COZEN O'CONNOR

February 26, 2020

VIA E-MAIL AND FIRST CLASS MAIL

Jonathan P. Nase
Direct Phone 717-773-4191
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jnase@cozen.com

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Application of Pennsylvania-American Water Company under Section 1102(a) of the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1102(a), for approval of (1) the transfer, by sale, of substantially all of the Borough of Kane Authority's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company, and (2) the rights of Pennsylvania-American Water Company to begin to offer or furnish wastewater service to the public in the Borough of Kane, and in a portion of Wetmore Township, McKean County, Pennsylvania; Docket Nos. A-2019-3014248 *et al.*

Pennsylvania-American Water Company's Answers to the Data Requests Propounded by the Bureau of Technical Utility Services, Set I

Dear Secretary Chiavetta:

On Friday, February 21, 2020, Pennsylvania-American Water Company served answers to the above-referenced data requests, consistent with 52 Pa. Code § 5.342. PAWC also filed the cover letter and certificate of service with the Secretary's Bureau, but did not file the answers themselves. Enclosed please find Pennsylvania-American Water Company's Answers to the Bureau of Technical Utility Services' Data Requests, Set I in the above-referenced matter. Copies have been served in accordance with the enclosed certificate of service.

Please feel free to contact me should you have any questions concerning the enclosed.

Sincerely,

COZEN O'CONNOR

By: Jonathan P. Nase
Counsel for *Pennsylvania-American Water Company*

JPN

cc: Per Certificate of Service

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-1. The Application's Appendix A-5.1, Cost Approach appraisal work papers of AUS Consultants, Inc. (AUS), Page 6 of 17 indicates most of the Kane Borough Authority (KBA) assets have a retirement dispersion Iowa-type value of R-3.0. Please provide the analysis documentation AUS relied upon to determine historic retirement rates for KBA assets.

Answer:

The necessary plant survival and retirement data was not available from Kane's accounting records to allow service life analysis; therefore, a survivor / retirement dispersion typical of the plant's expected survival / retirement experience was selected based on depreciation studies prepared by larger Pennsylvania wastewater providers which had sufficient survival and retirement data to analyze for life indications and AUS Consultants experience.

Answer provided by: Jerome C. Weinert, P.E. **Date:** February 21, 2020
Principal and Director, AUS Consultants, Inc.

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-2. Please compare and explain why the survivor curves used by AUS and Gannett Fleming Valuation and Rate Consultants, LLC differ with the survivor curves used by Pennsylvania-American Water Company – Wastewater Division (PAWC-WD) in PAWC-WD's most recent depreciation study for its wastewater operations, provided as Volume 12, Exhibit No. 11-D, Page I-4 of its most recent water and wastewater rate case at Docket No. R-2017-2595853.

Answer:

AUS Consultants: The PAWC depreciation study referred to was just one of the sources relied upon as a reference in determining the Iowa-type survivor curve and associated average service life (ASL). The following table compares the Iowa-type survivor curves and ASLs between those contained in the PAWC depreciation study and those used by AUS Consultants in the depreciation portion of our Cost Approach.

When we are discussing survivor curves for depreciation purposes there are two attributes which together form the basis of the depreciation projections: the Iowa-type survivor curve and the service life. The referenced table marked as Attachment A-2, details both attributes by account classification. The Iowa-type survivor curve depicts how the property survives and retires about its service life (average service life (ASL)). The Iowa-type survivor curves consist of four curve families based on the location of the mode of the retirements (the mode is the point of highest retirements or highest frequency of retirements). The four Iowa-type survivor curve families are those of: R right moded, S symmetric moded, L left moded, and O origin moded. The Iowa-type survivor curve's mode characteristic ranges from 0 to 6. The number describes the spread of the retirements as dispersed (spread) about the curve family's mode. The ASL defines the period of time over which the Iowa-type survivor curve described retirement pattern occurs.. As the table shows, the PAWC depreciation study's Iowa-type survivor curves were in the 2, 2.5, and or 3 numeric mode classification. AUS consultants used a numeric mode classification of 3 and 4 (R3 and R4) for all categories. The structures and improvements utilized a numeric mode classification of 4. The PAWC depreciation study shows a preponderance of R type Iowa-type survivor curves (the SQ distribution is similar to a R distribution having a high numeric

mode designation). AUS Consultants' R3 and R4 Iowa-type survivor curve designations is well supported by the PAWC depreciation study recommendations.

Answer provided by: Jerome C. Weinert, P.E. **Date:** February 21, 2020
Principal and Director, AUS Consultants, Inc.

Gannett Fleming: The wastewater system's assets were appraised under a standard of value of fair market value. Under the standard of value of fair market value, the buyer is a hypothetical or generic entity, it is neither Pennsylvania-American, nor Aqua Pennsylvania, nor any other specific entity. The use of Pennsylvania-American Water Company's or any other specific entity's survivor curves for the Wastewater System is only appropriate under a standard of value of investment value.

Answer provided by: Harold Walker (Gannett Fleming) **Date:** February 21, 2020
Manager, Financial Studies

ATTACHMENT A-2

ATTACHMENT A-2

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 20[illegible]

DEPRECIABLE GROUP	SURVIVOR CURVE (1)	(2)
DEPRECIABLE PLANT		
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	
354.30 STRUCTURES AND IMPROVEMENTS - SPP	50-R2.5	
354.40 STRUCTURES AND IMPROVEMENTS - TDP	65-R2	
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	
355.00 POWER GENERATING EQUIPMENT	35-R2.5	
360.10 COLLECTION SEWERS - FORCE MAINS	70-S2	
361.10 COLLECTION SEWERS - GRAVITY MAINS	70-R2.5	
361.20 MANHOLES	50-S1.5	
363.00 SERVICES	38-R3	
364.00 FLOW MEASURING DEVICES	20-L3	
365.00 FLOW MEASURING INSTALLATIONS	30-S1.5	
370.00 RECEIVING WELLS	50-R3	
371.00 PUMPING EQUIPMENT	40-SO	
380.00 TREATMENT EQUIPMENT	45-R2	
381.00 PLANT SEWERS	50-R3	
382.00 OUTFALL SEWER LINES	50-R3	
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	20-S2.5	
390.00 OFFICE FURNITURE AND EQUIPMENT	20-SQ	
391.00 TRANSPORTATION EQUIPMENT	15-L4	
392.00 STORES EQUIPMENT	25-SQ	
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	
394.00 LABORATORY EQUIPMENT	15-SQ	
395.00 POWER OPERATED EQUIPMENT	16-L2.5	
396.00 COMMUNICATION EQUIPMENT	15-SQ	
397.00 MISCELLANEOUS EQUIPMENT	15-SQ	
TOTAL DEPRECIABLE PLANT		
AMORTIZATION OF NET SALVAGE		
NONDEPRECIABLE PLANT		
352.10 FRANCHISES		
353.20 LAND AND LAND RIGHTS - COLLECTION		
353.30 LAND AND LAND RIGHTS - SPP		
353.40 LAND AND LAND RIGHTS - TDP		
TOTAL NONDEPRECIABLE PLANT		
TOTAL WASTEWATER PLANT IN SERVICE		

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System

Investor-Owned Utility

September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New

(1) Account Number	(2) Description	(4) (4a) Iowa Survivor / Retirement Curve	(4b) Normal Service Life years
354.00	Stuctures & Improvements	R4.0	55.00
360.00	Mains Force	R3.0	60.00
361.00	Mains Gravity	R3.0	75.00
363.00	Service Laterals	R3.0	55.00
364.00	Flow Measuring Devices	R3.0	35.00
371.00	Pumping Equipment	R3.0	35.00
380.00	Treatment and Disposal Equipment	R3.0	45.00
381.00	Plant Sewers	R3.0	45.00
389.00	Other Plant & Misc Equip	R3.0	45.00
391.00	Transportation Equipment	R3.0	10.00
392.00	Stores Equipment	R3.0	35.00
393.00	Tools, Shop, & Garage Equipment	R3.0	35.00
394.00	Laboratory Equipment	R3.0	20.00
395.00	Power Operated Equipment	R3.0	15.00
396.00	Communications Equipment	R3.0	12.00
397.00	Miscellaneous Equipment	R3.0	20.00
353.00	Land & Land Rights	Non-Depr	0.00

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-3. Please confirm whether either of the Utility Valuation Expert appraisals, provided as the Application's Appendices A-5.1 and A-5.2, include the value of future capital additions in the income approach.

Answer:

AUS Consultants: Future capital additions necessary to grow and maintain the system were included in the AUS Consultants' income approach.

Answer provided by: Jerome C. Weinert, P.E. **Date:** February 21, 2020
Principal and Director, AUS Consultants, Inc.

Answer:

Gannett Fleming: The income approach includes minimal capital additions to maintain the assets in a state of good repair.

Answer provided by: Harold Walker (Gannett Fleming) **Date:** February 21, 2020
Manager, Financial Studies

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-4. The Application's Appendix A-12, Page "xx Revised Page 61" indicates PAWC-WD intends to charge fees to certain customers in the requested territory for discharges with loadings above typical domestic sewage loadings (Loading Fees). Please provide responses for the following:

a. Explain whether discharge loading costs for combined sewer systems are comparable with discharge loading costs for sanitary sewer systems; and

b. Indicate whether Loading Fees apply to owners of stormwater facilities which discharge flows with loadings above typical domestic sewage loadings into the KBA system.

Answer:

a. Because the cost to treat loadings in excess of typical Domestic Sewage loadings are comparable whether the treatment facility is treating Combined Sewage or Sanitary Sewage, the discharge loading costs for combined sewer systems are comparable with discharge loading costs for sanitary sewer systems.

b. Stormwater facilities which discharge into a Combined Sewer System are not subject to an Industrial Pretreatment Program and therefore are not subject to Loading Fees.

Answer provided by: Michael Guntrum, PE, PMP **Date:** February 21, 2020
Senior Project Manager
Pennsylvania-American Water Company

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-5. The Application's Appendix A-14, PAWC Statement No. 2, Page 4, indicates "if and when combined sewers are separated into sanitary only and stormwater only lines, the MS4 [municipal separate storm sewer system] stormwater-only lines will be transferred to the municipality in which they are located". Please provide responses for the following:

a. Indicate whether PAWC-WD intends to recover any costs related to installing MS4 assets through wastewater rates;

b. Explain how PAWC-WD ratepayers would benefit from the installation of MS4 assets as compared with PAWC-WD maintaining combined sewer assets; and

c. Explain how the value of the proposed transaction would be impacted by PAWC-WD's ability or inability to recover through wastewater rates any costs PAWC-WD incurs to install MS4 assets.

Answer:

a. If PAWC determines existing stormwater facilities connected to the Combined Sewer System are proximate to an existing MS4 system, or determines existing stormwater facilities that are connected to the Combined Sewer System are proximate to a location suitable for the direct discharge of stormwater, PAWC may elect to connect those existing stormwater facilities to an MS4 system The MS4 permit holder will be responsible for all separate stormwater facilities. PAWC will seek to recover all costs associated with the separation of existing stormwater facilities from the Combined Sewer System to an MS4 permitted system

b. PAWC customers would benefit from the separation of stormwater flows from sanitary sewer flows. This separation will decrease the number of combined sewer overflows and the total volume of combined sewage that is directly discharged without receiving treatment. EPA regulation requires the Combined Sewer permit holder to minimize or eliminate these untreated discharges.

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

c. Any time PAWC makes an investment to improve its system for the benefit of customers and/or the environment, it is anticipated that the Company will receive recovery of its costs. If the Commission deems these costs to be unrecoverable, PAWC would be negatively impacted.

Answer provided by: Rod P. Nevirauskas **Date:** February 21, 2020
Senior Director - Rates and Regulation
Pennsylvania-American Water Company

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-6. The Application's Appendix A-14, PAWC Statement No. 2, Page 7 indicates PAWC-WD will be obligated to implement and assume KBA's Nine Minimum Control Plan (NMCP) and Long Term Control Plan (LTCP). Please provide copies of KBA's NMCP and LTCP.

Answer:

Please see Attachment A-6.

Answer provided by: Michael Guntrum, PE, PMP
Senior Project Manager
Pennsylvania-American Water Company

Date: February 21, 2020

ATTACHMENT A-6

Attachment A-6

Borough of Kane

Kinzua Road Wastewater Treatment Plant
NPDES Permit No. PA002175

Combined Sewer Overflow
Long Term Control Plan
(Revised)

KLH
ENGINEERS, INC.
5173 Campbells Run Road
Pittsburgh, PA 15205
Phone: 412-494-0510
Fax: 412-494-0426

Attachment A-6

Borough of Kane
Kinzua Road Wastewater Treatment Plant
Long Term Combined Sewer Overflow Control Plan

Table of Contents

Attachment A-6

Borough of Kane
Kinzua Road Wastewater Treatment Plant
Long Term Combined Sewer Overflow Control Plan

I. Introduction

The Borough of Kane owns and operates two wastewater treatment plants (WWTPs), the Kinzua Road and Pine Street WWTPs. This report focuses on the Kinzua Road WWTP, operated under NPDES Permit No. PA0023175, and the Kinzua Road Combined Sewerage System (CSS). Both of the Borough's WWTPs serve the Borough of Kane and Wetmore Township, approximately 5,847 people. A sewer plot plan of the Kinzua Road WWTP service area is shown in Appendix A.

There are two permitted combined sewer overflows (CSO) listed in the Borough's NPDES Permit. The receiving streams and locations of each CSO is listed below:

- Outfall 002 is located at the Kinzua Road Wastewater Treatment Plant and discharges into Hubert Run, the latitude and longitude are as follows:

  41° 40' 40" / 78" 48' 23"

- Outfall 003 is located near Glenwood Street and discharges into an Unnamed Tributary of Hubert Run. The overflow point for this outfall is located in Manhole No. H-23, located at the intersection of Bayard Street and Dawson Street. The latitude and longitude are as follows:

  41° 39' 58" / 78" 48' 02"

A location map of the CSOs is shown in Appendix B. Schematics of outfalls 002 and 003 are attached in Appendix C.

CSO 003 is within the collection system. An overflow has not occurred at this CSO since approximately 1999. If an overflow were to occur, it would only be caused by the amount of stormwater entering the collection system.

CSO 002 is located at the Kinzua Road WWTP. This CSO does experience overflows. The WWTP has a gate at the headworks which the operators partially close when the flow at the WWTP is too high, during wet weather events. Overflows at CSO 002 are caused by the amount of stormwater entering the system and from the gate at the WWTP headworks being throttled back.

In accordance with NPDES Permit No. PA 0023175, Parts C.3.I. & II. the Borough has completed and submitted the following documentation:

- *System Overflow Characterization, submitted on November 5, 1997*
- *Documentation of Implementation of the Nine Minimum Technology-Based Controls, submitted on October 9, 1997*
- *Long Term Combined Sewer Overflow Control Plan, submitted in draft form on December 8, 1997*

The Borough of Kane qualifies as a small community (population less than 75,000). The EPA's Combined Sewer Overflow Guidance for the Long Term Control Plan, states:

> *"At a minimum, however, all small municipalities should be required to develop LTCPs that will provide for the attainment of WQS and that include the following elements:"*
>
> - *Implementation of the NMC*
> - *Public Participation*
> - *Consideration of Sensitive Areas*
> - *Post-construction Compliance Monitoring Program*

This report fulfills the CSO requirements for small communities, the CSO requirements listed in the Borough's NPDES Permit and the directives of the DEP. The recommendations contained in this report are based on a goal of meeting water quality standards (i.e. the presumptive or demonstrative EPA CSO requirements).

As outlined in the above permit, the next phase of the Borough's "Plan of Action" is the submittal of this Long Term CSO Control Plan (LTCP). The following are the basic requirements of the LTCP, as outlined in the Borough's NPDES Permit:

- Characterization, monitoring and modeling of overflows and assessment of water quality impact
- Consideration of sensitive areas (recreation areas, public water supply, unique ecological habitat, etc.)
- Public participation in CSO plan
- Evaluation and selection of control alternative presumptive or demonstrative approach
- Implementation schedule and financing plan for selected control options
- Post-construction monitoring plan

The LTCP, as contained herein, will address each of the major objectives outlined in the "Combined Sewer Overflow Control Policy" to comply with the requirements of the Federal Clean Water Act (CWA). The Borough will continue to submit an Annual CSO Status Report with the Annual Wasteload Management Report.

II. Characterization, Monitoring and Modeling of Overflows and Assessment of Water Quality Impact

The following section will compliment and update the information contained in the previously submitted CSO System Overflow Characterization.

A. Rainfall Records

Three sources were used for rainfall records. Rainfall data was ordered from the National Climatic Data Center (NCDC), via the Internet, in fifteen-minute intervals from 1998 to January 2003. The second source was from the National Climatic Data Center's monthly Climatological Data Report. Rainfall data was also found in the monthly precipitation summary published in the Kane Republican, the Local newspaper. All three sources of the rainfall data were used to accurately characterize rainfall events in the Borough of Kane. Most of the rainfall data was taken from the fifteen-minute interval information, ordered from NCDC. However, there are a lot of missing days within the data set. For the dates where there was missing information, the data from the other two sources was utilized. This rainfall information was used to model the behavior of the CSOs and determine the water quality impacts of each of the chambers.

The Borough purchased rainfall-recording equipment the week of July 21, 2003 to ensure more accurate rainfall data. The rain gauges will be installed as soon as they are received; one gauge will be placed at each of the treatment plants. After the Borough has collected one year of rainfall data, a correlation between rainfall, rainfall intensity and CSO volumes will be developed. This information will be submitted to DEP with the Borough's next Chapter 94 Report after the completion of the analysis.

B. Monitoring

The flow meter that is in place at Outfall 002, at the Kinzua Road WWTP, is directly connected into the flow meter at the WWTP. Electronic data is not obtained for this Outfall; the overflows are instantaneously graphed onto the plant flow meter chart. The flow meter at the treatment plant is going to be scheduled for calibration.

There also is not a flow meter in place at Outfall 003. It was reported this outfall has not experienced an overflow since 1999. In 1999, the outfall was inspected after a storm event and it appeared the storm had caused an overflow. The Borough personnel have placed a tennis ball attached to a string that is tied to the top of the manhole. The Borough personnel check this manhole regularly to see if the tennis ball has moved down the overflow line. The movement of the tennis ball would indicate the occurrence of an overflow. The Borough also looks for signs of solids deposition to indicate the occurrence of an overflow. The overflow data for Outfall 002 was used to calibrate the CSO models.

C. Combined Sewer System Characterization

There are two approaches used to determine if the current CSO controls meet the water quality requirements of the Clean Water Act (CWA): *the demonstrative approach and the presumptive approach.* The Borough of Kane chose the presumptive approach after analyzing the data. Under the presumptive approach, a combined sewer system (CSS) must meet any of the following three criteria:

i. *"no more than an average of four overflow events per year, provided that the permitting Authority may allow up to two additional overflow events per year. For the purpose of this criterion, an overflow event is one or more overflows from a CSS as a result of a precipitation event that does not receive the minimum treatment specified below"*

ii. *"the elimination or capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis"*

iii. *"the elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring and modeling effort, for the volumes that would be eliminated or captured for treatment under paragraph ii above."*

Section *i* allows a maximum of four overflow events per year. This criteria is not being considered because of the frequency of overflow events in Kane. The Borough of Kane reported the following number of overflow events between 1998 and 2003:

Year	Number of Events
1998	12
1999	10
2000	9
2001	6
2002	16
2003*	0

* Only includes data up to February 24, 2003

Section *iii* outlines the use of sampling to demonstrate the reduction of mass pollutants in the receiving water. In the past the Borough collected a grab sample from at least one CSO event per quarter and analyzed the sample for pH, Biochemical Oxygen Demand (5-Day), Dissolved Oxygen, Ammonia Nitrogen, Total Suspended Solids and Temperature.

In a letter dated March 5, 2003, from the PA DEP, the Borough was given permission to discontinue the sampling. Therefore, the Borough of Kane LTCP is based upon the requirements listed in section *ii*. Tables 1 through 6, which are attached in Appendix D, were developed to demonstrate the capture of at least 85% by volume of the combined sewage.

The majority of the sewers contributing to the Kinzua WWTP are combined. All of the sewers within the Borough of Kane are combined, but the WWTP also treats flow from Wetmore Township, which is from separate sewers. Less than 10% of the flow treated at the WWTP, during dry weather is from the separate sewers in Wetmore Township. The percentage of flow from Wetmore Township would be significantly less during wet weather. All of the flow from Wetmore Township is conveyed through the Wetmore Township Pump Station, on Route 321. This pump station has two 80 gpm pumps, which operate at a maximum flow of approximately 113,000 gpd.

When calculating the volume of flow captured, only combined sewage can be included in the calculation. The volume of flow through the pump station is not known for everyday there was a rainfall event. Therefore, the maximum pump station flow, 113,000 gpd, was subtracted from the volume of plant flow, for all of the rainfall events.

The percentage of the system volume captured for treatment during wet weather events was calculated using the Metered Calculation Method, as outlined in the EPA's Guidance. The total overflow volume was calculated based upon the flow of the CSO, as reported on the Borough's monthly DMR's, and the duration of the rainfall event. The volume of the flow treated was calculated using the flow at the treatment plant, the flow from the Wetmore Township Pump Station and the duration of the rainfall event. The total overflow volume and the volume of flow treated were added to determine the total system volume. The percent of flow captured for treatment was calculated by dividing the total volume of flow treated at the plant by the total system volume. The total volume of plant flow and the total system volume were calculated for everyday there was a wet weather event from 1998 to February 2003. To calculate the percent of flow captured for each year reported, the total volume of plant flow and the total system volume were summed for every event recorded and then the two numbers were divided, as previously explained.

The average daily flow at the WWTP and the average CSO flow were used for these calculations to keep the calculation consistent because not all of the peak flows have been reported. Three overflow events were chosen from the most recent years, one from each year, to show a sample calculation of the percent captured.

Attachment A-6

Date	Rain/ Snow Fall (Inches)	Duration of Rain/Snow Fall Event (Hours)	Average Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Average CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured For Treatment (%)
8/15/00	0.20	0.50	1.078	0.113	0.0201	0.167	0.0035	0.0236	85.25%
11/24/01	0.18	0.50	0.701	0.113	0.0123	0.050	0.0010	0.0133	92.17%
6/5/02	1.80	3.00	2.027	0.113	0.2393	0.240	0.0300	0.2693	88.86%

General Equations:

$$\text{Total Volume of Plant Flow (MG)} = \frac{\text{Average Plant Flow (MGD)} - \text{Pump Station Flow (MGD)}}{\text{24 (hours/day)}} * \text{Duration of Rain Event (h)}$$

$$\text{Total CSO Volume (MG)} = \frac{\text{Average CSO Flow (MGD)}}{\text{24(hours/day)}} * \text{Duration of Rain Event (h)}$$

$$\text{\% Capture} = \frac{\text{Total Volume of Plant Flow (MG)}}{\text{Total System Volume (MG)}} * 100$$

8/15/00:

$$\text{Total Volume of Plant Flow (MG)} = \frac{1.078 \text{ MGD} - 0.113 \text{ MGD}}{24 \text{ h/d}} * 0.50 \text{ h} = 0.0201 \text{ MG}$$

$$\text{Total CSO Volume (MG)} = \frac{0.167 \text{ MGD}}{24 \text{ h/d}} * 0.50 \text{ h} = 0.0035 \text{ MG}$$

Total System Volume (MG) = 0.0201 MG + 0.0035 MG = 0.0236 MG

$$\text{\% Capture} = \frac{0.0201 \text{ MG}}{0.0236 \text{ MG}} * 100 = 85.25\%$$

11/24/01:

$$\text{Total Volume of Plant Flow (MG)} = \frac{0.701 \text{ MGD} - 0.113 \text{ MGD}}{24 \text{ h/d}} * 0.50 \text{ h} = 0.0123 \text{ MG}$$

$$\text{Total CSO Volume (MG)} = \frac{0.050 \text{ MGD}}{24 \text{ h/d}} * 0.50 \text{ h} = 0.0010 \text{ MG}$$

Total System Volume (MG) = 0.0123 MG + 0.0010 MG = 0.0156 MG

$$\% \text{ Capture} = \frac{0.0123 \text{ MG}}{0.0133 \text{ MG}} * 100 = 92.17\%$$

6/5/02:

$$\text{Total Volume of Plant Flow (MG)} = \frac{2.027 \text{ MGD} - 0.113 \text{ MGD}}{24 \text{ h/d}} * 3.00 \text{ h} = 0.2393 \text{ MG}$$

$$\text{Total CSO Volume (MG)} = \frac{0.240 \text{ MGD}}{24 \text{ h/d}} * 3.00 \text{ h} = 0.0300 \text{ MG}$$

Total System Volume (MG) = 0.2393 MG + 0.0300 MG = 0.2693 MG

$$\% \text{ Capture} = \frac{0.2393 \text{ MG}}{0.2693 \text{ MG}} * 100 = 88.86\%$$

A summary of the annual percentages of system volume captured for treatment during precipitation events is as follows:

Year	Total Rainfall (Inches)	Total Volume of Plant Flow (MG)	Total Volume of CSO Flow (MG)	Total System Volume (MG)	Percent Captured For Treatment
1998	41.48	4.2059	0.0570	4.2629	98.66%
1999	44.79	3.7193	0.0949	3.8142	97.51%
2000	35.13	3.2446	0.0054	3.2499	99.83%
2001	83.68	2.9697	0.0043	2.9740	99.86%
2002	79.89	5.1338	0.4464	5.5803	92.00%
2003*	48.10	1.2881	0.0000	1.2881	100.00%
Average					**97.98%**

* Only includes data through February 24, 2003

The captured flow should receive the following minimum treatment:

- *Primary Clarification: The removal of floatables and settleable solids, maybe achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification.*
- *Solids and floatables disposal*
- *Disinfection of effluent, if necessary to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary.*

All of the combined sewage that is captured and taken to the WWTP receives primary and secondary treatment and effluent disinfection.

Based upon the percent of flow captured and the treatment the flow receives, the Borough of Kane's CSS can be characterized as currently meeting the presumptive approach criteria for the attainment of WQS, in accordance with the CSO Control Policy.

As shown in flow meter charts attached in Appendix E, the Kinzua Road WWTP can treat 5.0 MGD during a storm event for a short period. Because of the decanting schedule, if a flow of 5.0 MGD is sustained at the plant for an extended period of time, the sludge blanket are in jeopardy of being washed out. When this happens the operators must make an in place decision whether or not to throttle back the flow at the head of the plant to approximately 3.0 MGD. Treating a sustained flow of 5.0 MGD is a risk to the treatment process because if the sludge blankets wash out, the plant would experience an NPDES effluent violation. The flow charts from the recent storms in July 2003 were obtained and studied. It shows that the plant can treat a peak flow of approximately 5 MGD for a short period. The flow charts also show that there are times in which the operators must throttle the flow entering the plant back to 3.0 MGD. This is done to preserve the treatment process. The excess flow is diverted through the bypass structure and discharged through Outfall 002.

The Borough has a service lateral testing program in place. The Borough adopted a clause into their rules and regulations that residents must have their service laterals tested before being allowed to sell their home.

D. Modeling

The quantitative analysis of the CSO discharges and flow at the WWTP, shown in Tables 1 through 6 in Appendix D, is more than sufficient to demonstrate that the Borough meets the requirements of the presumptive approach. A model of the entire CSS was not necessary to determine if the CSS meets the requirements of the presumptive approach.

III. Consideration of Sensitive Areas

EPA has requested that any sensitive area impacted by a CSO be of highest priority in the development of a LTCP. As stated in the CSO Control Policy a sensitive area has been designated as:

> *"Outstanding National Resource Water, National Marine Sanctuary, waters containing threatened or endangered species and their habitat, waters with primary contact recreation, public drinking water intakes or their designated protection areas, and shellfish beds."*

Outfall 002, at the Kinzua Road WWTP discharges into Hubert Run, which is classified as a Cold Water Fishery, under Chapter 25 Section 93.9q of the Pennsylvania Code. Outfall 003 discharges to an Unnamed Tributary to Hubert Run, which is not defined under Chapter 25 Section 93; therefore, it is being assumed this stream is also defined as a Cold Water Fishery. Under Chapter 25 Section 93.3 of the PA Code, a Cold Water Fishery is listed as a protected water use. This section defines a Cold Water Fishery as:

> *"Cold Water Fishery - Maintenance or propagation, or both, of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat."*

Based on the definition of a sensitive area, both of these outfalls are considered as discharging into a sensitive area, since both waterways are defined as Cold Water Fisheries. Because overflows only occur during wet weather events, it is being assumed that if an overflow occurred, no one would be fishing on either Hubert Run or the Unnamed Tributary to Hubert Run. The Borough has never received any complaints or reports after an overflow event of floatable solids in Hubert Run or its Unnamed Tributary and swimming does not take place in any of the areas near the outfalls.

The placement of the signs, which inform the public of the possibility of overflow events, will also help to ensure that primary contact will not occur after an overflow event. Currently the signs only identify the location of the outfalls. The Borough will include more information on the signs such as, a contact name and a warning that overflows could occur within twenty-four hours of a rainfall event.

It has been reported that Outfall 003 has not experienced an overflow event since 1999. Therefore, it is not believed that any of the waterways near the outfalls should be classified as a sensitive area.

