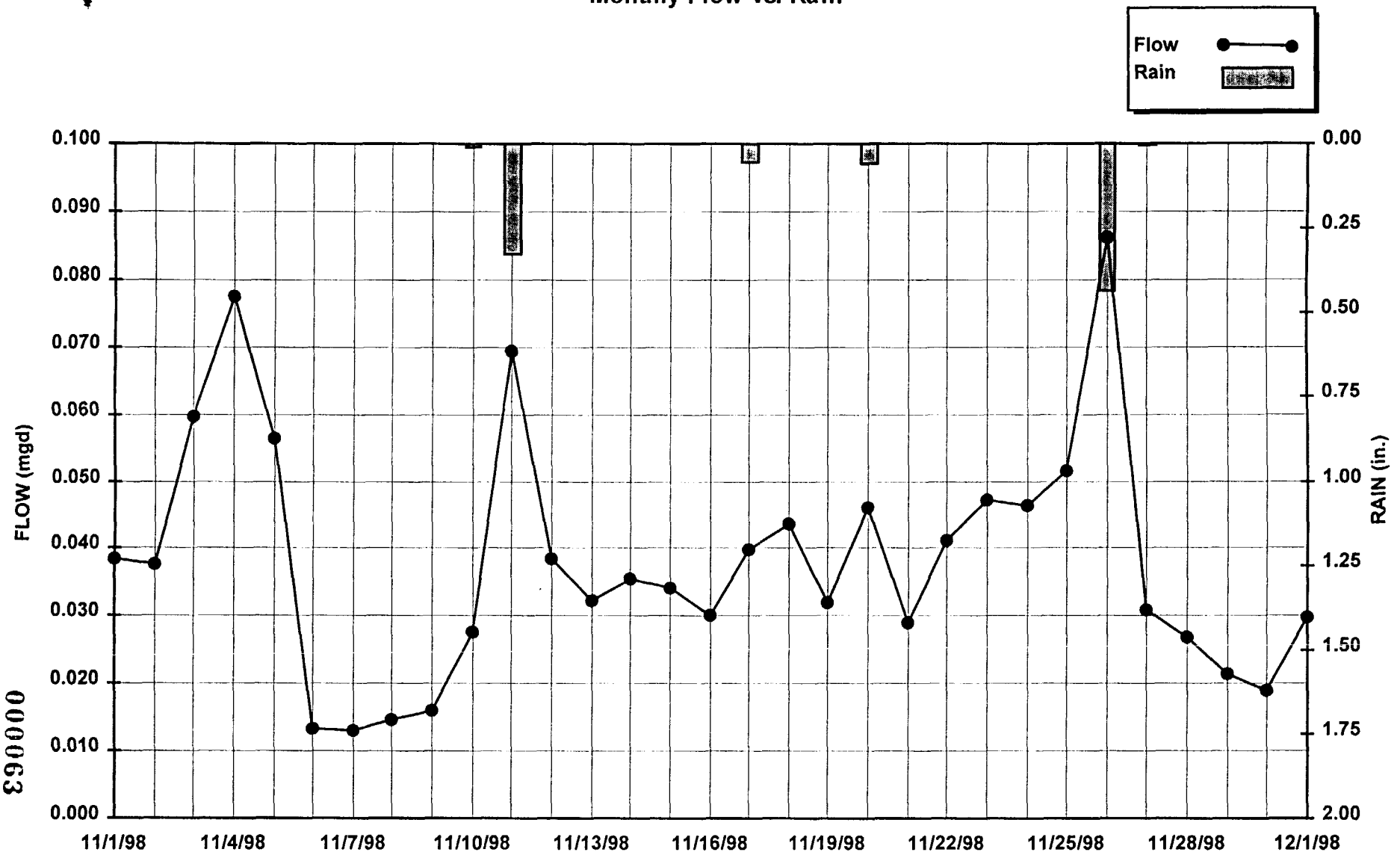
000062

863690759

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

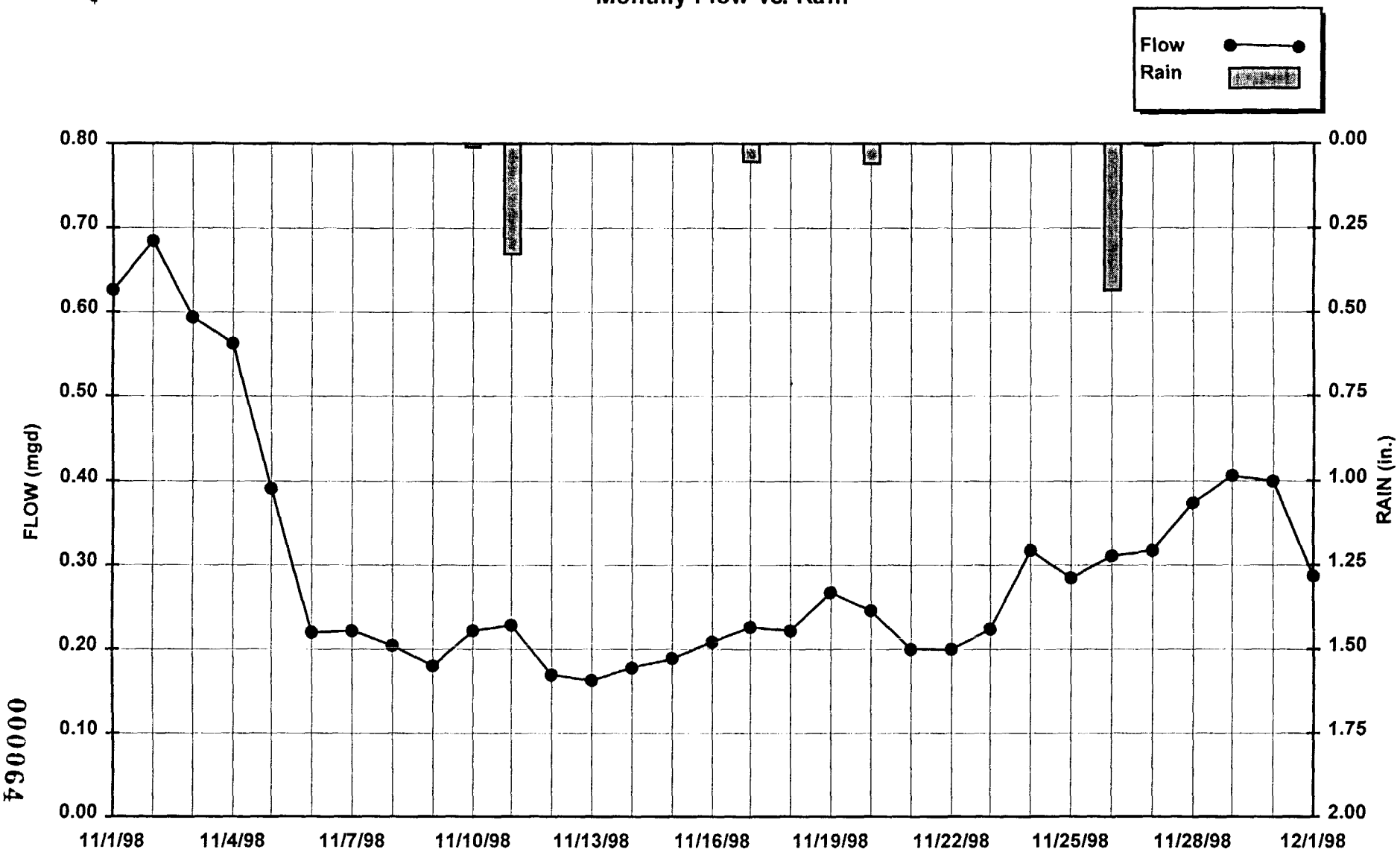
000063

863690760

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QU0

Monthly Flow Report (Flow1)

12/28/1998 9:06:36 AM

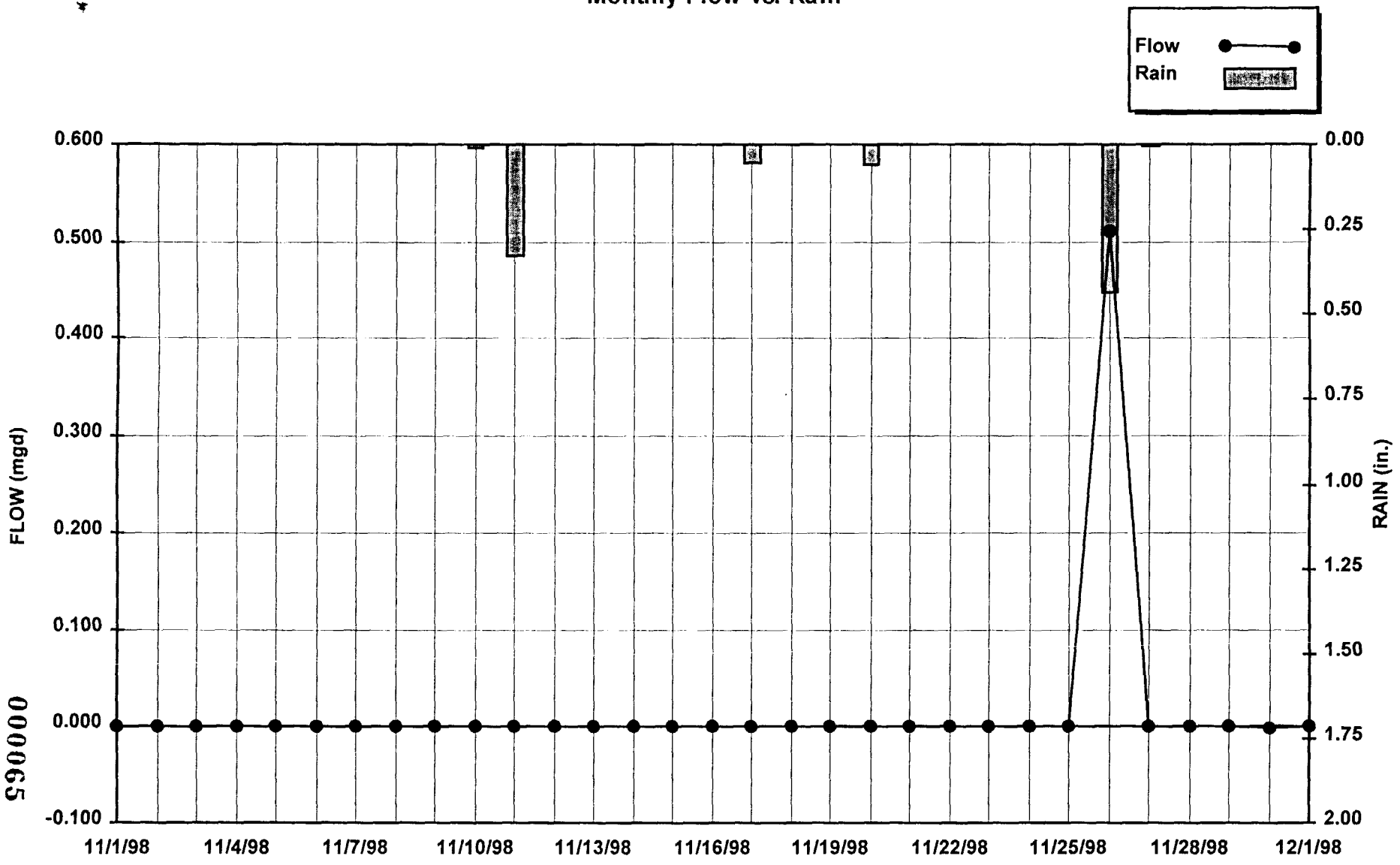
000064

863690761

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QU0

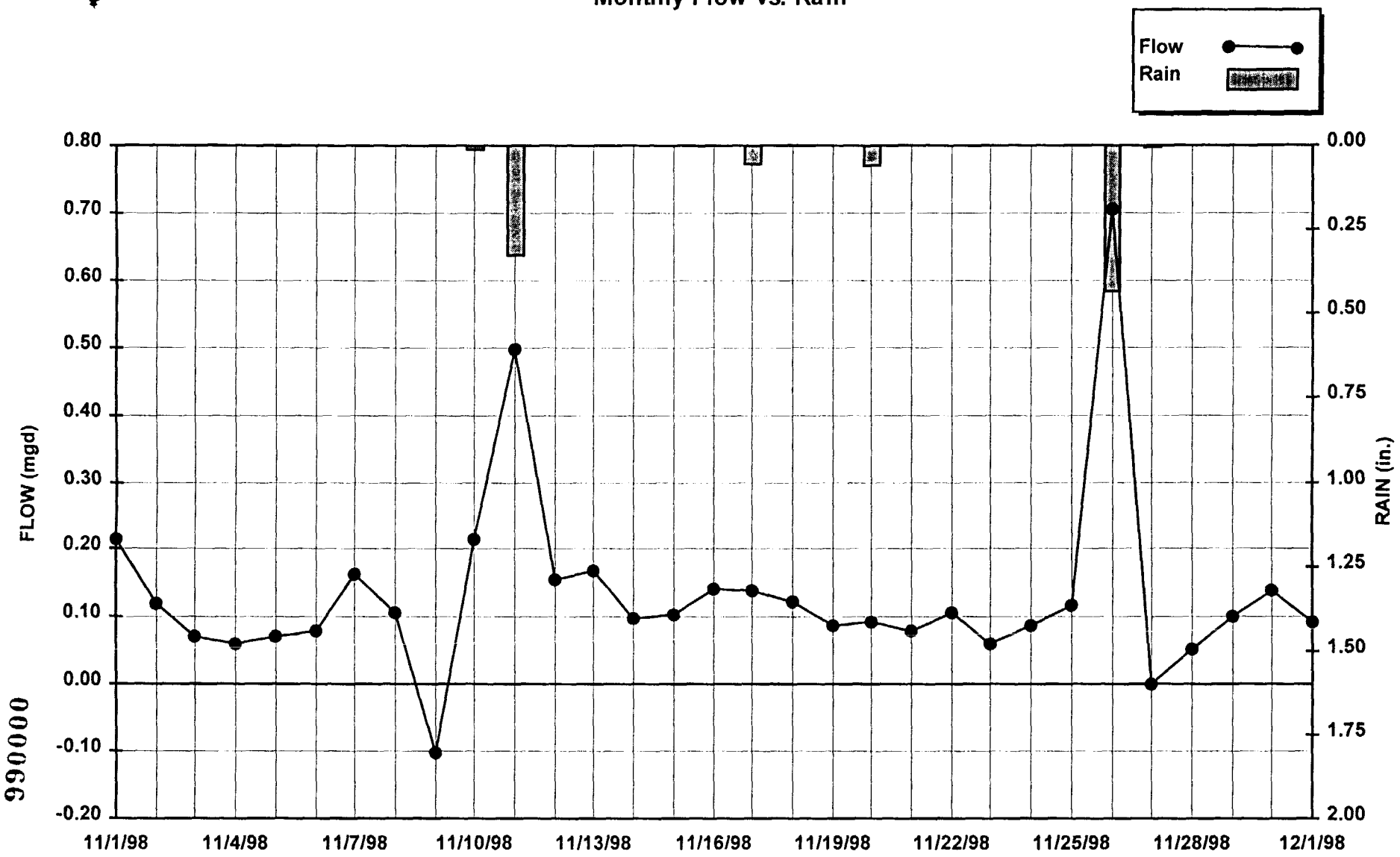
000065

863690762

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 022 - ROANOKE AVE
Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02
Serial#: QUZ

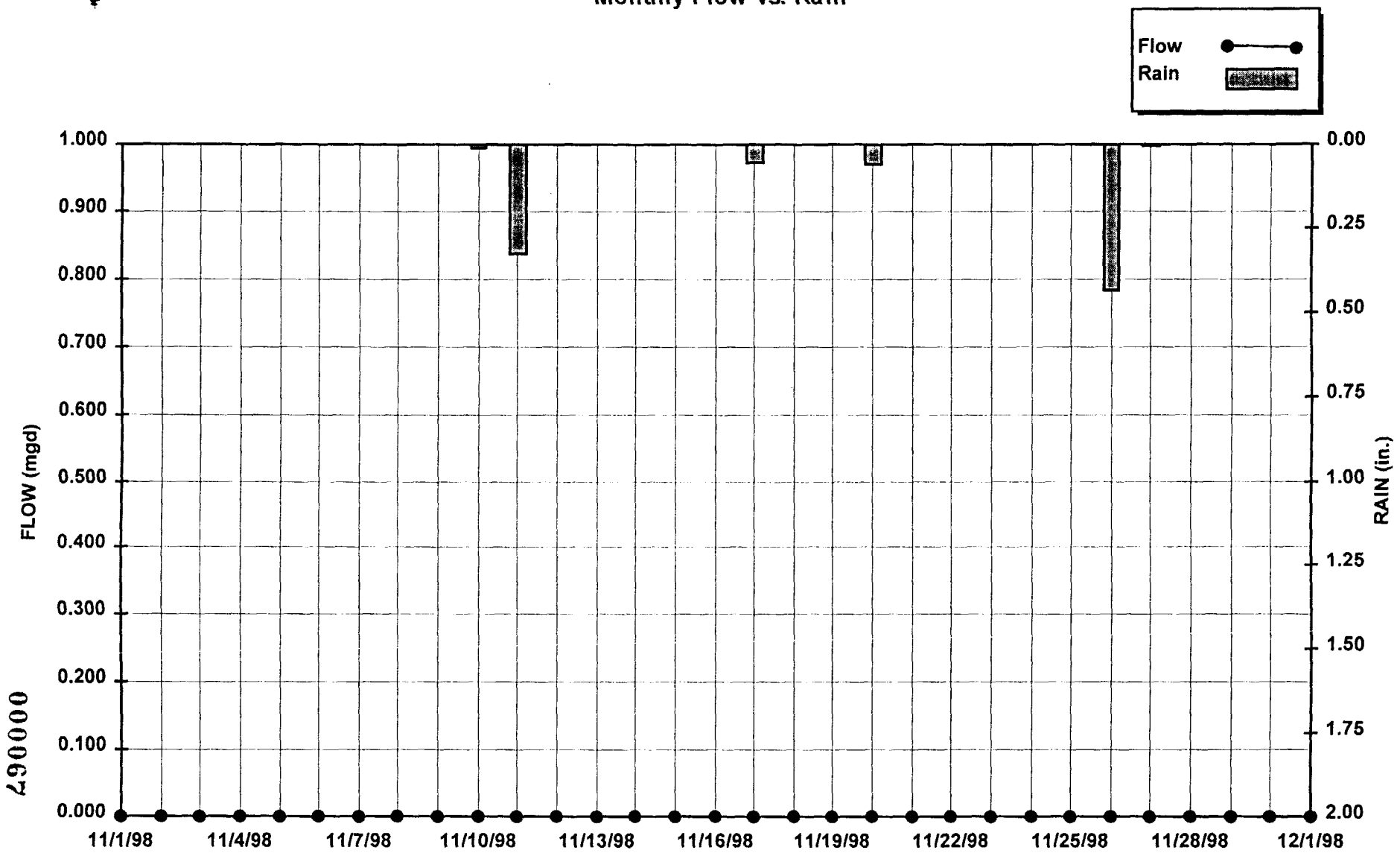
990000

863690763

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

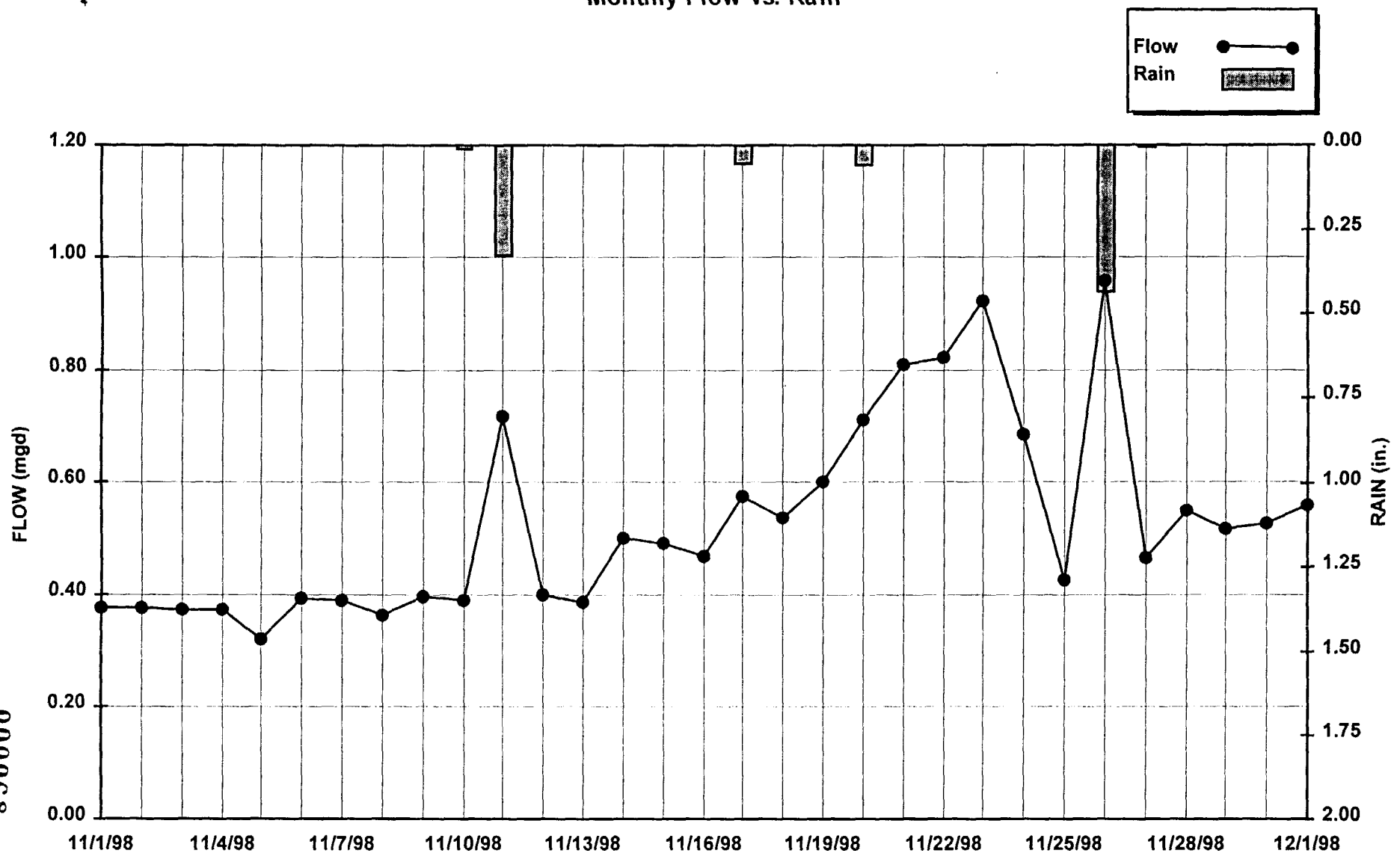
000067

863690764

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02

Serial#: QO4

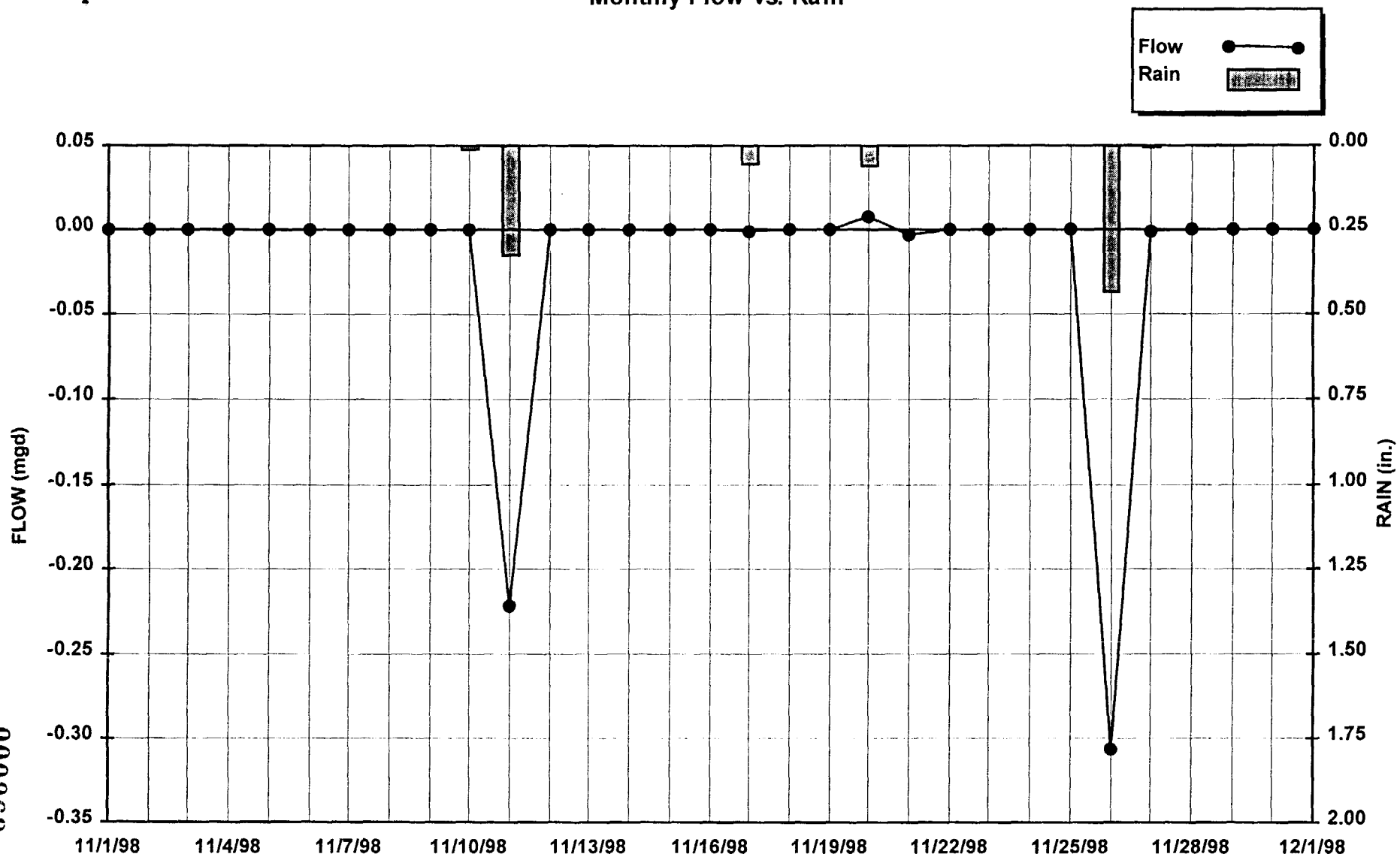
000068

863690765

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023B - ADAMS ST. overflow
Address: South St. and Jefferson St

910 F.M. VERSION: 1.02
Serial#: QPP

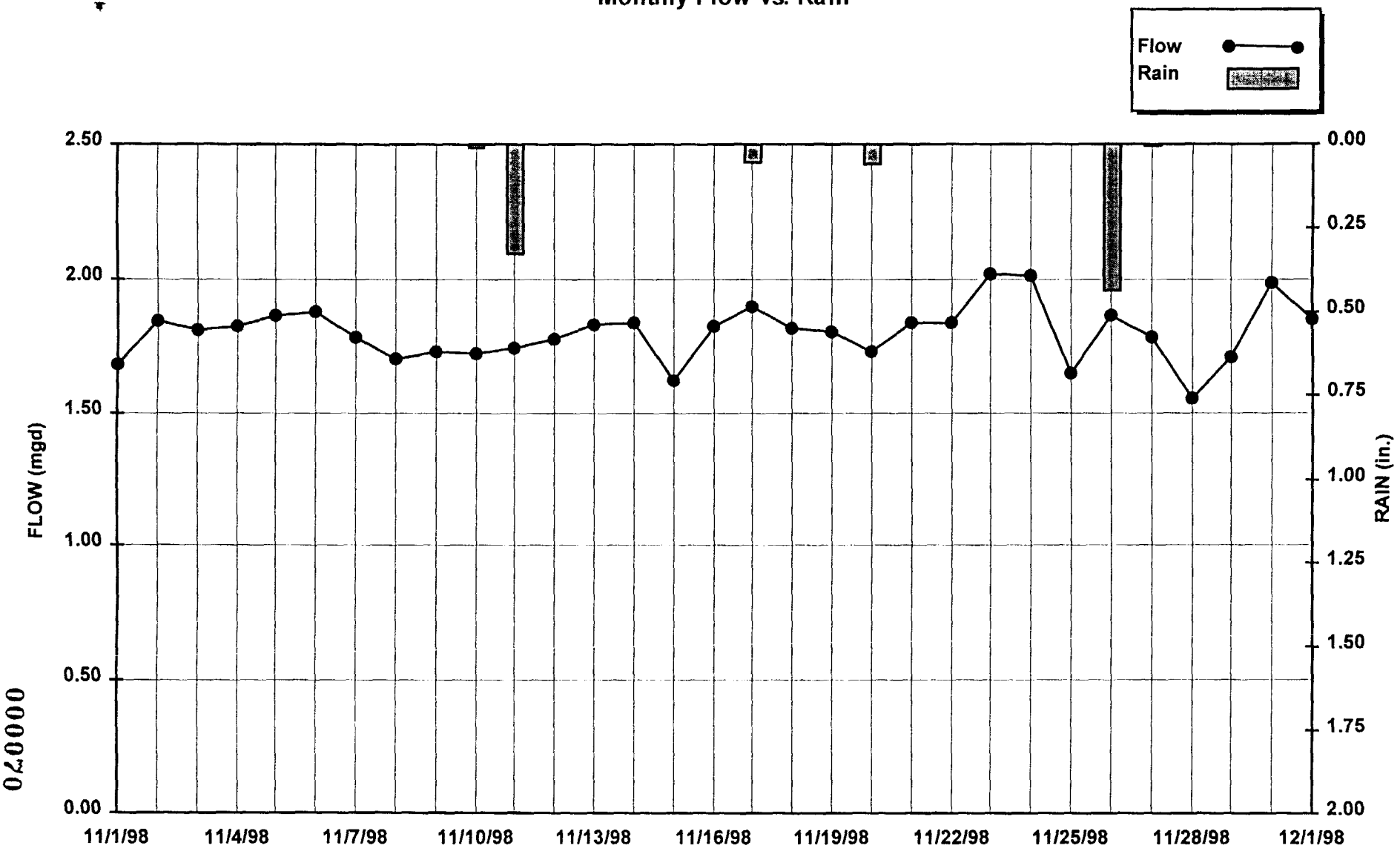
000069

863690766

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST
Address: South St. near Dawson St.

920 F.M. VERSION: 1.02
Serial#: QR4

Monthly Flow Report (Flow3)

12/28/1998 10:05:01 AM

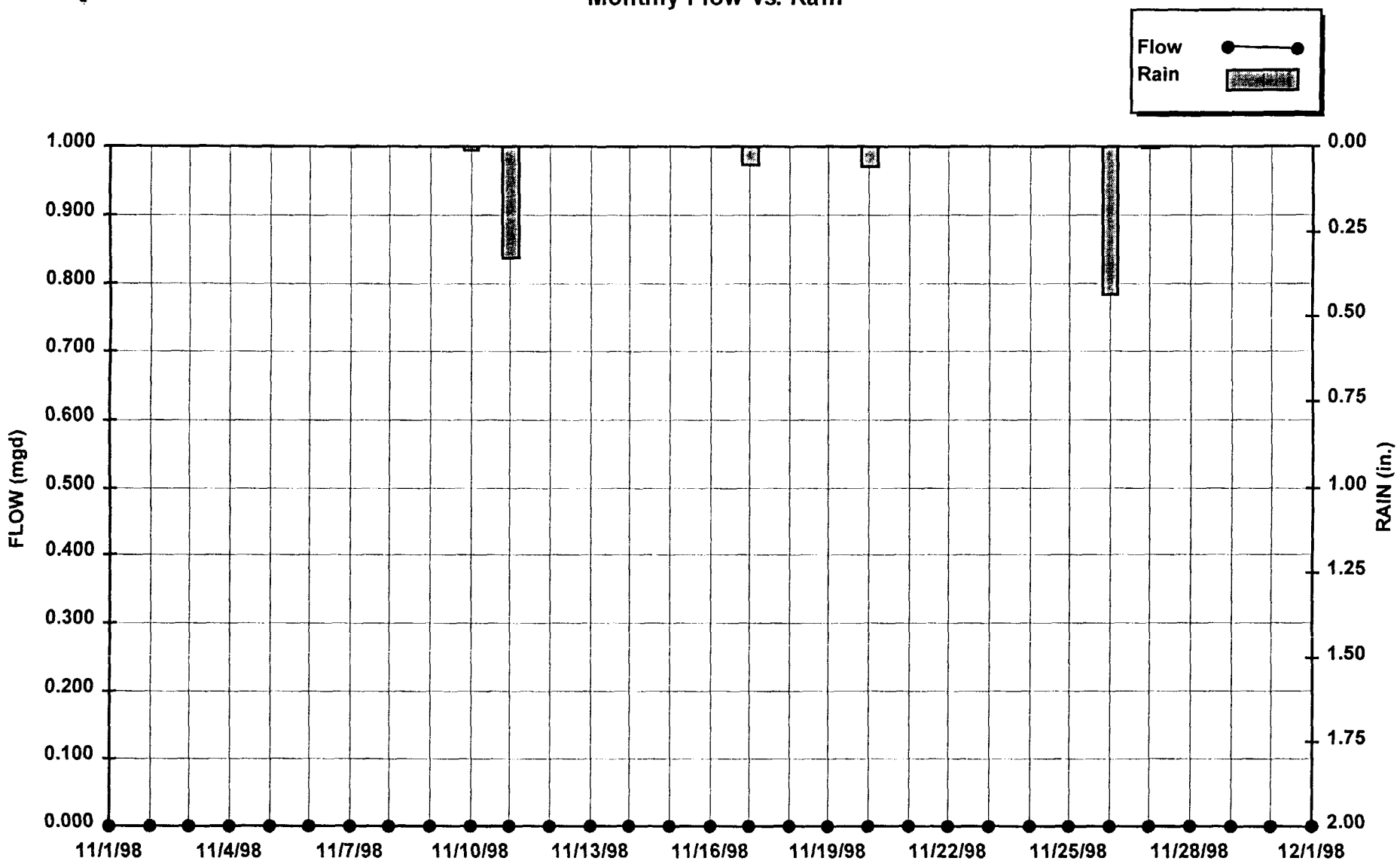
000070

863690767

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST
Address: South St. near Dawson St.

920 F.M. VERSION: 1.02
Serial#: QR4

Monthly Flow Report (Flow2)

12/28/1998 9:21:28 AM

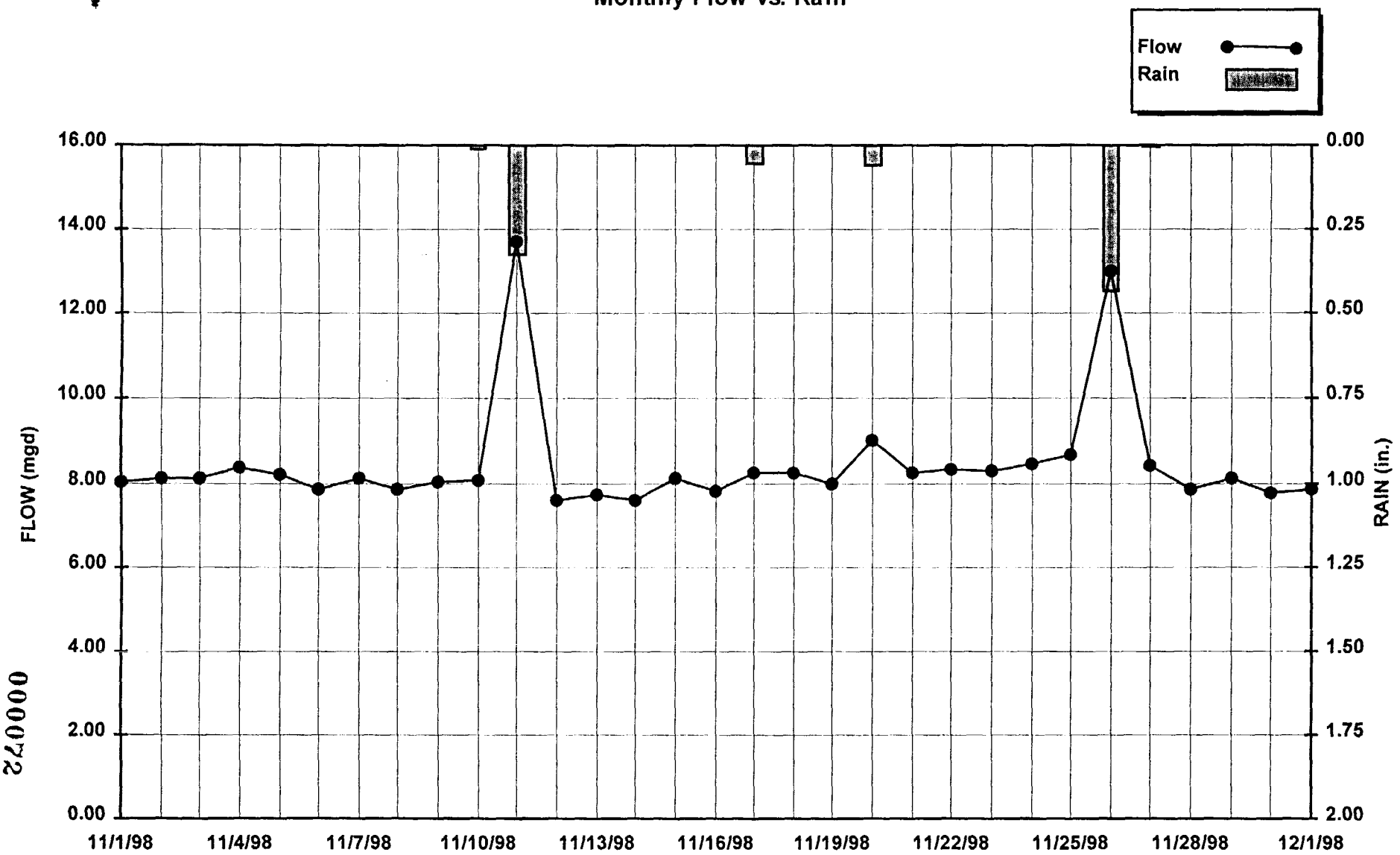
000071

863690768

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 Peddie St regulated
Address: Peddie Ditch

910 F.M. VERSION: 1.02
Serial#: QO7

Monthly Flow Report (Flow1)

12/28/1998 9:20:18 AM

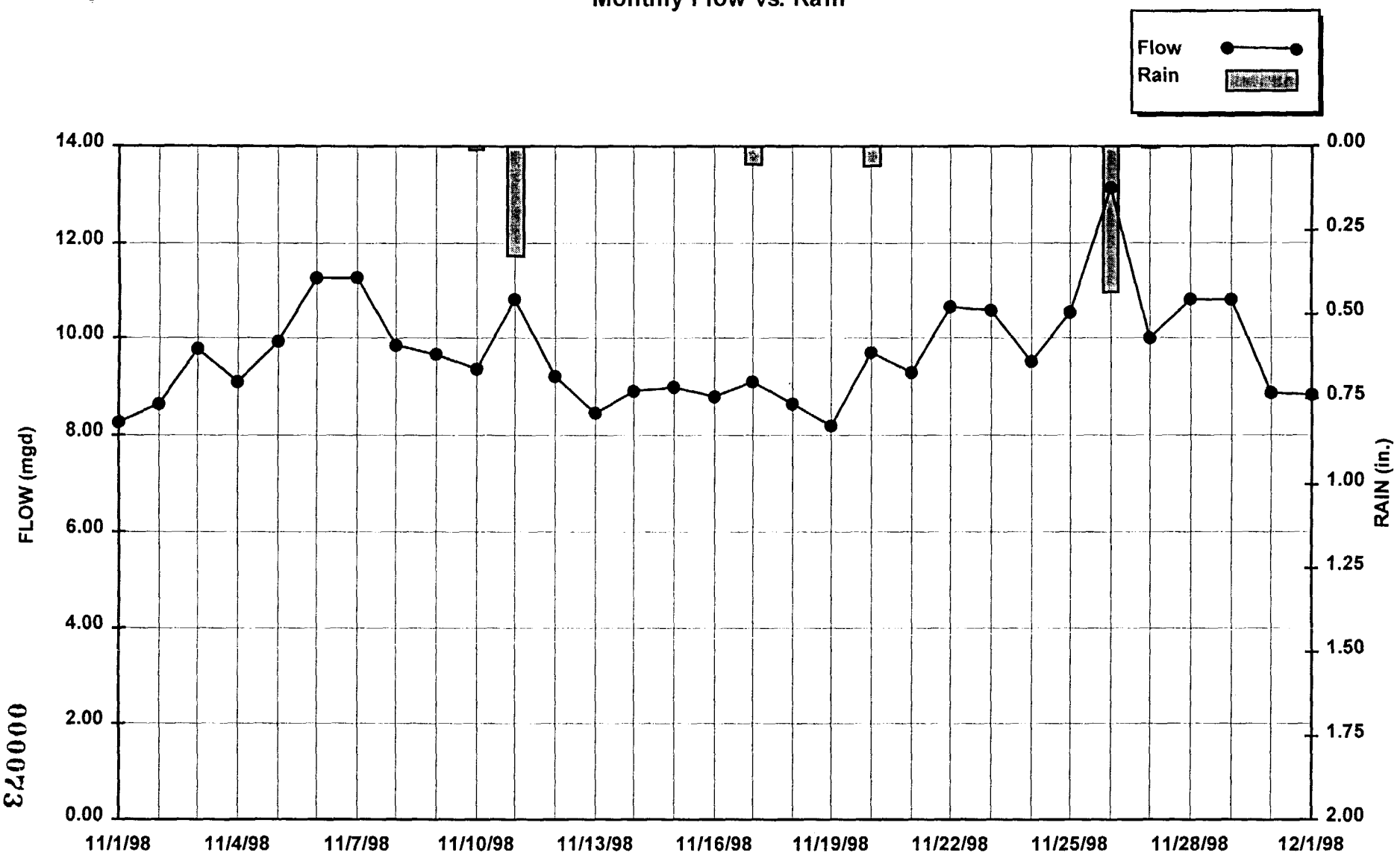
000072

863690769

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

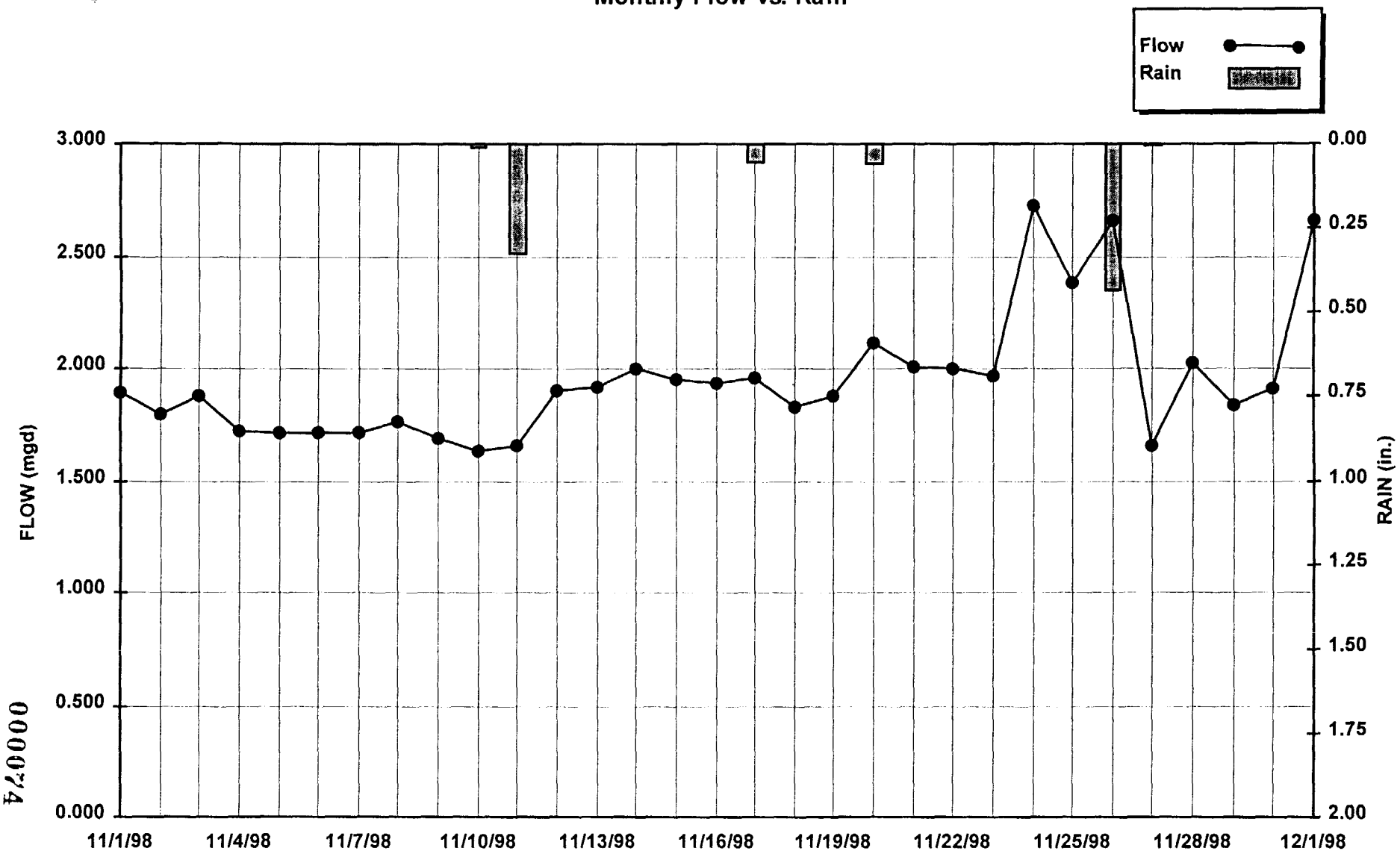
000073

863690770

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

Monthly Flow Report (Flow2)

12/28/1998 9:58:27 AM

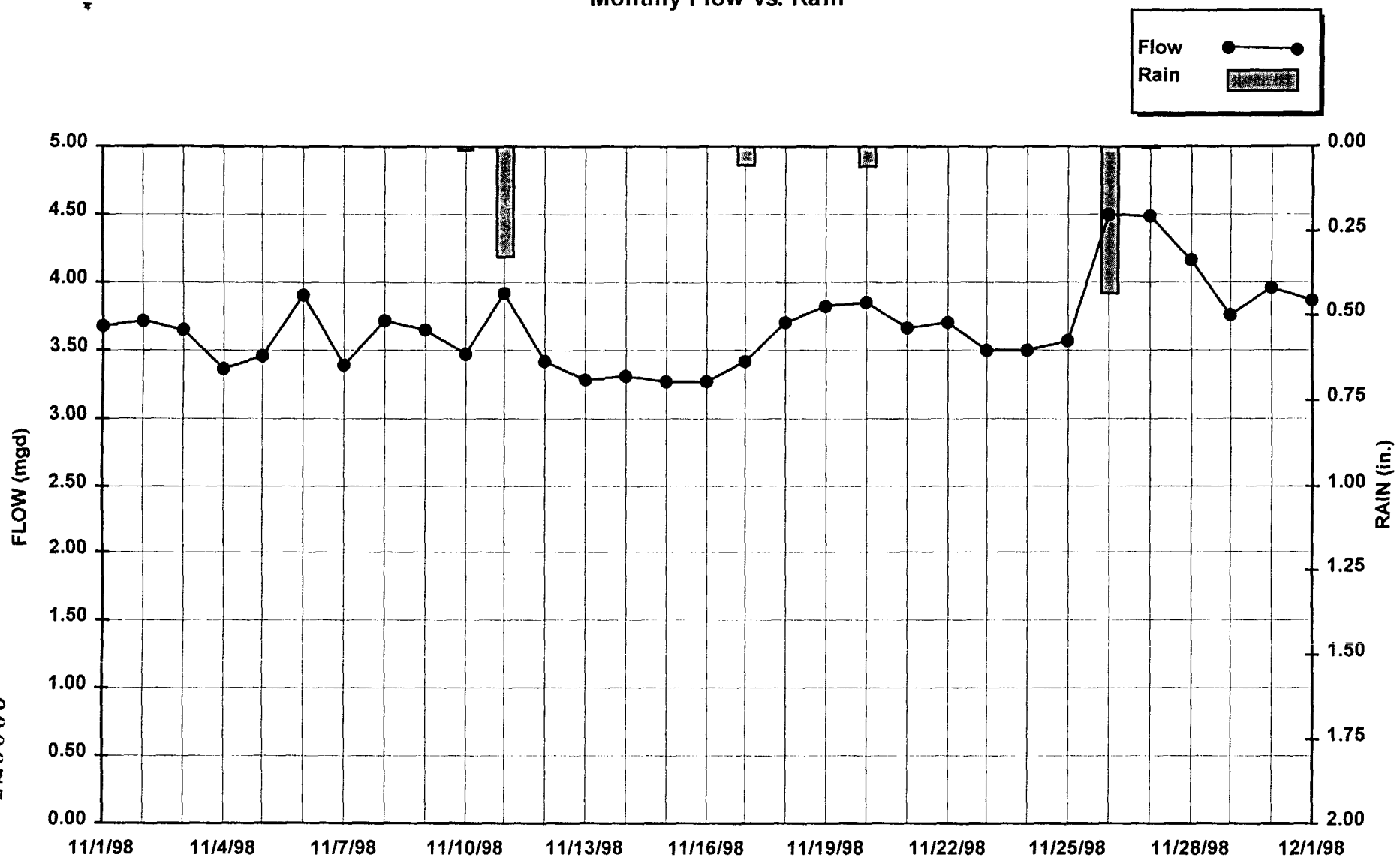
000074

863690771

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN regulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQV

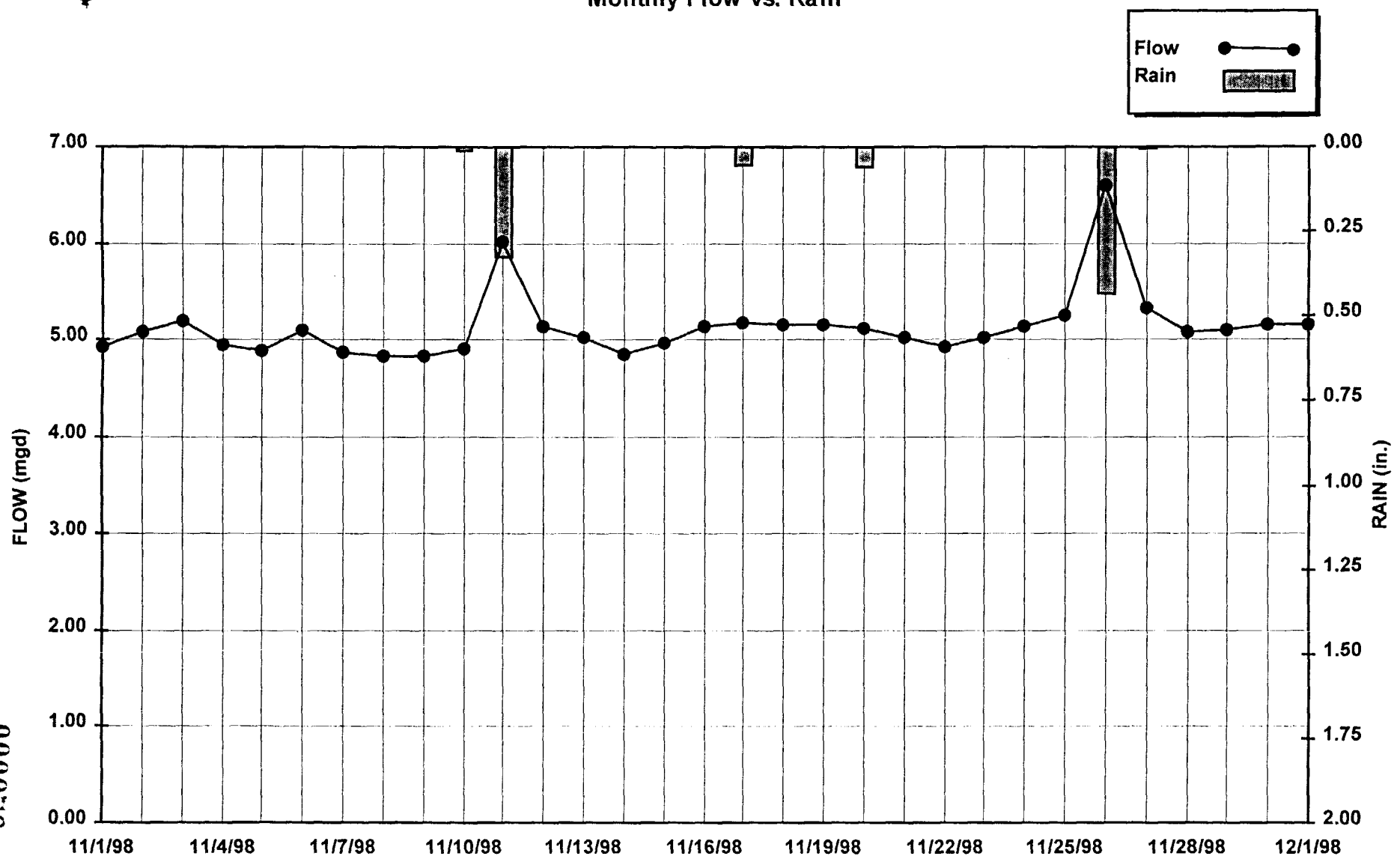
000075

863690772

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN unregulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQU

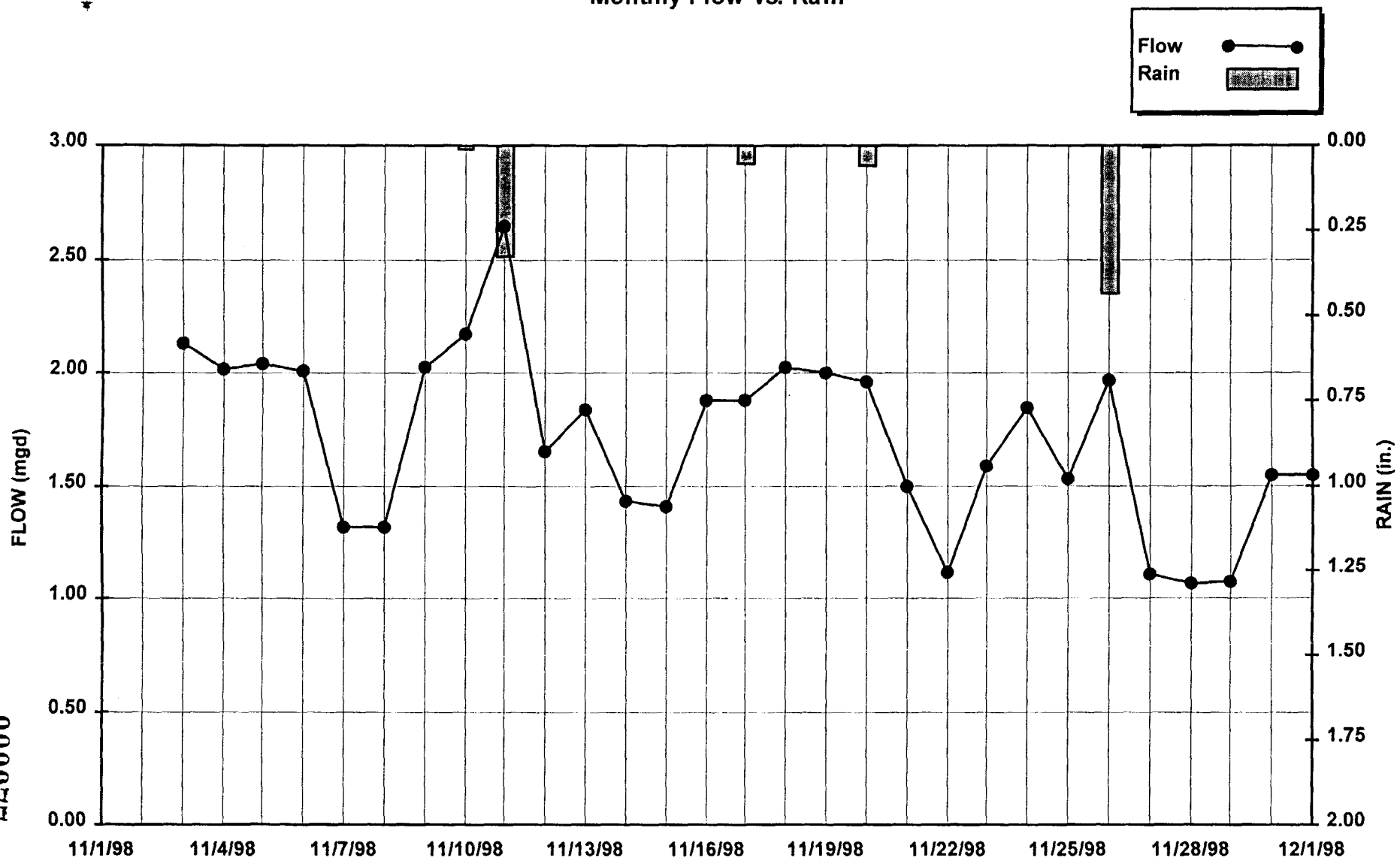
920000

863690773

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Monthly Flow Report (Flow1)

12/28/1998 9:00:17 AM

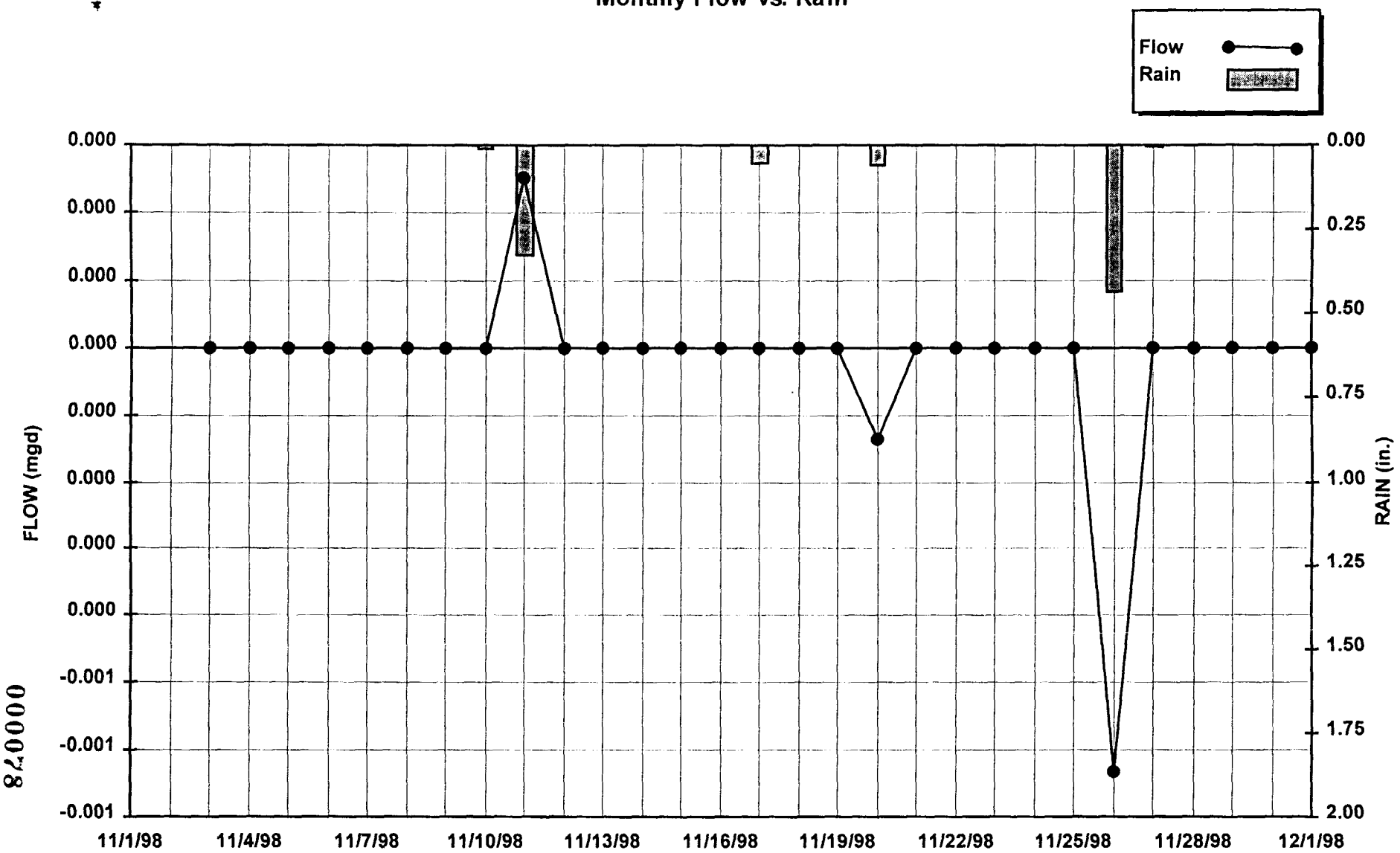
000077

863690774

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Monthly Flow Report (Flow2)

