Metropolitan Water Reclamation District of Greater Chicago

**Protecting Our Water Environment** 

# RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 2000-7

CHEMICAL CHARACTERISTICS OF COMBINED SEWER OVERFLOWS AND TUNNEL AND RESERVOIR PLAN FLOWS IN 1995 THROUGH 1997

April 2000

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CHEMICAL CHARACTERISTICS OF COMBINED SEWER OVERFLOWS AND TUNNEL AND RESERVOIR PLAN FLOWS IN 1995 THROUGH 1997

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April 2000

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#### ACKNOWLEDGMENT

The authors wish to acknowledge the assistance of the staff of the Maintenance and Operation Department in collection of the samples.

The assistance of the staff of Toxic Substances Section and the Analytical Laboratories Division in providing the analytical support is also acknowledged.

Dr. David Lordi's and Mr. Irwin Polls' input to this report is highly appreciated.

Particular thanks are due Ms. Laura Franklin for her diligence and patience in typing and proofreading the manuscript of this report.

#### DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

#### SUMMARY AND CONCLUSIONS

#### Summary

Two studies were conducted during 1995, 1996, and 1997 to characterize combined sewer overflows (CSOs) within the service area of Metropolitan Water Reclamation District of Greater Chicago (District). One study focused on the occurrence and levels of organic priority pollutants and Clean Air Act volatile organic compounds (VOCs) in CSOs and Tunnel and Reservoir Plan (TARP) flows. The other study focused on conventional pollutants, particularly total suspended solids (TSS) and biochemical oxygen demand (BOD<sub>5</sub>) in CSOs.

The study on organic priority pollutants and Clean Air Act VOCs in CSOs is considered an enhanced follow-up to a previcus District study initiated in 1987 (1). The 1987 study sought to determine if significant amounts of organic priority pollutants were contained in CSOs, as it was felt that this information would be relevant to the future operation of the proposed TARP reservoirs. With the passage of the Clean Air Act Amendments of 1990, an expanded list of organic pollutants commonly referred to as VOCs became relevant to District operations. Therefore in the current study of CSOs, the list of analytes was expanded to include the traditional organic priority pollutants as well as the Clean Air Act VOCs.

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In addition, in the current study, more samples from more sampling locations were collected for the determination of organic priority pollutants and VOCs than in the previous study. The CSOs from several locations within the service area of the District were sampled during various rainfall events from 1995 through 1997. These locations were:

1. The TARP Mainstream Pumping Station.

2. The TARP Calumet Pump Station.

- 3. The Kirie Water Reclamation Plant (WRP) influent sewage pump station.
- 4. The 125th Street drop shaft station (CDS-13).
- 5. The Racine Avenue drop shaft station (DS-M28).
- 6. The Riverside drop shaft station (DS-D45).
- 7. The Evanston drop shaft station (DS-M106).
- 8. The Lake Street overflow stations (CS-106A).

9. The Evanston overflow station (CS-106B).

These locations can be classified into three groups:

1. The first group is the three TARP pump stations, pumping CSOs from the TARP systems into the District's WRPs during and after the rainfall events. Two of these pump stations, Mainstream and Calumet, operate independently from the WRPs, and pump collected CSOs from the TARP tunnels back to the Stickney and Calumet WRPs after

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a rain event subsides using transfer tunnels separate from the raw sewage wet wells of the CSOs from these two pump stations will be WRPs. referred to as TARP pumpback hereafter. One pump station, Kirie, acts as the WRP influent sewage pump station as well as the TARP pump station. This station pumps dry-weather sewage into the WRP if there is no rain, and CSO into the WRP if there is rain, as both sewage and CSOs flow through the TARP tunnel to the Kirie WRP wet well. The CSO pumped at the Kirie pump station is hereafter called pumpage.

- 2. The second group is TARP drop shaft stations where CSOs are discharged from the collection systems into the TARP systems during rain.
- 3. The third group is overflow stations where CSOs are discharged to receiving waterways during heavy rain when the TARP systems are full.

In 1995, 28 samples were collected at 5 locations during 13 rainfall events. In 1996, 47 samples were collected at 9 locations during 22 rainfall events. In 1997, 28 samples were taken at 7 locations during 17 rainfall events. Each sample was a grab sample collected either from the pumpage of a TARP pump station or from the overflow at a TARP drop shaft or

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overflow station. The samples were analyzed for 160 organic pollutants including most of the organic priority pollutants and Clean Air Act VOCs. These will be referred to as organic pollutants in this report.

The study on conventional pollutants in CSOs had as its main focus the concentrations of conventional parameters, such as, total solids (TS), TSS, ammonium nitrogen (NH<sub>4</sub>-N), and BOD<sub>5</sub> of the CSOs entering the future TARP reservoir. In this study, the CSOs discharged into the TARP systems at four TARP drop shaft stations and into receiving waterways at three overflow stations were sampled for conventional parameters during various rainfall events from 1995 through 1997. These locations were:

1. The 125th Street drop shaft station.

2. The Racine Avenue drop shaft station.

3. The Riverside drop shaft station.

4. The Evanston drop shaft station.

5. The Riverside overflow station.

6. The Lake Street overflow station.

7. The Evanston overflow station.

Samples of CSOs from these stations were collected by automatic samplers at predetermined time intervals during rainfall events of more than 0.5 inch rainfall, for the determination of conventional parameter concentrations. Four

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hundred twenty-one (421) samples were collected at three TARP drop shaft stations during 13 rainfall events in 1995. Two hundred thirty-nine (239) samples were collected at six TARP drop shaft and overflow stations during 7 rainfall events in 1996. In 1997, 175 samples were collected at six TARP drop shaft and overflow stations during 8 rainfall events. All 1995 samples were analyzed for TS, BOD<sub>5</sub>, and NH<sub>4</sub>-N, and all 1996 and 1997 samples were analyzed for TSS and BOD<sub>5</sub>.

Samples of the actual pumpback and pumpage from these TARP pump stations are routinely collected by the M&O Department during each pumpback event, and analyzed for a variety of conventional pollutants. Thus, no special sampling was required for this aspect of the current study. Data from this routine sampling is included in this report where appropriate.

#### Conclusions

# ORGANIC PRIORITY POLLUTANTS AND CLEAN AIR ACT VOCS

The results of organics analysis of 103 samples collected at 9 locations during 52 rainfall sampling events from 1995 through 1997 were divided into two categories in terms of the type of TARP stations, namely, TARP pump stations and TARP drop shaft and overflow stations. The following conclusions were drawn from the study of these results:

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- 1. The number of organic pollutants detected and the type of most frequently detected pollutants varied from location to location. The average number of organic pollutants found in the pumpback and pumpage of the three TARP pump stations was more than that in the six TARP drop shaft and overflow stations. The average number of organic pollutants detected in at least one sample from the three TARP pump stations was 28, consisting of 14 volatiles, 12 semi-volatiles, and 2 pesticides and polychlorinated biphenyls (PCBs), compared with 17 organic pollutants, including 7 volatiles, 8 semi-volatiles, and 2 pesticides and PCBs, from the six TARP drop shaft and overflow stations. The occurrence of organic pollutants and the most frequently detected ones at each sampling location are summarized in Tables 1 and 2.
- 2. At the three TARP pump stations, in 71 samples collected from the pumpback and pumpage during and after various rainfall events during 1995 through 1997, VOCs were the predominant pollutants. The most frequently detected organic pollutants were acetone with 97 percent, toluene

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#### TABLE 1

#### PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM TARP MAINSTREAM AND CALUMET PUMP STATIONS AND KIRIE WRP INFLUENT PUMP STATION IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	TAR	P Mainstream Pumping Sta	ation
	1995	1996	1997
Number of Compounds Detected	43	36	26
Number of Volatiles Predominant Volatiles	15 Acetone (9/10)* TCE (9/10)** Toluene (9/10)	18 Acetone (8/9) Chloroform (8/9) TCE (8/9)	11 Acetone (7/7) Toluene (4/7) TCE (4/7)
Number of Semi-Volatiles Predominant Semi-Volatiles	23 Phenol (7/10) Phenanthrene (6/10) 4-MP (5/10)	15 4-MP (5/9) Phenanthrene (5/9) Fluoranthene (4/9)	15 3- and/or 4-MP (6/7) Phenanthrene (6/7) Fluoranthene (5/7)
Number of Pesticides and PCBs	5	3	0
Predominant Pesticides and PCBs	PCB-1248 (3/10) PCB-1260 (2/10) PCB-1254 (2/10)	PCB-1248 (2/9) PCB-1260 (2/9) PCB-1254 (1/9)	
Compound with Highest Concentration	Acetone	Phenol	Acetone
Highest Concentration Detected, $\mu g/L$	198.1	327.8	1371

#### TABLE 1 (Continued)

#### PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM TARP MAINSTREAM AND CALUMET PUMP STATIONS AND KIRIE WRP INFLUENT PUMP STATION IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	TARP Calumet Pump Station			
	1995	1996	1997	
Number of Compounds Detected	27	28	28	
Number of Volatiles Predominant Volatiles	12 Acetone (7/7) Chloroform (7/7) Toluene (6/7)	15 Acetone (7/7) MC (7/7) Toluene (6/7)	13 Acetone (5/5) Toluene (4/5) PCE (4/5)	
Number of Semi-Volatiles Predominant Semi-Volatiles	14 Acetophenone (6/7) Phenol (5/7) 4-MP (5/7)	13 4-MP (5/7) Phenol (5/7) Acetophenone (5/7)	12 Acetophenone (4/5) Phenol (3/5) 3- and/or 4-MP (2/5)	
Number of Pesticides and PCBs	1	0	3	
Predominant Pesticides and PCBs	PCB-1260 (1/7)		4,4'-DDD (1/5) 4,4'-DDT (1/5) PCB-1260 (1/5)	
Compound with Highest Concentration	Acetone	Acetone	Acetone	
Highest Concentration Detected, μg/L	317.1	586.5	692.9	