The Borough had a Pennsylvania Natural Diversity Index (PNDI) search performed at the outfall locations, which showed there are no endangered species within these areas. The results of the PNDI search are attached in Appendix F.

IV. Public Participation

The Borough of Kane has a local newspaper, the Kane Republican. Usually a reporter from the Kane Republican attends the Borough's regular Council meetings and outlines the proceedings of the meeting in the next day's publication. The events of the meetings are also reported by the local radio station the day after the meetings. The Borough plans on using the Kane Republican as its primary source of providing information to the public regarding the Borough's CSS. The Borough will place an add in the Kane Republican to inform the public that a copy of the Borough's LTCP can be reviewed at the Borough's office and if the public wishes to comment on the LTCP they can attend the Borough's October Council meeting. The signs that are placed at the outfall locations are also used to notify the public about possible overflows.

V. Evaluation and Selection of Control Alternatives – Presumptive or Demonstrative Approach

Although the Borough's combined sewer system can be characterized as meeting the presumptive approach criteria for attainment of WQS in accordance with the CSO Control Policy, it is understood that additional steps should be taken to reduce the undesirable effects of CSO discharges.

DEP's comment letter concerning the originally submitted Long Term Control Plan suggested the Borough seek community Development Block Grants to separate combined sewer areas. The Borough feels that performing any sanitary sewer separation would not be cost effective. The Borough is not proposing any construction to reduce the number of CSO events; they feel the continual implementation of the NMC's will help to reduce the number of CSO events. The Borough will also install flow meters in different areas of town to gather information on Infiltration and Inflow (I/I). The I/I data will be analyzed and the Borough will propose various activities, according to the information gathered. This action may also help to reduce the number of CSO events in the Borough.

The Borough will continue the implementation of their NMCs, which includes the development of a Combined Sewer System Operations and Maintenance Program, which will outline the procedures for the Borough employees. The Borough also has a clause within their rules and regulations that homeowners must have their service laterals tested before the sale of their home. This could help to reduce the infiltration and inflow (I/I) entering the system, which could help to reduce the number of CSO events.

A. Implementation of the Nine Minimum Controls

1. Proper Operation and Regular Maintenance Programs for the Sewer System and the CSO Outfalls

The Borough is planning to update their system maps to include sewer connection points, conveyance system flow meter locations and CSO structures.

The Borough is also reviewing the current operating procedures for the system and redesigning inspection logs. The Borough personnel inspect the CSO chambers and the stream after significant rain events for evidence of an overflow event. A visual inspection log will be designed for the Borough personnel to report and keep record of their findings. An Operation and Maintenance (O&M) Manual is being created for the Borough personnel to follow for CSO procedures. The O&M Manual will be submitted to the Department upon completion.

2. Maximum Use of the Collection System for Storage

The Borough will develop an O&M Program that will include an O&M Plan and Schedule, complete SOPs, detailed documentation forms and an organized method of record keeping. The sewer system will be televised on an as needed basis, utilizing an outside experienced contractor, to assist in performing preventative maintenance on the sewer system.

The active overflow in the Borough's system is Outfall 002, which is at the head of the Kinzua Road WWTP. The overflows at Outfall 002 can be attributed to the high flow at the WWTP. Therefore, it is believed the Borough maximizes the use of the collection system for storage.

3. Review and Modification of Pretreatment Requirements to Ensure that CSO Impacts are Minimized

There are no industrial users that contribute flow to the Borough's system and the small number of existing commercial and non-domestic customers contribute little flow. This flow is therefore being considered negligible. It was determined that any further action, with regards to this control, would not be cost effective.

4. Maximization of Flow to the POTW for Treatment

The Kinzua Road WWTP is rated for a peak capacity of 5.25 MGD. During intense rainfall events, the WWTP has experienced peak flows as high as 8.0 MGD. As previously discussed in Section II.C. of this report, the WWTP cannot treat a sustained flow of 5.0 MGD without risking washing out the sludge blankets, which could lead to an effluent NPDES violation. This shows the WWTP is maximizing its treatment capacity during wet weather flows. Therefore, the Borough does not plan to make any modifications to the WWTP to maximize treatment.

5. Elimination of Dry Weather CSOs

For the preparation of the LTCP, plant flows and overflow data was examined for a five-year period (1998 through 2002). During these five years, there were no dry weather overflows. Therefore, no further action is planned for this control.

6. Control of Solids and Floatable Material in CSOs

Outfall 002, at the Kinzua Road WWTP, has a coarse bar rack within the outfall pipe, to collect large solids and floatable material. Outfall 003 does not have any screens in the outfall pipe, but this outfall has not been active for years.

The Borough also has a street sweeping program, which helps to reduce the amount of solids and floatables that enter the CSS. The street sweeping program begins immediately after all of the snow has melted. From this point, the streets are swept six days a week for approximately sixteen hours a day. This schedule continues until all of the winter road maintenance material has been removed from the roadways. The street sweeping schedule is then reduced to Mondays and Fridays for eight hours a day, this continues until the first significant snowfall. Records are kept of when and for how long the streets are swept. The number of times the truck dumps the debris is also recorded.

7. Pollution Prevention Programs to Reduce Contaminants in CSOs

The Borough has a leaf/yard waste program, a street sweeping program, a recycling program, a curbside trash collection program and a public trash disposal program within the downtown area, all of which help to reduce the amount of contaminants entering the CSS. The street sweeping program was explained under control six. The recycling program allows residents to drop off aluminum, glass, plastics and newspapers.

The Borough's Street Department is responsible for cleaning and maintaining the catch basins. The Department uses a mechanical street cleaning vehicle, sewer vac unit, leaf collection unit and a wood chipper unit to aide in this program.

Currently the Borough is developing a program for cleaning and maintaining the catch basins. The schedule and work will be reported in the Borough's Annual CSO Report.

8. Public Notification to Ensure the Public Receives Adequate Notification of CSO Occurrences and CSO Impacts

The existing signs at the CSO outfalls state the Borough of Kane and the Number of the CSO. PA DEP suggested more specific language that should be included on the signs. These suggestions included a clear description of the nature of the CSO, a warning against water contact within at least 24 hours of an overflow event and the Borough phone number and a contact name. The Borough will place new signs at the outfall structures that contain the suggested information.

9. Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

As stated in Control 2, the Authority will develop an O&M Program. This new program will include a process and a documentation form for visual inspections of the stream after each rain and overflow event. This information will be reported with the CSO information as part of the Annual CSO Report.

The Borough purchased rainfall-recording equipment the week of July 21, 2003, to ensure more accurate rainfall data. The rain gauges will be installed as soon as they are received (one set for each drainage basin).

VI. Implementation Schedule and Financing Plan for Selected Control Options

No construction activities are being proposed in this LTCP. The Borough will continue the implementation of the Nine Minimum Technology Based Controls. Most of the costs associated with these activities are included within the Borough's budget.

VII. Post-Construction Monitoring Program

The Borough will continue to monitor and report overflow events at Outfalls 002 and 003. The Borough is not proposing any construction activities as part of this LTCP. The Borough is implementing their Nine Minimum Controls to satisfy the requirements of the CSO Control Policy.

A post-construction monitoring program has been developed for this LTCP. The Borough will take a dry weather sample upstream and downstream of Outfall 002, to be used as a control sample. This sample will be taken after 72 hours of dry weather. The downstream sample will be taken approximately 300 feet downstream of Outfall 002, on the right side of the stream bank. The wet weather event for the sampling will be chosen based upon the plant flow and the field conditions (i.e., daylight, stream flow).

After the approval of the Borough's LTCP, the Borough will collect six (6) wet weather overflow samples per year, to determine if the WWTP improvements are decreasing the water quality impacts of the overflows.

All of the above mentioned samples will be analyzed for the following parameters:

- Ph
- Biochemical Oxygen Demand (5-Day)
- Fecal Coliform
- Dissolved Oxygen
- Ammonia Nitrogen
- Total Suspended Solids
- Temperature

Attachment A-6

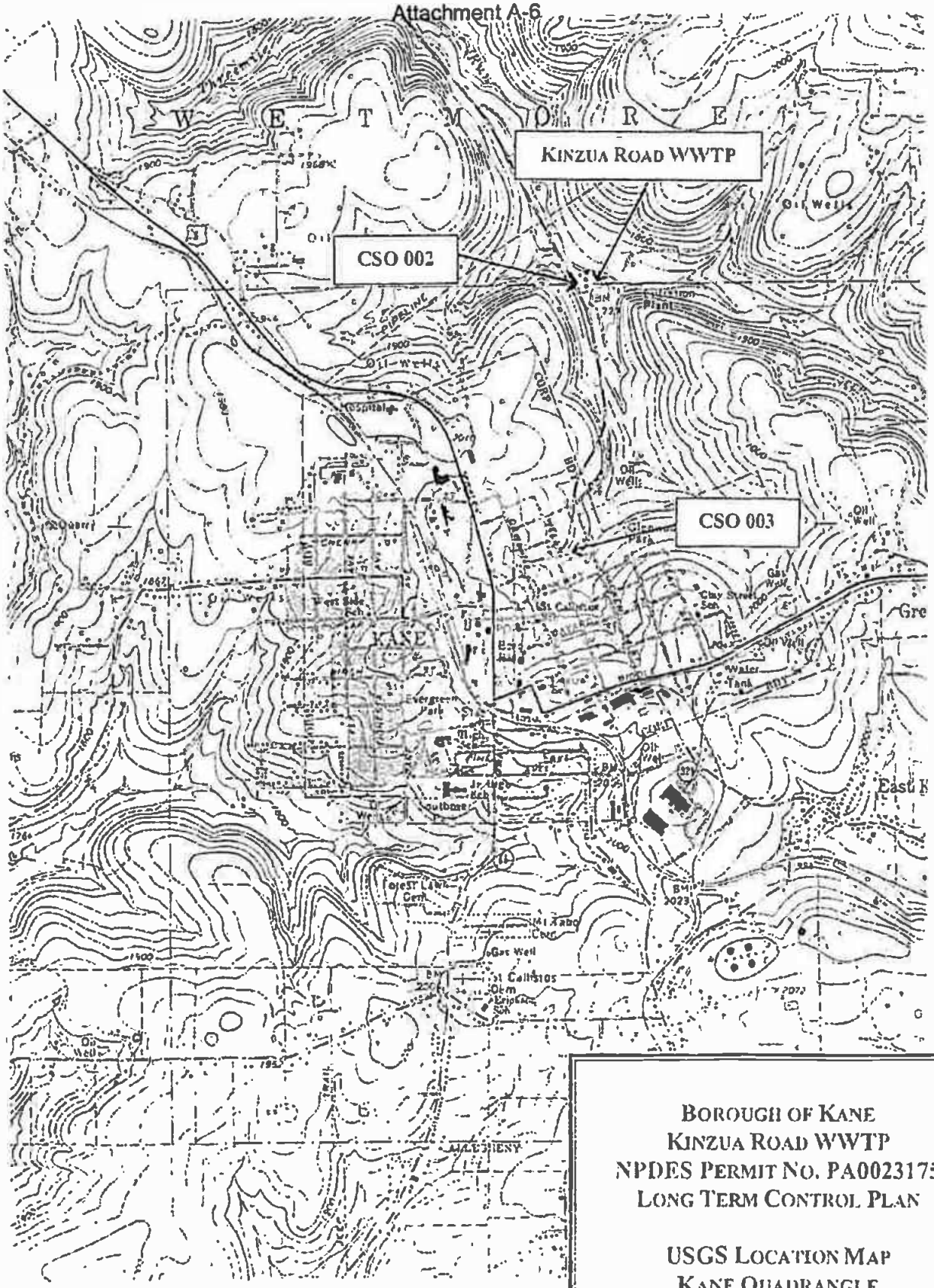
Appendix A

Sewer Plot Plan

Appendix B

CSO Location Map

Attachment A-6

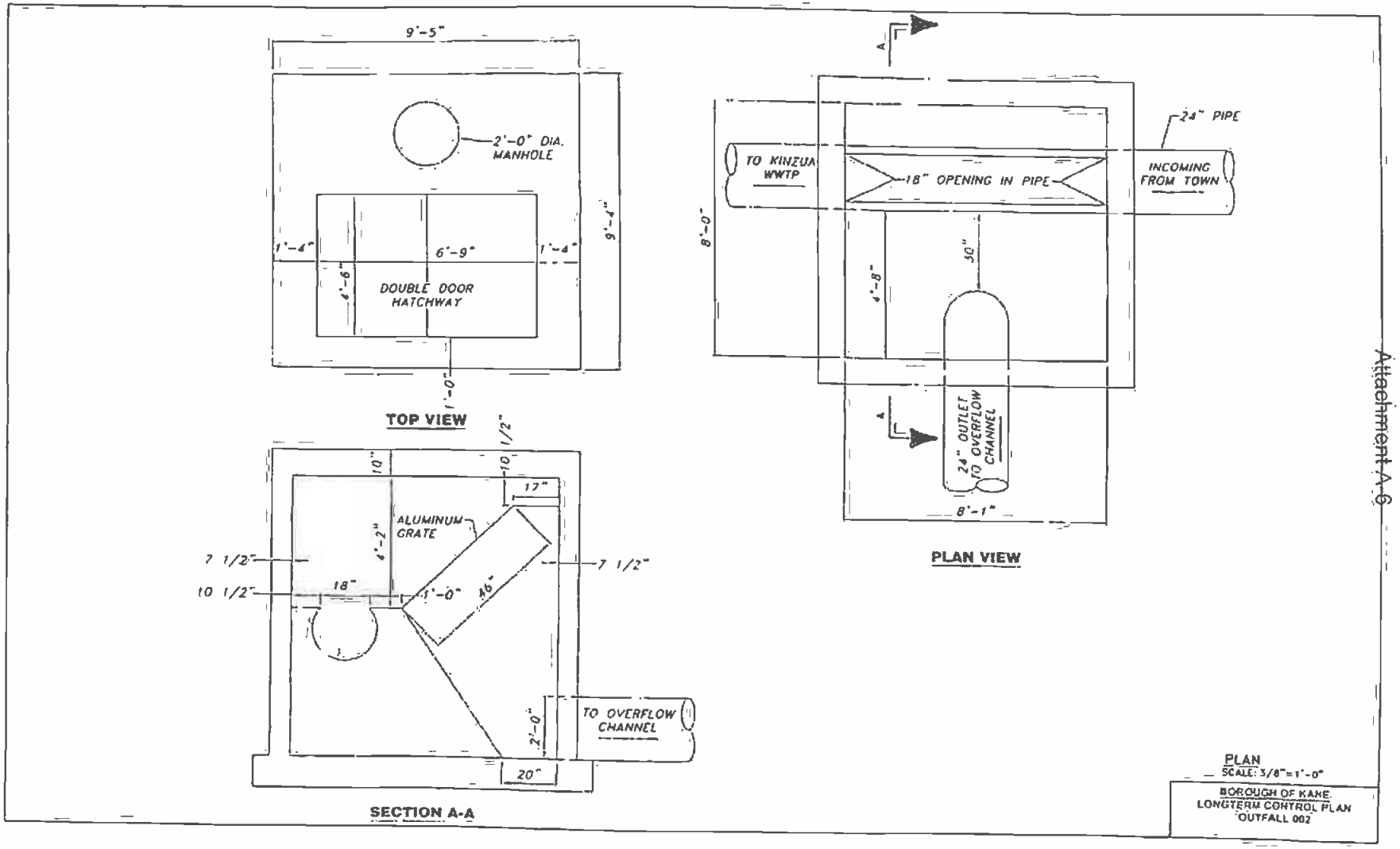


BOROUGH OF KANE
KINZUA ROAD WWTP
NPDES PERMIT NO. PA0023175
LONG TERM CONTROL PLAN

USGS LOCATION MAP
KANE QUADRANGLE

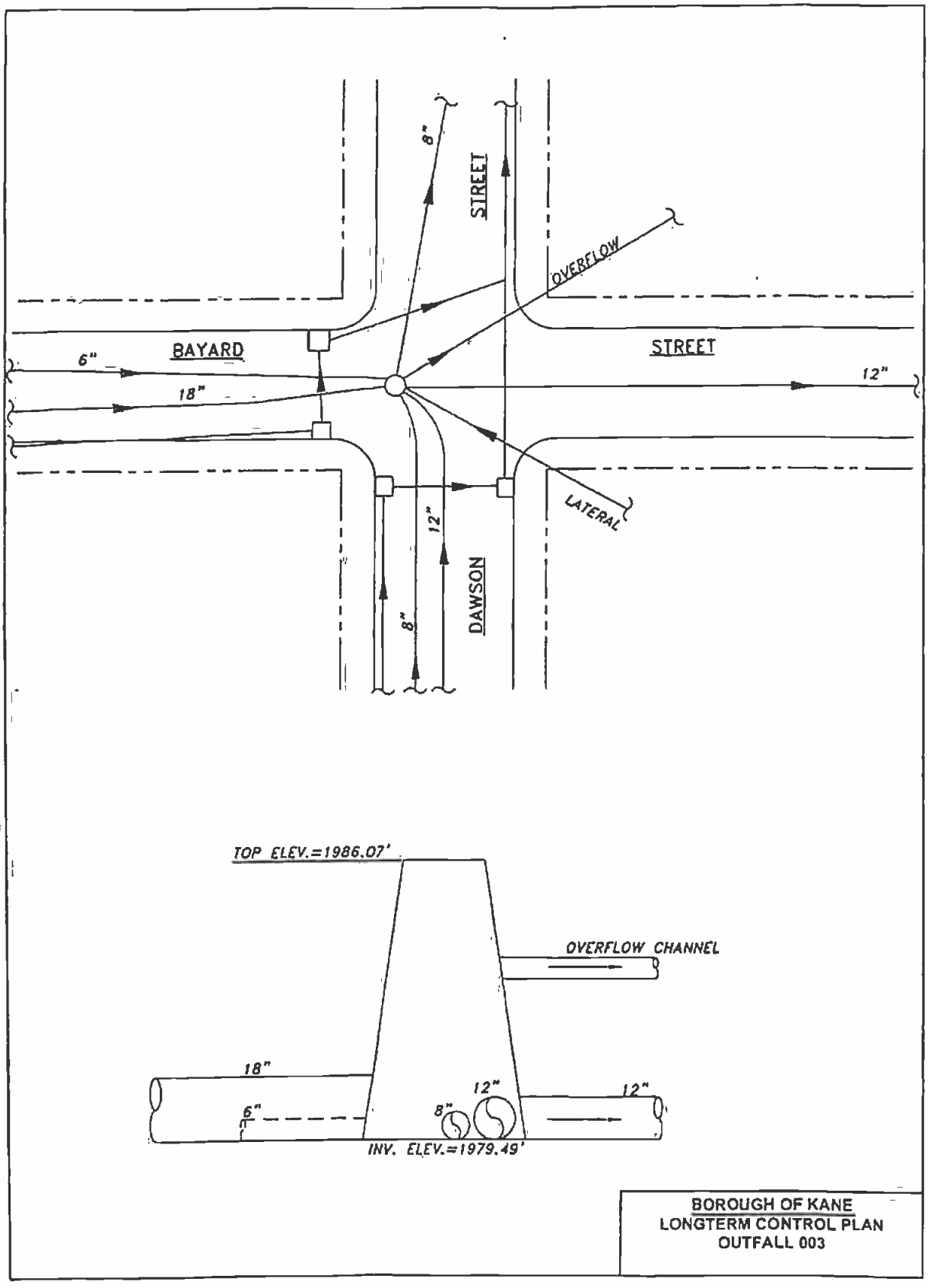
Appendix C

Schematics of Outfall 002 and Outfall 003



Attachment A-6

Attachment A-6



Appendix D

Summary of Combined Sewer Overflow Events

Attachment A-6

Table 1
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
1998

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
1/3/1998	0.01	0.121		0.113	0.0066	0.75				0.0000	0.0066	100.00%
1/4/1998	0.18	1.155		0.113	0.0541	1.25				0.0000	0.0541	100.00%
1/5/1998	0.03	1.024		0.113	0.0190	0.50				0.0000	0.0190	100.00%
1/6/1998	0.02	0.971		0.113	0.0089	0.25				0.0000	0.0089	100.00%
1/7/1998	0.03	1.310		0.113	0.0646	0.50				0.0000	0.0646	100.00%
1/8/1998	1.13	[illegible]		0.113	0.5083	3.25				0.0000	0.5083	100.00%
1/9/1998	1.03	1.618		0.113	0.2294	3.00				0.0000	0.2294	100.00%
1/10/1998	0.02	1.195		0.113	0.0113	0.25				0.0000	0.0113	100.00%
1/13/1998	0.07	0.680		0.113	0.0118	0.50				0.0000	0.0118	100.00%
1/14/1998	0.13	0.453		0.113	0.0106	0.75				0.0000	0.0106	100.00%
1/16/1998	0.10	0.350		0.113	0.0051	0.50				0.0000	0.0051	100.00%
1/17/1998	0.01	0.395		0.113	0.0029	0.25				0.0000	0.0029	100.00%
1/18/1998	0.05	0.364		0.113	0.0026	0.25				0.0000	0.0026	100.00%
1/19/1998	0.12	0.336		0.113	0.0042	0.50				0.0000	0.0042	100.00%
1/20/1998	0.05	0.303		0.113	0.0040	0.50				0.0000	0.0040	100.00%
1/21/1998	0.01	0.289		0.113	0.0018	0.25				0.0000	0.0018	100.00%
1/23/1998	0.21	0.618		0.113	0.0105	0.50				0.0000	0.0105	100.00%
1/24/1998	0.45	0.390		0.113	0.0090	0.75				0.0000	0.0090	100.00%
1/25/1998	0.02	0.352		0.113	0.0025	0.25				0.0000	0.0025	100.00%
1/26/1998	0.02	0.333		0.113	0.0021	0.25				0.0000	0.0021	100.00%
1/30/1998	0.16	0.205		0.113	0.0019	0.50				0.0000	0.0019	100.00%
1/31/1998	0.03	0.171		0.113	0.0054	0.50				0.0000	0.0054	100.00%
2/12/1998	0.30	0.428		0.113	0.0099	0.75				0.0000	0.0099	100.00%
2/13/1998	0.12	0.317		0.113	0.0043	0.50				0.0000	0.0043	100.00%
2/16/1998	0.20	0.496		0.113	0.0120	0.75				0.0000	0.0120	100.00%
2/17/1998	0.36	0.848		0.113	0.0383	1.25				0.0000	0.0383	100.00%
2/18/1998	0.20	0.791		0.113	0.0212	0.75				0.0000	0.0212	100.00%
2/19/1998	0.14	0.573		0.113	0.0096	0.50				0.0000	0.0096	100.00%
2/20/1998	0.05	0.614		0.113	0.0104	0.50				0.0000	0.0104	100.00%
2/21/1998	0.10	0.483		0.113	0.0077	0.50				0.0000	0.0077	100.00%
2/24/1998	0.30	0.512		0.113	0.0166	1.00				0.0000	0.0166	100.00%
2/25/1998	0.14	0.342		0.113	0.0056	0.50				0.0000	0.0056	100.00%
2/26/1998	0.60	1.075		0.113	0.0702	1.75				0.0000	0.0702	100.00%
3/2/1998	0.07	0.366		0.113	0.0136	0.50				0.0000	0.0136	100.00%
3/4/1998	0.20	0.471		0.113	0.0112	0.75				0.0000	0.0112	100.00%
3/6/1998	0.40	0.797		0.113	0.0357	1.25				0.0000	0.0357	100.00%
3/9/1998	0.45	0.961		0.113	0.0530	1.50				0.0000	[illegible]	100.00%
3/11/1998	0.07	0.496		0.113	0.0080	0.50				0.0000	0.0081	100.00%
3/12/1998	0.04	0.436		0.113	0.0067	0.50				0.0000	0.0067	100.00%
3/13/1998	0.06	0.451		0.113	0.0071	0.50				0.0000	0.0071	100.00%
3/14/1998	0.21	0.409		0.113	0.0093	0.75				0.0000	0.0093	100.00%
3/15/1998	0.11	0.412		0.113	0.0062	0.50				0.0000	0.0062	100.00%
3/16/1998	0.14	0.367		0.113	0.0027	0.25				0.0000	0.0027	100.00%
3/18/1998	0.20	0.686		0.113	0.0179	0.75				0.0000	0.0179	100.00%
3/19/1998	0.14	0.606		0.113	0.0119	0.50				0.0000	0.0119	100.00%
3/20/1998	0.02	0.622		0.113	0.0053	0.25				0.0000	0.0053	100.00%
3/21/1998	0.40	0.785		0.113	0.0350	1.25				0.0000	0.0350	100.00%
3/22/1998	0.18	0.609		0.113	0.0103	0.50				0.0000	0.0103	100.00%
3/23/1998	0.10	0.574		0.113	0.0096	0.50				0.0000	0.0096	100.00%
3/28/1998	0.15	0.543		0.113	0.0090	0.50				0.0000	0.0090	100.00%
4/1/1998	0.36	0.480		0.113	0.0230	1.50				0.0000	0.0230	100.00%
4/3/1998	0.02	0.391		0.113	0.0058	0.50				0.0000	0.0058	100.00%
4/9/1998	1.50	[illegible]		0.113	0.2904	4.00	0.17	[illegible]		0.0002	0.2906	99.94%

Attachment A-6

Table 1 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
1998

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
4/14/1998	0.60	0.980		0.113	0.0877	1.75				0.0000	0.0877	100.00%
4/17/1998	0.10	0.985		0.113	0.0078	0.50				0.0000	0.0078	100.00%
4/19/1998	0.10	1.056		0.113	0.1769	2.75				0.0000	0.1769	100.00%
4/20/1998	0.20	0.987		0.113	0.0273	0.75				0.0000	0.0273	100.00%
4/23/1998	0.02	0.998		0.113	0.0051	0.25				0.0000	0.0051	100.00%
4/26/1998	1.20	1.081		0.113	0.1112	2.75				0.0000	0.1112	100.00%
5/2/1998	0.05	0.996	1.200	0.113	0.0101	0.50				0.0000	0.0101	100.00%
5/2/1998	0.60	0.736	1.600	0.113	0.0391	1.50				0.0000	0.0391	100.00%
5/3/1998	0.10	0.612	1.000	0.113	0.0208	0.50				0.0000	0.0208	100.00%
5/4/1998	0.80	0.832	3.200	0.113	0.0375	1.25				0.0000	0.0375	100.00%
5/5/1998	0.20	0.764	1.500	0.113	0.0294	0.75				0.0000	0.0294	100.00%
5/8/1998	0.20	0.628	1.050	0.113	0.0161	0.75				0.0000	0.0161	100.00%
5/10/1998	0.20	0.674	0.995	0.113	0.0177	0.75				0.0000	0.0177	100.00%
5/11/1998	1.80	1.549	3.600	0.113	0.1341	2.25				0.0000	0.1341	100.00%
5/12/1998	0.10	0.857	1.100	0.113	0.0155	0.50				0.0000	0.0155	100.00%
5/16/1998	0.44	0.622	0.500	0.113	0.0291	1.25	0.25	0.011		0.0016	0.0297	94.61%
5/30/1998	0.02	0.320	0.685	0.113	0.0022	0.25				0.0000	0.0022	100.00%
5/31/1998	0.40	0.452	3.100	0.113	0.0177	1.25	0.17	0.001		0.0001	0.0177	99.21%
6/1/1998	0.02	0.478	0.350	0.113	0.0152	0.50				0.0000	0.0152	100.00%
6/2/1998	0.60	0.320	1.100	0.113	0.0151	1.75				0.0000	0.0151	100.00%
6/6/1998	0.09	0.327	0.995	0.113	0.0049	0.50				0.0000	0.0049	100.00%
6/8/1998	0.01	0.316	0.350	0.113	0.0021	0.25				0.0000	0.0021	100.00%
6/11/1998	0.30	1.067	6.500	0.113	0.0398	2.00	2.00	0.003		0.0035	0.0432	92.00%
6/12/1998	1.60	0.365	1.250	0.113	0.0466	3.00				0.0000	0.0466	100.00%
6/13/1998	0.02	0.422	1.700	0.113	0.0032	0.25				0.0000	0.0032	100.00%
6/14/1998	0.02	0.379	0.660	0.113	0.0028	0.25				0.0000	0.0028	100.00%
6/15/1998	0.20	0.629	3.900	0.113	0.0215	1.00				0.0000	0.0215	100.00%
6/16/1998	0.30	0.460	2.000	0.113	0.0131	0.75				0.0000	0.0131	100.00%
6/17/1998	0.10	0.428	1.000	0.113	0.0064	0.50				0.0000	0.0064	100.00%
6/18/1998	0.10	0.368	0.610	0.113	0.0053	0.50				0.0000	0.0053	100.00%
6/20/1998	0.01	0.338	0.460	0.113	0.0025	0.25				0.0000	0.0025	100.00%
6/23/1998	0.06	0.333	0.350	0.113	0.0046	0.50				0.0000	0.0046	100.00%
6/24/1998	0.10	0.322	1.150	0.113	0.0044	0.50				0.0000	0.0044	100.00%
6/28/1998	0.01	0.311	0.665	0.113	0.0021	0.25				0.0000	0.0021	100.00%
6/30/1998	1.00	1.273	2.650	0.113	0.2176	4.50	1.25	0.025	2.000	0.0044	0.2219	98.00%
7/5/1998	0.01	0.349	0.605	0.113	0.0025	0.25				0.0000	0.0025	100.00%
7/7/1998	0.10	0.549	1.400	0.113	0.0117	1.00				0.0000	0.0117	100.00%
7/18/1998	0.05	0.291	0.660	0.113	0.0039	0.25				0.0000	0.0039	100.00%
7/19/1998	0.11	0.354	0.450	0.113	0.0050	0.50				0.0000	0.0050	100.00%
7/21/1998	0.14	0.318	0.900	0.113	0.0043	0.50				0.0000	0.0043	100.00%
7/23/1998	0.50	0.380	1.000	0.113	0.0142	1.50				0.0000	0.0142	100.00%
8/9/1998	1.80	0.482	6.400	0.113	0.0462	3.00	0.25	0.068		0.0085	0.0547	84.46%
8/10/1998	1.30	0.482	6.400	0.113	0.0462	3.00	1.00	0.022		0.0028	0.0489	94.38%
8/13/1998	0.10	0.325	0.665	0.113	0.0044	0.50				0.0000	0.0044	100.00%
8/14/1998	2.90	1.014	6.150	0.113	0.1406	2.75	3.00	0.182		0.0205	0.1814	89.15%
8/15/1998	0.70	0.636	1.200	0.113	0.0117	0.50				0.0000	0.0117	100.00%
8/27/1998	0.10	0.518	1.300	0.113	0.0084	0.50				0.0000	0.0084	100.00%
8/31/1998	0.15	0.484	0.825	0.113	0.0116	0.75				0.0000	0.0116	100.00%
9/19/1998	0.13	0.411	0.685	0.113	0.0062	0.50				0.0000	0.0062	100.00%
9/24/1998	0.30	0.490	4.150	0.113	0.0141	1.00				0.0000	0.0141	100.00%
9/25/1998	0.10	0.364	1.000	0.113	0.0052	0.50				0.0000	0.0052	100.00%
9/27/1998	0.10	0.326	0.590	0.113	0.0044	0.50				0.0000	0.0044	100.00%
9/28/1998	0.30	0.462	1.250	0.113	0.0148	1.00				0.0000	0.0148	100.00%