12/28/1998 9:33:37 AM

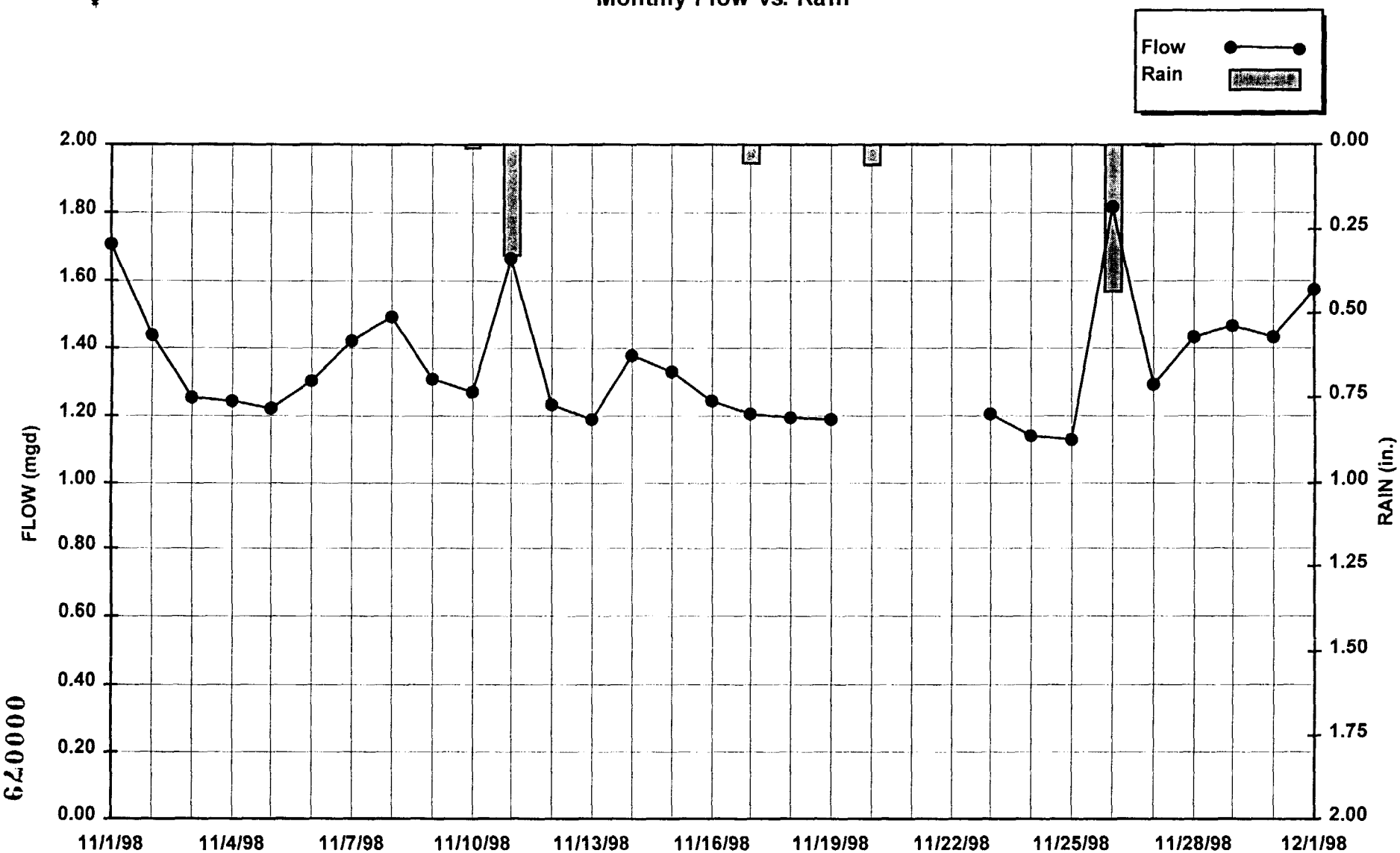
0000728

863690775

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

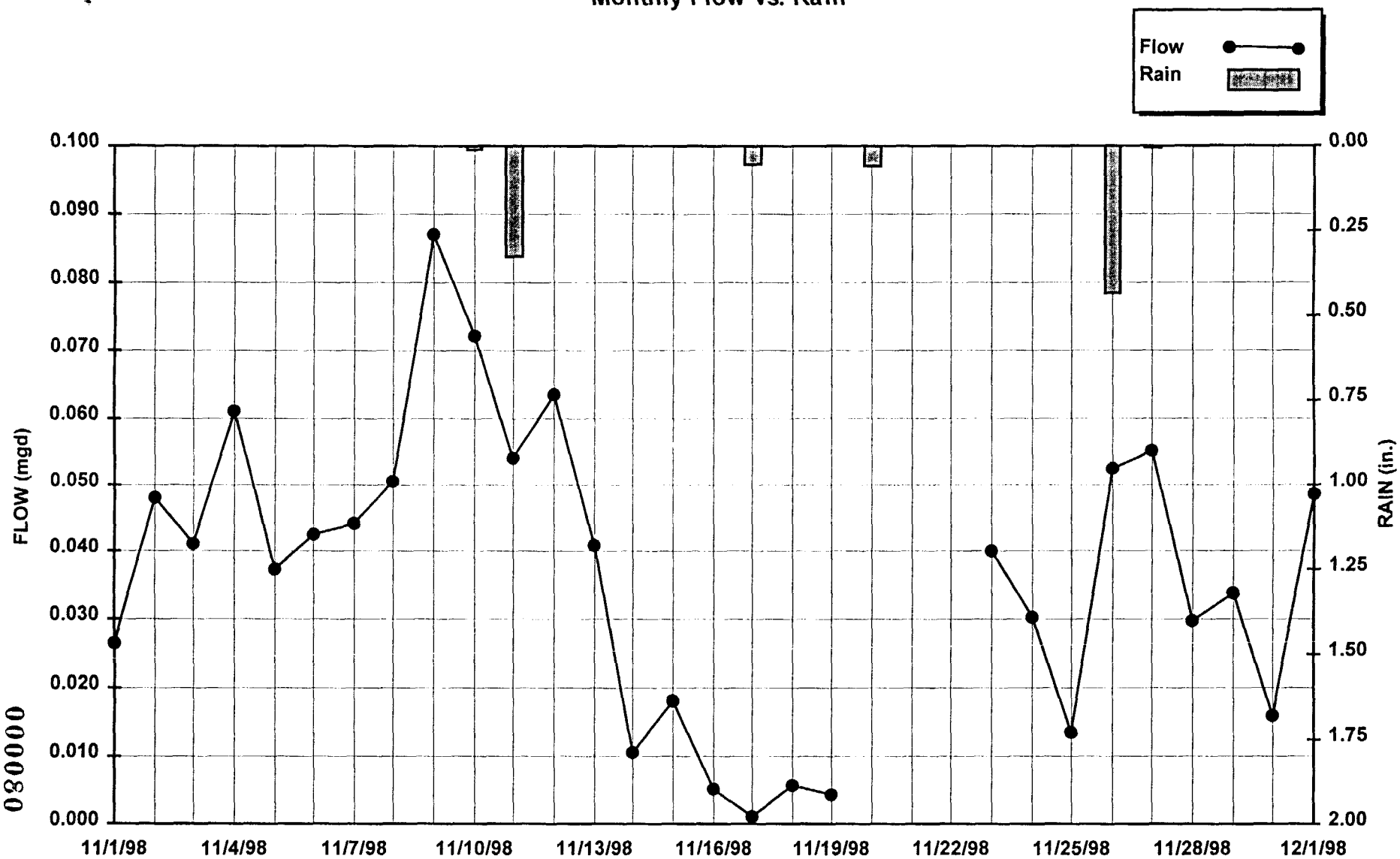
0000079

863690776

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

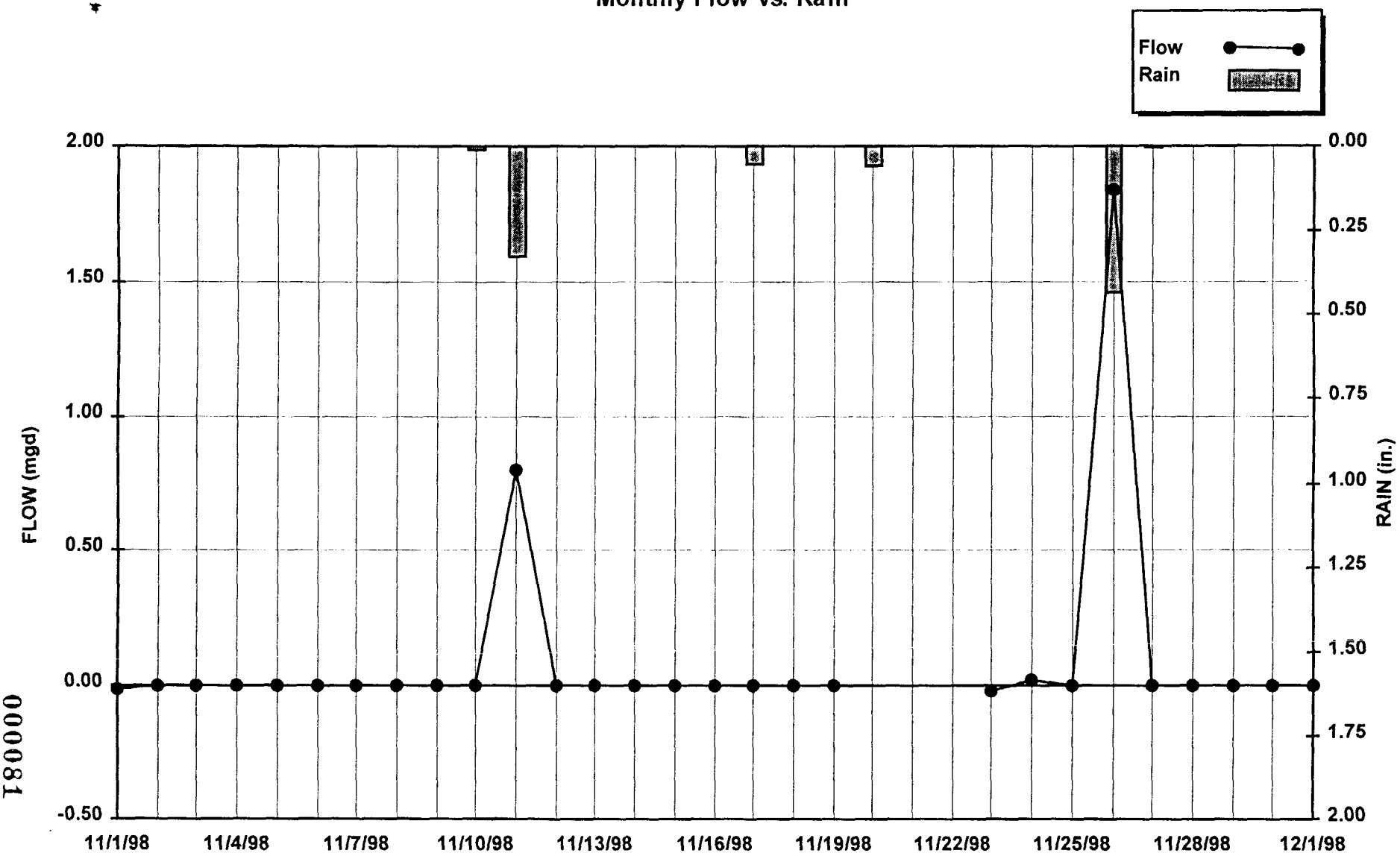
030000

863690777

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Monthly Flow Report (Flow3)

12/28/1998 10:21:33 AM

000081

863690778

Newark CSO Discharge Characterization Study 863690779

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 1 Rain Gauge

Address: Central Ave. and 15th St. RG-3, Water Supply Central Ave

49.25" H x 32.75" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98		.00
11/02/98	.15	.00
11/03/98	.15	.00
11/04/98	.14	.00
11/05/98	.14	.01
11/06/98	.14	.00
11/07/98	.15	.00
11/08/98	.15	.00
11/09/98	.15	.00
11/10/98	.16	.01
11/11/98	.33	.37
11/12/98	.18	.00
11/13/98	.16	.00
11/14/98	.15	.00
11/15/98	.14	.00
11/16/98	.13	.00
11/17/98	.14	.07
11/18/98	.14	.00
11/19/98	.16	.00
11/20/98	.17	.07
11/21/98	.18	.00
11/22/98	.17	.00
11/23/98	.18	.00
11/24/98	.17	.00
11/25/98	.17	.00
11/26/98	.35	.51
11/27/98	.15	.00
11/28/98	.15	.00
11/29/98	.14	.00
11/30/98	.14	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 2

Address: 9th Ave. and 15th St.

48.8" H x 33.4" W Egg Shaped

Rain Gauge

RG-3, Water Supply Central Ave

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.01
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.03	.37
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.07
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.07
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.10	.51
11/27/98	.00	.00
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 3 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

33" Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98		.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.08	.29
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.01	.07
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.01	.04
11/21/98	.01	.00
11/22/98	.01	.00
11/23/98	.01	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.19	.21
11/27/98	.00	.00
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 4 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

12" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98	.18	.00
11/02/98	.14	.00
11/03/98	.15	.00
11/04/98	.16	.00
11/05/98	.16	.00
11/06/98	.15	.00
11/07/98	.17	.00
11/08/98	.16	.00
11/09/98	.15	.00
11/10/98	.13	.01
11/11/98	.13	.29
11/12/98	.14	.00
11/13/98	.14	.00
11/14/98	.16	.00
11/15/98	.16	.00
11/16/98	.14	.00
11/17/98	.12	.07
11/18/98	.15	.00
11/19/98	.19	.00
11/20/98	.17	.04
11/21/98	.15	.00
11/22/98	.17	.00
11/23/98	.16	.00
11/24/98	.16	.00
11/25/98	.17	.00
11/26/98	.20	.21
11/27/98	.20	.00
11/28/98	.20	.00
11/29/98	.20	.00
11/30/98	.15	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 — Rain Gauge

Address: 14TH ST. & HEDDEN PL. — RG-1, Roberto Clemente School

33" RCP Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98		.00
11/02/98		.00
11/03/98		.00
11/04/98		.00
11/05/98		.00
11/06/98		.00
11/07/98		.00
11/08/98		.00
11/09/98		.00
11/10/98	.00	.01
11/11/98	.01	.29
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.07
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.04
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.08	.21
11/27/98	.00	.00
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 — Rain Gauge

Address: 14TH ST. & HEDDEN PL. — RG-1, Roberto Clemente School

18.75" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98		.00
11/02/98		.00
11/03/98		.00
11/04/98		.00
11/05/98		.00
11/06/98		.00
11/07/98		.00
11/08/98		.00
11/09/98		.00
11/10/98	.02	.01
11/11/98	.01	.29
11/12/98	.01	.00
11/13/98	.01	.00
11/14/98	.01	.00
11/15/98	.00	.00
11/16/98	.01	.00
11/17/98	.01	.07
11/18/98	.01	.00
11/19/98	.01	.00
11/20/98	.01	.04
11/21/98	.01	.00
11/22/98	.02	.00
11/23/98	.04	.00
11/24/98	.04	.00
11/25/98	.04	.00
11/26/98	.09	.21
11/27/98	.05	.00
11/28/98	.07	.00
11/29/98	.05	.00
11/30/98	.06	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 7 | Rain Gauge

Address: 6TH ST. & 13TH ST. | RG-1, Roberto Clemente School

30" RCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98	1.45	.00
11/02/98	1.36	.00
11/03/98	1.38	.00
11/04/98	1.39	.00
11/05/98	1.40	.00
11/06/98	1.38	.00
11/07/98	1.45	.00
11/08/98	1.54	.00
11/09/98	1.46	.00
11/10/98	1.48	.01
11/11/98	1.51	.29
11/12/98	1.46	.00
11/13/98	1.43	.00
11/14/98	1.45	.00
11/15/98	1.49	.00
11/16/98	1.43	.00
11/17/98	1.45	.07
11/18/98	1.39	.00
11/19/98	1.42	.00
11/20/98	1.38	.04
11/21/98	1.44	.00
11/22/98	1.53	.00
11/23/98	1.46	.00
11/24/98	1.43	.00
11/25/98	1.45	.00
11/26/98	1.54	.21
11/27/98	1.39	.00
11/28/98	1.37	.00
11/29/98	1.41	.00
11/30/98	1.34	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

24.25" VCP

Rain Gauge

RG-1, Roberto Clemente School

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
11/01/98	3.35	.00
11/02/98	3.21	.00
11/03/98	3.16	.00
11/04/98	3.15	.00
11/05/98	3.09	.00
11/06/98	3.08	.00
11/07/98	3.25	.00
11/08/98	3.31	.00
11/09/98	3.10	.00
11/10/98	3.14	.01
11/11/98	3.27	.29
11/12/98	3.12	.00
11/13/98	3.05	.00
11/14/98	3.21	.00
11/15/98	3.37	.00
11/16/98	3.28	.00
11/17/98	3.16	.07
11/18/98	3.12	.00
11/19/98	3.15	.00
11/20/98	3.18	.04
11/21/98	3.42	.00
11/22/98	3.57	.00
11/23/98	3.24	.00
11/24/98	3.10	.00
11/25/98	3.18	.00
11/26/98	3.53	.21
11/27/98	3.13	.00
11/28/98	3.17	.00
11/29/98	3.24	.00
11/30/98	3.07	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4 | 910 F.M. VERSION: 1.02

Address: Wilson and Ave. P | Serial#: QT1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.06	.00
11/02/98	.05	.00
11/03/98	.05	.00
11/04/98	.04	.00
11/05/98	.15	.00
11/06/98	.22	.00
11/07/98	.07	.00
11/08/98	.06	.00
11/09/98	.04	.00
11/10/98	.10	.01
11/11/98	.21	.33
11/12/98	.08	.00
11/13/98	.17	.00
11/14/98	.27	.00
11/15/98	.24	.00
11/16/98	.21	.00
11/17/98	.91	.05
11/18/98	.41	.00
11/19/98	.15	.00
11/20/98	.06	.06
11/21/98	.05	.00
11/22/98	.15	.00
11/23/98	.17	.00
11/24/98	.17	.00
11/25/98	.08	.00
11/26/98	.14	.43
11/27/98	.04	.01
11/28/98	.04	.00
11/29/98	.04	.00
11/30/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 2 910 F.M. VERSION: 1.02

Address: Weequahic Park Serial#: QUN

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.01	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.42	.06
11/21/98	.77	.00
11/22/98	.78	.00
11/23/98	.68	.00
11/24/98	.71	.00
11/25/98	.82	.00
11/26/98	.89	.43
11/27/98	.72	.01
11/28/98	.75	.00
11/29/98	.74	.00
11/30/98	.76	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 3 | 910 F.M. VERSION: 1.02

Address: Jabez Ave. near Backus St. | Serial#: QTZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	3.01	.00
11/02/98	3.00	.00
11/03/98	3.18	.00
11/04/98	3.14	.00
11/05/98	3.14	.00
11/06/98	3.05	.00
11/07/98	3.12	.00
11/08/98	3.07	.00
11/09/98	3.10	.00
11/10/98	3.17	.01
11/11/98	3.86	.33
11/12/98	3.39	.00
11/13/98	3.34	.00
11/14/98	3.18	.00
11/15/98	3.41	.00
11/16/98	3.15	.00
11/17/98	3.41	.05
11/18/98	3.29	.00
11/19/98	3.44	.00
11/20/98	3.52	.06
11/21/98	3.31	.00
11/22/98	3.23	.00
11/23/98	3.36	.00
11/24/98	3.14	.00
11/25/98	3.21	.00
11/26/98	3.92	.43
11/27/98	3.00	.01
11/28/98	3.11	.00
11/29/98	3.01	.00
11/30/98	3.37	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Newark 1 910 F.M. VERSION: 1.02

Address: Serial#: QXF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98		.00
11/03/98	1.51	.00
11/04/98	1.36	.00
11/05/98	1.31	.00
11/06/98	1.35	.00
11/07/98	1.32	.00
11/08/98	1.33	.00
11/09/98	1.26	.00
11/10/98	1.33	.01
11/11/98	1.45	.33
11/12/98	1.43	.00
11/13/98	1.35	.00
11/14/98	1.35	.00
11/15/98	1.34	.00
11/16/98	1.36	.00
11/17/98	1.32	.05
11/18/98	1.35	.00
11/19/98	1.33	.00
11/20/98	1.24	.06
11/21/98	1.30	.00
11/22/98	1.35	.00
11/23/98	1.39	.00
11/24/98	1.38	.00
11/25/98	1.40	.00
11/26/98	1.52	.43
11/27/98	1.38	.01
11/28/98	1.34	.00
11/29/98	1.32	.00
11/30/98	1.34	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4 | 910 F.M. VERSION: 1.02

Address: Wilson and Ave. P | Serial#: QT1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98		.00
11/03/98		.00
11/04/98		.00
11/05/98		.00
11/06/98		.00
11/07/98		.00
11/08/98		.00
11/09/98		.00
11/10/98		.01
11/11/98		.33
11/12/98		.00
11/13/98		.00
11/14/98		.00
11/15/98		.00
11/16/98		.00
11/17/98		.05
11/18/98		.00
11/19/98		.00
11/20/98		.06
11/21/98		.00
11/22/98		.00
11/23/98		.00
11/24/98		.00
11/25/98		.00
11/26/98		.43
11/27/98		.01
11/28/98		.00
11/29/98		.00
11/30/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 5

Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02

Serial#: QUO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.24	.00
11/02/98	.27	.00
11/03/98	.33	.00
11/04/98	.32	.00
11/05/98	.34	.00
11/06/98	.31	.00
11/07/98	.25	.00
11/08/98	.25	.00
11/09/98	.36	.00
11/10/98	.25	.01
11/11/98	.27	.33
11/12/98	.21	.00
11/13/98	.32	.00
11/14/98	.40	.00
11/15/98	.47	.00
11/16/98	.43	.00
11/17/98	.39	.05
11/18/98	.31	.00
11/19/98	.43	.00
11/20/98	.38	.06
11/21/98	.24	.00
11/22/98	.24	.00
11/23/98	.30	.00
11/24/98	.29	.00
11/25/98	.27	.00
11/26/98	.23	.43
11/27/98	.19	.01
11/28/98	.21	.00
11/29/98	.22	.00
11/30/98	.31	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 6 | 910 F.M. VERSION: 1.02

Address: Near 355 5th St. | Serial#: QU1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	4.09	.00
11/02/98	3.88	.00
11/03/98	3.89	.00
11/04/98	3.89	.00
11/05/98	3.81	.00
11/06/98	3.80	.00
11/07/98	4.01	.00
11/08/98	4.08	.00
11/09/98	3.94	.00
11/10/98	3.97	.01
11/11/98	4.14	.33
11/12/98	3.95	.00
11/13/98	3.89	.00
11/14/98	4.19	.00
11/15/98	4.33	.00
11/16/98	4.04	.00
11/17/98	3.98	.05
11/18/98	3.87	.00
11/19/98	3.90	.00
11/20/98	3.96	.06
11/21/98	4.17	.00
11/22/98	4.26	.00
11/23/98	4.05	.00
11/24/98	3.95	.00
11/25/98	3.98	.00
11/26/98	4.38	.43
11/27/98	3.93	.01
11/28/98	4.00	.00
11/29/98	4.08	.00
11/30/98	3.86	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 7 | 910 F.M. VERSION: 1.02

Address: Verona St. near Broadway | Serial#: QUK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.34	.00
11/02/98	.27	.00
11/03/98	.26	.00
11/04/98	.25	.00
11/05/98	.26	.00
11/06/98	.26	.00
11/07/98	.29	.00
11/08/98	.30	.00
11/09/98	.27	.00
11/10/98	.26	.01
11/11/98	.33	.33
11/12/98	.26	.00
11/13/98	.26	.00
11/14/98	.28	.00
11/15/98	.30	.00
11/16/98	.24	.00
11/17/98	.25	.05
11/18/98	.24	.00
11/19/98	.24	.00
11/20/98	.27	.06
11/21/98	.28	.00
11/22/98	.32	.00
11/23/98	.26	.00
11/24/98	.24	.00
11/25/98	.22	.00
11/26/98	.36	.43
11/27/98	.23	.01
11/28/98	.18	.00
11/29/98	.16	.00
11/30/98	.24	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 8 | 910 F.M. VERSION: 1.02

Address: Earl and Frelinghuysen | Serial#: QT3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.02	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 9

Address: Branch Brook Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QLF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98		.00
11/03/98		.00
11/04/98		.00
11/05/98		.00
11/06/98		.00
11/07/98		.00
11/08/98		.00
11/09/98		.00
11/10/98		.01
11/11/98		.33
11/12/98		.00
11/13/98		.00
11/14/98		.00
11/15/98		.00
11/16/98		.00
11/17/98		.05
11/18/98		.00
11/19/98		.00
11/20/98		.06
11/21/98		.00
11/22/98		.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

NEWARK No. 10

Address: Weequahic Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QUX

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.11	.00
11/02/98	1.12	.00
11/03/98	1.14	.00
11/04/98	1.12	.00
11/05/98	1.06	.00
11/06/98	1.09	.00
11/07/98	1.08	.00
11/08/98	1.10	.00
11/09/98	1.07	.00
11/10/98	1.06	.01
11/11/98	1.23	.33
11/12/98	1.09	.00
11/13/98	.98	.00
11/14/98	1.04	.00
11/15/98	1.06	.00
11/16/98	1.08	.00
11/17/98	1.09	.05
11/18/98	1.08	.00
11/19/98	1.12	.00
11/20/98	1.12	.06
11/21/98	1.24	.00
11/22/98	1.13	.00
11/23/98	1.08	.00
11/24/98	1.09	.00
11/25/98	1.09	.00
11/26/98	1.24	.43
11/27/98	1.22	.01
11/28/98	1.24	.00
11/29/98	1.23	.00
11/30/98	1.25	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

910 F.M. VERSION: 1.02

Serial#: QQ7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98	.05	.00
11/03/98	.03	.00
11/04/98	.03	.00
11/05/98	.04	.00
11/06/98	.05	.00
11/07/98	.06	.00
11/08/98	.06	.00
11/09/98	.05	.00
11/10/98	.04	.01
11/11/98	.04	.33
11/12/98	.05	.00
11/13/98	.05	.00
11/14/98	.05	.00
11/15/98	.05	.00
11/16/98	.05	.00
11/17/98	.05	.05
11/18/98	.04	.00
11/19/98	.05	.00
11/20/98	.04	.06
11/21/98	.05	.00
11/22/98	.05	.00
11/23/98	.04	.00
11/24/98	.04	.00
11/25/98	.04	.00
11/26/98	.06	.43
11/27/98	.05	.01
11/28/98	.05	.00
11/29/98	.04	.00
11/30/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 2 | 910 F.M. VERSION: 1.02

Address: Unity and Valley St. | Serial#: QQ2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98	.65	.00
11/03/98	.64	.00
11/04/98	.59	.00
11/05/98	.59	.00
11/06/98	.63	.00
11/07/98	.75	.00
11/08/98	.78	.00
11/09/98	.68	.00
11/10/98	.59	.01
11/11/98	.58	.33
11/12/98	.59	.00
11/13/98	.58	.00
11/14/98	.61	.00
11/15/98	.58	.00
11/16/98	.52	.00
11/17/98	.55	.05
11/18/98	.58	.00
11/19/98	.57	.00
11/20/98	.56	.06
11/21/98	.65	.00
11/22/98	.68	.00
11/23/98	.57	.00
11/24/98	.57	.00
11/25/98	.63	.00
11/26/98	.70	.43
11/27/98	.62	.01
11/28/98	.64	.00
11/29/98	.65	.00
11/30/98	.60	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 3

910 F.M. VERSION: 1.02

Address: Fabyan Pl. near Exit Ramp of I-78

Serial#: QRD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.45	.00
11/02/98	.41	.00
11/03/98	.42	.00
11/04/98	.38	.00
11/05/98	.38	.00
11/06/98	.39	.00
11/07/98	.44	.00
11/08/98	.43	.00
11/09/98	.38	.00
11/10/98	.35	.01
11/11/98	.42	.33
11/12/98	.38	.00
11/13/98	.38	.00
11/14/98	.39	.00
11/15/98	.42	.00
11/16/98	.39	.00
11/17/98	.40	.05
11/18/98	.41	.00
11/19/98	.37	.00
11/20/98	.39	.06
11/21/98	.48	.00
11/22/98	.50	.00
11/23/98	.44	.00
11/24/98	.44	.00
11/25/98	.44	.00
11/26/98	.52	.43
11/27/98	.45	.01
11/28/98	.45	.00
11/29/98	.46	.00
11/30/98	.46	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

Outgoing No. 4

910 F.M. VERSION: 1.02

Address: N. Lindon Ln between House # 63 and 65

Serial#: QUI

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.70	.00
11/02/98	1.63	.00
11/03/98	1.54	.00
11/04/98	1.52	.00
11/05/98	1.57	.00
11/06/98	1.60	.00
11/07/98	1.69	.00
11/08/98	1.65	.00
11/09/98	1.55	.00
11/10/98	1.52	.01
11/11/98	1.65	.33
11/12/98	1.58	.00
11/13/98	1.60	.00
11/14/98	1.71	.00
11/15/98	1.71	.00
11/16/98	1.59	.00
11/17/98	1.59	.05
11/18/98	1.59	.00
11/19/98	1.57	.00
11/20/98	1.64	.06
11/21/98	1.70	.00
11/22/98	1.78	.00
11/23/98	1.69	.00
11/24/98	1.70	.00
11/25/98	1.72	.00
11/26/98	1.82	.43
11/27/98	1.72	.01
11/28/98	1.77	.00
11/29/98	1.79	.00
11/30/98	1.69	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

920 F.M. VERSION: 1.02

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.30	.00
11/02/98	.94	.00
11/03/98	1.32	.00
11/04/98	1.29	.00
11/05/98	1.18	.00
11/06/98	1.12	.00
11/07/98	1.06	.00
11/08/98	1.15	.00
11/09/98	1.02	.00
11/10/98	1.01	.01
11/11/98	1.28	.33
11/12/98	1.20	.00
11/13/98	1.16	.00
11/14/98	1.36	.00
11/15/98	1.48	.00
11/16/98	1.42	.00
11/17/98	1.32	.05
11/18/98	1.21	.00
11/19/98	1.15	.00
11/20/98	1.12	.06
11/21/98	1.30	.00
11/22/98	1.21	.00
11/23/98	1.19	.00
11/24/98	1.21	.00
11/25/98	1.39	.00
11/26/98	1.82	.43
11/27/98	.91	.01
11/28/98	.96	.00
11/29/98	1.01	.00
11/30/98	.95	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

920 F.M. VERSION: 1.02

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.12	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.70	.00
11/02/98	.62	.00
11/03/98	.62	.00
11/04/98	.59	.00
11/05/98	.56	.00
11/06/98	.50	.00
11/07/98	.83	.00
11/08/98	1.09	.00
11/09/98	.93	.00
11/10/98	.69	.01
11/11/98	1.44	.33
11/12/98	.99	.00
11/13/98	.95	.00
11/14/98	1.01	.00
11/15/98	1.15	.00
11/16/98	1.08	.00
11/17/98	1.14	.05
11/18/98	1.58	.00
11/19/98	1.75	.00
11/20/98	3.15	.06
11/21/98	6.50	.00
11/22/98	9.39	.00
11/23/98	17.16	.00
11/24/98	5.61	.00
11/25/98	.34	.00
11/26/98	1.45	.43
11/27/98	.44	.01
11/28/98	.55	.00
11/29/98	.61	.00
11/30/98	.64	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.03	.00
11/02/98	.03	.00
11/03/98	.03	.00
11/04/98	.03	.00
11/05/98	.03	.00
11/06/98	.03	.00
11/07/98	.03	.00
11/08/98	.03	.00
11/09/98	.02	.00
11/10/98	.03	.01
11/11/98	.04	.33
11/12/98	.02	.00
11/13/98	.03	.00
11/14/98	.03	.00
11/15/98	.05	.00
11/16/98	.07	.00
11/17/98	.03	.05
11/18/98	.02	.00
11/19/98	.02	.00
11/20/98	.02	.06
11/21/98	.02	.00
11/22/98	.03	.00
11/23/98	.03	.00
11/24/98	.03	.00
11/25/98	.03	.00
11/26/98	.05	.43
11/27/98	.02	.01
11/28/98	.02	.00
11/29/98	.02	.00
11/30/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.01	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.77	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.02	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.01	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.45	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Influent

Address: Broadway and Second St.

910 F.M. VERSION: 1.02

Serial#: QUL

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.36	.00
11/02/98	1.39	.00
11/03/98	1.38	.00
11/04/98	1.21	.00
11/05/98	.90	.00
11/06/98	1.36	.00
11/07/98	1.52	.00
11/08/98	1.55	.00
11/09/98	1.43	.00
11/10/98	1.27	.01
11/11/98	1.76	.33
11/12/98	1.46	.00
11/13/98	1.43	.00
11/14/98	1.61	.00
11/15/98	1.70	.00
11/16/98	1.59	.00
11/17/98	1.59	.05
11/18/98	1.54	.00
11/19/98	1.59	.00
11/20/98	1.75	.06
11/21/98	1.00	.00
11/22/98	.76	.00
11/23/98	1.82	.00
11/24/98	.58	.00
11/25/98	.00	.00
11/26/98	1.60	.43
11/27/98	1.49	.01
11/28/98	1.54	.00
11/29/98	1.62	.00
11/30/98	1.57	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Overflow | 910 F.M. VERSION: 1.02

Address: Broadway and Second St. | Serial#: QUJ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.02	.00
11/02/98	.01	.00
11/03/98	.02	.00
11/04/98	.01	.00
11/05/98	.01	.00
11/06/98	.01	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.01	.00
11/10/98	.00	.01
11/11/98	.01	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.01	.00
11/16/98	.01	.00
11/17/98	.01	.05
11/18/98	.02	.00
11/19/98	.01	.00
11/20/98	.02	.06
11/21/98		.00
11/22/98		.00
11/23/98		.00
11/24/98		.00
11/25/98	.03	.00
11/26/98	.01	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.02	.00
11/04/98	.04	.00
11/05/98	.03	.00
11/06/98	.01	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98		.00
11/22/98		.00
11/23/98		.00
11/24/98		.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.57	.00
11/02/98	.93	.00
11/03/98	1.16	.00
11/04/98	1.61	.00
11/05/98	.65	.00
11/06/98	.36	.00
11/07/98	.48	.00
11/08/98	.36	.00
11/09/98	1.02	.00
11/10/98	1.03	.01
11/11/98	1.01	.33
11/12/98	.48	.00
11/13/98	.49	.00
11/14/98	.39	.00
11/15/98	.37	.00
11/16/98	.38	.00
11/17/98	.38	.05
11/18/98	.37	.00
11/19/98	.37	.00
11/20/98	.68	.06
11/21/98	.63	.00
11/22/98	.37	.00
11/23/98	.54	.00
11/24/98	.88	.00
11/25/98	.88	.00
11/26/98	2.23	.43
11/27/98	1.62	.01
11/28/98	.90	.00
11/29/98	.98	.00
11/30/98	.91	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	1.20	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Influent

Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02

Serial#: QRG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98	.41	.00
11/03/98	.38	.00
11/04/98	.39	.00
11/05/98	.40	.00
11/06/98	.39	.00
11/07/98	.39	.00
11/08/98	.40	.00
11/09/98	.38	.00
11/10/98	.38	.01
11/11/98	.44	.33
11/12/98	.36	.00
11/13/98	.36	.00
11/14/98	.38	.00
11/15/98	.38	.00
11/16/98	.37	.00
11/17/98	.39	.05
11/18/98	.37	.00
11/19/98	.39	.00
11/20/98	.38	.06
11/21/98	.34	.00
11/22/98	.36	.00
11/23/98	.35	.00
11/24/98	.33	.00
11/25/98	.36	.00
11/26/98	.46	.43
11/27/98	.35	.01
11/28/98	.36	.00
11/29/98	.37	.00
11/30/98	.40	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Overflow | 910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St. | Serial#: QU3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.02	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST | 920 F.M. VERSION: 1.02

Address: Clay St. and McCarter Hwy | Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.03	.00
11/02/98	.03	.00
11/03/98	.03	.00
11/04/98	.04	.00
11/05/98	.04	.00
11/06/98	.04	.00
11/07/98	.05	.00
11/08/98	.04	.00
11/09/98	.04	.00
11/10/98	.04	.01
11/11/98	.05	.33
11/12/98	.03	.00
11/13/98	.02	.00
11/14/98	.03	.00
11/15/98	.03	.00
11/16/98	.03	.00
11/17/98	.03	.05
11/18/98	.02	.00
11/19/98	.02	.00
11/20/98	.02	.06
11/21/98	.03	.00
11/22/98	.03	.00
11/23/98	.03	.00
11/24/98	.02	.00
11/25/98	.02	.00
11/26/98	.04	.43
11/27/98	.03	.01
11/28/98	.03	.00
11/29/98	.02	.00
11/30/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST | 920 F.M. VERSION: 1.02

Address: Clay St. and McCarter Hwy | Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Influents | 920 F.M. VERSION: 1.02

Address: Clay St. at McCarter Hwy | Serial#: QTR

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	10.76	.00
11/02/98	10.06	.00
11/03/98	10.04	.00
11/04/98	10.18	.00
11/05/98	10.75	.00
11/06/98	11.00	.00
11/07/98	11.20	.00
11/08/98	11.64	.00
11/09/98	11.41	.00
11/10/98	11.61	.01
11/11/98	12.88	.33
11/12/98	10.65	.00
11/13/98	10.87	.00
11/14/98	10.92	.00
11/15/98	11.22	.00
11/16/98	11.26	.00
11/17/98	11.75	.05
11/18/98	11.27	.00
11/19/98	11.39	.00
11/20/98	11.57	.06
11/21/98	11.87	.00
11/22/98	11.93	.00
11/23/98	11.86	.00
11/24/98	12.11	.00
11/25/98	12.26	.00
11/26/98	11.76	.43
11/27/98	10.70	.01
11/28/98	10.53	.00
11/29/98	10.36	.00
11/30/98	10.52	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow North Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QPS

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	-.01	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.01	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	3.62	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow South Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QT2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.01	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.01	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.02	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	-.01	.00
11/25/98	.00	.00
11/26/98	2.73	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST Influent | 910 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy | Serial#: QRF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.04	.00
11/02/98	.03	.00
11/03/98	.03	.00
11/04/98	.03	.00
11/05/98	.04	.00
11/06/98	.03	.00
11/07/98	.03	.00
11/08/98	.03	.00
11/09/98	.04	.00
11/10/98	.04	.01
11/11/98	.05	.33
11/12/98	.05	.00
11/13/98	.04	.00
11/14/98	.04	.00
11/15/98	.04	.00
11/16/98	.04	.00
11/17/98	.04	.05
11/18/98	.04	.00
11/19/98	.04	.00
11/20/98	.04	.06
11/21/98	.04	.00
11/22/98	.03	.00
11/23/98	.03	.00
11/24/98	.03	.00
11/25/98	.03	.00
11/26/98	.05	.43
11/27/98	.03	.01
11/28/98	.03	.00
11/29/98	.03	.00
11/30/98	.03	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.04	.00
11/02/98	.05	.00
11/03/98	.04	.00
11/04/98	.02	.00
11/05/98	.00	.00
11/06/98	.01	.00
11/07/98	.01	.00
11/08/98	.01	.00
11/09/98	.02	.00
11/10/98	.02	.01
11/11/98	.03	.33
11/12/98	.03	.00
11/13/98	.02	.00
11/14/98	.01	.00
11/15/98	.01	.00
11/16/98	.01	.00
11/17/98	.01	.05
11/18/98	.01	.00
11/19/98	.01	.00
11/20/98	.04	.06
11/21/98	.07	.00
11/22/98	.08	.00
11/23/98	.07	.00
11/24/98	.07	.00
11/25/98	.07	.00
11/26/98	.11	.43
11/27/98	.06	.01
11/28/98	.05	.00
11/29/98	.03	.00
11/30/98	.21	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.08	.00
11/02/98	.06	.00
11/03/98	.06	.00
11/04/98	.06	.00
11/05/98	.08	.00
11/06/98	.06	.00
11/07/98	.06	.00
11/08/98	.07	.00
11/09/98	.06	.00
11/10/98	.05	.01
11/11/98	.06	.33
11/12/98	.05	.00
11/13/98	.03	.00
11/14/98	.02	.00
11/15/98	.03	.00
11/16/98	.04	.00
11/17/98	.06	.05
11/18/98	.06	.00
11/19/98	.06	.00
11/20/98	.07	.06
11/21/98	.06	.00
11/22/98	.06	.00
11/23/98	.07	.00
11/24/98	.05	.00
11/25/98	.06	.00
11/26/98	.11	.43
11/27/98	.05	.01
11/28/98	.05	.00
11/29/98	.05	.00
11/30/98	.04	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	2.08	.00
11/02/98	2.23	.00
11/03/98	2.09	.00
11/04/98	2.05	.00
11/05/98	1.91	.00
11/06/98	2.11	.00
11/07/98	2.16	.00
11/08/98	2.07	.00
11/09/98	1.91	.00
11/10/98	1.71	.01
11/11/98	1.15	.33
11/12/98	.86	.00
11/13/98	.72	.00
11/14/98	.91	.00
11/15/98	1.06	.00
11/16/98	1.19	.00
11/17/98	1.34	.05
11/18/98	1.58	.00
11/19/98	1.91	.00
11/20/98	1.86	.06
11/21/98	1.36	.00
11/22/98	1.04	.00
11/23/98	1.51	.00
11/24/98	1.85	.00
11/25/98	1.81	.00
11/26/98	2.51	.43
11/27/98	1.44	.01
11/28/98	1.39	.00
11/29/98	1.34	.00
11/30/98	1.57	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	-.01	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.44	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98	2.76	.00
11/03/98	3.33	.00
11/04/98	3.63	.00
11/05/98	3.57	.00
11/06/98	3.67	.00
11/07/98	3.40	.00
11/08/98	3.25	.00
11/09/98	3.34	.00
11/10/98	3.50	.01
11/11/98	4.42	.33
11/12/98	3.52	.00
11/13/98	3.50	.00
11/14/98	3.59	.00
11/15/98	3.65	.00
11/16/98	3.91	.00
11/17/98	3.90	.05
11/18/98	3.33	.00
11/19/98	2.98	.00
11/20/98	3.01	.06
11/21/98	2.77	.00
11/22/98	2.81	.00
11/23/98	2.98	.00
11/24/98	3.71	.00
11/25/98	3.68	.00
11/26/98	4.47	.43
11/27/98	3.41	.01
11/28/98	3.31	.00
11/29/98	3.31	.00
11/30/98	3.49	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.86	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent3

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.02	.00
11/03/98	.03	.00
11/04/98	.02	.00
11/05/98	.01	.00
11/06/98	.01	.00
11/07/98	.01	.00
11/08/98	.01	.00
11/09/98	.03	.00
11/10/98	.03	.01
11/11/98	.06	.33
11/12/98	.04	.00
11/13/98	.04	.00
11/14/98	.03	.00
11/15/98	.03	.00
11/16/98	.05	.00
11/17/98	.05	.05
11/18/98	.05	.00
11/19/98	.06	.00
11/20/98	.04	.06
11/21/98	.02	.00
11/22/98	.01	.00
11/23/98	.03	.00
11/24/98	.02	.00
11/25/98	.01	.00
11/26/98	.04	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.01	.00
11/30/98	.03	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent2

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QU2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.03	.00
11/02/98	.06	.00
11/03/98	.06	.00
11/04/98	.07	.00
11/05/98	.05	.00
11/06/98	.06	.00
11/07/98	.04	.00
11/08/98	.02	.00
11/09/98	.05	.00
11/10/98	.02	.01
11/11/98	.10	.33
11/12/98	.06	.00
11/13/98	.06	.00
11/14/98	.03	.00
11/15/98	.02	.00
11/16/98	.06	.00
11/17/98	.06	.05
11/18/98	.06	.00
11/19/98	.06	.00
11/20/98	.07	.06
11/21/98	.01	.00
11/22/98	.05	.00
11/23/98	.07	.00
11/24/98	.06	.00
11/25/98	.05	.00
11/26/98	.08	.43
11/27/98	.03	.01
11/28/98	.03	.00
11/29/98	.03	.00
11/30/98	.05	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent1

910 F.M. VERSION: 1.02

Address: Raymond Plaza near Raymond Blvd.

Serial#: QQT

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.02	.00
11/03/98	.02	.00
11/04/98	.02	.00
11/05/98	.02	.00
11/06/98	.02	.00
11/07/98	.01	.00
11/08/98	.00	.00
11/09/98	.02	.00
11/10/98	.02	.01
11/11/98	.03	.33
11/12/98	.02	.00
11/13/98	.02	.00
11/14/98	.01	.00
11/15/98	.01	.00
11/16/98	.02	.00
11/17/98	.02	.05
11/18/98	.02	.00
11/19/98	.02	.00
11/20/98	.02	.06
11/21/98	.01	.00
11/22/98	.00	.00
11/23/98	.02	.00
11/24/98	.02	.00
11/25/98	.02	.00
11/26/98	.05	.43
11/27/98	.01	.01
11/28/98	.01	.00
11/29/98	.01	.00
11/30/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent4

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QPQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	2.05	.00
11/02/98	2.18	.00
11/03/98	2.16	.00
11/04/98	2.16	.00
11/05/98	2.16	.00
11/06/98	2.09	.00
11/07/98	2.00	.00
11/08/98	1.91	.00
11/09/98	1.96	.00
11/10/98	1.90	.01
11/11/98	2.88	.33
11/12/98	2.07	.00
11/13/98	2.13	.00
11/14/98	1.97	.00
11/15/98	1.88	.00
11/16/98	2.04	.00
11/17/98	2.08	.05
11/18/98	1.98	.00
11/19/98	2.05	.00
11/20/98	2.31	.06
11/21/98	1.99	.00
11/22/98	1.95	.00
11/23/98	2.06	.00
11/24/98	1.99	.00
11/25/98	1.90	.00
11/26/98	3.55	.43
11/27/98	1.62	.01
11/28/98	1.66	.00
11/29/98	1.64	.00
11/30/98	1.90	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Overflow

910 F.M. VERSION: 1.02

Address: Raymond Plaza East near Raymond Blvd.

Serial#: QLK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98		.00
11/07/98		.00
11/08/98		.00
11/09/98		.00
11/10/98		.01
11/11/98		.33
11/12/98		.00
11/13/98		.00
11/14/98		.00
11/15/98		.00
11/16/98		.00
11/17/98		.05
11/18/98		.00
11/19/98		.00
11/20/98		.06
11/21/98		.00
11/22/98		.00
11/23/98		.00
11/24/98		.00
11/25/98		.00
11/26/98		.43
11/27/98		.01
11/28/98		.00
11/29/98		.00
11/30/98		.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.71	.00
11/02/98	.70	.00
11/03/98	.74	.00
11/04/98	.66	.00
11/05/98	.67	.00
11/06/98	.65	.00
11/07/98	.69	.00
11/08/98	.75	.00
11/09/98	.60	.00
11/10/98	.64	.01
11/11/98	1.05	.33
11/12/98	.73	.00
11/13/98	.74	.00
11/14/98	.80	.00
11/15/98	.78	.00
11/16/98	.75	.00
11/17/98	.78	.05
11/18/98	.73	.00
11/19/98	.61	.00
11/20/98	.64	.06
11/21/98	.68	.00
11/22/98	.61	.00
11/23/98	.58	.00
11/24/98	.58	.00
11/25/98	.59	.00
11/26/98	.75	.43
11/27/98	.59	.01
11/28/98	.74	.00
11/29/98	.63	.00
11/30/98	.58	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.01	.00
11/02/98	.01	.00
11/03/98	.02	.00
11/04/98	.01	.00
11/05/98	.01	.00
11/06/98	.01	.00
11/07/98	.01	.00
11/08/98	.01	.00
11/09/98	.01	.00
11/10/98	.01	.01
11/11/98	.02	.33
11/12/98	.01	.00
11/13/98	.01	.00
11/14/98	.01	.00
11/15/98	.02	.00
11/16/98	.02	.00
11/17/98	.02	.05
11/18/98	.01	.00
11/19/98	.01	.00
11/20/98	.01	.06
11/21/98	.02	.00
11/22/98	.02	.00
11/23/98	.02	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	-.33	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.80	.00
11/02/98	1.71	.00
11/03/98	1.82	.00
11/04/98	1.59	.00
11/05/98	1.03	.00
11/06/98	.28	.00
11/07/98	.22	.00
11/08/98	.21	.00
11/09/98	.21	.00
11/10/98	.19	.01
11/11/98	.79	.33
11/12/98	.22	.00
11/13/98	.19	.00
11/14/98	.26	.00
11/15/98	.28	.00
11/16/98	.23	.00
11/17/98	.32	.05
11/18/98	.25	.00
11/19/98	.26	.00
11/20/98	.41	.06
11/21/98	.36	.00
11/22/98	.33	.00
11/23/98	.32	.00
11/24/98	.33	.00
11/25/98	.30	.00
11/26/98	1.15	.43
11/27/98	.40	.01
11/28/98	.41	.00
11/29/98	.39	.00
11/30/98	.34	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST | 920 F.M. VERSION: 1.02

Address: Polk St. and Raymond Blvd. | Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.02	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	3.09	.00
11/02/98	3.21	.00
11/03/98	2.27	.00
11/04/98	1.16	.00
11/05/98	.92	.00
11/06/98	.59	.00
11/07/98	.61	.00
11/08/98	.67	.00
11/09/98	.64	.00
11/10/98	.66	.01
11/11/98	1.15	.33
11/12/98	.57	.00
11/13/98	.62	.00
11/14/98	.60	.00
11/15/98	.69	.00
11/16/98	.57	.00
11/17/98	.59	.05
11/18/98	.58	.00
11/19/98	.64	.00
11/20/98	.69	.06
11/21/98	.62	.00
11/22/98	.63	.00
11/23/98	.61	.00
11/24/98	.60	.00
11/25/98	.63	.00
11/26/98	1.34	.43
11/27/98	.66	.01
11/28/98	.73	.00
11/29/98	.81	.00
11/30/98	.91	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.04	.00
11/02/98	.04	.00
11/03/98	.06	.00
11/04/98	.08	.00
11/05/98	.06	.00
11/06/98	.01	.00
11/07/98	.01	.00
11/08/98	.01	.00
11/09/98	.02	.00
11/10/98	.03	.01
11/11/98	.07	.33
11/12/98	.04	.00
11/13/98	.03	.00
11/14/98	.04	.00
11/15/98	.03	.00
11/16/98	.03	.00
11/17/98	.04	.05
11/18/98	.04	.00
11/19/98	.03	.00
11/20/98	.05	.06
11/21/98	.03	.00
11/22/98	.04	.00
11/23/98	.05	.00
11/24/98	.05	.00
11/25/98	.05	.00
11/26/98	.09	.43
11/27/98	.03	.01
11/28/98	.03	.00
11/29/98	.02	.00
11/30/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.63	.00
11/02/98	.68	.00
11/03/98	.59	.00
11/04/98	.56	.00
11/05/98	.39	.00
11/06/98	.22	.00
11/07/98	.22	.00
11/08/98	.20	.00
11/09/98	.18	.00
11/10/98	.22	.01
11/11/98	.23	.33
11/12/98	.17	.00
11/13/98	.16	.00
11/14/98	.18	.00
11/15/98	.19	.00
11/16/98	.21	.00
11/17/98	.23	.05
11/18/98	.22	.00
11/19/98	.27	.00
11/20/98	.25	.06
11/21/98	.20	.00
11/22/98	.20	.00
11/23/98	.22	.00
11/24/98	.32	.00
11/25/98	.28	.00
11/26/98	.31	.43
11/27/98	.32	.01
11/28/98	.37	.00
11/29/98	.41	.00
11/30/98	.40	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.51	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

920 F.M. VERSION: 1.02

Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.21	.00
11/02/98	.12	.00
11/03/98	.07	.00
11/04/98	.06	.00
11/05/98	.07	.00
11/06/98	.08	.00
11/07/98	.16	.00
11/08/98	.11	.00
11/09/98	.10	.00
11/10/98	.22	.01
11/11/98	.50	.33
11/12/98	.16	.00
11/13/98	.17	.00
11/14/98	.10	.00
11/15/98	.10	.00
11/16/98	.14	.00
11/17/98	.14	.05
11/18/98	.12	.00
11/19/98	.09	.00
11/20/98	.09	.06
11/21/98	.08	.00
11/22/98	.11	.00
11/23/98	.06	.00
11/24/98	.09	.00
11/25/98	.12	.00
11/26/98	.70	.43
11/27/98	.00	.01
11/28/98	.05	.00
11/29/98	.10	.00
11/30/98	.14	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

920 F.M. VERSION: 1.02

Address: Roanoke Ave. and Doremus Ave.

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02

Serial#: QO4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.38	.00
11/02/98	.38	.00
11/03/98	.37	.00
11/04/98	.37	.00
11/05/98	.32	.00
11/06/98	.39	.00
11/07/98	.39	.00
11/08/98	.36	.00
11/09/98	.40	.00
11/10/98	.39	.01
11/11/98	.72	.33
11/12/98	.40	.00
11/13/98	.39	.00
11/14/98	.50	.00
11/15/98	.49	.00
11/16/98	.47	.00
11/17/98	.57	.05
11/18/98	.54	.00
11/19/98	.60	.00
11/20/98	.71	.06
11/21/98	.81	.00
11/22/98	.82	.00
11/23/98	.92	.00
11/24/98	.69	.00
11/25/98	.43	.00
11/26/98	.96	.43
11/27/98	.47	.01
11/28/98	.55	.00
11/29/98	.52	.00
11/30/98	.53	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

910 F.M. VERSION: 1.02

Serial#: QPP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	-.22	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.01	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	-.31	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST | 920 F.M. VERSION: 1.02

Address: South St. near Dawson St. | Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.68	.00
11/02/98	1.84	.00
11/03/98	1.81	.00
11/04/98	1.82	.00
11/05/98	1.86	.00
11/06/98	1.88	.00
11/07/98	1.78	.00
11/08/98	1.70	.00
11/09/98	1.73	.00
11/10/98	1.72	.01
11/11/98	1.74	.33
11/12/98	1.77	.00
11/13/98	1.83	.00
11/14/98	1.84	.00
11/15/98	1.62	.00
11/16/98	1.83	.00
11/17/98	1.90	.05
11/18/98	1.82	.00
11/19/98	1.80	.00
11/20/98	1.73	.06
11/21/98	1.84	.00
11/22/98	1.84	.00
11/23/98	2.02	.00
11/24/98	2.01	.00
11/25/98	1.64	.00
11/26/98	1.87	.43
11/27/98	1.78	.01
11/28/98	1.55	.00
11/29/98	1.71	.00
11/30/98	1.99	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST | 920 F.M. VERSION: 1.02

Address: South St. near Dawson St. | Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.00	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 Peddie St regulated | 910 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QO7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	8.03	.00
11/02/98	8.13	.00
11/03/98	8.09	.00
11/04/98	8.36	.00
11/05/98	8.18	.00
11/06/98	7.87	.00
11/07/98	8.10	.00
11/08/98	7.85	.00
11/09/98	8.00	.00
11/10/98	8.04	.01
11/11/98	13.69	.33
11/12/98	7.61	.00
11/13/98	7.71	.00
11/14/98	7.57	.00
11/15/98	8.10	.00
11/16/98	7.79	.00
11/17/98	8.25	.05
11/18/98	8.23	.00
11/19/98	7.99	.00
11/20/98	9.03	.06
11/21/98	8.24	.00
11/22/98	8.33	.00
11/23/98	8.27	.00
11/24/98	8.46	.00
11/25/98	8.66	.00
11/26/98	13.00	.43
11/27/98	8.39	.01
11/28/98	7.84	.00
11/29/98	8.10	.00
11/30/98	7.75	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated

Address: Peddie Ditch

920 F.M. VERSION: 1.02

Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	8.25	.00
11/02/98	8.67	.00
11/03/98	9.77	.00
11/04/98	9.11	.00
11/05/98	9.92	.00
11/06/98	11.28	.00
11/07/98	11.27	.00
11/08/98	9.85	.00
11/09/98	9.69	.00
11/10/98	9.37	.01
11/11/98	10.82	.33
11/12/98	9.24	.00
11/13/98	8.47	.00
11/14/98	8.91	.00
11/15/98	8.99	.00
11/16/98	8.80	.00
11/17/98	9.09	.05
11/18/98	8.64	.00
11/19/98	8.20	.00
11/20/98	9.71	.06
11/21/98	9.29	.00
11/22/98	10.67	.00
11/23/98	10.57	.00
11/24/98	9.53	.00
11/25/98	10.53	.00
11/26/98	13.12	.43
11/27/98	10.02	.01
11/28/98	10.83	.00
11/29/98	10.81	.00
11/30/98	8.87	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated | 920 F.M. VERSION: 1.02

Address: Peddie Ditch | Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.89	.00
11/02/98	1.79	.00
11/03/98	1.87	.00
11/04/98	1.72	.00
11/05/98	1.72	.00
11/06/98	1.71	.00
11/07/98	1.71	.00
11/08/98	1.76	.00
11/09/98	1.69	.00
11/10/98	1.64	.01
11/11/98	1.66	.33
11/12/98	1.90	.00
11/13/98	1.92	.00
11/14/98	2.00	.00
11/15/98	1.95	.00
11/16/98	1.94	.00
11/17/98	1.96	.05
11/18/98	1.83	.00
11/19/98	1.88	.00
11/20/98	2.11	.06
11/21/98	2.01	.00
11/22/98	2.00	.00
11/23/98	1.97	.00
11/24/98	2.72	.00
11/25/98	2.38	.00
11/26/98	2.66	.43
11/27/98	1.66	.01
11/28/98	2.02	.00
11/29/98	1.84	.00
11/30/98	1.91	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN regulated | 910 F.M. VERSION: 1.02

Address: Queen Ditch | Serial#: QQV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	3.67	.00
11/02/98	3.71	.00
11/03/98	3.64	.00
11/04/98	3.36	.00
11/05/98	3.45	.00
11/06/98	3.90	.00
11/07/98	3.39	.00
11/08/98	3.72	.00
11/09/98	3.64	.00
11/10/98	3.47	.01
11/11/98	3.92	.33
11/12/98	3.42	.00
11/13/98	3.28	.00
11/14/98	3.30	.00
11/15/98	3.27	.00
11/16/98	3.27	.00
11/17/98	3.41	.05
11/18/98	3.70	.00
11/19/98	3.83	.00
11/20/98	3.84	.06
11/21/98	3.65	.00
11/22/98	3.70	.00
11/23/98	3.49	.00
11/24/98	3.50	.00
11/25/98	3.56	.00
11/26/98	4.50	.43
11/27/98	4.48	.01
11/28/98	4.16	.00
11/29/98	3.75	.00
11/30/98	3.96	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN unregulated | 910 F.M. VERSION: 1.02

Address: Queen Ditch | Serial#: QQU

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	4.93	.00
11/02/98	5.08	.00
11/03/98	5.20	.00
11/04/98	4.95	.00
11/05/98	4.90	.00
11/06/98	5.10	.00
11/07/98	4.88	.00
11/08/98	4.83	.00
11/09/98	4.84	.00
11/10/98	4.91	.01
11/11/98	6.02	.33
11/12/98	5.14	.00
11/13/98	5.02	.00
11/14/98	4.86	.00
11/15/98	4.97	.00
11/16/98	5.14	.00
11/17/98	5.18	.05
11/18/98	5.16	.00
11/19/98	5.16	.00
11/20/98	5.13	.06
11/21/98	5.02	.00
11/22/98	4.92	.00
11/23/98	5.03	.00
11/24/98	5.14	.00
11/25/98	5.25	.00
11/26/98	6.60	.43
11/27/98	5.33	.01
11/28/98	5.09	.00
11/29/98	5.10	.00
11/30/98	5.16	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

920 F.M. VERSION: 1.02

Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98		.00
11/03/98	2.13	.00
11/04/98	2.01	.00
11/05/98	2.04	.00
11/06/98	2.01	.00
11/07/98	1.32	.00
11/08/98	1.31	.00
11/09/98	2.03	.00
11/10/98	2.17	.01
11/11/98	2.64	.33
11/12/98	1.65	.00
11/13/98	1.83	.00
11/14/98	1.43	.00
11/15/98	1.41	.00
11/16/98	1.88	.00
11/17/98	1.88	.05
11/18/98	2.02	.00
11/19/98	2.00	.00
11/20/98	1.96	.06
11/21/98	1.49	.00
11/22/98	1.11	.00
11/23/98	1.59	.00
11/24/98	1.85	.00
11/25/98	1.53	.00
11/26/98	1.96	.43
11/27/98	1.11	.01
11/28/98	1.07	.00
11/29/98	1.07	.00
11/30/98	1.55	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

.CSO 027 - WAVERLY | 920 F.M. VERSION: 1.02

Address: Anheuser-Busch | Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98		.00
11/02/98		.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.00	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98	.00	.06
11/21/98	.00	.00
11/22/98	.00	.00
11/23/98	.00	.00
11/24/98	.00	.00
11/25/98	.00	.00
11/26/98	.00	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	1.71	.00
11/02/98	1.43	.00
11/03/98	1.25	.00
11/04/98	1.24	.00
11/05/98	1.22	.00
11/06/98	1.30	.00
11/07/98	1.42	.00
11/08/98	1.49	.00
11/09/98	1.31	.00
11/10/98	1.27	.01
11/11/98	1.66	.33
11/12/98	1.23	.00
11/13/98	1.19	.00
11/14/98	1.38	.00
11/15/98	1.33	.00
11/16/98	1.24	.00
11/17/98	1.20	.05
11/18/98	1.19	.00
11/19/98	1.19	.00
11/20/98		.06
11/21/98		.00
11/22/98		.00
11/23/98	1.21	.00
11/24/98	1.14	.00
11/25/98	1.13	.00
11/26/98	1.81	.43
11/27/98	1.29	.01
11/28/98	1.43	.00
11/29/98	1.46	.00
11/30/98	1.43	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	.03	.00
11/02/98	.05	.00
11/03/98	.04	.00
11/04/98	.06	.00
11/05/98	.04	.00
11/06/98	.04	.00
11/07/98	.04	.00
11/08/98	.05	.00
11/09/98	.09	.00
11/10/98	.07	.01
11/11/98	.05	.33
11/12/98	.06	.00
11/13/98	.04	.00
11/14/98	.01	.00
11/15/98	.02	.00
11/16/98	.01	.00
11/17/98	.00	.05
11/18/98	.01	.00
11/19/98	.00	.00
11/20/98		.06
11/21/98		.00
11/22/98		.00
11/23/98	.04	.00
11/24/98	.03	.00
11/25/98	.01	.00
11/26/98	.05	.43
11/27/98	.06	.01
11/28/98	.03	.00
11/29/98	.03	.00
11/30/98	.02	.00

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
11/01/98	-.01	.00
11/02/98	.00	.00
11/03/98	.00	.00
11/04/98	.00	.00
11/05/98	.00	.00
11/06/98	.00	.00
11/07/98	.00	.00
11/08/98	.00	.00
11/09/98	.00	.00
11/10/98	.00	.01
11/11/98	.80	.33
11/12/98	.00	.00
11/13/98	.00	.00
11/14/98	.00	.00
11/15/98	.00	.00
11/16/98	.00	.00
11/17/98	.00	.05
11/18/98	.00	.00
11/19/98	.00	.00
11/20/98		.06
11/21/98		.00
11/22/98		.00
11/23/98	-.02	.00
11/24/98	.02	.00
11/25/98	.00	.00
11/26/98	1.84	.43
11/27/98	.00	.01
11/28/98	.00	.00
11/29/98	.00	.00
11/30/98	.00	.00

URS Greiner Woodward Clyde
A Division of URS Corporation

Mack Centre II
One Mack Centre Drive
Paramus, NJ 07652-3909
Tel: 201.262.7000
Fax: 201.262.9199
Offices Worldwide

February 19, 1999

Mr. Sanjeev Varghese, Project Manager
City of Newark Department of Engineering
Water/Sewer Utility
1294 McBride Avenue
Little Falls, New Jersey 07424

Subject: City of Newark CSO Discharge Characterization Study
Task 5.0 - CSO Monitoring
Flow Monitoring and Rainfall Data, December 1998; January 1999

Dear Mr. Varghese:

Attached for your information is our flow metering data for December 1998 and January 1999. Average daily precipitation quantities are also provided in the summary tables for daily flows.

We are continuing to carefully review the data obtained from the PVSC Interceptor flow meters; therefore we have not included data for these locations.

Please call me if you have any questions.