TABLE 1 (Continued)

PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM TARP MAINSTREAM AND CALUMET PUMP STATIONS AND KIRLE WRP INFLUENT PUMP STATION IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	Kirie WRP Influent Pump Station		
	1995	1996	1997
Number of Compounds Detected	24	20	. 23
Number of Volatiles Predominant Volatiles	15 Acetone (8/8) Chloroform (8/8) Toluene (8/8)	13 Acetone (10/10) Chloroform (10/10) MC (9/10)	11 Acetone (8/8) Chloroform (8/8) Toluene (8/8)
Number of Semi-Volatiles Predominant Semi-Volatiles	8 4-MP (5/8) DBPh (5/8) DEPh (3/8)	7 DEPh (5/10) 4-MP (4/10) Phenol (2/10)	7 DBPh: (3/8) BBPh: (2/8) DOPh: (1/8)
Number of Pesticides and PCBs	1	0	5
Predominant Pesticides and PCBs	b-Endosulfan (2/8)		PCB-1254 (1/8) 4,4'-DDD (1/8) b-BHC (1/8)
Compound with Highest Concentration	Acetone	Acetone	DOPh
Highest Concentration Detected, μg/L	219.4	381.8	265

\*The numbers in parentheses are number of detections/number of samples collected.

\*\*Certain chemical names are abbreviated as follows: TCE, trichloroethene; MP, methylphenol; MC, methylene chloride; PCE, tetrachloroethene (perchloroethene); DEPh, diethyl phthalate; DBPh, di-nbutyl phthalate; DOPh, di-octyl phthalate; and BBPh, butyl benzyl phthalate.

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#### TABLE 2

#### PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM VARIOUS TARP DROP SHAFT AND OVERFLOW STATIONS IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	DS-M28		
	1995	1996	1997
Number of Compounds Detected	21	26	14
Number of Volatiles Predominant Volatiles	11 Acetone (2/2)* 2-Butanone (2/2) PCE (2/2)	12 Acetone (3/3) MC (3/3)** PCE (3/3)	6 Acetone (2/2) PCE (2/2) Chloroform (2/2)
Number of Semi-Volatiles Predominant Semi-Volatiles	9 2-MNPh (1/2) Naphthalene (1/2) Phenanthrene (1/2)	10 1,4-DCB (2/3) Bis-EHPh (1/3) 4-MP (1/3)	8 Pryene (2/2) Fluoranthene (2/2) Phenanthrene (2/2)
Number of Pesticides and PCBs	1	4	0
Predominant Pesticides and PCBs	PCB-1260 (1/2)	PCB-1248 (2/3) PCB-1260 (2/3) 4,4'-DDT (1/3)	• •
Compound with Highest Concentration	2-MNPh	Acetone	Acetone
Highest Concentration Detected, μg/L	128.6	129.2	60.0

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#### TABLE 2 (Continued)

#### PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM VARIOUS TARP DROP SHAFT AND OVERFLOW STATIONS IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	DS-D45		
	1995	1996	1997
Number of Compounds Detected	11	9	5
Number of Volatiles Predominant Volatiles	3 Acetone (1/1) Chloroform (1/1) Toluene (1/1)	3 Acetone (2/3) MC (1/3) Chloroform (1/3)	2 Acetone (1/1) Toluene (1/1)
Number of Semi-Volatiles Predominant Semi-Volatiles	5 4-MP (1/1) Fluoranthene (1/1) DBPh (1/1)	4 Fluorathene (2/3) Pyrene (1/3) Chrysene (1/3)	0
Number of Pesticides and PCBs Predominant Pesticides	3 4,4'-DDE (1/1)	2 HCE (2/3)	3 4,4'-DDE (1/1)
and PCBs	4,4'-DDD (1/1) 4,4'-DDT (1/1)	4,4'-DDE (1/3)	4,4'-DDD (1/1) 4,4'-DDT (1/1)
Compound with Highest Concentration	Acetone	Acetone	Acetone
Highest Concentration Detected, $\mu$ g/L	33.4	37.9	20.6

TABLE 2 (Continued)

#### PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM VARIOUS TARP DROP SHAFT AND OVERFLOW STATIONS IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	DS-M106		CDS-13
	. 1996	1997	1996
Number of Compounds Detected	23	22	28
Number of Volatiles Predominant Volatiles	8 Acetone (4/4) 1,2-DCE (total) (4/4) PCE (4/4)	7 Acetone (3/4) PCE (3/4) Toluene (3/4)	9 Chloroform (4/5) m- and/or p-Xylene (3/5) o-Xylene (3/5)
Number of Semi-Volatiles Predominant Semi-Volatiles	11 Phenanthrene (3/4) Fluoranthene (3/4) Pyrene (3/4)	12 Phenanthrene (4/4) Naphthalene (3/4) Pyrene (3/4)	18 Phenanthrene (5/5) Naphthalene (4/5) Fluorathene (4/5)
Number of Pesticides and PCBs	4	3	1
Predominant Pesticides and PCBs	Methoxychlor (3/4) 4,4'-DDT (3/4) 4,4'-DDE (3/4)	4,4'-DDE (3/4) 4,4'-DDT (3/4) 4,4'-DDD (2/4)	PCB-1016 (2/5)
Compound with Highest Concentration	Acetone	Acetone	4-MP
Highest Concentration Detected, µg/L	134.9	173.0	1845

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TABLE 2 (Continued)

#### PREDOMINANT ORGANIC POLLUTANTS DETECTED IN WASTEWATER FROM VARIOUS TARP DROP SHAFT AND OVERFLOW STATIONS IN 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

	CS-10	6A	CS-106B
	1996	1997	1996
Number of Compounds Detected	18	17	8
Number of Volatiles Predominant Volatiles	8 1,2-DCE (total) (4/4) PCE (4/4) Acetone (3/4)	6 PCE (1/1) Acetone (1/1) Toluene (1/1)	6 Acetone (2/2) PCE (2/2) 1,2-DCE (total) (2/2)
Number of Semi-Volatiles Predominant Semi-Volatiles	6 Phenanthrene (2/4) Fluoranthene (2/4) Pyrene (1/4)	11 Naphthalene (1/1) Phenanthrene (1/1) Pyrene (1/1)	1 Fluoranthene (1/2)
Number of Pesticides and PCBs	4	0	1
Predominant Pesticides and PCBs	Methoxychlor (2/4) 4,4'-DDT (2/4) 4,4'-DDE (2/4)		Methoxychlor (1/2)
Compound with Highest Concentration	Acetone	PCE	Acetone
Highest Concentration Detected, µg/L	116.1	28.5	94.2

\*The numbers in parentheses are number of detections/number of samples collected. \*\*Certain chemical names are abbreviated as follows: PCE, tetrachloroethene (perchloroethene); MNPh, methylnaphthalene; MC, methylene chloride; DCB, dichlorobenzene; Bis-EHPh, bis(2ethylhexyl)phthalate; MP, methylphenol; DBPh, di-n-butyl phthalate; HCE, heptachlor epoxide; DCE, dichloroethene.

with 82 percent, and chloroform with 82 percent occurrence. The predominant semi-volatile compounds found were 4-methylphenol with 54 percent, phenol with 44 percent, and phenanthrene with 38 percent occurrence. Pesticides and PCBs were detected much less frequently. The predominant compounds under the category of pesticides and PCBs were PCB-1260 with 8 percent, PCB-1248 with 7 percent, and PCB-1254 with 6 percent occurrence. The occurrence and levels of these predominant pollutants in the pumpback and pumpage of the three TARP pump stations during 1995 through 1997 are summarized in Table 3. At the three TARP pump stations, the concentrations of the organic pollutants detected in the pumpback and pumpage varied widely from sample to sample. The highest concentration found for volatile compounds was 1371  $\mu$ g/L (acetone), and semi-volatile compounds for was 454.3 µq/L (4-methylphenol). The concentrations of pesticides and PCBs in the samples collected were generally low, less than 2.4  $\mu$ g /L. No general correlation between the quantity of rainfall and

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## TABLE 3

OCCURRENCE AND LEVELS OF MAIN ORGANIC POLLUTANTS FOUND IN WASTEWATER FROM TWO TARP PUMP STATIONS AND KIRIE WRP INFLUENT PUMP STATION IN VARIOUS RAINFALL SAMPLING EVENTS IN 1995 THROUGH 1997