Attachment A-6

Table 1 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
1998

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
8/30/1998	0.10	0.419	2.630	0.113	[illegible]	0.50				0.0000	0.0064	100.00%
8/31/1998	0.18	0.331	0.900	0.113	0.0046	0.50				0.0000	0.0046	100.00%
9/2/1998	0.15	0.336	—	0.113	0.0047	0.50				0.0000	0.0047	100.00%
9/7/1998	0.34	0.442		0.113	0.0137	1.00				0.0000	0.0137	100.00%
9/8/1998	0.10	0.402		0.113	0.0060	0.50				0.0000	0.0060	100.00%
9/9/1998	0.18	0.360		0.113	0.0077	0.75				0.0000	0.0077	100.00%
9/15/1998	0.07	0.296		0.113	0.0038	0.50				0.0000	0.0038	100.00%
9/17/1998	0.12	0.264		0.113	0.0019	0.50				0.0000	0.0019	100.00%
9/19/1998	0.50	0.544	0.544	0.113	0.0225	1.25	0.17	0.001		0.0001	0.0225	99.77%
9/20/1998	0.10	0.452	0.544	0.113	0.0071	0.50	0.17	0.001		0.0002	0.0071	99.71%
9/21/1998	0.20	0.367		0.113	0.0080	0.25				0.0000	0.0080	100.00%
9/22/1998	0.16	0.386	—	0.113	0.0057	0.50				0.0000	0.0057	100.00%
9/26/1998	0.10	0.311		0.113	0.0042	0.50				0.0000	0.0042	100.00%
9/28/1998	0.07	0.315		0.113	0.0042	0.50				0.0000	0.0042	100.00%
10/1/1998	0.06	0.299	0.340	0.113	0.0039	0.50				0.0000	0.0039	100.00%
10/3/1998	0.40	0.495	1.700	0.113	0.0199	1.25				0.0000	0.0199	100.00%
10/7/1998	0.90	1.690	6.550	0.113	0.1322	2.00	0.25	0.017		0.0014	0.1336	98.95%
10/8/1998	1.10	1.029	2.700	0.113	0.1146	3.00				0.0000	0.1146	100.00%
10/9/1998	0.17	0.754	1.500	0.113	0.0200	0.75				0.0000	0.0200	100.00%
10/14/1998	0.15	0.429	0.720	0.113	0.0066	0.50				0.0000	0.0066	100.00%
10/19/1998	0.25	0.455	1.500	0.113	0.0143	1.00				0.0000	0.0143	100.00%
10/21/1998	0.05	0.333	0.495	0.113	0.0046	0.50				0.0000	0.0046	100.00%
10/22/1998	0.09	0.320	0.440	0.113	0.0013	0.50				0.0000	0.0013	100.00%
10/23/1998	0.02	0.289	0.445	0.113	0.0018	0.25				0.0000	0.0018	100.00%
10/28/1998	0.20	0.347	0.990	0.113	0.0073	0.75				0.0000	0.0073	100.00%
10/29/1998	0.10	0.280	0.445	0.113	0.0035	0.50				0.0000	0.0035	100.00%
11/7/1998	0.01	0.291	0.500	0.113	0.0019	0.25				0.0000	0.0019	100.00%
11/8/1998	0.14	0.289	0.445	0.113	0.0036	0.50				0.0000	0.0036	100.00%
11/9/1998	0.01	0.293	1.400	0.113	0.0019	0.25				0.0000	0.0019	100.00%
11/10/1998	0.50	0.499	2.900	0.113	0.0242	1.50				0.0000	0.0242	100.00%
11/15/1998	0.03	0.261	0.500	0.113	0.0018	0.25				0.0000	0.0018	100.00%
11/18/1998	0.02	0.256	0.490	0.113	0.0015	0.25				0.0000	0.0015	100.00%
11/20/1998	0.30	0.371	1.200	0.113	0.0109	1.00				0.0000	0.0109	100.00%
11/21/1998	0.10	0.271	0.390	0.113	0.0033	0.50				0.0000	0.0033	100.00%
11/26/1998	0.12	0.293	0.775	0.113	0.0038	0.50				0.0000	0.0038	100.00%
11/28/1998	0.02	0.260	0.400	0.113	0.0035	0.50				0.0000	0.0035	100.00%
12/1/1998	0.24	0.292	0.440	0.113	0.0071	1.00				0.0000	0.0071	100.00%
12/3/1998	0.21	0.302	0.530	0.113	0.0059	0.75				0.0000	0.0059	100.00%
12/7/1998	0.06	0.280	0.500	0.113	0.0035	0.50				0.0000	0.0035	100.00%
12/9/1998	0.02	0.241	0.445	0.113	0.0013	0.25				0.0000	0.0013	100.00%
12/17/1998	0.30	0.253	0.390	0.113	0.0059	1.00				0.0000	0.0059	100.00%
12/19/1998	0.10	0.354	1.150	0.113	0.0050	0.50				0.0000	0.0051	100.00%
12/20/1998	0.07	0.344	0.500	0.113	0.0048	0.50				0.0000	0.0048	100.00%
12/21/1998	1.80	2.078	4.900	0.113	0.3685	4.50	2.42	0.079		0.0148	0.3833	96.14%
12/22/1998	0.10	0.817	1.400	0.113	0.0147	0.50				0.0000	0.0147	100.00%
12/25/1998	0.02	0.388	0.660	0.113	0.0029	0.25				0.0000	0.0029	100.00%
12/29/1998	0.10	0.317	0.665	0.113	0.0043	0.50				0.0000	0.0043	100.00%
12/31/1998	0.10	0.261	0.445	0.113	0.0031	0.50				0.0000	0.0031	100.00%
TOTALS	41.48	90.850	141.498	17.325	4.2059	131.00	11.58	0.449	2.8500	0.0550	4.2629	98.66% AVERAGE

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Table 2
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
1999

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
1/3/1999	0.00	0.256	0.441	0.113	0.0000	1.50				0.0000	0.0000	100.00%
1/7/1999	0.20	0.281	0.445	0.113	0.0053	0.75				0.0000	0.0053	100.00%
1/8/1999	0.01	0.259	0.360	0.113	0.0168	2.75				0.0000	0.0168	100.00%
1/14/1999	0.02	0.224	0.185	0.113	0.0012	0.25				0.0000	0.0012	100.00%
1/15/1999	0.01	0.212	0.335	0.113	0.0010	0.25				0.0000	0.0010	100.00%
1/16/1999	0.23	0.238	0.360	0.113	0.0039	0.75				0.0000	0.0039	100.00%
1/18/1999	0.36	0.269	0.360	0.113	0.0065	1.00				0.0000	0.0065	100.00%
1/19/1999	0.01	0.250	0.495	0.113	0.0072	1.25				0.0000	0.0072	100.00%
1/27/1999	0.26	0.241	0.385	0.113	0.0040	0.75				0.0000	0.0040	100.00%
1/29/1999	0.46	0.487	1.500	0.113	0.0195	1.25				0.0000	0.0195	100.00%
1/31/1999	0.58	0.397	0.775	0.113	0.0148	1.25				0.0000	0.0148	100.00%
2/14/1999	1.00	0.360	0.440	0.113	0.0225	2.75				0.0000	0.0225	100.00%
2/19/1999	0.30	0.271	0.360	0.113	0.0083	1.25				0.0000	0.0083	100.00%
2/17/1999	0.58	0.674	1.700	0.113	0.0234	1.00				0.0000	0.0234	100.00%
2/18/1999	0.60	1.370	2.150	0.113	0.0069	0.75				0.0000	0.0069	100.00%
2/22/1999	0.30	2.512	3.450	0.113	0.0148	0.50				0.0000	0.0148	100.00%
2/23/1999	0.40	5.052	5.300	0.113	0.1544	0.75	10.25	0.536		0.0168	0.1711	90.21%
2/24/1999	0.50	2.741	5.000	0.113	0.0548	0.50				0.0000	0.0548	100.00%
2/25/1999	0.04	1.853	3.350	0.113	0.0139	0.25				0.0000	0.0139	100.00%
2/26/1999	0.15	0.927	1.350	0.113	0.0170	0.50				0.0000	0.0170	100.00%
2/27/1999	0.20	0.774	1.350	0.113	0.0345	1.25				0.0000	0.0345	100.00%
2/28/1999	0.41	1.299	2.100	0.113	0.0618	1.25				0.0000	0.0618	100.00%
2/28/1999	0.24	0.873	1.100	0.113	0.0238	0.75				0.0000	0.0238	100.00%
2/27/1999	0.40	0.569	0.775	0.113	0.0238	1.25				0.0000	0.0238	100.00%
2/28/1999	0.10	0.280	0.450	0.113	0.0035	0.50				0.0000	0.0035	100.00%
2/12/1999	0.30	1.096	2.000	0.113	0.0205	0.50				0.0000	0.0205	100.00%
2/13/1999	0.10	0.674	1.100	0.113	0.0117	0.50				0.0000	0.0117	100.00%
2/12/1999	0.03	0.603	0.770	0.113	0.0051	0.25				0.0000	0.0051	100.00%
2/21/1999	0.02	0.383	0.600	0.113	0.0028	0.25				0.0000	0.0028	100.00%
2/26/1999	0.02	0.299	0.439	0.113	0.0030	0.50				0.0000	0.0030	100.00%
2/28/1999	0.40	0.941	1.500	0.113	0.0223	1.25				0.0000	0.0223	100.00%
3/1/1999	0.10	0.386	0.491	0.113	0.0065	0.75				0.0000	0.0065	100.00%
3/22/1999	0.30	0.350	0.560	0.113	0.0056	0.50				0.0000	0.0056	100.00%
3/3/1999	0.90	0.854	1.600	0.113	0.0772	2.50				0.0000	0.0772	100.00%
3/4/1999	0.30	0.865	0.710	0.113	0.0147	1.00				0.0000	0.0147	100.00%
3/6/1999	0.20	0.362	0.600	0.113	0.0225	2.00				0.0000	0.0225	100.00%
3/10/1999	0.02	0.343	0.490	0.113	0.0024	0.25				0.0000	0.0024	100.00%
3/19/1999	0.60	0.516	1.150	0.113	0.0042	0.25				0.0000	0.0042	100.00%
3/21/1999	0.10	0.502	0.820	0.113	0.0101	0.50				0.0000	0.0101	100.00%
3/22/1999	0.10	0.503	1.100	0.113	0.0081	0.50				0.0000	0.0081	100.00%
3/23/1999	0.11	0.545	1.000	0.113	0.0090	0.50				0.0000	0.0090	100.00%
4/1/1999	0.25	0.586	1.250	0.113	0.0364	1.00				0.0000	0.0364	100.00%
4/2/1999	0.34	0.766	0.875	0.113	0.0309	1.25				0.0000	0.0309	100.00%
4/3/1999	0.10	0.699	1.000	0.113	0.0122	0.50				0.0000	0.0122	100.00%
4/4/1999	0.30	0.844	1.500	0.113	0.0305	1.00				0.0000	0.0305	100.00%
4/5/1999	0.24	0.699	0.939	0.113	0.0241	1.00				0.0000	0.0241	100.00%
4/7/1999	0.01	0.568	1.000	0.113	0.0047	0.25				0.0000	0.0047	100.00%
4/8/1999	0.02	0.518	1.200	0.113	0.0042	0.25				0.0000	0.0042	100.00%
4/9/1999	1.21	1.754	4.000	0.113	0.2229	3.25				0.0000	0.2229	100.00%
4/11/1999	0.33	1.000	2.000	0.113	0.0373	1.00				0.0000	0.0373	100.00%
4/16/1999	0.70	0.985	1.400	0.113	0.0727	2.00				0.0000	0.0727	100.00%
4/17/1999	0.10	1.100	1.500	0.113	0.0414	1.25				0.0000	0.0414	100.00%
4/18/1999	0.10	0.824	1.000	0.113	0.0148	0.50				0.0000	0.0148	100.00%

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Table 3 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
1999

Date	Rain / Snow Fall (inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
4/19/1999	0.10	0.066	1.150	0.113	0.0157	0.50				0.0000	0.0157	100.00%
4/20/1999	0.20	0.732	1.200	0.113	0.0194	0.25				0.0000	0.0194	100.00%
4/22/1999	0.01	0.076	0.900	0.113	0.0164	0.25				0.0000	0.0164	100.00%
4/23/1999	0.56	1.200	2.600	0.113	0.0736	1.50				0.0000	0.0736	100.00%
5/7/1999	0.10	0.066	0.900	0.113	0.0157	0.50	0.75	0.0014		0.0001	0.0160	99.38%
5/8/1999	1.78	0.902	3.900	0.113	0.1316	4.00				0.0000	0.1316	100.00%
5/9/1999	0.10	0.582	0.420	0.113	0.0083	0.50				0.0000	0.0083	100.00%
5/14/1999	0.02	0.388	0.945	0.113	0.0020	0.25				0.0000	0.0020	100.00%
5/18/1999	0.25	0.338	0.765	0.113	0.0069	0.75				0.0000	0.0069	100.00%
5/22/1999	0.05	0.347	1.450	0.113	0.0049	0.50				0.0000	0.0049	100.00%
5/25/1999	1.10	0.777	3.500	0.113	0.0831	3.00				0.0000	0.0831	100.00%
5/26/1999	0.10	0.368	0.800	0.113	0.0053	0.50				0.0000	0.0053	100.00%
6/1/1999	0.20	0.302	0.875	0.113	0.0118	1.50				0.0000	0.0118	100.00%
6/2/1999	0.10	0.302	1.100	0.113	0.0039	0.50				0.0000	0.0039	100.00%
6/10/1999	0.01	0.252	0.650	0.113	0.0014	0.25				0.0000	0.0014	100.00%
6/15/1999	0.02	0.248	0.455	0.113	0.0014	0.25				0.0000	0.0014	100.00%
6/17/1999	0.38	0.245	0.710	0.113	0.0028	0.50				0.0000	0.0028	100.00%
6/18/1999	0.04	0.227	0.430	0.113	0.0012	0.25				0.0000	0.0012	100.00%
6/22/1999	0.55	0.319	1.150	0.113	0.0063	0.75				0.0000	0.0063	100.00%
6/29/1999	0.25	0.480	0.450	0.113	0.0136	2.00	0.33	0.0004		0.0002	0.0138	98.79%
6/30/1999	0.01	0.224	0.430	0.113	0.0034	0.50				0.0000	0.0034	100.00%
7/1/1999	0.70	0.569	0.800	0.113	0.0133	0.75	0.50	0.0021		0.0015	0.0348	95.60%
7/2/1999	0.10	0.287	0.595	0.113	0.0016	0.50				0.0000	0.0016	100.00%
7/6/1999	0.40	0.405	2.500	0.113	0.0183	1.50				0.0000	0.0183	100.00%
7/9/1999	0.60	0.528	5.450	0.113	0.0260	3.50	0.17	0.1001		0.0001	0.0261	99.76%
7/11/1999	0.02	0.260	0.485	0.113	0.0015	0.25				0.0000	0.0015	100.00%
7/13/1999	0.02	0.257	1.100	0.113	0.0015	0.25				0.0000	0.0015	100.00%
7/19/1999	0.20	0.303	1.250	0.113	0.0068	0.25				0.0000	0.0068	100.00%
7/20/1999	0.10	0.303	0.588	0.113	0.0048	0.50				0.0000	0.0048	100.00%
7/22/1999	0.20	0.258	1.000	0.113	0.0043	0.75				0.0000	0.0043	100.00%
7/25/1999	0.34	0.353	5.300	0.113	0.0075	0.75	0.17	0.0001		0.0000	0.0075	99.59%
7/29/1999	0.31	0.249	0.810	0.113	0.0065	1.50				0.0000	0.0065	100.00%
7/30/1999	0.01	0.219	0.430	0.113	0.0011	0.25				0.0000	0.0011	100.00%
7/31/1999	0.50	0.360	4.200	0.113	0.0144	1.25				0.0000	0.0144	100.00%
8/1/1999	0.10	0.244	0.465	0.113	0.0041	0.75				0.0000	0.0041	100.00%
8/4/1999	0.01	0.278	1.150	0.113	0.0054	0.50				0.0000	0.0054	100.00%
8/5/1999	0.21	0.248	1.200	0.113	0.0062	0.75				0.0000	0.0062	100.00%
8/6/1999	0.16	0.215	0.455	0.113	0.0038	0.75				0.0000	0.0038	100.00%
8/8/1999	0.04	0.125	1.000	0.113	0.0011	1.25				0.0000	0.0011	100.00%
8/11/1999	0.05	0.236	0.490	0.113	0.0013	0.25				0.0000	0.0013	100.00%
8/13/1999	0.20	0.267	0.900	0.113	0.0048	0.75				0.0000	0.0048	100.00%
8/14/1999	0.10	0.242	0.595	0.113	0.0027	0.50				0.0000	0.0027	100.00%
8/19/1999	1.11	0.990	5.050	0.113	0.0398	2.00	0.17	0.0001		0.0001	0.0399	99.75%
8/20/1999	2.30	1.056	5.900	0.113	0.1571	4.00	0.83	0.0109		0.0174	0.1745	99.99%
8/24/1999	0.10	0.285	1.350	0.113	0.0036	0.50				0.0000	0.0036	100.00%
8/26/1999	0.10	0.284	0.930	0.113	0.0036	0.50				0.0000	0.0036	100.00%
8/27/1999	0.01	0.248	0.450	0.113	0.0014	0.25				0.0000	0.0014	100.00%
9/6/1999	0.40	0.392	1.850	0.113	0.0146	1.25				0.0000	0.0146	100.00%
9/7/1999	0.10	0.244	0.485	0.113	0.0027	0.50				0.0000	0.0027	100.00%
9/10/1999	0.08	0.231	0.595	0.113	0.0025	0.50				0.0000	0.0025	100.00%
9/13/1999	0.20	0.249	0.935	0.113	0.0043	0.75				0.0000	0.0043	100.00%
9/14/1999	0.10	0.233	0.450	0.113	0.0025	0.50				0.0000	0.0025	100.00%
9/18/1999	0.08	0.229	0.600	0.113	0.0024	0.25				0.0000	0.0024	100.00%

Attachment A-6

Table 1 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
1999

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
9/13/1999	0.10	0.236	0.335	0.113	0.0026	0.50				0.0000	0.0026	100.00%
9/20/1999	0.28	0.330	0.690	0.113	0.0068	0.25				0.0000	0.0068	100.00%
9/21/1999	0.10	0.245	0.475	0.113	0.0028	0.50				0.0000	0.0028	100.00%
9/25/1999	0.05	0.238	0.180	0.113	0.0026	0.50				0.0000	0.0026	100.00%
9/29/1999	2.46	2.300	3.000	0.113	0.3626	4.00	1.67	0.215		0.0359	0.4004	91.05%
9/30/1999	0.40	0.600	1.500	0.113	0.0256	1.25				0.0000	0.0256	100.00%
10/4/1999	0.03	0.291	0.500	0.113	0.0019	0.25				0.0000	0.0019	100.00%
10/8/1999	0.20	0.358	1.200	0.113	0.0077	0.75				0.0000	0.0077	100.00%
10/9/1999	0.10	0.269	0.555	0.113	0.0037	0.50				0.0000	0.0037	100.00%
10/12/1999	0.10	0.270	0.400	0.113	0.0031	0.50				0.0000	0.0031	100.00%
10/13/1999	0.23	0.385	1.500	0.113	0.0321	2.00				0.0000	0.0321	100.00%
10/18/1999	0.06	0.275	0.430	0.113	0.0034	0.50				0.0000	0.0034	100.00%
10/20/1999	0.07	0.273	0.500	0.113	0.0034	0.50				0.0000	0.0034	100.00%
10/23/1999	0.30	0.379	0.695	0.113	0.0111	1.00				0.0000	0.0111	100.00%
10/24/1999	0.10	0.319	0.600	0.113	0.0033	0.50				0.0000	0.0033	100.00%
11/1/1999	0.02	0.259	0.495	0.113	0.0031	0.50				0.0000	0.0031	100.00%
11/2/1999	2.50	5.000	6.300	0.113	0.1531	4.25	3.00	0.125		0.0157	0.1760	91.07%
11/3/1999	0.20	0.782	1.200	0.113	0.0209	0.25				0.0000	0.0209	100.00%
11/10/1999	0.11	0.344	0.600	0.113	0.0050	0.50				0.0000	0.0050	100.00%
11/20/1999	0.10	0.370	0.825	0.113	0.0041	0.50				0.0000	0.0041	100.00%
11/24/1999	0.10	0.300	0.720	0.113	0.0039	0.50				0.0000	0.0039	100.00%
11/25/1999	0.08	0.267	2.000	0.113	0.0136	0.50				0.0000	0.0136	100.00%
11/26/1999	1.60	1.600	3.000	0.113	0.2009	4.25				0.0000	0.2009	100.00%
11/29/1999	0.20	0.500	0.720	0.113	0.0121	0.75				0.0000	0.0121	100.00%
12/5/1999	0.30	0.700	1.200	0.113	0.0186	0.75				0.0000	0.0186	100.00%
12/6/1999	0.10	0.535	0.770	0.113	0.0000	0.50				0.0000	0.0000	100.00%
12/10/1999	0.30	0.679	1.300	0.113	0.0216	1.00				0.0000	0.0216	100.00%
12/13/1999	0.02	0.577	0.605	0.113	0.0041	0.25				0.0000	0.0041	100.00%
12/14/1999	0.40	1.019	2.150	0.113	0.0727	1.75				0.0000	0.0727	100.00%
12/15/1999	0.20	0.770	1.400	0.113	0.0205	0.75				0.0000	0.0205	100.00%
12/17/1999	0.01	0.551	0.700	0.113	0.0036	0.25				0.0000	0.0036	100.00%
12/18/1999	0.01	0.502	0.770	0.113	0.0041	0.25				0.0000	0.0041	100.00%
12/20/1999	0.30	0.789	1.700	0.113	0.0282	1.00				0.0000	0.0282	100.00%
12/24/1999	0.10	0.433	0.710	0.113	0.0067	0.50				0.0000	0.0067	100.00%
12/25/1999	0.10	0.376	0.505	0.113	0.0055	0.50				0.0000	0.0055	100.00%
12/27/1999	0.06	0.392	0.600	0.113	0.0056	0.50				0.0000	0.0056	100.00%
12/28/1999	0.01	0.378	0.600	0.113	0.0028	0.25				0.0000	0.0028	100.00%
12/29/1999	0.10	0.332	0.495	0.113	0.0046	0.50				0.0000	0.0046	100.00%
TOTALS	44.79	85.430	211.055	16.300	3.7193	135.00	27.81	1.020	0.0000	0.0249	3.8142	97.51% AVERAGE

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Table 3
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2000

Date	Rain / Snow Fall (inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
1/1/2000	0.10	0.360	0.605	0.113	0.0077	0.75				0.0000	0.0077	100.00%
1/2/2000	0.01	0.555	0.835	0.113	0.0046	0.25				0.0000	0.0046	100.00%
1/3/2000	0.94	1.700	3.050	0.113	0.1499	2.25				0.0000	0.1499	100.00%
1/4/2000	0.16	1.315	2.000	0.113	0.0509	1.00				0.0000	0.0509	100.00%
1/7/2000	0.07	0.516	0.770	0.113	0.0056	0.50				0.0000	0.0056	100.00%
1/10/2000	0.16	0.603	2.200	0.113	0.0268	1.00				0.0000	0.0268	100.00%
1/11/2000	0.20	0.633	1.000	0.113	0.0166	0.75				0.0000	0.0166	100.00%
1/12/2000	0.10	0.551	0.700	0.113	0.0091	0.50				0.0000	0.0091	100.00%
1/13/2000	0.10	0.466	0.600	0.113	0.0074	0.38				0.0000	0.0074	100.00%
1/20/2000	0.10	0.356	0.535	0.113	0.0076	0.75				0.0000	0.0076	100.00%
1/21/2000	0.10	0.322	0.500	0.113	0.0045	0.50				0.0000	0.0045	100.00%
1/26/2000	0.02	0.326	0.445	0.113	0.0022	0.25				0.0000	0.0022	100.00%
1/31/2000	0.27	0.308	0.495	0.113	0.0083	1.00				0.0000	0.0083	100.00%
2/1/2000	0.02	0.302	0.440	0.113	0.0079	1.00				0.0000	0.0079	100.00%
2/2/2000	0.08	0.295	0.365	0.113	0.0038	0.50				0.0000	0.0038	100.00%
2/4/2000	0.30	0.230	0.355	0.113	0.0041	1.00				0.0000	0.0041	100.00%
2/5/2000	0.19	0.291	0.395	0.113	0.0056	0.25				0.0000	0.0056	100.00%
2/9/2000	0.10	0.319	0.475	0.113	0.0047	0.50				0.0000	0.0047	100.00%
2/10/2000	0.20	0.555	0.775	0.113	0.0138	0.75				0.0000	0.0138	100.00%
2/12/2000	0.20	0.317	0.600	0.113	0.0064	0.75				0.0000	0.0064	100.00%
2/13/2000	0.24	0.626	1.400	0.113	0.0160	0.75				0.0000	0.0160	100.00%
2/15/2000	0.10	0.407	0.600	0.113	0.0061	0.50				0.0000	0.0061	100.00%
2/18/2000	0.20	0.361	0.545	0.113	0.0078	0.75				0.0000	0.0078	100.00%
2/19/2000	0.16	0.369	0.665	0.113	0.0053	0.50				0.0000	0.0053	100.00%
2/20/2000	0.09	0.361	0.615	0.113	0.0052	0.50				0.0000	0.0052	100.00%
2/23/2000	0.10	0.600	1.000	0.113	0.0120	0.50				0.0000	0.0120	100.00%
2/24/2000	0.40	2.056	3.400	0.113	0.0426	0.50				0.0000	0.0426	100.00%
2/25/2000	0.20	2.156	3.900	0.113	0.0630	0.75				0.0000	0.0639	100.00%
2/27/2000	0.50	1.712	1.100	0.113	0.0669	1.00				0.0000	0.0669	100.00%
3/2/2000	0.31	0.773	0.995	0.113	0.0223	1.00				0.0000	0.0223	100.00%
3/3/2000	0.04	0.671	0.985	0.113	0.0058	0.25				0.0000	0.0058	100.00%
3/9/2000	0.01	0.483	0.995	0.113	0.0049	0.25				0.0000	0.0049	100.00%
3/10/2000	0.03	0.364	0.600	0.113	0.0037	0.25				0.0000	0.0037	100.00%
3/12/2000	0.24	0.552	0.930	0.113	0.0133	0.75				0.0000	0.0133	100.00%
3/13/2000	0.07	0.446	0.665	0.113	0.0065	0.50				0.0000	0.0065	100.00%
3/17/2000	0.42	0.611	0.825	0.113	0.0415	2.00				0.0000	0.0415	100.00%
3/22/2000	0.14	0.500	0.665	0.113	0.0122	0.75				0.0000	0.0122	100.00%
3/26/2000	0.12	0.452	0.770	0.113	0.0078	0.50				0.0000	0.0078	100.00%
3/29/2000	0.09	0.521	0.720	0.113	0.0065	0.50				0.0000	0.0065	100.00%
3/30/2000	0.06	0.439	0.610	0.113	0.0070	0.50				0.0000	0.0070	100.00%
4/2/2000	0.20	0.632	1.200	0.113	0.0164	0.75				0.0000	0.0164	100.00%
4/3/2000	0.60	2.174	4.500	0.113	0.1503	1.75				0.0000	0.1503	100.00%
4/4/2000	0.50	1.682	2.400	0.113	0.0901	11.50				0.0000	0.0901	100.00%
4/6/2000	0.10	0.874	3.600	0.113	0.0159	0.50				0.0000	0.0159	100.00%
4/7/2000	0.30	1.262	3.600	0.113	0.0487	1.00				0.0000	0.0487	100.00%
4/8/2000	0.50	2.021	4.950	0.113	0.1193	1.50				0.0000	0.1193	100.00%
4/10/2000	0.08	0.851	1.650	0.113	0.0151	0.50				0.0000	0.0151	100.00%
4/12/2000	0.09	0.657	1.050	0.113	0.0120	0.50				0.0000	0.0120	100.00%
4/17/2000	0.02	0.461	0.605	0.113	0.0071	0.50				0.0000	0.0071	100.00%
4/20/2000	0.81	1.146	5.100	0.113	0.0215	0.50	0.5	[illegible]	[illegible]	0.0001	0.0216	99.61%
4/21/2000	1.00	3.996	5.650	0.113	0.2151	2.75				0.0000	0.2151	100.00%
4/22/2000	0.10	1.549	2.350	0.113	0.0613	1.00				0.0000	0.0613	100.00%
4/23/2000	0.10	1.053	1.350	0.113	0.0176	0.50				0.0000	0.0176	100.00%