Very truly yours,
URS Greiner, Inc.

Michael F. Lorenzo, P.E.
Project Manager

MFL:mfl
Attachments

cc:
URS Greiner: Moutal, Murray
Newark: Sherban

Newark CSO Discharge Characterization Study

December Flow Metering Report

American Sigma flow meters have been installed at 24 CSO locations, 8 incoming sewer lines from East Orange, 4 outgoing sewer lines to surrounding municipalities, 10 internal Newark sewer lines and 4 points of flow on PVSC/Newark Interceptors. The flow meters use Doppler technology and are equipped with one, two or three probes. Each probe is capable of measuring the level and velocity in a single conduit. The level and velocity measurements are then used to calculate the flow rate in each conduit.

At CSO locations, levels and velocities are measured in each sewer line influent to the regulator chamber and at *either* the overflow to the receiving water *or* downstream of the regulator chamber in the sewer line carrying flow to the interceptor. Therefore many CSO locations required the installation of more than one meter with multiple probes.

Each graph/table in this Monthly Flow Metering Report represents the average daily flow rate(s) calculated by a single flow meter probe. The flow rates presented in this report are considered "raw" data, that is it has not yet been adjusted for transient field conditions such as electronic drift, nor has each 10 minute-interval reading been scrutinized. Therefore, because the daily average flow is an average of 144 flow rates calculated using level and velocity readings, a few errant level or velocity readings taken over a 10 to 30 minute period could significantly offset the daily average. These errant readings could be due to debris which has momentarily become entangled in the probe, but clears itself before the field crews arrive for the next routine maintenance visit. The flow data however, will be scrutinized as needed and adjustments will be made during the modeling phase of the project.

The size and type of each flow conduit is listed in the attached Flow Meter Report Key and corresponds to the appropriate flow channel (i.e., Flow1, Flow2 or Flow2) identified in each graph in the lower right-hand corner.

Total daily rainfall is also included in the graphs/tables. This rainfall is the average of four of the five rain gauges located throughout the City. The fifth rain gauge, RG-5, located on the roof of the Lehigh and Bergen Fire Station has been temporarily removed during renovations to the building. The rain gauge will be reinstalled upon completion of construction activities.

Special Notes:

Graphs/tables for flow meters installed on the interceptors are not yet available. This equipment is being fine tuned and flow data will be forthcoming.

Newark CSO Discharge Characterization Study

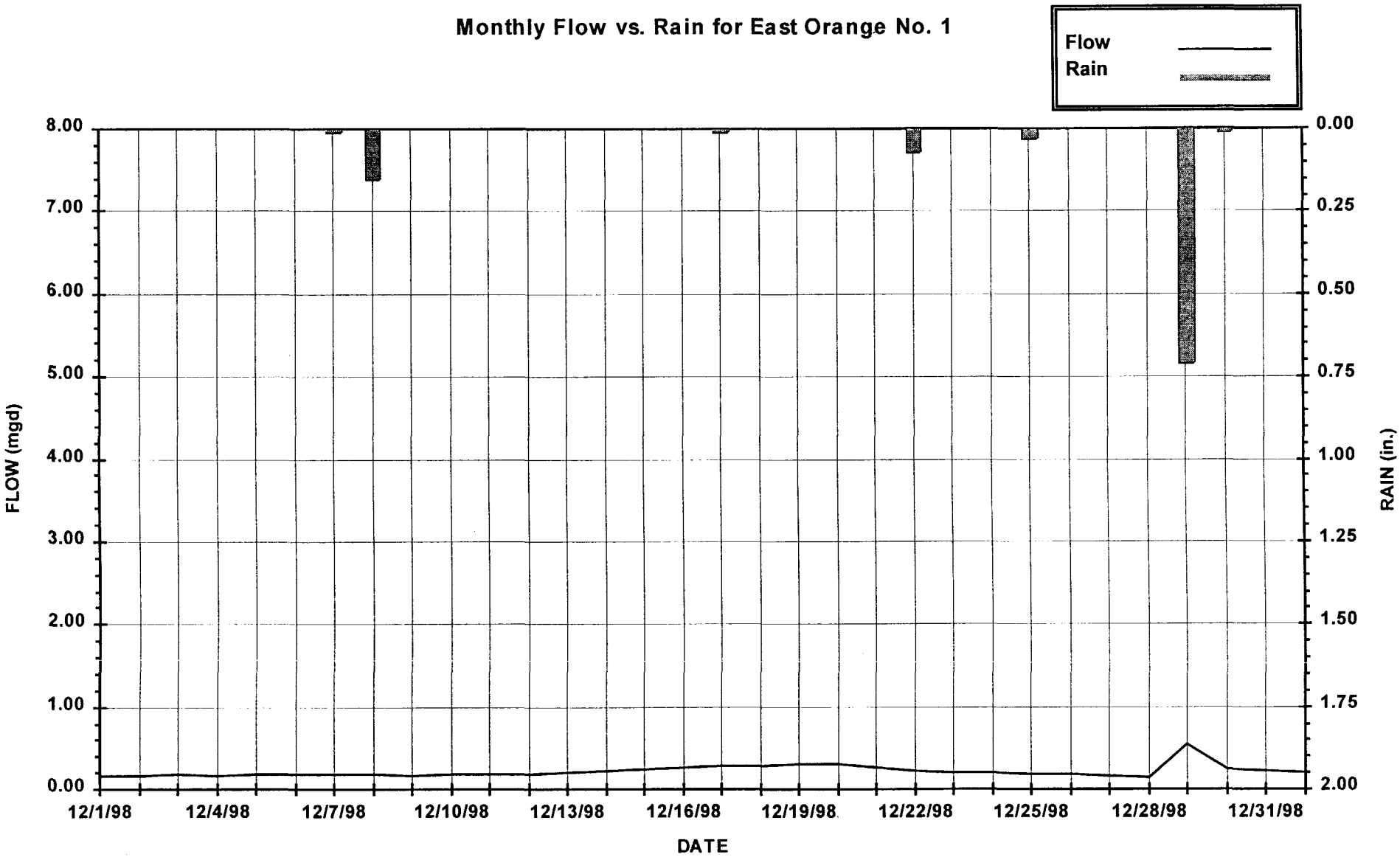
December Flow Meter Report Key

Region/Location	*Meter Serial Number*	*Flow1*	*Flow2*	*Flow3*
CSO 002 - Verona Ave	QR8	54.75" Influent	72"W x 58.75"H Overflow	
CSO 004/005 - Herbert Pl. - Influent	QTQ	48" Influent	24" Influent	
CSO 004/005 - Herbert Pl. - Overflows	QTP	51" Overflow	48.5"H x 72.4"W Overflow	
CSO 006 - Oriental Ave Influent	QUL	48" Influent		
CSO 006 - Orential Ave Overflow	QUJ	54" Overflow		
CSO 007 - Third Ave	QR6	15" Influent	48"W Overflow Weir	
CSO 008 - Fourth Ave	QQD		72"W x 53"H Overflow	45"H x 25.75"W Influent
CSO 009B - Clay St Influent	QRG	18" Influent		
CSO 009B - Clay St Overflow	QU3	18" Overflow		
CSO 009C - Clay St	QRW	15.2" Influent	15.1" Overflow	
CSO 010 - Clay St Influents	QTR	To Be Profiled	To be Profiled	
CSO 010 - Clay St Overflow North Pipe	QPS		100"W x75.3"H Overflow	
CSO 010 - Clay St Overflow South Pipe	QUM		100"W x75.3"H Overflow	
CSO 011 - Orange St Influent	QRF	15" Influent		
CSO 011 - Orange St influent and overflow	QRZ	18" Influent	22.5" Overflow	
CSO 012 - Bridge St	QR7	15" Influent	48"W Overflow Weir	
CSO 013 - Rector St	QUY	62" Influent	45"W x 54"H Influent	79.5"W x 66.5"H Overflow
CSO 014 - Saybrook Pl Influent and Overflow	QRV		102.5"W x 83"H Overflow	75.75"H x74"W Influent
CSO 015 - City Dock Influent1	QQT	12" Influent		
CSO 015 - City Dock Influent2	QU2	18" Influent		
CSO 015 - City Dock Influent3	QPV	36" Influent		
CSO 015 - City Dock Influent4	QPQ		108"W x 88"H Influent (Siphon)	
CSO 015 - City Dock Overflow	QLK		87"H x 108"W Overflow	
CSO 016 - Jackson St	QTO	56.5" Influent	12" Influent	72"W Overflow Weir
CSO 017 - Polk St	QUG	85" Influent	97" Overflow Weir	
CSO 018 - Freeman St Influent	QUF	28.5" Influent	18.25" Influent	
CSO 018 - Freeman St Influent&Overflow	QU0	24.2" Influent	44"W Overflow Weir	
CSO 022 - Roanoke Ave	QUZ	60" Influent	60" Overflow	
CSO 023a - Adams St	QR4		88"W x 12"H Overflow	64"H x 51.5"W Influent
CSO 023b - Adams St Influent	QO4	48" Influent		
CSO 023b - Adams St overflow	QPP	42" Overflow		
CSO 025 - Peddie St unregulated	QUE	192"W x 80"H Influent	191"W x 85"H Influent	
CSO 025 - Peddie St regulated	QO7	48"H x 48"W Regulated Flow		
CSO 026 - Queen unregulated	QQU	102.5"W x 61"H Influent		
CSO 026 - Queen regulated	QQV	47.3"H x 48.2"W Regulated Flow		
CSO 027 - Waverly	QRY	96" Influent	96" Overflow	
CSO 030 - Wheeler/Ave A	QUD	56" Influent	66" Influent	51.75"H x 11.6"H Overflow
East Orange No. 1	QRH		49.25"H x 32.75"W	
East Orange No. 2	QRM		48.8"H x 33.4"W	
East Orange No. 3	QQZ	33"		
East Orange No. 4	QRC	12"		
East Orange No. 5/6	QR1	33"	18.75"	
East Orange No. 7	QPT	30"		
East Orange No. 8	QO1	24.25"		
Outgoing No. 1	QQ7	12"		
Outgoing No. 2	QQ2	20"		
Outgoing No. 3	QRD	15"		
Outgoing No. 4	QUI	18.25"		
Newark No. 1	QLL	36"		
Newark No. 2	QUN	18.25"		
Newark No. 3	QTZ	47.1"		
Newark No. 4	QT1	45"W x 48"H		
Newark No. 5	QUO	21.1"		
Newark No. 6	QU1	24.5"		
Newark No. 7	QUK	24.4"		
Newark No. 8	QT3	18"		
Newark No. 9	QLF	102"W x 24"H		
Newark No. 10	QUX	2 - 20.5"		

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 1



EAST ORANGE NO. 1
Address: Central Ave. and 15th St.
49.25" H x 32.75"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

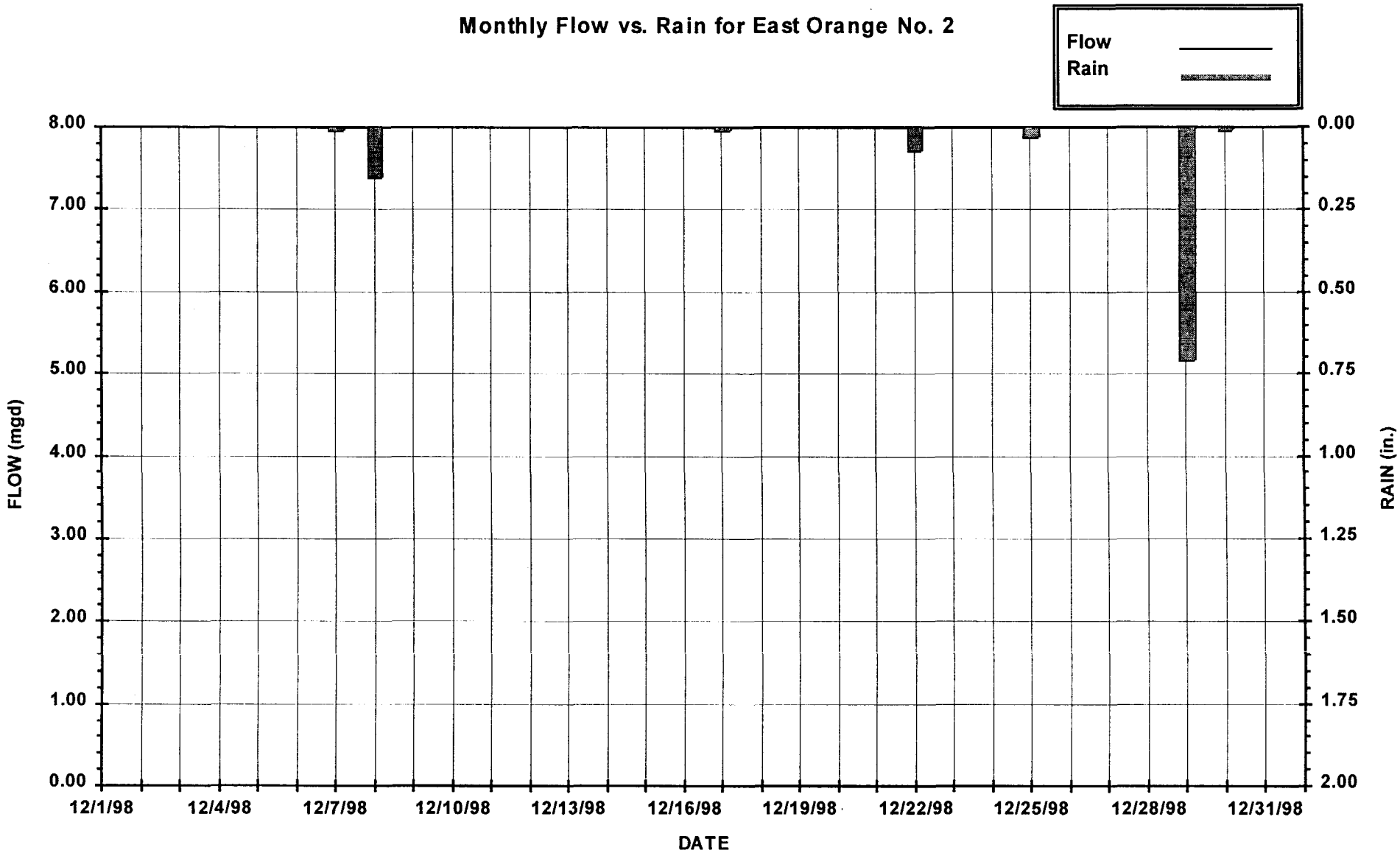
863690864

000003

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 2



EAST ORANGE NO. 2
Address: 9th Ave. and 15th St.
48.8" H x 33.4"W Egg Shaped

Rain Gauge
RG-3, Water Supply Central Ave

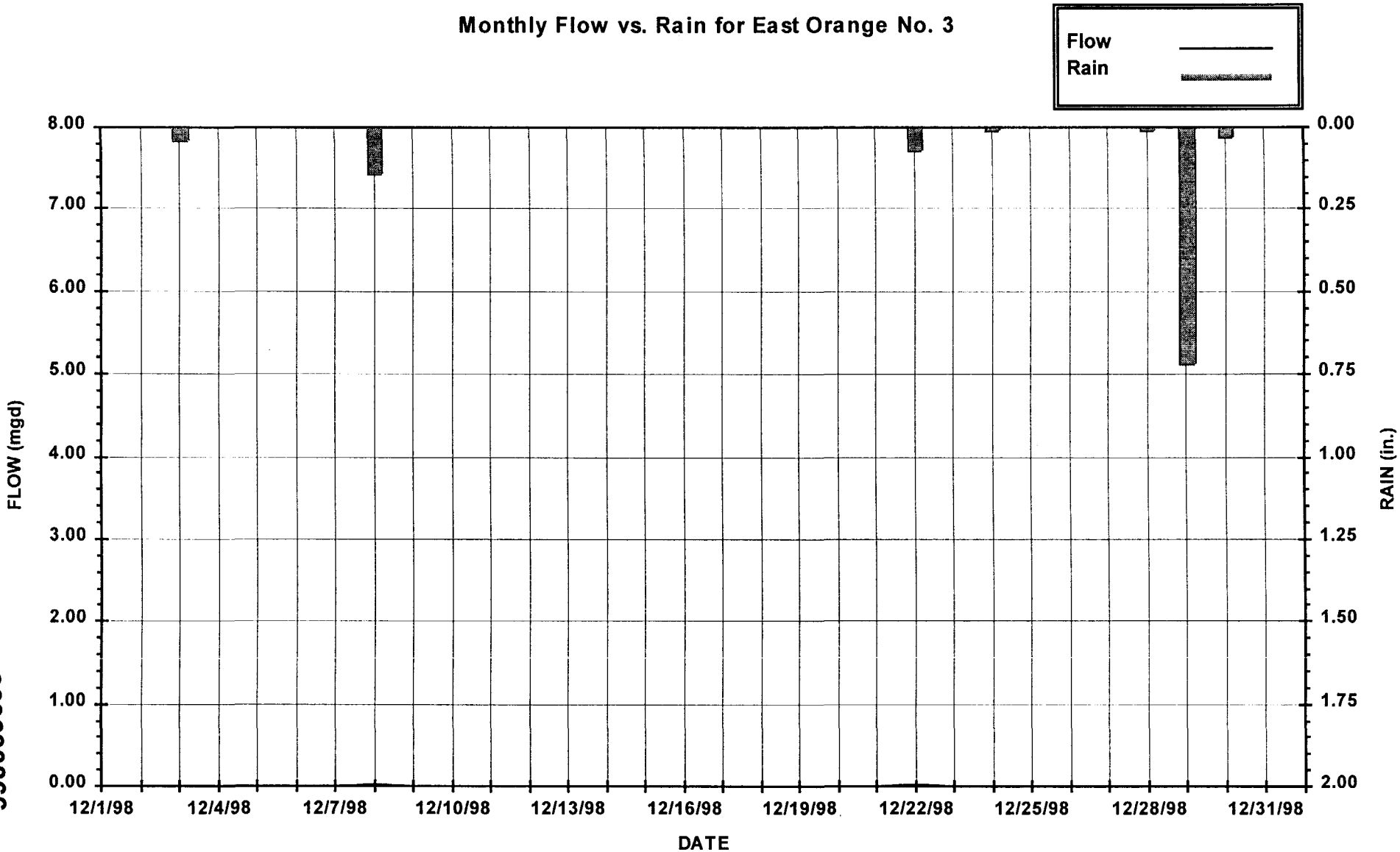
863690865

000004

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 3



EAST ORANGE NO. 3
Address: Sussex Ave. and 15th St.
33" Storm

Rain Gauge
RG-1, Roberto Clemente School

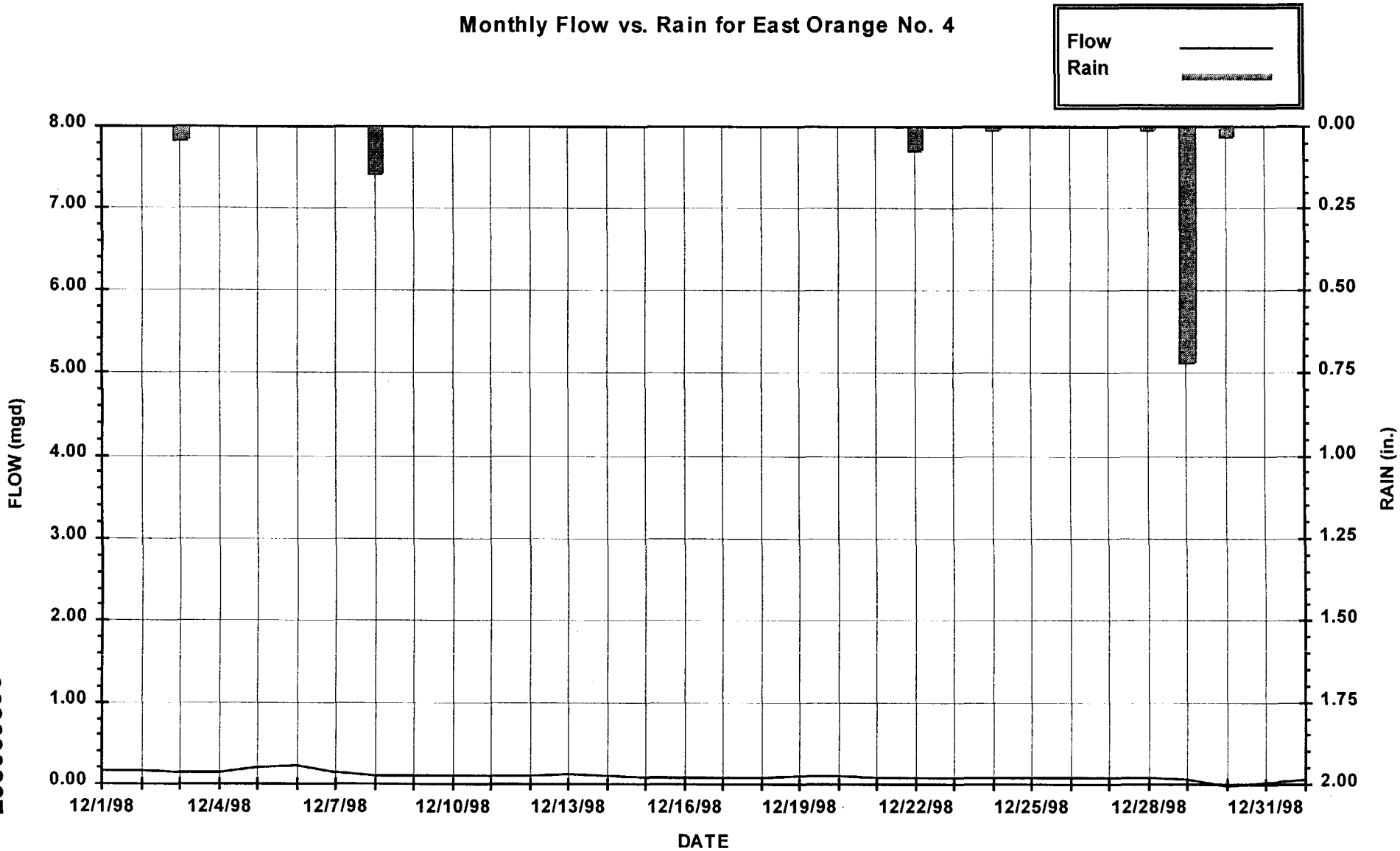
863690866

000005

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 4



EAST ORANGE NO. 4
Address: Sussex Ave. and 15th St.
12" VCP

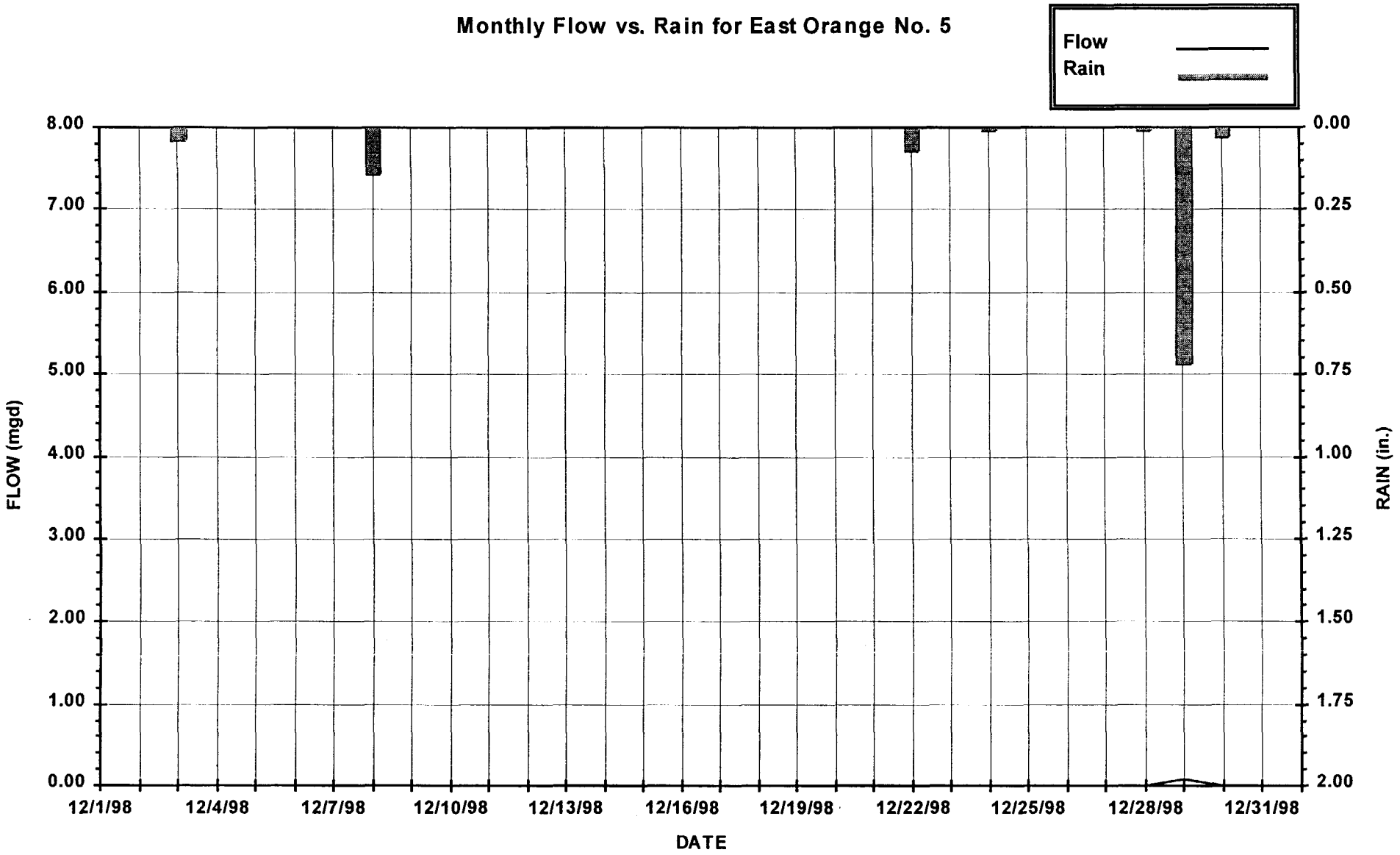
Rain Gauge
RG-1, Roberto Clemente School

863690867

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 5



EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
33" RCP Storm

Rain Gauge
RG-1, Roberto Clemente School

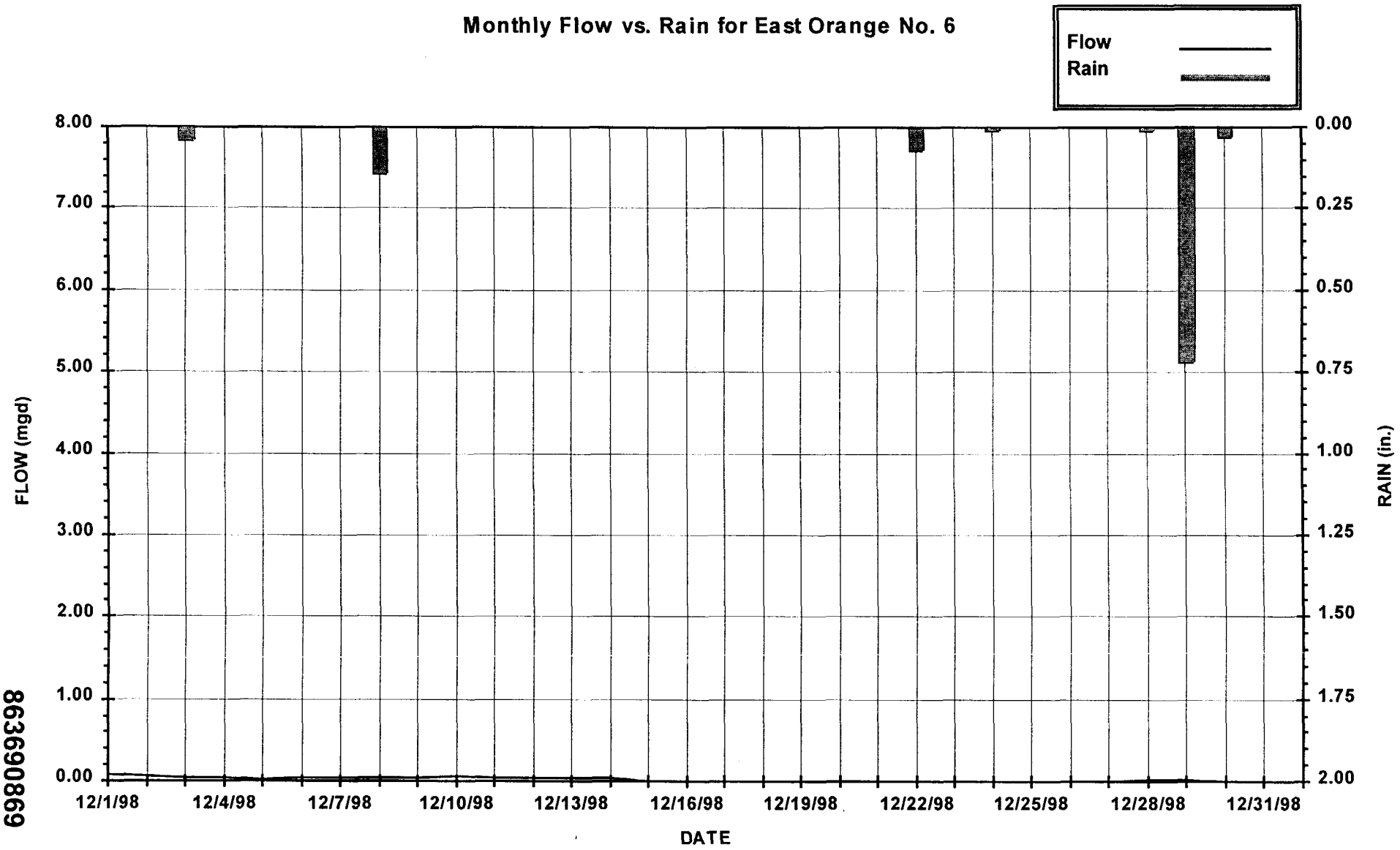
863690868

000007

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 6



EAST ORANGE NO. 5/6
Address: 14TH ST. & HEDDEN PL.
18.75" VCP

Rain Gauge
RG-1, Roberto Clemente School

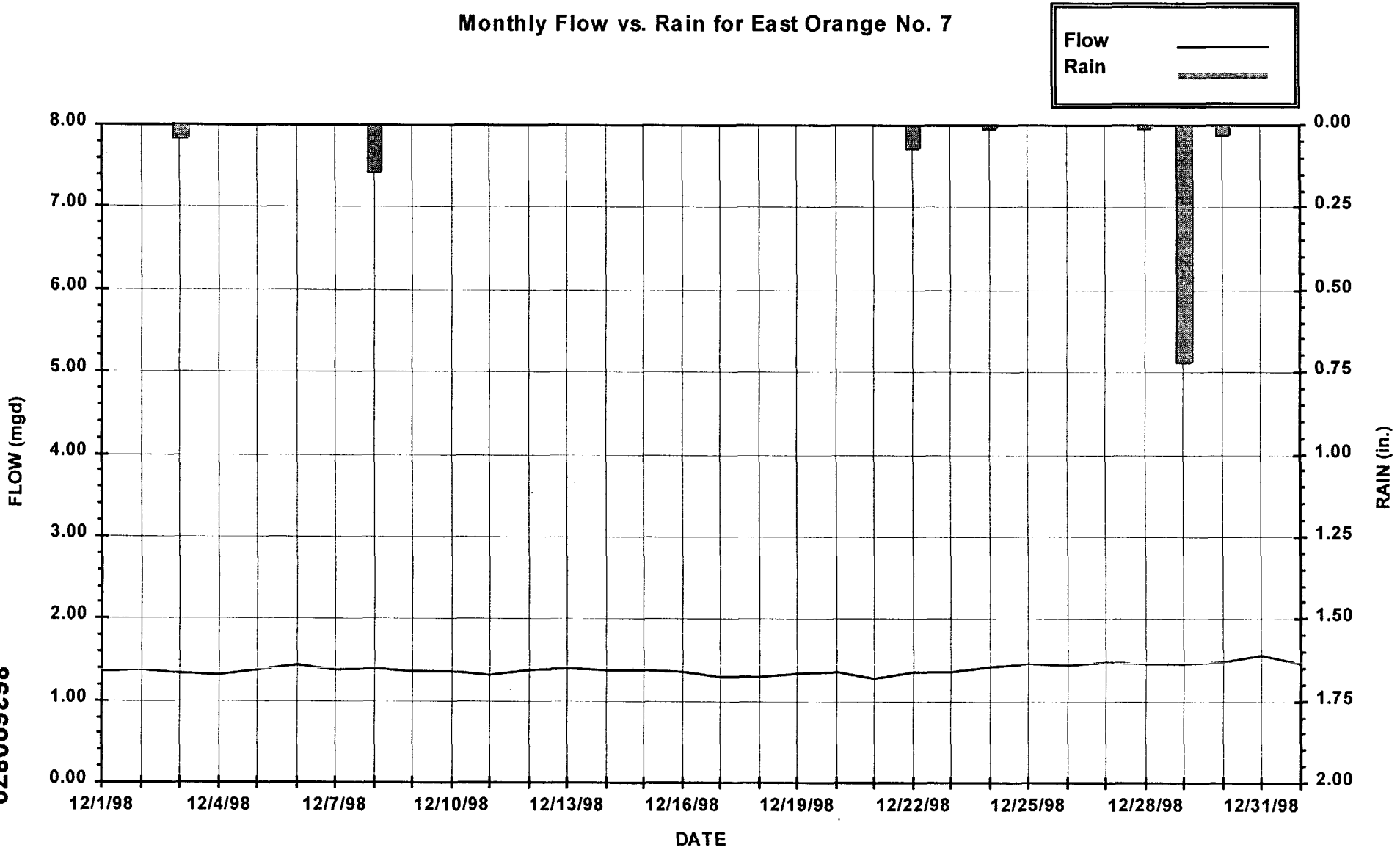
863690869

000008

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 7



EAST ORANGE NO. 7
Address: 6TH ST. & 13TH ST.
30" RCP

Rain Gauge
RG-1, Roberto Clemente School

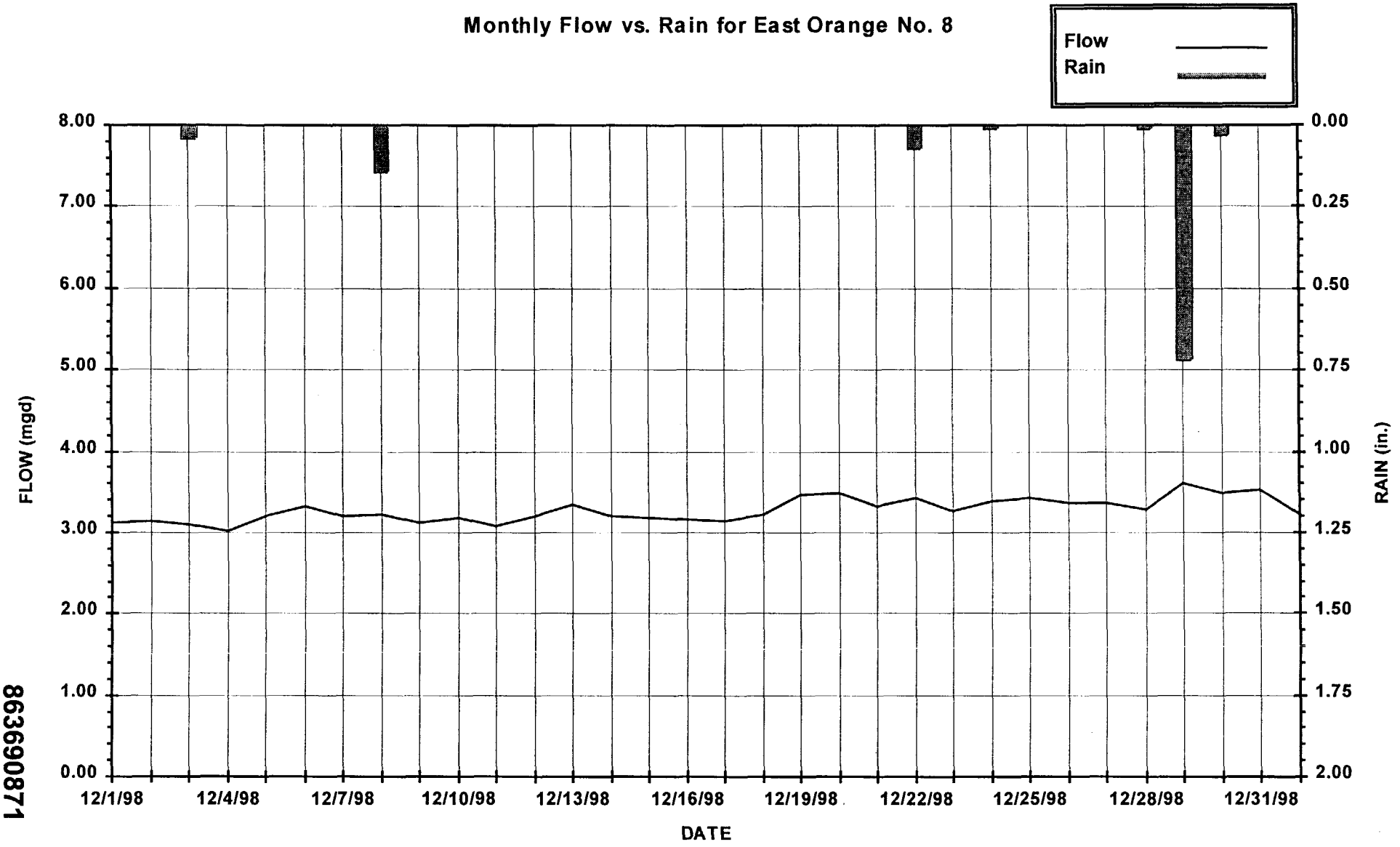
863690870

000009

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 8



EAST ORANGE NO. 8
Address: 13TH ST. & SPRINGDALE AVE.
24.25" VCP

Rain Gauge
RG-1, Roberto Clemente School

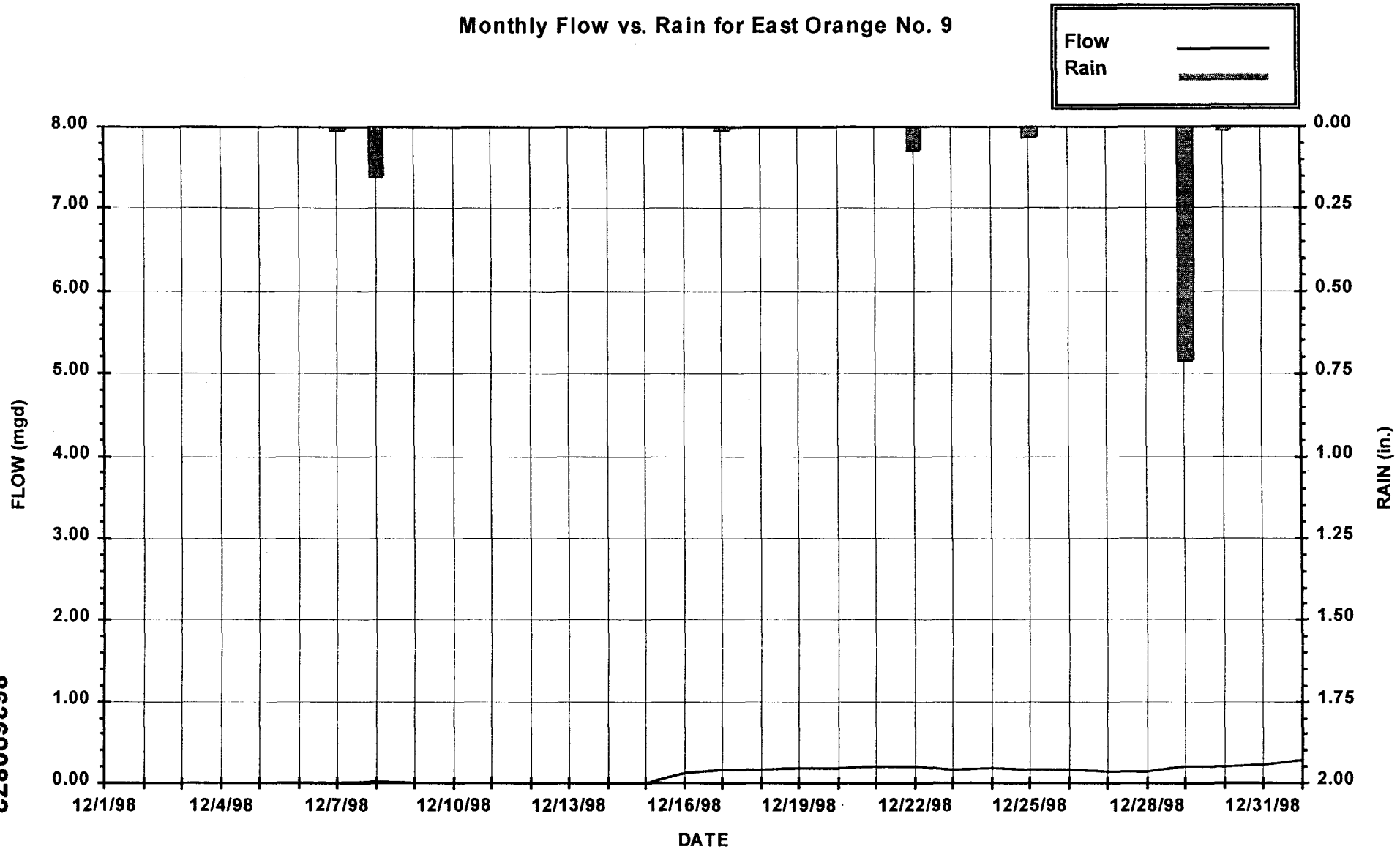
863690871

000010

Newark CSO Discharge Characterization Study

Task 5 - Flow Monitoring Study

Monthly Flow vs. Rain for East Orange No. 9



EAST ORANGE NO. 9
Address: Struben St. and Freeway
18"

Rain Gauge
RG-3, Water Supply Central Ave

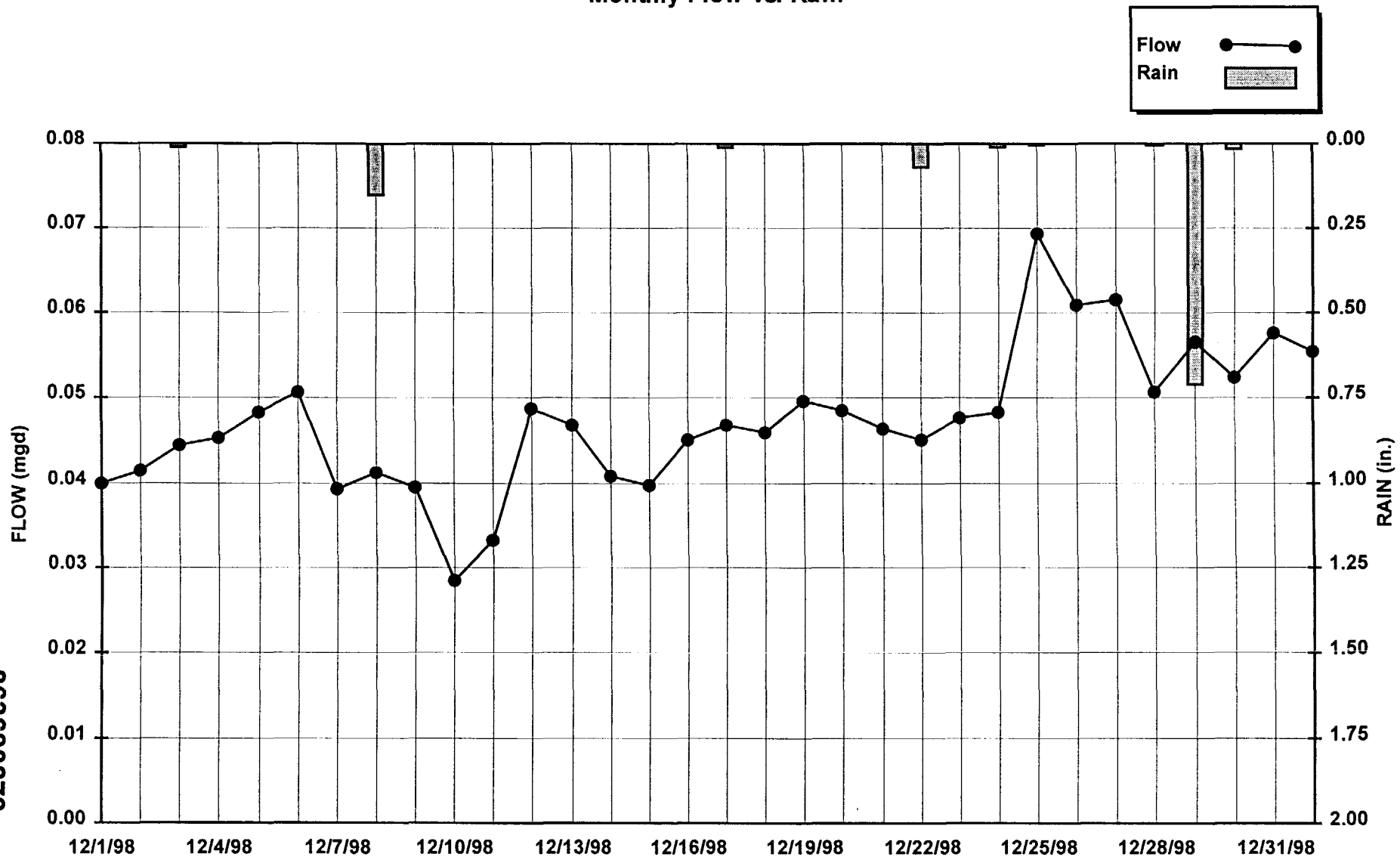
863690872

000011

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 1

Address: Mt. Vernon St. near Chapman St.

910 F.M. VERSION: 1.02

Serial#: QQ7

Monthly Flow Report (Flow1)

2/9/1999 5:18:12 PM

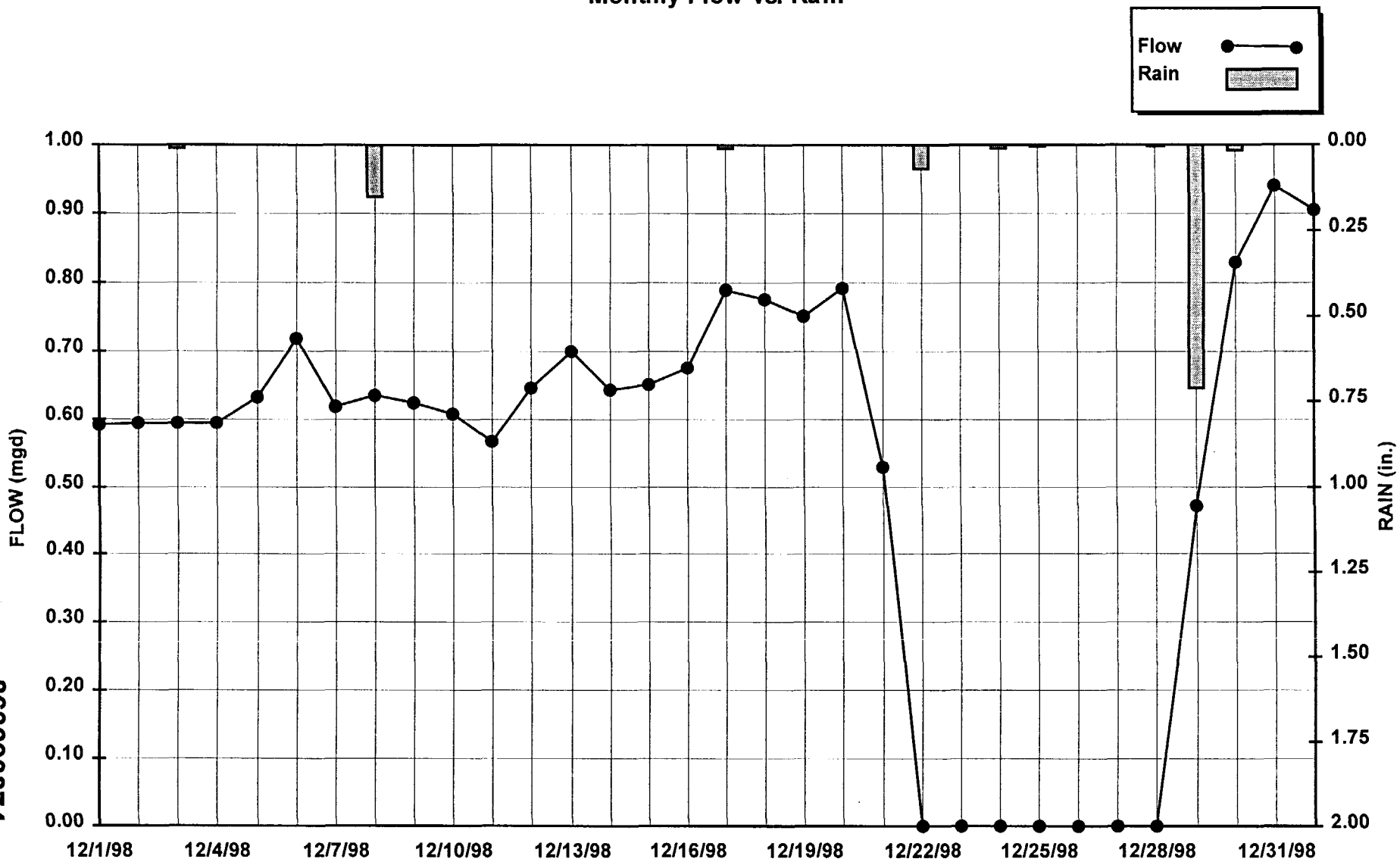
863690873

000012

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 2
Address: Unity and Valley St.

910 F.M. VERSION: 1.02
Serial#: QQ2

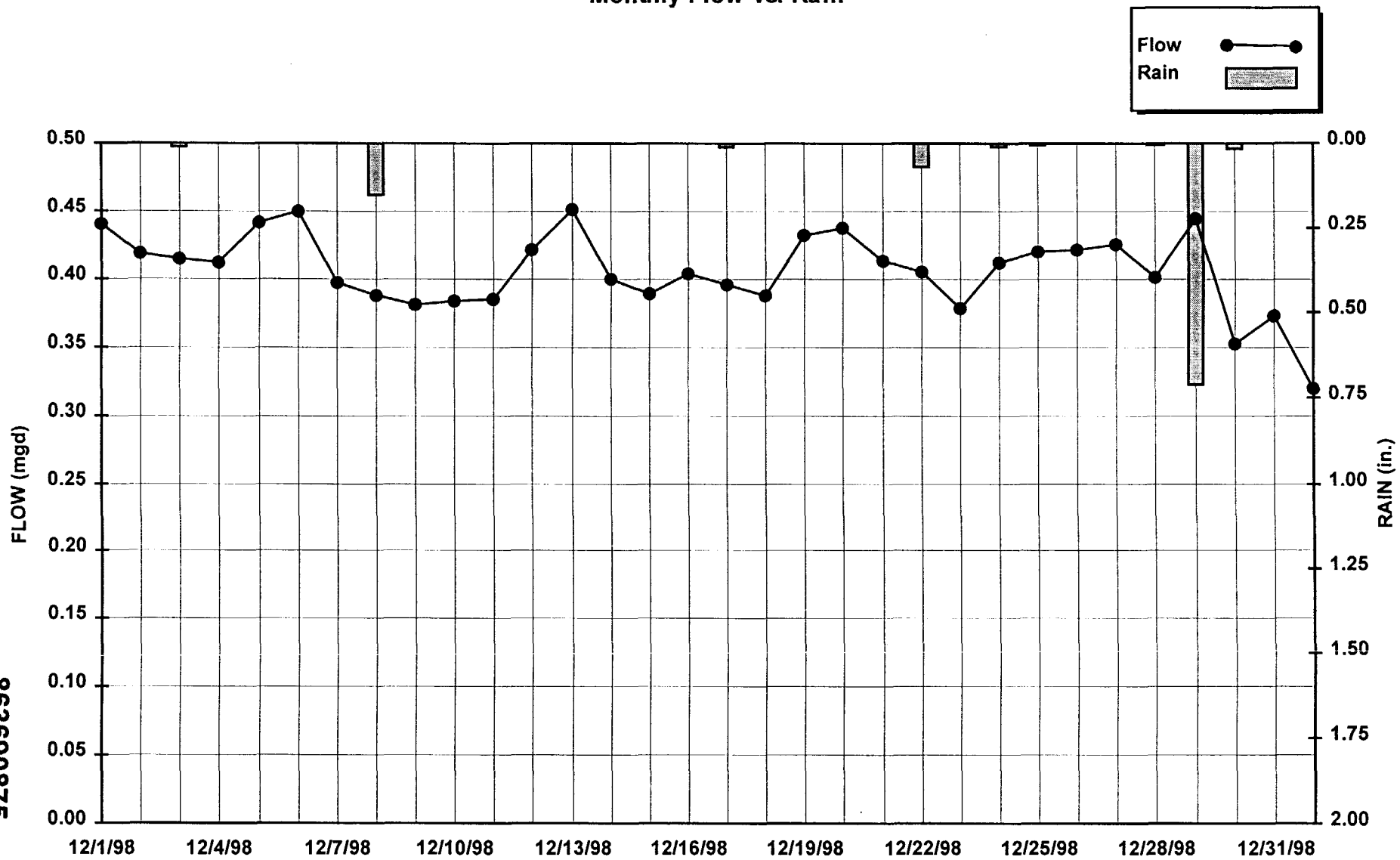
863690874

000013

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 3

Address: Fabyan Pl. near Exit Ramp of I-78

910 F.M. VERSION: 1.02

Serial#: QRD

Monthly Flow Report (Flow1)

2/9/1999 5:19:06 PM

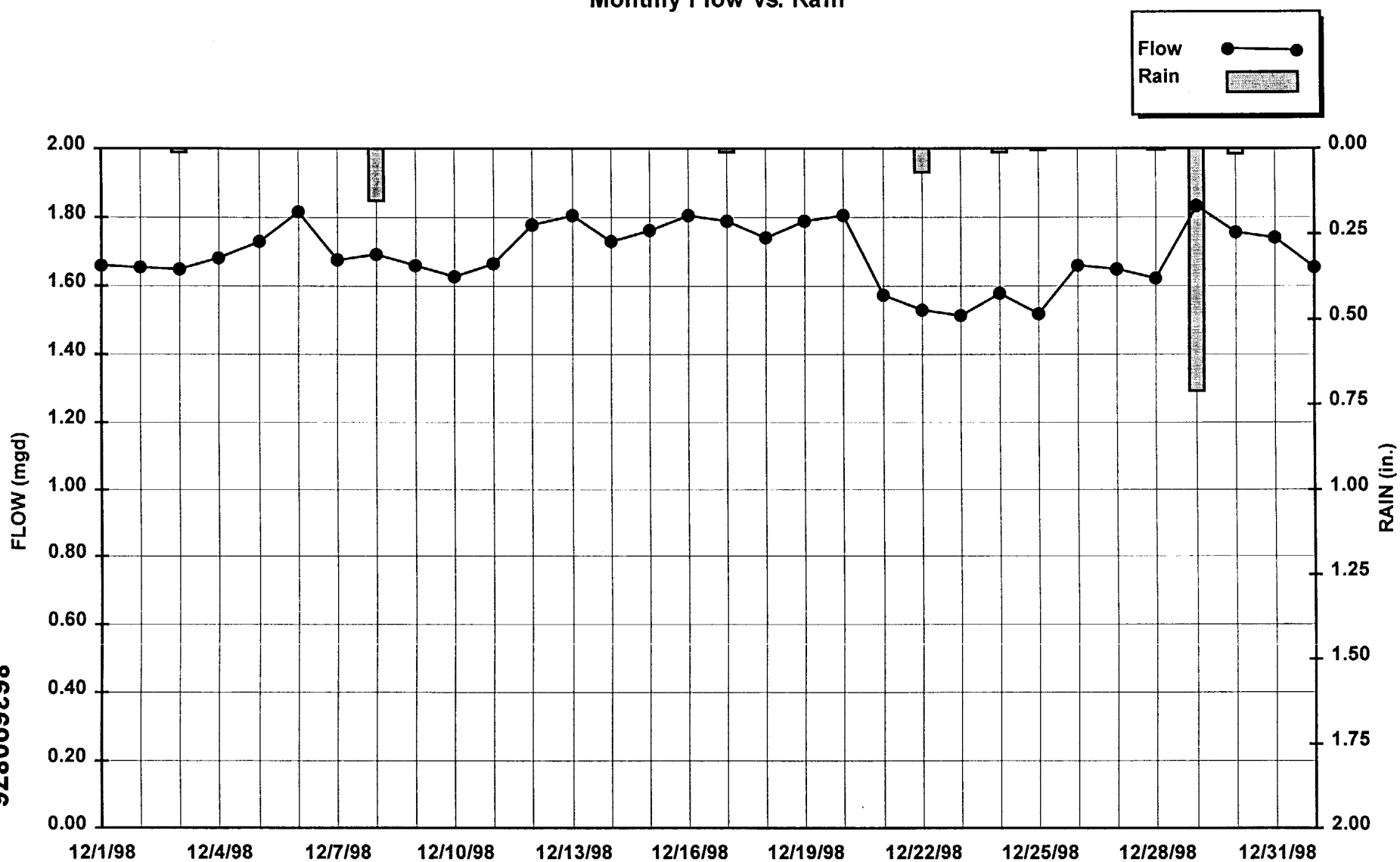
863690875

000014

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Outgoing No. 4
Address: N. Lindon Ln between House # 63 and 65

910 F.M. VERSION: 1.02
Serial#: QUI

Monthly Flow Report (Flow1)

2/9/1999 5:19:34 PM

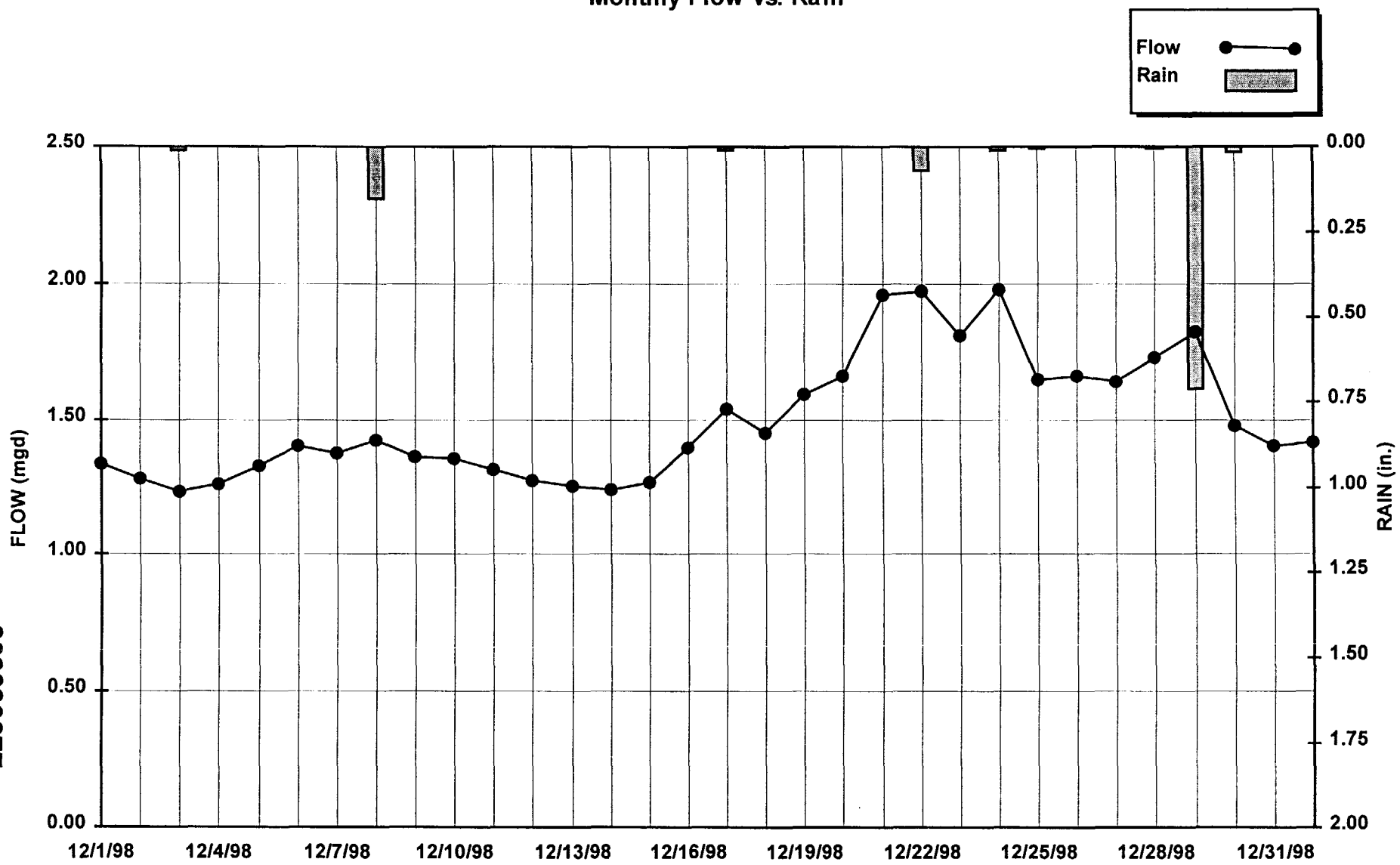
863690876

000015

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



Newark No. 1
Address: Elizabeth and Mapes

910 F.M. VERSION: 1.02
Serial#: QXF

Monthly Flow Report (Flow1)

2/11/1999 3:26:49 PM

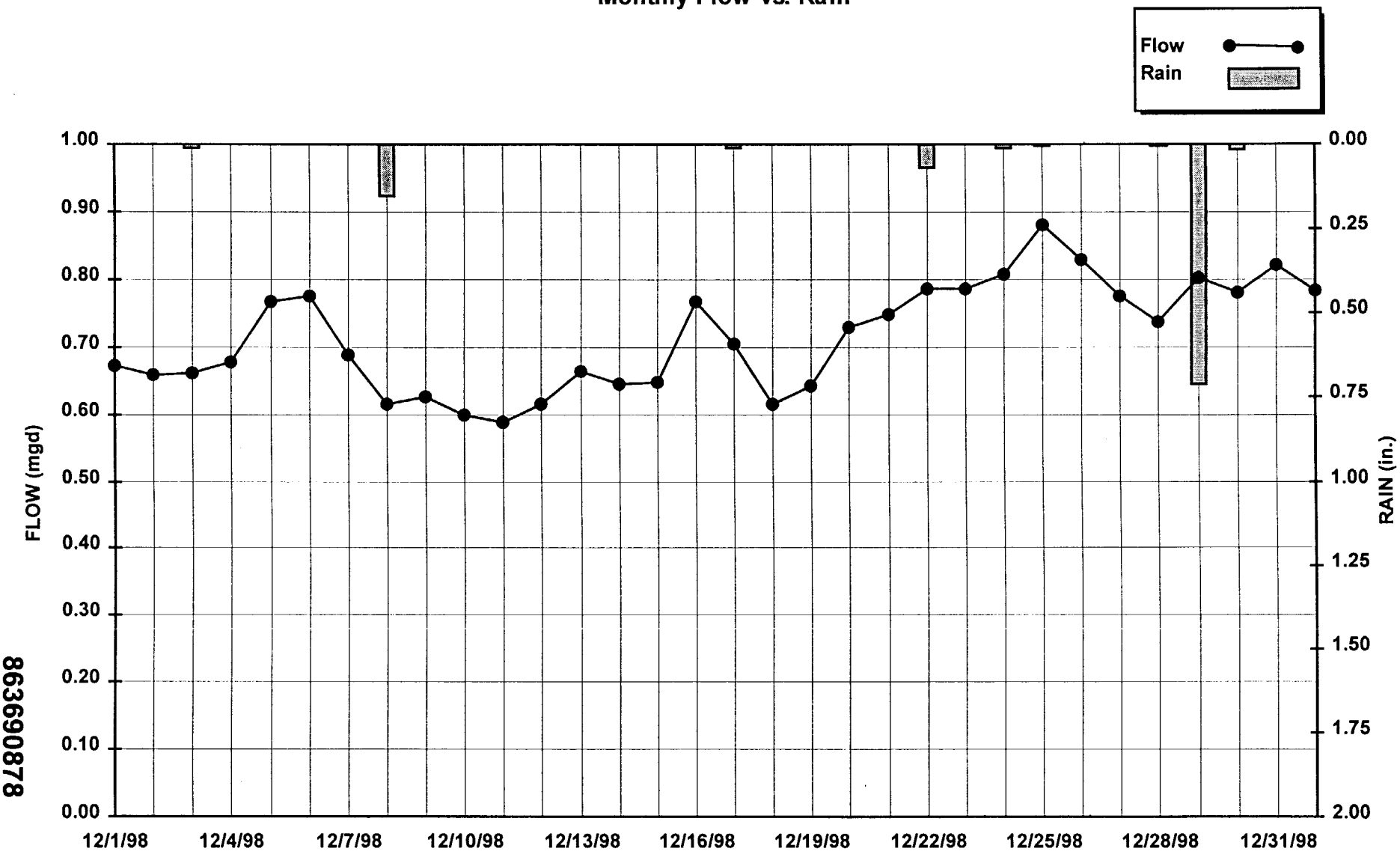
863690877

000016

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 2
Address: Weequahic Park

910 F.M. VERSION: 1.02
Serial#: QUN

Monthly Flow Report (Flow1)

2/9/1999 5:22:09 PM

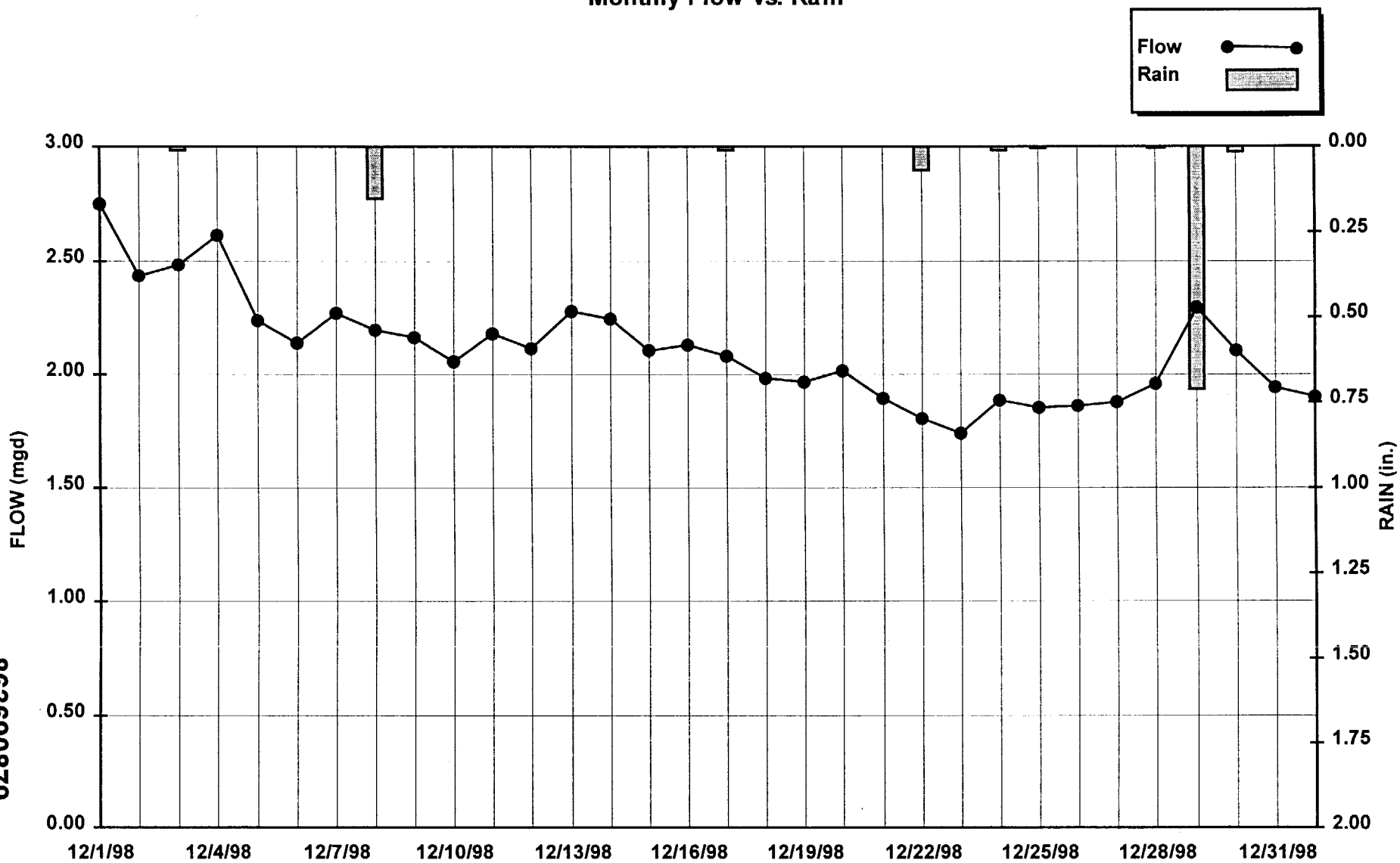
863690878

000017

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 3
Address: Jabez Ave. near Backus St.