Compound	Number of Detections*	Detection Limit (µg/L)	Concentr (µg Minimum	cation** /L) Maximum	Location of Maximum Concentration
Volatiles					
Acetone Toluene Chloroform Methylene Chloride Trichloroethene m and/or p-Xylene	69 (97) 58 (82) 58 (82) 49 (69) 41 (58) 35 (49)	5.0 1.8 0.7 0.8 0.6 1.0	16.3 1.8 0.7 1.0 0.6 1.2	1371 108.4 29.7 20.4 19.1 14.5	Mainstream Calumet Kirie Calumet Mainstream Kirie
Semi-Volatiles					
4-Methylphenol Phenol Phenanthrene Diethyl Phthalate Fluoranthene Di-n-butyl Phthalate	38 (54) 31 (44) 27 (38) 24 (34) 21 (30) 19 (28)	3.5 0.7 0.9 2.1 0.9 1.3	5.6 1.5 1.0 2.3 1.0 1.3	454.3 327.8 15.7 7.0 20.5 3.9	Calumet Mainstream Mainstream Kirie Mainstream Kirie

## TABLE 3 (Continued)

## OCCURRENCE AND LEVELS OF MAIN ORGANIC POLLUTANTS FOUND IN WASTEWATER FROM TWO TARP PUMP STATIONS AND KIRIE WRP INFLUENT PUMP STATION IN VARIOUS RAINFALL SAMPLING EVENTS IN 1995 THROUGH 1997

Compound	Number of Detections*	Detection Limit ( $\mu$ g/L)	Concentı <u>(µg</u> Minimum	cation** /L) Maximum	Location of Maximum Concentration
Pesticides and PCBs				<b>MANE A REAL POINT OF A DESCRIPTION OF A</b>	an Maria Anna an Anna an Anna an Anna Anna Ann
PCB-1260	6 (8)	0.20	0.20	2.35	Mainstream
PCB-1248	5 (7)	0.20	0.31	1.26	Mainstream
PCB-1254	4 (6)	0.20	0.21	0.65	Kirie

\*Number of samples in which pollutant was found out of 71 samples analyzed; frequency of detection in percent is in parentheses. \*\*Concentrations of the pollutants which had detectable values. concentrations of pollutants in the samples collected was observed.

- 4. The trend of occurrence of the predominant volatile and semi-volatile compounds in the CSOs from the six TARP drop shaft and overflow stations was similar to that in the pumpback and pumpage from the three TARP pump stations. The most frequently detected VOCs were acetone, with a frequency of 81 percent, tetrachloroethene 69 percent and chloroform 69 percent. Phenanthrene with a frequency of detection of 66 percent, fluoranthene 66 percent, and pyrene 47 percent were the predominant semi-volatile compounds in the CSOs. The predominant pesticides and PCBs found were 4,4'-DDE, 4,4'-DDT and 4,4'-DDD with frequency of detection ranging from 31 to 34 percent. The occurrence and levels of these predominant organic pollutants in the six TARP drop shaft and overflow stations during 1995 through 1997 are summarized in Table 4.
- 5. The concentrations of organic pollutants in the samples from the six TARP drop shaft and overflow stations varied widely. As can be seen in Table 2, the highest concentration detected for

## TABLE 4

## OCCURRENCE AND LEVELS OF MAIN ORGANIC POLLUTANTS FOUND IN WASTEWATER FROM SIX TARP DROP SHAFT AND OVERFLOW STATIONS IN VARIOUS RAINFALL SAMPLING EVENTS IN 1995 THROUGH 1997

Compound	Number of Detections*	Detection Limit ( $\mu$ g/L)	Concentr (µg Minimum		Location of Maximum Concentration
Volatiles					
Acetone Tetrachloroethene Chloroform 1,2-DCE (total) Trichloroethene Methylene Chloride	26 (81) 22 (69) 22 (69) 20 (63) 14 (44) 12 (38)	5.0 1.6 0.7 0.6 0.6 0.8	12.7 1.7 0.7 1.0 0.6 0.8	173.0 63.4 2.9 29.4 39.7 42.3	DS-M106 DS-M106 DS-M28 CS-106A CS-106A DS-M106
Semi-Volatiles					
Phenanthrene Fluoranthene Pyrene Chrysene Naphthalene Benzo(a)anthracene	21 (66) 21 (66) 15 (47) 12 (38) 12 (38) 9 (28)	0.9 0.9 1.7 0.9 0.6 0.7	1.2 1.0 1.8 1.1 1.8 1.0	24.8 4.5 6.8 2.6 26.9 2.2	DS-M28 DS-M28 DS-M28 DS-M28 DS-M28 CS-106A

### TABLE 4 (Continued)

## OCCURRENCE AND LEVELS OF MAIN ORGANIC POLLUTANTS FOUND IN WASTEWATER FROM SIX TARP DROP SHAFT AND OVERFLOW STATIONS IN VARIOUS RAINFALL SAMPLING EVENTS IN 1995 THROUGH 1997

	Number of	Detection	Concentr (µg		Location of Maximum
Compound	Detections*	Limit ( $\mu$ g/L)	Minimum	Maximum	Concentration
Pesticides and PCBs		·		<b>A THE ANNUAL OF T</b> HE AND AN	
4,4'-DDE	11 (34)	0.05	0.08	0.23	DS-D45
4 4 555	11 (34)	0.10	0.12	0.26	DS-M106
4,4-DDT		V • 1 U	0.11	<b>U</b> • • • •	

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\*Number of samples in which pollutant was found out of 32 samples analyzed; frequency of detection in percent is in parentheses.

\*\*Concentrations of the pollutants which had detectable values.

VOCs was 173.0  $\mu$ g/L (acetone), and for semivolatile compounds was 1845  $\mu$ g/L (4methylphenol). The concentrations of pesticides and PCBs were normally low, less than 0.3  $\mu$ g/L. No general correlation between the quantity of rainfall and concentrations of organic pollutants at the six TARP drop shaft and overflow stations was observed.

6. The types and concentrations of organic pollutants found in the pumpback and pumpage from the three TARP pump stations and the CSOs from the six TARP drop shaft and overflow stations were similar to those found in the raw sewage influents to the District treatment facilities. However, on occasion, some organic compounds were found in higher concentrations, in the samples of CSOs, than in the composite raw sewage samples, perhaps due to the fact that these were grab samples.

### CONVENTIONAL POLLUTANTS

The following conclusions were drawn from the data originating from the following sources: (1) the routine monitoring data collected for TARP pumpbacks to the District's WRPs, and

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(2) the data from the study on conventional pollutants in CSOs conducted jointly by the District and the United States Army Corps of Engineers (COE):

- 1. Based on the data from the District's routine monitoring, the concentrations of the conventional pollutants in the pumpback and pumpage varied widely during the period of 1995 through 1997 when the pumpback and pumpage were sampled for the analysis of organic pollutants. The concentration of TSS from TARP pumpback at the TARP Mainstream Pumping Station ranged from 14 to 356 mg/L, BOD<sub>5</sub> from 10 to 174 mg/L, and  $NH_4-N$ from 1.28 to 9.12 mg/L. The concentration of TSS from TARP pumpback at the TARP Calumet Pump Station ranged from 22 to 610 mg/L, BOD<sub>5</sub> from 10 to 174 mg/L, and NH<sub>4</sub>-N from 1.60 to 13.7 mg/L. The concentration of TSS from TARP pumpage at the Kirie WRP Influent Pump Station ranged from 36 to 1504 mg/L, BOD<sub>5</sub> from 29 to 245 mg/L, and NH4-N from 2.60 to 12.51 mg/L.
- 2. Based on the data from the study on CSOs at the seven TARP drop shaft and overflow stations during 1995 through 1997, the average concentrations of the conventional pollutants over a

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rainfall event varied from location to location. The ranges of the time-weighted average concentrations of the conventional pollutants analyzed in the samples collected in the CSOs from seven TARP drop shaft and overflow stations during the 1995 through 1997 rainfall sampling events are summarized in Table 5.

- 3. No pattern between rainfall and the timeweighted average concentrations of conventional pollutants in CSOs was observed based on 28 sets of data collected at the seven TARP drop shaft and overflow stations during various rainfall events from 1995 through 1997.
- 4. Generally, the average BOD₅ concentration in the CSOs from the same rainfall event was relatively high when the average concentration of corresponding suspended solids was high. However, the correlation was not linear.
- 5. No correlation between the average concentrations of conventional pollutants and the number of organic pollutants detected was found from the data obtained from either the TARP pump stations or the TARP drop shaft and overflow stations.