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Table 3 (Cont'd)
Borough of Kinzers
Kinzers Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2000

Date	Rainfall Amount (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Weimer Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
5/1/2000	0.28	0.576	1.500	0.113	0.0231	4.25				0.0000	0.0231	100.00%
5/2/2000	0.10	0.455	1.005	0.113	0.0027	0.50				0.0000	0.0027	100.00%
5/7/2000	0.02	0.412	0.549	0.113	0.0014	0.25				0.0000	0.0014	100.00%
5/11/2000	0.17	0.418	1.000	0.113	0.0127	1.00	0.08	0.001		0.0001	0.0128	99.67%
5/13/2000	0.10	0.353	2.250	0.113	0.0092	0.50				0.0000	0.0092	100.00%
5/18/2000	1.00	2.070	3.276	0.113	0.3273	4.00				0.0000	0.3273	100.00%
5/19/2000	0.28	1.200	3.276	0.113	0.0593	1.00				0.0000	0.0593	100.00%
5/23/2000	0.30	1.247	3.200	0.113	0.0845	5.00				0.0000	0.0845	100.00%
5/24/2000	0.30	0.871	2.950	0.113	0.0269	0.75				0.0000	0.0269	100.00%
6/2/2000	0.04	0.447	1.200	0.113	0.0070	0.50				0.0000	0.0070	100.00%
6/9/2000	0.17	0.499	1.200	0.113	0.0121	0.75				0.0000	0.0121	100.00%
6/11/2000	0.10	0.531	0.200	0.113	0.0267	1.00	0.25	0.003		0.0001	0.0268	99.59%
6/13/2000	0.20	0.530	1.000	0.113	0.0122	0.75				0.0000	0.0122	100.00%
6/14/2000	0.10	0.359	0.000	0.113	0.0000	1.00				0.0000	0.0000	100.00%
6/16/2000	0.10	0.421	2.000	0.113	0.0170	1.00				0.0000	0.0170	100.00%
6/17/2000	0.03	0.421	1.200	0.113	0.0032	0.25				0.0000	0.0032	100.00%
6/18/2000	0.30	0.668	2.000	0.113	0.0289	1.25				0.0000	0.0289	100.00%
6/21/2000	0.50	0.637	0.000	0.113	0.0278	1.25	0.25	0.007		0.0002	0.0279	99.21%
6/27/2000	0.20	0.365	0.000	0.113	0.0079	0.75				0.0000	0.0079	100.00%
7/4/2000	0.60	0.708	5.200	0.113	0.0343	1.25	0.42	0.013		0.0017	0.0360	97.91%
7/9/2000	0.60	0.636	3.420	0.113	0.0311	1.75				0.0000	0.0311	100.00%
7/15/2000	0.20	0.504	1.500	0.113	0.0088	0.75				0.0000	0.0088	100.00%
7/21/2000	0.13	0.510	1.050	0.113	0.0061	0.50				0.0000	0.0061	100.00%
7/28/2000	0.20	0.548	1.450	0.113	0.0074	0.75				0.0000	0.0074	100.00%
7/30/2000	0.20	0.512	0.550	0.113	0.0064	0.75				0.0000	0.0064	100.00%
7/31/2000	0.60	0.738	4.700	0.113	0.0156	1.75				0.0000	0.0156	100.00%
8/2/2000	0.30	0.733	5.150	0.113	0.0382	1.50	0.27	0.002		0.0001	0.0383	99.82%
8/3/2000	0.20	0.529	0.550	0.113	0.0124	0.75				0.0000	0.0124	100.00%
8/6/2000	0.70	1.359	5.200	0.113	0.0839	2.00	0.42	0.005		0.0004	0.0843	99.60%
8/7/2000	0.20	0.654	1.200	0.113	0.0226	1.00				0.0000	0.0226	100.00%
8/9/2000	0.10	0.536	0.955	0.113	0.0067	0.50				0.0000	0.0067	100.00%
8/13/2000	0.02	0.369	0.735	0.113	0.0027	0.25				0.0000	0.0027	100.00%
8/15/2000	0.20	1.028	2.150	0.113	0.0200	0.50	1.17	0.007		0.0055	0.0256	85.25%
8/16/2000	0.01	0.501	0.995	0.113	0.0109	1.00				0.0000	0.0109	100.00%
8/24/2000	0.40	0.583	2.450	0.113	0.0224	1.25				0.0000	0.0224	100.00%
8/30/2000	0.20	0.531	1.100	0.113	0.0058	0.75				0.0000	0.0058	100.00%
9/11/2000	0.10	0.262	0.510	0.113	0.0071	0.50				0.0000	0.0071	100.00%
9/12/2000	0.50	0.503	5.250	0.113	0.0235	1.25	0.25	0.001		0.0003	0.0238	99.78%
9/13/2000	0.10	0.275	0.585	0.113	0.0030	0.50				0.0000	0.0030	100.00%
9/14/2000	0.01	0.183	2.500	0.113	0.0092	1.25				0.0000	0.0092	100.00%
9/15/2000	0.20	0.450	1.250	0.113	0.0105	0.75				0.0000	0.0105	100.00%
9/16/2000	0.10	0.350	0.700	0.113	0.0049	0.50				0.0000	0.0049	100.00%
9/21/2000	0.20	0.351	0.450	0.113	0.0059	0.75				0.0000	0.0059	100.00%
9/23/2000	0.20	0.445	1.700	0.113	0.0116	0.75				0.0000	0.0117	100.00%
9/24/2000	0.10	0.356	0.650	0.113	0.0050	0.50				0.0000	0.0050	100.00%
9/26/2000	0.20	0.295	0.605	0.113	0.0043	0.75				0.0000	0.0043	100.00%
10/1/2000	0.01	0.287	2.850	0.113	0.0118	0.25				0.0000	0.0118	100.00%
10/2/2000	0.13	0.322	1.650	0.113	0.0087	0.75				0.0000	0.0087	100.00%
10/5/2000	0.30	1.815	0.000	0.113	0.0496	1.25				0.0000	0.0496	100.00%
10/6/2000	0.10	0.688	1.250	0.113	0.0228	3.00				0.0000	0.0228	100.00%
10/7/2000	0.30	0.564	0.450	0.113	0.0184	1.00				0.0000	0.0184	100.00%
10/9/2000	0.10	0.455	0.000	0.113	0.0067	0.50				0.0000	0.0067	100.00%
10/10/2000	0.02	0.412	0.000	0.113	0.0026	0.25				0.0000	0.0021	100.00%

Attachment A-6

Table 1 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2000

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
10/18/2000	0.30	0.321	0.550	0.113	0.0008	1.00				0.0000	0.0008	100.00%
10/21/2000	0.06	0.264	0.440	0.113	0.0032	0.50				0.0000	0.0032	100.00%
10/25/2000	0.26	0.251	0.440	0.113	0.0018	0.75				0.0000	0.0018	100.00%
10/28/2000	0.02	0.271	0.550	0.113	0.0017	0.25				0.0000	0.0017	100.00%
11/9/2000	0.03	0.354	1.200	0.113	0.0025	0.25				0.0000	0.0025	100.00%
11/10/2000	0.31	0.351	1.200	0.113	0.0126	1.25				0.0000	0.0126	100.00%
11/11/2000	0.23	0.293	0.550	0.113	0.0057	0.75				0.0000	0.0057	100.00%
11/14/2000	0.01	0.241	0.445	0.113	0.0014	0.25				0.0000	0.0014	100.00%
11/15/2000	0.01	0.249	0.500	0.113	0.0011	0.25				0.0000	0.0011	100.00%
11/16/2000	0.10	0.255	0.400	0.113	0.0030	0.50				0.0000	0.0030	100.00%
11/18/2000	0.09	0.253	0.450	0.113	0.0029	0.50				0.0000	0.0029	100.00%
11/19/2000	0.01	0.269	0.500	0.113	0.0016	0.25				0.0000	0.0016	100.00%
11/21/2000	0.12	0.215	0.480	0.113	0.0028	0.50				0.0000	0.0028	100.00%
11/22/2000	0.08	0.241	0.480	0.113	0.0027	0.50				0.0000	0.0027	100.00%
11/23/2000	0.01	0.225	0.640	0.113	0.0023	0.50				0.0000	0.0023	100.00%
11/26/2000	0.48	0.635	1.000	0.113	0.0327	1.50				0.0000	0.0327	100.00%
11/27/2000	0.21	0.431	0.715	0.113	0.0108	0.75				0.0000	0.0108	100.00%
11/28/2000	0.03	0.342	0.610	0.113	0.0024	0.25				0.0000	0.0024	100.00%
11/29/2000	0.00	0.348	0.610	0.113	0.0172	1.75				0.0000	0.0172	100.00%
11/30/2000	0.19	0.321	0.515	0.113	0.0044	0.50				0.0000	0.0044	100.00%
12/4/2000	0.16	0.263	0.435	0.113	0.0031	0.50				0.0000	0.0031	100.00%
12/5/2000	0.16	0.251	0.420	0.113	0.0029	0.50				0.0000	0.0029	100.00%
12/6/2000	0.16	0.241	0.415	0.113	0.0027	0.50				0.0000	0.0027	100.00%
12/8/2000	0.40	0.226	0.415	0.113	0.0059	1.25				0.0000	0.0059	100.00%
12/9/2000	0.40	0.218	0.495	0.113	0.0052	1.00				0.0000	0.0052	100.00%
12/10/2000	0.40	0.244	0.495	0.113	0.0068	1.25				0.0000	0.0068	100.00%
12/11/2000	0.20	0.690	2.200	0.113	0.0100	0.75				0.0000	0.0100	100.00%
12/13/2000	0.30	0.388	0.220	0.113	0.0057	0.50				0.0000	0.0057	100.00%
12/14/2000	0.44	0.272	0.440	0.113	0.0081	1.25				0.0000	0.0081	100.00%
12/15/2000	0.10	0.265	0.445	0.113	0.0032	0.50				0.0000	0.0032	100.00%
12/17/2000	0.50	1.400	3.750	0.113	0.1000	2.00				0.0000	0.1000	100.00%
12/18/2000	0.16	0.650	0.990	0.113	0.0120	0.50				0.0000	0.0120	100.00%
12/20/2000	0.01	0.436	0.715	0.113	0.0035	0.25				0.0000	0.0034	100.00%
12/21/2000	0.00	0.401	0.600	0.113	0.0060	0.50				0.0000	0.0060	100.00%
12/22/2000	0.01	0.340	0.660	0.113	0.0024	0.25				0.0000	0.0024	100.00%
12/25/2000	0.06	0.300	0.550	0.113	0.0041	0.50				0.0000	0.0041	100.00%
12/26/2000	0.02	0.306	0.600	0.113	0.0020	0.25				0.0000	0.0020	100.00%
12/27/2000	0.02	0.292	0.500	0.113	0.0019	0.25				0.0000	0.0019	100.00%
12/28/2000	0.14	0.265	0.500	0.113	0.0036	0.50				0.0000	0.0036	100.00%
12/31/2000	0.05	0.240	0.550	0.113	0.0028	0.50				0.0000	0.0028	100.00%
TOTALS	35.13	97.191	239.033	16.425	3.2116	119.00	3.69	0.281	0.0000	0.0054	3.2169	99.83% AVERAGE

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Table 4
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2001

Date	Rain/Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
1/1/2001	0.71	0.253	0.550	0.113	0.0115	2.00				0.0000	0.0115	100.00%
1/3/2001	1.58	0.226	0.390	0.113	0.0166	3.50				0.0000	0.0166	100.00%
1/5/2001	3.09	0.207	0.390	0.113	0.0217	5.50				0.0000	0.0217	100.00%
1/6/2001	0.23	0.223	0.410	0.113	0.0036	0.75				0.0000	0.0036	100.00%
1/15/2001	0.19	0.232	0.440	0.113	0.0024	0.75				0.0000	0.0024	100.00%
1/16/2001	0.44	0.240	0.390	0.113	0.0085	1.50				0.0000	0.0085	100.00%
1/18/2001	0.64	0.235	0.415	0.113	0.0089	1.75				0.0000	0.0089	100.00%
1/19/2001	0.96	0.225	0.390	0.113	0.0094	2.00				0.0000	0.0094	100.00%
1/20/2001	2.41	0.261	0.390	0.113	0.0148	4.00				0.0000	0.0148	100.00%
1/23/2001	1.09	0.217	0.440	0.113	0.0152	3.50				0.0000	0.0152	100.00%
1/29/2001	0.17	0.204	0.390	0.113	0.0019	0.50				0.0000	0.0019	100.00%
1/30/2001	0.41	0.741	1.150	0.113	0.0263	1.00				0.0000	0.0263	100.00%
1/31/2001	1.21	0.412	0.770	0.113	0.0125	1.00				0.0000	0.0125	100.00%
2/2/2001	0.10	0.264	0.495	0.113	0.0032	0.50				0.0000	0.0032	100.00%
2/3/2001	0.10	0.263	0.505	0.113	0.0036	0.50				0.0000	0.0036	100.00%
2/6/2001	0.08	0.265	0.500	0.113	0.0032	0.50				0.0000	0.0032	100.00%
2/8/2001	0.16	0.434	1.450	0.113	0.0132	0.75				0.0000	0.0132	100.00%
2/9/2001	1.021	2.100	3.050	0.113	0.0646	0.75				0.0000	0.0646	100.00%
2/10/2001	0.10	1.068	1.500	0.113	0.0199	0.50				0.0000	0.0199	100.00%
2/13/2001	0.07	0.571	1.000	0.113	0.0143	0.75				0.0000	0.0143	100.00%
2/14/2001	0.50	0.337	1.450	0.113	0.0140	1.50				0.0000	0.0140	100.00%
2/16/2001	0.10	0.693	1.000	0.113	0.0121	0.50				0.0000	0.0121	100.00%
2/17/2001	0.11	0.552	0.800	0.113	0.0092	0.50				0.0000	0.0092	100.00%
2/18/2001	0.30	0.400	0.770	0.113	0.0153	1.00				0.0000	0.0153	100.00%
2/20/2001	0.07	0.450	0.700	0.113	0.0072	0.50				0.0000	0.0072	100.00%
2/22/2001	1.11	0.352	0.555	0.113	0.0150	1.50				0.0000	0.0150	100.00%
2/23/2001	2.36	0.305	0.550	0.113	0.0261	2.50				0.0000	0.0261	100.00%
2/24/2001	0.10	0.313	0.610	0.113	0.0042	0.50				0.0000	0.0042	100.00%
2/25/2001	0.18	0.570	1.000	0.113	0.0095	0.50				0.0000	0.0095	100.00%
3/1/2001	1.20	0.290	0.500	0.113	0.0111	1.50				0.0000	0.0111	100.00%
3/4/2001	10.50	0.281	0.550	0.113	0.0088	1.25				0.0000	0.0088	100.00%
3/5/2001	1.26	0.272	0.500	0.113	0.0083	1.25				0.0000	0.0083	100.00%
3/6/2001	1.51	0.242	0.445	0.113	0.0085	1.50				0.0000	0.0085	100.00%
3/8/2001	11.66	0.256	0.450	0.113	0.0105	1.75				0.0000	0.0105	100.00%
3/11/2001	2.91	0.214	0.445	0.113	0.0127	1.00				0.0000	0.0127	100.00%
3/12/2001	0.11	0.527	1.000	0.113	0.0130	0.75				0.0000	0.0130	100.00%
3/13/2001	0.91	1.071	1.000	0.113	0.0176	1.00				0.0000	0.0176	100.00%
3/14/2001	1.44	0.667	1.000	0.113	0.0347	1.50				0.0000	0.0347	100.00%
3/16/2001	2.11	0.592	0.950	0.113	0.0549	2.25				0.0000	0.0549	100.00%
3/17/2001	1.32	0.605	0.950	0.113	0.0359	1.75				0.0000	0.0359	100.00%
3/20/2001	0.01	0.684	1.000	0.113	0.0060	0.25				0.0000	0.0060	100.00%
3/21/2001	1.70	1.103	1.300	0.113	0.1401	2.00				0.0000	0.1401	100.00%
3/24/2001	0.15	0.759	1.000	0.113	0.0202	0.75				0.0000	0.0202	100.00%
3/25/2001	1.50	0.611	0.950	0.113	0.1090	5.25				0.0000	0.1090	100.00%
3/26/2001	1.21	0.508	0.785	0.113	0.0247	1.50				0.0000	0.0247	100.00%
3/29/2001	0.31	1.200	1.600	0.113	0.0340	0.75				0.0000	0.0340	100.00%
4/3/2001	1.22	0.605	1.000	0.113	0.0257	1.25				0.0000	0.0257	100.00%
4/5/2001	0.10	0.738	1.300	0.113	0.0126	0.50				0.0000	0.0126	100.00%
4/6/2001	0.11	0.733	1.150	0.113	0.0127	0.50				0.0000	0.0127	100.00%
4/7/2001	0.13	0.805	1.350	0.113	0.0151	0.50				0.0000	0.0151	100.00%
4/8/2001	0.63	1.134	3.000	0.113	0.0759	1.25	0.42	0.440	5.000	0.0023	[illegible]	97.[illegible]%
4/11/2001	0.01	0.727	1.100	0.113	0.0064	0.25				0.0000	0.0064	100.00%
4/15/2001	0.21	0.857	1.500	0.113	0.0110	1.00				0.0000	0.0110	100.00%

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Table 4 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2001

Date	Rain/Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
1/16/2001	0.36	0.242	1.100	0.113	0.0132	0.50				0.0000	0.0132	100.00%
1/17/2001	0.07	0.616	0.950	0.113	0.0109	0.50				0.0000	0.0109	100.00%
1/20/2001	0.52	0.095		0.113	0.0352	1.00				0.0000	0.0352	100.00%
1/21/2001	0.30	0.610	1.050	0.113	0.0145	0.50				0.0000	0.0145	100.00%
1/23/2001	0.01	0.555	0.880	0.113	0.0016	0.25				0.0000	0.0016	100.00%
1/26/2001	0.02	0.483	0.720	0.113	0.0039	0.25				0.0000	0.0039	100.00%
5/4/2001	0.01	0.368	0.605	0.113	0.0027	0.25				0.0000	0.0027	100.00%
5/5/2001	0.13	0.366	0.805	0.113	0.0053	0.50				0.0000	0.0053	100.00%
5/11/2001	1.02	0.518	1.400	0.113	0.0441	1.50				0.0000	0.0441	100.00%
5/12/2001	0.14	0.432	0.900	0.113	0.0026	0.25				0.0000	0.0026	100.00%
5/17/2001	0.07	0.375	0.900	0.113	0.0055	0.50				0.0000	0.0055	100.00%
5/21/2001	0.20	0.509	1.150	0.113	0.0123	0.75				0.0000	0.0123	100.00%
5/22/2001	1.10	1.119	4.200	0.113	0.1531	3.00				0.0000	0.1531	100.00%
5/25/2001	0.40	0.416	0.720	0.113	0.0063	0.50				0.0000	0.0063	100.00%
5/26/2001	0.20	0.562	1.550	0.113	0.0094	0.50				0.0000	0.0094	100.00%
5/31/2001	0.34	0.702	2.500	0.113	0.0246	1.00				0.0000	0.0246	100.00%
5/30/2001	0.07	0.416	0.620	0.113	0.0067	0.50				0.0000	0.0067	100.00%
6/1/2001	0.10	0.501	1.500	0.113	0.0121	0.75				0.0000	0.0121	100.00%
6/2/2001	0.26	0.522	1.500	0.113	0.0131	0.75				0.0000	0.0131	100.00%
6/4/2001	0.11	0.356	0.715	0.113	0.0068	0.50				0.0000	0.0068	100.00%
6/9/2001	0.09	0.363	0.700	0.113	0.0052	0.50				0.0000	0.0052	100.00%
6/11/2001	0.29	0.457	0.620	0.113	0.0076	0.75				0.0000	0.0076	100.00%
6/16/2001	0.02	0.321	0.600	0.113	0.0022	0.25				0.0000	0.0022	100.00%
6/20/2001	0.18	0.300	0.770	0.113	0.0039	0.50				0.0000	0.0039	100.00%
6/21/2001	0.40	0.656	4.250	0.113	0.0346	1.50				0.0000	0.0346	100.00%
6/22/2001	0.30	0.373	0.770	0.113	0.0109	1.00				0.0000	0.0109	100.00%
6/23/2001	0.20	0.492	1.200	0.113	0.0119	0.75				0.0000	0.0119	100.00%
6/30/2001	0.12	0.318	0.730	0.113	0.0064	0.75				0.0000	0.0064	100.00%
7/1/2001	0.14	0.352	1.250	0.113	0.0075	0.75				0.0000	0.0075	100.00%
7/3/2001	0.29	0.371	1.000	0.113	0.0061	0.25				0.0000	0.0061	100.00%
7/5/2001	0.07	0.312	0.550	0.113	0.0042	0.50				0.0000	0.0042	100.00%
7/7/2001	0.08	0.314	0.825	0.113	0.0041	0.50				0.0000	0.0041	100.00%
7/10/2001	0.14	0.304	0.600	0.113	0.0046	0.50				0.0000	0.0046	100.00%
7/16/2001	0.12	0.321	2.000	0.113	0.0044	0.50				0.0000	0.0044	100.00%
7/19/2001	0.05	0.232		0.113	0.0027	0.50				0.0000	0.0027	100.00%
7/25/2001	0.71	0.337	6.000	0.113	0.0354	2.00	0.25	0.001	[illegible]	0.0001	0.0355	99.71%
8/3/2001	0.15	0.303	0.715	0.113	0.0048	0.50				0.0000	0.0048	100.00%
8/10/2001	0.16	0.280	0.770	0.113	0.0017	0.25				0.0000	0.0017	100.00%
8/16/2001	0.09	0.299	0.550	0.113	0.0039	0.50				0.0000	0.0039	100.00%
8/19/2001	0.30	0.320	4.200	0.113	0.0128	1.00				0.0000	0.0128	100.00%
8/20/2001	0.06	0.298	0.390	0.113	0.0018	0.25				0.0000	0.0018	100.00%
8/21/2001	0.11	0.340		0.113	0.0047	0.50				0.0000	0.0047	100.00%
8/23/2001	0.43	0.242	1.900	0.113	0.0126	1.25				0.0000	0.0126	100.00%
8/26/2001	0.70	0.772	4.500	0.113	0.0550	2.00	0.25	0.001		0.0002	0.0554	99.95%
8/27/2001	0.20	0.320	0.540	0.113	0.0065	0.75				0.0000	0.0065	100.00%
8/28/2001	0.10	0.318	0.490	0.113	0.0041	0.50				0.0000	0.0041	100.00%
8/31/2001	0.50	0.606	5.000	0.113	0.0108	1.50				0.0000	0.0108	100.00%
9/4/2001	0.05	0.311	1.750	0.113	0.0021	0.25				0.0000	0.0021	100.00%
9/10/2001	0.16	0.292	1.250	0.113	0.0017	0.50				0.0000	0.0017	100.00%
9/13/2001	0.60	0.686	3.100	0.113	0.0358	1.50				0.0000	0.0358	100.00%
9/20/2001	0.10	0.312	0.700	0.113	0.0083	1.00				0.0000	0.0083	100.00%
9/22/2001	0.15	0.290	0.540	0.113	0.0039	0.50				0.0000	0.0039	100.00%
9/24/2001	0.50	0.702	3.000	0.113	0.0056	1.50				0.0000	0.0056	100.00%

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Table 4 (Cont'd)
Borough of Kane
Klaus Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2001

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
9/25/2001	[illegible]	[illegible]	[illegible]	0.113	0.0017	0.50				0.0000	0.0057	100.00%
9/26/2001	0.10	0.345	[illegible]	0.113	[illegible]	0.50				0.0000	[illegible]	100.00%
9/27/2001	0.26	[illegible]	1.050	0.113	[illegible]	0.75				0.0000	0.0000	100.00%
9/28/2001	0.04	0.302	0.495	0.113	0.0023	0.25				0.0000	0.0023	100.00%
10/5/2001	0.20	0.318	1.100	0.113	0.0063	0.75				0.0000	0.0064	100.00%
10/6/2001	0.10	0.326	0.545	0.113	0.0044	0.50			–	0.0000	0.0044	100.00%
10/7/2001	0.10	0.349	0.760	0.113	[illegible]	0.50				0.0000	0.0049	100.00%
10/9/2001	0.10	0.296	0.430	0.113	[illegible]	0.50		–		0.0000	[illegible]	100.00%
10/13/2001	0.10	0.340	0.765	0.113	0.0017	0.50				0.0000	0.0042	100.00%
10/14/2001	0.40	0.578	2.900	0.113	0.0212	1.25				0.0000	0.0212	100.00%
10/16/2001	0.30	0.559	3.600 –	0.113	0.0186	1.00				0.0000	0.0186	100.00%
10/17/2001	0.20	0.365	0.710	0.113	[illegible]	0.75				0.0000	[illegible]	100.00%
10/21/2001	0.10	0.366	1.050	0.113	0.0033	0.50				0.0000	0.0053	100.00%
10/22/2001	0.10	0.347	0.765	0.113	0.0049	0.50				0.0000	0.0049	100.00%
10/23/2001	0.90	1.400	3.500	0.113	0.1351	2.00				0.0000	0.1351	100.00%
10/24/2001	0.20	0.764	2.100	0.113	0.0204	0.75				0.0000	0.0204	100.00%
10/25/2001	0.10	0.559	0.870	0.113	0.0093	0.50				0.0000	0.0093	100.00%
10/26/2001	0.10	0.469	0.660	0.113	0.0074	0.50				0.0000	0.0074	100.00%
10/27/2001	0.20	0.563	0.825	0.113	0.0094	0.50				0.0000	0.0094	100.00%
10/30/2001	0.02	0.397	0.550	0.113	[illegible]	0.25				0.0000	[illegible]	100.00%
10/31/2001	0.01	0.300	0.540	0.113	0.0028	0.25				0.0000	0.0028	100.00%
11/2/2001	0.30	0.417	2.400	0.113	0.0266	1.00				0.0000	0.0266	100.00%
11/3/2001	0.01	0.324	0.718	0.113	0.0012	0.25				0.0000	0.0012	100.00%
11/6/2001	0.10	0.384	1.400	0.113	0.0057	0.50				0.0000	0.0057	100.00%
11/19/2001	0.10	0.349	1.500	0.113	0.0144	1.00				0.0000	0.0114	100.00%
11/24/2001	0.18	0.301	2.350	0.113	0.0121	0.50	1.00	0.050	0.1900	0.0014	0.0133	92.17%
11/25/2001	1.10	1.251	5.250	0.113	0.0935	2.00	0.50	0.016	0.0200	0.0008	0.0943	99.12%
11/27/2001	0.20	0.443	0.735	0.113	0.0120	0.75				0.0000	0.0120	100.00%
11/28/2001	0.20	0.625	1.500	0.113	0.0160	0.75				0.0000	0.0160	100.00%
11/29/2001	0.15	0.615	0.910	0.113	0.0153	0.75				0.0000	0.0153	100.00%
11/30/2001	0.45	1.021	5.350	0.113	0.0189	0.50	0.17	0.011	[illegible]	0.0002	0.0189	99.89%
12/4/2001	0.01	0.445	0.635	0.113	0.0015	0.25			—	0.0000	0.0035	100.00%
12/6/2001	0.04	0.463	0.570	0.113	0.0037	0.25				0.0000	0.0037	100.00%
12/8/2001	0.10	0.423	0.600	0.113	0.0097	0.75	—	—		0.0000	0.0097	100.00%
12/12/2001	0.17	0.427	0.920	0.113	[illegible]	0.50				0.0000	[illegible]	100.00%
12/13/2001	0.10	0.460	0.940	0.113	0.0145	1.00				0.0000	0.0145	100.00%
12/14/2001	0.48	0.950	4.500	0.113	0.0436	1.25				0.0000	0.0436	100.00%
12/16/2001	0.21	0.558	1.200	0.113	0.0140	0.75				0.0000	0.0140	100.00%
12/17/2001	1.05	1.951	5.600	0.113	0.2109	2.75				0.0000	0.2109	100.00%
12/18/2001	0.10	1.235	2.000	0.113	0.0468	1.00				0.0000	0.0468	100.00%
12/19/2001	0.03	0.879	1.700	0.113	0.0080	0.25				0.0000	0.0080	100.00%
12/20/2001	0.20	0.743	0.865	0.113	0.0197	0.75				0.0000	0.0197	100.00%
12/23/2001	0.28	0.892	2.000	0.113	0.0325	1.00				0.0000	0.0325	100.00%
12/25/2001	0.31	0.325	0.710	0.113	0.0150	1.00				0.0000	0.0150	100.00%
12/26/2001	0.92	0.393	0.765	0.113	0.0316	2.00				0.0000	0.0316	100.00%
12/27/2001	1.16	0.433	0.600	0.113	0.0433	2.50			—	0.0000	0.0533	100.00%
12/28/2001	0.10	0.461	0.600	0.113	0.0021	0.50				0.0000	0.0021	100.00%
12/29/2001	1.03	0.330	0.590	0.113	0.0182	2.00				0.0000	0.0182	100.00%
12/30/2001	1.45	0.263	0.600	0.113	0.0175	2.75				0.0000	0.0175	100.00%
TOTALS	83.68	32.651	210.251	11.330	2.9697	157.00	2.62	0.093	5.7370	0.0045	2.9740	99.86% AVERAGE