910 F.M. VERSION: 1.02
Serial#: QTZ

Monthly Flow Report (Flow1)

2/9/1999 5:23:27 PM

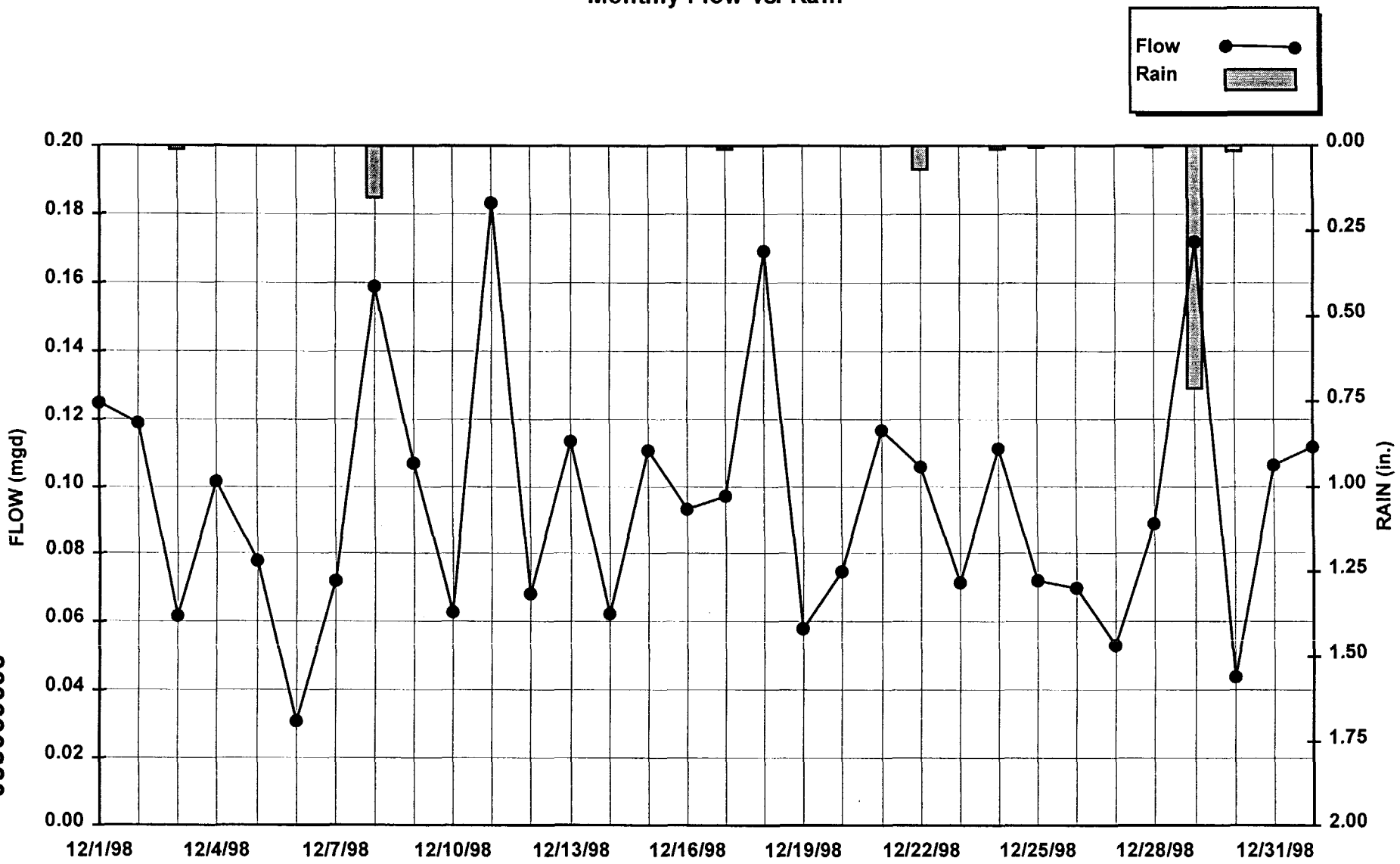
863690879

000013

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 4
Address: Wilson and Ave. P

910 F.M. VERSION: 1.02
Serial#: QT1

Monthly Flow Report (Flow1)

2/11/1999 3:28:40 PM

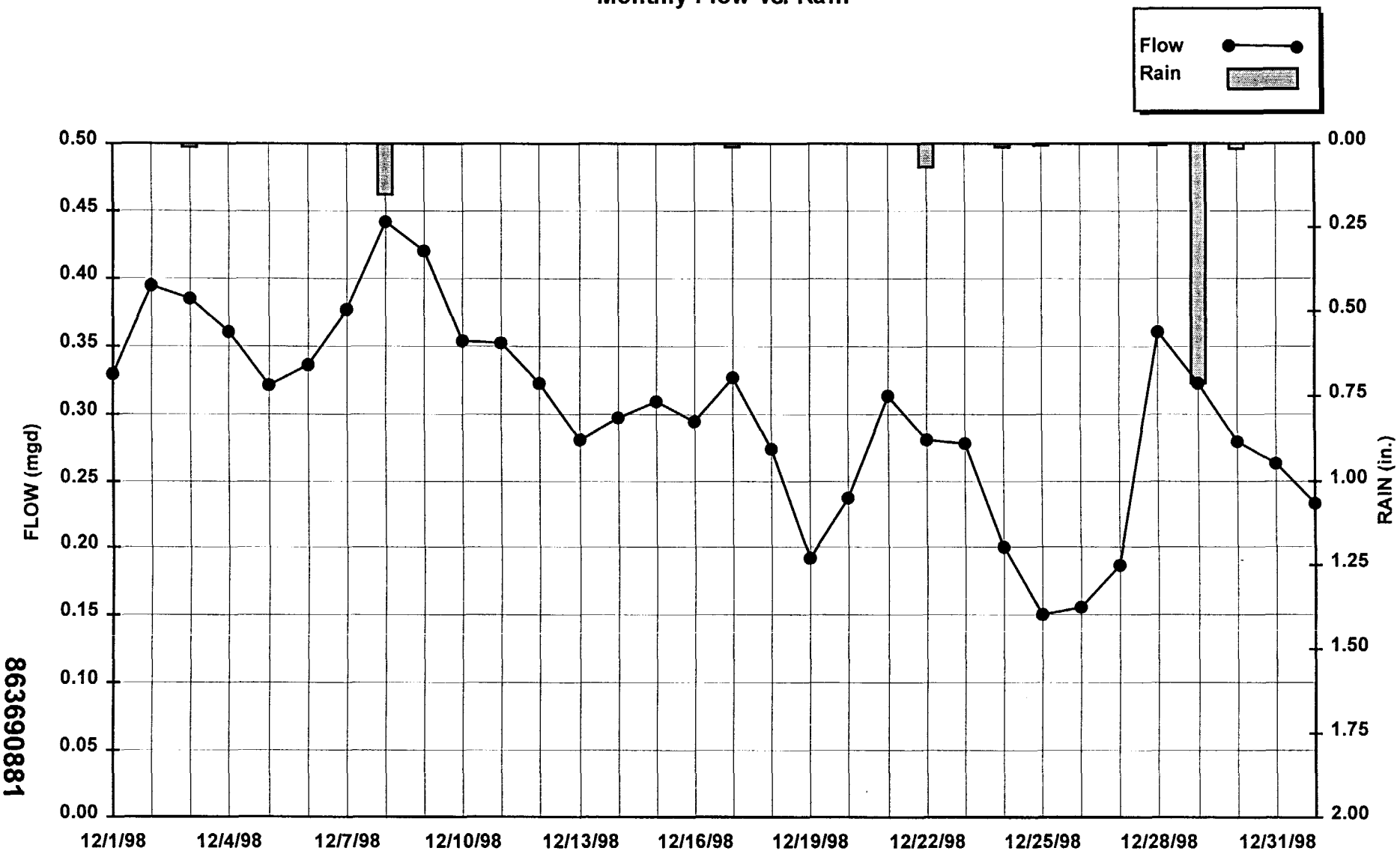
863690880

000019

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 5
Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02
Serial#: QUO

Monthly Flow Report (Flow1)

2/9/1999 5:21:18 PM

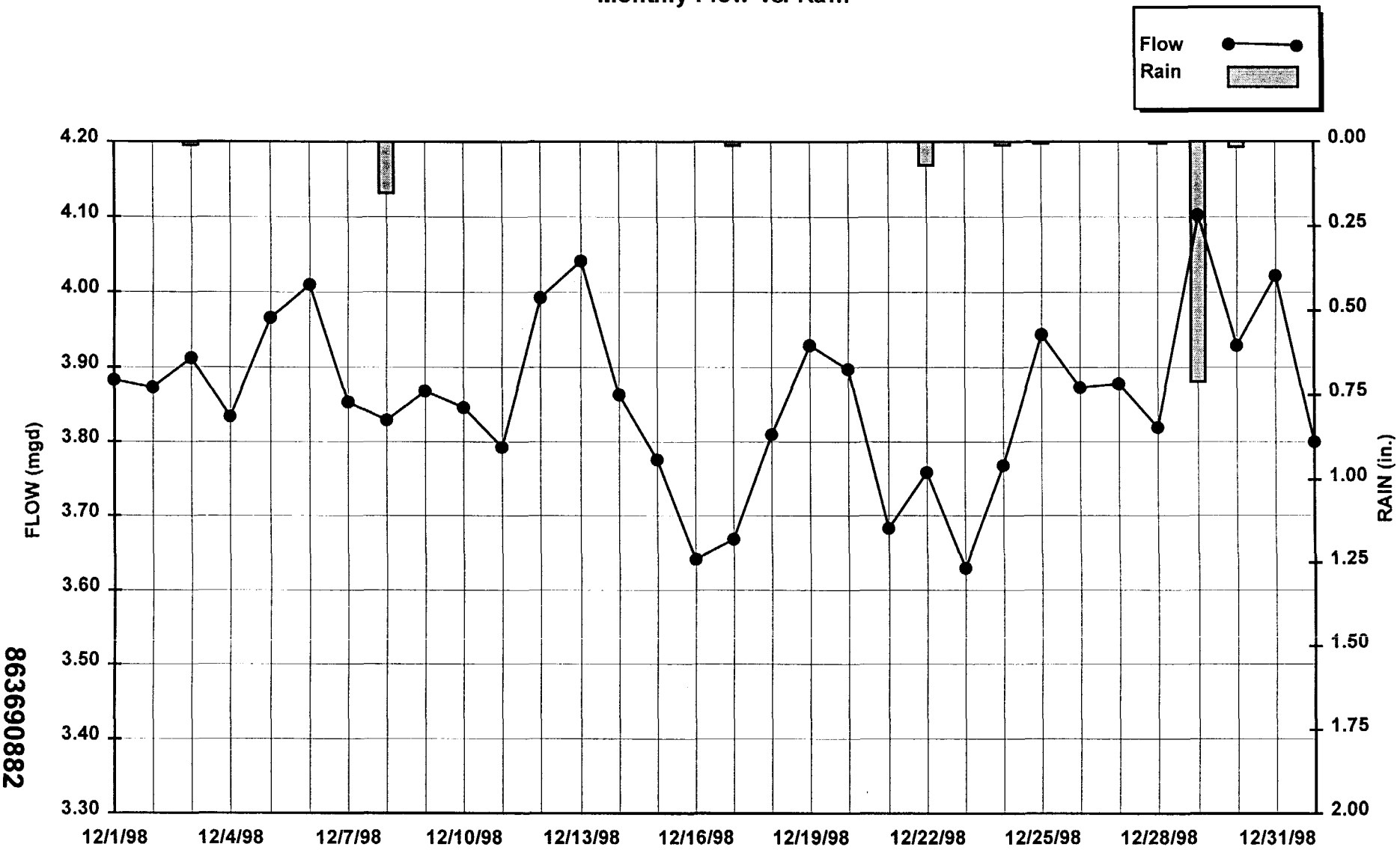
863690881

000020

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 6
Address: Near 355 5th St.

910 F.M. VERSION: 1.02
Serial#: QU1

Monthly Flow Report (Flow1)

2/9/1999 5:20:24 PM

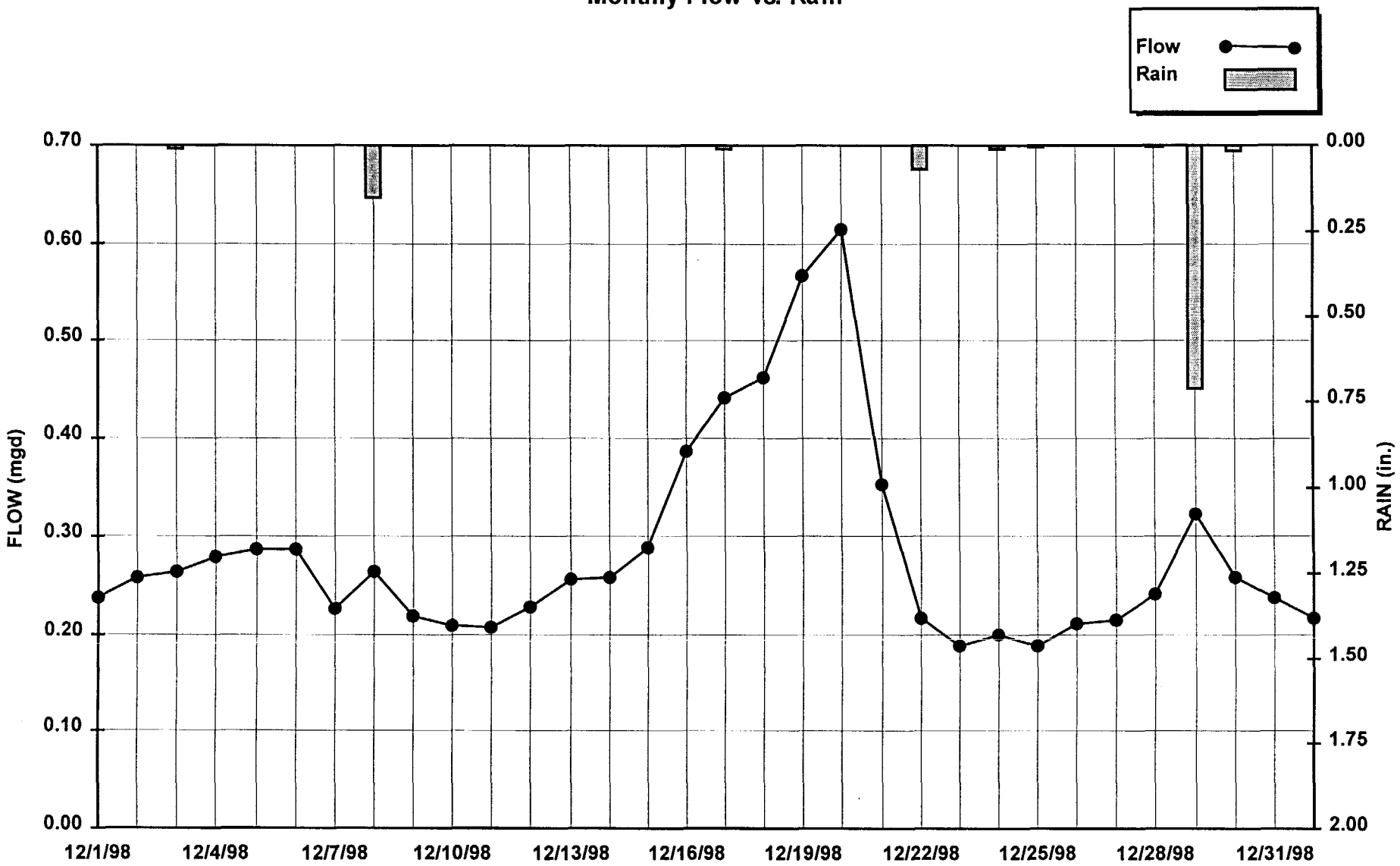
863690882

000021

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 7
Address: Verona St. near Broadway

910 F.M. VERSION: 1.02
Serial#: QUK

Monthly Flow Report (Flow1)

2/9/1999 5:20:51 PM

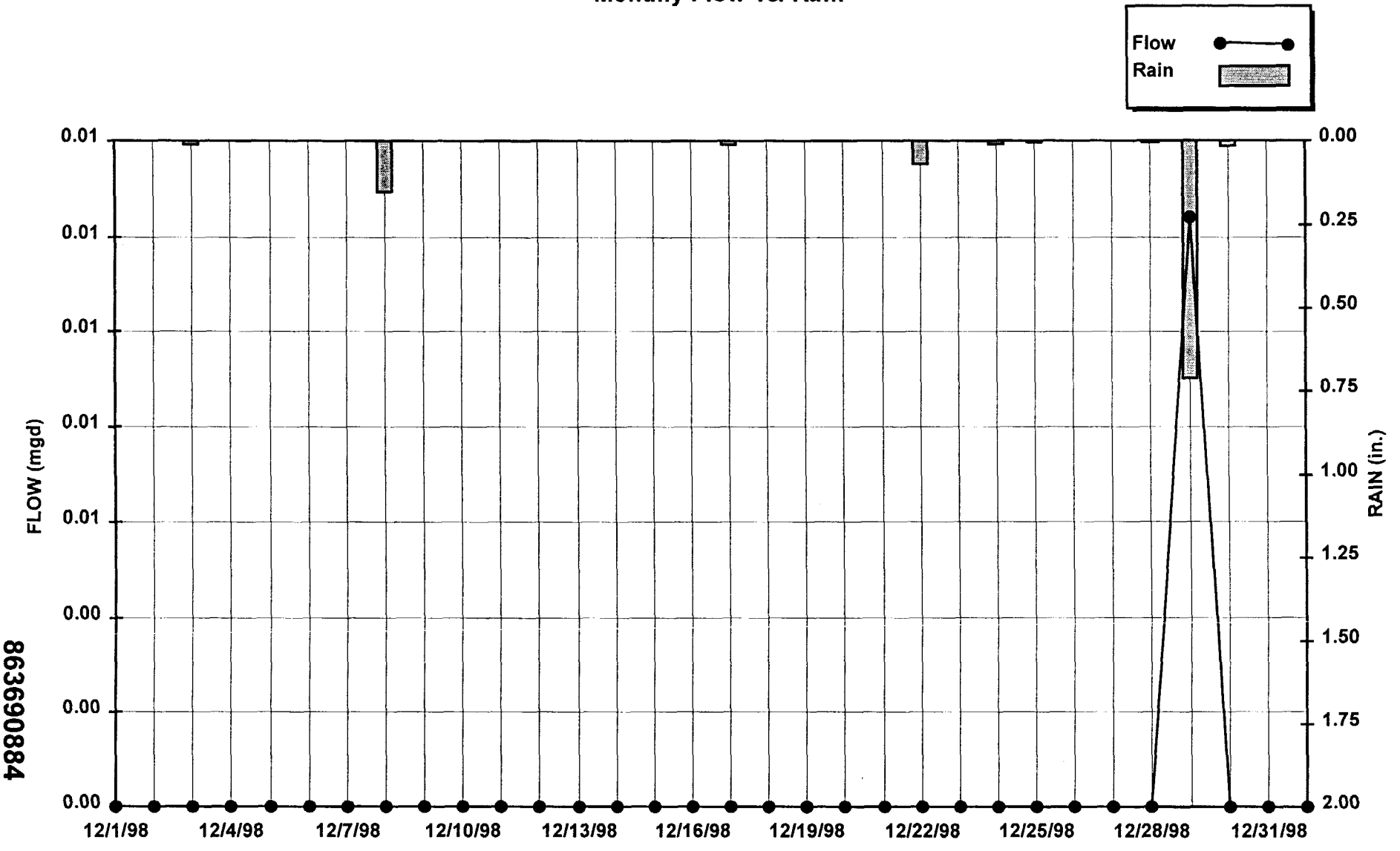
863690883

000022

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 8

Address: Earl and Frelinghuysen

910 F.M. VERSION: 1.02

Serial#: QT3

Monthly Flow Report (Flow1)

2/9/1999 5:23:01 PM

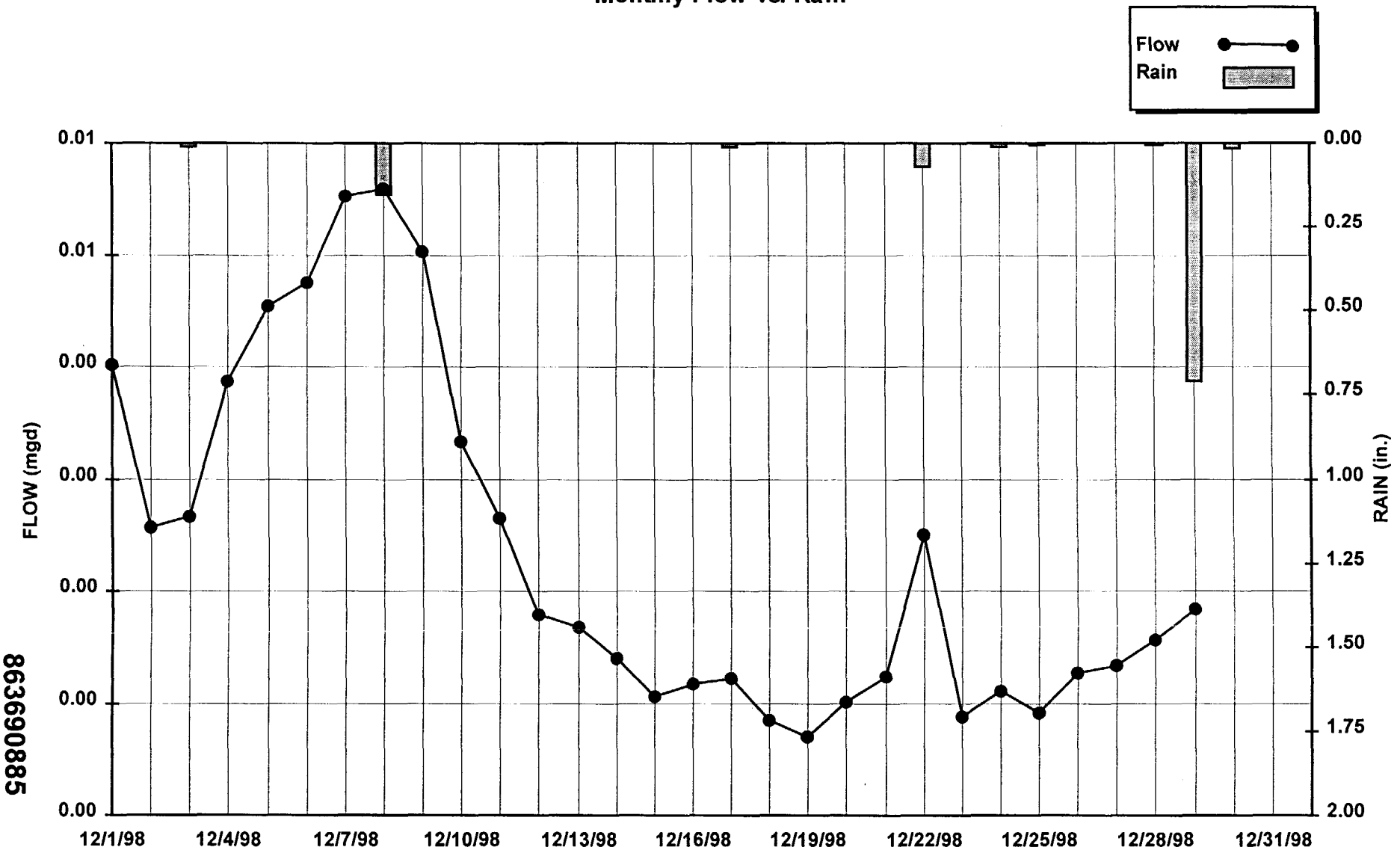
863690884

000023

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 9

Address: Branch Brook Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QLF

Monthly Flow Report (Flow1)

2/9/1999 5:21:42 PM

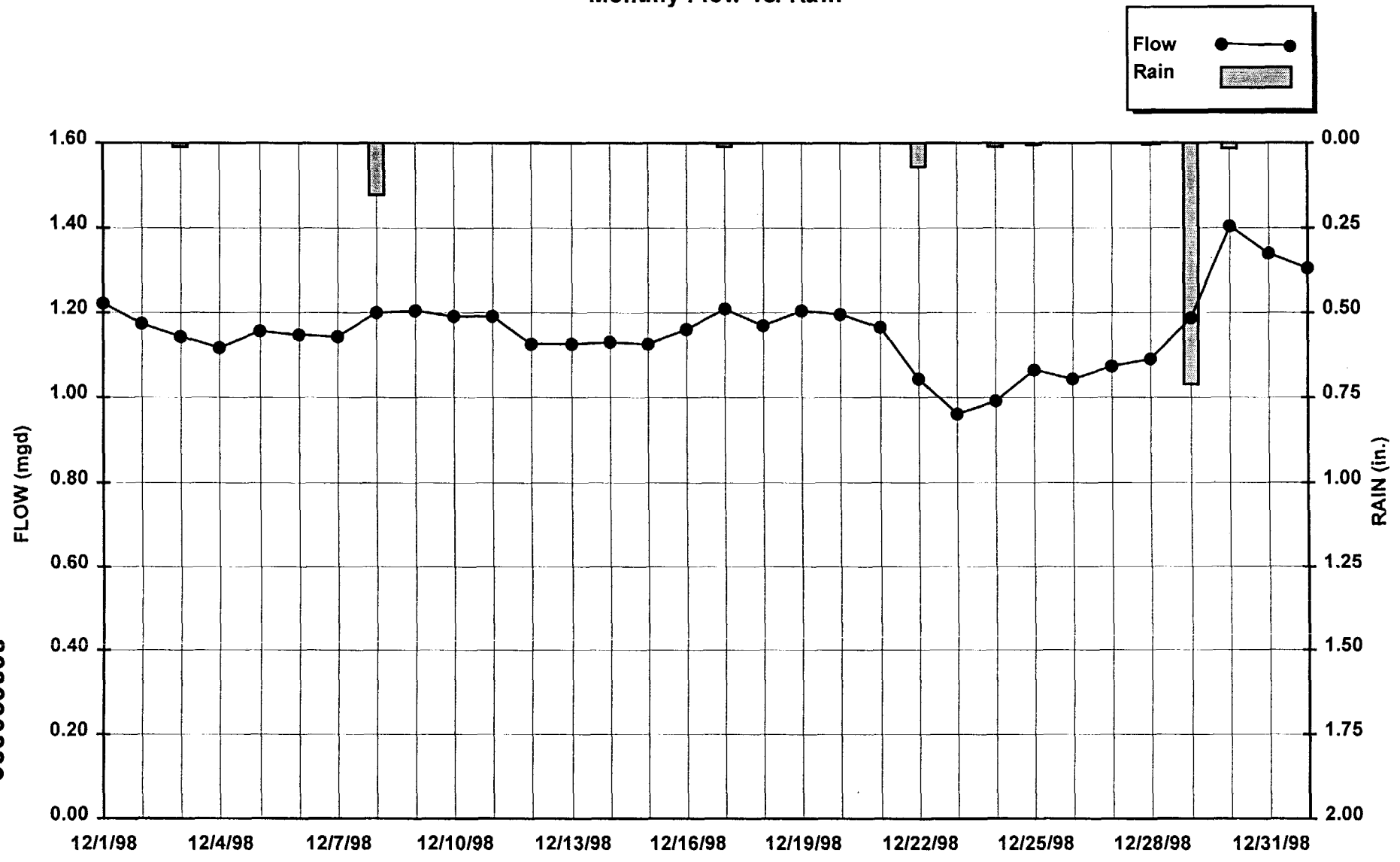
863690885

000024

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



NEWARK No. 10

Address: Weequahic Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QUX

Monthly Flow Report (Flow1)

2/9/1999 5:22:34 PM

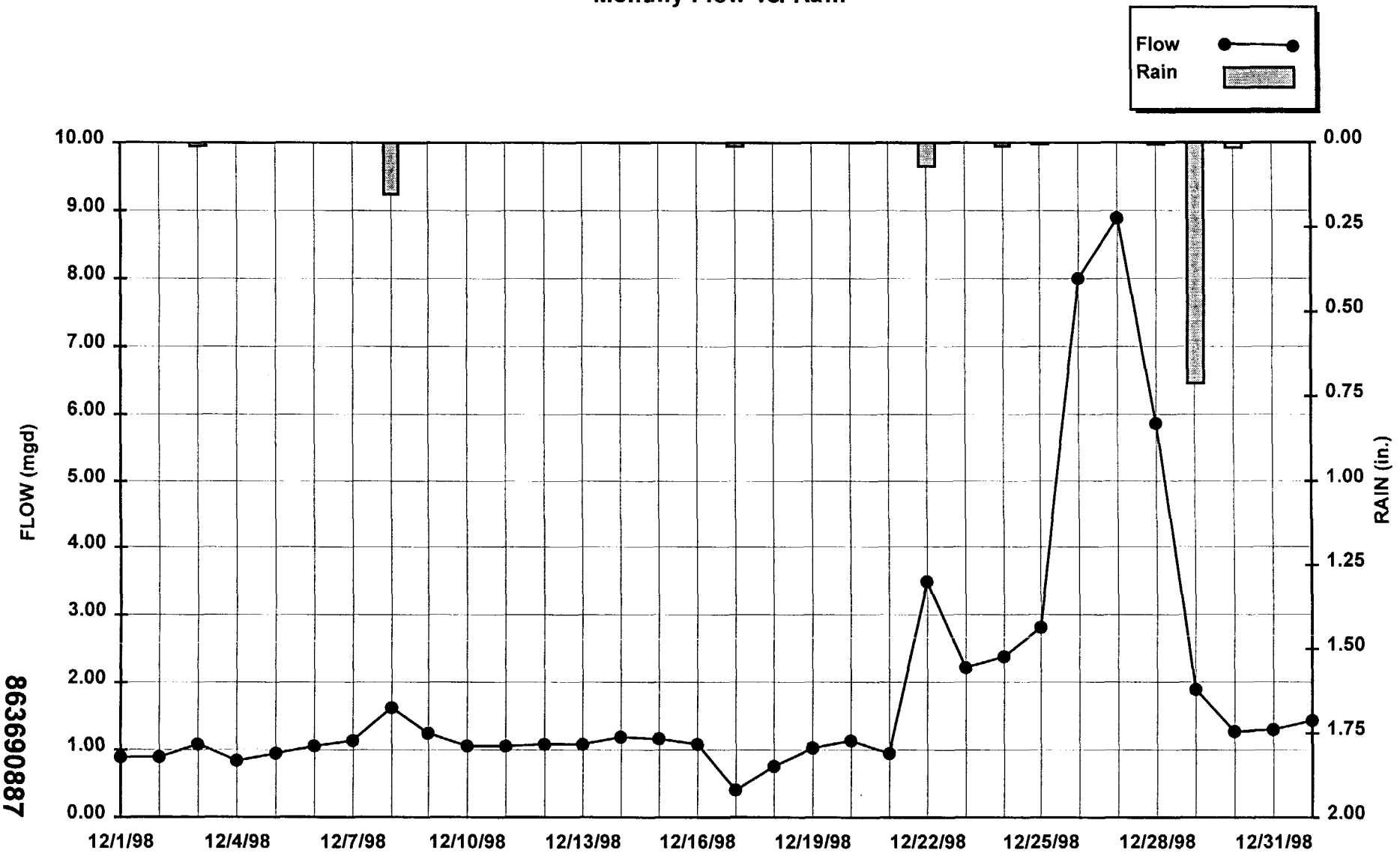
863690886

000025

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 002 - VERONA AVE
Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR8

Monthly Flow Report (Flow1)

2/9/1999 5:08:42 PM

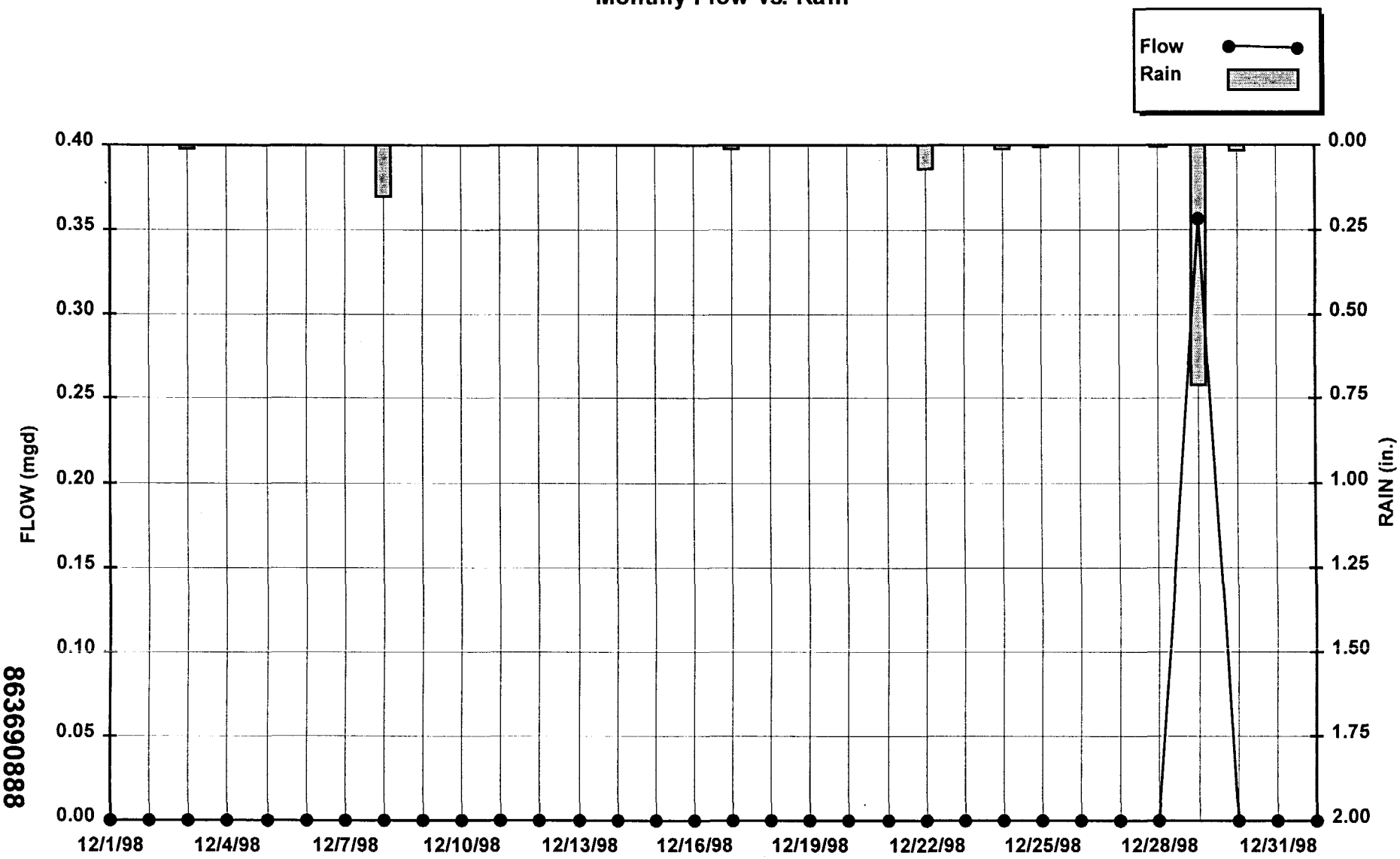
863690887

000026

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 002 - VERONA AVE
Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR8

Monthly Flow Report (Flow2)

2/9/1999 5:28:23 PM

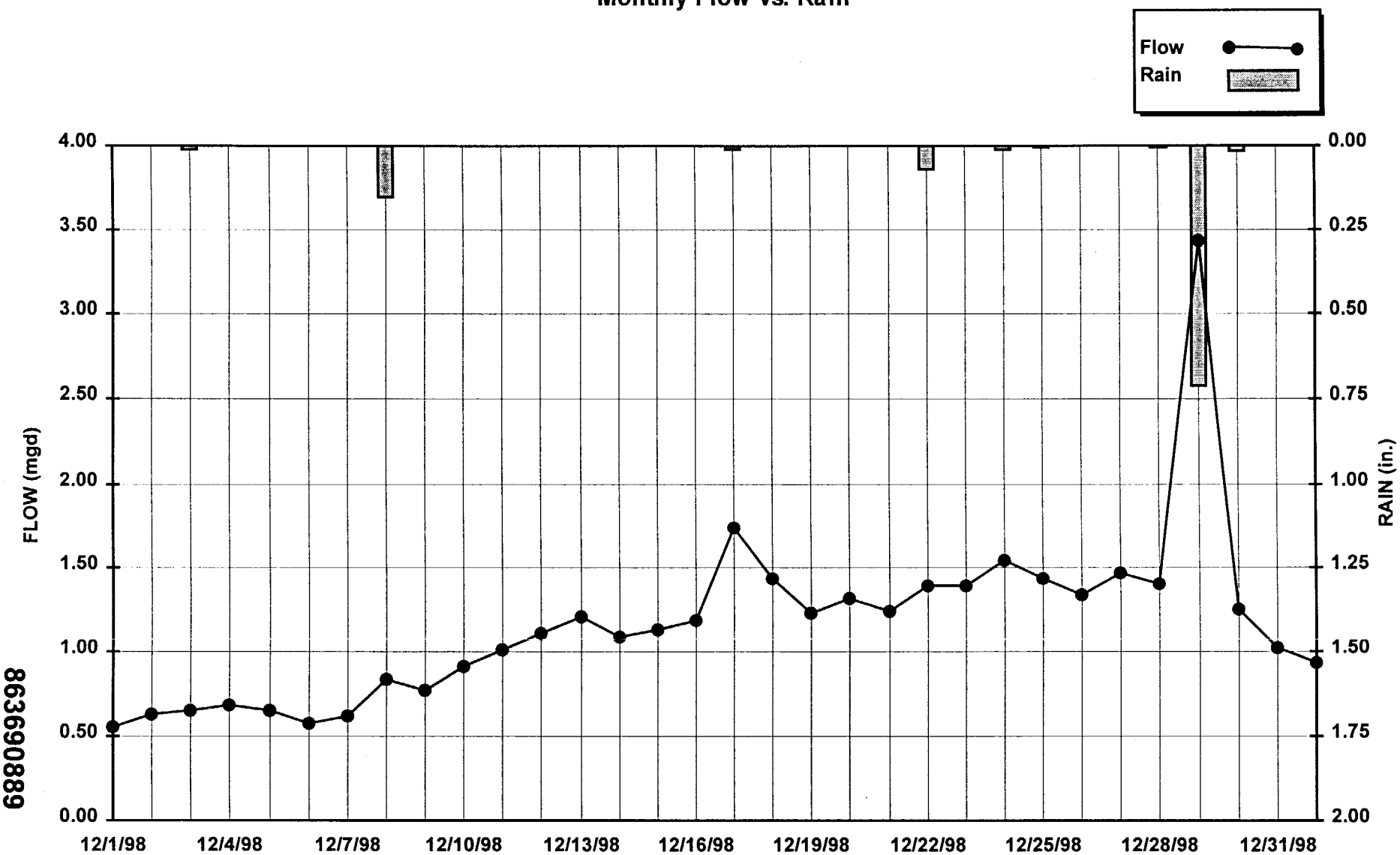
863690888

000027

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTQ

Monthly Flow Report (Flow1)

2/9/1999 5:09:35 PM

863690889

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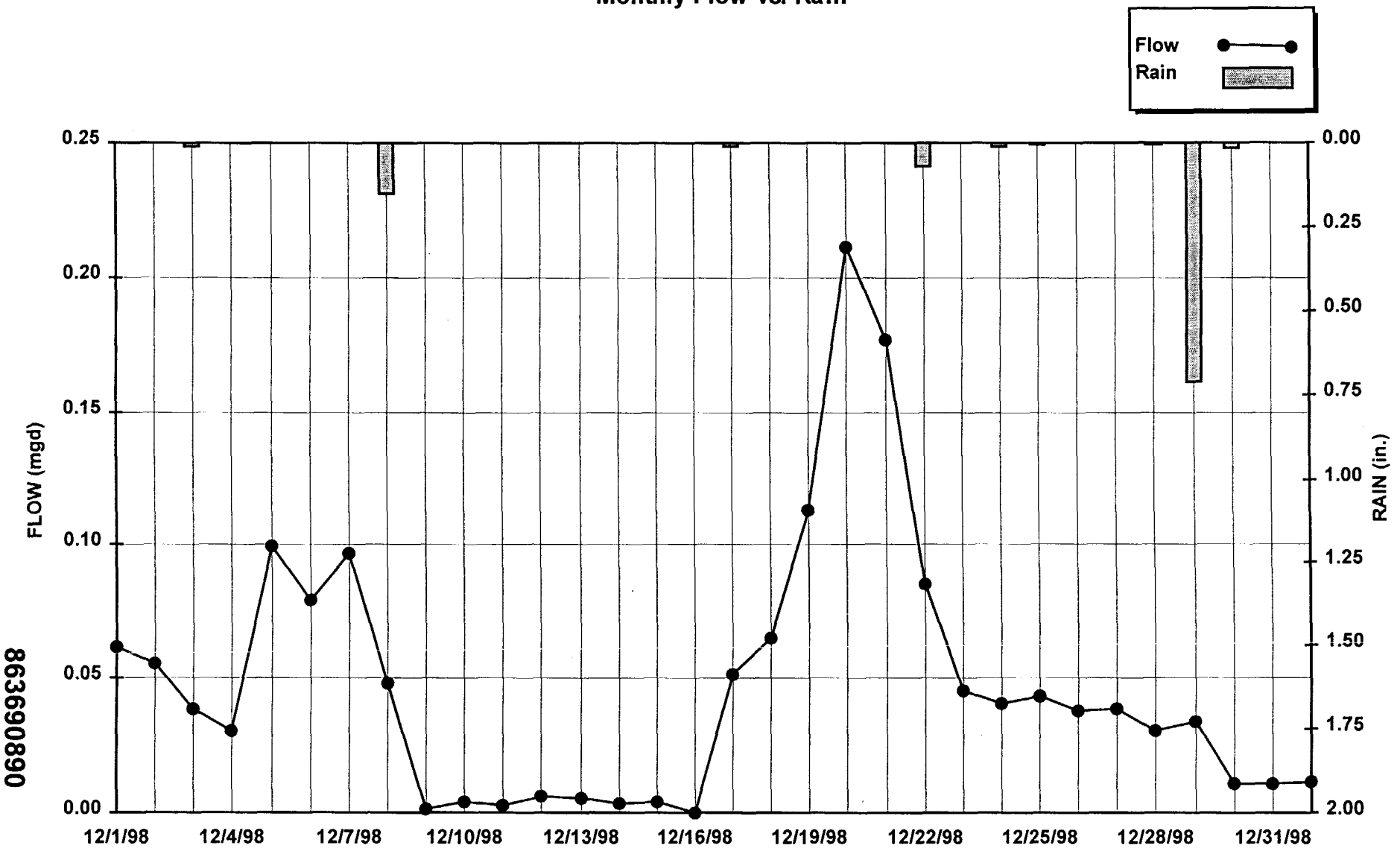
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Influent
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTQ

Monthly Flow Report (Flow2)

2/9/1999 5:29:18 PM

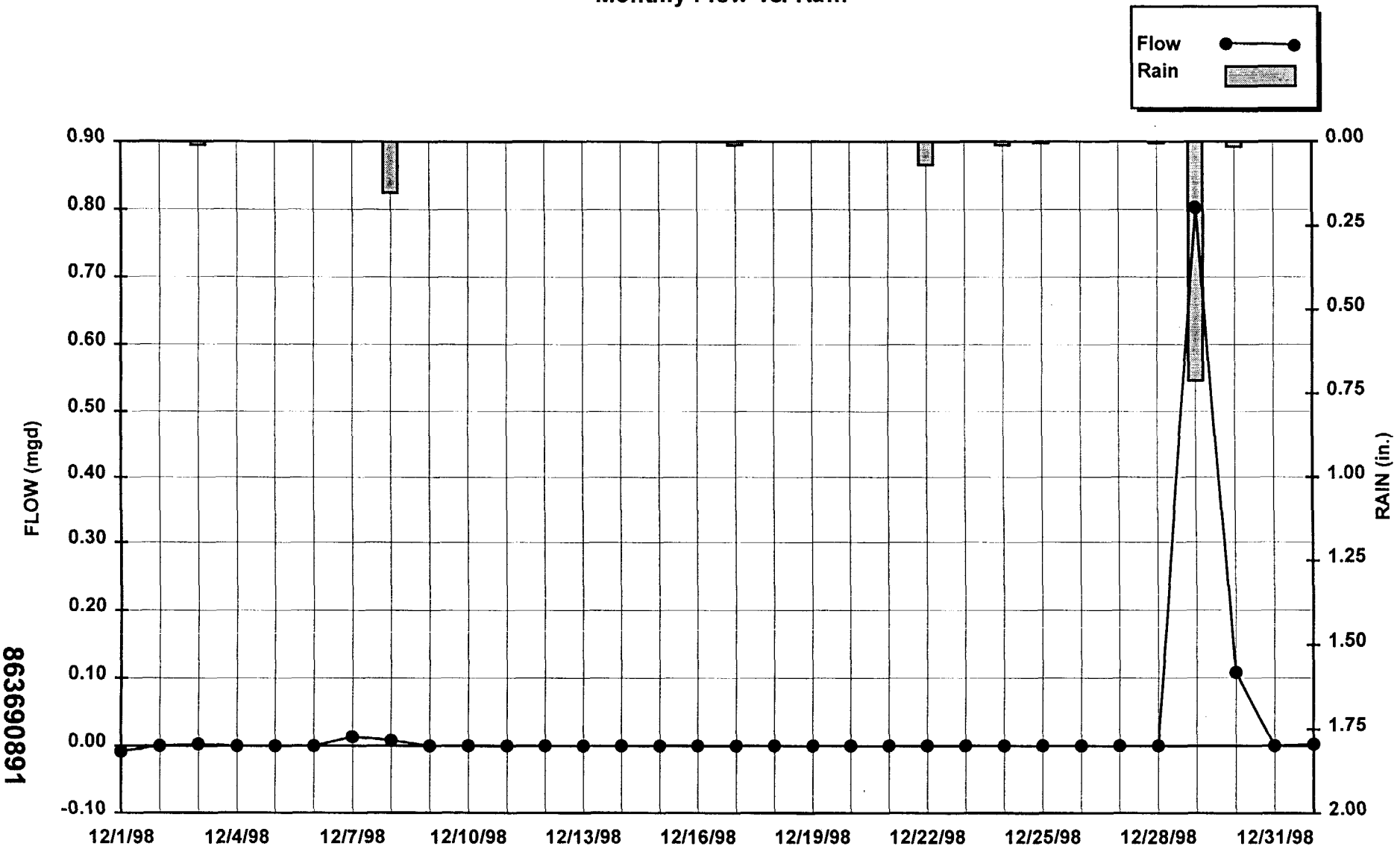
863690890

000029

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

Monthly Flow Report (Flow1)

2/9/1999 5:07:20 PM

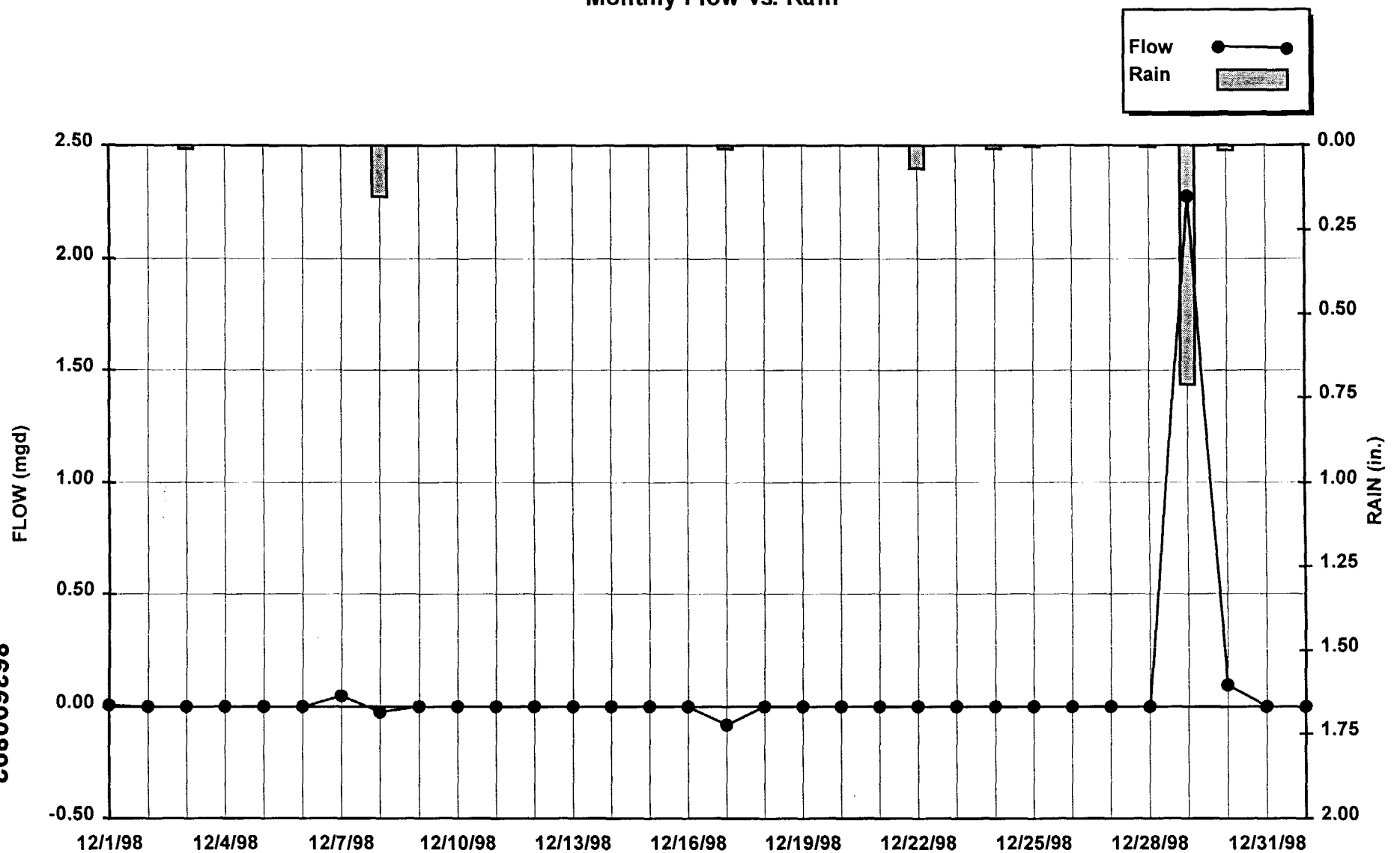
863690891

000030

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 004/005 HERBERT PL. - Overflows
Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTP

Monthly Flow Report (Flow2)

2/9/1999 5:25:43 PM

863690892

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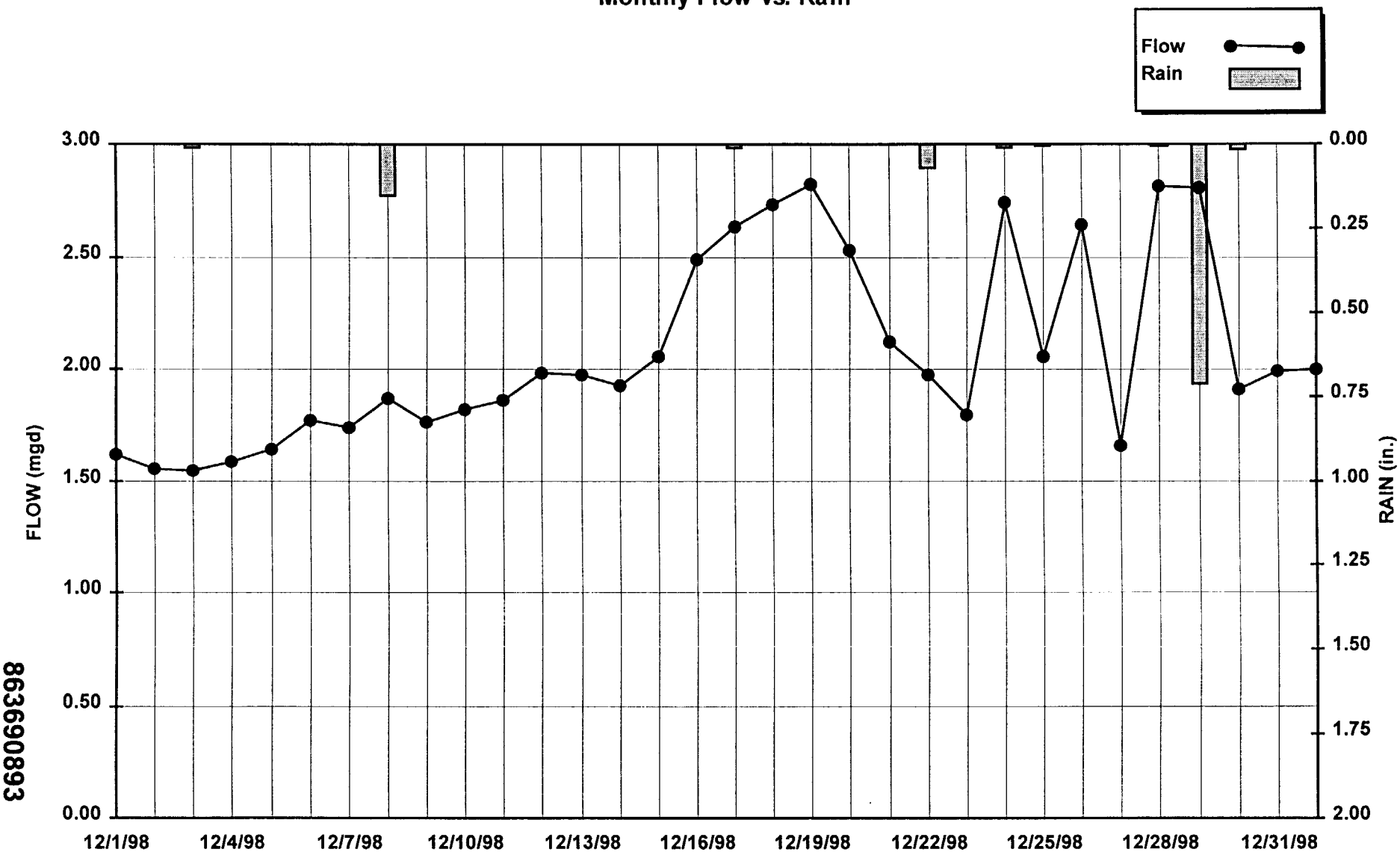
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Influent
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUL

Monthly Flow Report (Flow1)

2/9/1999 5:10:28 PM

863690893

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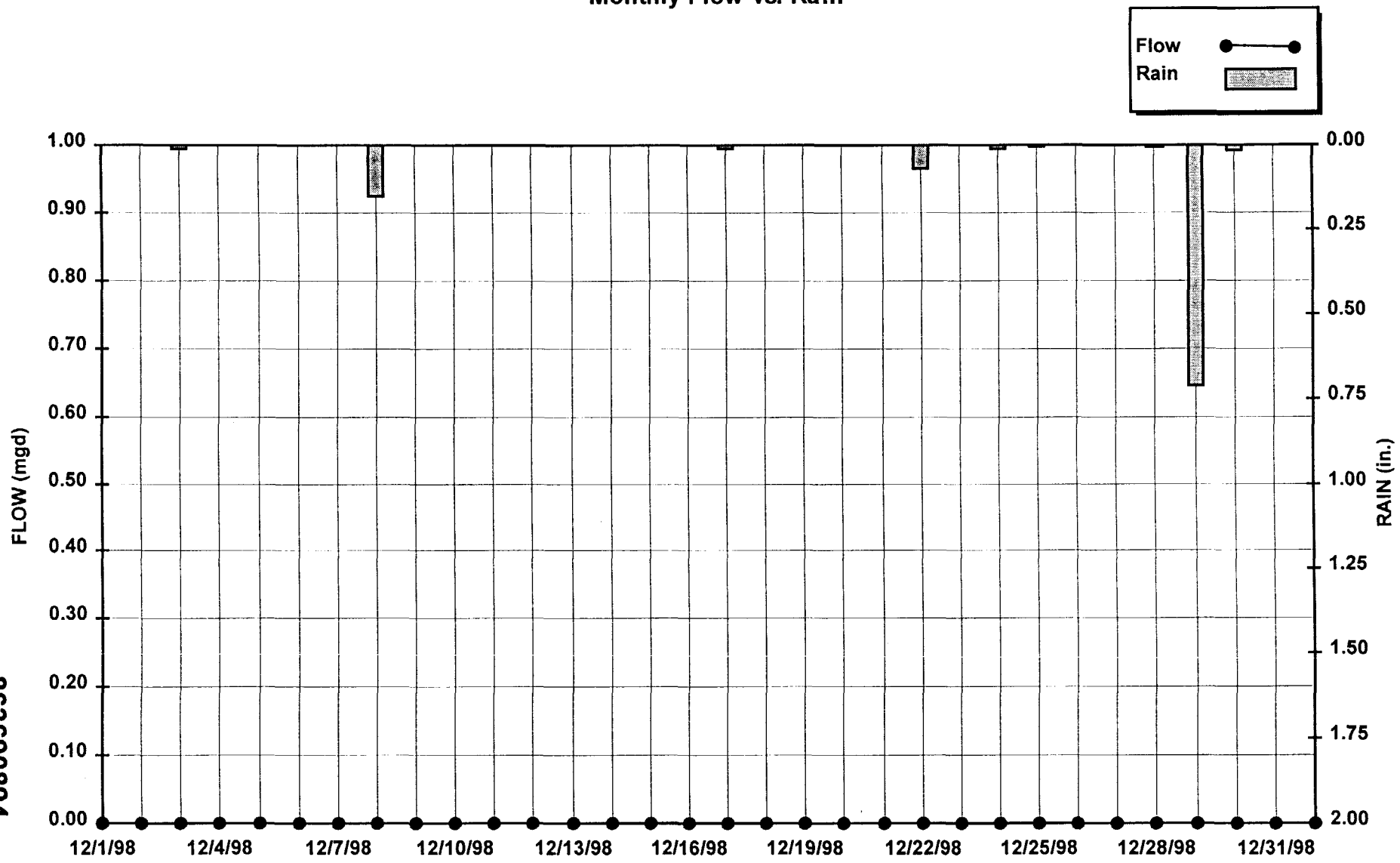
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 006 - ORIENTAL AVE Overflow
Address: Broadway and Second St.