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## TABLE 5

RANGES OF TIME-WEIGHTED AVERAGE CONCENTRATIONS OF CONVENTIONAL POLLUTANTS IN THE COMBINED SEWER OVERFLOWS FROM SEVEN TARP DROP SHAFT AND OVERFLOW STATIONS DURING 1995 TO 1997 RAINFALL SAMPLING EVENTS

Location	TS (mg/L)	TSS (mg/L)	BOD₅ (mg/L)	$NH_4 - N$ (mg/L)
Drop Shaft Stations				
125th Street (CDS-13) Racine Avenue (DS-M28) Riverside (DS-D45) Evanston (DS-M106)	699 - 752 389 - 662 324 - 626 N/A*	85 - 217 84 - 256 74 - 217 89 - 551	16 - 116 14 - 94 10 - 186 32 - 81	1.60 - 2.50 1.62 - 2.94 1.07 - 2.81 N/A
Overflow Stations				
Riverside (CS-44) Lake Street (CS-106A) Evanston (CS-106B)	N/A N/A N/A	19 72 28 - 97	9 22 7 - 23	N/A N/A N/A

\*Not analyzed

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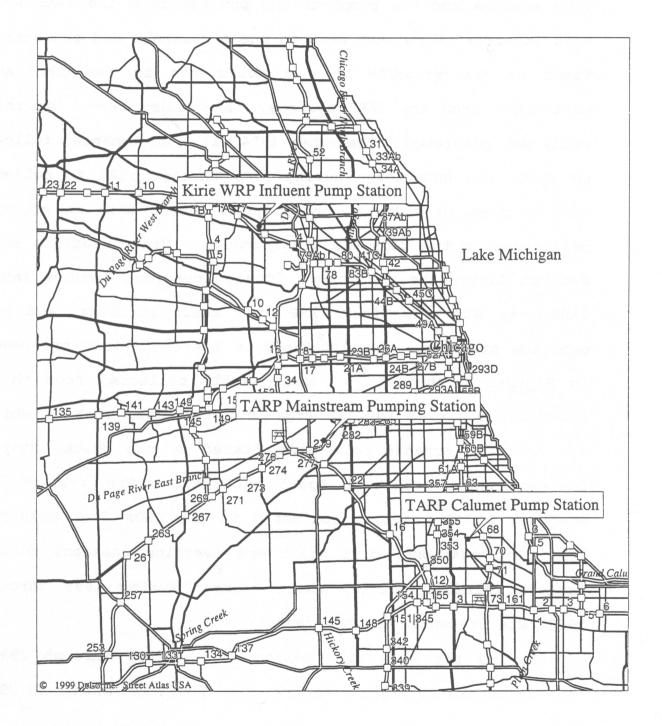
#### INTRODUCTION

A program was initiated in 1987 to sample the CSOs to the TARP systems and the pumpback and pumpage from the TARP systems in order to collect data on the occurrence and concentrations of the priority organic pollutants in the CSOs and wastewater from the TARP systems. A summary report on this study was completed in December 1994 (1). An enhanced followup study was undertaken during 1995 through 1997 to collect more samples in order to obtain more recent data on organic pollutants in the CSOs and TARP pumpage. Nine locations were sampled during the new study. These locations include three TARP pump stations, four TARP drop shaft stations, and two overflow stations. The locations of these stations are shown in Figures 1 through 3. Each sample collected from these sites was analyzed for 160 organic pollutants, most of which are priority organic pollutants listed by the United States Environmental Protection Agency (USEPA). The results of analyses of the samples collected in the CSOs from selected TARP pump stations, drop shaft and overflow stations during various rainfall events, that occurred during 1995 through 1997, are presented in this report.

During the same time period, i.e., 1995 through 1997, four conventional pollutants (TS, TSS,  $BOD_5$ , and  $NH_4-N$ ) in CSOs

## FIGURE 1

THE LOCATIONS OF THREE PUMP STATIONS SAMPLED FOR TARP CSOS IN SEVERAL RAINFALL EVENTS DURING 1995 THROUGH 1997



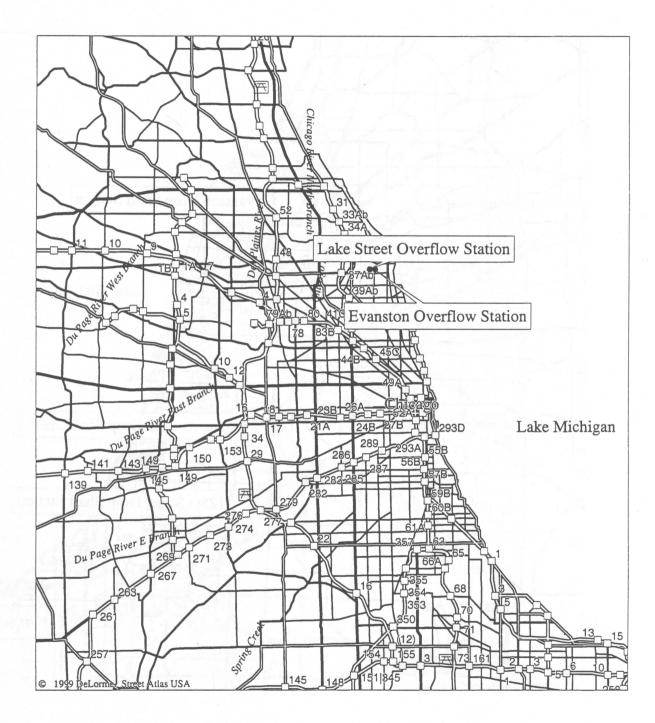
### FIGURE 2

THE LOCATIONS OF FOUR TARP DROP SHAFT STATIONS SAMPLED IN SEVERAL RAINFALL EVENTS DURING 1995 THROUGH 1997



## FIGURE 3

## THE LOCATIONS OF TWO CSO OVERFLOW STATIONS SAMPLED FOR ORGANIC POLLUTANTS IN SEVERAL RAINFALL EVENTS DURING 1995 THROUGH 1997

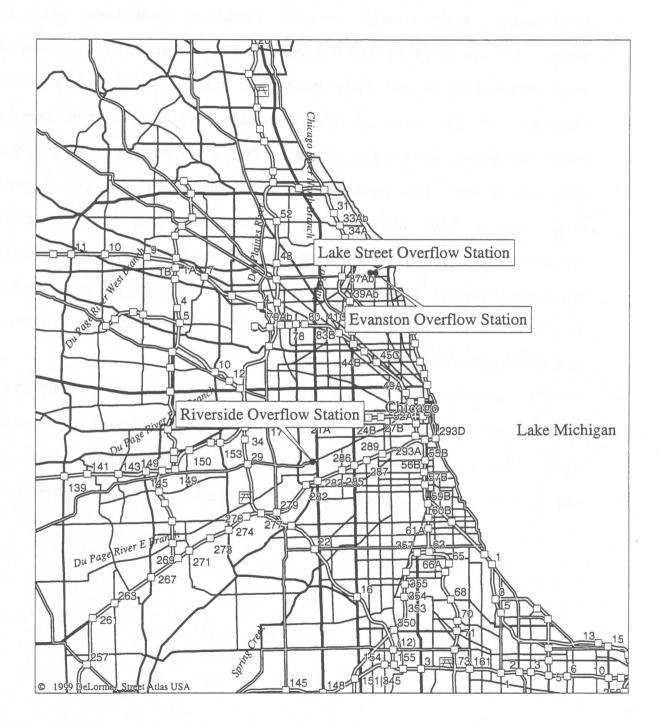


discharged into the TARP systems were analyzed to fulfill a contractual obligation with the COE. The sampling method for conventional pollutants was different from that of organic pollutants, even though several sampling locations were the same. In the case of the conventional pollutants, the samples were collected as multiple grabs at different time intervals, whereas, in the case of the organic pollutants, the samples were collected as single grabs. The samples for conventional pollutants were not necessarily the same as those for organic pollutants. Four TARP drop shaft stations and three overflow stations were selected as sampling locations for the COE work. The locations of these stations are shown in Figures 2 and 4. The results of the analyses of samples collected in this study are also presented in this report.

In addition, the data routinely collected by the District during 1995 through 1997 on the three conventional pollutants (TSS,  $BOD_5$ , and  $NH_4-N$ ) in the pumpback and pumpage from the three TARP pump stations are also included in this report.

### FIGURE 4

THE LOCATIONS OF THREE CSO OVERFLOW STATIONS SAMPLED FOR CONVENTIONAL POLLUTANTS IN SEVERAL RAINFALL EVENTS DURING 1995 THROUGH 1997



#### MATERIALS AND METHODS

### Sampling Locations

ORGANIC PRIORITY POLLUTANTS AND CLEAN AIR ACT VOCS

A total of nine locations were sampled during selected rainfall events resulting in at least 0.5 inch of rainfall as recorded at a nearby rainfall gauge station. These sampling locations are categorized into three groups in the following paragraphs.

 The first group is the two TARP pumpback stations to the Stickney and Calumet WRPs, and the Kirie WRP influent pump station, which pumps wastewater from the TARP system to the WRP during and after the rainfall events.

At the Kirie WRP, due to the configuration of the system, the TARP pumpage could not be sampled directly. Thus, the samples were taken from the influent that consisted of the dry weather flow and the TARP pumpage resulting from a rainfall event.

The second group consists of four locations of TARP drop shaft stations at which CSOs flow into the TARP systems during rainfall events. They are as follows:

1. 125th Street Drop Shaft Station (CDS-13) to the Calumet TARP system.

- 2. Racine Avenue Drop Shaft Station (DS-M28) to the Mainstream TARP system.
- 3. Riverside Drop Shaft Station (DS-D45) to the Des Plaines TARP system.
- Evanston Drop Shaft Station (DS-M106) to the Mainstream TARP system.

The third group consists of two locations at which CSOs discharge directly to the waterways during excessive rainfall events. They are as follows:

- Lake Street Overflow Station (CS-106A) to the North Shore Channel.
- Evanston Overflow Station (CS-106B) to the North Shore Channel.

### CONVENTIONAL POLLUTANTS

A total of seven locations were sampled in the study under contract with the COE. Samples were collected by automatic samplers during rainfall events resulting in at least 0.5 inch of rainfall as recorded at a nearby rainfall gauge station. These locations are categorized into two groups.

Four of the locations are TARP drop shaft stations in which CSOs are discharged into the TARP systems. They are as follows:

- 1. 125th Street Drop Shaft Station (CDS-13) to the Calumet TARP system.
- Racine Avenue Drop Shaft Station (DS-M28) to the Mainstream TARP system.
- Riverside Drop Shaft Station (DS-D45) to the Des Plaines TARP system.
- 4. Evanston Drop Shaft Station (DS-M106) to the Mainstream TARP system.