Attachment A-6

Table 5

Borough of Kenilworth

Kimball Road Wastewater Treatment Plant

Summary of Combined Sewer Overflow Events

2002

Date	Rainfall Total (inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetwell Influent Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment, (%)
1/1/2002	1.10	0.467	0.519	0.113	0.00571	0.50				0.00000	0.00571	100.00%
1/6/2002	0.20	0.501	0.505	0.113	0.00171	0.75				0.00000	0.00171	100.00%
1/7/2002	0.20	0.262	0.300	0.113	0.00057	0.75				0.00000	0.00057	100.00%
1/14/2002	0.60	0.200	0.300	0.113	0.00057	0.50				0.00000	0.00057	100.00%
1/15/2002	0.20	0.435	0.575	0.113	0.00057	2.00				0.00000	0.00057	100.00%
1/18/2002	1.30	0.304	0.300	0.113	0.00057	0.50				0.00000	0.00057	100.00%
1/19/2002	0.60	0.323	0.320	0.113	0.00057	0.50				0.00000	0.00057	100.00%
1/25/2002	0.80	0.291	0.430	0.113	0.00057	0.50				0.00000	0.00057	100.00%
1/26/2002	1.40	0.302	0.440	0.113	0.00057	3.50				0.00000	0.00057	100.00%
1/27/2002	0.30	0.250	0.300	0.113	0.00057	1.25				0.00000	0.00057	100.00%
1/28/2002	0.20	0.290	0.435	0.113	0.00171	1.00				0.00000	0.00171	100.00%
1/29/2002	0.20	0.292	0.300	0.113	0.00056	0.75				0.00000	0.00056	100.00%
1/31/2002	0.20	0.271	0.435	0.113	0.00058	0.75				0.00000	0.00058	100.00%
1/23/2002	0.10	0.225	0.250	0.113	0.00128	0.50				0.00000	0.00179	100.00%
1/24/2002	0.20	1.265	2.150	0.113	0.00171	0.75				0.00000	0.00171	100.00%
1/26/2002	0.10	0.274	1.300	0.113	0.00128	0.50				0.00000	0.00128	100.00%
1/30/2002	0.50	1.057	2.450	0.113	0.00500	1.50				0.00000	0.00500	100.00%
1/31/2002	0.20	1.524	3.600	0.113	0.00748	1.25				0.00000	0.00748	100.00%
2/1/2002	0.10	1.382	2.900	0.113	0.00571	1.00				0.00000	0.00571	100.00%
2/2/2002	0.75	0.996	1.900	0.113	0.00427	1.50				0.00000	0.00427	100.00%
2/3/2002	1.87	0.611	0.825	0.113	0.00023	0.00				0.00000	0.00023	100.00%
2/10/2002	0.80	1.142	2.700	0.113	0.00570	1.25				0.00000	0.00570	100.00%
2/11/2002	0.10	0.753	1.000	0.113	0.00133	0.50				0.00000	0.00133	100.00%
2/12/2002	0.34	0.591	0.770	0.113	0.00502	2.50				0.00000	0.00502	100.00%
2/16/2002	0.10	0.611	0.700	0.113	0.00101	0.50				0.00000	0.00164	100.00%
2/17/2002	0.74	0.175	0.650	0.113	0.00193	1.75				0.00000	0.00193	100.00%
2/20/2002	0.40	0.621	2.500	0.113	0.00213	1.00				0.00000	0.00213	100.00%
2/21/2002	0.10	0.469	0.940	0.113	0.00116	0.50				0.00000	0.00116	100.00%
2/22/2002	0.10	0.504	0.710	0.113	0.00082	0.50				0.00000	0.00082	100.00%
2/26/2002	0.30	0.587	1.600	0.113	0.00198	1.00				0.00000	0.00198	100.00%
3/27/2002	0.10	0.387	0.605	0.113	0.00056	0.50				0.00000	0.00056	100.00%
3/2/2002	0.20	0.842	2.250	0.113	0.00231	0.75				0.00000	0.00231	100.00%
3/3/2002	0.50	0.949	1.750	0.113	0.00417	1.50				0.00000	0.00417	100.00%
3/5/2002	0.42	0.947	0.220	0.113	0.00226	1.25				0.00000	0.00226	100.00%
3/6/2002	0.10	0.524	0.715	0.113	0.00056	0.50				0.00000	0.00056	100.00%
3/8/2002	0.30	0.630	1.000	0.113	0.00165	0.75				0.00000	0.00165	100.00%
3/10/2002	0.53	0.500	0.710	0.113	0.00161	1.00				0.00000	0.00161	100.00%
3/13/2002	0.10	0.420	0.635	0.113	0.00054	0.50				0.00000	0.00054	100.00%
3/15/2002	0.10	0.566	1.300	0.113	0.00092	0.50				0.00000	0.00092	100.00%
3/16/2002	0.10	0.306	0.710	0.113	0.00050	0.50				0.00000	0.00050	100.00%
3/18/2002	0.20	0.865	0.825	0.113	0.00110	0.75				0.00000	0.00110	100.00%
3/20/2002	0.40	0.768	0.900	0.113	0.00131	1.25				0.00000	0.00131	100.00%
3/21/2002	0.10	0.500	0.570	0.113	0.00093	0.50				0.00000	0.00093	100.00%
3/22/2002	1.12	0.496	1.000	0.113	0.00240	1.75				0.00000	0.00280	100.00%
3/24/2002	1.80	0.968	0.825	0.113	0.00093	0.50				0.00000	0.00093	100.00%
3/25/2002	3.82	0.906	0.660	0.113	0.00607	1.25				0.00000	0.00607	100.00%
3/26/2002	0.68	1.735	3.450	0.113	0.00840	1.25				0.00000	0.00840	100.00%
3/29/2002	0.51	1.318	2.350	0.113	0.00602	1.00				0.00000	0.00602	100.00%
3/30/2002	0.10	0.823	1.200	0.113	0.00146	0.50				0.00000	0.00146	100.00%
4/2/2002	0.10	0.701	1.650	0.113	0.00136	0.50				0.00000	0.00136	100.00%
4/5/2002	0.50	0.932	1.250	0.113	0.00225	0.75				0.00000	0.00225	100.00%
4/6/2002	0.01	0.498	0.895	0.113	0.00052	0.25				0.00000	0.00052	100.00%
4/9/2002	0.10	0.665	0.795	0.113	0.00102	0.50				0.00000	0.00102	100.00%

Attachment A-6

Table 5 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2002

Date	Rain/Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
4/8/2002	0.10	0.497	0.680	0.113	0.0080	0.50				0.0000	0.0080	100.00%
4/9/2002	0.50	0.696	3.500	0.113	0.0243	1.00				0.0000	0.0243	100.00%
4/12/2002	0.02	0.454	1.800	0.113	0.0076	0.25				0.0000	0.0076	100.00%
4/13/2002	0.64	0.955	3.050	0.113	0.0614	1.75				0.0000	0.0614	100.00%
4/14/2002	1.01	1.911	5.300	0.113	0.1877	2.50	1.42	0.023	3.050	0.0076	0.1953	96.11%
4/15/2002	0.13	0.627	4.000	0.113	0.0097	0.50	0.02	0.001		0.0003	0.0103	99.81%
4/20/2002	0.11	0.630	2.150	0.113	0.0100	0.50	—	—	—	0.0000	0.0100	100.00%
4/21/2002	0.05	0.426	0.715	0.113	0.0011	0.25				0.0000	0.0011	100.00%
4/22/2002	0.05	0.464	0.610	0.113	0.0074	0.50				0.0000	0.0074	100.00%
4/24/2002	0.05	0.433	0.800	0.113	0.0033	0.25				0.0000	0.0033	100.00%
4/25/2002	0.11	0.365	1.400	0.113	0.0073	0.50				0.0000	0.0073	100.00%
4/27/2002	0.65	0.796	1.500	0.113	0.0356	1.25				0.0000	0.0356	100.00%
4/28/2002	0.65	1.316	4.400	0.113	0.0627	1.25				0.0000	0.0627	100.00%
4/29/2002	0.02	0.795	1.050	0.113	0.0071	0.25				0.0000	0.0071	100.00%
4/30/2002	0.01	0.724	1.000	0.113	0.0127	0.50				0.0000	0.0127	100.00%
5/1/2002	0.41	0.879	3.900	0.113	0.0240	0.75				0.0000	0.0240	100.00%
5/6/2002	0.02	0.492	0.700	0.113	0.0040	0.25				0.0000	0.0040	100.00%
5/8/2002	0.33	0.907	4.950	0.113	0.0331	3.00	1.42	0.303	10.000	0.0126	0.0457	72.39%
5/9/2002	1.03	1.266	3.150	0.113	0.0961	2.00				0.0000	0.0961	100.00%
5/10/2002	0.17	0.818	3.300	0.113	0.0250	0.75				0.0000	0.0250	100.00%
5/12/2002	1.39	2.484	5.250	0.113	0.2470	2.50	1.83	0.125	3.300	0.0130	0.2601	94.99%
5/13/2002	0.17	2.779	3.300	0.113	0.1111	1.00				0.0000	0.1111	100.00%
5/14/2002	0.78	2.224	5.250	0.113	0.1128	1.50	2.50	0.004	1.350	0.0034	0.1160	97.06%
5/16/2002	0.33	1.220	1.900	0.113	0.0346	0.75				0.0000	0.0346	100.00%
5/17/2002	0.59	1.455	2.800	0.113	0.0499	1.25				0.0000	0.0499	100.00%
5/18/2002	0.02	1.163	2.750	0.113	0.0109	0.25	—			0.0000	0.0109	100.00%
5/21/2002	0.08	0.674	3.450	0.113	0.0175	0.25				0.0000	0.0175	100.00%
5/29/2002	0.26	0.422	2.850	0.113	0.0097	0.75	1.25	0.002		0.0001	0.0097	99.36%
5/30/2002	0.08	0.461	1.350	0.113	0.0073	0.50				0.0000	0.0073	100.00%
5/31/2002	0.09	0.305	0.785	0.113	0.0064	0.50				0.0000	0.0064	100.00%
6/1/2002	1.19	0.508	4.850	0.113	0.0165	1.00	0.33	0.001	0.150	0.0001	0.0165	99.25%
6/5/2002	1.80	2.027	5.950	0.113	0.2393	3.00	3.00	0.240	2.450	0.0300	0.2693	88.86%
6/6/2002	0.50	1.324	2.150	0.113	0.0757	1.50				0.0000	0.0757	100.00%
6/12/2002	0.01	0.463	1.200	0.113	0.0037	0.25				0.0000	0.0037	100.00%
6/13/2002	0.30	0.999	5.900	0.113	0.0326	1.00	0.58	0.132	7.000	0.0055	0.0383	85.63%
6/14/2002	1.50	1.447	4.500	0.113	0.1946	3.50	0.50	0.290	3.200	0.0123	0.2069	82.15%
6/15/2002	0.50	1.160	2.650	0.113	0.0435	1.00				0.0000	0.0435	100.00%
6/16/2002	0.30	0.900	1.500	0.113	0.0243	0.75				0.0000	0.0243	100.00%
6/22/2002	0.33	0.599	2.500	0.113	0.0203	1.00				0.0000	0.0203	100.00%
6/26/2002	0.10	0.287	0.540	0.113	0.0057	0.50				0.0000	0.0057	100.00%
6/27/2002	0.40	0.542	5.300	0.113	0.0089	0.50	0.17	0.015	2.000	0.0003	0.0093	96.63%
7/9/2002	0.10	0.332	0.635	0.113	0.0036	0.50				0.0000	0.0036	100.00%
7/16/2002	0.07	0.315	1.050	0.113	0.0032	0.50				0.0000	0.0032	100.00%
7/22/2002	0.07	0.270	0.425	0.113	0.0013	0.50				0.0000	0.0013	100.00%
7/23/2002	0.16	0.354	1.600	0.113	0.0141	1.25				0.0000	0.0141	100.00%
7/26/2002	0.08	0.285	0.430	0.113	0.0018	0.25				0.0000	0.0018	100.00%
7/27/2002	0.20	0.307	0.650	0.113	0.0061	0.25				0.0000	0.0061	100.00%
7/28/2002	0.36	0.410	2.500	0.113	0.0136	1.00				0.0000	0.0136	100.00%
7/29/2002	0.30	0.312	0.510	0.113	0.0043	1.00				0.0000	0.0043	100.00%
8/2/2002	0.21	0.307	1.500	0.113	0.0060	0.75				0.0000	0.0060	100.00%
8/5/2002	0.10	0.315	0.370	0.113	0.0012	0.50				0.0000	0.0012	100.00%
8/12/2002	0.21	0.313	1.000	0.113	0.0043	0.25				0.0000	0.0043	100.00%
8/13/2002	0.10	0.379	3.000	0.113	0.0039	1.25				0.0000	0.0039	100.00%

Attachment A-6

Table 5 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2002

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
8/16/2002	1.53	0.833	6.000	0.113	0.0592	1.25	1.00	0.238	10.000	0.0124	0.0501	75.27%
8/22/2002	1.60	0.577	3.000	0.113	0.0190	1.75	0.50	0.057	6.0000	0.0012	0.0200	89.07%
8/23/2002	0.00	0.113	0.945	0.014	0.0061	0.50				0.0000	0.0063	100.00%
8/24/2002	0.10	0.190	0.700	0.113	0.0046	0.50				0.0000	0.0049	100.00%
9/3/2002	0.33	0.158	3.000	0.113	0.0077	0.75				0.0000	0.0077	100.00%
9/4/2002	0.10	0.255	0.420	0.113	0.0040	0.50				0.0000	0.0049	100.00%
9/15/2002	1.60	0.931	5.850	0.113	0.1101	3.25	0.75	0.120	8.2500	0.0163	0.1274	87.24%
9/19/2002	0.00	0.284	0.540	0.113	0.0018	0.25				0.0000	0.0019	100.00%
9/21/2002	0.12	0.321	1.350	0.113	0.0011	0.50				0.0000	0.0043	100.00%
9/24/2002	0.20	0.501	1.300	0.113	0.0121	0.75				0.0000	0.0151	100.00%
9/27/2002	1.30	1.019	5.250	0.113	0.2025	4.50	1.25	0.015	1.5500	0.0020	0.2031	99.01%
10/3/2002	0.10	0.326	0.430	0.113	0.0044	0.50				0.0000	0.0044	100.00%
10/4/2002	0.20	0.423	1.650	0.113	0.0092	0.75				0.0000	0.0097	100.00%
10/5/2002	0.10	0.329	0.595	0.113	0.0015	0.50				0.0000	0.0015	100.00%
10/13/2002	0.11	0.366	1.500	0.113	0.0053	0.50				0.0000	0.0053	100.00%
10/15/2002	0.19	0.312	1.100	0.113	0.0062	0.25				0.0000	0.0062	100.00%
10/16/2002	0.60	0.521	0.935	0.113	0.0290	1.25				0.0000	0.0294	100.00%
10/17/2002	0.20	0.440	1.150	0.113	0.0136	0.00	—			0.0000	0.0116	100.00%
10/18/2002	0.11	0.617	2.000	0.113	0.0210	1.00				0.0000	0.0210	100.00%
10/19/2002	1.00	1.054	2.400	0.113	0.1079	2.75		—		0.0000	0.1079	100.00%
10/21/2002	0.02	0.325	0.455	0.113	0.0022	0.25				0.0000	0.0022	100.00%
10/25/2002	0.50	0.983	2.100	0.113	0.0500	1.50				0.0000	0.0500	100.00%
10/26/2002	0.40	0.673	1.200	0.113	0.0292	1.25				0.0000	0.0292	100.00%
10/29/2002	0.24	0.435	0.600	0.113	0.0101	0.75				0.0000	0.0101	100.00%
10/30/2002	0.10	0.462	0.650	0.113	0.0071	0.50				0.0000	0.0071	100.00%
10/31/2002	1.16	0.470	0.650	0.113	0.0186	1.25				0.0000	0.0186	100.00%
11/1/2002	0.30	0.430	0.705	0.113	0.0232	1.75				0.0000	0.0232	100.00%
11/2/2002	0.20	0.493	0.815	0.113	0.0119	0.75				0.0000	0.0119	100.00%
11/4/2002	0.10	0.451	0.630	0.113	0.0077	0.50				0.0000	0.0077	100.00%
11/5/2002	0.31	0.761	1.570	0.113	0.0271	1.00				0.0000	0.0271	100.00%
11/7/2002	0.10	0.411	0.710	0.113	0.0062	0.50				0.0000	0.0062	100.00%
11/10/2002	0.30	0.603	1.550	0.113	0.0258	1.00				0.0000	0.0258	100.00%
11/11/2002	0.30	0.554	0.925	0.113	0.0184	1.00				0.0000	0.0184	100.00%
11/15/2002	1.01	0.415	0.545	0.113	0.0257	2.25	—			0.0000	0.0257	100.00%
11/16/2002	0.60	1.223	2.250	0.113	0.0810	1.75				0.0000	0.0810	100.00%
11/17/2002	0.50	1.051	1.650	0.113	0.0567	1.50				0.0000	0.0567	100.00%
11/19/2002	0.60	0.655	0.985	0.113	0.0113	0.50				0.0000	0.0113	100.00%
11/20/2002	0.10	0.661	0.770	0.113	0.0102	0.50				0.0000	0.0102	100.00%
11/21/2002	0.20	0.791	1.600	0.113	0.0212	0.75				0.0000	0.0212	100.00%
11/22/2002	0.10	0.797	1.400	0.113	0.0245	1.00				0.0000	0.0245	100.00%
11/24/2002	0.10	0.627	0.950	0.113	0.0107	0.50		—		0.0000	0.0107	100.00%
11/26/2002	0.10	0.534	0.700	0.113	0.0108	0.50				0.0000	0.0104	100.00%
11/27/2002	0.10	0.502	0.700	0.113	[illegible]	0.50				0.0000	0.0101	100.00%
11/30/2002	0.20	0.498	0.755	0.113	0.0120	0.75				0.0000	0.0120	100.00%
12/1/2002	0.10	0.419	0.615	0.113	0.0160	1.25				0.0000	0.0160	100.00%
12/2/2002	0.10	0.405	0.595	0.113	0.0062	0.40				0.0000	0.0062	100.00%
12/3/2002	0.10	0.372	0.540	0.113	0.0054	0.40				0.0000	0.0054	100.00%
12/5/2002	0.10	0.355	0.445	0.113	0.0061	0.50				0.0000	0.0061	100.00%
12/6/2002	0.31	0.390	0.515	0.113	0.0159	1.75				0.0000	0.0159	100.00%
12/8/2002	0.23	0.380	0.540	0.113	0.0215	2.25				0.0000	0.0211	100.00%
12/11/2002	0.60	0.626	1.050	0.113	0.0428	2.00				0.0000	0.0420	100.00%
12/13/2002	0.30	0.865	1.700	0.113	0.0715	2.00				0.0000	0.0715	100.00%
12/14/2002	0.70	0.530	1.150	0.113	[illegible]	2.00				0.0000	0.0606	100.00%

Attachment A-6

Table 5 (Cont'd)
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2002

Date	Rain / Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of Overflow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)	
12/18/2002	0.10	0.700	0.950	0.113	0.0123	0.50		—		0.0000	0.0123	100.00%	
12/19/2002	0.60	1.764	5.250	0.113	0.1201	1.75	1.50	1.7000	4.0500	0.2633	0.4157	26.97%	
12/20/2002	0.20	2.067	3.900	0.113	0.0611	0.75				0.0000	0.0611	100.00%	
12/21/2002	0.20	0.774	1.200	0.113	0.0207	0.25		—		0.0000	0.0207	100.00%	
12/22/2002	0.25	0.788	1.050	0.113	0.0093	1.75				0.0000	0.0493	100.00%	
12/24/2002	2.41	0.400	0.900	0.113	0.0648	4.25		—		0.0000	0.0648	100.00%	
12/25/2002	0.70	0.536	0.700	0.113	0.0553	2.00				0.0000	0.0553	100.00%	
12/26/2002	0.10	0.405	0.645	0.113	0.0061	0.50				0.0000	0.0061	100.00%	
12/30/2002	0.00	0.544	1.050	0.113	0.0090	0.50				0.0000	0.0090	100.00%	
12/31/2002	0.20	1.474	2.500	0.113	0.0425	0.75				0.0000	0.0425	100.00%	
TOTALS	73.09	117.034	293.068	19.013	5.1338	175.75	18.60	5.326	73.0500	0.3364	5.5003	92.005%	AVERAGE

Attachment A-6

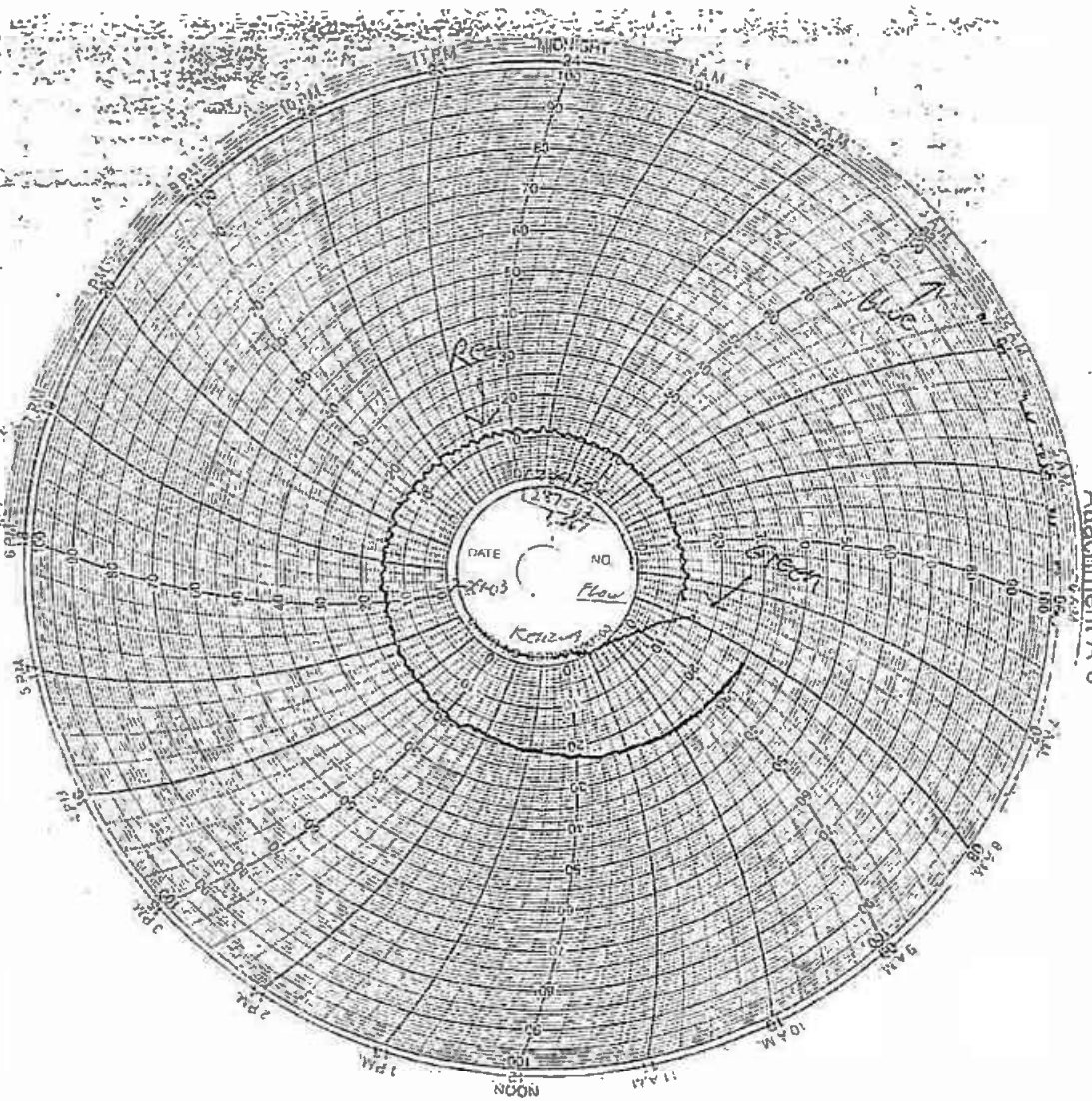
Table 6
Borough of Kane
Kinzua Road Wastewater Treatment Plant
Summary of Combined Sewer Overflow Events
2003

Date	Rain/Snow Fall (Inches)	Average Plant Flow (MGD)	Peak Plant Flow (MGD)	Wetmore Township Pump Station Flow (MGD)	Volume of Plant Flow (MG)	Duration of Rainfall Event (Hours)	Duration of OverFlow Event (Hours)	Average CSO Flow (MGD)	Peak CSO Flow (MGD)	CSO Volume (MG)	Total System Volume (MG)	Captured for Treatment (%)
1/1/2003	0.80	2.225	5.200	0.113	0.2611	3.500				0.0000	0.2611	100.00%
1/2/2003	1.75	1.998	3.500	0.113	0.1822	2.50				0.0000	0.1822	100.00%
1/3/2003	0.30	0.729	1.400	0.113	0.0256	1.00				0.0000	0.0256	100.00%
1/4/2003	0.00	0.693	0.963	0.113	0.0224	0.50				0.0000	0.0224	100.00%
1/5/2003	0.65	0.569	0.920	0.113	0.0295	1.50				0.0000	0.0295	100.00%
1/6/2003	0.20	0.552	0.700	0.113	0.0137	0.75				0.0000	0.0137	100.00%
1/7/2003	0.41	0.508	0.595	0.113	0.0205	1.25				0.0000	0.0205	100.00%
1/8/2003	0.00	0.860	0.595	0.113	0.0672	0.50				0.0000	0.0672	100.00%
1/9/2003	0.72	0.498	0.700	0.113	0.0281	0.75				0.0000	0.0281	100.00%
1/10/2003	0.20	0.470	0.605	0.113	0.0112	0.75				0.0000	0.0112	100.00%
1/11/2003	0.10	0.504	0.650	0.113	0.0204	2.50				0.0000	0.0204	100.00%
1/12/2003	0.60	0.385	0.500	0.113	0.0171	1.50				0.0000	0.0171	100.00%
1/13/2003	0.41	0.350	0.530	0.113	0.0110	1.00				0.0000	0.0116	100.00%
1/14/2003	0.00	0.370	0.535	0.113	0.0087	0.75				0.0000	0.0087	100.00%
1/15/2003	0.10	0.368	0.485	0.113	0.0093	0.50				0.0000	0.0093	100.00%
1/16/2003	0.52	0.341	0.485	0.113	0.0094	1.00				0.0000	0.0094	100.00%
1/17/2003	0.51	0.357	0.500	0.113	0.0102	2.00				0.0000	0.0102	100.00%
1/18/2003	0.00	0.344	0.535	0.113	0.0080	0.50				0.0000	0.0080	100.00%
1/20/2003	0.00	0.344	0.580	0.113	0.0048	0.50				0.0000	0.0048	100.00%
1/22/2003	0.63	0.532	0.920	0.113	0.0118	1.25				0.0000	0.0118	100.00%
1/23/2003	0.13	0.381	0.525	0.113	0.0125	1.35				0.0000	0.0125	100.00%
1/24/2003	0.10	0.364	0.485	0.113	0.0048	0.50				0.0000	0.0048	100.00%
1/26/2003	0.10	0.304	0.580	0.113	0.0048	0.50				0.0000	0.0048	100.00%
1/27/2003	1.41	0.284	0.425	0.113	0.0160	2.25				0.0000	0.0160	100.00%
1/29/2003	0.10	0.216	0.420	0.113	0.0022	0.50				0.0000	0.0022	100.00%
1/31/2003	0.10	0.287	0.490	0.113	0.0032	0.50				0.0000	0.0036	100.00%
2/1/2003	1.52	0.303	0.490	0.113	0.0139	1.75				0.0000	0.0139	100.00%
2/2/2003	0.58	0.910	2.000	0.113	0.0420	1.25				0.0000	0.0420	100.00%
2/3/2003	5.30	0.869	2.350	0.113	0.1418	2.50				0.0000	0.1418	100.00%
2/6/2003	1.90	0.217	0.600	0.113	0.0254	2.00				0.0000	0.0254	100.00%
2/9/2003	1.12	0.365	0.600	0.113	0.0116	1.25				0.0000	0.0116	100.00%
2/10/2003	2.10	0.365	0.545	0.113	0.0237	2.25				0.0000	0.0237	100.00%
2/11/2003	4.87	0.342	0.490	0.113	0.0383	4.00				0.0000	0.0383	100.00%
2/12/2003	1.14	0.362	0.490	0.113	0.0136	1.50				0.0000	0.0136	100.00%
2/13/2003	2.10	0.341	0.490	0.113	0.0217	2.25				0.0000	0.0217	100.00%
2/16/2003	3.67	0.341	0.600	0.113	0.0334	3.50				0.0000	0.0334	100.00%
2/17/2003	1.93	0.345	0.485	0.113	0.0166	1.75				0.0000	0.0166	100.00%
2/18/2003	0.31	0.296	0.435	0.113	0.0097	0.75				0.0000	0.0097	100.00%
2/22/2003	0.61	1.570	2.900	0.113	0.0759	1.25				0.0000	0.0759	100.00%
2/23/2003	1.23	1.147	1.850	0.113	0.0539	1.25				0.0000	0.0539	100.00%
2/24/2003	1.91	0.349	0.705	0.113	0.0666	1.75				0.0000	0.0666	100.00%
TOTALS	45.10	21.884	57.020	3.613	1.2881	64.910	0.00	0.000	0.0000	0.0000	1.2881	100.00%