910 F.M. VERSION: 1.02
Serial#: QUJ

Monthly Flow Report (Flow1)

2/9/1999 5:10:02 PM

863690894

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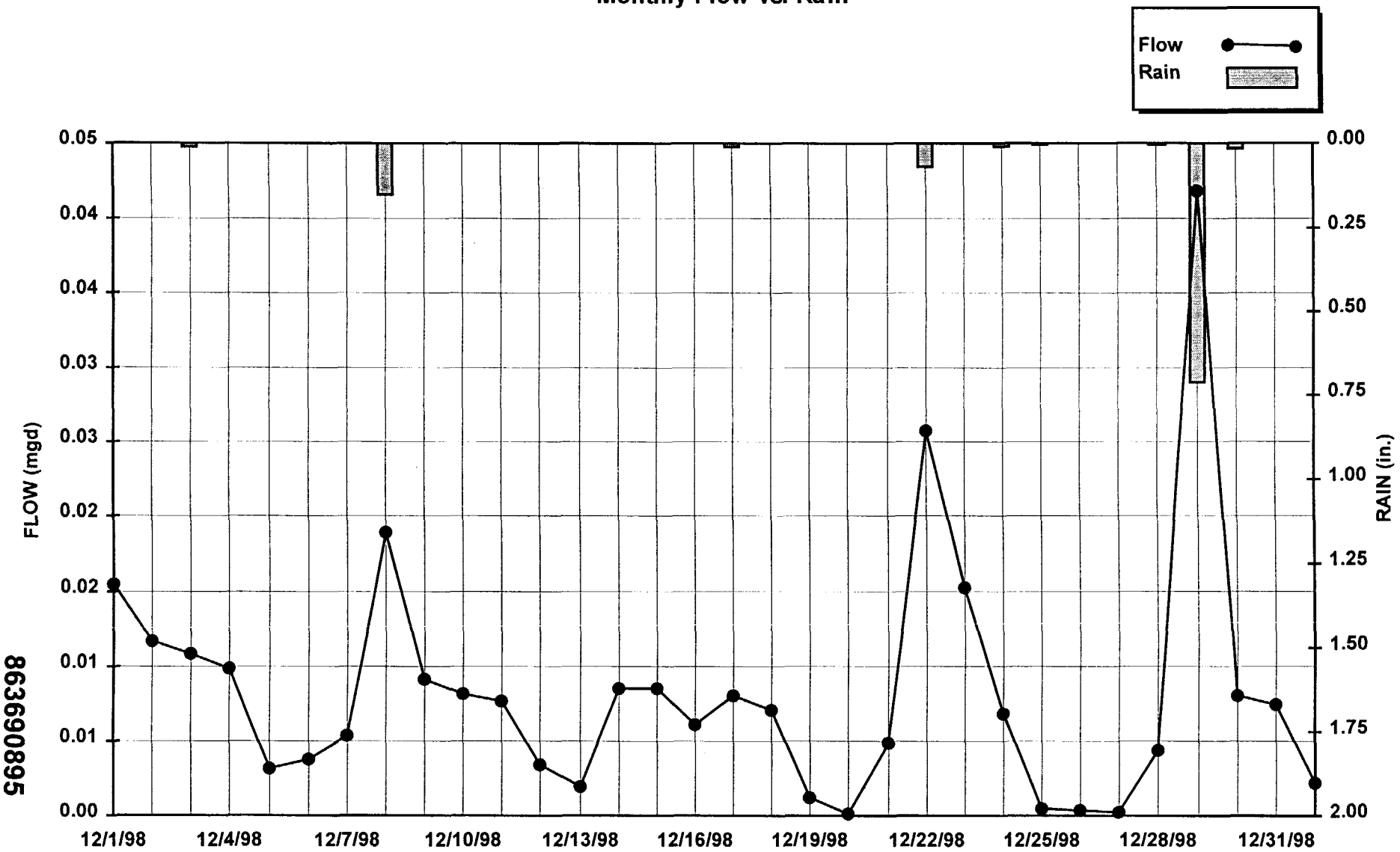
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 007 - THIRD AVE
Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02
Serial#: QR6

Monthly Flow Report (Flow1)

2/9/1999 5:06:53 PM

863690895

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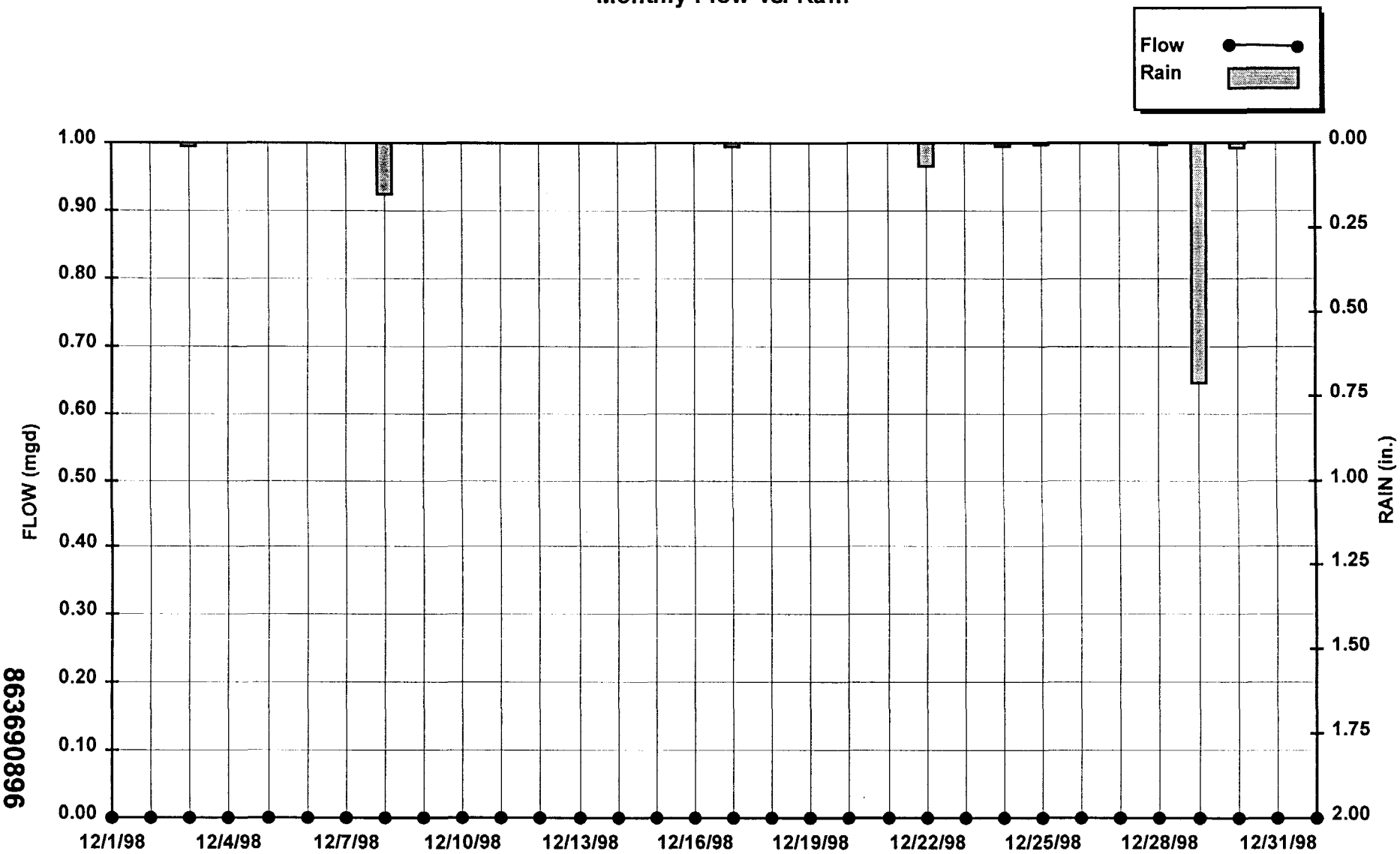
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Monthly Flow Report (Flow2)

2/9/1999 5:25:16 PM

863690896

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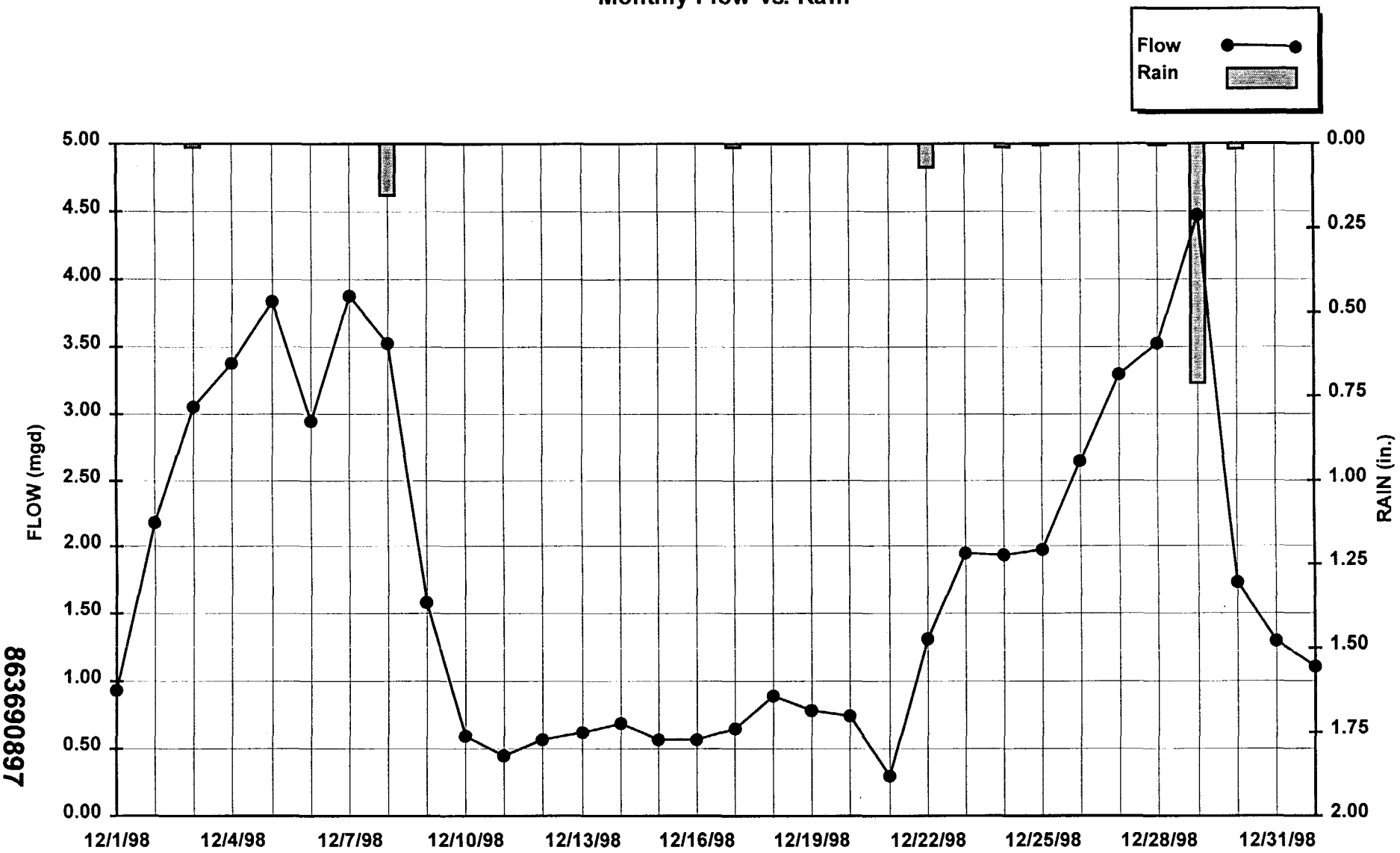
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Monthly Flow Report (Flow3)

2/9/1999 5:43:30 PM

863690897

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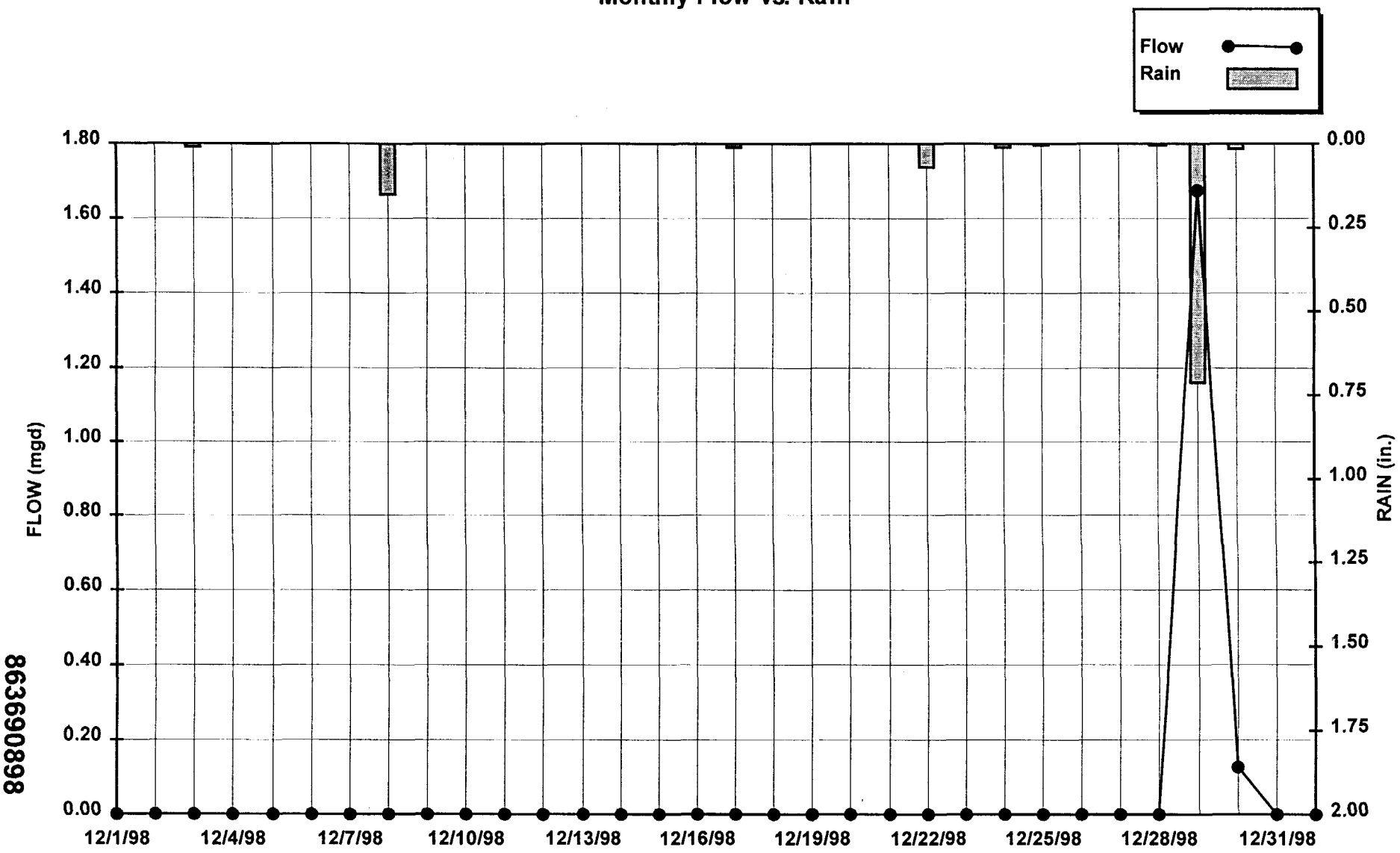
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Monthly Flow Report (Flow2)

2/9/1999 5:24:50 PM

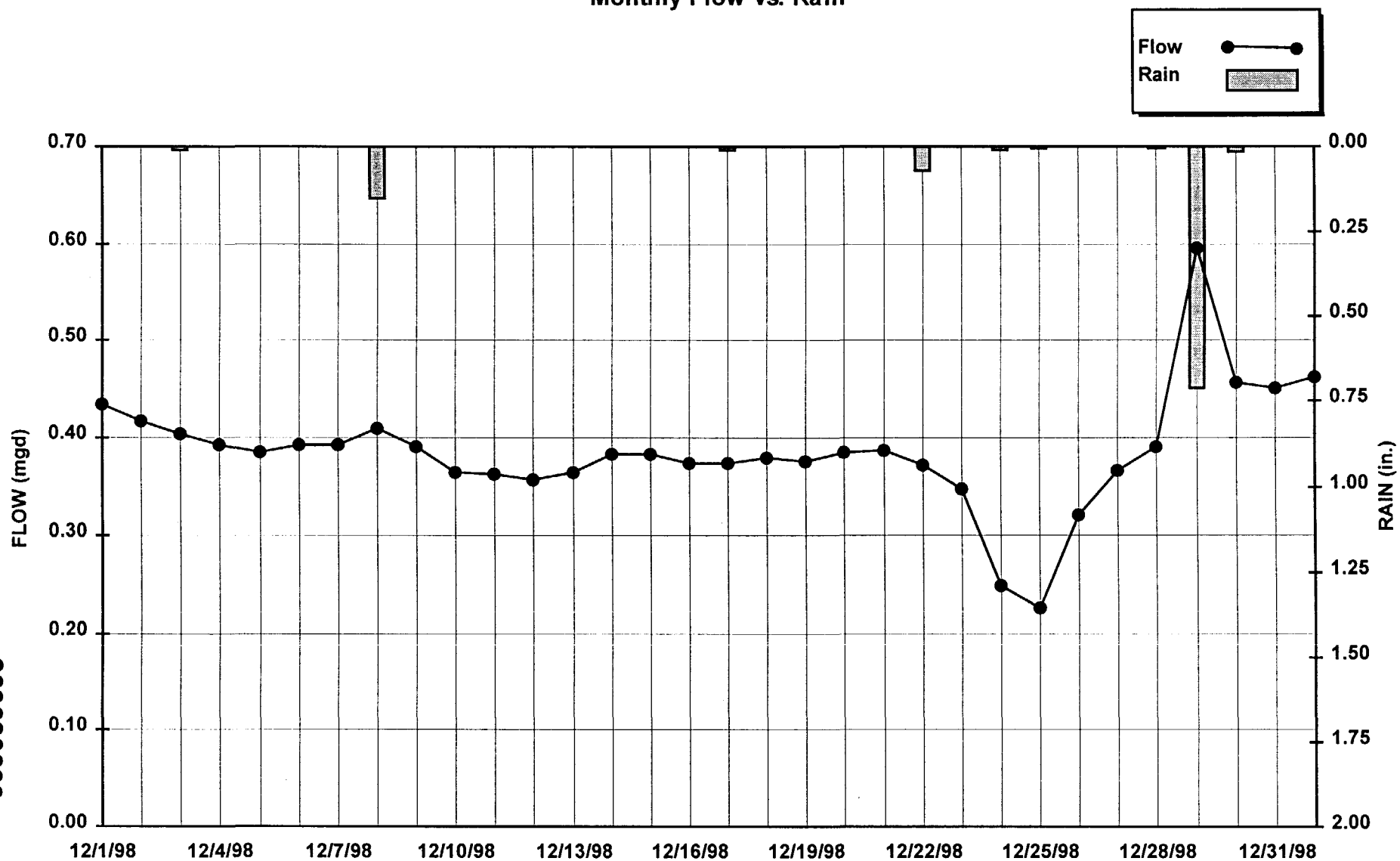
863690898

000037

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Influent
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QRG

Monthly Flow Report (Flow1)

2/9/1999 5:06:26 PM

863690899

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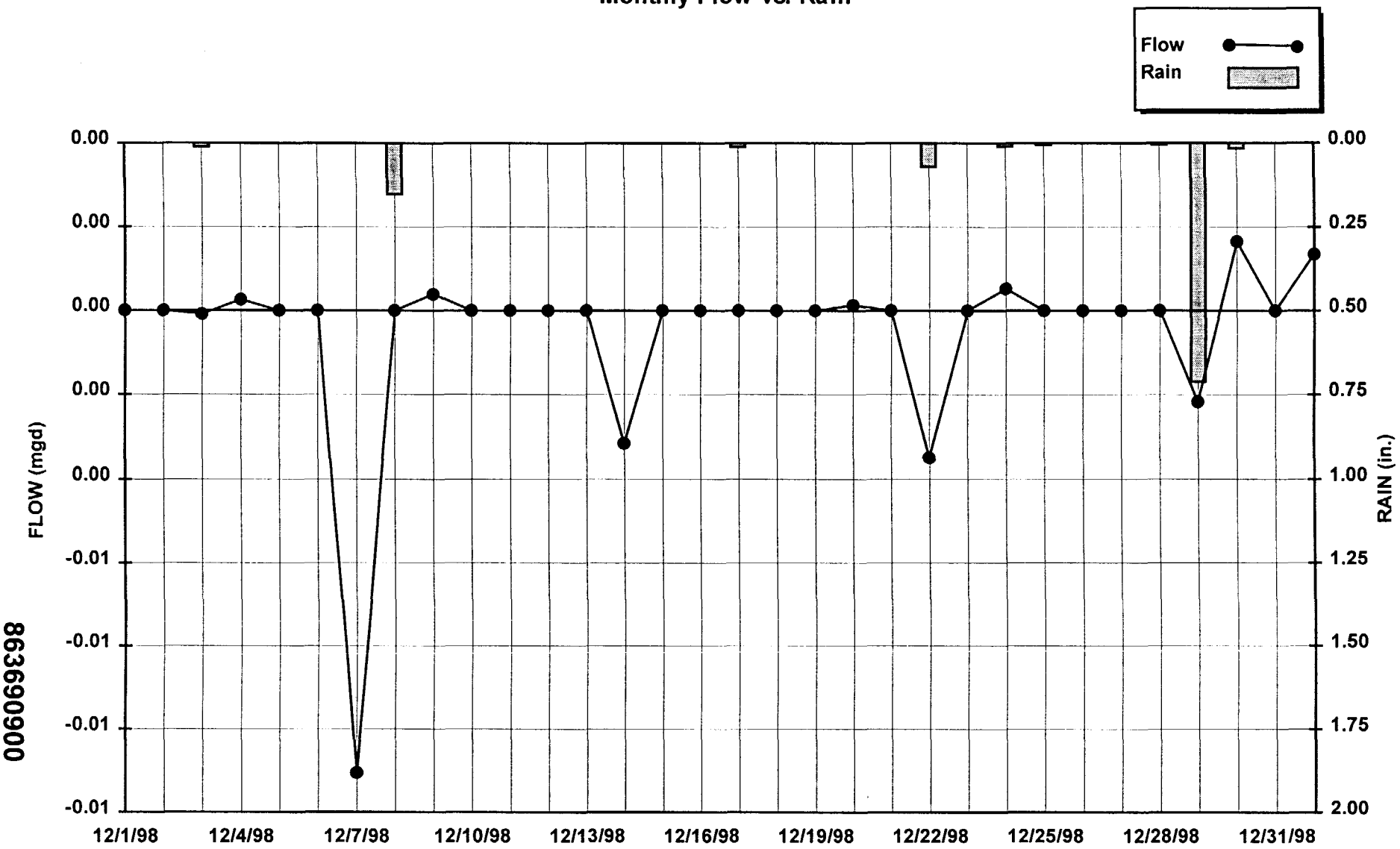
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009B - CLAY ST Overflow
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QU3

Monthly Flow Report (Flow1)

2/9/1999 5:06:01 PM

863690900

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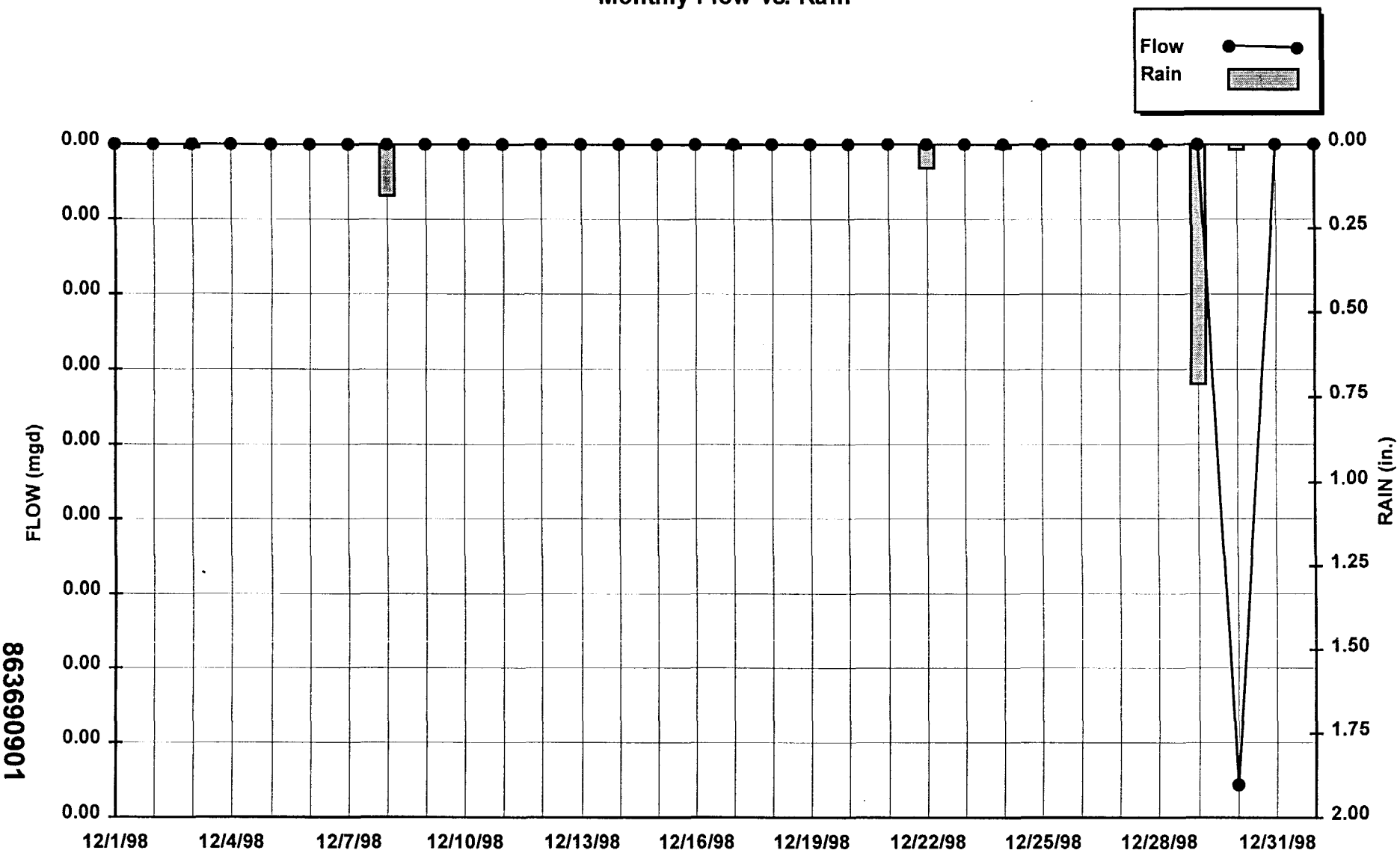
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 009C CLAY ST
Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRW

Monthly Flow Report (Flow2)

2/9/1999 5:32:53 PM

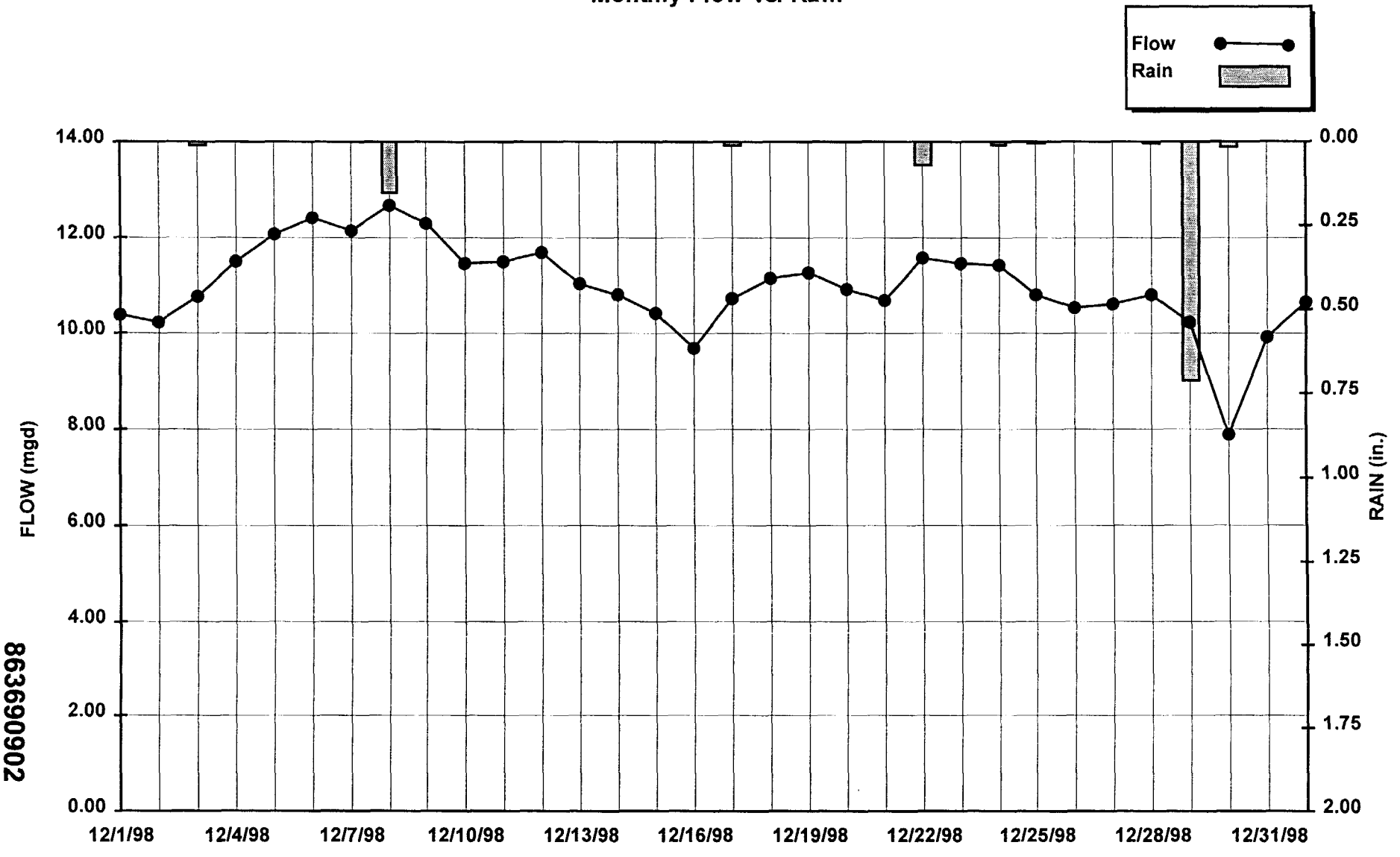
863690901

000041

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Influents
Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QTR

Monthly Flow Report (Flow2)

2/9/1999 5:27:55 PM

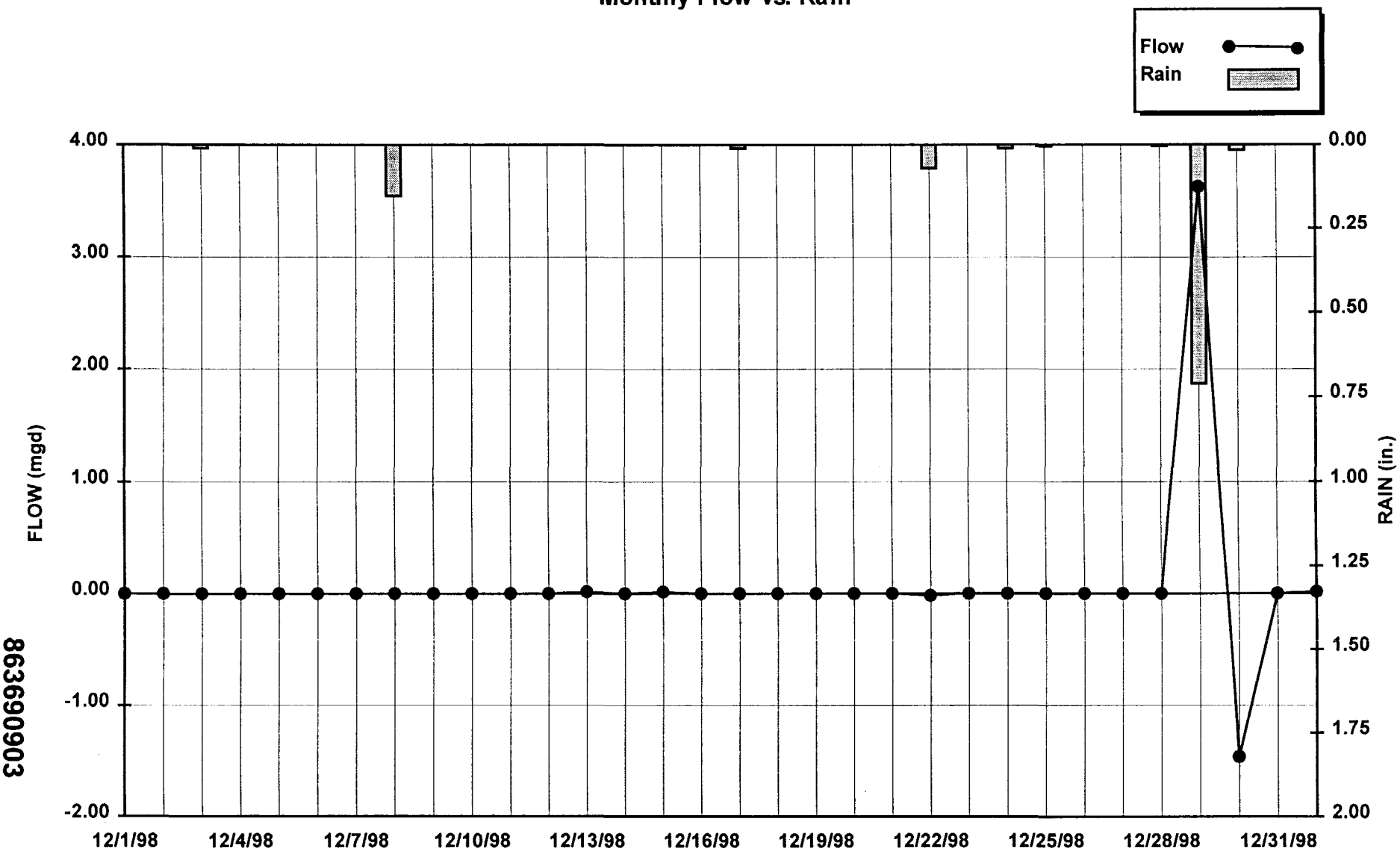
863690902

000042

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow North Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QPS

Monthly Flow Report (Flow2)

2/9/1999 5:27:02 PM

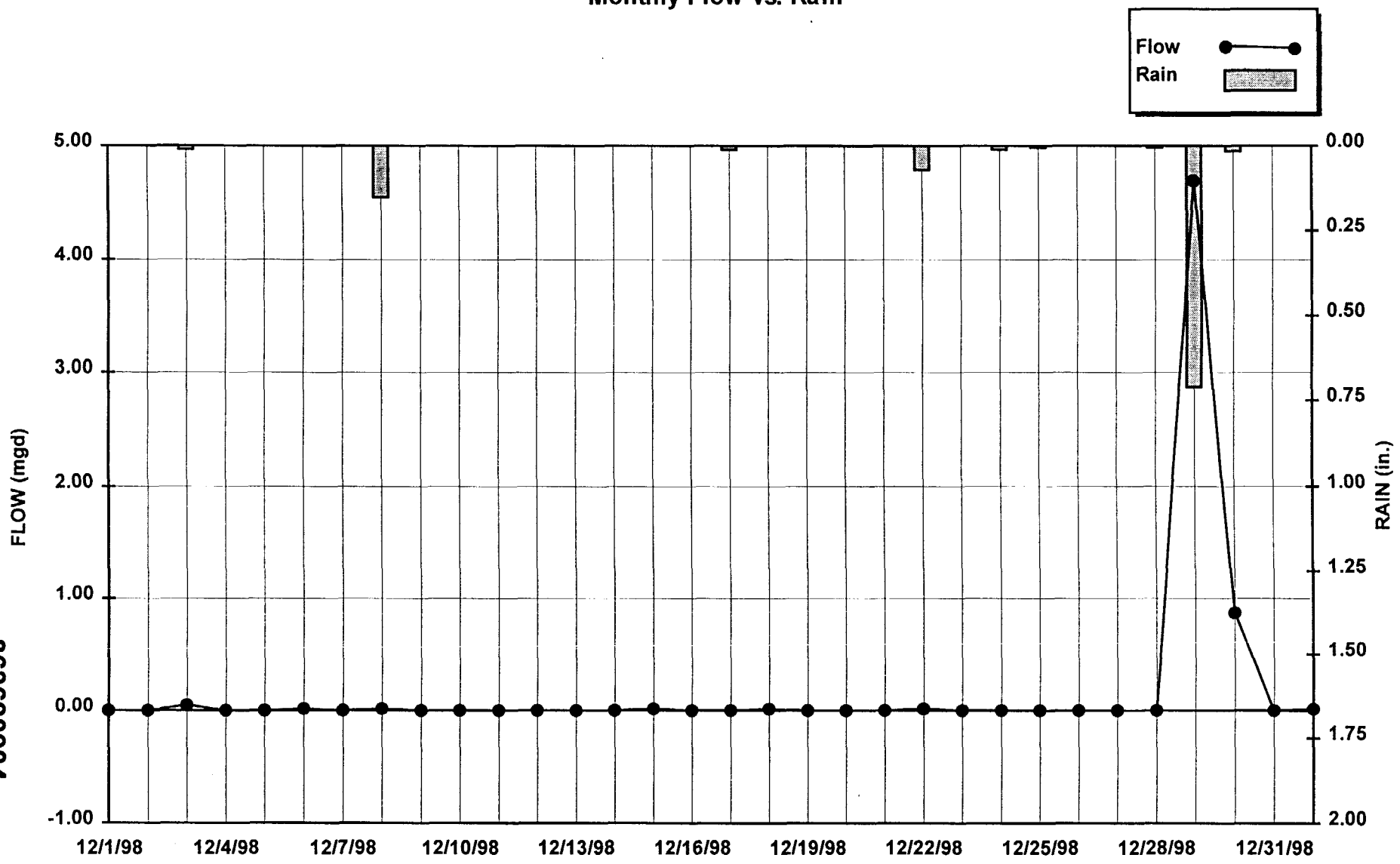
863690903

000043

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 010 - CLAY ST Overflow South Pipe
Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02
Serial#: QT2

Monthly Flow Report (Flow2)

2/9/1999 5:26:37 PM

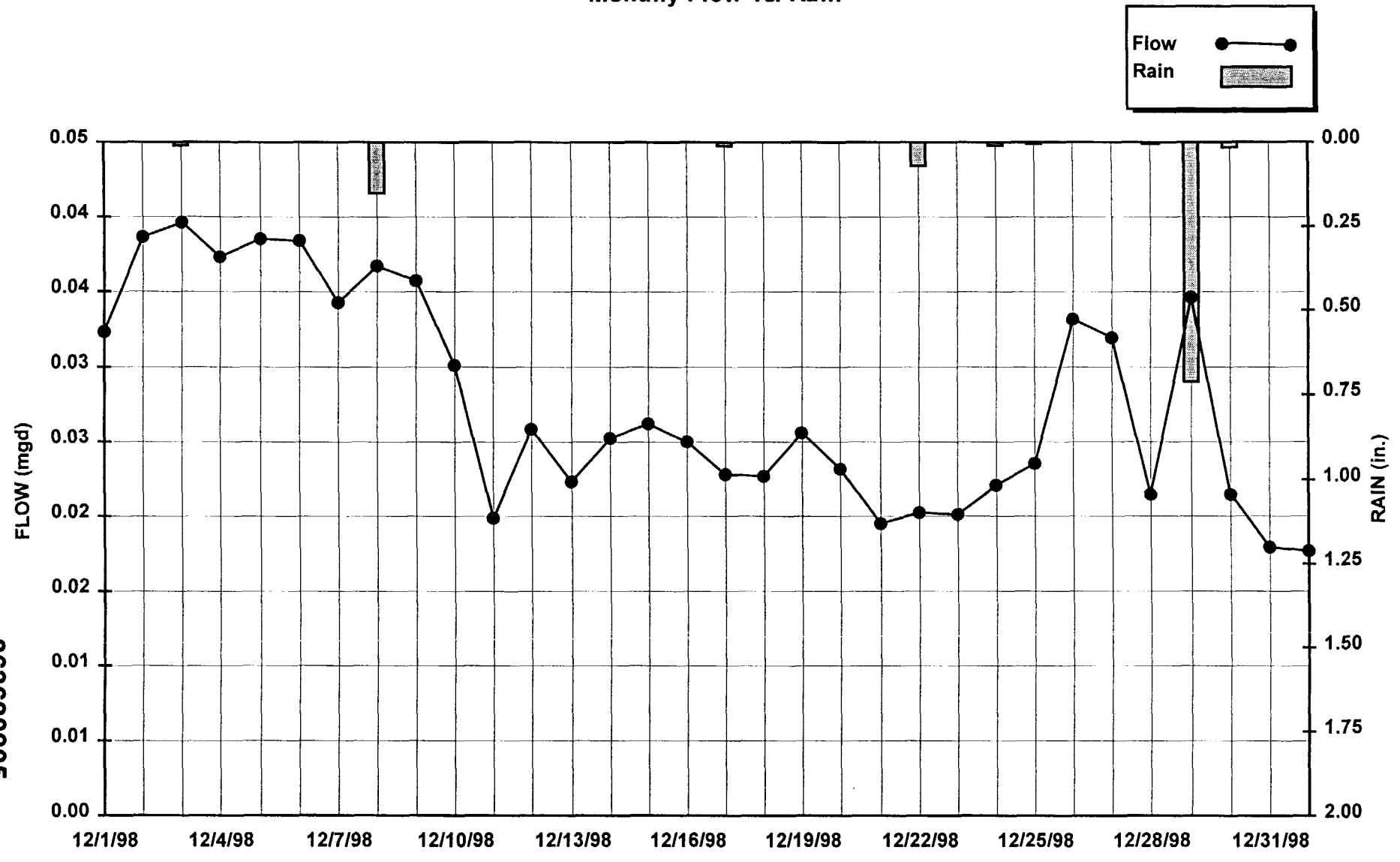
863690904

000044

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST Influent
Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02
Serial#: QRF

Monthly Flow Report (Flow1)

2/9/1999 5:07:47 PM

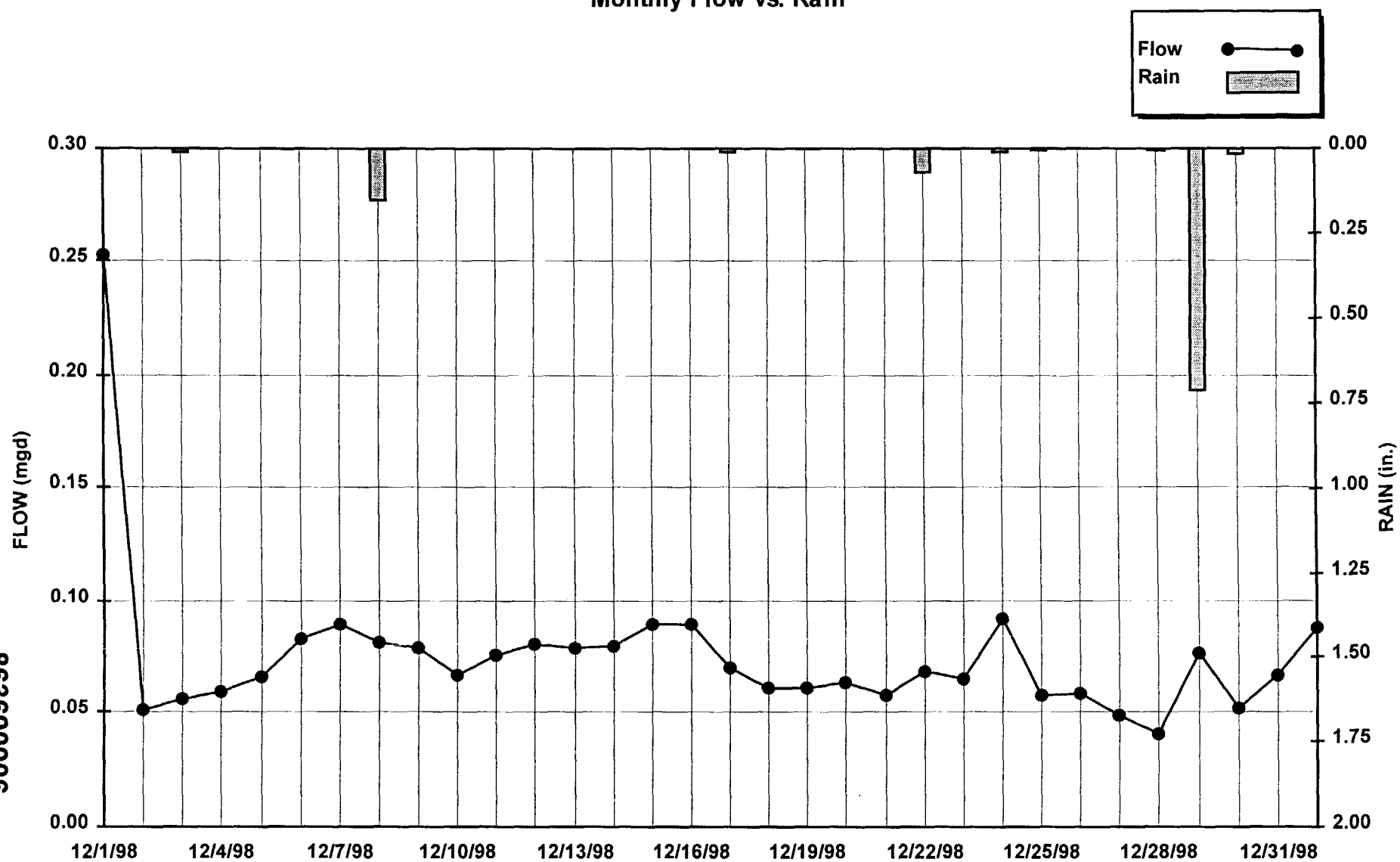
863690905

000045

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST influent and overflow

Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRZ

Monthly Flow Report (Flow1)

2/9/1999 5:08:14 PM

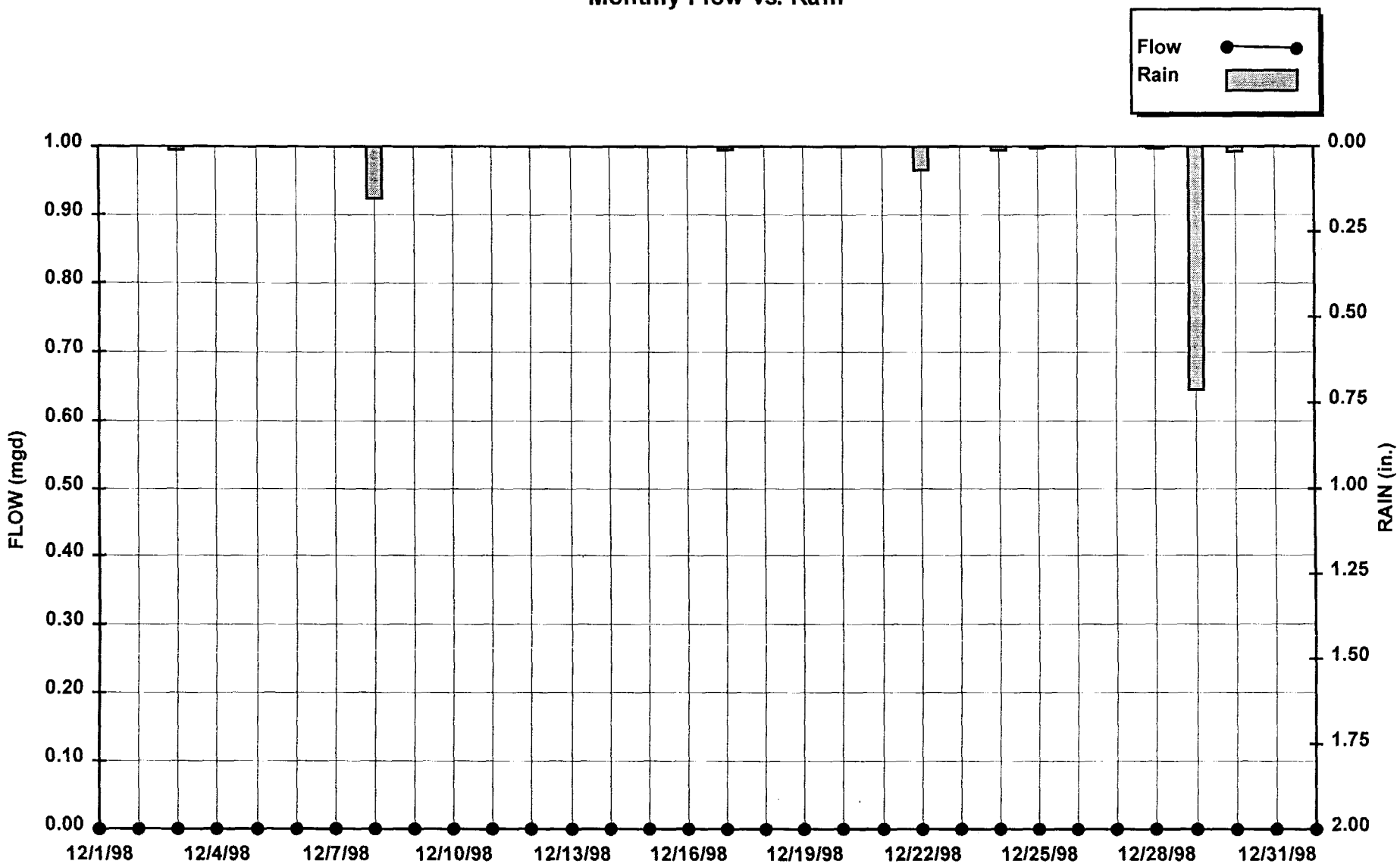
863690906

000045

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 011 - ORANGE ST influent and overflow
Address: Orange St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRZ

Monthly Flow Report (Flow2)

2/9/1999 5:27:29 PM

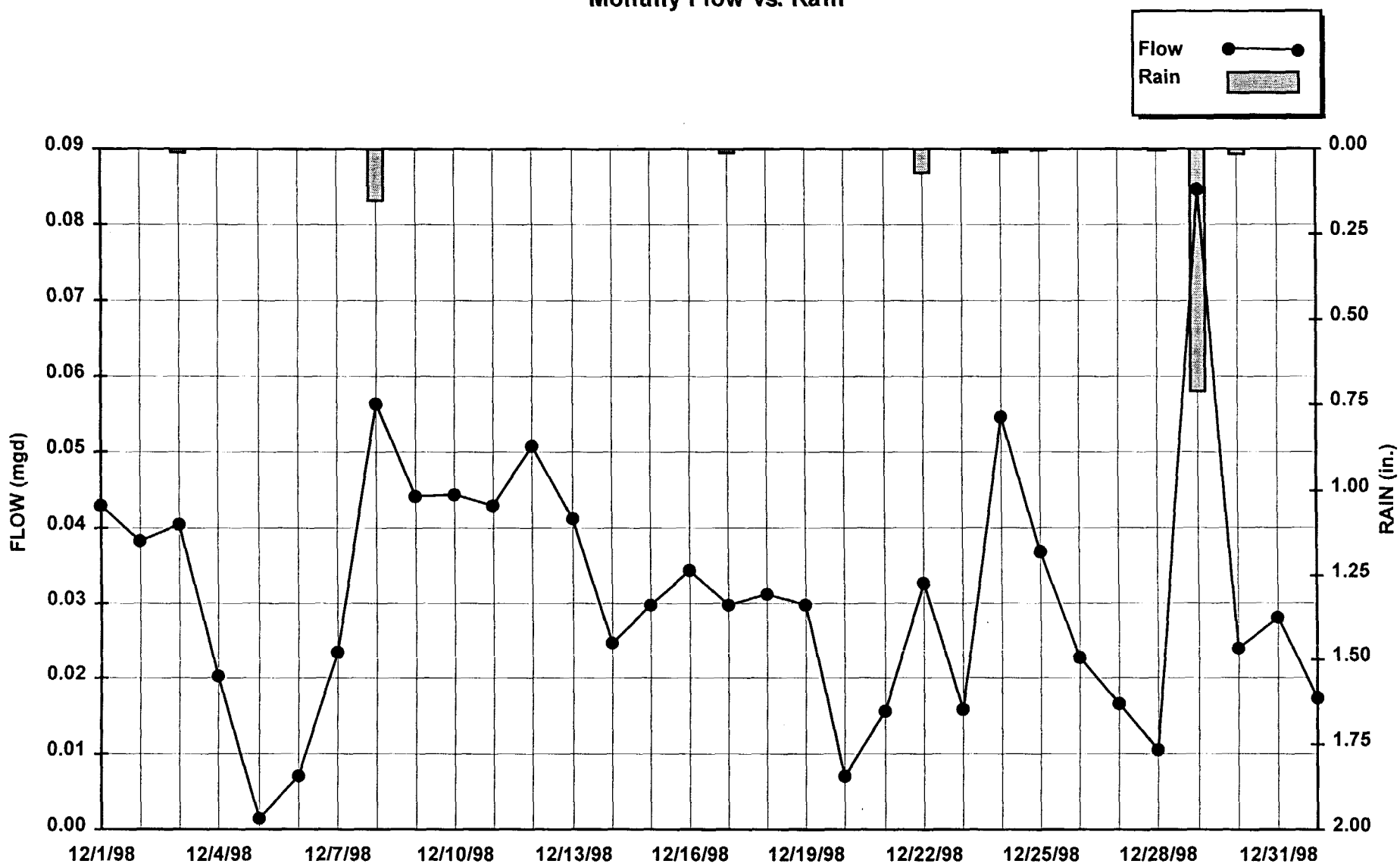
863690907

0000047

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST
Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QR7

Monthly Flow Report (Flow1)

2/9/1999 5:16:20 PM

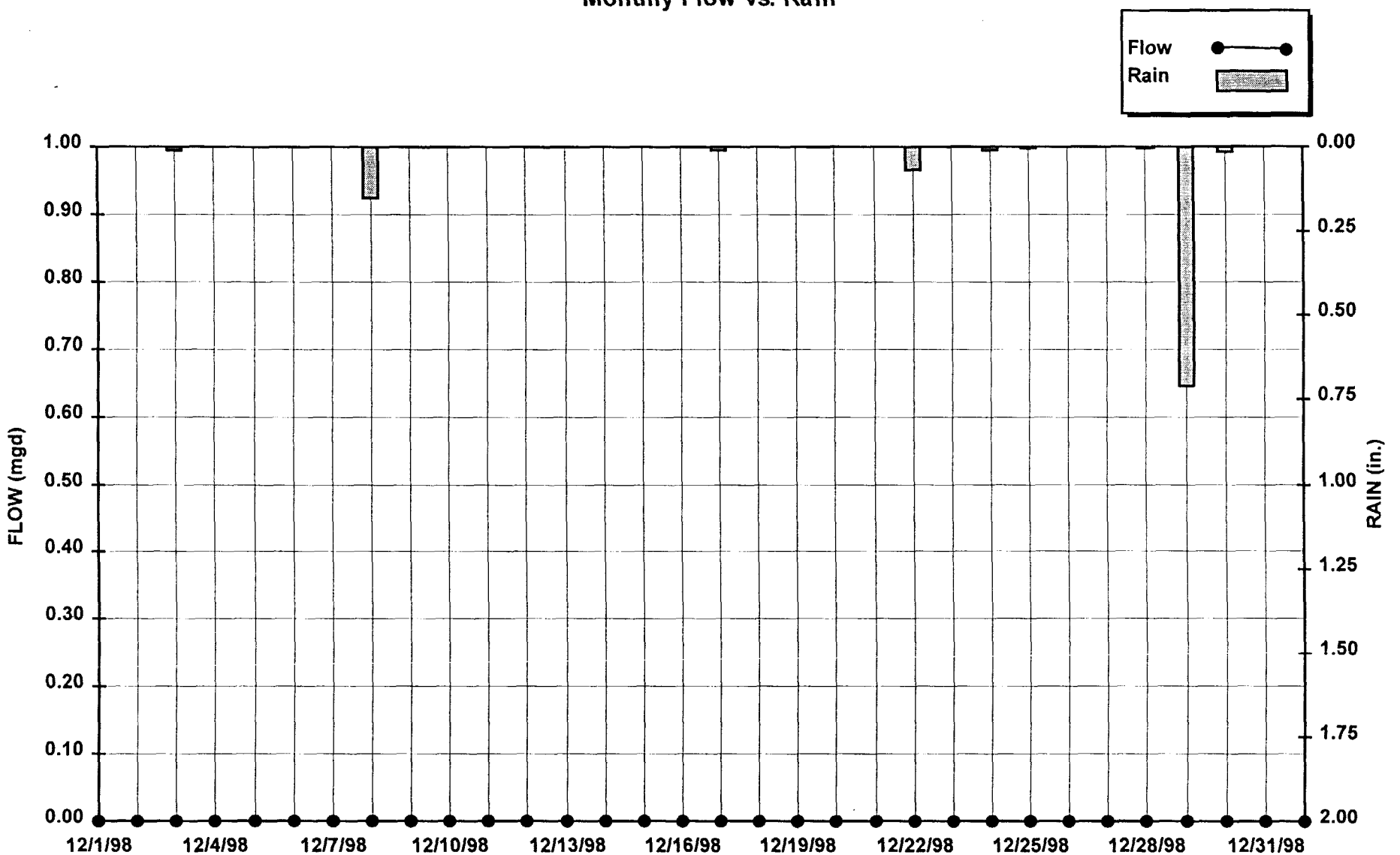
863690908

000043

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Monthly Flow Report (Flow2)

2/9/1999 5:33:21 PM

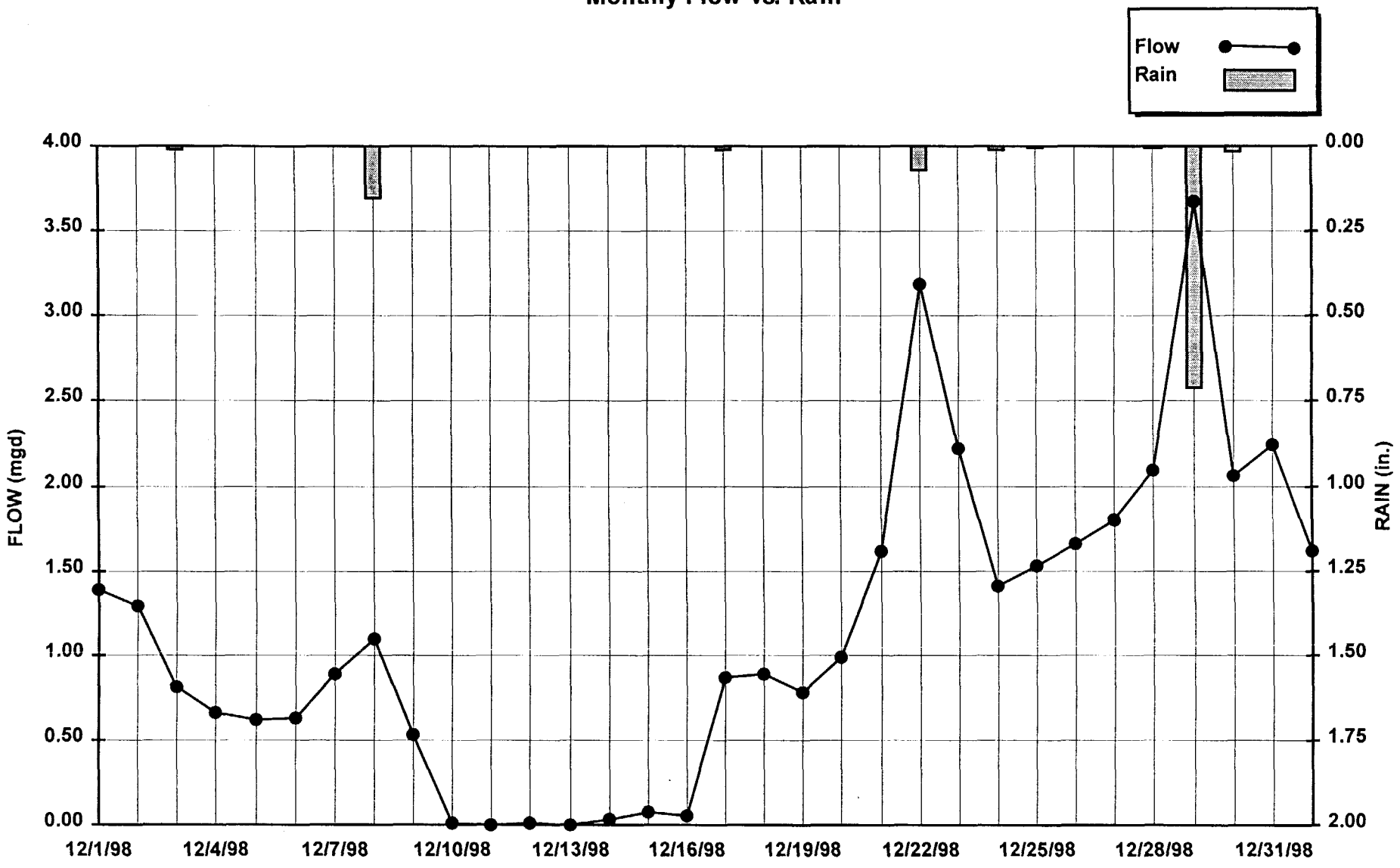
863690909

000049

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Monthly Flow Report (Flow1)