Three of the locations are stations at which CSOs are discharged directly to the waterways during excessive rainfall events. They are as follows:

- Riverside Overflow Station (CS-44) to the Des Plaines River.
- Lake Street Overflow Station (CS-106A) to the North Shore Channel
- Evanston Overflow Station (CS-106B) to the North
   Shore Channel.

In addition, the routine monitoring data collected by the District on three conventional pollutants in the pumpback and pumpage from the following two TARP pump stations and one WRP influent pump station are included in this report:

- 1. TARP Mainstream Pumping Station to the Stickney WRP.
- 2. TARP Calumet Pump Station to the Calumet WRP.

Kirie WRP Influent Pump Station to the Kirie WRP.

### Sampling and Analytical Methods

For organic pollutants, grab samples were collected during various rainfall events. At TARP pumpback stations, samples were collected by Maintenance and Operations (M&O) Department personnel, typically one at the beginning and another towards the end, from the pumpage. At TARP drop shafts and overflow stations, samples were collected during the rainfall event when the overflow was occurring.

For conventional pollutants, the samples in the study under contract with the COE were collected using on-site autosamplers at various time intervals during a rainfall event. The interval was small at the beginning of a sampling event, and was then gradually increased as sampling proceeded. The pattern of sampling was identical at each sampling location, even though the intervals and the change of intervals varied slightly from station to station. The samples from the three TARP pumpback stations were composite samples collected by personnel from the M&O Department.

Three USEPA methods were used to analyze 160 organic pollutants, of which most are priority organic pollutants listed by USEPA. These included 55 volatiles, 74 semi-volatiles, and

31 pesticides and PCBs. The analyses followed USEPA Method 624 for volatiles, Method 625 for semi-volatiles, and Method 608 for pesticides and PCBs.

The conventional pollutants analyzed included TS, TSS, BOD<sub>5</sub>, and NH<sub>4</sub>-N. The analyses of these conventional pollutants followed the methods listed in <u>Standard Methods for the Exami-</u> <u>nation of Water and Wastewater</u> (2). In the study under contract with the COE, TS and NH<sub>4</sub>-N, along with BOD<sub>5</sub>, were analyzed for 1995 samples, and TSS and BOD<sub>5</sub> were analyzed for 1996 and 1997 samples at the request of the COE.

### Calculation Method for Time-Weighted Averages

A time-weighted average method was used to calculate the average values of concentrations of conventional pollutants in a rainfall sampling event, because the time interval between any two adjacent samples was not necessarily uniform throughout the sampling event in the study under contract with the COE. Thus, the time interval between two adjacent samples was used as the weight in the calculation for averages. The formula used for computing a time-weighted average is given as:

Time-weighted average =  $\frac{\sum_{i=1}^{N-1} \frac{(C_i + C_{i+1})}{2} t_i}{\sum_{i=1}^{N-1} t_i}$ 

Where

- $C_i$  and  $C_{i+1}$  = the concentrations of a conventional pollutant for ith and (i+1)th samples
  - t<sub>i</sub> = the time interval between ith and
     (i+1)th samples
  - N = the number of samples collected during a sampling event.

### RESULTS

### Organic Priority Pollutants and Clean Air Act VOCs

Heavy rain causes CSOs to discharge into the TARP systems, requiring pumping back to the treatment plants during and after the rainfall event. TARP pumpage and CSO discharges were sampled for organic pollutants during and after various rainfall events during 1995 through 1997. <u>Tables 6, 7, and 8</u> contain the sampling locations, number of rainfall events sampled, and number of samples collected in 1995, 1996 and 1997, respectively.

### 1995 RAINFALL EVENTS SAMPLED

The quantity of CSOs pumped from TARP varied from rainfall event to rainfall event, and WRP to WRP. The rainfall and pumping data and number of samples collected from the TARP Mainstream and Calumet pump stations, and Kirie WRP influent pump station during sampling events in 1995 are presented in <u>Tables 9</u> through <u>11</u>. The results of organic analyses for each sample taken from these three pump stations in 1995 are contained in Appendix Tables AI-1 through AI-3.

TARP Mainstream Pumping Station. Out of 160 organic pollutants, 43 were detected in at least one of the samples collected from the TARP Mainstream pumping station, as shown in

## TABLE 6

## 1995 RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS

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Sampling Location	Number of Rainfall Events Sampled	Number of Samples Collected
TARP Pumpback and Pumpage		
Mainstream Pumping Station Kirie WRP Influent Pump Station Calumet Pump Station	4 4 3	10 8 7
TARP Drop Shaft		
Racine Avenue (DS-M28) Riverside (DS-D45)	1 1	2 1
Total	13	28

## TABLE 7

## 1996 RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS

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Sampling Location	Number of Rainfall Events Sampled	Number of Samples Collected
TARP Pumpback and Pumpage		
Mainstream Pumping Station Kirie WRP Influent Pump Station Calumet Pump Station	4 5 3	9 10 7
TARP Drop Shaft		
Racine Avenue (DS-M28) Riverside (DS-D45) Evanston (DS-M106) 125th Street (CDS-13)	1 2 2 2	3 3 4 5
Overflow		
Lake Street (CS-106A) Evanston (CS-106B)	2 1	4 2
Total	22	47

## TABLE 8

## 1997 RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS

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Sampling Location	Number of Rainfall Events Sampled	Number of Samples Collected
TARP Pumpback and Pumpage		
Mainstream Pumping Station Kirie WRP Influent Pump Station Calumet Pump Station	4 4 3	7 8 5
TARP Drop Shaft		
Racine Avenue (DS-M28) Riverside (DS-D45) Evanston (DS-M106)	1 1 3	2 1 4
Overflow		
Lake Street (CS-106A)	1	1
Total	17	28

## TABLE 9

		······································	
Date	Number of Samples Collected*	Accumulated Rainfall** (inches)	Accumulated Pumpback*** (MG)
6/28-7/2/95	3	0.99	535
10/19-10/22/95	1	1.45	765
11/1-11/5/95	3	0.67	682
11/10-11/17/95	3	2.65	1232
Total	10	5.76	3214

1995 RAINFALL AND PUMPBACK QUANTITY DATA FOR SAMPLING EVENTS AT THE TARP MAINSTREAM PUMPING STATION

\*Samples were collected during pumpback, usually one at the beginning and the others towards the end.

\*\*Heaviest rainfall generally occurred at the beginning of the period.

\*\*\*The total quantity of pumpback during the sampling event.

## TABLE 10

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Date	Number of Samples Collected*	Accumulated Rainfall** (inches)	Accumulated Pumpback*** (MG)
6/7-6/10/95	2	1.53	323
6/27-6/30/95	3	1.14	200
8/19-8/22/95	2	. 1.80	134
Total	7	4.47	657 .

## 1995 RAINFALL AND PUMPBACK QUANTITY DATA FOR SAMPLING EVENTS AT THE TARP CALUMET PUMP STATION

\*Samples were collected during pumpback, usually one at the beginning and the others towards the end.

\*\*Heaviest rainfall generally occurred at the beginning of the period.

\*\*\*The total quantity of pumpback during the sampling event.

### TABLE 11

Date	Number of Samples	Rainfall (inches)	Total Daily Flow (MGD)	Estimated TARP Flow* (MGD)
6/25/95 6/26/95 6/27/95	0 0 2	0 0 2.45	25.93 25.81 67.30	41.43
Subtotal	2	2.45		41.43
7/18/95 7/19/95 7/20/95	0 0 2	0 0 2.62	26.87 27.37 65.05	37.93
Subtotal	2	2.62		37.93
8/13/95 8/14/95 8/15/95	0 0 2	0 0 0.96	27.57 27.56 51.91	24.35
Subtotal	2	0.96		24.35
9/5/95 9/6/95 9/7/95	0 0 2	0 0 1.09	26.60 26.39 51.95	25.46
Subtotal	2	1.09		25.46
Total	8			

## 1995 RAINFALL AND PUMPAGE FLOW DATA FOR SAMPLING EVENTS AT THE KIRIE WRP INFLUENT PUMP STATION

\*Calculated by subtracting the average total daily flow for the two preceding days from the total daily flow on the rainy day. Table 12. Ten samples were collected during four rainfall events. No single organic pollutant was detected in all ten samples. Of the 43 organic pollutants detected, there were 15 volatiles, 23 semi-volatiles, and 5 pesticides and PCBs. The most frequently detected volatiles were acetone (9 out of 10), with concentrations ranging from 32.9 to 198.1 µg/L, trichloroethene (9 out of 10), from 0.9 to 13.3 µg/L, and toluene (8 out of 10), from 3.6 to 70.7 µg/L. The predominant semivolatiles were phenol (7 out of 10), with concentrations ranging from 1.5 to 127.3 µg/L, phenanthrene (6 out of 10), from 1.5 to 15.7 µg/L, and 4-methylphenol (5 out of 10), from 5.6 to 92.2 µg/L. Pesticides and PCBs were not commonly found in the samples. The main organic compound found under this category was PCB-1248 (3 out of 10), and its concentrations ranged from 0.31 to 0.46 µg/L.

Of all the organic pollutants, acetone was found most frequently and in the highest concentration.