AVERAGE

Appendix E

July 2003 Flow Meter Charts

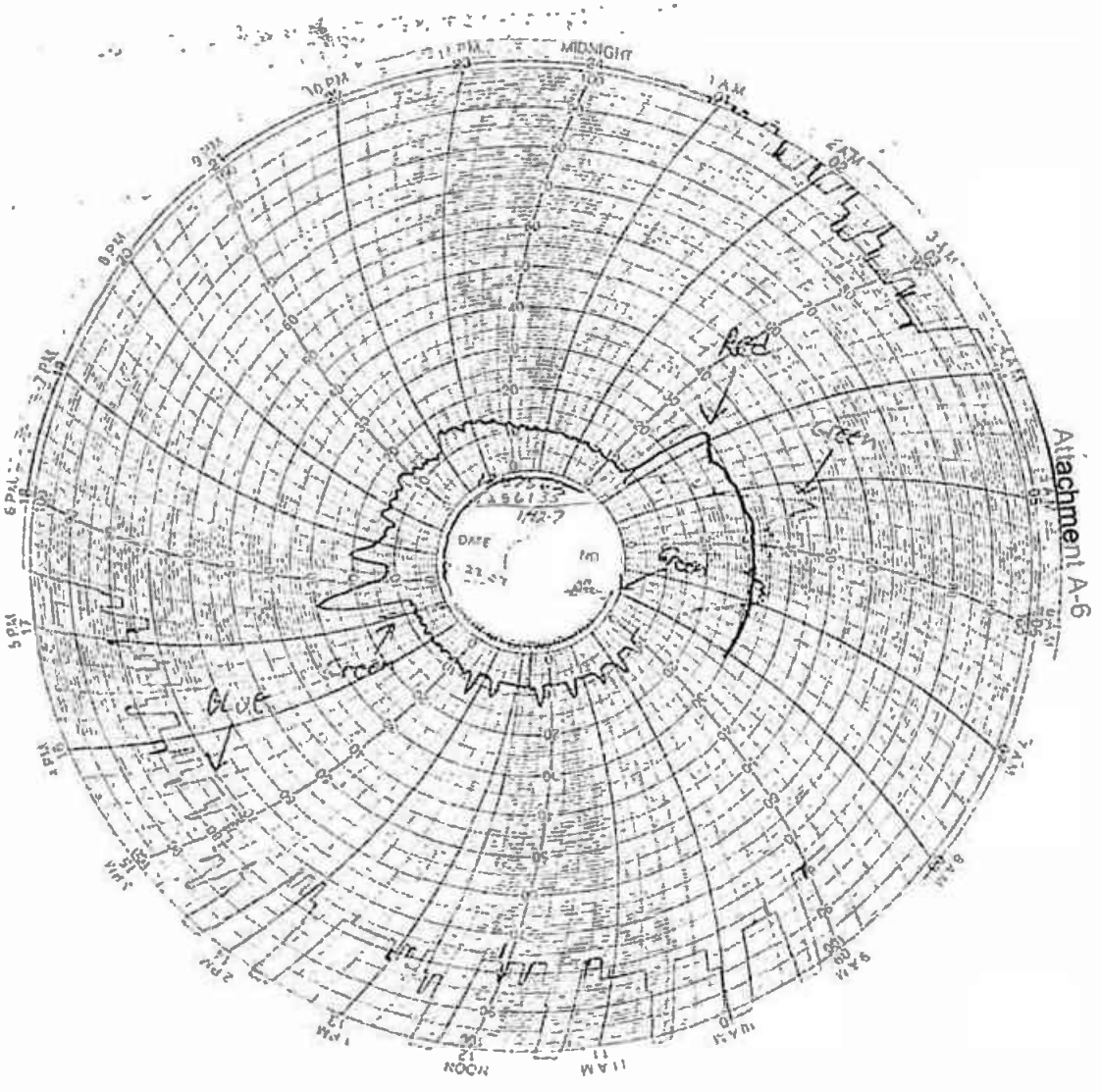


* Red - Flow in M.G.D.

* Blue - Flow in G.P.D.

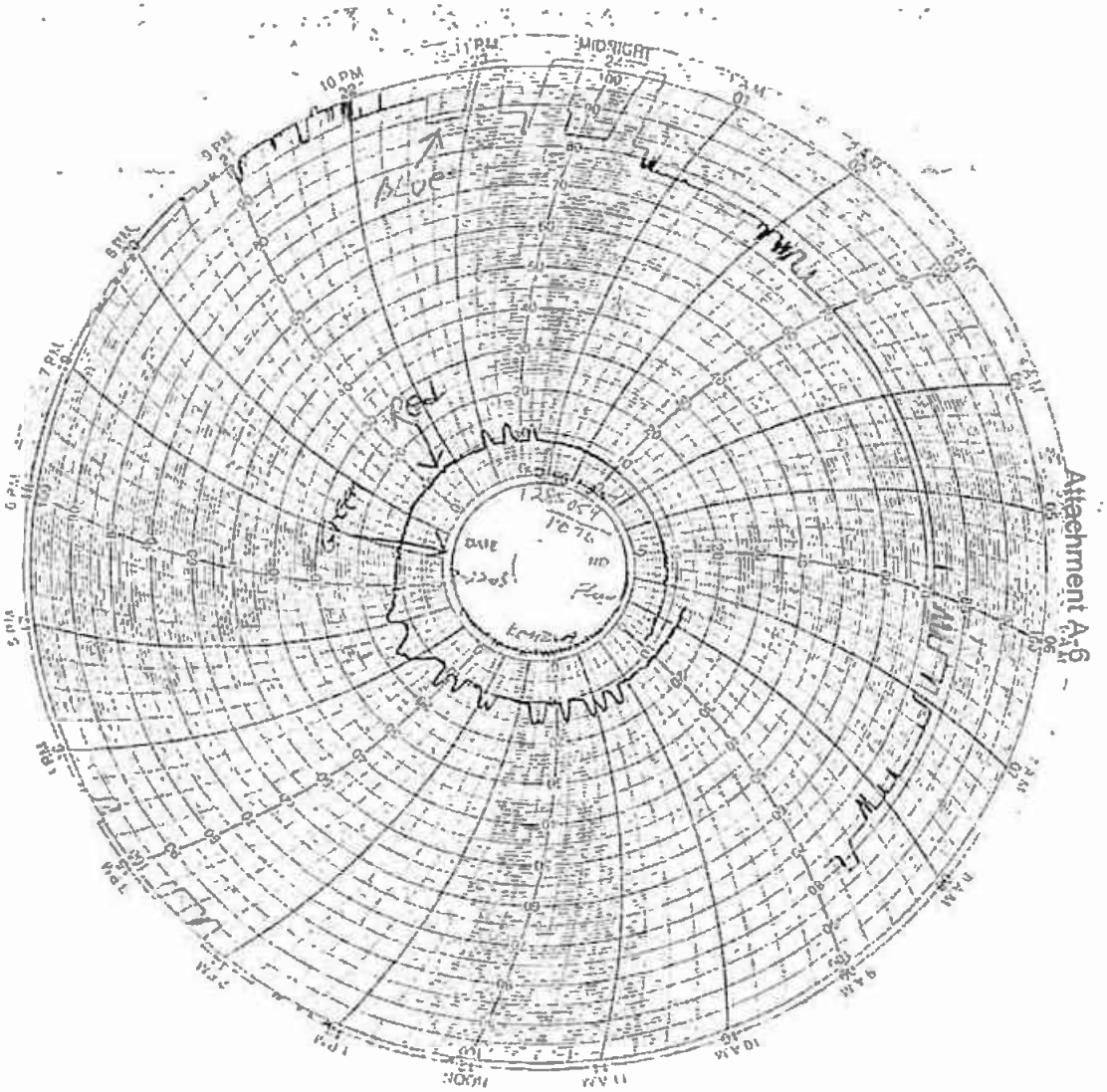
* Green is Bypass in M.G.D.

Attachment A-6



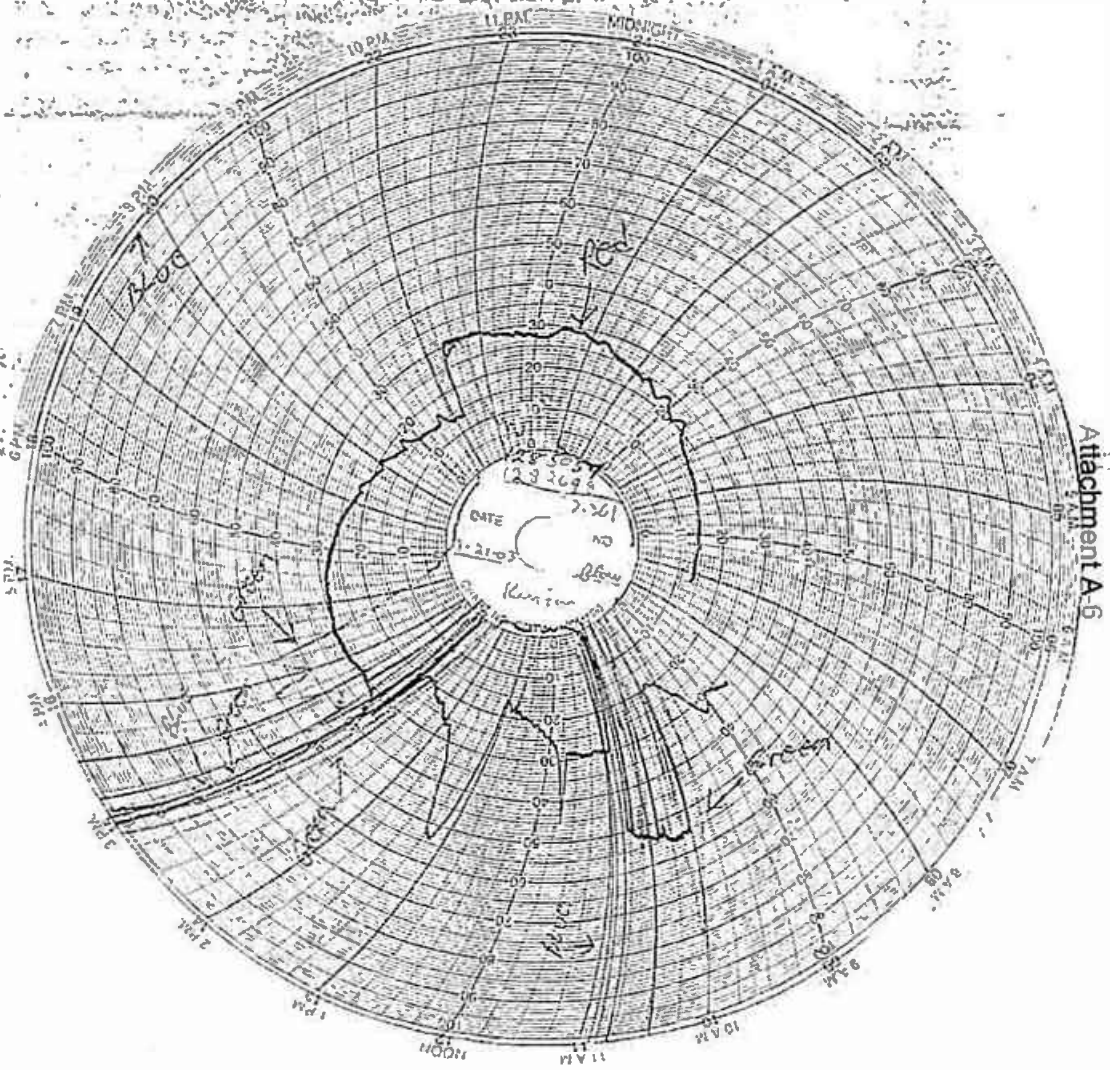
Attachment A-6

* Red - Flow in MGD
* Blue Flow in G.P.D.
* Green - is bypass in MGD



Attachment A-6

- ★ Red - Flow in M.G.D.
- ★ Blue - Flow in G.P.D.
- ★ Green - is By Pass in M.G.D.



Attachment A-6

☆Red – Flow in M G D.

☆ Blue – Flow in G P D.

☆ Green is BYPASS in M G D.

Attachment A-6

Appendix F

Pennsylvania Natural Diversity Index Search Results

Attachment A-6

KLH Engineers, Inc.

5173 Campbells Run Road, Pittsburgh, PA 15205

Telephone (412) 494-0510
Telecopier (412) 494-0426
EMAIL info@klhengineers.com

July 28, 2003
Ref. No. 242

Department of Environmental Protection
Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335

Gentlemen:

Borough of Kane
Kinzua Road Wastewater Treatment Plant
PNDI Search Form

Attached please find a copy of the PNDI Search Form for the Borough of Kane's Kinzua Road Wastewater Treatment Plant (WWTP). The Borough is finalizing the Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) for the Kinzua Road WWTP. As part of this report, the Borough must show that the CSO at the WWTP, CSO 002, does not discharge into a sensitive area. DEP requested the Borough provide the results of a PNDI Search to satisfy the requirements of the LTCP. If you should have any questions or comments, please call.

Sincerely,

KLH ENGINEERS, INC.

Kimberly R. Mundorf

3930-PM-WM0041 2/2001

Attachment A-6
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERSHED MANAGEMENT
BUREAU OF WATERWAYS ENGINEERING

FOR OFFICIAL USE ONLY
PNDI Screening
Reviewer
Date 8/11/03
Phone No. 814 332 -6942

SUPPLEMENT NO. 1
PENNSYLVANIA NATURAL DIVERSITY INVENTORY SEARCH FORM

This form provides site information necessary to perform a computer screening for species of special concern listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, the Pennsylvania Fish and Boat Code or the PA Game and Wildlife Code. Records regarding species of special concern are maintained by PA DCNR in a computer data base called the "Pennsylvania Natural Diversity Inventory" (PNDI). Results from this search are not intended to be a conclusive compilation of all potential special concern resources located within a proposed project site. On-site biological surveys may be recommended to provide a definitive statement on the presence or absence, or degree of natural integrity of any project site. Results of this PNDI search are valid for one year.

Please complete the information below, attach an 8½" x 11" photocopy (DO NOT REDUCE) of the portion of the U.S.G.S. Quadrangle Map that identifies the project location and outlines the approximate boundaries of the project and mail to the appropriate DEP regional office or delegated County Conservation District prior to completing a Chapter 105 environmental assessment or any other DEP permit application. (SEE REVERSE SIDE FOR LIST OF OFFICES AND ADDRESSES).

41° 40' 37" N
78° 48' 19" W

NAME: Borough of Kane, Kinzua Road Wastewater Treatment Plant

ADDRESS: Kinzua Road & RR 321

Kane, PA 16735

PHONE: (814) 837-9240

COUNTY: McKean

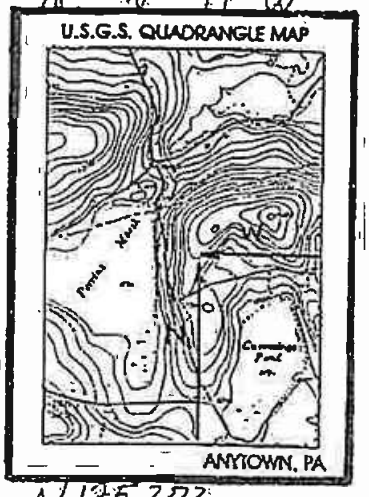
TWP./MUNICIPALITY: Kane

U.S.G.S. 7½ Minute Quadrangle

Kane, PA

PROJECT DESCRIPTION AND SIZE (Briefly describe entire area relevant to your project, including acreage.)

CSO Outfall 002, this search is needed as a part of the Borough of Kane's Kinzua Road Wastewater Treatment Plant Long Term Control Plan



N 185 373

North (Up) 7.9 inches

West (to the left) 2.8 inches

INDICATE PROJECT LOCATION TO THE NEAREST ONE TENTH INCH MEASURING FROM THE EDGE OF THE MAP IMAGE FROM THE LOWER RIGHT CORNER.

RECEIVED
JUL 31 2003
ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

FOR OFFICIAL USE ONLY

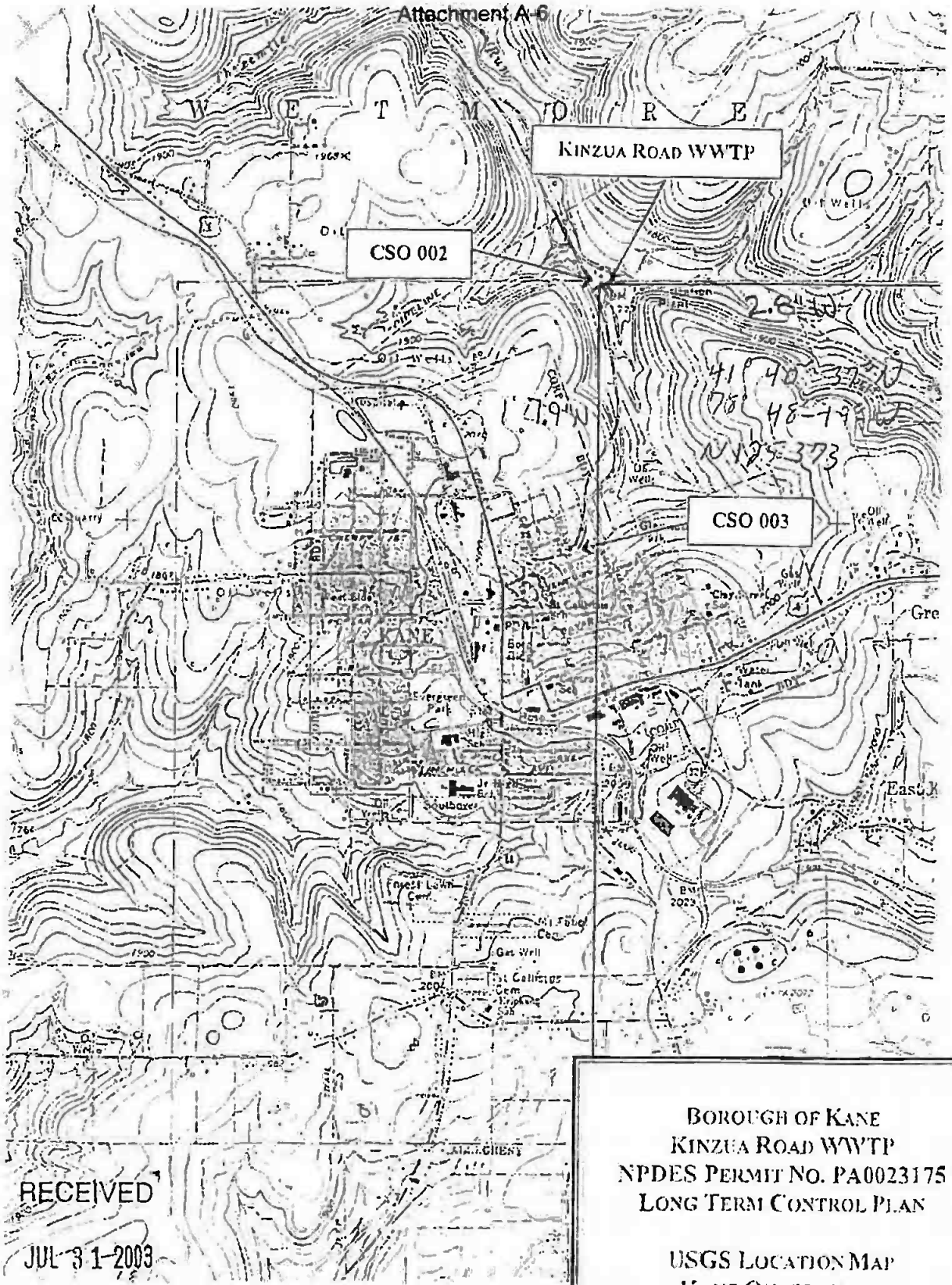
received 100 acre N 185 373 No conflict found

SCREENING RESULTS - Follow the directions of the checked block.

☒ No potential conflicts were encountered during the PNDI inquiry. Include this form and the PNDI receipt with your Chapter 105 environmental assessment or other DEP permit application submissions.

☐ Potential conflicts must be resolved by contacting the natural resource agencies listed on the PNDI receipt. Please provide a copy of this form and the PNDI receipt along with a brief description of your project to the listed agency for consultation and recommendations. Include this form, the printed PNDI search results and the natural resource agency's written recommendation with your Chapter 105 environmental assessment or other DEP permit application submissions.

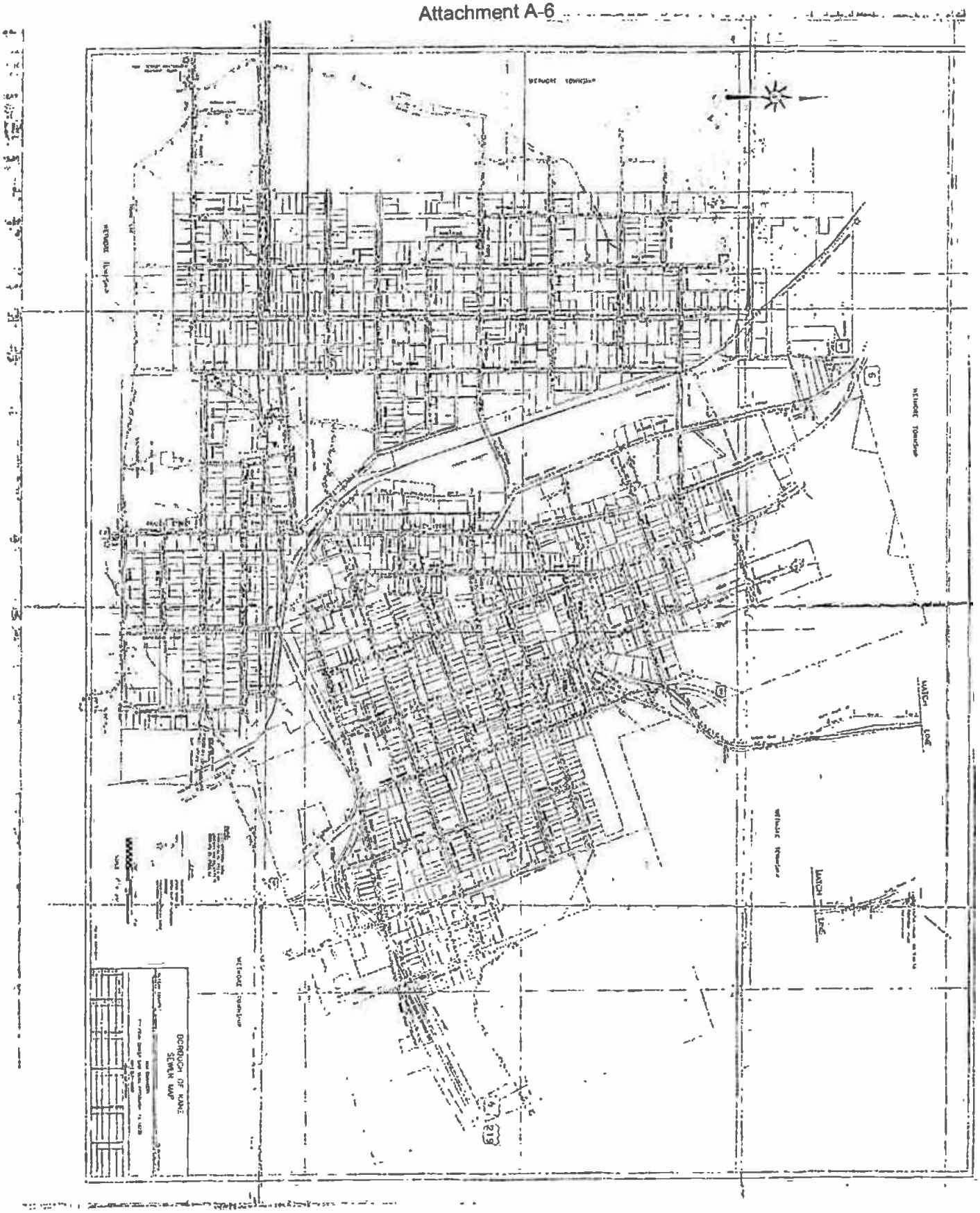
Attachment A-6



BOROUGH OF KANE
KINZUA ROAD WWTP
NPDES PERMIT NO. PA0023175
LONG TERM CONTROL PLAN

USGS LOCATION MAP
KANE QUADRANGLE

Attachment A-6



Attachment A-6

Borough of Kane

Pine Street Wastewater Treatment Plant
NPDES Permit No. PA0023167

Combined Sewer Overflow
Long Term Control Plan

KLH
ENGINEERS, INC.
5173 Campbells Run Road
Pittsburgh, PA 15205
Phone: 412-494-0510
Fax: 412-494-0426

Attachment A-6

Borough of Kane
Pine Street Wastewater Treatment Plant
Long Term Combined Sewer Overflow Control Plan

Table of Contents

Attachment A-6

Borough of Kane
Pine Street Wastewater Treatment Plant
Long Term Combined Sewer Overflow Control Plan

I. Introduction

The Borough of Kane owns and operates two wastewater treatment plants (WWTPs), the Kinzua Road and Pine Street WWTPs. This report focuses on the Pine Street WWTP, operated under NPDES Permit No. PA0023167, and the Pine Street drainage basin Combined Sewerage System (CSS). Both of the Borough's WWTPs serve the Borough of Kane and Wetmore Township, approximately 5,847 people. A sewer plot plan of the Pine Street WWTP service area is shown in Appendix A.

The receiving stream and location of the outfall for the Pine Street WWTP is listed below:

- Outfall 001 is located at the Pine Street Wastewater Treatment Plant and discharges into West Run, the latitude and longitude are as follows:

  41° 39' 19" / 78° 49' 45"

In accordance with the Consent Order & Agreement, dated January 17, 2001, the Borough has been charged with the following tasks:

1. *Submit to the Department the WQM Permit Application for a CSO-related bypass*
   STATUS: Completed

2. *Complete construction of the CSO-related bypass and a portion of the interceptor (from the CSO-related bypass to manhole TL-8, at a minimum) in accordance with the approved WQM Permits*
   STATUS: Completed

3. *Collect the following flow monitoring data:*
   (1) when the CSO-related bypass is activated, collect grab samples for the parameters listed in the NPDES Permit, and
   (2) according to the information contained in EPA's policy entitled "CSO Guidance for Long-Term Control Plan" under Section 2.5.2 "Combined Sewer System Monitoring"
   STATUS: sampling commenced on 11/19/03 and is ongoing

4. *Submit the data detailed in subparagraph 3.c. (task 3. above) to the Department*
   STATUS: submitted with quarterly progress reports

5. *Complete and submit a Nine Minimum Control (hereinafter "NMC") Report to the Department*
   STATUS: Completed and submitted to the Department on 7/13/01

6. *Complete and submit a Long Term Control Plan (hereinafter "LTCP") in accordance with EPA's policy entitled "CSO Guidance for Long-Term Control Plan" focusing on a comprehensive solution to any outstanding environmental issues*
   STATUS: Purpose of this report

7. *Implement the Department approved LTCP in accordance with the schedule contained therein, which becomes incorporated herein by reference.*
   STATUS: See Section VI. of this report

8. *Achieve compliance with NPDES Permit No. PA0023167 for six consecutive months*
   STATUS: Pending

Submission of the report contained herein is intended to satisfy the requirements of Task No. 6 above. Department approval of this report will ultimately lead to attainment of Tasks No. 7 & 8.

The Borough of Kane qualifies as a small community (population less than 75,000). The EPA's Combined Sewer Overflow Guidance for the Long Term Control Plan, states:

> *"At a minimum, however, all small municipalities should be required to develop LTCPs that will provide for the attainment of WQS and that include the following elements:"*
>
> - *Implementation of the NMC*
> - *Public Participation*
> - *Consideration of Sensitive Areas*
> - *Post-construction Compliance Monitoring Program*

This report fulfills the CSO requirements for small communities, the CSO requirements listed in the Borough's CO&A, and the directives of the DEP. The recommendations contained in this report are based on a goal of meeting water quality standards.