2/9/1999 5:05:34 PM

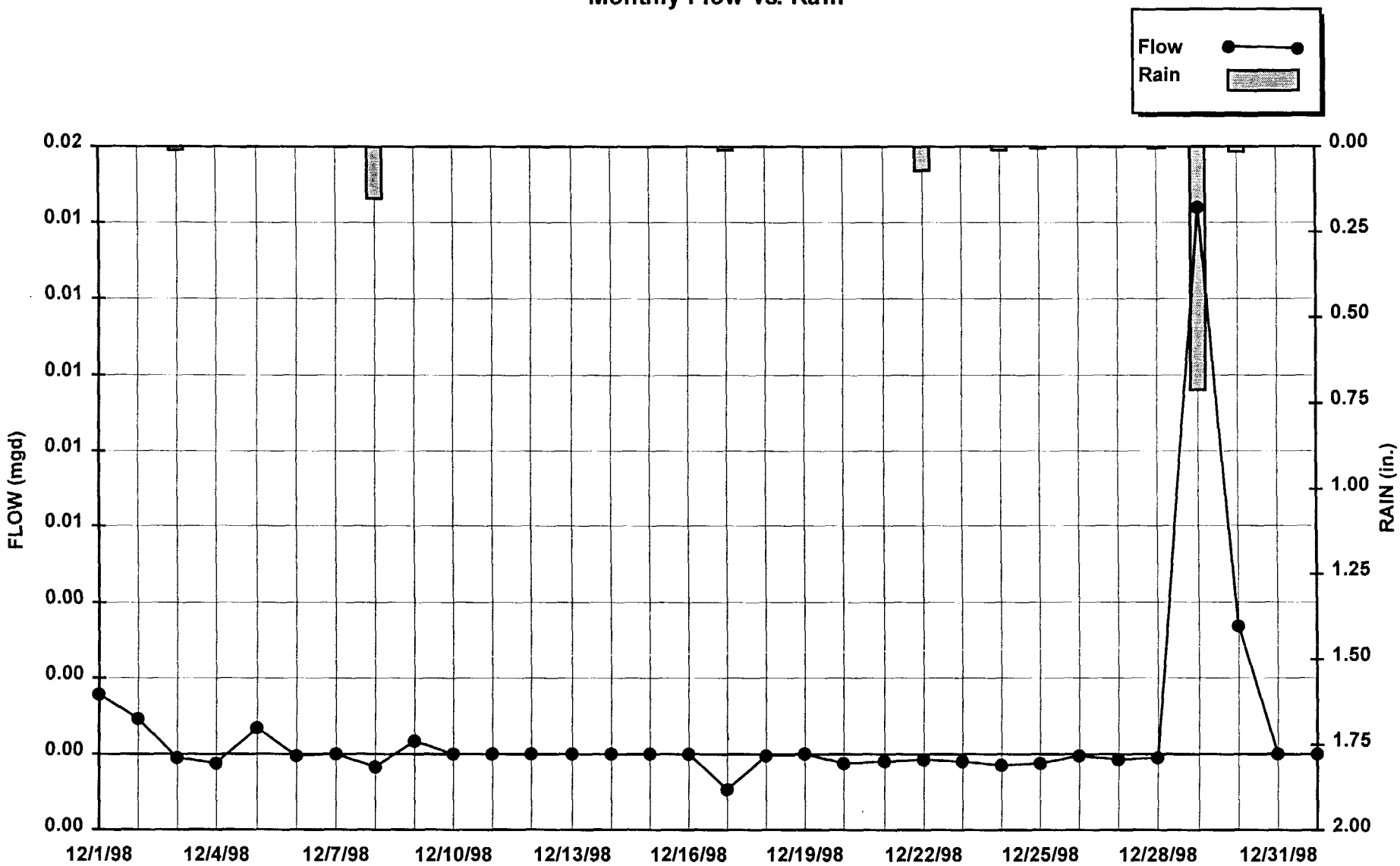
863690910

000039

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUY

Monthly Flow Report (Flow2)

2/9/1999 5:24:23 PM

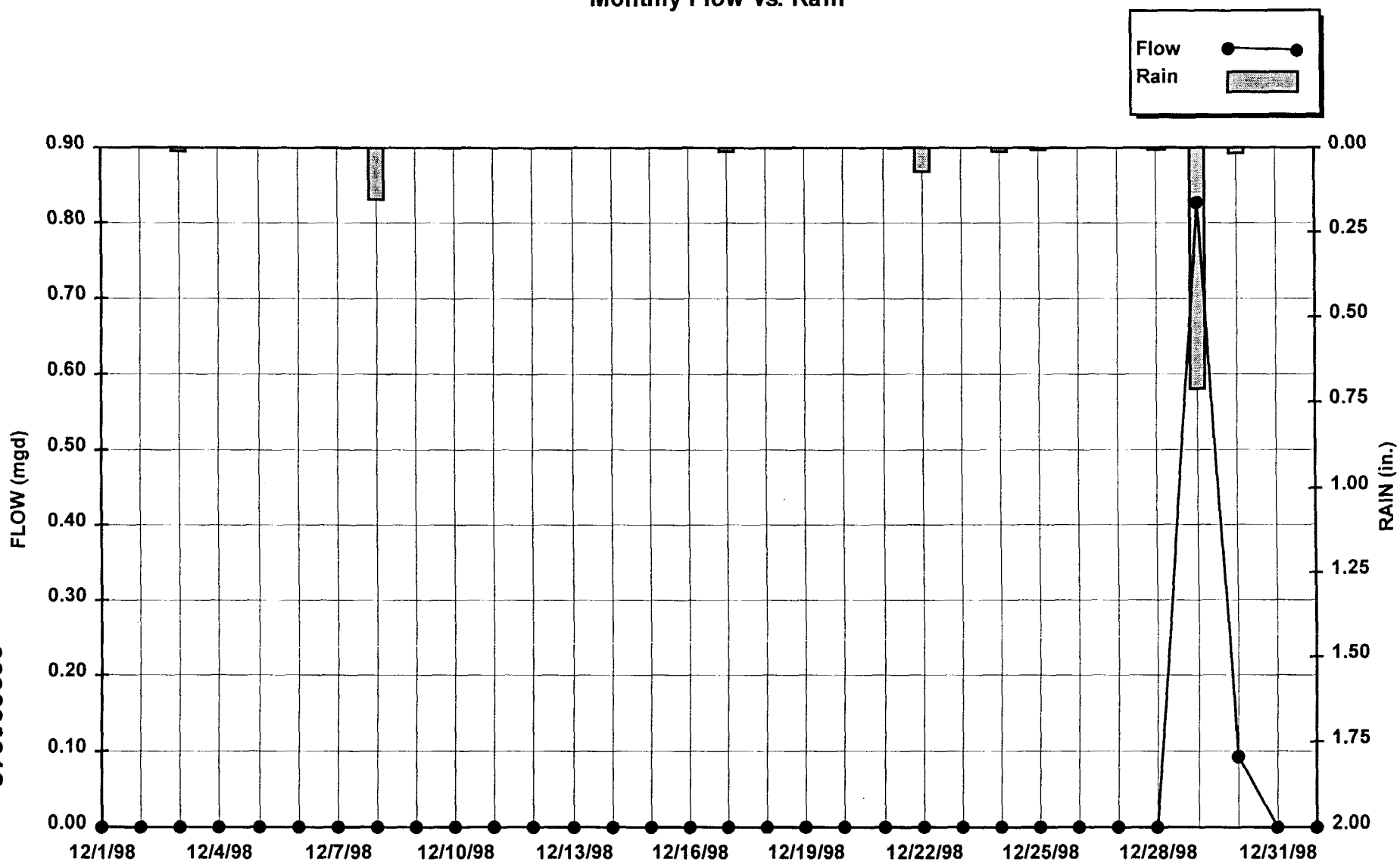
863690911

000051

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690912

CSO 013 - RECTOR ST
Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUY

Monthly Flow Report (Flow3)

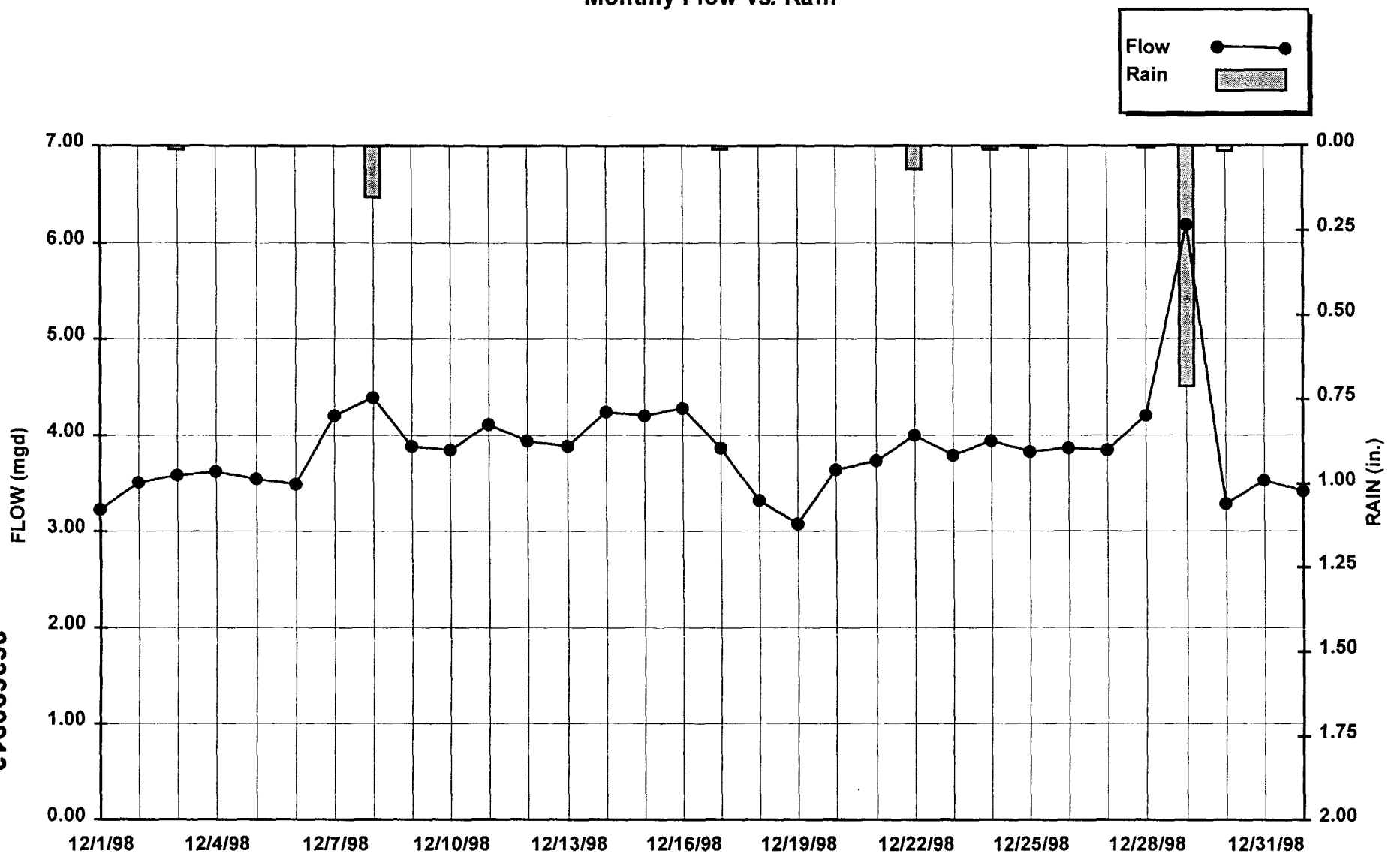
2/9/1999 5:40:39 PM

000052

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

Monthly Flow Report (Flow3)

2/9/1999 5:46:20 PM

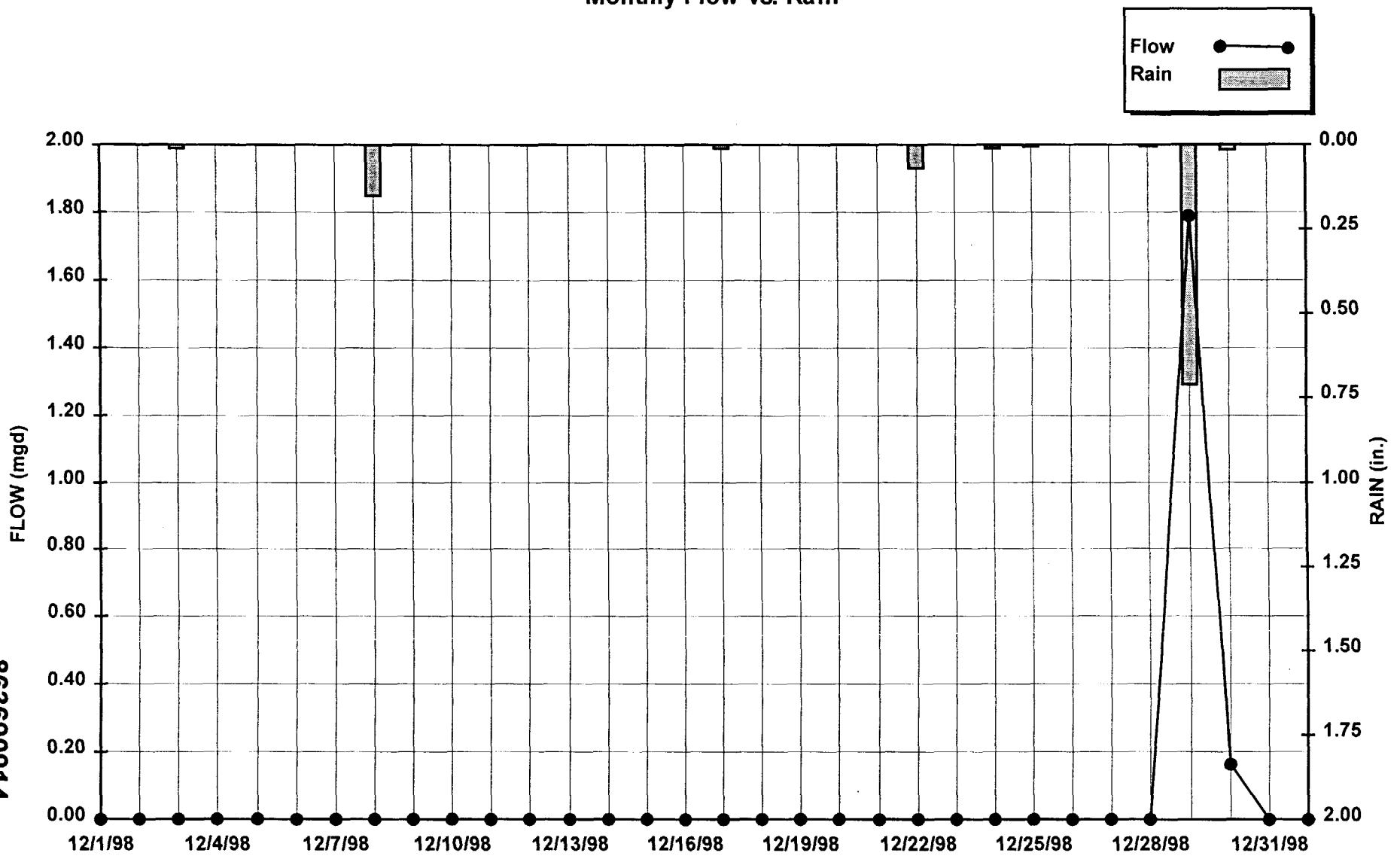
863690913

000053

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 014 - SAYBROOK PL Influent and Overflow
Address: Saybrook Pl. at McCarter Hwy

920 F.M. VERSION: 1.02
Serial#: QRV

Monthly Flow Report (Flow2)

2/9/1999 5:26:11 PM

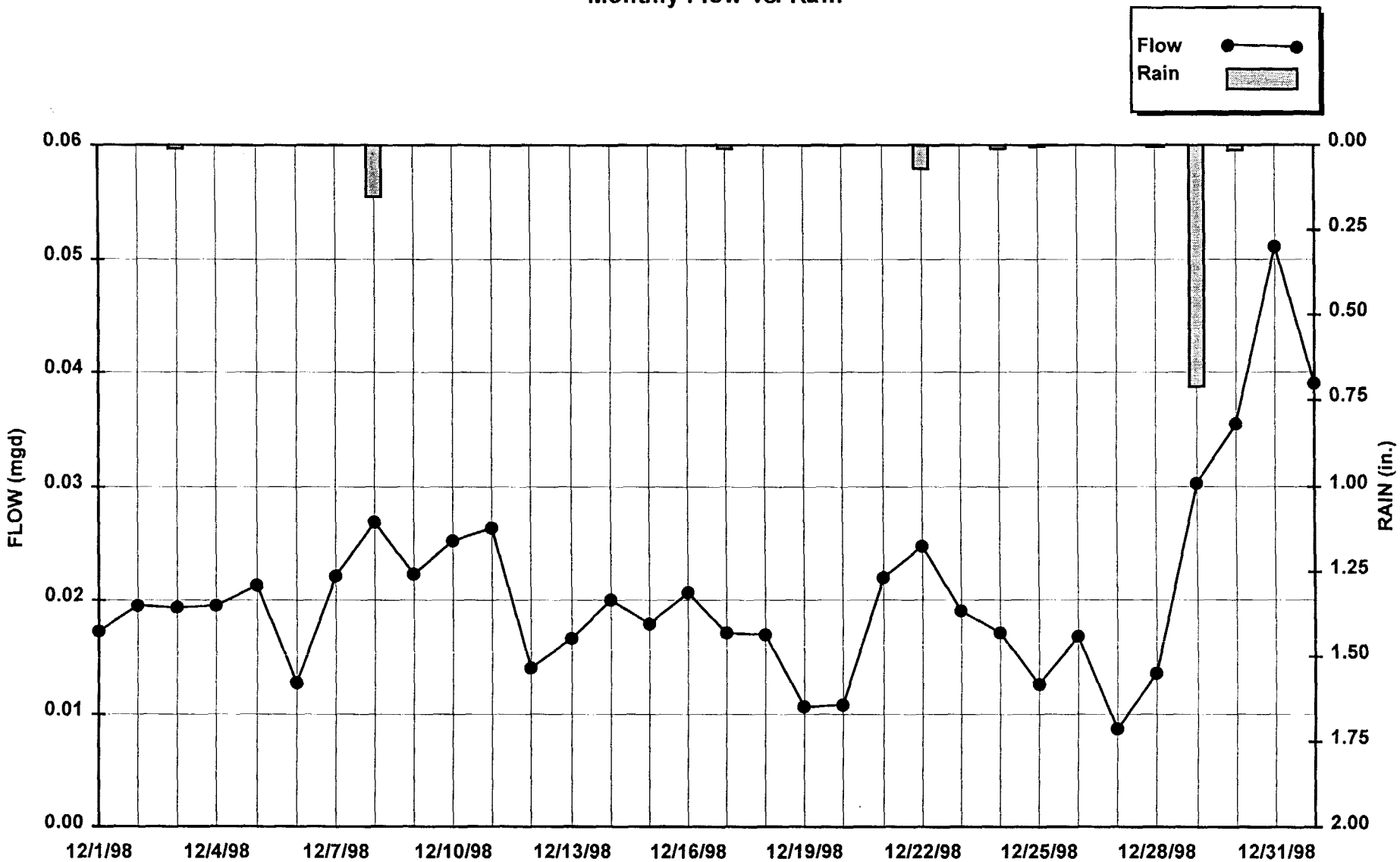
863690914

000054

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent1

Address: Raymond Plaza near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QQT

Monthly Flow Report (Flow1)

2/9/1999 5:10:55 PM

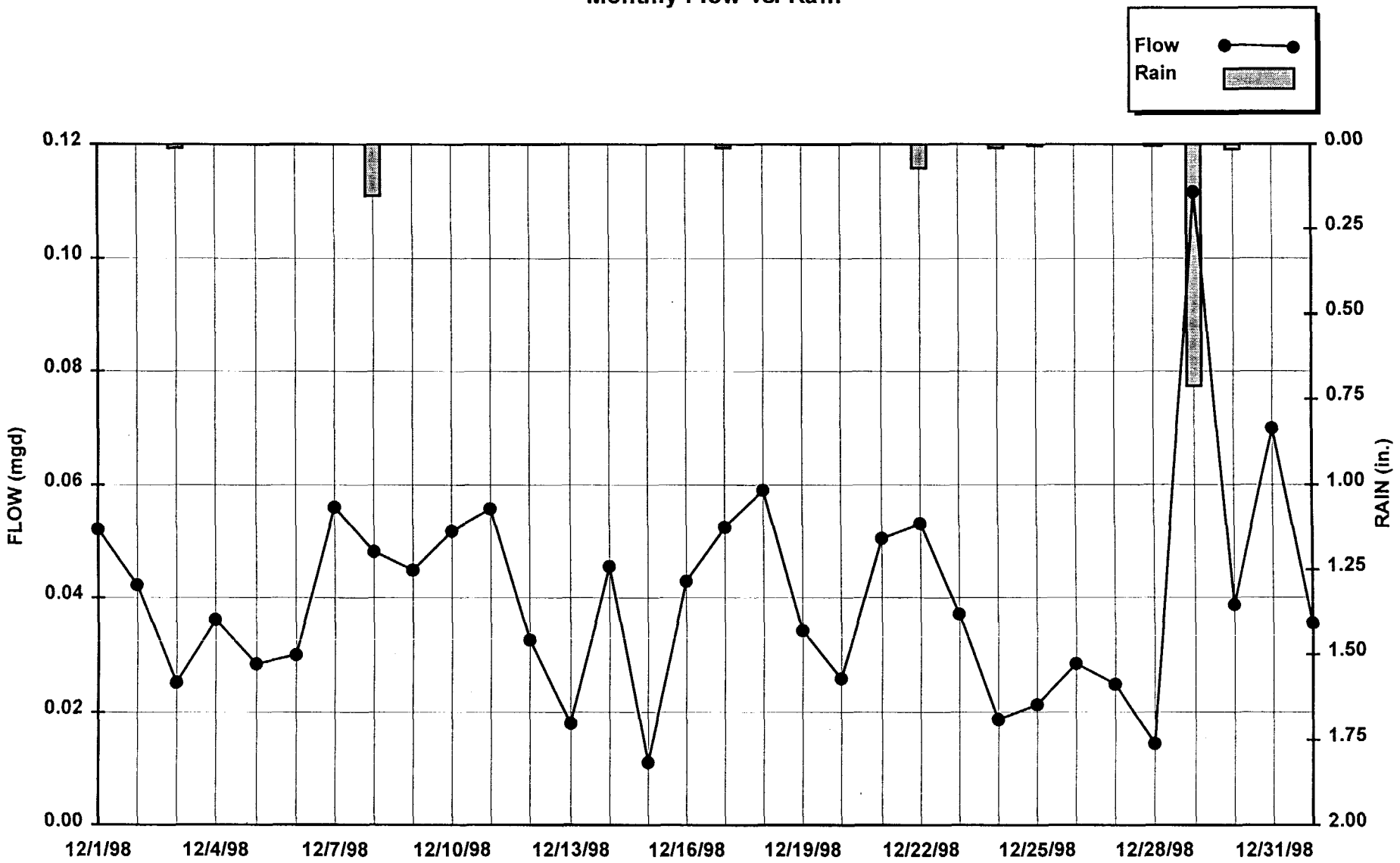
863690915

000055

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QU2

Monthly Flow Report (Flow1)

2/9/1999 5:11:49 PM

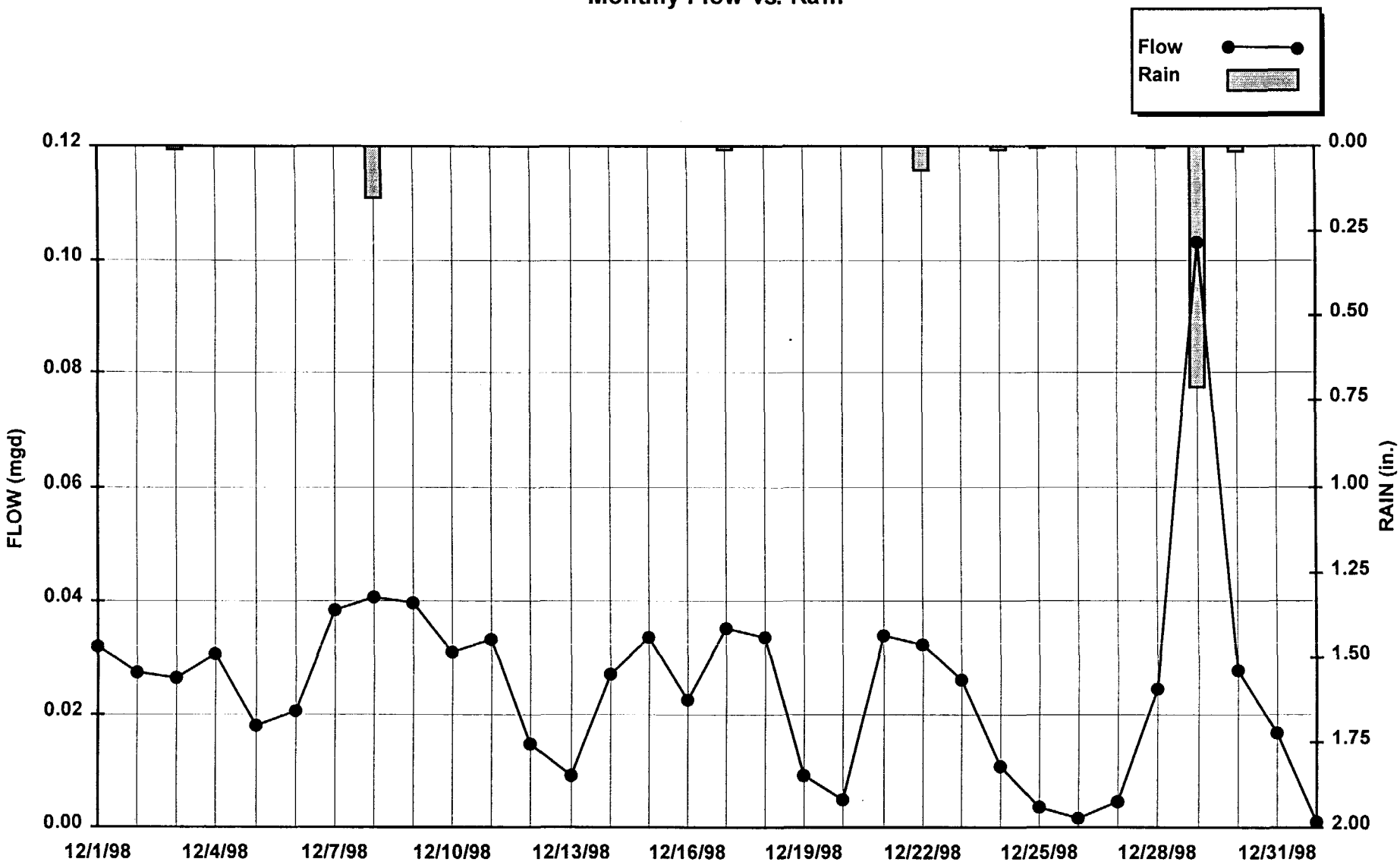
863690916

000056

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Influent3

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPV

Monthly Flow Report (Flow1)

2/9/1999 5:11:21 PM

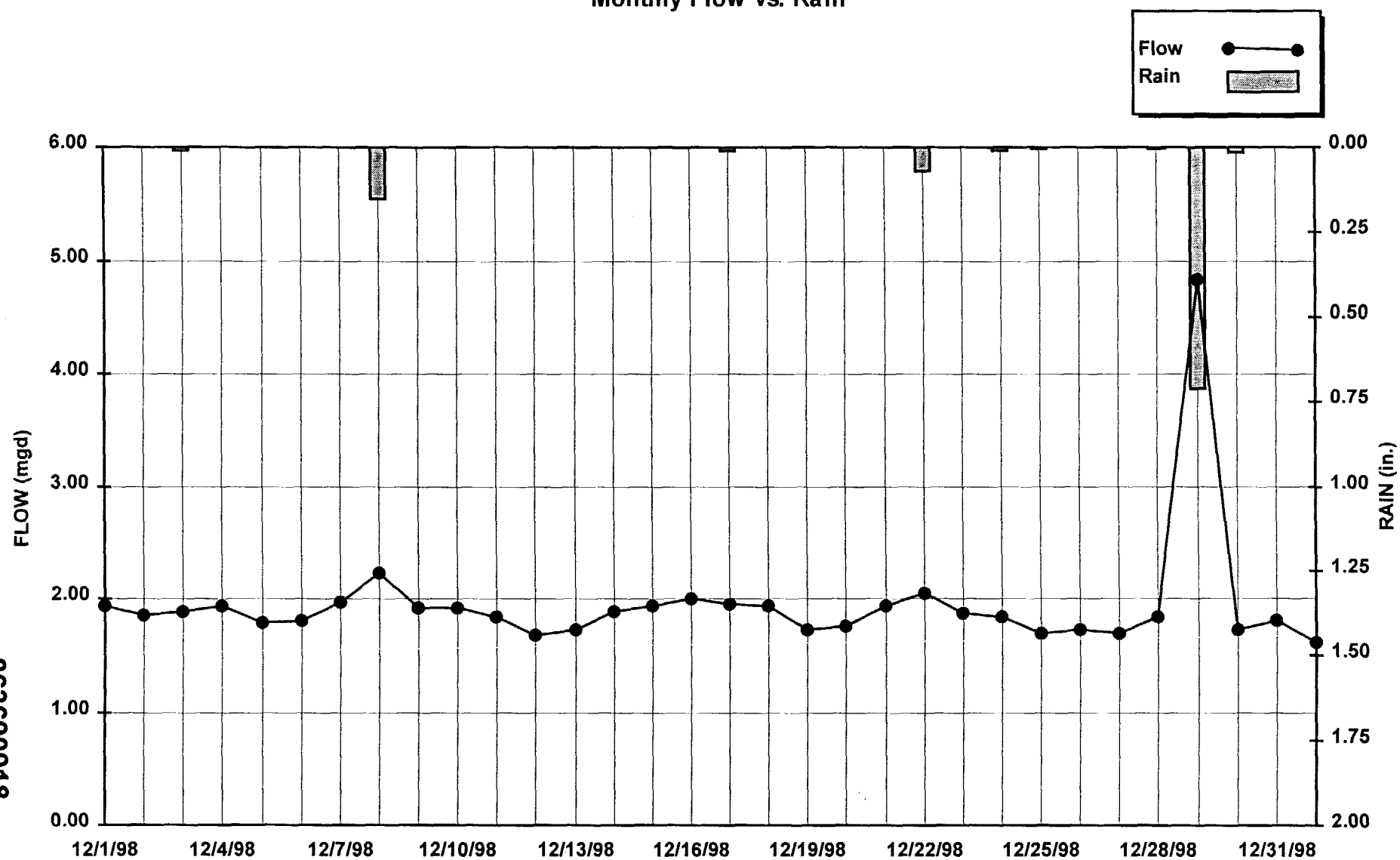
863690917

000057

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPQ

Monthly Flow Report (Flow2)

2/9/1999 5:33:46 PM

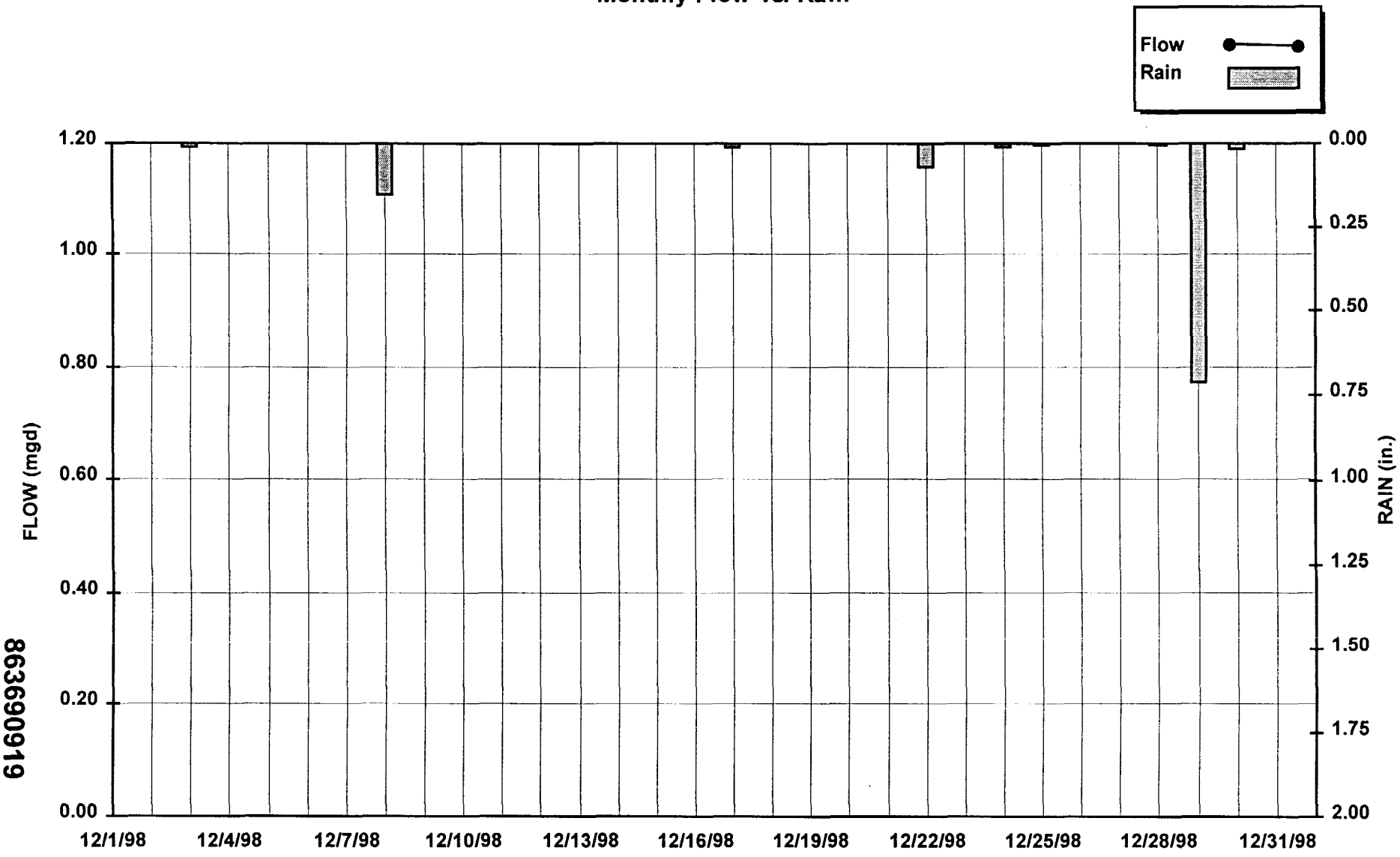
863690918

000058

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QLK

Monthly Flow Report (Flow2)

2/9/1999 5:29:41 PM

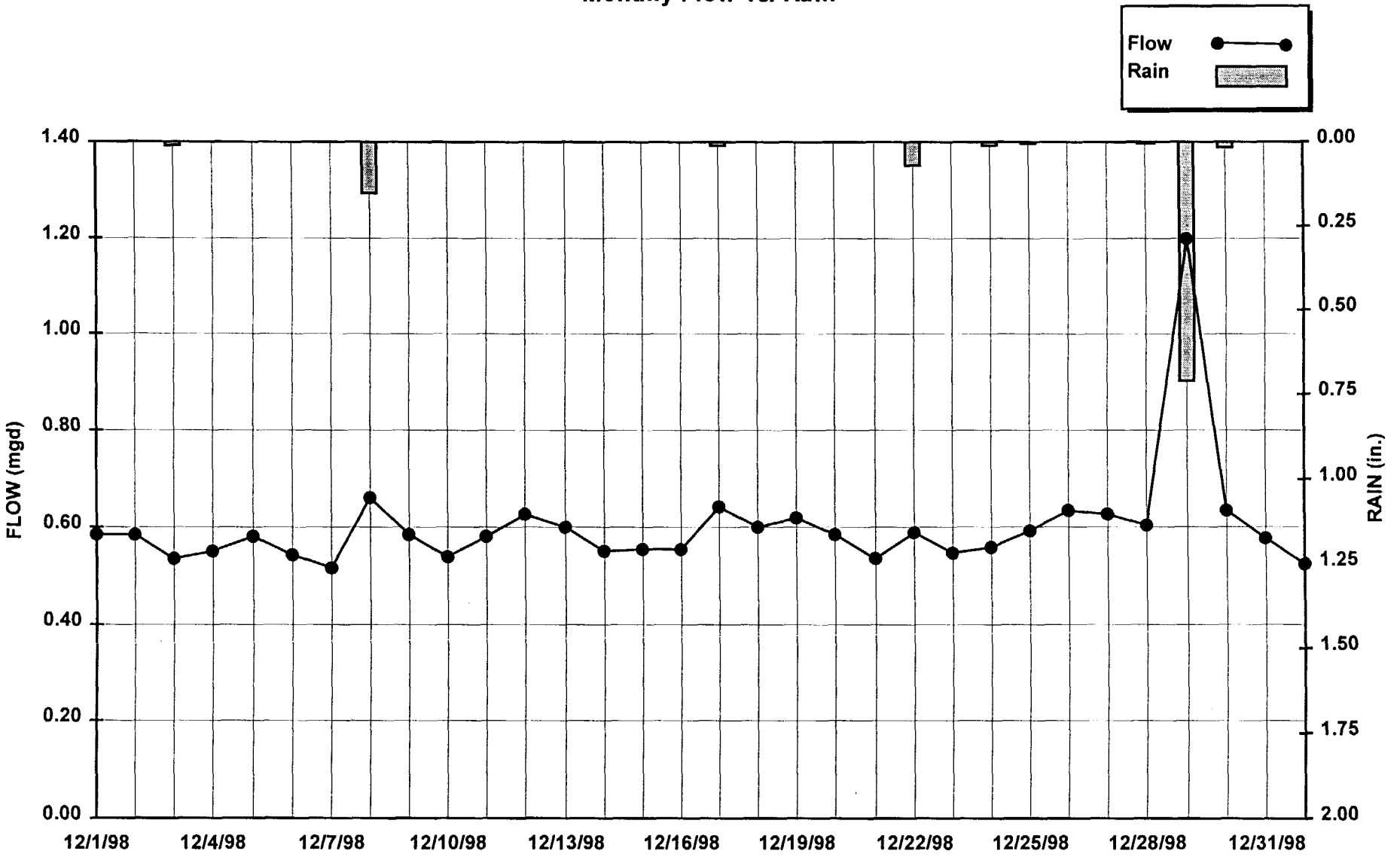
863690919

000059

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Monthly Flow Report (Flow1)

2/9/1999 5:14:29 PM

863690920

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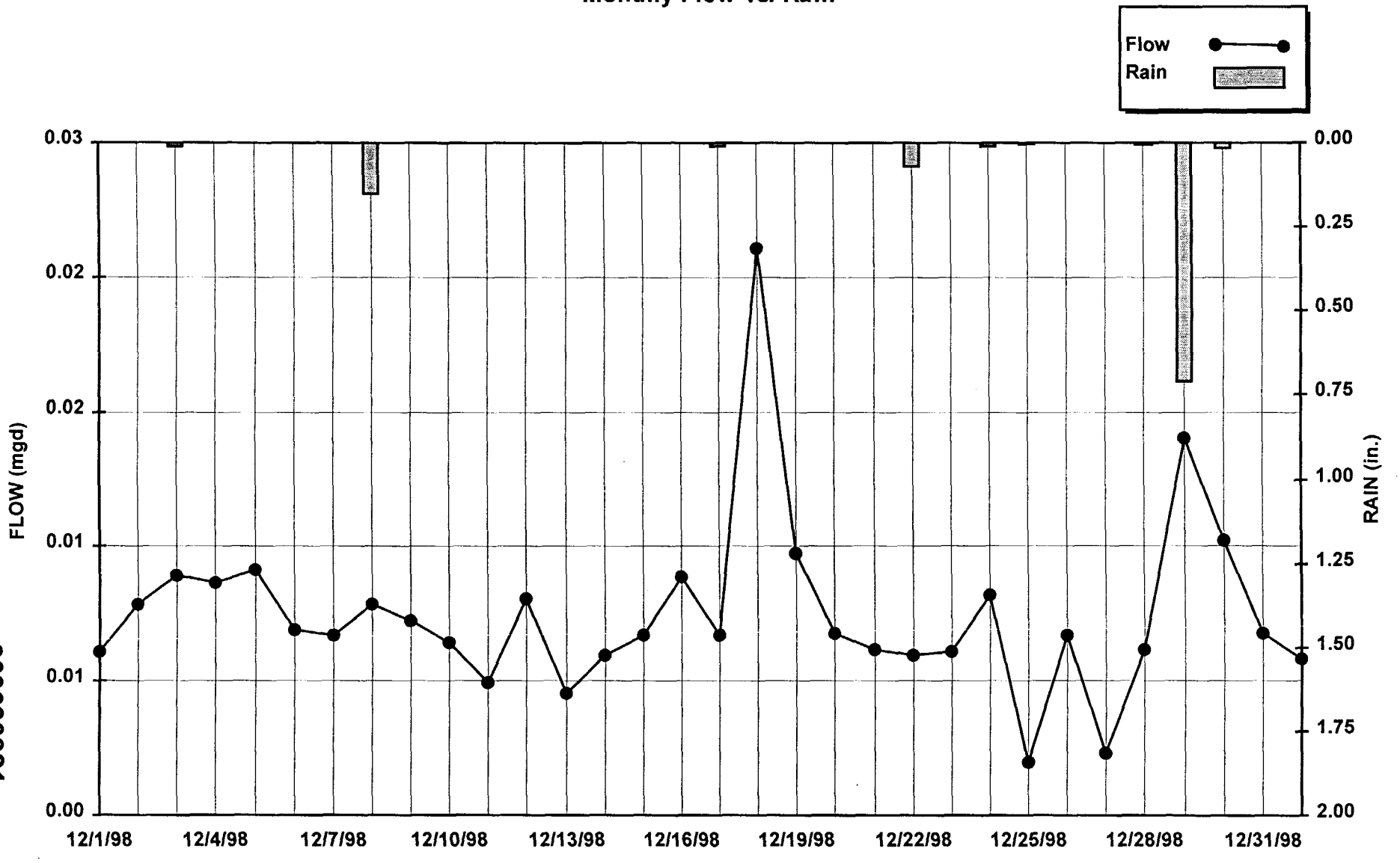
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Monthly Flow Report (Flow2)

2/9/1999 5:31:31 PM

863690921

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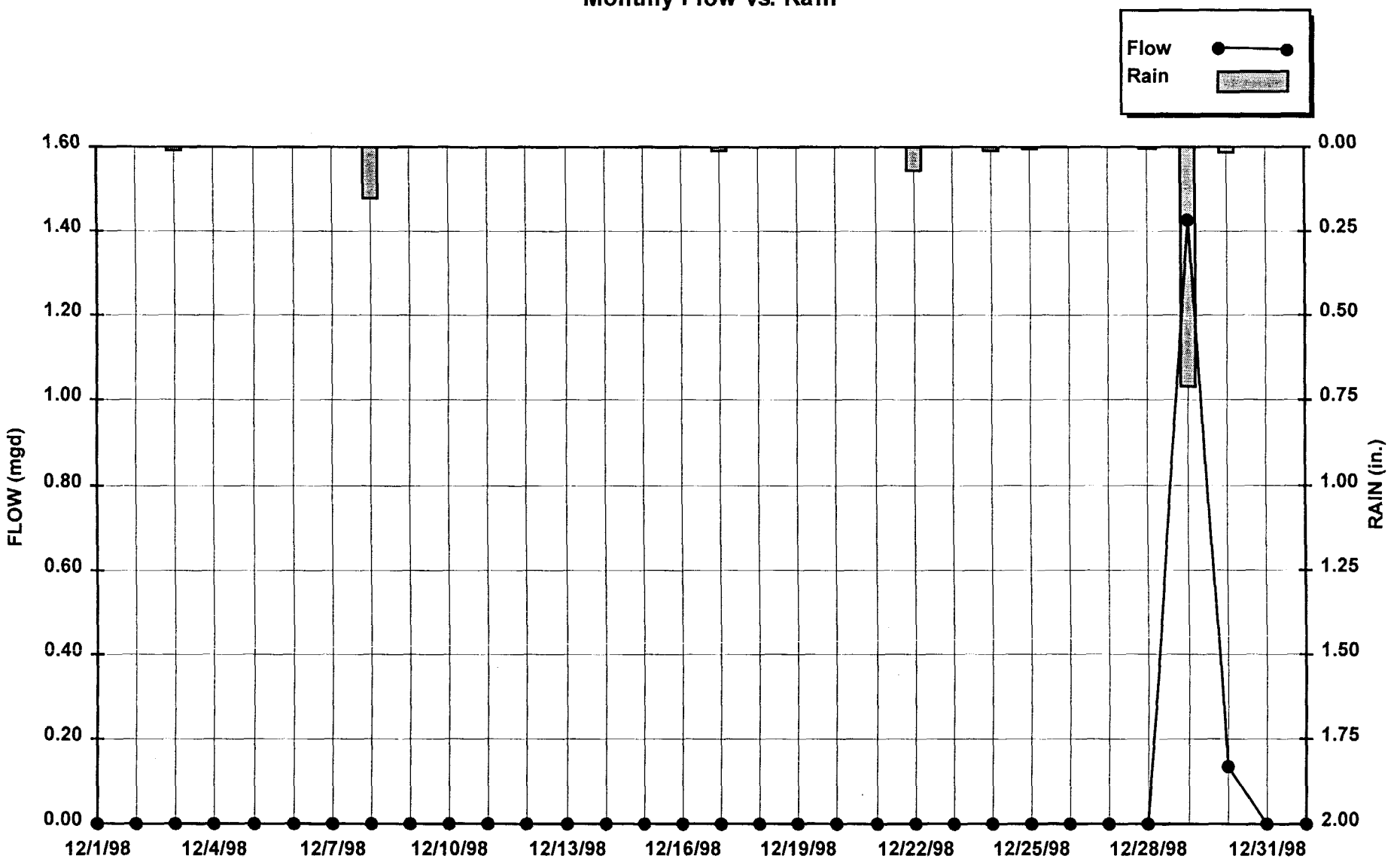
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Monthly Flow Report (Flow3)

2/9/1999 5:49:09 PM

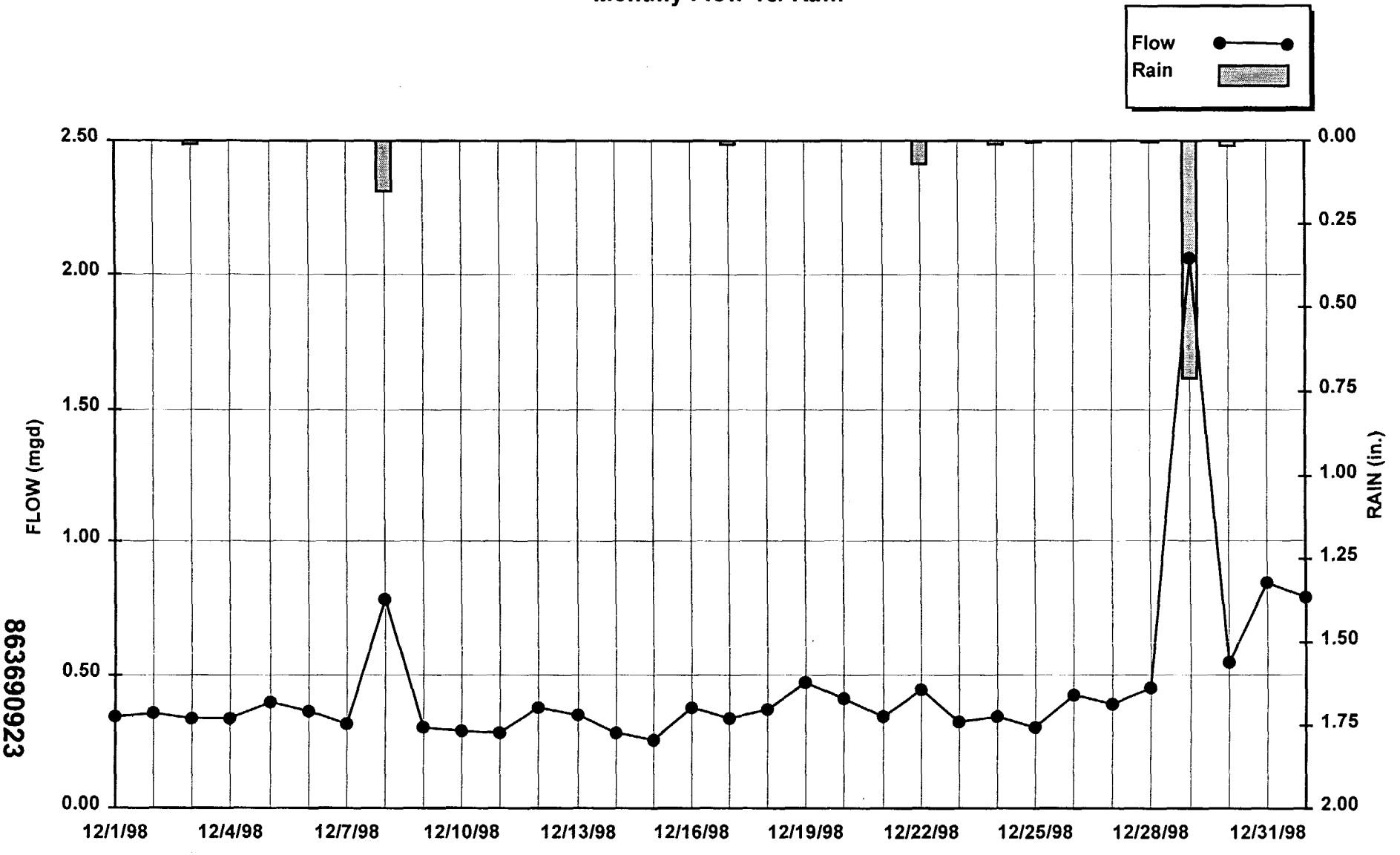
863690922

000062

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 017 - POLK ST
Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUG

Monthly Flow Report (Flow1)

2/9/1999 5:12:41 PM

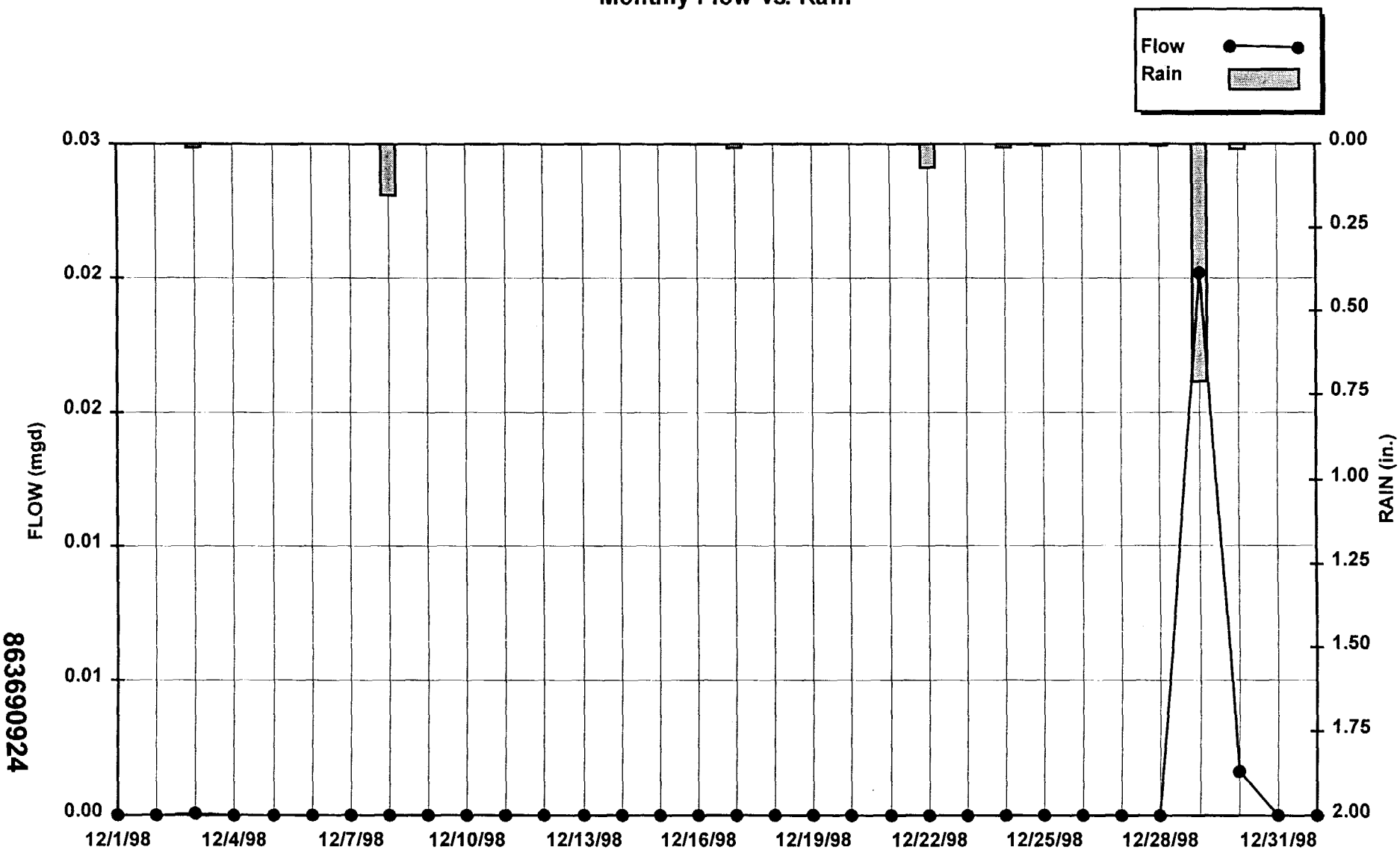
863690923

000063

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690924

CSO 017 - POLK ST
Address: Polk St. and Raymond Blvd.