TARP Calumet Pump Station. As shown in Table 13, there were 27 organic pollutants detected in at least one of the seven samples collected during three rainfall events. Of these 27 organic pollutants, there were 12 volatiles, 14 semivolatiles, and one PCB. The predominant volatiles were acetone (7 out of 7), with concentrations ranging from 82.2 to

### TABLE 12

## ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING 1995 RAINFALL SAMPLING EVENTS

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	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum Maximum
	Volatiles			
1234567890112345 1112345	Acetone Carbon disulfide Methylene chloride 1,2-Dichloroethene (total) Methyl tert butyl ether 2-Butanone Chloroform Trichloroethene 4-Methyl-2-pentanone Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene Styrene	9 5 6 7 2 5 4 9 2 8 5 5 7 5 1	5.0 1.0 0.8 0.6 2.0 4.6 0.7 0.6 3.5 1.8 1.6 0.6 1.0 1.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	Semi-Volatiles			
11112222222222223333355678 333333333333333333333333333333333333	Phenol 4-Methylphenol Naphthalene 4-Chloro-3-methylphenol 2-Methylnaphthalene Acenaphthene Fluorene Diethyl phthalate Phenanthrene Anthracene Di-n-butyl phthalate Fluoranthene Pyrene Butyl benzyl phthalate Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octyl phthalate Benzo(b)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(ghi)perylene	7 5 1 1 1 1 1 1 6 2 3 4 2 4 3 3 3 1 2 2 1 1 1 1	1.5 5.0 1.6 1.7 3.8 1.2 1.5 3.2 1.3 1.2 1.4 1.5 4.6 2.5 1.4 1.5 15.0 2.7 2.0 2.2 1.6 3.0 4.0	1.5 $127.3$ $5.6$ $92.2$ $3.1$ $3.1$ $17.7$ $17.7$ $10.0$ $10.0$ $2.1$ $2.1$ $2.8$ $2.8$ $3.4$ $3.4$ $1.5$ $15.7$ $1.3$ $2.7$ $1.6$ $3.2$ $3.3$ $20.5$ $8.2$ $29.0$ $2.8$ $10.0$ $2.9$ $9.7$ $5.4$ $15.0$ $25.9$ $94.0$ $5.9$ $5.9$ $4.1$ $13.0$ $3.1$ $10.0$ $10.4$ $10.4$ $6.5$ $6.5$ $6.3$ $6.3$

#### TABLE 12 (Continued)

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#### ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING 1995 RAINFALL SAMPLING EVENTS

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L) **	
				Minimum	Maximum
39 40 41 42 43	Pesticides and PCBs Heptachlor PCB-1016 PCB-1248 PCB-1254 PCB-1260	1 1 3 2 2	0.02 0.20 0.20 0.20 0.20 0.20	0.02 3.33 0.31 0.21 0.20	0.02 3.33 0.46 0.46 2.35

\*Number of samples in which pollutant was found out of ten samples collected.

\*\*Concentrations of the pollutants which had detectable values.

#### TABLE 13

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum Maximum	
		Dettettons			navaman
<u></u>	Volatiles				
1 2 3 4 5 6 7 8 9 10 11 12	Acetone Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform Trichloroethene Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene Styrene	7 3 4 7 3 6 6 2 6 1 2	5.0 0.8 0.6 4.6 0.7 0.6 1.8 1.6 0.6 1.0 1.0	82.2 1.3 0.7 4.6 0.7 1.1 7.0 1.8 0.7 1.3 1.3 1.3	317.1 4.1 1.4 6.9 1.3 2.7 87.1 11.5 0.7 2.3 1.3 32.1
	Semi-Volatiles				
13 14 15 16 17 19 21 223 24 22 26	Phenol 2-Methylphenol Acetophenone 4-Methylphenol 4-Chloroaniline Diethyl phthalate Phenanthrene Carbazole Di-n-butyl phthalate Fluoranthene Benzo(a) anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octyl phthalate	5 1 5 1 5 3 1 2 2 1 1 2 2 1 1 2	1.5 5.0 2.0 5.0 2.0 3.2 1.3 3.6 1.4 1.5 1.4 1.5 1.4 1.5 15.0 2.7	4.8 10.3 10.8 13.4 1.6 3.3 1.4 7.0 1.8 1.8 1.5 2.0 19.0 3.8	89.2 10.3 24.3 41.6 1.6 4.2 3.0 7.0 1.9 3.4 1.5 2.0 19.0 14.2
	Pesticides and PCBs				
27	PCB-1260	1	0.20	1.82	1.82

ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP CALUMET PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

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\*Number of samples in which pollutant was found out of seven samples collected.

\*\*Concentrations of the pollutants which had detectable values.

317.1  $\mu$ g/L, chloroform (7 out of 7), from 0.7 to 1.3  $\mu$ g/L, toluene (6 out of 7), from 7.0 to 87.1  $\mu$ g/L, tetrachloroethene (6 out of 7), from 1.8 to 11.5  $\mu$ g/L, and m- and/or p-xylenes (6 out of 7), from 1.3 to 2.3  $\mu$ g/L. The most frequently detected semi-volatiles were acetophenone (6 out of 7), with concentrations ranging from 10.8 to 24.3  $\mu$ g/L, phenol (5 out of 7), from 4.8 to 89.2  $\mu$ g/L, 4-methylphenol (5 out of 7), from 13.4 to 41.6  $\mu$ g/L, and diethyl phthalate (5 out of 7), from 3.3 to 4.2  $\mu$ g/L. Among the pesticide and PCB group of compounds, only PCB-1260 was found in one sample at a concentration of 1.82  $\mu$ g/L.

Of all the organic pollutants, acetone had the highest individual concentration of 317.1 µg/L in one sample.

<u>Kirie WRP Influent Pump Station</u>. In the case of the Kirie TARP pumpback, of the 160 organic pollutants, 24 were detected in at least one of the eight samples collected over the four rainfall events. <u>Table 14</u> contains the list of the 24 organic pollutants detected. These were 15 volatiles, 8 semi-volatiles, and 1 pesticide. Four organic pollutants were found only once in the eight samples collected. The most frequently detected volatiles were acetone (8 out of 8), with concentrations ranging from 28.4 to 219.4 µg/L, chloroform (8 out of 8), from 1.2 to 29.7 µg/L, and toluene (8 out of 8),

#### TABLE 14

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum Maximum	
				Millindin	Flax Linuin
	Volatiles				
1 2 3 4 5 6 7 8 9 0 11 2 3 4 5 6 7 8 9 0 11 2 3 4 5 6 7 8 9 0 11 2 3 4 5 6 7 8 9 0 11 2 3 4 5 6 7 8 9 0 11 12 3 12 5 6 7 12 5 12 12 12 12 12 12 12 12 12 12 12 12 12	Acetone Carbon disulfide Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform 1,1,1-Trichloroethane Trichloroethene Bromodichloromethane Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene Styrene	8 5 6 2 7 8 4 7 1 8 5 1 6 2 2	5.0 1.0 0.8 0.6 4.6 0.7 0.7 0.7 0.7 1.8 1.6 0.6 1.0 1.0 1.5	28.4 1.9 1.1 1.4 5.1 1.2 0.7 0.6 2.2 4.6 1.9 1.9 1.2 1.3 1.9	219.43.22.51.418.629.72.01.42.213.36.41.914.55.03.7
	Semi-Volatiles				
16 17 18 19 20 21 22 23	Phenol 4-Methylphenol 4-Chloro-3-methylphenol Diethyl phthalate Phenanthrene Di-n-butyl phthalate Fluoranthene Butyl benzyl phthalate	2 5 1 3 2 5 1 2	1.5 5.0 1.7 3.2 1.3 1.4 1.5 2.5	1.9 6.6 1.9 4.4 1.5 1.7 1.9 2.6	4.0 31.6 1.9 7.0 1.8 2.4 1.9 3.7
	Pesticides and PCBs				
24	beta-Endosulfan	2	0.05	0.16	0.17

#### ORGANIC POLLUTANTS FOUND IN PUMPAGE FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

\*Number of samples in which pollutant was found out of eight samples collected.

\*\*Concentrations of the pollutants which had detectable values.

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from 4.6 to 13.3  $\mu$ g/L. The predominant semi-volatiles were 4methylphenol (5 out of 8), with concentrations ranging from 6.6 to 31.6  $\mu$ g/L, and di-n-butyl phthalate (5 out of 8), from 1.7 to 2.4  $\mu$ g/L. Among the pesticide and PCB group of compounds,  $\beta$ -endosulfan was the only compound detected in two samples at concentrations of 0.16 and 0.17  $\mu$ g/L.

Again, acetone was the organic pollutant with the highest single concentration of 219.4  $\mu$ g/L.

During rainfall events, CSOs are discharged into the TARP systems at various TARP drop shaft stations. Only two TARP drop shaft stations, namely, Racine Avenue (DS-M28) and Riverside (DS-D45), were sampled for organic pollutants in 1995. The rainfall data for the sampling events at these stations are presented in <u>Table 15</u>. The results of organic pollutants for the samples collected at these two stations are presented in Appendix Tables AI-4 and AI-5.

Racine Avenue TARP Drop Shaft Station. At the Racine Avenue drop shaft station (DS-M28), two samples were collected during one rainfall event in 1995. As shown in <u>Table 16</u>, out of 160 organic pollutants, 21 were detected in at least one of the samples collected. Of the 21 organics, 11 were volatiles, 9 semi-volatiles, and 1 PCB. The organic pollutant with the

## TABLE 15

#### Number of Date of Rainfall Samples Station Sampling (inches) Collected Racine Avenue (DS-M28) 8/16/95 >0.78\* 2 Riverside (DS-D45) 8/15/95 1.07 1

## 1995 RAINFALL DATA FOR TARP DROP SHAFT STATIONS DURING SAMPLING EVENTS

\*Rain gauge recorded 0.78 inches before failing at 15:45.