As outlined in the above tasks, the next phase of the Borough's "Plan of Action" is the submittal of this Long Term CSO Control Plan (LTCP).

II. Implementation of the Nine Minimum Controls

1. Proper Operation and Regular Maintenance Programs for the Sewer System and the CSO Outfalls

The Pine Street watershed does not contain any combined sewer overflows. Regular maintenance programs for the CSS include the inspection, cleaning, and repair/replacement of catch basins within the watershed, a regular flushing schedule on "flat" sewerlines within the Borough, and a catch basin cleaning program. The Borough also performs repair/rehabilitation on the sewer lines on an as needed basis. In addition to the day-to-day operations of the WWTP, the wastewater department personnel are responsible for the maintenance and operation of four pump stations within the collection system that discharge to the Pine Street WWTP (Route 66 pump station, West Kane pump station, Westwind pump station, and Rt. 6 pump station). Each pump station is inspected on a weekly basins and maintenance is performed as needed. Inspection and maintenance logs for the pump stations can be found in Appendix B.

2. Maximum Use of the Collection System for Storage

The Borough has developed an O&M Program that includes an O&M Plan and Schedule, complete SOPs, detailed documentation forms and an organized method of record keeping. The sewer system is televised on an as needed basis, utilizing an outside experienced contractor to assist in performing preventative maintenance on the sewer system.

The Borough also maintains a catch basin repair/replacement program to ensure that the maximum use of the collection system is maintained. A log (Appendix C) is kept daily of catch basin repairs/replacements and their status.

There is no active overflow in the Pine Street system watershed. Therefore, it is believed the Borough maximizes the use of the collection system for storage. The WWTP foreman has also developed an operating strategy whereby additional storage capacity in the SBR tanks is reserved for wet weather flows.

3. Review and Modification of Pretreatment Requirements to Ensure that CSO Impacts are Minimized

There are no industrial users that contribute flow to the Borough's system and the small number of existing commercial and non-domestic customers contribute little flow. This flow is therefore being considered negligible.

It was determined that any further action, with regards to this control, would not be cost effective and is considered unnecessary.

4. Maximization of Flow to the POTW for Treatment

The Pine Street WWTP is rated for a peak capacity of 5.25 MGD. The WWTP cannot treat a sustained flow of 5.0 MGD without risking washing out the sludge blankets, which could lead to an effluent NPDES violation. In order to prevent CSOs within the CSS, and simultaneously treat as much flow as possible without overloading the WWTP, the Borough constructed a CSO related bypass and upgraded the capacity of the Pine Street interceptor. As a result, there are no known combined sewer overflows occurring within the Pine Street watershed during wet weather events or during dry weather. This shows the WWTP is maximizing its treatment capacity during wet weather flows and demonstrates that the CSS is capturing for treatment 100% of the combined sewage during precipitation events. Therefore, the Borough does not plan to make any modifications to the WWTP to maximize treatment.

Routine flushing of the sewerlines (Appendix D) within the Borough is also part of the Borough personnel maintenance duties which helps to maximize flow to the treatment plant.

5. Elimination of Dry Weather CSOs

As stated previously, there are no known wet weather *or* dry weather overflows occurring within the Pine Street watershed. Therefore, no further action is planned for this control.

6. Control of Solids and Floatable Material in CSOs

The Borough has a street sweeping program, which helps to reduce the amount of solids and floatables that enter the CSS. The street sweeping program begins immediately after all of the snow has melted. Each street within the Borough is swept on both sides at least once. On streets where debris is known to collect and cause problems within the collection system, street sweeping may be performed up to 5 or 6 times a year. Records are kept (Appendix E) of when and for how long the streets are swept. The number of times the truck dumps the debris is also recorded. Over the past year, records indicate that the Borough has disposed of approximately 62,000 ft^3 of debris that would otherwise enter the sewer system and either hinder the sewer capacity or negatively impact the treatment facilities.

The collection of leaves is another program that serves to reduce contaminants entering the collection system. Records are kept (Appendix F) of the number of times the leaf collector dumps the leaves. Records show that the Borough removed and disposed of approximately 17,000 ft^3 of leaf/yard waste during the past season.

The Borough also maintains a catch basin cleaning/inspection program to reduce the amount of solids and debris that enter the collection system. Logs are kept (Appendix G) of which catch basins are cleaned and the condition of the catch basin at the time of the cleaning which helps to prioritize catch basins for the catch basin repair/replacement program.

7. Pollution Prevention Programs to Reduce Contaminants in CSOs

The Borough has a leaf collection program, a street sweeping program, a recycling program, a curbside trash collection program and a public trash disposal program within the downtown area, all of which help to reduce the amount of contaminants entering the CSS. The street sweeping program and leaf collection program were explained under control six. The recycling program allows residents to drop off aluminum, glass, plastics and newspapers.

8. Public Notification to Ensure the Public Receives Adequate Notification of CSO Occurrences and CSO Impacts

The Pine Street WWTP CSS has no permitted CSOs and, as stated earlier, has no known overflows during dry or wet weather. However, the Borough has posted signs at all CSO facilities in the entire CSS. The Borough also annually posts an advertisement in the local newspaper, *The Kane Republican*, which provides information on the existing CSO facilities, events and signage.

9. Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

Construction of the new interceptor and the CSO related bypass facilities has eliminated any CSOs within the Pine Street CSS. However, as part of the development of this Long Term Control Plan, a monitoring period was established after the construction of the facilities to collect data for use in determining whether these controls result in the effluent's parameters being within permitted limits.

A detailed description of the CSO related bypass facilities, results of the post-construction monitoring program, and an analysis of the data is presented in Section V. of this report.

III. Public Participation

The Borough of Kane has a local newspaper, the *Kane Republican.* Usually a reporter from the newspaper attends the Borough's regular Council and Authority meetings and outlines the proceedings of the meeting in the next day's publication. The events of the meetings are also reported by the local radio station, WLMI Radio, the day after the meetings. The Borough uses the *Kane Republican* as its primary source of providing information to the public regarding the Borough's CSS. The Borough will place an add in the *Kane Republican* to inform the public that a copy of the Borough's LTCP can be reviewed at the Borough's office and if the public wishes to comment on the LTCP they can attend the Borough's December Council meeting. The signs that are placed at the outfall locations are also used to notify the public about possible overflows.

In addition to keeping the public informed of significant events through radio and newspaper coverage, the Borough is in the process of scheduling an open house for the public to invite all interested people in the community to visit the WWTP and become more educated in the process. It will be advertised in the local paper and on the local radio station.

IV. Consideration of Sensitive Areas

EPA has requested that any sensitive area impacted by a CSO be of highest priority in the development of a LTCP. As stated in the CSO Control Policy a sensitive area has been designated as:

> *"Outstanding National Resource Water, National Marine Sanctuary, waters containing threatened or endangered species and their habitat, waters with primary contact recreation, public drinking water intakes or their designated protection areas, and shellfish beds."*

Outfall 001, at the Pine Street WWTP discharges into West Run, which is not defined under Chapter 25 Section 93 of the Pennsylvania Code. However, West Run is a tributary to the stream East Branch Tionesta Creek, which is classified as a High Quality - Cold Water Fishery, under Chapter 25 Section 93.9q of the Pennsylvania Code. It is therefore assumed that West Run is also defined as a High Quality - Cold Water Fishery. Under Chapter 93, Section 93.3 of the PA Code, a High Quality Water is listed as a Special Protection protected water use. This section defines a High Quality Water as:

> *"High Quality Waters – A stream or watershed which has excellent quality waters and environmental or other features that require special water quality protection."*

Under Chapter 93, Section 93.3, a Cold Water Fishery is listed as an Aquatic Life protected water use. This section defines a Cold Water Fishery as:

> *"Cold Water Fishery – Maintenance and/or propagation of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat."*

Based on the definition of a sensitive area, this outfall is considered as discharging into a sensitive area, since the waterway is defined as a High Quality - Cold Water Fishery. As stated previously, overflows do not occur in the Pine Street watershed. However, it is being assumed that if an overflow occurred, no one would be fishing on either Hubert Run or the Unnamed Tributary to Hubert Run. The Borough has not received any complaints or reports after an overflow event of floatable solids in West Run since the installation of the CSO related bypass and swimming does not take place in any of the areas near the outfall.

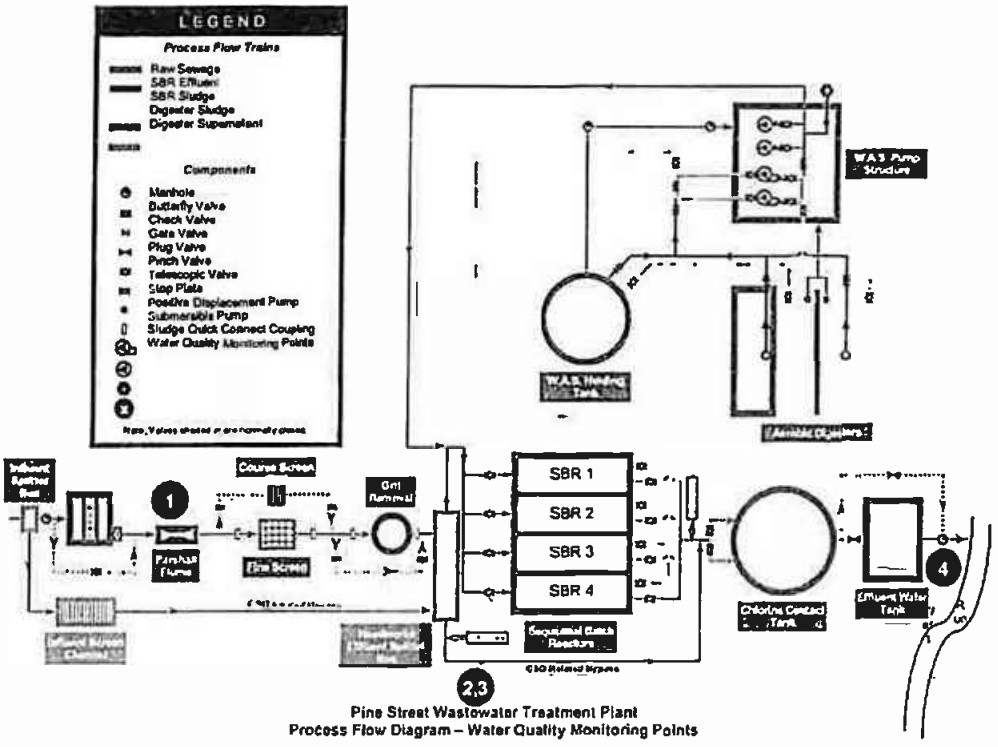
Since the Pine Street CSS contains no overflows, it is not believed that any of the waterways near the outfall should be classified as a sensitive area.

V. Maximizing Treatment at the Existing WWTP

The Borough of Kane Authority, in an effort to avoid overloading of the secondary treatment facilities and achieve a consistent water quality has already constructed a 24" CSO related bypass (see Flow Diagram next page) to convey wet weather flow in excess of 3.5 MGD around the plant. The construction of this bypass and the related interceptor upgrade as capital improvements to the system allows all combined sewer flows to reach the plant, effectively eliminating all CSOs within the system. Data compiled over an 11-month period (November, 2003 to October, 2004) is used to determine the effectiveness of the bypass facilities on the quality of effluent leaving the treatment facilities and to determine the need for additional facilities (i.e. primary clarification) to meet water quality standards as stipulated in the Pine Street WWTP NPDES Permit.

1. Description of Process

The bypass is controlled by a combination of two diversion structures to regulate the flow during wet weather events. The first structure is located at the head of the plant at the end of the interceptor leading into the plant. This structure, the "Influent Diversion Chamber", is equipped with a vortex type flow control valve that limits flow into the headworks building to its maximum capacity of 7 MGD. The excess flow is diverted over a side weir, through a coarse screen channel, and into the 24' bypass pipe that leads around the plant where it converges with the effluent from the SBRs before entering the chlorine contact tank.



Pine Street Wastewater Treatment Plant
Process Flow Diagram – Water Quality Monitoring Points

The second structure is located after the headworks building between the headworks and the SBRs. After screening and grit removal in the headworks building, a maximum flow of 7 MGD enters the second structure, called the "headworks effluent splitter". Here a flow proportional weir limits flows to the SBRs to their maximum capacity of 3.5 MGD. The excess flow is diverted over a

side weir and into an adjacent chamber where it joins the flow from the 24" bypass line. An area-velocity flow meter is installed in the bypass line to monitor and record bypass flows. The flow meter is equipped with a sensor that automatically triggers the bypass disinfection process. The chlorination rates, along with all required parameters are monitored and recorded during these bypass events.

As previously stated, the bypass facilities allow all combined sewer flows to reach the plant. This assures that no surcharging or overflows occur within the sewer system. A characterization of overflows is, therefore not applicable to this long term control plan. Monitoring and modeling of the bypass flows and resulting combined effluent from the SBRs and the bypass flows is performed in order to provide data for the Assessment of Water Quality Impact.

2. Summary of Data

Three monitoring points were chosen to monitor the content of contaminants in the process. The first monitoring point is at the Influent Diversion Chamber. This monitoring point is used to compare the intermediate and final effluent content with the raw sewage entering the plant. The second monitoring point is located at the discharge side of the Headworks Effluent Splitter structure. Data collected from this monitoring point gives insight into the content of the overflows to be blended with the discharge from the SBRs. The third monitoring point is located at the Effluent Water Tank following the chlorine contact tank. Data from this monitoring point indicates the overall effectiveness of the combined SBR effluent and the bypass flows.

Because individual treatment parameters have different causes and effects, and in order to correctly analyze and understand the information obtained from the monitoring results, each parameter is analyzed individually. For the purposes of this study, the following parameters are analyzed:

A. Fecal Coliform
B. Total Suspended Solids (TSS)
C. Carbonaceous Biochemical Oxygen Demand (CBOD)
D. Nitrite – Nitrate (NO_2 - NO_3)
E. Ammonia – Nitrogen (NH_3-N)
F. Phosphorous (P)

A. Fecal Coliform Removal

The Pine Street Wastewater Treatment Plant NPDES Permit has set its Fecal Coliform concentration effluent limits as a geometric mean at 200/100 mL for the period of 5/1 through 9/30 and 2,100/100 mL for the period of 10/1 through 4/30. Furthermore, no more than 10% of the samples taken during a month are to contain fecal concentrations greater than 1,000/100 mL.

The data collected for the fecal coliform concentrations during bypass events is presented in Table 1 and graphed in Figure 1 (Appendix A).

The data indicates that the bypass process is performing poorly for the disinfection process, especially in the later half of the monitoring period. However, a review of the chlorine residuals detected in the effluent side of the headworks effluent splitter structure reveals that low chlorine residuals correspond to every elevated fecal coliform concentration instance for which chlorine residual information is available. The failure of the disinfection process therefore is attributed to improper chlorine addition in the bypass facilities.

Discussions with treatment plant personnel and a review of the WWTP daily log (Appendix H) reveal that the elevated fecal coliform concentrations correspond to a failure in the chlorination facilities. Since the discovery of the malfunction, repairs have been made to the ejector, the rotameter, and the solenoid valve for the bypass facilities. Also, the 2" chlorine line was flushed with compressed air to clear a suspected blockage. It is believed that the chlorination facilities are back in working order and should provide the proper flow of chlorine to achieve proper disinfection.

Incidentally, when the chlorination facilities were operating properly, there were no instances of fecal coliform concentrations that exceeded permit levels. Data excluding low chlorine residual results is presented in Table 1(a) and graphed in Figure 1(b). The information reflected here indicates excellent disinfection results.

B. Total Suspended Solids Removal

Effluent limits for Total Suspended Solids (TSS) for Pine Street WWTP are set at 30, 45, and 60 mg/L for average monthly, average weekly, and instantaneous maximum, respectively.

The data collected for the TSS concentrations during bypass events is presented in Table 2 and graphed in Figure 2. The data indicates that on 6 instances during the monitoring period, TSS levels exceeded the instantaneous maximum levels permitted. Several of these occurrences are attributed to causes not directly related to the bypass facilities.

The first two occurrences, which occurred during the same bypass event, happened during an unusually large and extended storm event. At the time of the storm event, one side of the Chlorine Contact Tank (CCT) had been drained for cleaning, which resulted in an overloading in the half of the chlorine contact tank that was still in service. This, in turn, caused the solids in this half to be washed out, resulting in the elevated TSS concentrations in the Effluent Water Tank. It should be noted that the TSS levels in the influent diversion chamber and the headworks effluent splitter indicated a decreasing trend through the process which strongly suggests that, based on the majority of bypass event results, would most likely have resulted in an effluent within the parameter limits had it not been for the CCT problem.

The third occurrence took place on May 22, 2004. The information from the operators' logs indicates that the cause for this was due to an SBR malfunction. A "filled decant" was occurring due to a malfunction in the transducer that measures the water level in the tank. When a "filled

decant" happens, the tank is still filling while the decanter is discharging. This causes an upset of the sludge blanket in the tank and, consequently, a discharge of solids occurs. Record logs of the sample collection and the occurrence of the filled decant show that the malfunction was occurring at the same time as the sample collection.

Further inspection of the sample records shows that the TSS levels in the headworks effluent splitter were approximately 37% lower than the level in the effluent water tank at this time, which further supports the belief that this occurrence of elevated TSS was not a result of the bypass as much as a malfunction of the SBR treatment. Also supporting this is the fact that a second set of samples taken during the same bypass event (but not during a filled decant phase) shows TSS levels far below the effluent limits.

The fourth occurrence took place less than a week later on May 28th. Review of the sample data for this event also shows TSS levels in the headworks effluent splitter below that which was detected in the effluent water tank, suggesting that this occurrence was again the result of TSS content from a source other than the bypass facilities. There are only two sources, therefore, that can reasonably be assumed to be the source(s) of this content; the SBRs or the chlorine contact tank. Data from the SBR logs indicates that there were no malfunctions in the treatment processes at this time. It is therefore concluded that the source responsible for the elevated TSS concentration for this occurrence is the CCT.

The proximity of this bypass event and the one prior to it provided for a small window frame of opportunity for the personnel to perform the routine cleaning of the CCT that is normally performed following bypass events. The solids that were deposited in the CCT from the prior event most likely were stirred up due to the high flows and transferred to the effluent water tank.

C. Carbonaceous Biochemical Oxygen Demand Removal

Effluent limits for Carbonaceous Biochemical Oxygen Demand (CBOD) for average monthly, average weekly, and instantaneous maximum for Pine Street WWTP are set at 10, 15, and 20 mg/L, respectively for the period of 5/1 through 10/31 and 25, 40, and 50 mg/l, respectively for the remainder of the year.

The data collected for the CBOD concentrations during bypass events is presented in Table 3 and graphed in Figure 3. The data indicates that on 2 instances during the monitoring period, CBOD levels exceeded the instantaneous maximum levels permitted.

D. Nitrite-Nitrate Removal

The Pine Street WWTP combined Nitrite-Nitrate effluent concentration limits for average monthly and instantaneous maximum are 10 and 20, respectively.

The data collected for the Nitrite-Nitrate concentrations during bypass events is presented in Table 4 and graphed in Figure 4. The data indicates that at no time during the course of the monitoring did the effluent water tank's NO_2-NO_3 concentration exceed the permitted limit.

E. Ammonia-Nitrogen Removal

Effluent limits at the Pine Street WWTP for Ammonia-Nitrogen for average monthly and instantaneous maximum concentrations respectively are 1.5 and 3 mg/L for the period 6/1 through 10/31, 4.5 and 9 mg/L for the period 11/1 through 4/30, and 3.5 and 7mg/L for the month of May.

The data collected for the Ammonia-Nitrogen concentrations during bypass events is presented in Table 5 and graphed in Figure 5. The data indicates that at no time during the course of the monitoring did the effluent water tank's NH_3-N concentration exceed the permitted limits.

F. Phosphorous Removal

Pine Street WWTP's average monthly and instantaneous maximum effluent limits for Phosphorous are 2 and 4 mg/L, respectively.

The data collected for the Phosphorous concentrations during bypass events is presented in Table 6 and graphed in Figure 6. The data indicates that at no time during the course of the monitoring did the effluent water tank's Phosphorous concentration exceed the permitted limits.

3. Conclusions

The fecal coliform removal process appears to be performing most poorly. Over half of the samples analyzed during bypass events (17 of 29) revealed bacteriological concentrations above the permitted levels. A trend is revealed, however, when the chlorine residual readings are compared to the elevated coliform samples. As stated previously, all of the samples above permit limits correspond to low chlorine residual levels detected at the headworks effluent

splitter. Removal of these instances shows that the bypass facilities have operated flawlessly during bypass events when a sufficient chlorine residual is present.

Total Suspended Solids removal is then the outstanding parameter for which exceedences of permitted levels exist. Of the 29 samples taken during the monitoring period, 6 instances occurred when the levels detected in the effluent water tank were above the permitted limit. Most of these occurrences are attributable to reasons other than the bypass facilities. Instances where all other aspects of the treatment process are in correct working order, for the most part, result in TSS levels within permit limits. Only 2 of the 23 samples taken under these circumstances showed an elevated TSS level.

The only other parameter to show levels above that permitted during the monitoring period was the Carbonaceous Biochemical Oxygen Demand. Only two such instances occurred during this time. The other parameters analyzed (combined nitrite-nitrate, ammonia-nitrogen, and Phosphorous) remained within the permit levels at all times without exception.

VI. Post-Construction Compliance Monitoring

The majority of contaminant exceedences during the monitoring period analyzed in the previous section are the result of mechanical equipment failures and do not accurately reflect the success of the CSO related bypass in eliminating NPDES Permit violations at the Pine Street WWTP. Since the installation of the bypass facilities, the plant has lost very little sludge blanket in the SBRs. The treatment plant no longer receives flows beyond its capacity during wet weather events and stream quality at the outfall has improved significantly. It is believed that, with some additional measures and a continued monitoring program, the success of the plant to meet Water Quality Standards consistently can be better demonstrated.

In order to further improve the quality of effluent leaving the WWTP during bypass events, the Authority will implement the following measures.

1. A more organized schedule for cleaning of the chlorine contact tank immediately after and in between bypass events is currently under development and will be implemented upon completion. Currently, the tank is cleaned 3 or 4 times a year during the warm weather season, which does not appear to be sufficient enough to prevent the appearance of elevated solids in the effluent water tank during bypass events.

2. A more aggressive maintenance and repair schedule on the chlorination equipment will be implemented to avoid recurrence of the multiple bacteriological violations for the bypass facilities.

3. Bypass sampling will be more strictly enforced, with samples being collected every 2 hours for the duration of the bypass.

4. The Borough will continue implementation of the Nine Minimum Controls.

5. Results of the monitoring program will be reported in the Annual CSO Report.

Appendix A

Bypass Monitoring Tables and Graphs

Appendix B

Pump Station Maintenance Logs

Appendix C

Catch Basin Repair/Replacement Log

Appendix D

Sewerline Flushing Log

Appendix E

Street Sweeper Log

Appendix F

Leaf Collector Log

Appendix G

Catch Basin Cleaning/Inspection Log

Appendix H

Pine Street WWTP Daily Log

Attachment A-6

BOROUGH OF KANE AUTHORITY

Supplemental Information Addendum to the
2004 Pine Street WWTP CSO
Long Term Control Plan
Additional Storage Options
December 3, 2010

KLH
ENGINEERS, INC.
5173 CAMPBELLS RUN ROAD
PITTSBURGH, PA 15205-9733

Attachment A-6

Borough of Kane Authority

Supplemental Information Addendum to the
2004 Pine Street WWTP
CSO Long Term Control Plan
Additional Evaluation of Storage Options

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LIST OF APPENDICES

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Borough of Kane Authority

Supplemental Information Addendum to the 2004 Pine Street WWTP CSO Long Term Control Plan Evaluations of Storage Options for Small Flow CSO Related Bypass Events At the Pine Street WWTP

1.0 Introduction

The information in this document has been prepared by KLH Engineers, Inc. as a Supplement to the 2004 Pine Street Wastewater Treatment Plant (Pine St. WWTP) Combined Sewer Overflow Long Term Control Plan (LTCP).

The Kane Borough Authority (Authority), and KLH Engineers, Inc. met with the Pennsylvania Department of Environmental Protection (DEP) on September 16, 2010 to review and discuss issues related to the Authority's Pine St. WWTP LTCP.

The DEP issued a letter to the Authority dated October 1, 2010 which summarized the September 16, 2010 meeting and requested additional information required to complete the review and approval of the Pine Street WWTP LTCP.

2.0 Justification to Maintain CSO WWTP Internal Bypass

The first point raised in the DEP's October 1, 2010 letter to the Authority titled "LTCP Revision and Flow Maximization" relates to the CSO Related Internal Bypass at the Pine Street WWTP and the approval of this Internal Bypass under WQM Permit 4201402, issued June 13, 2001.

The WQM Permit 4201402 specifies a peak flow rate of 3.5 MGD Peak Hourly Maximum flow be delivered to the Sequencing Batch Reactors (SBR's), and that 7.0 MGD be processed through the Preliminary Treatment Structure (PTS) to receive screening, grit removal and metering.

The DEP indicated that a review of the Bypass flow records submitted as part of the May 28, 2010 Addendum to the LTCP indicated numerous occasions when small volume bypasses were initiated at flow rates lower than the required 3.5 MGD into the SBR units.

KLH and the Authority provided an explanation that these small volume bypasses are a result of splash over flows at the bypass weir as a result of turbulence and that they have had no observed impact on the water quality observed at the effluent discharge. Water Quality Standards are still being met at the WWTP outfall.

The DEP questioned the elevation of the overflow weir which controls the Internal CSO Bypass and stated they required the full 3.5 MGD flow rate into the SBR units to be achieved prior to initiation of any Internal CSO Related Bypass.

KLH completed a hydraulic evaluation of the overflow weir and determined that the small flow weir overflows could be eliminated by increasing the bypass weir elevation. A hydraulic evaluation was made to determine the incremental increase in forward flow to the SBR units based on an incremental increase in weir elevation.

KLH advised the Authority to increase the operating elevation of the weir by one inch and observe the net effect one when the CSO Related Internal Bypass is initiated. The one inch increase in weir elevation was determined to correspond to an additional 0.255 mgd in flow. The Authority initiated the increased weir elevation on September 2, 2010.

On October 26, 2010 an internal overflow was observed to activate at a peak flow rate to the SBR units of 3.30 MGD. The increase in weir elevation was done incrementally to assure that the SBR units were not hydraulically overloaded, which would result in a side wall overflow.

After the October 26, 2010 CSO Related Internal Bypass was reviewed and evaluated, KLH recommended the Authority increase the weir elevation an additional inch, which should provide for full forward peak flows of 3.5 MGD into the SBR Units. The Authority completed the increase in elevation of the overflow weir on November 15, 2010.

On November 16, 2010 the Authority observed a CSO Related Internal Bypass at a forward flow rate of 3.8 MGD into the WWTP, and a weir overflow depth of one inch. The corresponding bypass flow based on one inch depth of flow over a rectangular weir without end contractions, and a weir length of 59.25 inches corresponds to a bypass flow rate of 0.2556 MGD. A Weir table listing this calculation is included for reference in Appendix A. With a Plant influent flow rate of 3.8 MGD and a bypass flow rate of 0.2556 MGD the flow into the SBR units was determined to be 3.8 MGD – 0.2556 MGD or 3.5444 MGD.

The DEP was notified on November 18, 2010 via email, of the fact the Authority has been able to achieve full forward flow into the SBR units of 3.5 MGD prior to initiation of a bypass. A Copy of this email is included in Appendix B for reference.

It is the intention of the Authority to continue to monitor the CSO Related Internal Bypass to assure that 3.5 MGD forward flow is processed into the SBR units prior to any initiation of an internal bypass. In addition the Authority is proposing to initiate a 24 hour composite, flow proportion sampling during each internal bypass event to assure NPDES effluent discharge limitations are met during all bypasses.

The Authority and KLH Engineers believe maximizing the forward flow to the SBR units at a 3.5 MGD rate, the biological secondary treatment process will receive the first flush load of the collection system. By processing the first flush load associated with the CSO internal bypass event through the biological SBR unit process the treatment will be maximized. Bypass flow loadings will thus be minimal and primarily dilute storm waters, that when blended with the fully treated secondary SBR effluent and disinfected prior to discharge will assure WQS are continually met during activation of the CSO internal bypass.

The Authority is requesting the adjustment of the bypass weir elevation and continual monitoring of the bypass and plant forward flows, in addition to sampling of each CSO related bypass event to assure WQS are met, be considered the first step of compliance with the LTCP. We believe that the number of CSO Related Internal Bypass events can be significantly reduced and can fully comply with NPDES Discharge limitations during bypasses. If the Authority cannot document that the operation of the CSO Related Internal Bypass continually meets its NPDES permit effluent limitations and WQS's, the Authority will initiate utilization of on site storage capacity to reduce the frequency of CSO related bypass events.

A schematic detail of the currently permitted CSO Related Bypass system can be referenced on Plate I, located in Appendix D of this report.

3.0 Evaluation of Storage Alternatives for Small Volume Bypasses

The second point raised in the DEP's October 1, 2010 letter to the Authority titled "LTCP Revision and Flow Maximization" was the approval of the Pine Street WWTP Long Term Control Plan and the Issuance of the facilities new NPDES discharge permit. The DEP noted that the LTCP Addendum dated May 28, 2010 did not adequately address the many storage options that may be available to the Authority to minimize small volume overflows.