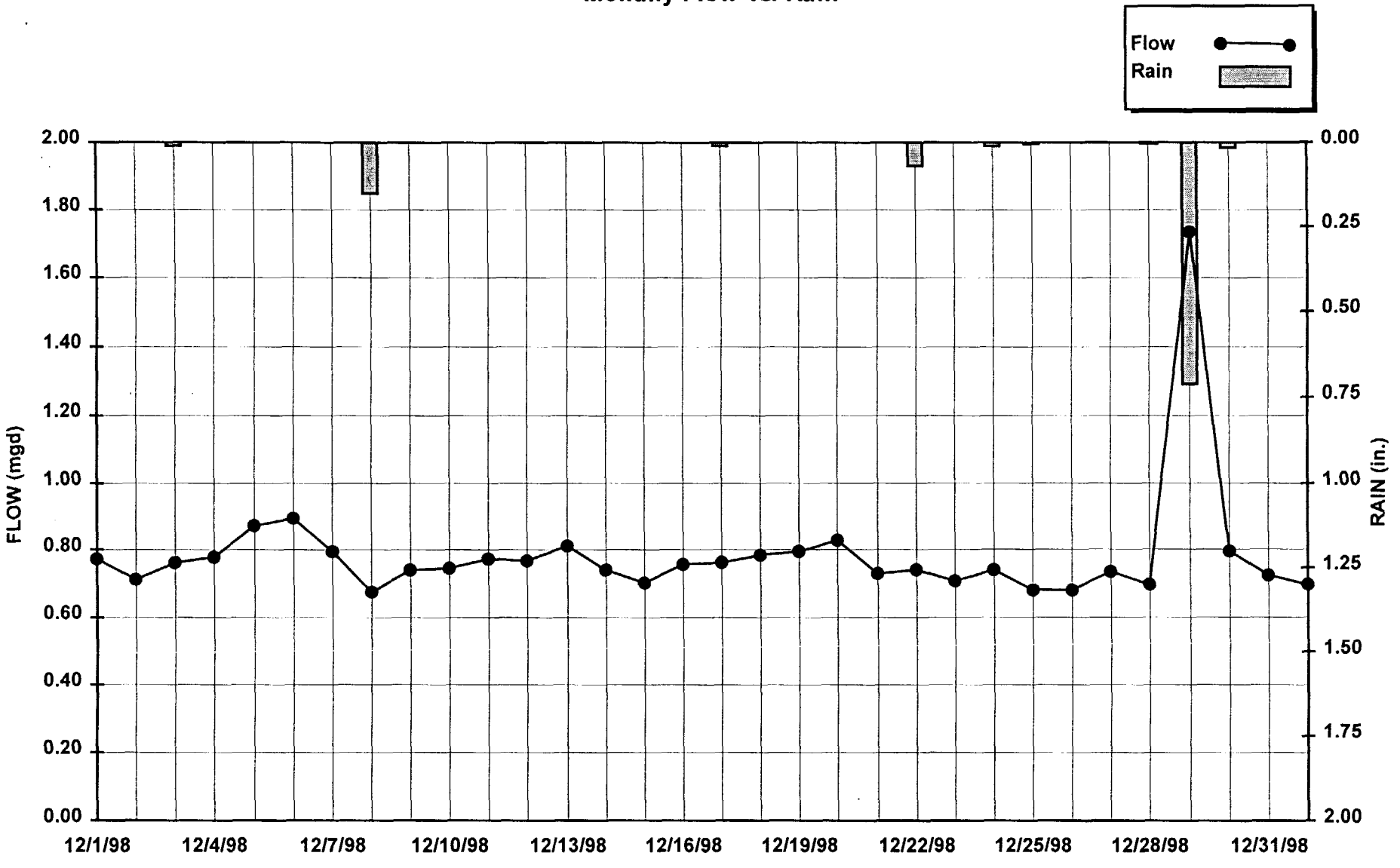
920 F.M. VERSION: 1.02
Serial#: QUG

000064

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690925

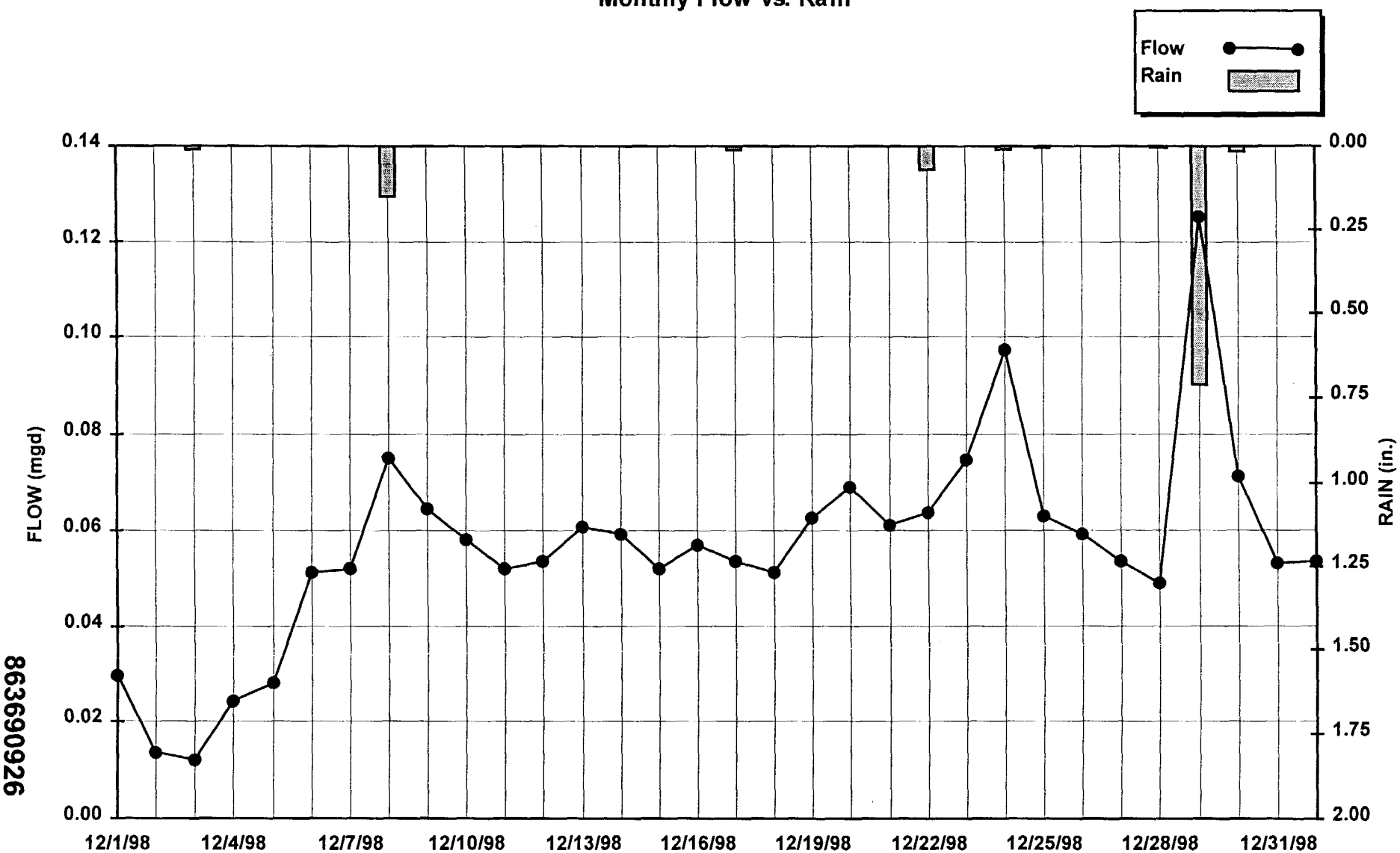
CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QUF

Monthly Flow Report (Flow2)

2/9/1999 5:32:26 PM

863690926

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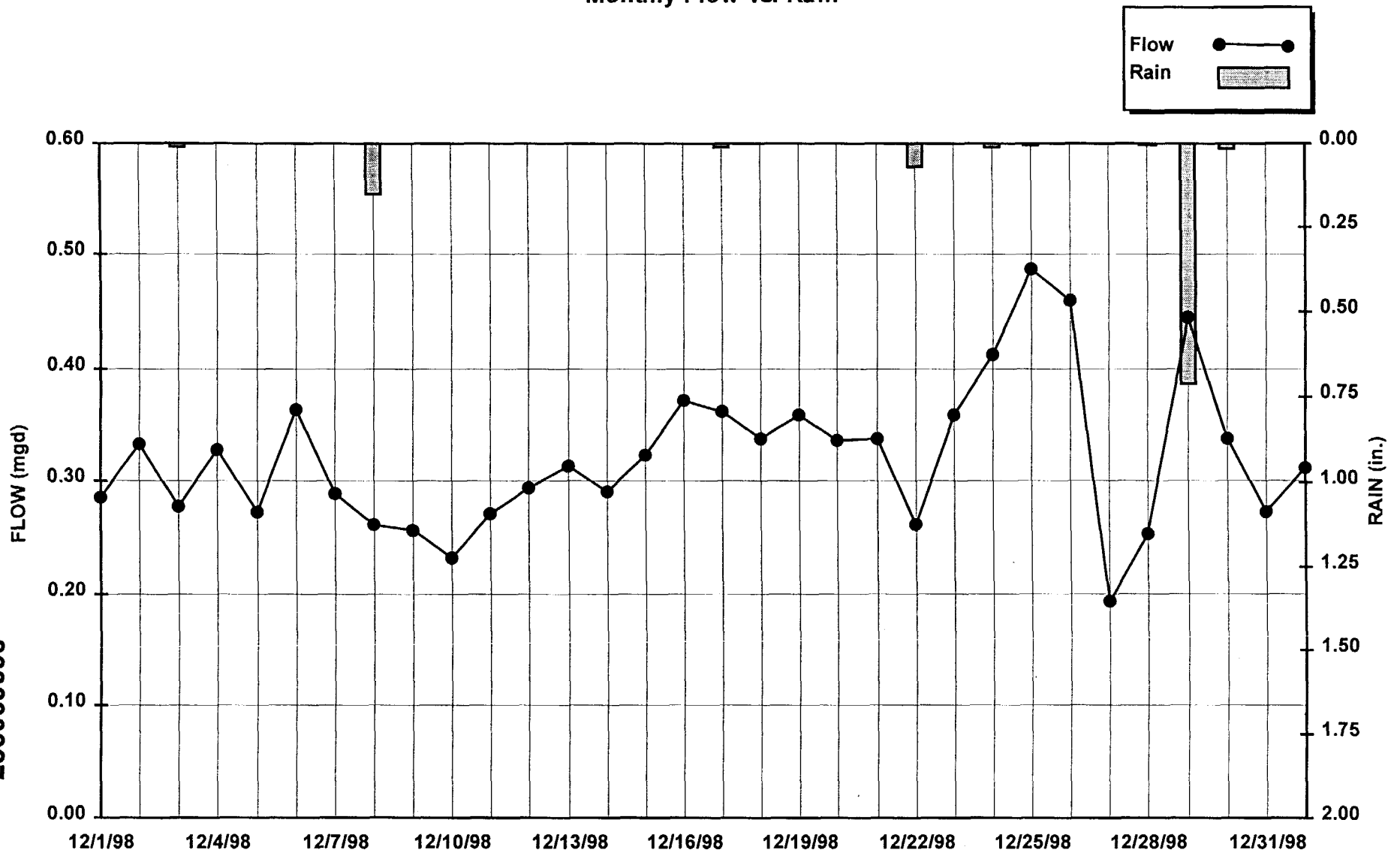
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QU0

Monthly Flow Report (Flow1)

2/9/1999 5:12:14 PM

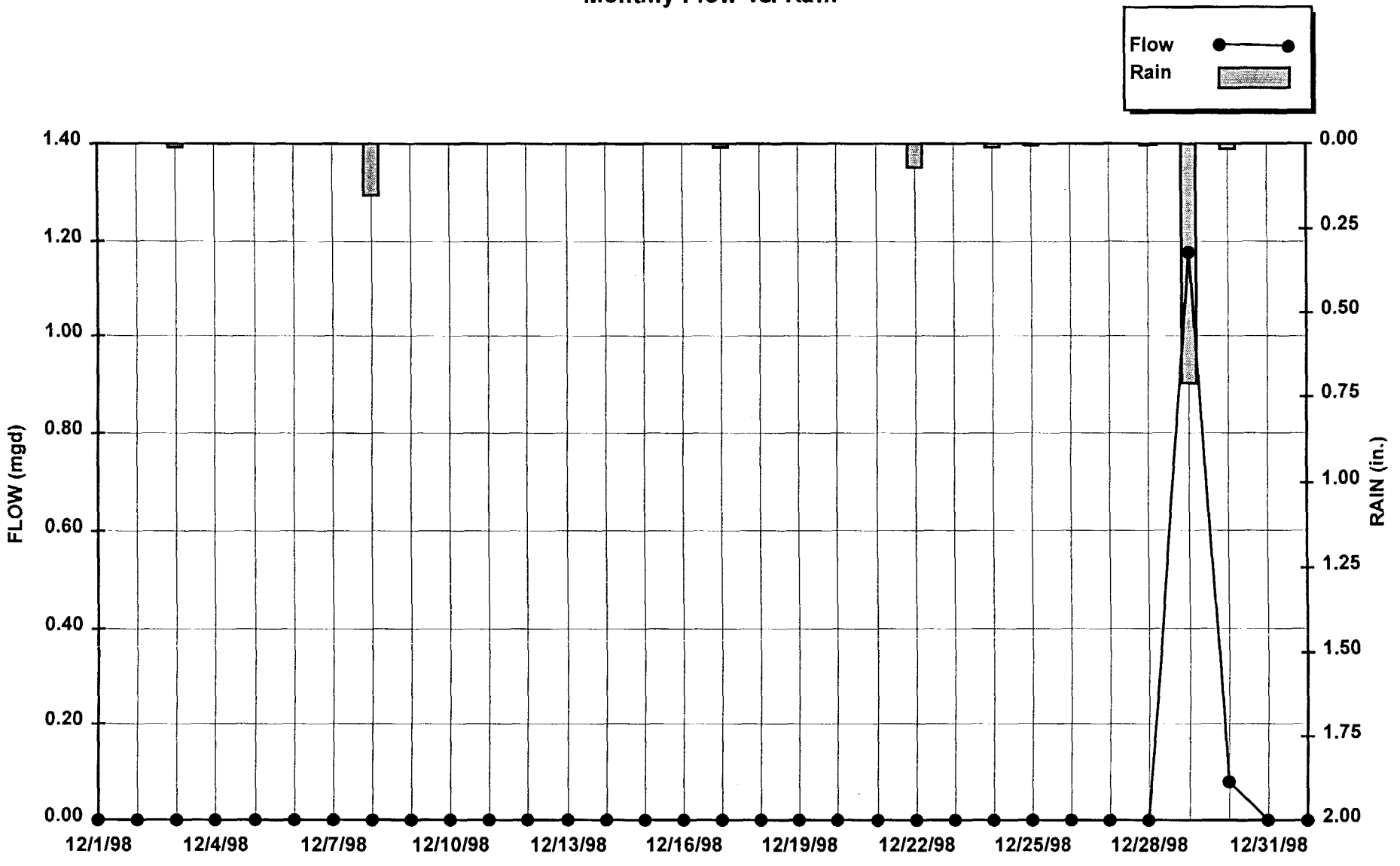
863690927

000067

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 018 - FREEMAN ST Influent&Overflow
Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02
Serial#: QU0

Monthly Flow Report (Flow2)

2/9/1999 5:30:09 PM

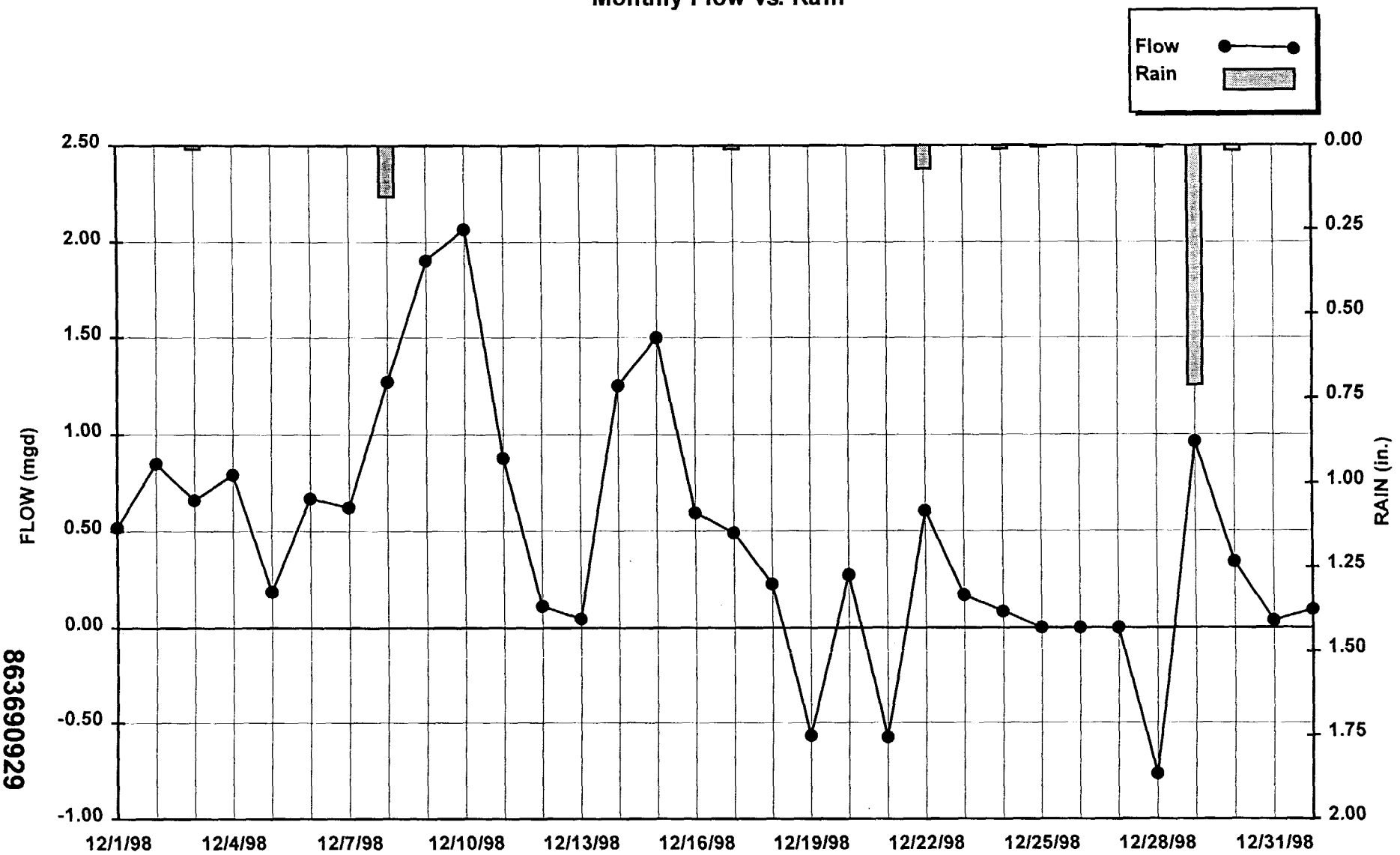
863690928

000068

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690929

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

Monthly Flow Report (Flow1)

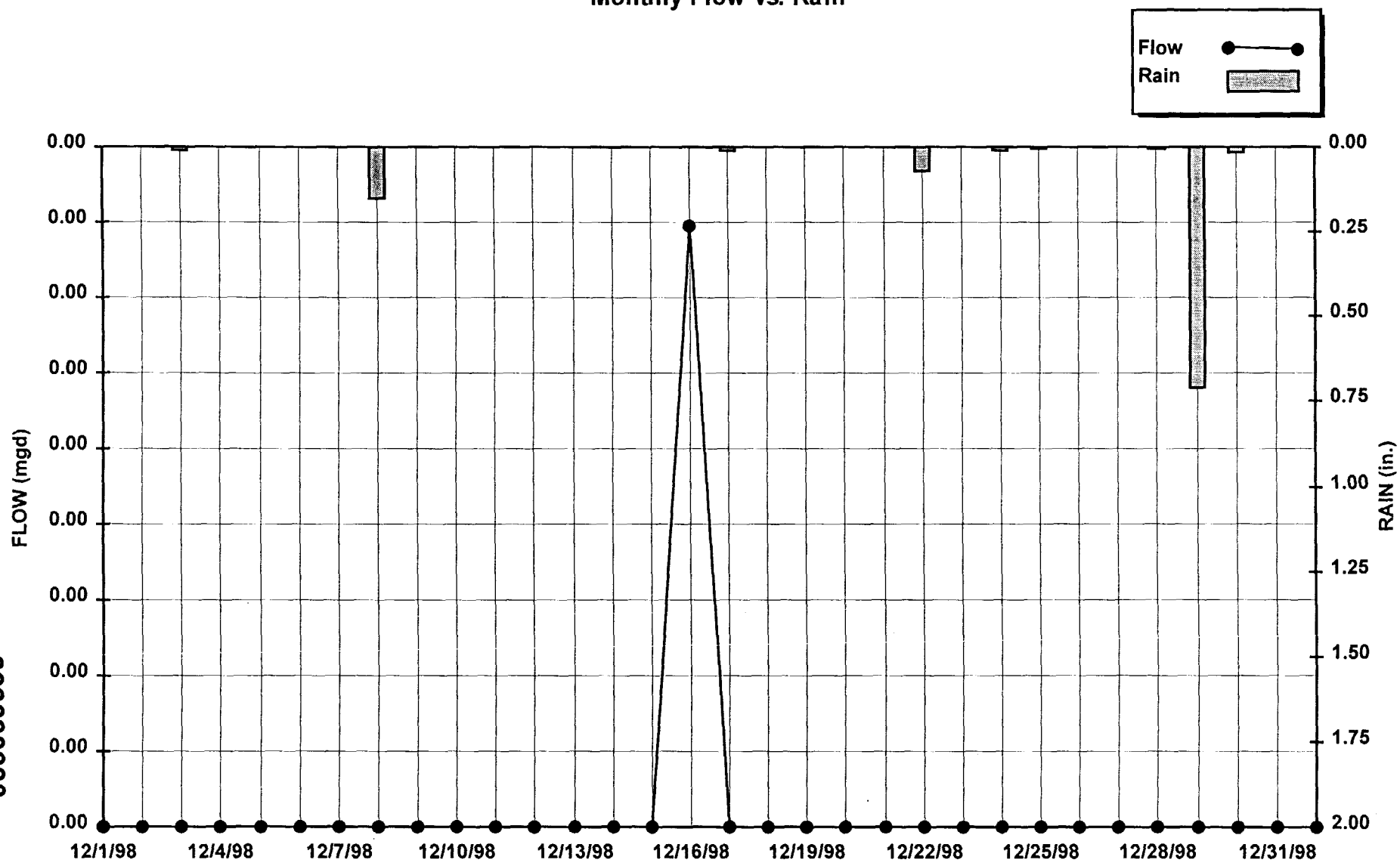
2/9/1999 5:13:08 PM

000069

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

Monthly Flow Report (Flow2)

2/9/1999 5:31:03 PM

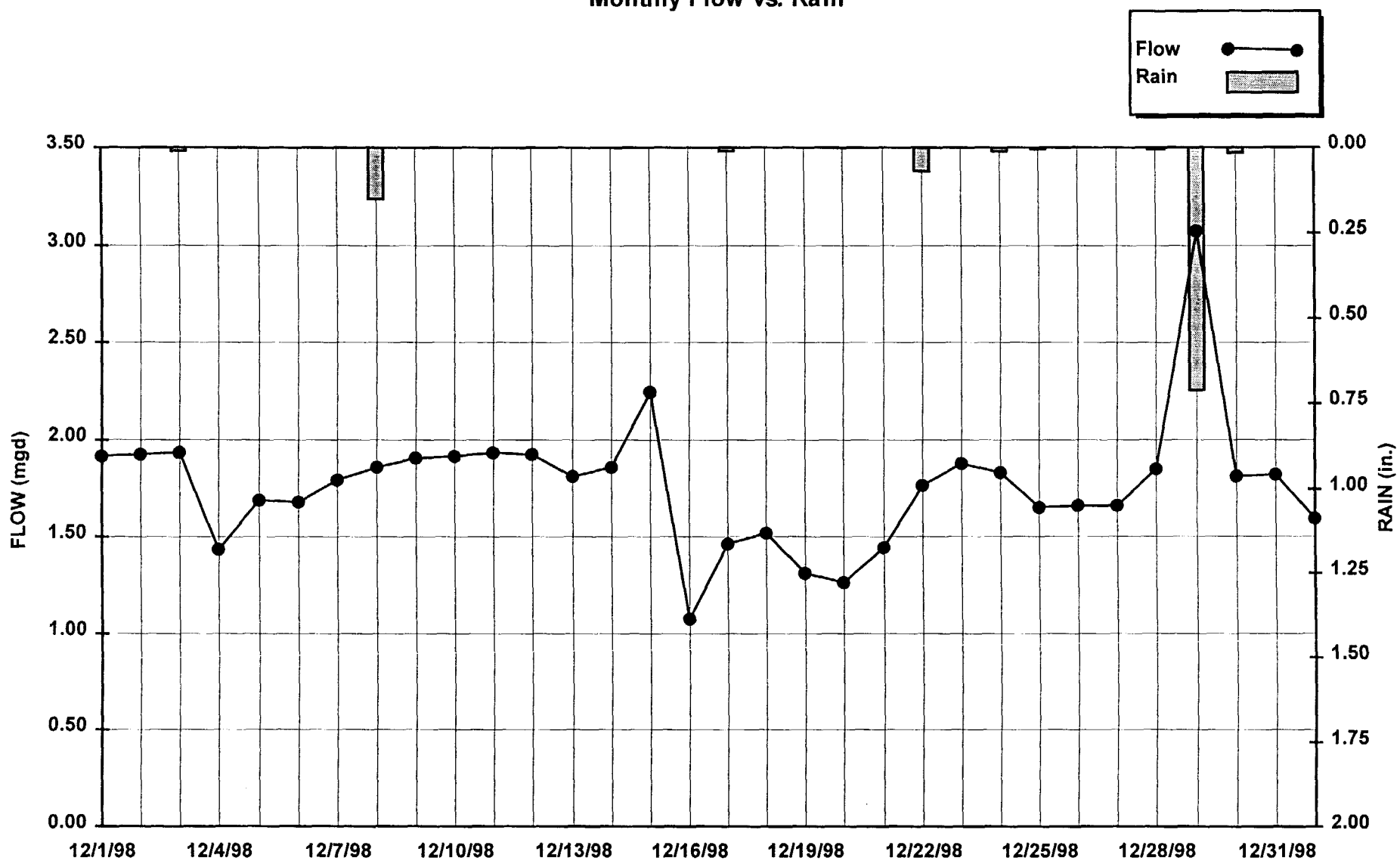
863690930

000070

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

Monthly Flow Report (Flow3)

2/9/1999 5:37:49 PM

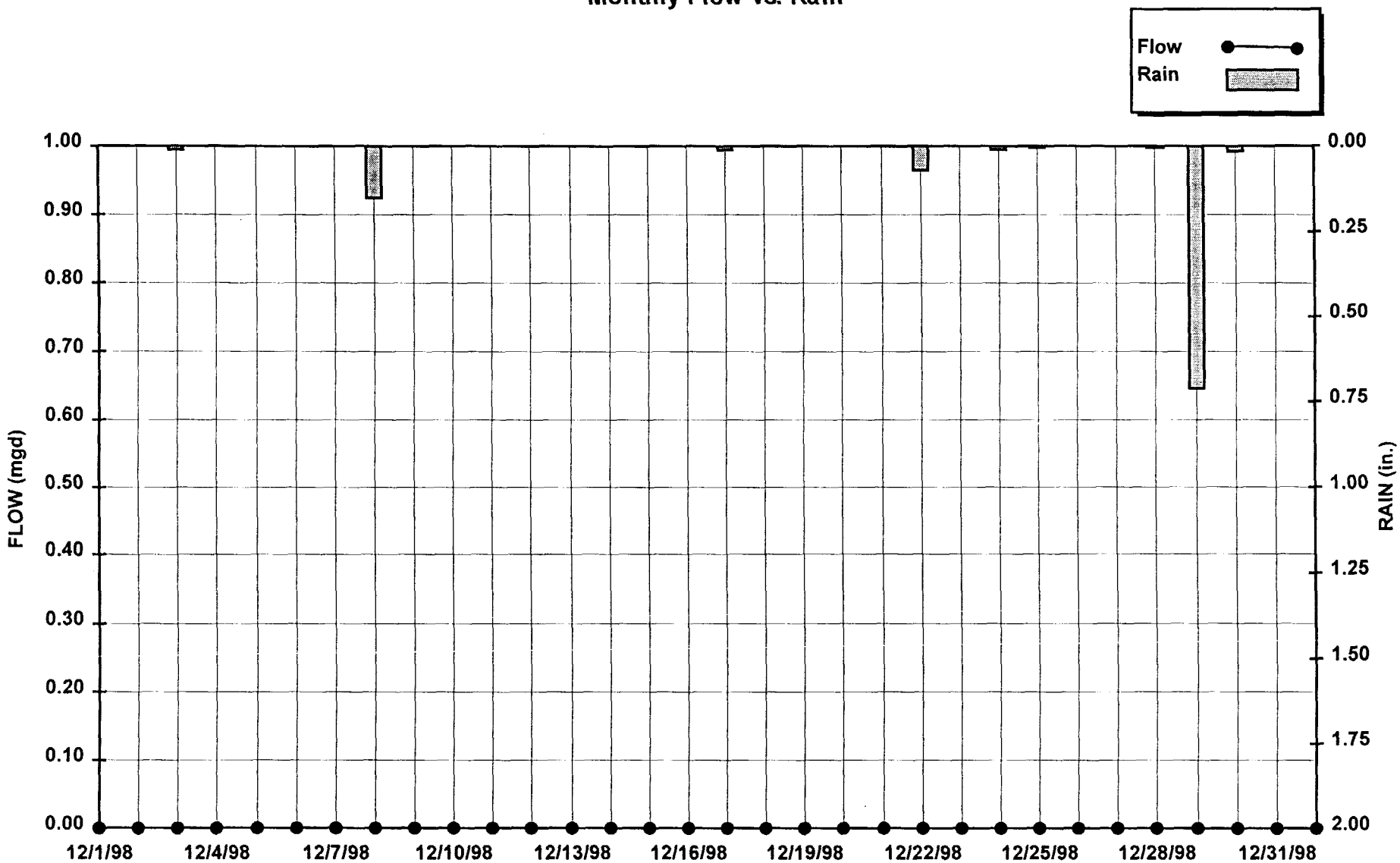
863690931

000071

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 023a - ADAMS ST
Address: South St. near Dawson St.

920 F.M. VERSION: 1.02
Serial#: QR4

Monthly Flow Report (Flow2)

2/9/1999 5:23:55 PM

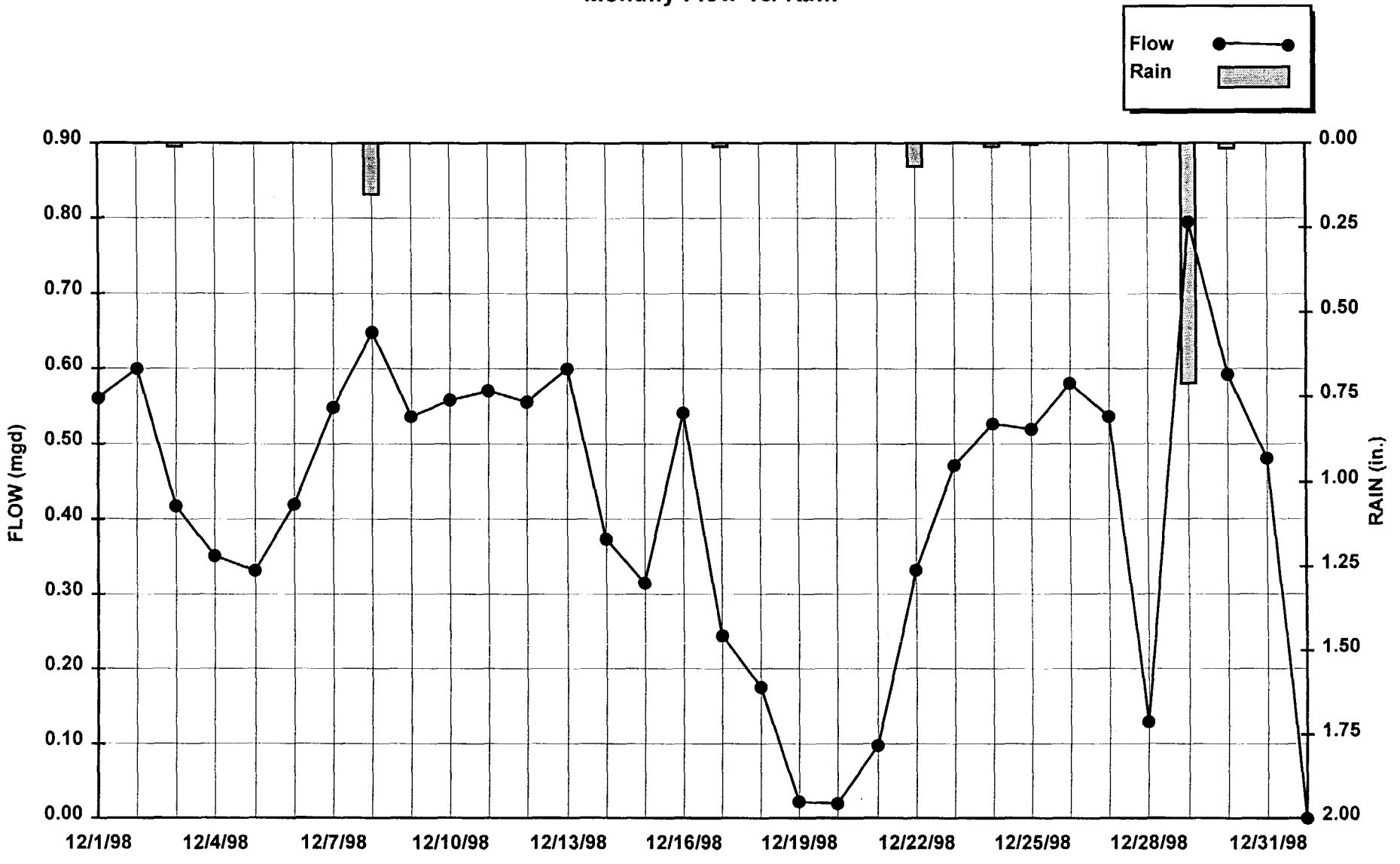
863690932

000072

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690933

CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02

Serial#: QO4

Monthly Flow Report (Flow1)

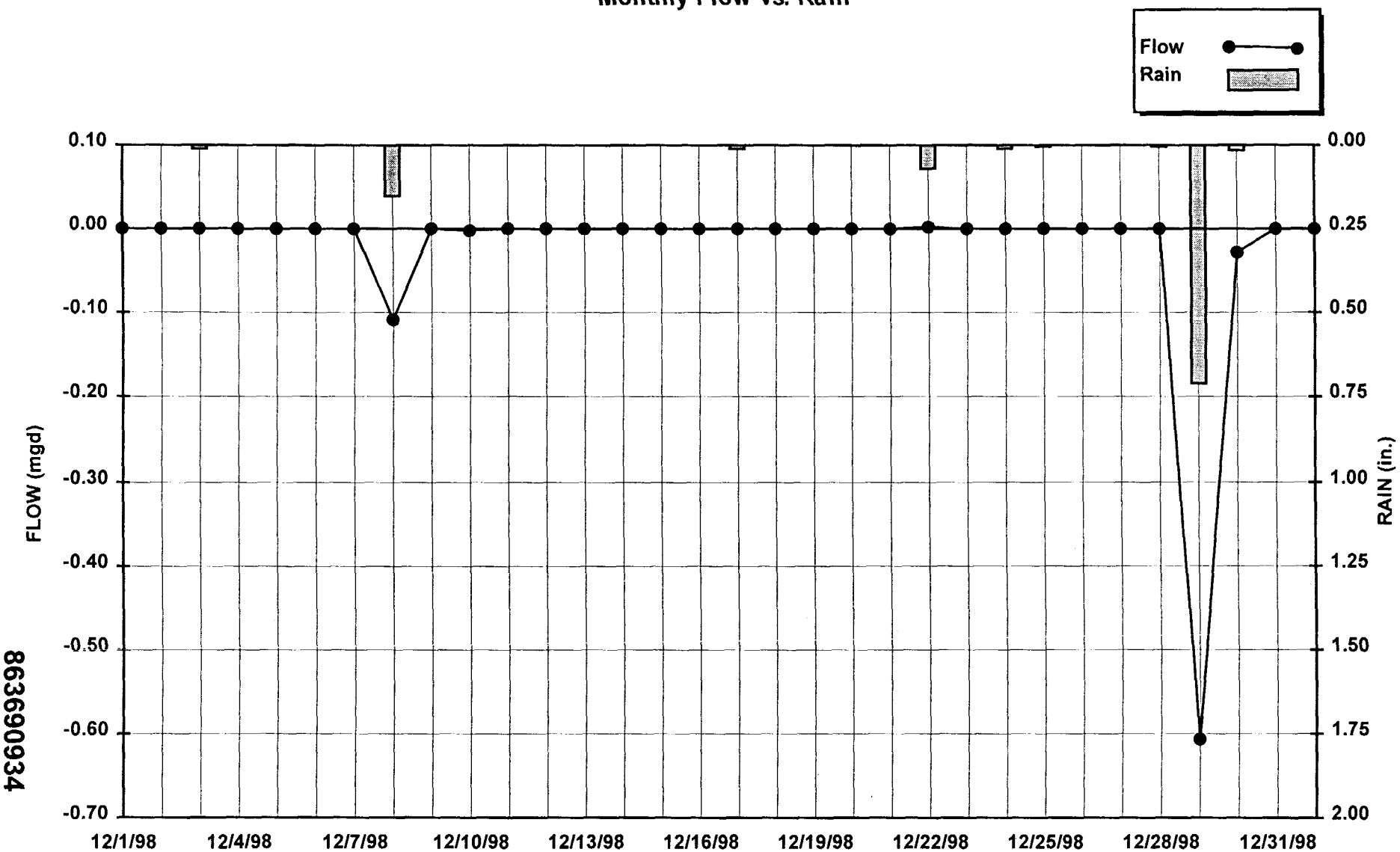
2/9/1999 5:05:08 PM

000073

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690934

CSO 023B - ADAMS ST. overflow
Address: South St. and Jefferson St

910 F.M. VERSION: 1.02
Serial#: QPP

Monthly Flow Report (Flow1)

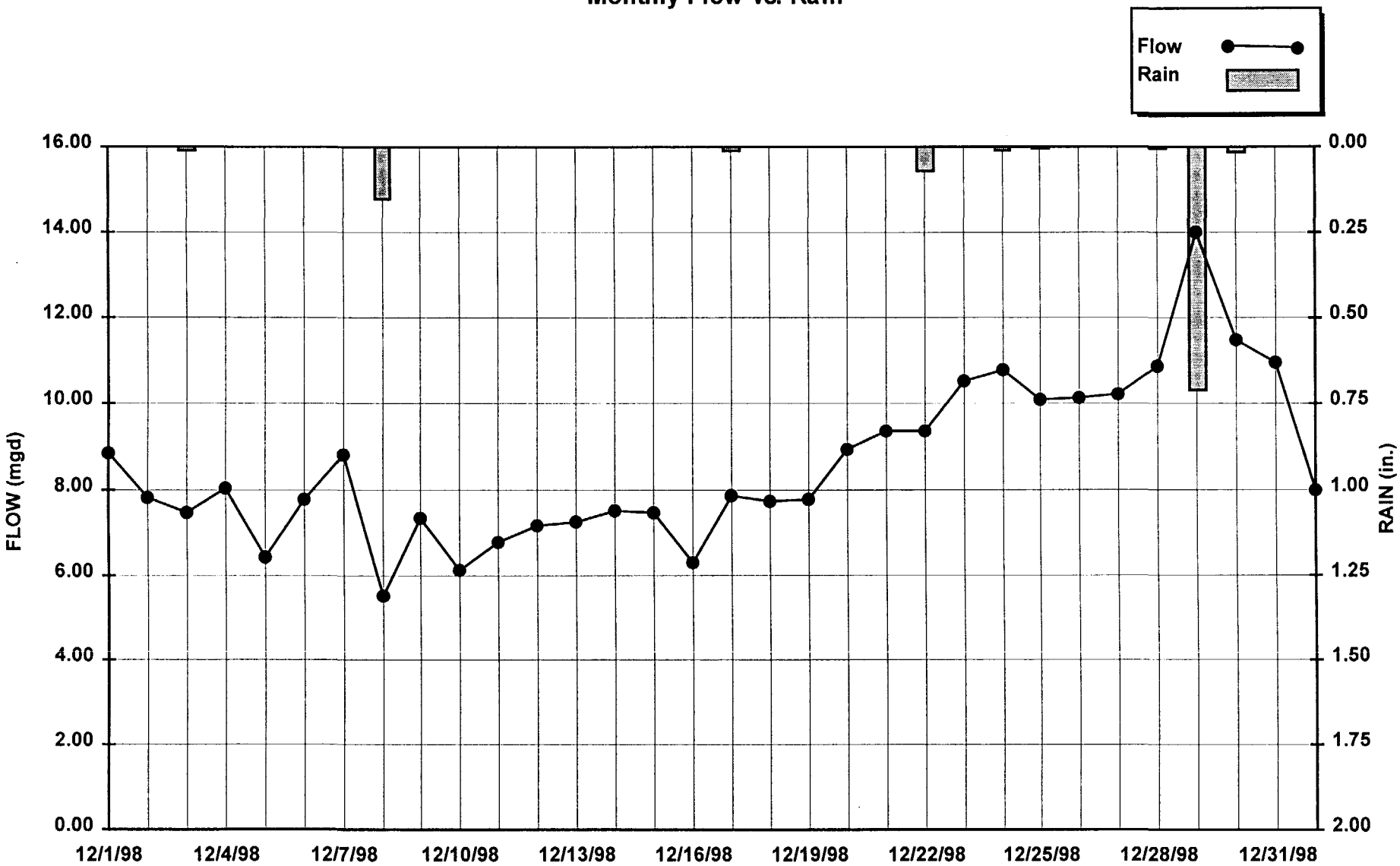
2/9/1999 5:17:43 PM

000074

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

Monthly Flow Report (Flow1)

2/9/1999 5:16:48 PM

863690935

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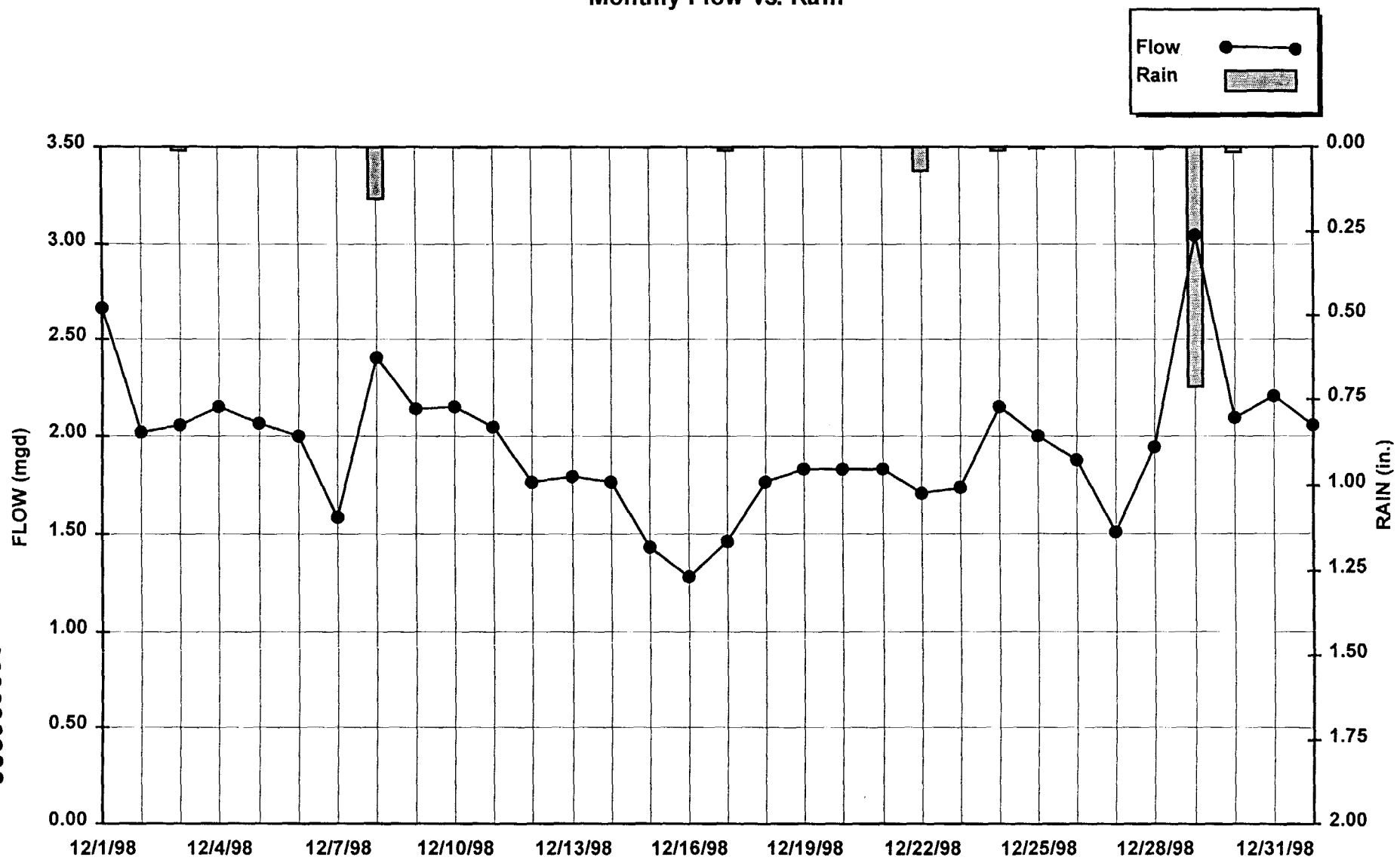
Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690936

CSO 025 - PEDDIE ST unregulated
Address: Peddie Ditch

920 F.M. VERSION: 1.02
Serial#: QUE

Monthly Flow Report (Flow2)

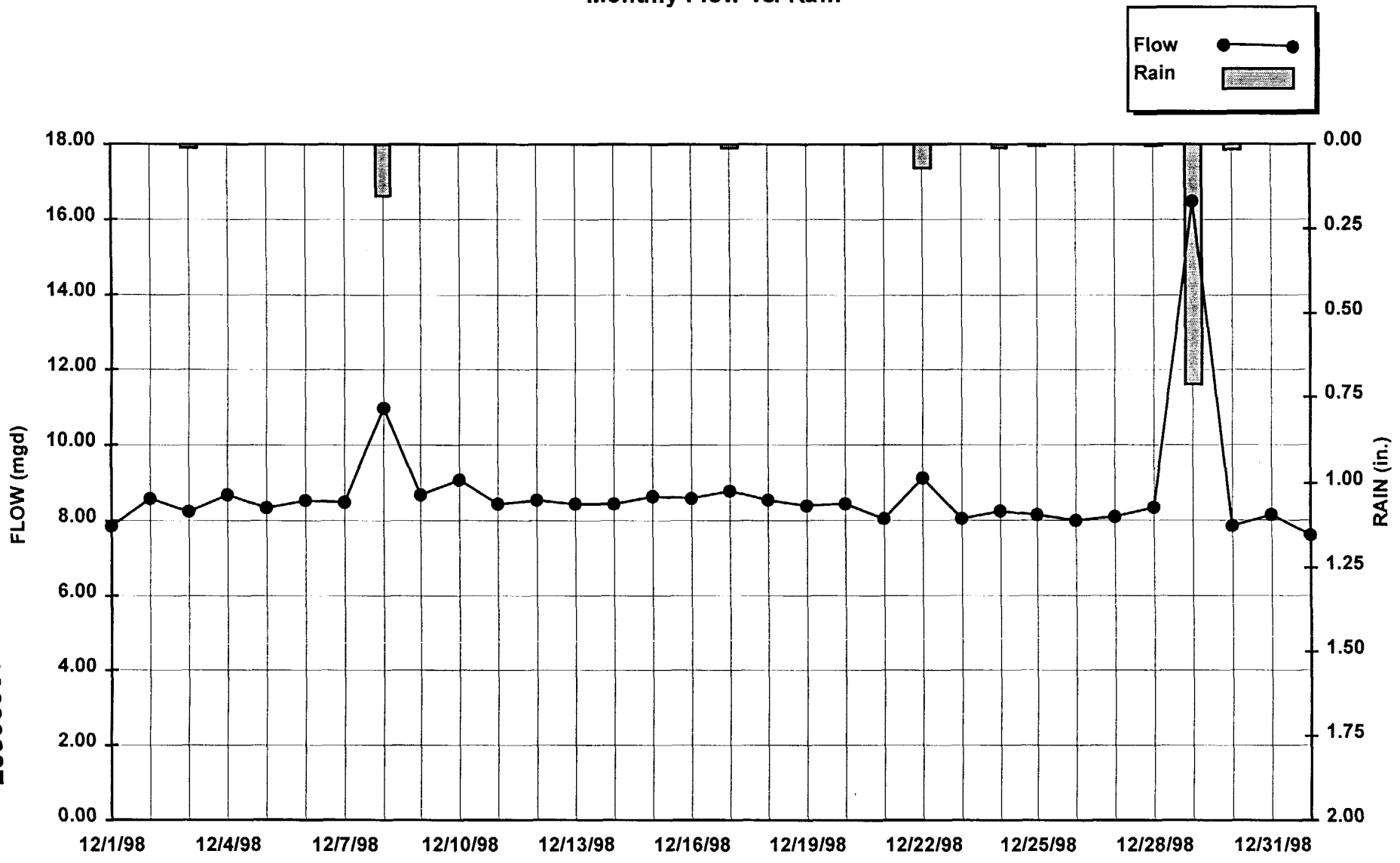
2/9/1999 5:34:14 PM

000076

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 025 Peddie St regulated
Address: Peddie Ditch

910 F.M. VERSION: 1.02
Serial#: QO7

Monthly Flow Report (Flow1)

2/9/1999 5:17:16 PM

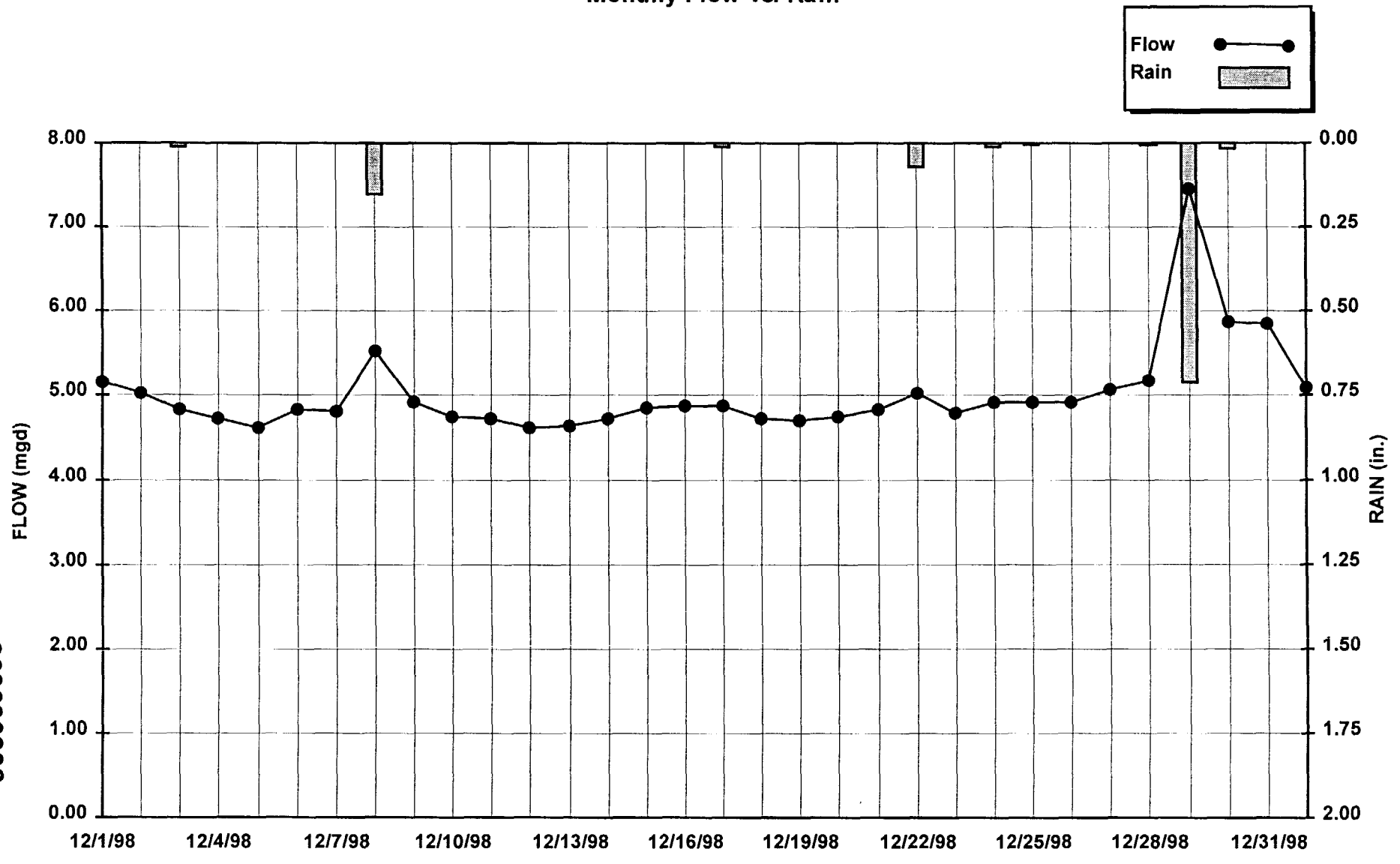
863690937

000022

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN unregulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQU

Monthly Flow Report (Flow1)

2/9/1999 5:14:02 PM

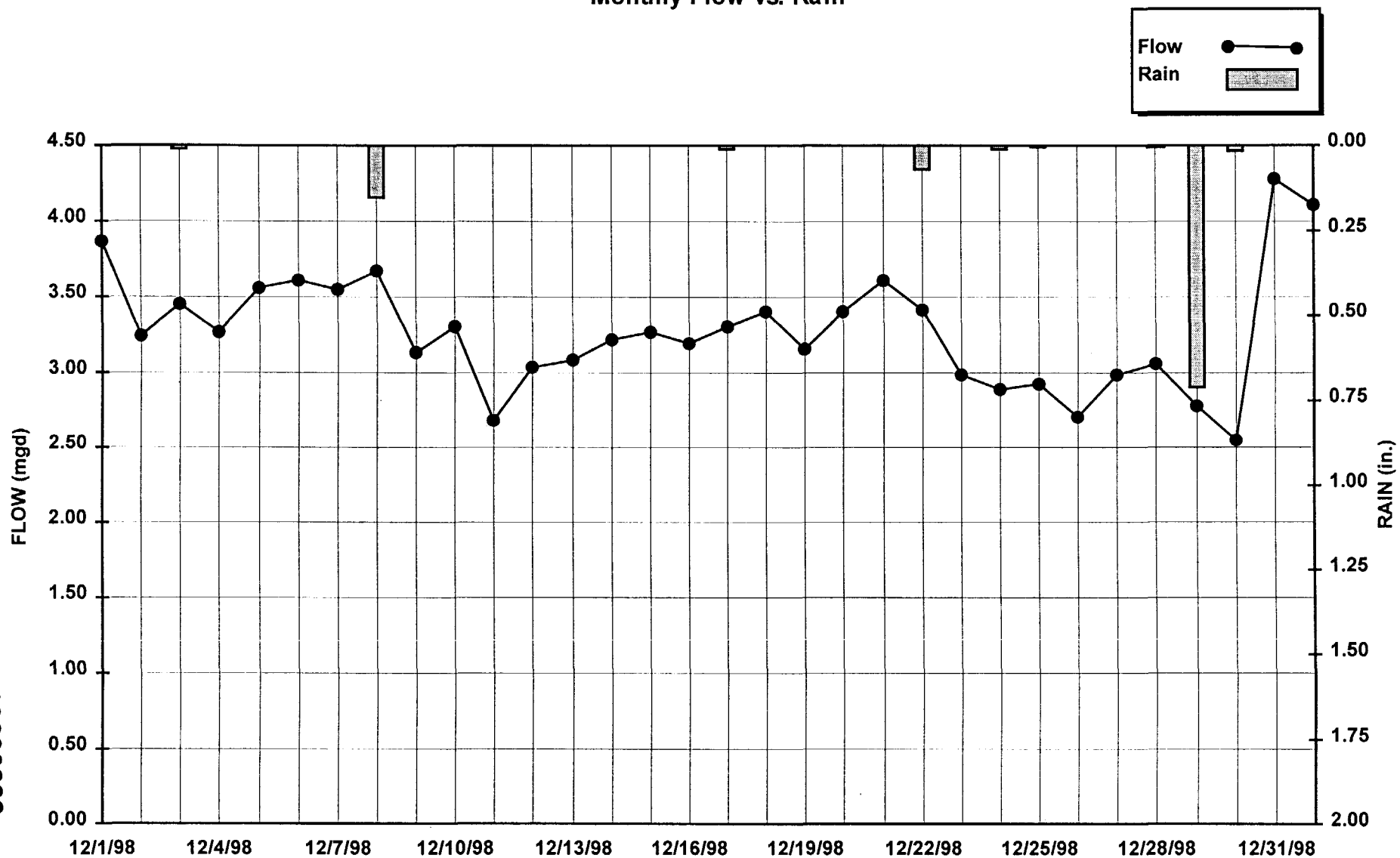
863690938

000078

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 026 - QUEEN regulated
Address: Queen Ditch

910 F.M. VERSION: 1.02
Serial#: QQV

Monthly Flow Report (Flow1)

2/9/1999 5:13:35 PM

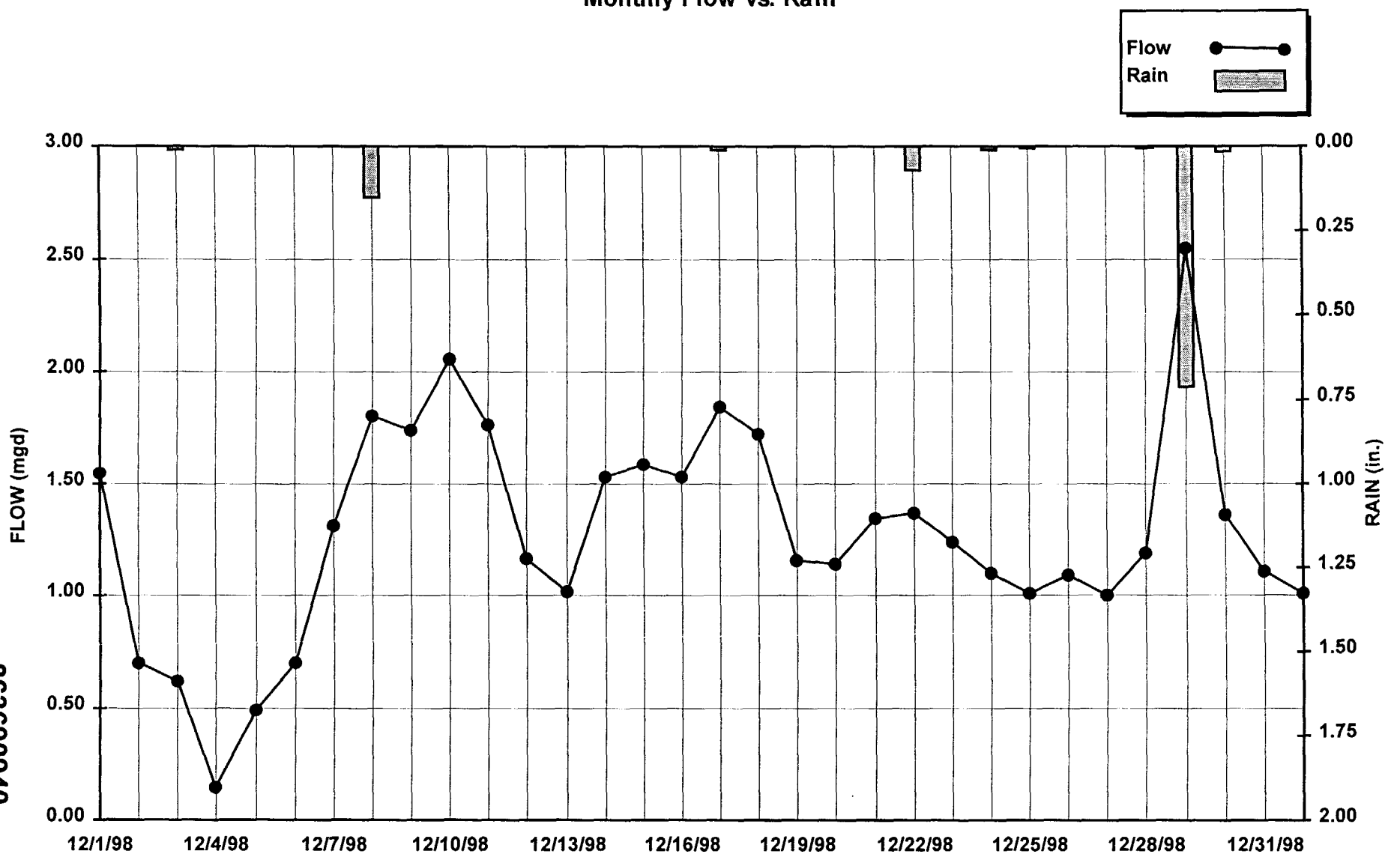
863690939

000079

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Monthly Flow Report (Flow1)

2/9/1999 5:09:09 PM

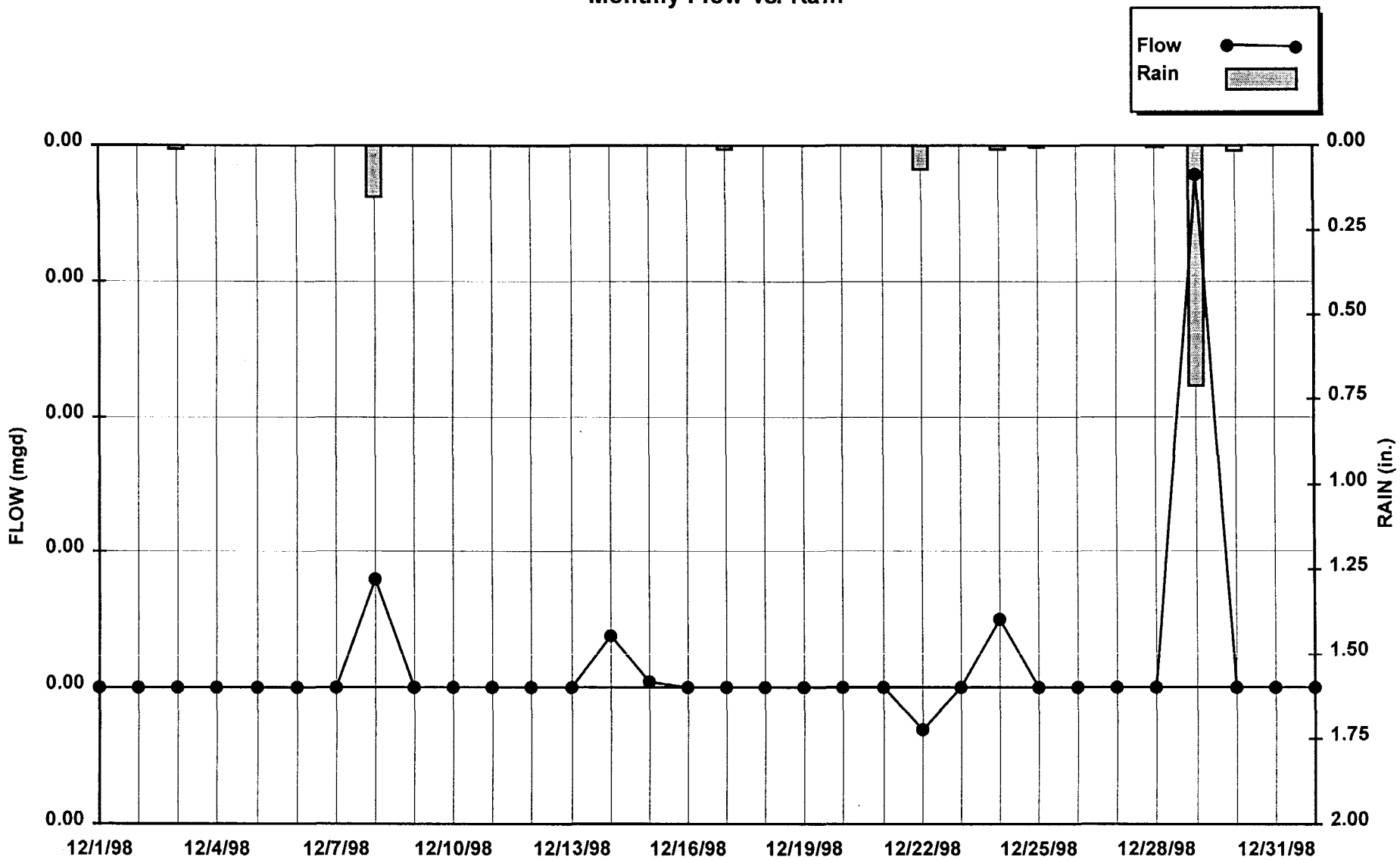
863690940

000030

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 027 - WAVERLY
Address: Anheuser-Busch

920 F.M. VERSION: 1.02
Serial#: QRY

Monthly Flow Report (Flow2)

2/9/1999 5:28:52 PM

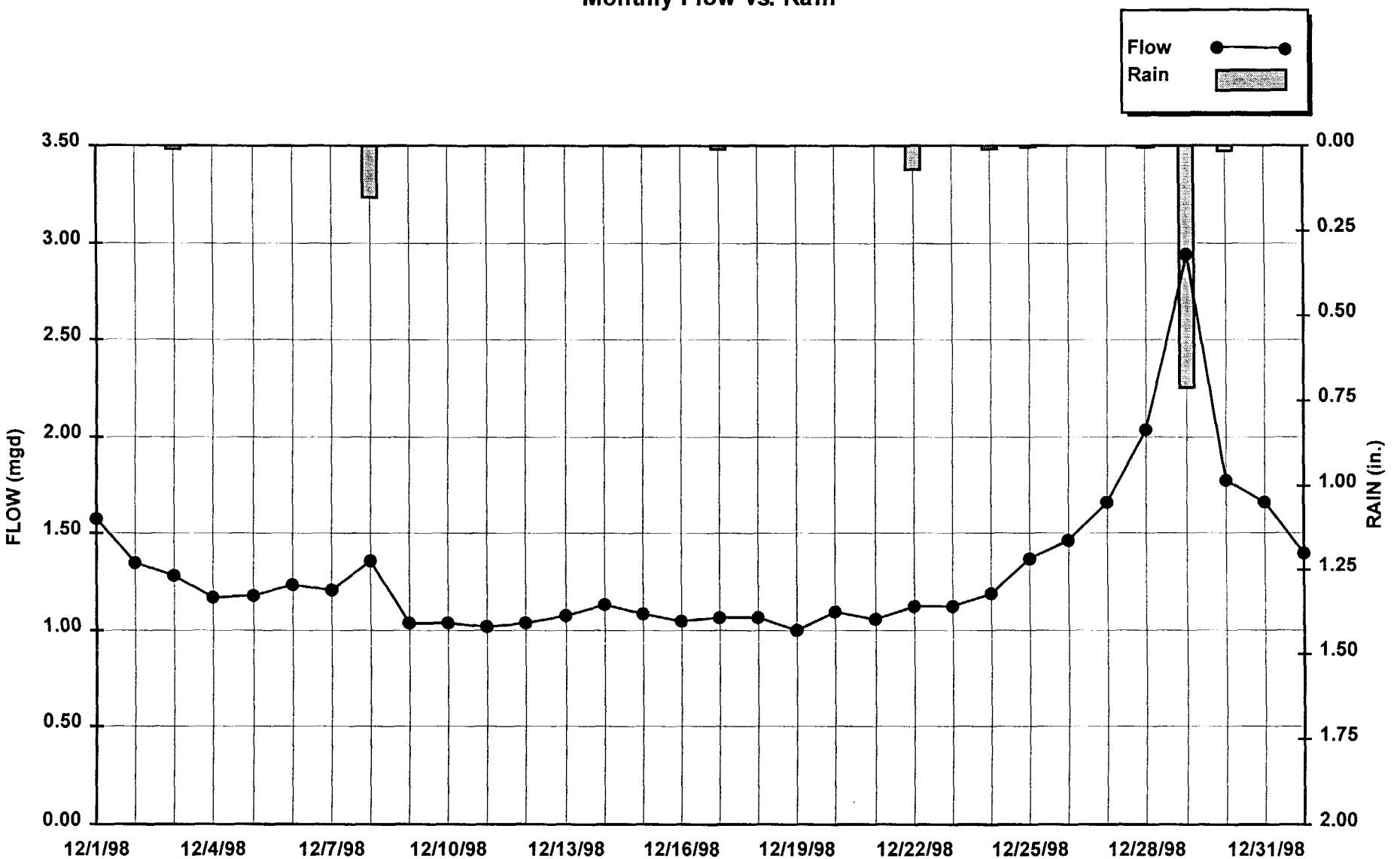
863690941

000081

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Monthly Flow Report (Flow1)