#### TABLE 16

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ORGANIC POLLUTANT'S FOUND IN CSO OVERFLOW FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1995 RAINFALL SAMPLING EVENT

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concent (µg/ Minimum	rations L)** Maximum
	Volatiles	······································		•	
1 2 3 4 5 6 7 8 9 10 11	Acetone Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform Trichloroethene Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	5.0 0.8 0.6 4.6 0.7 0.6 1.8 1.6 0.6 1.0 1.0	58.7 1.2 1.2 5.0 1.2 2.0 2.3 3.0 2.1 1.1 3.8	73.9 1.6 1.2 7.0 2.9 3.8 2.9 6.9 2.1 7.3 3.8
	Semi-Volatiles				
12 13 14 15 16 17 18 19 20	Naphthalene 2-Methylnaphthalene 1,1'-Biphenyl Dibenzofuran Fluorene Phenanthrene Fluoranthene Pyrene Bis(2-ethylhexyl)phthalate	1 1 1 1 1 1 1 1	1.6 3.8 2.0 2.0 1.5 1.3 1.5 4.6 15.0	26.9 128.6 11.1 5.4 11.7 24.8 1.5 4.8 20.6	26.9 128.6 11.1 5.4 11.7 24.8 1.5 4.8 20.6
	Pesticides and PCBs			· .	
21	PCB-1260	1	0.20	3.71	3.71

\*Number of samples in which pollutant was found out of two samples collected.

highest single concentration detected was 2-methylnaphthalene, with a concentration of 128.6  $\mu$ g/L.

<u>Riverside TARP Drop Shaft Station</u>. At the Riverside TARP drop shaft station (DS-D45), one sample was collected during one rainfall event in 1995. <u>Table 17</u> presents the organic pollutants detected in this sample. Out of the 460 organic pollutants tested, only 11 organic pollutants were found, including 3 volatiles, 5 semi-volatiles, and 3 pesticides. Acetone, with a concentration of 33.4  $\mu$ g/L, was the pollutant having the highest concentration.

## 1996 RAINFALL EVENTS SAMPLED

Two TARP pump stations, Mainstream and Calumet, and the Kirie WRP influent pump station, were sampled for the analysis for organic pollutants during and after various rainfall events in 1996. The rainfall and pumping data for these stations .during sampling events are presented in <u>Tables 18</u> through <u>20</u>. The results of organic analyses for the samples taken at these stations in 1996 are contained in <u>Appendix Tables AII-1</u> through AII-3.

TARP Mainstream Pumping Station. At this pump station, 36 out of 160 organic pollutants were detected in at least one of the nine samples collected during four rainfall events. As

#### TABLE 17

#### ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1995 RAINFALL SAMPLING EVENT

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	Compound	Detection Limit µg/L (ppb)	Concentrations* (µg/L)
-	Volatiles		
1 2 3	Acetone Chloroform Toluene	5.0 0.7 1.8	33.4 1.4 12.7
	Semi-Volatiles		
<b>4</b> 5 6 7 8	4-Methylphenol Phenanthrene Di-n-butyl phthalate Fluoranthene Chrysene	5.0 1.3 1.4 1.5 1.5	9.3 1.4 2.3 2.6 1.6
	Pesticides and PCBs		
9 10 11	4,4'-DDE 4,4'-DDD 4,4'-DDT	0.05 0.05 0.15	0.23 0.16 0.17

\*Only one sample was collected at this location in 1995.

# TABLE 18

Date	Number of Samples Collected*	Accumulated Rainfall** (inches)	Accumulated Pumpback*** (MG)
5/9-5/16/96	4	2.49	898
5/28-6/1/96	2	2.01	976
6/17-6/20/96	2	1.49	243
9/26-9/27/96	1	0.99	157
Total	9	6.98	2274

1996 RAINFALL AND PUMPBACK QUANTITY DATA FOR SAMPLING EVENTS FOR THE TARP MAINSTREAM PUMPING STATION

\*Samples were collected during pumpback, usually one at the beginning and the others towards the end.

\*\*Heaviest rainfall generally occurred at the beginning of the period.

\*\*\*The total quantity of pumpback during the sampling event.

# TABLE 19

Date	Number of Samples Collected*	Accumulated Rainfall** (inches)	Accumulated Pumpback*** (MG)
5/9-5/15/96	3	1.67	340
6/16-6/23/96	2	2.45	589
7/18-7/24/96	2	6.04	351
Total	7	10.16	1280

# 1996 RAINFALL AND PUMPBACK QUANTITY DATA FOR SAMPLING EVENTS FOR THE TARP CALUMET PUMP STATION

\*Samples were collected during pumpback, usually one at the beginning and the others towards the end.

\*\*Heaviest rainfall generally occurred at the beginning of the period.

\*\*\*The total quantity of pumpback during the sampling event.

# TABLE 20

1996 RAINFALL AND PUMPAGE FLOW DATA FOR SAMPLING EVENTS FOR THE KIRLE WRP INFLUENT PUMP STATION

Date	Number of Samples	Rainfall (inches)	Total Daily Flow (MGD)	Estimated TARP Flow* (MGD)
5/7/96 5/8/96 5/9/96 5/10/96	0 0 1 1	0.10 0.00 1.80 0.24**	29.19 29.84 49.22 132.92	19.71 103.41
Subtotal	2	2.14		123.12
5/18/96 5/19/96 5/20/96 5/21/96	0 0 1 1	0.00 0.00 1.03 0.00**	59.99 41.46 118.97 143.95	68.25 93.23
Subtotal	2	1.03		161.48
5/26/96 5/27/96 5/28/96 5/29/96	0 0 1 1	0.05 0.41 1.39 0.00**	58.91 68.04 123.04 130.62	59.57 67.15
Subtotal	2	1.85		126.72
6/15/96 6/16/96 6/17/96 6/18/96	0 0 1 1	0.00 0.53 1.58 0.03**	35.27 40.40 73.60 125.47	35.77 87.64
Subtotal	2	2.14		123.41

# TABLE 20 (Continued)

1996 RAINFALL AND PUMPAGE FLOW DATA FOR SAMPLING EVENTS FOR THE KIRIE WRP INFLUENT PUMP STATION

Date	Number of Samples	Rainfall (inches)	Total Daily Flow (MGD)	Estimated TARP Flow* (MGD)
7/15/96 7/16/96 7/17/96 7/18/96	0 0 1 1	0.15 0.00 1.55 0.91**	27.09 25.99 61.20 113.99	34.66 87.45
Subtotal	2	2.61		122.11
Total	10			

\*Calculated by subtracting the average total daily flow for the two preceding days from the total daily flow on the rainy day.

\*\*Pumpage from TARP occurred as a result of the rainfall on the preceding day. presented in <u>Table 21</u>, the organic pollutants detected included 18 volatiles, 15 semi-volatiles, and 3 PCBs. No single organic was found in all nine samples, and 8 out of 16 organics were detected only once. The most frequently detected volatiles were acetone (8 out of 9), with concentrations ranging from 44.1 to 216.0 µg/L, chloroform (8 out of 9), from 0.8 to 1.6 µg/L, and trichloroethene (8 out of 9), from 0.8 to 19.1 µg/L. The predominant semi-volatiles were 4-methylphenol (5 out of 9), with concentrations ranging from 7.7 to 45.8 µg/L, and phenanthrene (5 out of 9), from 1.0 to 6.1 µg/L. Of all the organic pollutants, phenol was found at the highest single concentration of 327.8 µg/L in one sample.

TARP Calumet Pump Station. Seven samples were collected during three rainfall events in 1996. Table 22 presents the number of detections and range of concentrations of the organic pollutants found in these samples. Of the 160 organic pollutants analyzed, 28 were detected in at least one out of the seven samples. These were 15 volatiles and 13 semivolatiles. The predominant volatiles were acetone (7 out of 7), with concentrations ranging from 51.4 to 586.5  $\mu$ g/L, and methylene chloride (7 out of 7), from 1.2 to 11.4  $\mu$ g/L. The major semi-volatiles were phenol (5 out of 7), with concentrations ranging from 7.3 to 148.8  $\mu$ g/L, acetophenone (5 out of

#### TABLE 21

# ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING 1996 RAINFALL SAMPLING EVENTS

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	(µg/	rations L)** Maximum
	Volatiles		· · · ·		
15	1,2-Dichloroethene (total) 2-Butanone Chloroform Benzene Trichloroethene 4-Methyl-2-pentanone Toluene Tetrachloroethene 1,2-Dibromoethane Chlorobenzene Ethylbenzene m- and/or p-Xylenes o-Xylene	8 4 7 5 8 1 8 4 6 3 1 2 4 4 4 1 1	5.0 1.0 0.8 0.6 4.6 0.7 0.7 0.7 0.6 3.5 1.8 1.6 2.0 0.6 1.0 1.5 2.0	44.1 1.2 1.1 1.0 8.8 0.8 3.8 0.8 7.9 1.8 2.0 2.1 0.7 1.0 3.2 2.2 2.8 4.3	$216.0 \\ 6.8 \\ 4.2 \\ 3.6 \\ 27.5 \\ 1.6 \\ 3.8 \\ 19.1 \\ 32.3 \\ 78.8 \\ 2.8 \\ 2.1 \\ 0.7 \\ 4.6 \\ 13.2 \\ 12.0 \\ 2.8 \\ 4.3 \\ $
22 23 24 25 26 27 28 29 30	Semi-Volatiles Phenol Bis(2-chloroisopropyl)ether 4-Methylphenol Naphthalene Diethyl phthalate Phenanthrene Anthracene Carbazole Di-n-butyl phthalate Fluoranthene Pyrene Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Benzo(b)fluoranthene	3 1 5 2 4 5 2 1 1 4 2 2 2 3 1	1.52.05.01.63.21.31.23.61.41.54.61.41.515.02.0	12.2 4.5 7.7 2.3 2.4 1.0 0.9 4.7 2.5 1.0 4.3 1.1 1.6 19.9 4.5	327.8 4.5 45.8 2.8 3.7 6.1 1.3 4.7 2.5 82.0 11.4 3.2 5.1 35.9 4.5