Detailed economic analysis was conducted for full peak flow storage options in the LTCP Addendum dated May 28, 2010. The DEP recognized the evaluation and the economically unfeasible storage of maximum peak flows, but requested evaluation of

storage of small volume bypass flows that may be captured during flow events above 3.5 MGD.

KLH recommends as the second step of the LTCP. utilizing the existing Waste Activated Sludge tank, which has a capacity of 122,000 gallons, to provide storage of bypass flows if the Authority cannot achieve NPDES permit and WQS compliance through Step One procedures outlined above.

To evaluate the potential use of the existing WAS holding tank we must first evaluate the number of CSO Related Bypass events and the associated volumes of each. A record of the 2010 CSO Related Bypass events is included in Appendix C, for reference. Appendix C indicates there have been seventeen CSO Related Bypass events since January 1, 2010. Full data has not yet been obtained for the most current two events which occurred on November 30 and December 1, 2010. The bypass flow meter that records the total volume of the bypass has not been downloaded as of the due date of this report.

The CSO Bypass records for 2010 indicate that utilizing the existing 122,000 gallon WAS holding tank for storage during CSO Events would have provided sufficient storage to has eliminated eleven of the seventeen events. I am assuming due to the severity of the rain events on November 30, 2010 and December 1, 2010 that these events would have exceeded the 122,000 gallon capacity of the WAS holding tank even though these volumes were not available at this time.

If the Authority cannot continually meet NPDES discharge limitations during CSO related bypasses we are proposing reconfiguring the existing WAS holding tank to accept the first 122,000 gallons of bypass flow and store said flow until the CSO Related Bypass event has subsided. After the bypass event has subsided the plant operations staff can return the stored flow at a controlled rate to the SBR units for processing.

To utilize the existing WAS holding tank for storage, a submersible pumping station will be installed in series with the existing bypass line. Flow to this pumping station will be received by gravity and pumped to the WAS holding tank at a maximum rate of 1,000 gpm. Pump operation will be controlled and integrated with a level controller sensing the available capacity in the WAS holding tank. When the WAS holding tank has reached full capacity the pump operation will cease to prevent overflowing. If the CSO Related Bypass event is of sufficient volume the bypass will continue even after the WAS holding tank has been filled, at which time the submersible wet well will surcharge to the pump station overflow line which will convey the PS flows to the chlorine contact tank, thus initiating the CSO bypass.

By utilizing the existing WAS holding tank the Borough of Kane Authority can economically provide low flow storage capacity and reduce the number of small volume bypass events. The installation of this holding tank arrangement should only be pursued if the Authority cannot meet WQS in its effluent under the currently permitted bypass arrangement.

If the implementation of storage is required due to noncompliance with NPDES discharge limitations during CSO Related Bypass events, and if compliance cannot be fully achieved with the existing 122,000 gallon storage tank, then additional storage tank capacity will be evaluated under proposed step three of the LTCP.

A schematic detail of the proposed layout to utilize the WAS holding tank for storage of up to 122,000 gallons of CSO Related Bypass flow can be referenced on Plate II, in Appendix E of this report.

4.0 Proposed Sequence and Schedule for Meeting CSO Bypass WQS's

Step 1. Adjust existing CSO Related Bypass weir to maximize forward flow into the plant SBR secondary treatment units to receive 3.5 MGD.
(Completed November 15, 2010)

Monitor each CSO Related bypass event for quantity, duration, and monitor WWTP effluent water quality during all bypass events.
(December 2010 through December 2011)

If NPDES effluent limitations cannot be met on any composite effluent samples during a bypass event proceed with Step 2.

Step 2. Integrate existing 122,000 gallon WAS holding tank into CSO Related Bypass system. Install pumping station in series with existing bypass line to collect and pump bypass flows to holding tank.

Monitor each CSO Related bypass event for quantity, duration, and monitor WWTP effluent water quality during all bypass events after storage system is completed.

If NPDES effluent limitations cannot be met on any composite effluent samples during a bypass event after storage is integrated proceed with Step 3.

Step 3. Evaluate increased storage capacity beyond the 122,000 gallons or expansion of WWTP if water quality cannot be met with 122,000 gallons of storage capacity.

Attachment A-6

APPENDIX A

Overflow Weir Table

Attachment A-6

Kane weir overflow table
Pine St WWTP bypass weir
Weir configuration rectangular weir without end contractions

Equation: $Q = kLH^{1.5}$

L = weir length of 59 1/4 inches, or 4.9375 feet
H = head above weir plate
k = 2.152

H (inches)	Q (MGD)
0.1250	0.0113
0.2500	0.0320
0.3750	0.0587
0.5000	0.0904
0.6250	0.1263
0.7500	0.1660
0.8750	0.2092
1.0000	0.2556
1.1250	0.3050
1.2500	0.3572
1.3750	0.4121
1.5000	0.4696
1.6250	0.5295
1.7500	0.5917
1.8750	0.6563
2.0000	0.7230
2.1250	0.7918
2.2500	0.8627
2.3750	0.9356
2.5000	1.0104
2.6250	1.0871
2.7500	1.1657
2.8750	1.2460
3.0000	1.3282
3.1250	1.4121
3.2500	1.4978
3.3750	1.5848
3.5000	1.6737
3.6250	1.7642
3.7500	1.8562
3.8750	1.9498
4.0000	2.0449
4.1250	2.1415
4.2500	2.2396
4.3750	2.3391
4.5000	2.4400
4.6250	2.5424
4.7500	2.6462
4.8750	2.7513
5.0000	2.8578
5.1250	2.9656
5.2500	3.0748
5.3750	3.1853
5.5000	3.2970
5.6250	3.4101
5.7500	3.5244
5.8750	3.6399
6.0000	3.7567
6.1250	3.8747
6.2500	3.9939
6.3750	4.1143
6.5000	4.2359
6.6250	4.3587
6.7500	4.4826
6.8750	4.6077
7.0000	4.7340
7.1250	4.8613
7.2500	4.9898
7.3750	5.1194
7.5000	5.2501
7.6250	5.3819
7.7500	5.5148
7.8750	5.6488
8.0000	5.7838
8.1250	5.9199
8.2500	6.0570
8.3750	6.1952
8.5000	6.3344
8.6250	6.4746
8.7500	6.6159

Attachment A-6

APPENDIX B

CSO BYPASS WEIR ADJUSTMENT NOTIFICATION TO PADEP

Attachment A-6

Mike Sherrieb

From:	Mike Sherrieb
Sent:	Thursday, November 18, 2010 10:10 AM
To:	'smccauley@state.pa.us'
Cc:	'James Salvamoser'; 'Pine Street Kane'; Craig Bauer
Subject:	Kane Borough Authority Pine St. STP Bypass Event 11-16-2010
Attachments:	bypass weir table Pine St STP.xls

Steven,

I was contacted by Phil Lingenfelter, Chief Operator of the Kane Borough Authority regarding a significant rain event on the evening of November 16, 2010 and Phil and I wanted to make you aware of the results of this event on the Pine St STP.

The Pine St STP service area experienced a significant rain event on the evening of November 16, 2010. For your information, we had made a second adjustment to the position of the overflow weir plate at the plants splitter-box, increasing its operating level an additional inch. This adjustment was made in an effort to send the required 3.5 MGD into the SBR system for treatment prior to any bypass flow going over this weir, and was made prior to the Novemeber 16, 2010 rain event.

The operator on call for the Pine Street Plant responded to the facility on the evening of November 16, 2010 in an effort to observe the plants flow rate at which point a bypass is initiated. When he arrived at the plant the bypass was already initiated. He observed the plant influent flow rate measured before the overflow/splitter box chamber to be 3.8 MGD. He also observed that the peak plant influent flow recorded on the chart recorder was 3.95 MGD. He measured the depth of the overflow at the overflow weir to be 1 inch while the plant influent flow was 3.8 MGD.

Based on my calculations for a rectangular weir without end contractions, and a weir length of 59.25 inches, one inch of flow over this weir corresponds to a flow rate of 0.2556 MGD. I have attached a weir table detailing this calculation.

The plant flow as previously stated was observed on the influent flow meter to be 3.8 MGD, and the corresponding measured bypass flow was 0.2556 MGD. This translates into a forward flow into the SBR treatment trains of 3.5444 MGD. This rate is slightly above the 3.5 MGD maximum flow rate into the SBR treatment trains.

We will continue to monitor the system and will verify at what plant influent flow rate the bypass flow is initiated, as soon as the plant staff is able to verify this particular point in time during a rain event. We believe the current weir setting has met the required 3.5 MGD forward flow requirement into the SBR treatment trains prior to bypass.

Kane also collected a composite sample during the bypass event and is currently awaiting analysis of this sample to be completed. Once the data is received from the environmental lab we will provide the Department with the results of the water quality during the bypass.

I am currently preparing the final addendum response for the Pine Street LTCP and will have it delivered to you by the December 3, 2010 deadline.

If you have any questions regarding this email please contact me directly at (412)-494-0510, extension 116, or on my cell phone at (724)-809-5196, or via email.

Thank you.

Michael C. Sherrieb

KLH Engineers, Inc.
5173 Campbells Run Road
Pittsburgh, PA 15205
(412)-494-0510
(412)-494-0426 facsimile

Attachment A-6

APPENDIX C

PINE STREET WWTP
2010 CSO BYPASS SUMMARY

Attachment A-6

Pine Street WWTP CSO's

2010

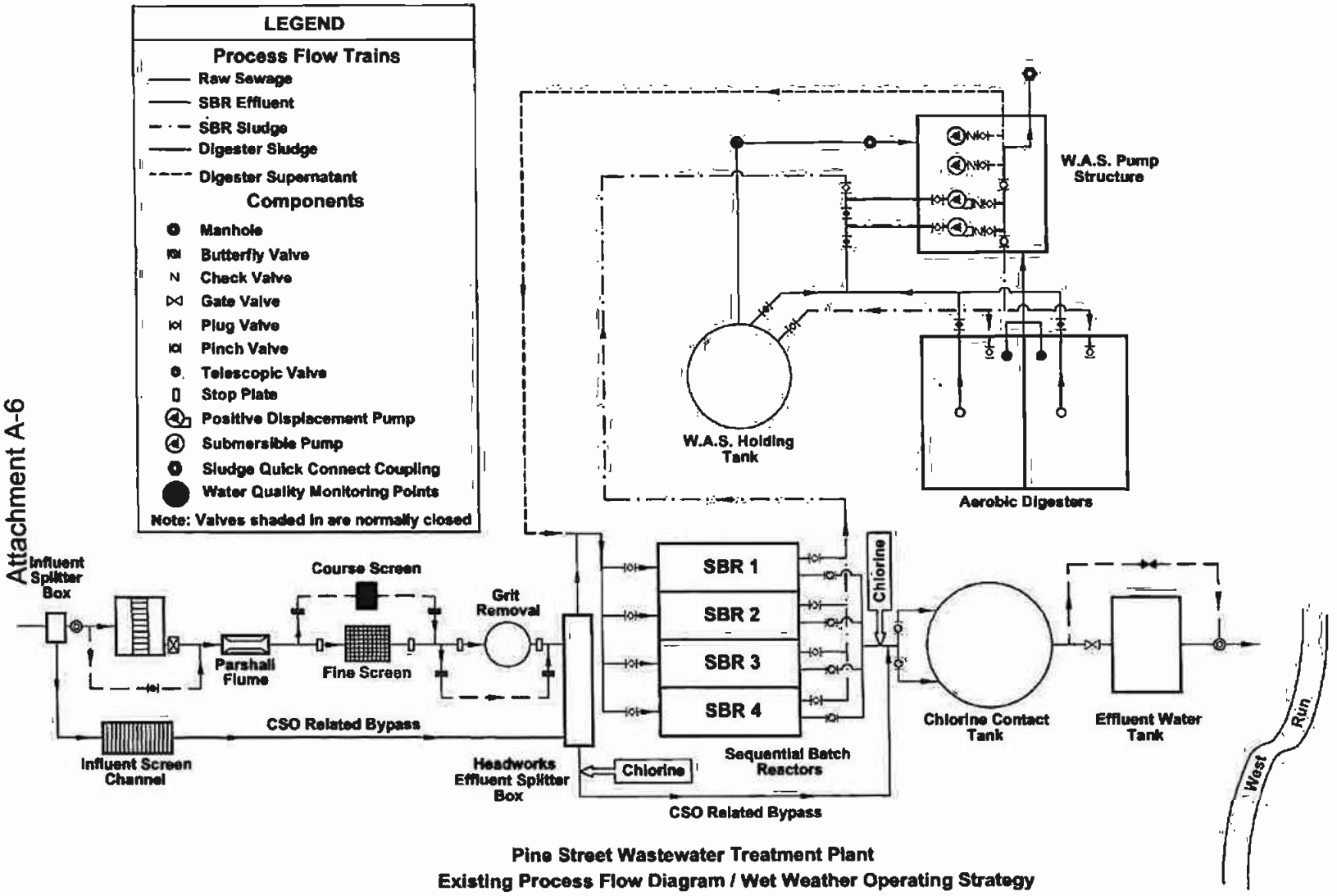
Date	Volume(MG)	Duration	Cause	Precipitation	Comments	Peak Flows
1/24/2010	0.626 MG	~15 hrs	H. Rain, Snow Melt	1.26"		PTS 4.15 MGD
1/25/2010	6.404 MG	~13 hrs	H. Rain, Snow Melt	1.49"		PTS 3.95 MGD
5/11/2010	0.308 MG	~3 hrs	Heavy Rain	1.56"		PTS 4.00 MGD
6/13/2010	0.003 MG	~15 min	Heavy Rain	0.61"	DEP 6/14/10 ~1258	PTS 3.35MGD
6/23/2010	0.004 MG	~15 min	Heavy Rain	0.27"? K.93"	DEP 6/24/10 ~1256	PTS 3.60 MGD
7/9/2010	0.002 MG	~15 min	Heavy Rain	0.98"	?	PTS 3.25 MGD
7/13/2010	0.414 MG	~1hr 45min-2 hr	Heavy Rain	1.64"	DEP 7/14/10 ~1259	PTS 4.10 MGD
7/17/2010	<0.001 MG??	5-10 min	Heavy Downpour	0.35"	DEP 7/18-19/10	PTS 3.10 MGD
7/25/2010	0.042 MG	~1 hr	Heavy Rain	0.69"	DEP 7/26/10 ~1409	PTS 3.95 MGD
7/28/2010	0.001 MG	~5-10 min	Heavy downpour	0.43"	DEP 7/29/10~1342	PTS 3.20 MGD
7/29/2010	0.003 MG	~15 min	Heavy Rain	0.51"	Note: this on 7/28 chrt	PTS 3.20 MGD
NOTE: 7/29/10, DEP said no longer call in, just report with DMR					7/29 OF rprted with 7/28 OF	
8/15/2010	0.001 MG	<5 min ?	Heavy Rain	0.95"	on 8/14/10 chart	PTS 3.05 MGD
8/22/2010	0.052 MG	~1hr 45min	Heavy Rain	1.43"	on 8/21/10 chart	PTS 3.75 MGD
9/2/10 Raised weir in OF box ~1" or ~0.25 MG, so OF should not happen til ~3.25 MGD will see what happens						
10/26/2010	0.017 MG	~1 hr	Heavy Rain	1.04"		PTS 3.30 MGD
11/15/10 Raised weir inOF box another 1" or so, ~0.25 MGD so OF should not happen til ~3.5 MGD						
11/16/2010	0.051 MG	~40-45min>3.5	Heavy Rain	1.05"	SBR 4 Fill.Dec ~17 min	PTS 3.95 MGD
11/30/2010		~10 hrs	Heavy Rain-extended		~20k+gal city H2O	PTS 4.15 MGD
12/1/2010		~16 hrs	Heavy Rain		25+c.w cl2 onw/o OF	PTS 4.00 MGD

Attachment A-6

APPENDIX D

PINE STREET WWTP
EXISTING BYPASS SCHEMATIC

Attachment A-6



Pine Street Wastewater Treatment Plant
Existing Process Flow Diagram / Wet Weather Operating Strategy

BOROUGH OF KANE AUTHORITY
McKEAN COUNTY, PENNSYLVANIA
PLATE I
PINE STREET WASTEWATER TREATMENT PLANT
- EXISTING PROCESS FLOW DIAGRAM

Scale: NTS
Date: Feb / 2006
Drawing No. 242-170

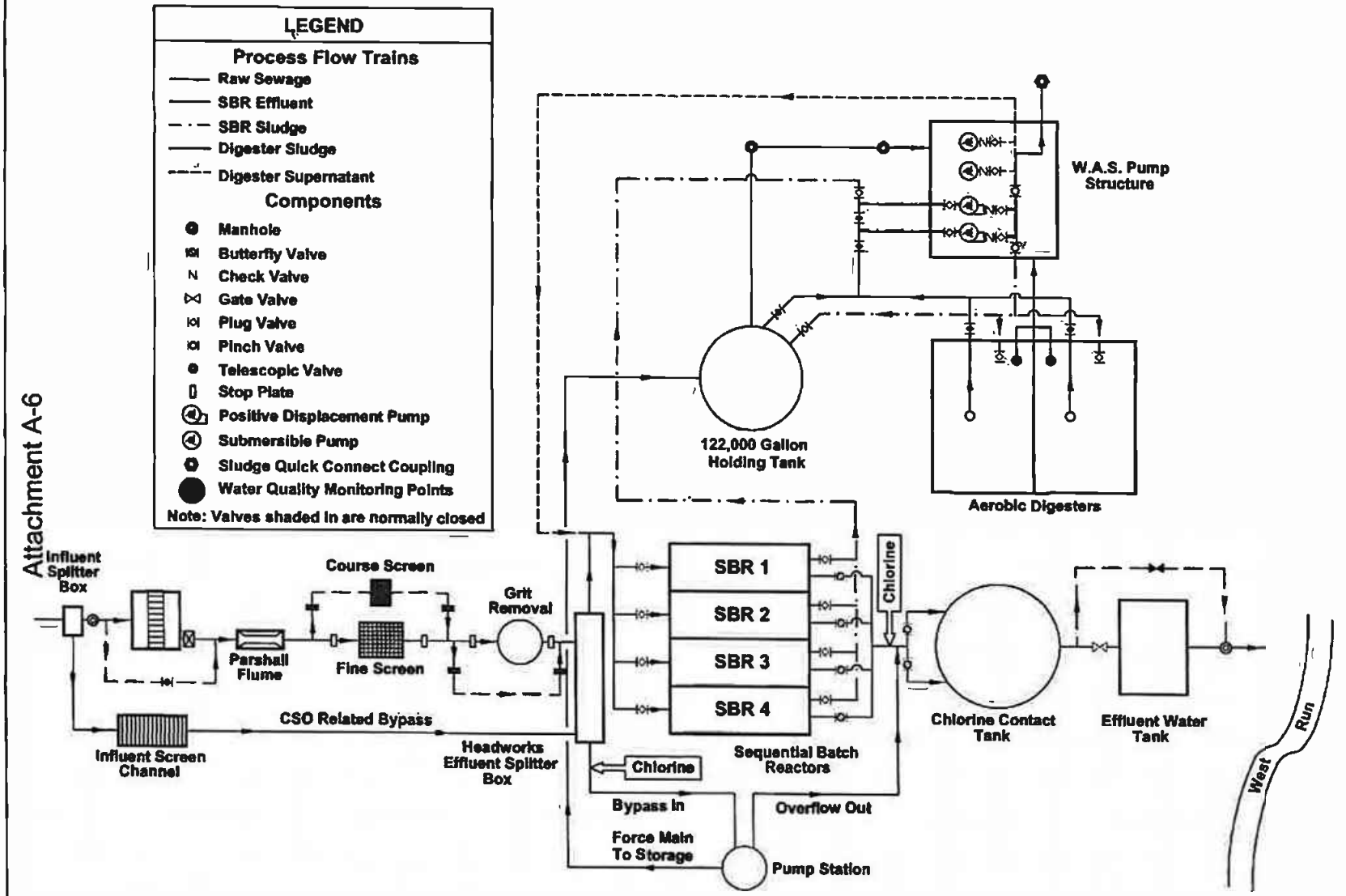
KLH ENGINEERS, INC.
5173 Campbells Run Road
Pittsburgh, PA 15205
Phone: 412-494-4836
Fax: 412-494-0426
info@klhengineers.com

Attachment A-6

APPENDIX E

PINE STREET WWTP
PROPOSED BYPASS SCHEMATIC
WITH STORAGE

Attachment A-6



Pine Street Wastewater Treatment Plant
Existing Process Flow Diagram / Wet Weather Operating Strategy

BOROUGH OF KANE AUTHORITY
McKEAN COUNTY, PENNSYLVANIA
PLATE II
PINE STREET WASTEWATER TREATMENT PLANT
EXISTING PROCESS FLOW DIAGRAM

Scale: NTS
Date: Dec / 2010
Drawing No. 242-170A

KLH ENGINEERS, INC.
5173 Campbells Run Road
Pittsburgh, PA 15205
Phone: 412-494-0310
Fax: 412-494-0426
info@klhengineers.com

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-7. Appendix A, Pages 21-22 of the Engineer's Assessment, provided as the Application's Appendix A-15-a, identifies several septage acceptance facility assets at the Kinzua Wastewater Treatment Plant (WWTP). Please provide responses for the following:

a. Consistent with the requirements of Part B, Section I.C.4.d. of KBA National Pollutant Discharge Elimination System Permit No. PA0023175, as indicated on Page 15 of the Application's Appendix A-20-b, quantify the total volume of hauled-in residual and municipal wastes received by KBA during the years ended 2017 and 2018, by source;

b. Indicate whether PAWC-WD intends to accept hauled-in residual or municipal wastes at the Kinzua or Pine Street WWTPs; and

c. If PAWC-WD intends to accept hauled-in residual or municipal wastes at the Kinzua or Pine Street WWTPs, specify the rates PAWC-WD intends to charge for treatment and disposal of hauled-in residual and municipal wastes.

Answer:

a. KBA has not received any hauled-in residual and municipal wastes during the years ended 2017 and 2018.

b. PAWC has no plan to receive hauled-in residual or municipal wastes at the Kinzua or Pine Street WWTPs at this time.

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

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Docket No. A-2019-3014248

TUS SET I

c. If PAWC decides to begin accepting hauled-in residual or municipal waste at the Kinzua or Pine Street WWTPs, PAWC will submit to the Commission for approval a Supplement to the PAWC Wastewater tariff with rates for treatment and disposal of hauled-in residential and municipal wastes at the Kinzua and/or Pine Street WWTPs.

Answer provided by: Michael Guntrum, PE, PMP **Date:** February 21, 2020
Senior Project Manager
Pennsylvania-American Water Company

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-8. The Application's Appendix A-15-f indicates PAWC-WD intends to debit $33,612,710 to Account No. 101, debit -$16,052,710 to Account No. 108 and credit $17,560,000 to Account No. 232. Please provide responses for the following:

a. Explain whether booking the ratemaking rate base value for the proposed transaction under Account No. 101 conforms with the requirements of the Uniform System of Accounts (USOA) applicable to PAWC-WD

b. Explain how PAWC-WD intends to record the difference between the original cost less depreciation (OCLD) and the ratemaking rate base values to utility plant account numbers (i.e., Account Nos. 351 through 398); and

c. Explain whether booking the difference between the OCLD and the ratemaking rate base values under Account No. 114 - Utility Plant Acquisition Adjustment would conform with the requirements of the USOA applicable to PAWC-WD.

Answer:

a. Section 1329 of the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1329, creates a statutory exception to the Uniform System of Accounts for Class A Wastewater Utilities by permitting the acquiring wastewater utility to incorporate the fair market value of the acquired assets, as determined in accordance with the statute, into its rate base rather than original cost. Accordingly, under this statutory exception, it is appropriate for PAWC to incorporate the anticipated Kane system rate base of $17,560,000 as a proposed debit to Account 1010 – Utility Plant in Service.

b. PAWC intends to proportionally scale the reproduction cost and associated accumulated depreciation of depreciable assets to the fair market value ratemaking rate base approved by the Commission.

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

c. Please refer to the response to part a.

Answer provided by: Rod P. Nevirauskas **Date:** February 21, 2020
Senior Director - Rates and Regulation
Pennsylvania-American Water Company

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-9. Please indicate whether the following acquisitions were included in KBA appraisals under the market approach. If not, please explain why not:

a. The York Water Company's acquisition of the wastewater system assets of the Borough of Jacobus at Docket No. A-2019-3007355;

b. Community Utilities of Pennsylvania, Inc.'s acquisition of the water and wastewater system assets of Pennsylvania Utility Company at Docket Nos. A-2018-3005430 and A-2018-3005431, respectively;

c. Pennsylvania-American Water Company's acquisition of the water system assets of the Municipal Authority of the Borough of Turbotville at Docket No. A-2018-3004191;

d. PAWC-WD's acquisition of the wastewater system assets of the Borough of Turbotville at Docket No. A-2018-3004189; and

e. PAWC-WD's acquisition of the wastewater system assets of the Scranton Sewer Authority at Docket No. A-2016-2537209.

Answer:

AUS Consultants: It is my understanding that the acquisitions listed were not evaluated by the Commission under Section 1329; therefore, in this appraiser's view, they are not comparable to an acquisition being evaluated under Section 1329.

Answer provided by: Jerome C. Weinert, P.E. **Date:** February 21, 2020
Principal and Director, AUS Consultants, Inc.

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

Answer:

Gannett Fleming: None of the acquisitions listed were included in the Selected Transactions method. All of the acquisitions listed involved very small systems with the exception of the Scranton Sewer Authority acquisition. The acquisitions listed also involved transactions which discounted "cost free" capital/customer contributions as part of the purchase price. Additionally, many of the acquisitions listed could be considered distressed sales. Finally, the fact that the buyers did not afford themselves use of section 1329 proceedings implies the buyers did not believe the transactions were fair market value transactions.

Answer provided by: Harold Walker, Gannet Fleming
Manager – Financial Studies

Date: February 21, 2020

BUREAU OF TECHNICAL UTILITY SERVICES
WATER/WASTEWATER DIVISION

SECTION 1329 APPLICATION OF PENNSYLVANIA-AMERICAN WATER COMPANY – WASTEWATER DIVISION FOR THE ACQUISITION OF KANE BOROUGH AUTHORITY'S WASTEWATER SYSTEM ASSETS

Docket No. A-2019-3014248

TUS SET I

A-10. Please identify the entity or entities financially responsible for operation, maintenance and replacement of stormwater catch basins throughout the KBA system.

Answer:

As the holder of the MS4 permit, the Borough of Kane will be financially responsible for the operation, maintenance, and replacement of stormwater catch basins that ultimately discharge through a MS4 permitted outfall.

PAWC will be financially responsible for the operation, maintenance, and replacement of stormwater catch basins that are connected to the Combined Sewer System

Answer provided by: Michael Guntrum, PE, PMP
Senior Project Manager
Pennsylvania-American Water Company

Date: February 21, 2020

VERIFICATION

I, Jerome C. Weinert, P.E., hereby state that the facts above set forth above are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements made herein are made subject to the penalties of 18 Pa. Cons. Stat. §4904 relating to unsworn falsification to authorities.

Jerome C. Weinert

Jerome C. Weinert, P.E. Principal and Director
AUS Consultants, Inc.

Dated: 2/16/20

VERIFICATION

I, Harold Walker, III hereby state that the facts above set forth above are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements made herein are made subject to the penalties of 18 Pa. Cons. Stat. §4904 relating to unsworn falsification to authorities.

Harold Walker III, Manager, Financial Services
Gannett Fleming

Dated: 2/10/20

VERIFICATION

I, MICHAEL J. GUNTRUM hereby state that the facts above set forth above are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements made herein are made subject to the penalties of 18 Pa. Cons. Stat. §4904 relating to unsworn falsification to authorities.

Michael J. Guntrum, P.E. Senior Project Engineer

Dated: 2/10/20

VERIFICATION

I, Rod P. Nevirauskas hereby state that the facts above set forth above are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements made herein are made subject to the penalties of 18 Pa. Cons. Stat. §4904 relating to unsworn falsification to authorities.

Rod P. Nevirauskas, Senior Director of Rates and Regulations

Dated: 2/10/20

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of Pennsylvania-American Water Company under Section 1102(a) of the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1102(a), for approval of (1) the transfer, by sale, of substantially all of the Borough of Kane Authority's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company, and (2) the rights of Pennsylvania-American Water Company to begin to offer or furnish wastewater service to the public in the Borough of Kane, and in a portion of Wetmore Township, McKean County, Pennsylvania	:	Docket No. A-2019-3014248, *et al.*

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing **PAWC's Answers to the Data Requests Propounded by the Bureau of Technical Utility Services, Set I,** upon the parties, listed below in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a party).

VIA E-MAIL and FIRST CLASS MAIL

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dasmus@pa.gov

Christine Maloni Hoover, Esq. (PA ID 50026)
Erin L. Gannon, Esq. (PA ID 83487)
Harrison W. Breitman, Esq. (PA ID 320580)
Santo G. Spataro, Esq. (PA ID 327494)
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Respectfully submitted,

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17 North Second Street, Suite 1410
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(717) 703-5892
jnase@cozen.com

Date: February 26, 2020