2/9/1999 5:14:57 PM

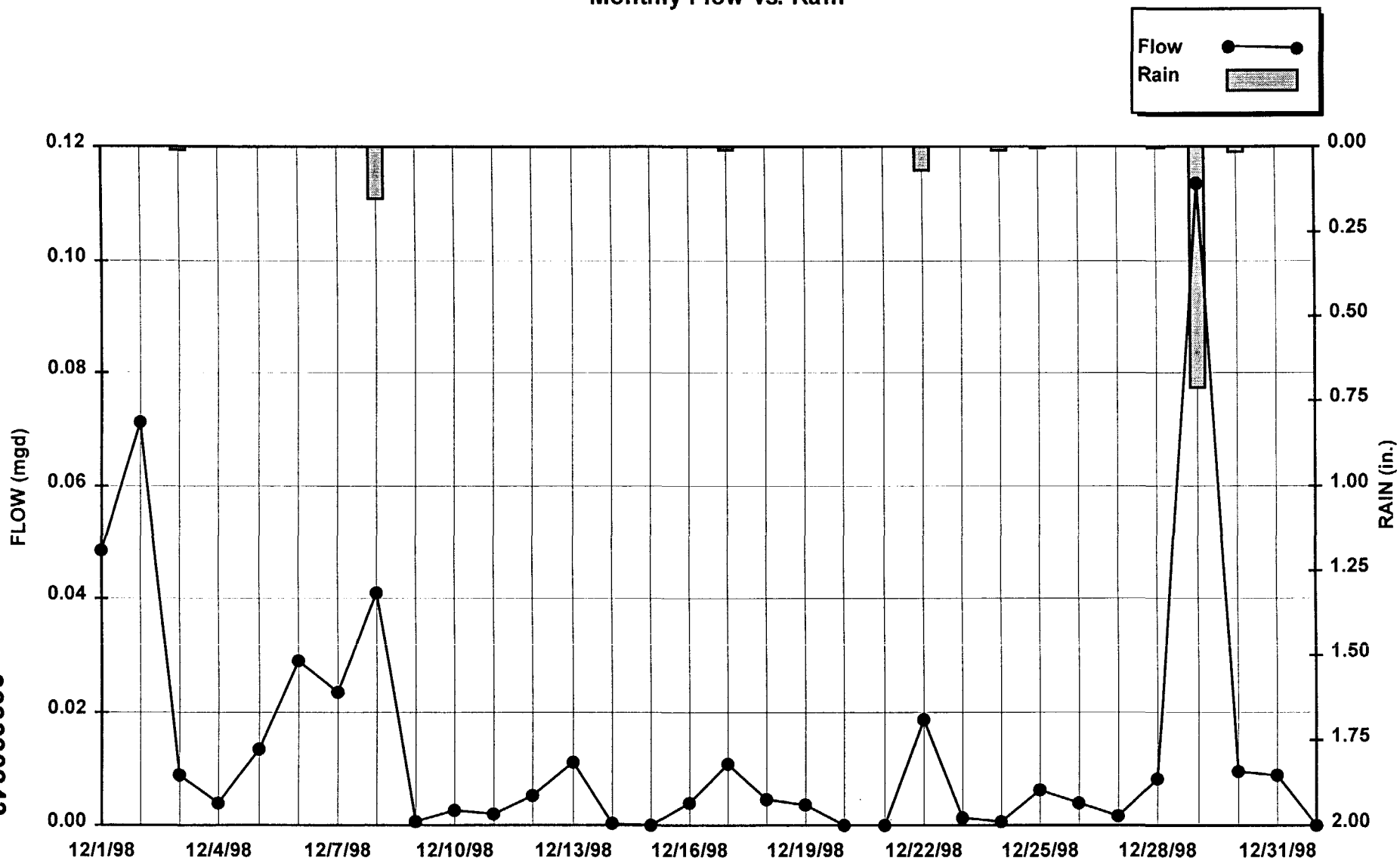
863690942

000082

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Monthly Flow Report (Flow2)

2/9/1999 5:31:59 PM

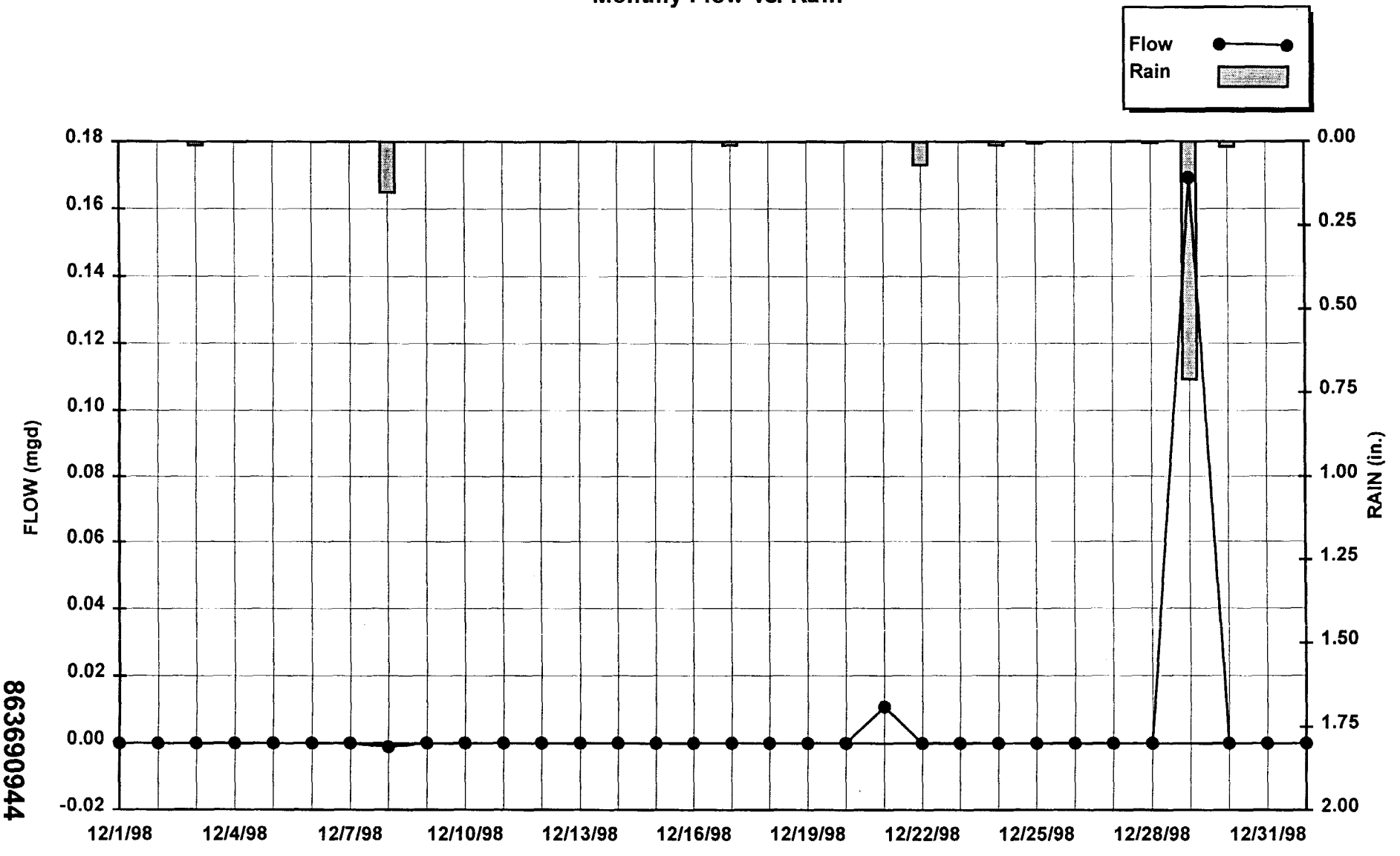
863690943

000083

Newark CSO Discharge Characterization Study

Task 5 - CSO Monitoring

Monthly Flow vs. Rain



863690944

CSO 030 - WHEELER/AVE A
Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02
Serial#: QUD

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 1 — Rain Gauge

Address: Central Ave. and 15th St. — RG-3, Water Supply Central Ave

49.25" H x 32.75" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.16	.00
12/02/98	.17	.00
12/03/98	.17	.00
12/04/98	.17	.00
12/05/98	.18	.00
12/06/98	.18	.00
12/07/98	.18	.01
12/08/98	.18	.15
12/09/98	.17	.00
12/10/98	.19	.00
12/11/98	.17	.00
12/12/98	.18	.00
12/13/98	.20	.00
12/14/98	.22	.00
12/15/98	.24	.00
12/16/98	.26	.00
12/17/98	.28	.01
12/18/98	.28	.00
12/19/98	.29	.00
12/20/98	.30	.00
12/21/98	.26	.00
12/22/98	.23	.07
12/23/98	.21	.00
12/24/98	.20	.00
12/25/98	.19	.03
12/26/98	.17	.00
12/27/98	.17	.00
12/28/98	.15	.00
12/29/98	.55	.71
12/30/98	.25	.01
12/31/98	.23	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 2 | Rain Gauge

Address: 9th Ave. and 15th St. | RG-3, Water Supply Central Ave

48.8" H x 33.4" W Egg Shaped

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.00
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.01
12/08/98	.01	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98		.01
12/18/98		.00
12/19/98		.00
12/20/98		.00
12/21/98		.00
12/22/98		.07
12/23/98		.00
12/24/98		.00
12/25/98		.03
12/26/98		.00
12/27/98		.00
12/28/98		.00
12/29/98		.71
12/30/98		.01
12/31/98		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 3 — Rain Gauge

Address: Sussex Ave. and 15th St. — RG-1, Roberto Clemente School

33" Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.04
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.03	.14
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.01	.00
12/17/98	.01	.00
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.01	.00
12/22/98	.01	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.00
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.01	.72
12/30/98		.03
12/31/98		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 4 | Rain Gauge

Address: Sussex Ave. and 15th St. | RG-1, Roberto Clemente School

12" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.17	.00
12/02/98	.16	.00
12/03/98	.15	.04
12/04/98	.14	.00
12/05/98	.20	.00
12/06/98	.22	.00
12/07/98	.15	.00
12/08/98	.11	.14
12/09/98	.11	.00
12/10/98	.11	.00
12/11/98	.10	.00
12/12/98	.11	.00
12/13/98	.11	.00
12/14/98	.09	.00
12/15/98	.09	.00
12/16/98	.08	.00
12/17/98	.09	.00
12/18/98	.09	.00
12/19/98	.10	.00
12/20/98	.11	.00
12/21/98	.08	.00
12/22/98	.08	.07
12/23/98	.08	.00
12/24/98	.08	.01
12/25/98	.08	.00
12/26/98	.08	.00
12/27/98	.08	.00
12/28/98	.08	.01
12/29/98	.05	.72
12/30/98	-.01	.03
12/31/98	.03	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 Rain Gauge

Address: 14TH ST. & HEDDEN PL. RG-1, Roberto Clemente School

33" RCP Storm

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.04
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.14
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.00
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.00
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.09	.72
12/30/98	.00	.03
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 5/6 — Rain Gauge

Address: 14TH ST. & HEDDEN PL. — RG-1, Roberto Clemente School

18.75" VCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.09	.00
12/02/98	.06	.00
12/03/98	.04	.04
12/04/98	.04	.00
12/05/98	.03	.00
12/06/98	.03	.00
12/07/98	.04	.00
12/08/98	.04	.14
12/09/98	.05	.00
12/10/98	.05	.00
12/11/98	.05	.00
12/12/98	.04	.00
12/13/98	.04	.00
12/14/98	.04	.00
12/15/98	.01	.00
12/16/98	.00	.00
12/17/98	.00	.00
12/18/98	.01	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.00
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.01	.01
12/29/98	.02	.72
12/30/98	.00	.03
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 7 | Rain Gauge

Address: 6TH ST. & 13TH ST. | RG-1, Roberto Clemente School

30" RCP

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	1.36	.00
12/02/98	1.38	.00
12/03/98	1.35	.04
12/04/98	1.31	.00
12/05/98	1.39	.00
12/06/98	1.44	.00
12/07/98	1.38	.00
12/08/98	1.40	.14
12/09/98	1.36	.00
12/10/98	1.37	.00
12/11/98	1.32	.00
12/12/98	1.38	.00
12/13/98	1.41	.00
12/14/98	1.38	.00
12/15/98	1.39	.00
12/16/98	1.35	.00
12/17/98	1.30	.00
12/18/98	1.31	.00
12/19/98	1.34	.00
12/20/98	1.36	.00
12/21/98	1.28	.00
12/22/98	1.36	.07
12/23/98	1.36	.00
12/24/98	1.43	.01
12/25/98	1.47	.00
12/26/98	1.45	.00
12/27/98	1.48	.00
12/28/98	1.46	.01
12/29/98	1.45	.72
12/30/98	1.47	.03
12/31/98	1.57	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 8

Address: 13TH ST. & SPRINGDALE AVE.

24.25" VCP

Rain Gauge

RG-1, Roberto Clemente School

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	3.11	.00
12/02/98	3.15	.00
12/03/98	3.10	.04
12/04/98	3.03	.00
12/05/98	3.20	.00
12/06/98	3.33	.00
12/07/98	3.19	.00
12/08/98	3.21	.14
12/09/98	3.11	.00
12/10/98	3.19	.00
12/11/98	3.09	.00
12/12/98	3.19	.00
12/13/98	3.34	.00
12/14/98	3.19	.00
12/15/98	3.18	.00
12/16/98	3.15	.00
12/17/98	3.13	.00
12/18/98	3.22	.00
12/19/98	3.46	.00
12/20/98	3.49	.00
12/21/98	3.33	.00
12/22/98	3.43	.07
12/23/98	3.26	.00
12/24/98	3.38	.01
12/25/98	3.41	.00
12/26/98	3.36	.00
12/27/98	3.36	.00
12/28/98	3.29	.01
12/29/98	3.61	.72
12/30/98	3.49	.03
12/31/98	3.53	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

EAST ORANGE NO. 9 | Rain Gauge

Address: Struben St. and Freeway | RG-3, Water Supply Central Ave

18"

Date	Avg. Daily Flow (mgd)	Daily Rainfall (in.)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.00
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.01
12/08/98	.01	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.12	.00
12/17/98	.16	.01
12/18/98	.17	.00
12/19/98	.18	.00
12/20/98	.18	.00
12/21/98	.21	.00
12/22/98	.20	.07
12/23/98	.16	.00
12/24/98	.18	.00
12/25/98	.16	.03
12/26/98	.16	.00
12/27/98	.15	.00
12/28/98	.15	.00
12/29/98	.20	.71
12/30/98	.20	.01
12/31/98	.23	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 1

910 F.M. VERSION: 1.02

Address: Mt. Vernon St. near Chapman St.

Serial#: QQ7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.04	.00
12/02/98	.04	.00
12/03/98	.04	.01
12/04/98	.05	.00
12/05/98	.05	.00
12/06/98	.05	.00
12/07/98	.04	.00
12/08/98	.04	.15
12/09/98	.04	.00
12/10/98	.03	.00
12/11/98	.03	.00
12/12/98	.05	.00
12/13/98	.05	.00
12/14/98	.04	.00
12/15/98	.04	.00
12/16/98	.05	.00
12/17/98	.05	.01
12/18/98	.05	.00
12/19/98	.05	.00
12/20/98	.05	.00
12/21/98	.05	.00
12/22/98	.05	.07
12/23/98	.05	.00
12/24/98	.05	.01
12/25/98	.07	.01
12/26/98	.06	.00
12/27/98	.06	.00
12/28/98	.05	.01
12/29/98	.06	.71
12/30/98	.05	.01
12/31/98	.06	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 2 | 910 F.M. VERSION: 1.02

Address: Unity and Valley St. | Serial#: QQ2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.59	.00
12/02/98	.59	.00
12/03/98	.59	.01
12/04/98	.59	.00
12/05/98	.63	.00
12/06/98	.72	.00
12/07/98	.62	.00
12/08/98	.63	.15
12/09/98	.62	.00
12/10/98	.61	.00
12/11/98	.57	.00
12/12/98	.65	.00
12/13/98	.70	.00
12/14/98	.64	.00
12/15/98	.65	.00
12/16/98	.68	.00
12/17/98	.79	.01
12/18/98	.78	.00
12/19/98	.75	.00
12/20/98	.79	.00
12/21/98	.53	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.47	.71
12/30/98	.83	.01
12/31/98	.94	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 3

Address: Fabyan Pl. near Exit Ramp of I-78

910 F.M. VERSION: 1.02

Serial#: QRD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.44	.00
12/02/98	.42	.00
12/03/98	.41	.01
12/04/98	.41	.00
12/05/98	.44	.00
12/06/98	.45	.00
12/07/98	.40	.00
12/08/98	.39	.15
12/09/98	.38	.00
12/10/98	.38	.00
12/11/98	.38	.00
12/12/98	.42	.00
12/13/98	.45	.00
12/14/98	.40	.00
12/15/98	.39	.00
12/16/98	.40	.00
12/17/98	.40	.01
12/18/98	.39	.00
12/19/98	.43	.00
12/20/98	.44	.00
12/21/98	.41	.00
12/22/98	.40	.07
12/23/98	.38	.00
12/24/98	.41	.01
12/25/98	.42	.01
12/26/98	.42	.00
12/27/98	.43	.00
12/28/98	.40	.01
12/29/98	.45	.71
12/30/98	.35	.01
12/31/98	.37	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Outgoing No. 4

910 F.M. VERSION: 1.02

Address: N. Lindon Ln between House # 63 and 65

Serial#: QUI

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.66	.00
12/02/98	1.65	.00
12/03/98	1.65	.01
12/04/98	1.68	.00
12/05/98	1.73	.00
12/06/98	1.81	.00
12/07/98	1.67	.00
12/08/98	1.69	.15
12/09/98	1.66	.00
12/10/98	1.62	.00
12/11/98	1.67	.00
12/12/98	1.78	.00
12/13/98	1.81	.00
12/14/98	1.73	.00
12/15/98	1.76	.00
12/16/98	1.81	.00
12/17/98	1.79	.01
12/18/98	1.74	.00
12/19/98	1.79	.00
12/20/98	1.81	.00
12/21/98	1.57	.00
12/22/98	1.53	.07
12/23/98	1.51	.00
12/24/98	1.58	.01
12/25/98	1.52	.01
12/26/98	1.66	.00
12/27/98	1.65	.00
12/28/98	1.62	.01
12/29/98	1.83	.71
12/30/98	1.76	.01
12/31/98	1.74	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

Newark No. 1 | 910 F.M. VERSION: 1.02

Address: Elizabeth and Mapes | Serial#: QXF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.33	.00
12/02/98	1.28	.00
12/03/98	1.23	.01
12/04/98	1.26	.00
12/05/98	1.33	.00
12/06/98	1.40	.00
12/07/98	1.37	.00
12/08/98	1.42	.15
12/09/98	1.36	.00
12/10/98	1.35	.00
12/11/98	1.32	.00
12/12/98	1.28	.00
12/13/98	1.25	.00
12/14/98	1.24	.00
12/15/98	1.26	.00
12/16/98	1.39	.00
12/17/98	1.54	.01
12/18/98	1.45	.00
12/19/98	1.59	.00
12/20/98	1.66	.00
12/21/98	1.96	.00
12/22/98	1.97	.07
12/23/98	1.81	.00
12/24/98	1.98	.01
12/25/98	1.65	.01
12/26/98	1.66	.00
12/27/98	1.64	.00
12/28/98	1.73	.01
12/29/98	1.82	.71
12/30/98	1.48	.01
12/31/98	1.40	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 2 | 910 F.M. VERSION: 1.02

Address: Weequahic Park | Serial#: QUN

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.67	.00
12/02/98	.66	.00
12/03/98	.66	.01
12/04/98	.68	.00
12/05/98	.77	.00
12/06/98	.78	.00
12/07/98	.69	.00
12/08/98	.62	.15
12/09/98	.63	.00
12/10/98	.60	.00
12/11/98	.59	.00
12/12/98	.62	.00
12/13/98	.67	.00
12/14/98	.65	.00
12/15/98	.65	.00
12/16/98	.77	.00
12/17/98	.70	.01
12/18/98	.61	.00
12/19/98	.64	.00
12/20/98	.73	.00
12/21/98	.75	.00
12/22/98	.79	.07
12/23/98	.79	.00
12/24/98	.81	.01
12/25/98	.88	.01
12/26/98	.83	.00
12/27/98	.77	.00
12/28/98	.74	.01
12/29/98	.80	.71
12/30/98	.78	.01
12/31/98	.82	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 3 | 910 F.M. VERSION: 1.02

Address: Jabez Ave. near Backus St. | Serial#: QTZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	2.75	.00
12/02/98	2.43	.00
12/03/98	2.48	.01
12/04/98	2.61	.00
12/05/98	2.23	.00
12/06/98	2.14	.00
12/07/98	2.27	.00
12/08/98	2.20	.15
12/09/98	2.16	.00
12/10/98	2.06	.00
12/11/98	2.18	.00
12/12/98	2.12	.00
12/13/98	2.28	.00
12/14/98	2.24	.00
12/15/98	2.11	.00
12/16/98	2.13	.00
12/17/98	2.08	.01
12/18/98	1.99	.00
12/19/98	1.97	.00
12/20/98	2.02	.00
12/21/98	1.89	.00
12/22/98	1.81	.07
12/23/98	1.74	.00
12/24/98	1.88	.01
12/25/98	1.86	.01
12/26/98	1.86	.00
12/27/98	1.87	.00
12/28/98	1.96	.01
12/29/98	2.30	.71
12/30/98	2.11	.01
12/31/98	1.94	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 4 | 910 F.M. VERSION: 1.02

Address: Wilson and Ave. P | Serial#: QT1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.12	.00
12/02/98	.12	.00
12/03/98	.06	.01
12/04/98	.10	.00
12/05/98	.08	.00
12/06/98	.03	.00
12/07/98	.07	.00
12/08/98	.16	.15
12/09/98	.11	.00
12/10/98	.06	.00
12/11/98	.18	.00
12/12/98	.07	.00
12/13/98	.11	.00
12/14/98	.06	.00
12/15/98	.11	.00
12/16/98	.09	.00
12/17/98	.10	.01
12/18/98	.17	.00
12/19/98	.06	.00
12/20/98	.07	.00
12/21/98	.12	.00
12/22/98	.11	.07
12/23/98	.07	.00
12/24/98	.11	.01
12/25/98	.07	.01
12/26/98	.07	.00
12/27/98	.05	.00
12/28/98	.09	.01
12/29/98	.17	.71
12/30/98	.04	.01
12/31/98	.11	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 5

Address: Doremus Ave. near Delancy St.

910 F.M. VERSION: 1.02

Serial#: QUO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.33	.00
12/02/98	.39	.00
12/03/98	.39	.01
12/04/98	.36	.00
12/05/98	.32	.00
12/06/98	.34	.00
12/07/98	.38	.00
12/08/98	.44	.15
12/09/98	.42	.00
12/10/98	.35	.00
12/11/98	.35	.00
12/12/98	.32	.00
12/13/98	.28	.00
12/14/98	.30	.00
12/15/98	.31	.00
12/16/98	.29	.00
12/17/98	.33	.01
12/18/98	.27	.00
12/19/98	.19	.00
12/20/98	.24	.00
12/21/98	.31	.00
12/22/98	.28	.07
12/23/98	.28	.00
12/24/98	.20	.01
12/25/98	.15	.01
12/26/98	.16	.00
12/27/98	.19	.00
12/28/98	.36	.01
12/29/98	.32	.71
12/30/98	.28	.01
12/31/98	.26	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 6 | 910 F.M. VERSION: 1.02

Address: Near 355 5th St. | Serial#: QU1

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	3.88	.00
12/02/98	3.87	.00
12/03/98	3.91	.01
12/04/98	3.83	.00
12/05/98	3.97	.00
12/06/98	4.01	.00
12/07/98	3.85	.00
12/08/98	3.83	.15
12/09/98	3.87	.00
12/10/98	3.85	.00
12/11/98	3.79	.00
12/12/98	3.99	.00
12/13/98	4.04	.00
12/14/98	3.86	.00
12/15/98	3.78	.00
12/16/98	3.64	.00
12/17/98	3.67	.01
12/18/98	3.81	.00
12/19/98	3.93	.00
12/20/98	3.90	.00
12/21/98	3.68	.00
12/22/98	3.76	.07
12/23/98	3.63	.00
12/24/98	3.77	.01
12/25/98	3.94	.01
12/26/98	3.87	.00
12/27/98	3.88	.00
12/28/98	3.82	.01
12/29/98	4.10	.71
12/30/98	3.93	.01
12/31/98	4.02	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 7 | 910 F.M. VERSION: 1.02

Address: Verona St. near Broadway | Serial#: QUK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.24	.00
12/02/98	.26	.00
12/03/98	.26	.01
12/04/98	.28	.00
12/05/98	.29	.00
12/06/98	.29	.00
12/07/98	.23	.00
12/08/98	.26	.15
12/09/98	.22	.00
12/10/98	.21	.00
12/11/98	.21	.00
12/12/98	.23	.00
12/13/98	.26	.00
12/14/98	.26	.00
12/15/98	.29	.00
12/16/98	.39	.00
12/17/98	.44	.01
12/18/98	.46	.00
12/19/98	.57	.00
12/20/98	.61	.00
12/21/98	.35	.00
12/22/98	.22	.07
12/23/98	.19	.00
12/24/98	.20	.01
12/25/98	.19	.01
12/26/98	.21	.00
12/27/98	.21	.00
12/28/98	.24	.01
12/29/98	.32	.71
12/30/98	.26	.01
12/31/98	.24	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 8 | 910 F.M. VERSION: 1.02

Address: Earl and Frelinghuysen | Serial#: QT3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.01	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 9

910 F.M. VERSION: 1.02

Address: Branch Brook Park Lake Overflow

Serial#: QLF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.01	.00
12/08/98	.01	.15
12/09/98	.01	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98		.01
12/31/98		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

NEWARK No. 10

Address: Weequahic Park Lake Overflow

910 F.M. VERSION: 1.02

Serial#: QUX

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.22	.00
12/02/98	1.17	.00
12/03/98	1.15	.01
12/04/98	1.12	.00
12/05/98	1.16	.00
12/06/98	1.15	.00
12/07/98	1.14	.00
12/08/98	1.20	.15
12/09/98	1.21	.00
12/10/98	1.19	.00
12/11/98	1.19	.00
12/12/98	1.13	.00
12/13/98	1.13	.00
12/14/98	1.13	.00
12/15/98	1.13	.00
12/16/98	1.16	.00
12/17/98	1.21	.01
12/18/98	1.17	.00
12/19/98	1.21	.00
12/20/98	1.20	.00
12/21/98	1.17	.00
12/22/98	1.04	.07
12/23/98	.96	.00
12/24/98	.99	.01
12/25/98	1.06	.01
12/26/98	1.04	.00
12/27/98	1.07	.00
12/28/98	1.09	.01
12/29/98	1.19	.71
12/30/98	1.40	.01
12/31/98	1.34	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

Address: Verona Ave. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.90	.00
12/02/98	.90	.00
12/03/98	1.07	.01
12/04/98	.85	.00
12/05/98	.94	.00
12/06/98	1.06	.00
12/07/98	1.13	.00
12/08/98	1.63	.15
12/09/98	1.26	.00
12/10/98	1.07	.00
12/11/98	1.06	.00
12/12/98	1.09	.00
12/13/98	1.10	.00
12/14/98	1.18	.00
12/15/98	1.17	.00
12/16/98	1.08	.00
12/17/98	.41	.01
12/18/98	.77	.00
12/19/98	1.02	.00
12/20/98	1.15	.00
12/21/98	.94	.00
12/22/98	3.50	.07
12/23/98	2.21	.00
12/24/98	2.37	.01
12/25/98	2.83	.01
12/26/98	7.98	.00
12/27/98	8.88	.00
12/28/98	5.87	.01
12/29/98	1.88	.71
12/30/98	1.28	.01
12/31/98	1.30	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 002 - VERONA AVE

920 F.M. VERSION: 1.02

Address: Verona Ave. and McCarter Hwy

Serial#: QR8

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.36	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.55	.00
12/02/98	.63	.00
12/03/98	.65	.01
12/04/98	.68	.00
12/05/98	.65	.00
12/06/98	.57	.00
12/07/98	.62	.00
12/08/98	.84	.15
12/09/98	.77	.00
12/10/98	.91	.00
12/11/98	1.01	.00
12/12/98	1.11	.00
12/13/98	1.20	.00
12/14/98	1.09	.00
12/15/98	1.13	.00
12/16/98	1.18	.00
12/17/98	1.73	.01
12/18/98	1.44	.00
12/19/98	1.22	.00
12/20/98	1.31	.00
12/21/98	1.24	.00
12/22/98	1.39	.07
12/23/98	1.39	.00
12/24/98	1.54	.01
12/25/98	1.43	.01
12/26/98	1.34	.00
12/27/98	1.46	.00
12/28/98	1.40	.01
12/29/98	3.44	.71
12/30/98	1.24	.01
12/31/98	1.02	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Influent

Address: Herbert Pl. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.06	.00
12/02/98	.06	.00
12/03/98	.04	.01
12/04/98	.03	.00
12/05/98	.10	.00
12/06/98	.08	.00
12/07/98	.10	.00
12/08/98	.05	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.01	.00
12/13/98	.01	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.05	.01
12/18/98	.06	.00
12/19/98	.11	.00
12/20/98	.21	.00
12/21/98	.18	.00
12/22/98	.09	.07
12/23/98	.05	.00
12/24/98	.04	.01
12/25/98	.04	.01
12/26/98	.04	.00
12/27/98	.04	.00
12/28/98	.03	.01
12/29/98	.03	.71
12/30/98	.01	.01
12/31/98	.01	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	-.01	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.01	.00
12/08/98	.01	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.80	.71
12/30/98	.11	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 004/005 HERBERT PL. - Overflows

920 F.M. VERSION: 1.02

Address: Herbert Pl. and McCarter Hwy

Serial#: QTP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.04	.00
12/08/98	-.02	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	-.09	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	2.27	.71
12/30/98	.10	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Influent

Address: Broadway and Second St.

910 F.M. VERSION: 1.02

Serial#: QUL

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.62	.00
12/02/98	1.55	.00
12/03/98	1.55	.01
12/04/98	1.59	.00
12/05/98	1.64	.00
12/06/98	1.78	.00
12/07/98	1.74	.00
12/08/98	1.87	.15
12/09/98	1.76	.00
12/10/98	1.82	.00
12/11/98	1.86	.00
12/12/98	1.98	.00
12/13/98	1.98	.00
12/14/98	1.93	.00
12/15/98	2.06	.00
12/16/98	2.49	.00
12/17/98	2.64	.01
12/18/98	2.73	.00
12/19/98	2.82	.00
12/20/98	2.53	.00
12/21/98	2.12	.00
12/22/98	1.97	.07
12/23/98	1.79	.00
12/24/98	2.74	.01
12/25/98	2.05	.01
12/26/98	2.64	.00
12/27/98	1.66	.00
12/28/98	2.82	.01
12/29/98	2.80	.71
12/30/98	1.91	.01
12/31/98	1.99	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 006 - ORIENTAL AVE Overflow

Address: Broadway and Second St.

910 F.M. VERSION: 1.02

Serial#: QUJ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.02	.00
12/02/98	.01	.00
12/03/98	.01	.01
12/04/98	.01	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.01	.00
12/08/98	.02	.15
12/09/98	.01	.00
12/10/98	.01	.00
12/11/98	.01	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.01	.00
12/15/98	.01	.00
12/16/98	.01	.00
12/17/98	.01	.01
12/18/98	.01	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.03	.07
12/23/98	.02	.00
12/24/98	.01	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.04	.71
12/30/98	.01	.01
12/31/98	.01	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 007 - THIRD AVE

Address: Third Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QR6

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.93	.00
12/02/98	2.18	.00
12/03/98	3.05	.01
12/04/98	3.38	.00
12/05/98	3.84	.00
12/06/98	2.95	.00
12/07/98	3.88	.00
12/08/98	3.53	.15
12/09/98	1.59	.00
12/10/98	.60	.00
12/11/98	.44	.00
12/12/98	.57	.00
12/13/98	.62	.00
12/14/98	.69	.00
12/15/98	.56	.00
12/16/98	.57	.00
12/17/98	.65	.01
12/18/98	.90	.00
12/19/98	.79	.00
12/20/98	.75	.00
12/21/98	.30	.00
12/22/98	1.31	.07
12/23/98	1.95	.00
12/24/98	1.93	.01
12/25/98	1.98	.01
12/26/98	2.64	.00
12/27/98	3.29	.00
12/28/98	3.52	.01
12/29/98	4.47	.71
12/30/98	1.74	.01
12/31/98	1.30	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 008 - FOURTH AVE

Address: Fourth Ave. and Passaic St.

920 F.M. VERSION: 1.02

Serial#: QQD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	1.67	.71
12/30/98	.13	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Influent

Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02

Serial#: QRG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.43	.00
12/02/98	.42	.00
12/03/98	.40	.01
12/04/98	.39	.00
12/05/98	.39	.00
12/06/98	.39	.00
12/07/98	.39	.00
12/08/98	.41	.15
12/09/98	.39	.00
12/10/98	.36	.00
12/11/98	.36	.00
12/12/98	.36	.00
12/13/98	.36	.00
12/14/98	.38	.00
12/15/98	.38	.00
12/16/98	.37	.00
12/17/98	.37	.01
12/18/98	.38	.00
12/19/98	.38	.00
12/20/98	.39	.00
12/21/98	.39	.00
12/22/98	.37	.07
12/23/98	.35	.00
12/24/98	.25	.01
12/25/98	.23	.01
12/26/98	.32	.00
12/27/98	.37	.00
12/28/98	.39	.01
12/29/98	.59	.71
12/30/98	.46	.01
12/31/98	.45	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009B - CLAY ST Overflow

Address: Clay St. at Passaic St.

910 F.M. VERSION: 1.02

Serial#: QU3

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	-.01	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.02	.00
12/02/98	.02	.00
12/03/98	.02	.01
12/04/98	.02	.00
12/05/98	.02	.00
12/06/98	.02	.00
12/07/98	.03	.00
12/08/98	.03	.15
12/09/98	.02	.00
12/10/98	.02	.00
12/11/98	.02	.00
12/12/98	.02	.00
12/13/98	.02	.00
12/14/98	.02	.00
12/15/98	.02	.00
12/16/98	.02	.00
12/17/98	.02	.01
12/18/98	.02	.00
12/19/98	.02	.00
12/20/98	.03	.00
12/21/98	.02	.00
12/22/98	.02	.07
12/23/98	.02	.00
12/24/98	.01	.01
12/25/98	.01	.01
12/26/98	.01	.00
12/27/98	.01	.00
12/28/98	.01	.01
12/29/98	.05	.71
12/30/98	.02	.01
12/31/98	.02	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 009C CLAY ST

Address: Clay St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QRW

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Influents

Address: Clay St. at McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QTR

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	10.38	.00
12/02/98	10.26	.00
12/03/98	10.78	.01
12/04/98	11.49	.00
12/05/98	12.05	.00
12/06/98	12.41	.00
12/07/98	12.13	.00
12/08/98	12.67	.15
12/09/98	12.30	.00
12/10/98	11.47	.00
12/11/98	11.48	.00
12/12/98	11.70	.00
12/13/98	11.05	.00
12/14/98	10.80	.00
12/15/98	10.42	.00
12/16/98	9.71	.00
12/17/98	10.73	.01
12/18/98	11.15	.00
12/19/98	11.29	.00
12/20/98	10.94	.00
12/21/98	10.71	.00
12/22/98	11.58	.07
12/23/98	11.47	.00
12/24/98	11.44	.01
12/25/98	10.83	.01
12/26/98	10.56	.00
12/27/98	10.62	.00
12/28/98	10.81	.01
12/29/98	10.24	.71
12/30/98	7.91	.01
12/31/98	9.95	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow North Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QPS

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	-.01	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.02	.00
12/14/98	.00	.00
12/15/98	.01	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.01	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	-.01	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.01	.01
12/26/98	.01	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	3.62	.71
12/30/98	-1.46	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 010 - CLAY ST Overflow South Pipe

910 F.M. VERSION: 1.02

Address: Clay St. at Passaic St.

Serial#: QT2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.03	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.01	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	4.69	.71
12/30/98	.86	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST Influent

Address: Orange St. and McCarter Hwy

910 F.M. VERSION: 1.02

Serial#: QRF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.03	.00
12/02/98	.04	.00
12/03/98	.04	.01
12/04/98	.04	.00
12/05/98	.04	.00
12/06/98	.04	.00
12/07/98	.03	.00
12/08/98	.04	.15
12/09/98	.04	.00
12/10/98	.03	.00
12/11/98	.02	.00
12/12/98	.03	.00
12/13/98	.02	.00
12/14/98	.03	.00
12/15/98	.03	.00
12/16/98	.02	.00
12/17/98	.02	.01
12/18/98	.02	.00
12/19/98	.03	.00
12/20/98	.02	.00
12/21/98	.02	.00
12/22/98	.02	.07
12/23/98	.02	.00
12/24/98	.02	.01
12/25/98	.02	.01
12/26/98	.03	.00
12/27/98	.03	.00
12/28/98	.02	.01
12/29/98	.03	.71
12/30/98	.02	.01
12/31/98	.02	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 011 - ORANGE ST influent and overflow

920 F.M. VERSION: 1.02

Address: Orange St. and McCarter Hwy

Serial#: QRZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.25	.00
12/02/98	.05	.00
12/03/98	.06	.01
12/04/98	.06	.00
12/05/98	.07	.00
12/06/98	.08	.00
12/07/98	.09	.00
12/08/98	.08	.15
12/09/98	.08	.00
12/10/98	.07	.00
12/11/98	.08	.00
12/12/98	.08	.00
12/13/98	.08	.00
12/14/98	.08	.00
12/15/98	.09	.00
12/16/98	.09	.00
12/17/98	.07	.01
12/18/98	.06	.00
12/19/98	.06	.00
12/20/98	.06	.00
12/21/98	.06	.00
12/22/98	.07	.07
12/23/98	.07	.00
12/24/98	.09	.01
12/25/98	.06	.01
12/26/98	.06	.00
12/27/98	.05	.00
12/28/98	.04	.01
12/29/98	.08	.71
12/30/98	.05	.01
12/31/98	.07	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.04	.00
12/02/98	.04	.00
12/03/98	.04	.01
12/04/98	.02	.00
12/05/98	.00	.00
12/06/98	.01	.00
12/07/98	.02	.00
12/08/98	.06	.15
12/09/98	.04	.00
12/10/98	.04	.00
12/11/98	.04	.00
12/12/98	.05	.00
12/13/98	.04	.00
12/14/98	.02	.00
12/15/98	.03	.00
12/16/98	.03	.00
12/17/98	.03	.01
12/18/98	.03	.00
12/19/98	.03	.00
12/20/98	.01	.00
12/21/98	.02	.00
12/22/98	.03	.07
12/23/98	.02	.00
12/24/98	.05	.01
12/25/98	.04	.01
12/26/98	.02	.00
12/27/98	.02	.00
12/28/98	.01	.01
12/29/98	.08	.71
12/30/98	.02	.01
12/31/98	.03	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 012 - BRIDGE ST

Address: Bridge St. and McCarter Hwy

920 F.M. VERSION: 1.02

Serial#: QR7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.39	.00
12/02/98	1.29	.00
12/03/98	.81	.01
12/04/98	.66	.00
12/05/98	.62	.00
12/06/98	.62	.00
12/07/98	.88	.00
12/08/98	1.09	.15
12/09/98	.53	.00
12/10/98	.02	.00
12/11/98	.00	.00
12/12/98	.01	.00
12/13/98	.00	.00
12/14/98	.03	.00
12/15/98	.07	.00
12/16/98	.06	.00
12/17/98	.86	.01
12/18/98	.88	.00
12/19/98	.78	.00
12/20/98	.98	.00
12/21/98	1.62	.00
12/22/98	3.19	.07
12/23/98	2.22	.00
12/24/98	1.41	.01
12/25/98	1.53	.01
12/26/98	1.66	.00
12/27/98	1.80	.00
12/28/98	2.10	.01
12/29/98	3.68	.71
12/30/98	2.06	.01
12/31/98	2.24	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.01	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 013 - RECTOR ST

Address: Rector St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.83	.71
12/30/98	.09	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	3.22	.00
12/02/98	3.50	.00
12/03/98	3.58	.01
12/04/98	3.63	.00
12/05/98	3.55	.00
12/06/98	3.49	.00
12/07/98	4.21	.00
12/08/98	4.40	.15
12/09/98	3.88	.00
12/10/98	3.86	.00
12/11/98	4.12	.00
12/12/98	3.94	.00
12/13/98	3.89	.00
12/14/98	4.25	.00
12/15/98	4.21	.00
12/16/98	4.29	.00
12/17/98	3.87	.01
12/18/98	3.32	.00
12/19/98	3.08	.00
12/20/98	3.65	.00
12/21/98	3.74	.00
12/22/98	4.01	.07
12/23/98	3.80	.00
12/24/98	3.95	.01
12/25/98	3.82	.01
12/26/98	3.86	.00
12/27/98	3.85	.00
12/28/98	4.21	.01
12/29/98	6.19	.71
12/30/98	3.28	.01
12/31/98	3.52	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 014 - SAYBROOK PL Influent and Overflow

920 F.M. VERSION: 1.02

Address: Saybrook Pl. at McCarter Hwy

Serial#: QRV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	1.79	.71
12/30/98	.16	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent1

Address: Raymond Plaza near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QQT

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.02	.00
12/02/98	.02	.00
12/03/98	.02	.01
12/04/98	.02	.00
12/05/98	.02	.00
12/06/98	.01	.00
12/07/98	.02	.00
12/08/98	.03	.15
12/09/98	.02	.00
12/10/98	.03	.00
12/11/98	.03	.00
12/12/98	.01	.00
12/13/98	.02	.00
12/14/98	.02	.00
12/15/98	.02	.00
12/16/98	.02	.00
12/17/98	.02	.01
12/18/98	.02	.00
12/19/98	.01	.00
12/20/98	.01	.00
12/21/98	.02	.00
12/22/98	.02	.07
12/23/98	.02	.00
12/24/98	.02	.01
12/25/98	.01	.01
12/26/98	.02	.00
12/27/98	.01	.00
12/28/98	.01	.01
12/29/98	.03	.71
12/30/98	.04	.01
12/31/98	.05	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent2

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QU2

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.05	.00
12/02/98	.04	.00
12/03/98	.03	.01
12/04/98	.04	.00
12/05/98	.03	.00
12/06/98	.03	.00
12/07/98	.06	.00
12/08/98	.05	.15
12/09/98	.04	.00
12/10/98	.05	.00
12/11/98	.06	.00
12/12/98	.03	.00
12/13/98	.02	.00
12/14/98	.05	.00
12/15/98	.01	.00
12/16/98	.04	.00
12/17/98	.05	.01
12/18/98	.06	.00
12/19/98	.03	.00
12/20/98	.03	.00
12/21/98	.05	.00
12/22/98	.05	.07
12/23/98	.04	.00
12/24/98	.02	.01
12/25/98	.02	.01
12/26/98	.03	.00
12/27/98	.02	.00
12/28/98	.01	.01
12/29/98	.11	.71
12/30/98	.04	.01
12/31/98	.07	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Influent3

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.03	.00
12/02/98	.03	.00
12/03/98	.03	.01
12/04/98	.03	.00
12/05/98	.02	.00
12/06/98	.02	.00
12/07/98	.04	.00
12/08/98	.04	.15
12/09/98	.04	.00
12/10/98	.03	.00
12/11/98	.03	.00
12/12/98	.01	.00
12/13/98	.01	.00
12/14/98	.03	.00
12/15/98	.03	.00
12/16/98	.02	.00
12/17/98	.04	.01
12/18/98	.03	.00
12/19/98	.01	.00
12/20/98	.00	.00
12/21/98	.03	.00
12/22/98	.03	.07
12/23/98	.03	.00
12/24/98	.01	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.02	.01
12/29/98	.10	.71
12/30/98	.03	.01
12/31/98	.02	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK influent4

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QPQ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.94	.00
12/02/98	1.85	.00
12/03/98	1.88	.01
12/04/98	1.94	.00
12/05/98	1.79	.00
12/06/98	1.81	.00
12/07/98	1.96	.00
12/08/98	2.23	.15
12/09/98	1.92	.00
12/10/98	1.91	.00
12/11/98	1.83	.00
12/12/98	1.67	.00
12/13/98	1.72	.00
12/14/98	1.89	.00
12/15/98	1.94	.00
12/16/98	2.00	.00
12/17/98	1.96	.01
12/18/98	1.94	.00
12/19/98	1.72	.00
12/20/98	1.75	.00
12/21/98	1.93	.00
12/22/98	2.04	.07
12/23/98	1.87	.00
12/24/98	1.84	.01
12/25/98	1.69	.01
12/26/98	1.73	.00
12/27/98	1.69	.00
12/28/98	1.83	.01
12/29/98	4.84	.71
12/30/98	1.73	.01
12/31/98	1.80	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 015 - CITY DOCK Overflow

Address: Raymond Plaza East near Raymond Blvd.

910 F.M. VERSION: 1.02

Serial#: QLK

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98		.00
12/02/98		.00
12/03/98		.01
12/04/98		.00
12/05/98		.00
12/06/98		.00
12/07/98		.00
12/08/98		.15
12/09/98		.00
12/10/98		.00
12/11/98		.00
12/12/98		.00
12/13/98		.00
12/14/98		.00
12/15/98		.00
12/16/98		.00
12/17/98		.01
12/18/98		.00
12/19/98		.00
12/20/98		.00
12/21/98		.00
12/22/98		.07
12/23/98		.00
12/24/98		.01
12/25/98		.01
12/26/98		.00
12/27/98		.00
12/28/98		.01
12/29/98		.71
12/30/98		.01
12/31/98		.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.59	.00
12/02/98	.58	.00
12/03/98	.53	.01
12/04/98	.55	.00
12/05/98	.58	.00
12/06/98	.54	.00
12/07/98	.52	.00
12/08/98	.66	.15
12/09/98	.58	.00
12/10/98	.54	.00
12/11/98	.58	.00
12/12/98	.63	.00
12/13/98	.60	.00
12/14/98	.55	.00
12/15/98	.55	.00
12/16/98	.55	.00
12/17/98	.64	.01
12/18/98	.60	.00
12/19/98	.62	.00
12/20/98	.58	.00
12/21/98	.54	.00
12/22/98	.59	.07
12/23/98	.55	.00
12/24/98	.56	.01
12/25/98	.59	.01
12/26/98	.63	.00
12/27/98	.63	.00
12/28/98	.60	.01
12/29/98	1.20	.71
12/30/98	.63	.01
12/31/98	.58	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.01	.00
12/02/98	.01	.00
12/03/98	.01	.01
12/04/98	.01	.00
12/05/98	.01	.00
12/06/98	.01	.00
12/07/98	.01	.00
12/08/98	.01	.15
12/09/98	.01	.00
12/10/98	.01	.00
12/11/98	.00	.00
12/12/98	.01	.00
12/13/98	.00	.00
12/14/98	.01	.00
12/15/98	.01	.00
12/16/98	.01	.00
12/17/98	.01	.01
12/18/98	.02	.00
12/19/98	.01	.00
12/20/98	.01	.00
12/21/98	.01	.00
12/22/98	.01	.07
12/23/98	.01	.00
12/24/98	.01	.01
12/25/98	.00	.01
12/26/98	.01	.00
12/27/98	.00	.00
12/28/98	.01	.01
12/29/98	.01	.71
12/30/98	.01	.01
12/31/98	.01	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 016 - JACKSON ST

Address: Jackson St. near Raymond Blvd.

930 F.M. VERSION: 1.02

Serial#: QTO

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	1.42	.71
12/30/98	.13	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.35	.00
12/02/98	.36	.00
12/03/98	.34	.01
12/04/98	.34	.00
12/05/98	.40	.00
12/06/98	.37	.00
12/07/98	.32	.00
12/08/98	.78	.15
12/09/98	.30	.00
12/10/98	.29	.00
12/11/98	.28	.00
12/12/98	.38	.00
12/13/98	.35	.00
12/14/98	.29	.00
12/15/98	.26	.00
12/16/98	.38	.00
12/17/98	.34	.01
12/18/98	.37	.00
12/19/98	.47	.00
12/20/98	.42	.00
12/21/98	.34	.00
12/22/98	.45	.07
12/23/98	.33	.00
12/24/98	.34	.01
12/25/98	.31	.01
12/26/98	.43	.00
12/27/98	.40	.00
12/28/98	.45	.01
12/29/98	2.06	.71
12/30/98	.55	.01
12/31/98	.85	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 017 - POLK ST

Address: Polk St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUG

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.02	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.78	.00
12/02/98	.72	.00
12/03/98	.76	.01
12/04/98	.78	.00
12/05/98	.87	.00
12/06/98	.89	.00
12/07/98	.80	.00
12/08/98	.68	.15
12/09/98	.74	.00
12/10/98	.75	.00
12/11/98	.77	.00
12/12/98	.77	.00
12/13/98	.82	.00
12/14/98	.74	.00
12/15/98	.71	.00
12/16/98	.76	.00
12/17/98	.77	.01
12/18/98	.78	.00
12/19/98	.80	.00
12/20/98	.83	.00
12/21/98	.73	.00
12/22/98	.74	.07
12/23/98	.71	.00
12/24/98	.74	.01
12/25/98	.68	.01
12/26/98	.68	.00
12/27/98	.74	.00
12/28/98	.70	.01
12/29/98	1.73	.71
12/30/98	.79	.01
12/31/98	.73	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST Influent

Address: Freeman St. and Raymond Blvd.

920 F.M. VERSION: 1.02

Serial#: QUF

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.03	.00
12/02/98	.01	.00
12/03/98	.01	.01
12/04/98	.02	.00
12/05/98	.03	.00
12/06/98	.05	.00
12/07/98	.05	.00
12/08/98	.08	.15
12/09/98	.06	.00
12/10/98	.06	.00
12/11/98	.05	.00
12/12/98	.05	.00
12/13/98	.06	.00
12/14/98	.06	.00
12/15/98	.05	.00
12/16/98	.06	.00
12/17/98	.05	.01
12/18/98	.05	.00
12/19/98	.06	.00
12/20/98	.07	.00
12/21/98	.06	.00
12/22/98	.06	.07
12/23/98	.07	.00
12/24/98	.10	.01
12/25/98	.06	.01
12/26/98	.06	.00
12/27/98	.05	.00
12/28/98	.05	.01
12/29/98	.13	.71
12/30/98	.07	.01
12/31/98	.05	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	1.18	.71
12/30/98	.08	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 018 - FREEMAN ST
Influent&Overflow

920 F.M. VERSION: 1.02

Address: Freeman St. and Raymond Blvd.

Serial#: QU0

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.29	.00
12/02/98	.33	.00
12/03/98	.28	.01
12/04/98	.33	.00
12/05/98	.27	.00
12/06/98	.36	.00
12/07/98	.29	.00
12/08/98	.26	.15
12/09/98	.26	.00
12/10/98	.23	.00
12/11/98	.27	.00
12/12/98	.29	.00
12/13/98	.31	.00
12/14/98	.29	.00
12/15/98	.32	.00
12/16/98	.37	.00
12/17/98	.36	.01
12/18/98	.34	.00
12/19/98	.36	.00
12/20/98	.34	.00
12/21/98	.34	.00
12/22/98	.26	.07
12/23/98	.36	.00
12/24/98	.41	.01
12/25/98	.49	.01
12/26/98	.46	.00
12/27/98	.19	.00
12/28/98	.25	.01
12/29/98	.44	.71
12/30/98	.34	.01
12/31/98	.27	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.52	.00
12/02/98	.85	.00
12/03/98	.66	.01
12/04/98	.79	.00
12/05/98	.19	.00
12/06/98	.67	.00
12/07/98	.63	.00
12/08/98	1.28	.15
12/09/98	1.90	.00
12/10/98	2.07	.00
12/11/98	.88	.00
12/12/98	.11	.00
12/13/98	.05	.00
12/14/98	1.26	.00
12/15/98	1.50	.00
12/16/98	.59	.00
12/17/98	.49	.01
12/18/98	.22	.00
12/19/98	-.56	.00
12/20/98	.27	.00
12/21/98	-.57	.00
12/22/98	.60	.07
12/23/98	.17	.00
12/24/98	.08	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	-.76	.01
12/29/98	.97	.71
12/30/98	.34	.01
12/31/98	.04	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 022 - ROANOKE AVE

Address: Roanoke Ave. and Doremus Ave.

920 F.M. VERSION: 1.02

Serial#: QUZ

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.92	.00
12/02/98	1.93	.00
12/03/98	1.93	.01
12/04/98	1.43	.00
12/05/98	1.68	.00
12/06/98	1.68	.00
12/07/98	1.79	.00
12/08/98	1.85	.15
12/09/98	1.90	.00
12/10/98	1.92	.00
12/11/98	1.93	.00
12/12/98	1.92	.00
12/13/98	1.82	.00
12/14/98	1.86	.00
12/15/98	2.25	.00
12/16/98	1.08	.00
12/17/98	1.46	.01
12/18/98	1.52	.00
12/19/98	1.31	.00
12/20/98	1.26	.00
12/21/98	1.45	.00
12/22/98	1.76	.07
12/23/98	1.88	.00
12/24/98	1.83	.01
12/25/98	1.65	.01
12/26/98	1.66	.00
12/27/98	1.66	.00
12/28/98	1.85	.01
12/29/98	3.07	.71
12/30/98	1.81	.01
12/31/98	1.82	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023a - ADAMS ST

Address: South St. near Dawson St.

920 F.M. VERSION: 1.02

Serial#: QR4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023b - ADAMS ST. influent

Address: South St. and Jefferson St.

910 F.M. VERSION: 1.02

Serial#: QO4

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.56	.00
12/02/98	.60	.00
12/03/98	.42	.01
12/04/98	.35	.00
12/05/98	.33	.00
12/06/98	.42	.00
12/07/98	.55	.00
12/08/98	.65	.15
12/09/98	.54	.00
12/10/98	.56	.00
12/11/98	.57	.00
12/12/98	.56	.00
12/13/98	.60	.00
12/14/98	.37	.00
12/15/98	.31	.00
12/16/98	.54	.00
12/17/98	.24	.01
12/18/98	.18	.00
12/19/98	.02	.00
12/20/98	.02	.00
12/21/98	.10	.00
12/22/98	.33	.07
12/23/98	.47	.00
12/24/98	.53	.01
12/25/98	.52	.01
12/26/98	.58	.00
12/27/98	.54	.00
12/28/98	.13	.01
12/29/98	.80	.71
12/30/98	.59	.01
12/31/98	.48	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 023B - ADAMS ST. overflow

Address: South St. and Jefferson St

910 F.M. VERSION: 1.02

Serial#: QPP

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	-.11	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	-.61	.71
12/30/98	-.03	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated

Address: Peddie Ditch

920 F.M. VERSION: 1.02

Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	8.83	.00
12/02/98	7.80	.00
12/03/98	7.45	.01
12/04/98	8.01	.00
12/05/98	6.41	.00
12/06/98	7.74	.00
12/07/98	8.80	.00
12/08/98	5.49	.15
12/09/98	7.35	.00
12/10/98	6.11	.00
12/11/98	6.77	.00
12/12/98	7.15	.00
12/13/98	7.26	.00
12/14/98	7.49	.00
12/15/98	7.47	.00
12/16/98	6.30	.00
12/17/98	7.86	.01
12/18/98	7.72	.00
12/19/98	7.75	.00
12/20/98	8.93	.00
12/21/98	9.35	.00
12/22/98	9.37	.07
12/23/98	10.52	.00
12/24/98	10.82	.01
12/25/98	10.11	.01
12/26/98	10.14	.00
12/27/98	10.24	.00
12/28/98	10.88	.01
12/29/98	13.99	.71
12/30/98	11.51	.01
12/31/98	10.96	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 - PEDDIE ST unregulated

Address: Peddie Ditch

920 F.M. VERSION: 1.02

Serial#: QUE

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	2.66	.00
12/02/98	2.02	.00
12/03/98	2.06	.01
12/04/98	2.15	.00
12/05/98	2.07	.00
12/06/98	2.00	.00
12/07/98	1.58	.00
12/08/98	2.41	.15
12/09/98	2.14	.00
12/10/98	2.16	.00
12/11/98	2.05	.00
12/12/98	1.77	.00
12/13/98	1.80	.00
12/14/98	1.76	.00
12/15/98	1.43	.00
12/16/98	1.28	.00
12/17/98	1.46	.01
12/18/98	1.76	.00
12/19/98	1.83	.00
12/20/98	1.83	.00
12/21/98	1.83	.00
12/22/98	1.71	.07
12/23/98	1.74	.00
12/24/98	2.16	.01
12/25/98	2.00	.01
12/26/98	1.88	.00
12/27/98	1.50	.00
12/28/98	1.94	.01
12/29/98	3.04	.71
12/30/98	2.10	.01
12/31/98	2.21	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 025 Peddie St regulated

Address: Peddie Ditch

910 F.M. VERSION: 1.02

Serial#: QO7

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	7.84	.00
12/02/98	8.60	.00
12/03/98	8.24	.01
12/04/98	8.68	.00
12/05/98	8.36	.00
12/06/98	8.52	.00
12/07/98	8.50	.00
12/08/98	11.00	.15
12/09/98	8.67	.00
12/10/98	9.05	.00
12/11/98	8.45	.00
12/12/98	8.52	.00
12/13/98	8.46	.00
12/14/98	8.42	.00
12/15/98	8.62	.00
12/16/98	8.56	.00
12/17/98	8.77	.01
12/18/98	8.52	.00
12/19/98	8.40	.00
12/20/98	8.44	.00
12/21/98	8.04	.00
12/22/98	9.14	.07
12/23/98	8.03	.00
12/24/98	8.25	.01
12/25/98	8.16	.01
12/26/98	7.98	.00
12/27/98	8.08	.00
12/28/98	8.33	.01
12/29/98	16.48	.71
12/30/98	7.86	.01
12/31/98	8.15	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN unregulated

Address: Queen Ditch

910 F.M. VERSION: 1.02

Serial#: QQU

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	5.16	.00
12/02/98	5.04	.00
12/03/98	4.83	.01
12/04/98	4.73	.00
12/05/98	4.63	.00
12/06/98	4.84	.00
12/07/98	4.82	.00
12/08/98	5.53	.15
12/09/98	4.92	.00
12/10/98	4.75	.00
12/11/98	4.73	.00
12/12/98	4.62	.00
12/13/98	4.64	.00
12/14/98	4.72	.00
12/15/98	4.86	.00
12/16/98	4.87	.00
12/17/98	4.88	.01
12/18/98	4.73	.00
12/19/98	4.71	.00
12/20/98	4.74	.00
12/21/98	4.83	.00
12/22/98	5.03	.07
12/23/98	4.79	.00
12/24/98	4.91	.01
12/25/98	4.92	.01
12/26/98	4.93	.00
12/27/98	5.08	.00
12/28/98	5.18	.01
12/29/98	7.46	.71
12/30/98	5.88	.01
12/31/98	5.85	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 026 - QUEEN regulated

Address: Queen Ditch

910 F.M. VERSION: 1.02

Serial#: QQV

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	3.87	.00
12/02/98	3.24	.00
12/03/98	3.45	.01
12/04/98	3.26	.00
12/05/98	3.57	.00
12/06/98	3.61	.00
12/07/98	3.55	.00
12/08/98	3.67	.15
12/09/98	3.13	.00
12/10/98	3.30	.00
12/11/98	2.68	.00
12/12/98	3.04	.00
12/13/98	3.09	.00
12/14/98	3.22	.00
12/15/98	3.26	.00
12/16/98	3.19	.00
12/17/98	3.30	.01
12/18/98	3.41	.00
12/19/98	3.16	.00
12/20/98	3.40	.00
12/21/98	3.61	.00
12/22/98	3.41	.07
12/23/98	2.99	.00
12/24/98	2.89	.01
12/25/98	2.92	.01
12/26/98	2.71	.00
12/27/98	2.99	.00
12/28/98	3.06	.01
12/29/98	2.78	.71
12/30/98	2.55	.01
12/31/98	4.28	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

920 F.M. VERSION: 1.02

Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.54	.00
12/02/98	.70	.00
12/03/98	.62	.01
12/04/98	.14	.00
12/05/98	.49	.00
12/06/98	.70	.00
12/07/98	1.31	.00
12/08/98	1.81	.15
12/09/98	1.74	.00
12/10/98	2.06	.00
12/11/98	1.77	.00
12/12/98	1.16	.00
12/13/98	1.02	.00
12/14/98	1.53	.00
12/15/98	1.58	.00
12/16/98	1.53	.00
12/17/98	1.85	.01
12/18/98	1.72	.00
12/19/98	1.16	.00
12/20/98	1.14	.00
12/21/98	1.35	.00
12/22/98	1.37	.07
12/23/98	1.23	.00
12/24/98	1.10	.01
12/25/98	1.01	.01
12/26/98	1.09	.00
12/27/98	1.00	.00
12/28/98	1.19	.01
12/29/98	2.54	.71
12/30/98	1.36	.01
12/31/98	1.10	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 027 - WAVERLY

Address: Anheuser-Busch

920 F.M. VERSION: 1.02

Serial#: QRY

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.00	.71
12/30/98	.00	.01
12/31/98	.00	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	1.57	.00
12/02/98	1.35	.00
12/03/98	1.28	.01
12/04/98	1.16	.00
12/05/98	1.17	.00
12/06/98	1.23	.00
12/07/98	1.20	.00
12/08/98	1.35	.15
12/09/98	1.04	.00
12/10/98	1.04	.00
12/11/98	1.01	.00
12/12/98	1.04	.00
12/13/98	1.07	.00
12/14/98	1.13	.00
12/15/98	1.08	.00
12/16/98	1.04	.00
12/17/98	1.06	.01
12/18/98	1.07	.00
12/19/98	1.00	.00
12/20/98	1.09	.00
12/21/98	1.06	.00
12/22/98	1.12	.07
12/23/98	1.12	.00
12/24/98	1.19	.01
12/25/98	1.37	.01
12/26/98	1.46	.00
12/27/98	1.66	.00
12/28/98	2.04	.01
12/29/98	2.94	.71
12/30/98	1.77	.01
12/31/98	1.66	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.05	.00
12/02/98	.07	.00
12/03/98	.01	.01
12/04/98	.00	.00
12/05/98	.01	.00
12/06/98	.03	.00
12/07/98	.02	.00
12/08/98	.04	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.01	.00
12/13/98	.01	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.01	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.00	.00
12/22/98	.02	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.01	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.01	.01
12/29/98	.11	.71
12/30/98	.01	.01
12/31/98	.01	.00

Newark CSO Discharge Characteization Study

Task 5 - CSO Monitoring Study

CSO 030 - WHEELER/AVE A

Address: Emmet St. and McCarter Hwy

930 F.M. VERSION: 1.02

Serial#: QUD

Date	Average Daily Flow (mgd)	Average Daily Rain (in)
12/01/98	.00	.00
12/02/98	.00	.00
12/03/98	.00	.01
12/04/98	.00	.00
12/05/98	.00	.00
12/06/98	.00	.00
12/07/98	.00	.00
12/08/98	.00	.15
12/09/98	.00	.00
12/10/98	.00	.00
12/11/98	.00	.00
12/12/98	.00	.00
12/13/98	.00	.00
12/14/98	.00	.00
12/15/98	.00	.00
12/16/98	.00	.00
12/17/98	.00	.01
12/18/98	.00	.00
12/19/98	.00	.00
12/20/98	.00	.00
12/21/98	.01	.00
12/22/98	.00	.07
12/23/98	.00	.00
12/24/98	.00	.01
12/25/98	.00	.01
12/26/98	.00	.00
12/27/98	.00	.00
12/28/98	.00	.01
12/29/98	.17	.71
12/30/98	.00	.01
12/31/98	.00	.00