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#### TABLE 21 (Continued)

## ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Number of	Detection Limit	Concentrations (µg/L) **	
	Compound	Detections*	µg/L (ppb)	Minimum Maximum	
• :	Pesticides and PCBs				
34 35 36	PCB-1248 PCB-1254 PCB-1260	2 1 2	0.20 0.20 0.20	0.52 1.26 1.93 1.93 0.21 0.68	

\*Number of samples in which pollutant was found out of nine samples collected.

#### TABLE 22

	Compound	Number of Detections*	Detection Limit µg/L (ppb)		rations L)** Maximum
	Volatiles				• • • • •
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Acetone Carbon disulfide Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform Benzene Trichloroethene 4-Methyl-2-pentanone Toluene Tetrachloroethene m- and/or p-Xylenes o-Xylene Styrene Cumene	7 1 7 1 3 6 1 2 2 6 2 3 3 4 3	5.0 1.0 0.8 5.5 0.7 1.0 0.6 3.5 1.8 1.6 1.4 1.0 1.5 2.0	51.4 1.0 1.2 1.3 7.2 1.0 1.2 0.9 4.2 2.7 2.0 1.9 1.2 1.6 2.7	586.5 1.0 11.4 1.3 10.2 2.1 1.2 1.1 4.2 108.4 3.8 2.9 1.6 5.6 17.7
16 17 18 20 21 22 23 24 25 26 27 28	Semi-Volatiles Phenol 2-Methylphenol Acetophenone 4-Methylphenol 2,4-Dimethylphenol Naphthalene Diethyl phthalate Phenanthrene Carbazole Fluoranthene Pyrene Benzo(a)anthracene Chrysene	5 4 5 5 3 2 5 2 1 2 1 1 1 1	0.7 3.7 1.4 3.5 0.7 1.7 2.1 0.9 4.0 1.0 2.4 0.8 1.1	7.3 4.9 2.5 8.0 0.8 1.7 2.3 2.8 5.0 1.4 9.9 3.0 4.4	148.8 44.2 27.0 454.3 135.0 2.9 5.2 7.5 5.0 8.3 9.9 3.0 4.4

## ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP CALUMET PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

## Pesticides and PCBs

None detected.

\*Number of samples in which pollutant was found out of seven samples collected.

7), from 2.5 to 27.0  $\mu$ g/L, and 4-methylphenol (5 out of 7), from 8.0 to 454.3  $\mu$ g/L. Acetone was the organic pollutant with the highest concentration of 586.5  $\mu$ g/L. No pesticides or PCBs were found at this location in 1996.

Kirie WRP Influent Pump Station. Ten samples were collected during five rainfall events in 1996. <u>Table 23</u> presents the number of detections and range of concentrations of the organic pollutants found in these samples. Out of the 160 organic pollutants analyzed, 20 were detected in at least one of the ten samples. They were 13 volatiles, 7 semi-volatiles, and no pesticides or PCBs. The most frequently detected volatiles were acetone (10 out of 10), with concentrations ranging from 36.3 to 381.8 µg/L, chloroform (10 out of 10), from 1.3 to 4.1 µg/L, methylene chloride (9 out of 10), from 1.5 to 4.5 µg/L, and toluene (8 out of 10), from 2.1 to 3.8 µg/L. The main semi-volatiles were diethyl phthalate (5 out of 10), from 2.3 to 5.5 µg/L, and 4-methylphenol (4 out of 10), from 6.8 to 16.0 µg/L.

Of all the organic pollutants detected, acetone had the highest concentration of 381.8 µg/L.

Four TARP drop shafts and two overflow stations were sampled for organic pollutants during various rainfall events in 1996. The rainfall data for the sampling events at these

#### TABLE 23

		Number of	Detection Limit	(µg/	rations L)**
	Compound	Detections*	µg/L (ppb)	Minimum	Maximum
	Volatiles			······································	
1 2 3 4 5 6 7 8 9 10 11 12 13	Acetone Carbon disulfide Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform 1,1,1-Trichloroethane Trichloroethene Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene	10 3 9 2 3 10 1 5 8 5 1 3 2	5.0 1.0 0.8 0.8 5.5 0.7 0.7 0.6 1.8 1.6 0.8 1.4 1.0	36.3 1.8 1.5 0.9 8.1 1.3 0.8 0.6 2.1 1.8 1.2 1.6 1.7	381.8 2.6 4.5 1.3 12.5 4.1 0.8 1.5 3.8 15.7. 1.2 4.5 2.1
	Semi-Volatiles				
14 15 16 17 18 19 20	Phenol 4-Methylphenol Diethyl phthalate Phenanthrene Di-n-butyl phthalate Fluoranthene Di-n-octyl phthalate	2 4 5 1 1 1 1	0.7 3.5 2.1 0.9 1.6 1.0 5.6	2.0 6.8 2.3 1.0 3.9 1.6 44.5	3.2 16.0 5.5 1.0 3.9 1.6 44.5

#### ORGANIC POLLUTANTS FOUND IN PUMPAGE FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

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Pesticides and PCBs

None detected.

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\*Number of samples in which pollutant was found out of ten samples collected.

stations are presented in <u>Table 24</u>. The results of organic analyses for the samples collected at these stations are tabulated in Appendix AII-4 through AII-9.

Racine Avenue TARP Drop Shaft Station. At this station (DS-M28), three samples were collected during one rainfall event in 1996. The results of the analyses are summarized in Table 25. Out of the 160 organic pollutants analyzed, 26 were detected in at least one of the three samples. Of these 26 organics, 12 were volatiles, 10 semi-volatiles, and 4 pesticides or PCBs. Five volatile organics, acetone, methylene chloride, 1,2-dichloroethene (total), chloroform, and tetrachloroethene were found in all three samples. The concentrations of all volatiles were less than 14 µg/L, except for acetone, which had concentrations ranging from 37.4 to 129.2  $\mu g/L$ . The majority of the semi-volatiles (9 out of 10) were detected only once. The highest concentration found was 46.6  $\mu g/L$  for bis(2-ethylhexyl)phthalate.

Riverside TARP Drop Shaft Station. At this station (DS-D45), three samples were collected during two rainfall events in 1996. <u>Table 26</u> presents the number of detections and range of concentrations for organic pollutant analyses. Out of the 160 organic pollutants analyzed, 9 were detected, including 3 volatiles, 4 semi-volatiles, and 2 pesticides. Of the nine

# TABLE 24

Station	Date of Sampling	Rainfall (inches)	Number of Samples Collected
Racine Avenue (DS-M28)	7/17-19/96	4.12	3
Riverside (DS-D45)	7/17-18/96 9/26/96	4.65 1.90	1 2
Evanston (DS-M106)	7/17-18/96 9/26-27/96	2.06 1.51	2 2
125th Street (CDS-13)	7/17-19/96 9/26/96	5.93 2.12	3 2
Lake Street (CS-106A)	7/17-18/96 9/26-27/96	2.06 1.51	2 2
Evanston (CS-106B)	9/26-27/96	1.51	2

# 1996 RAINFALL DATA FOR TARP DROP SHAFT AND OVERFLOW STATIONS DURING SAMPLING EVENTS

#### TABLE 25

ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1996 RAINFALL SAMPLING EVENT

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		Number of	Detection Limit		rations L)**
	Compound	Detections*	µg/L (ppb)	Minimum	Maximum
	Volatiles				
1 2 3 4 5 6 7 8 9 10 11 12	Acetone Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform 1,1,1-Trichloroethane Trichloroethene Bromodichloromethane Toluene Tetrachloroethene m- and/or p-Xylenes o-Xylene	3 3 1 3 1 2 1 1 3 2 2	5.0 0.8 5.5 0.7 0.7 0.6 0.7 1.8 1.6 1.4 1.0	37.4 1.5 1.1 8.8 1.4 1.6 0.7 1.0 13.4 1.7 1.6 1.1	129.2 9.6 1.6 8.8 2.8 1.6 2.5 1.0 13.4 4.4 1.8 1.3
	Semi-Volatiles				
13 14 15 16 17 18 19 20 21 22	1,4-Dichlorobenzene 4-Methylphenol Naphthalene Phenanthrene Di-n-butyl phthalate Fluoranthene Pyrene Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate	2 1 1 1 1 1 1 1 1	1.1 3.5 1.7 0.9 1.6 1.0 2.4 0.8 1.1 15.0	1.6 7.2 1.8 3.6 2.0 4.5 6.8 1.8 2.6 46.6	1.9 7.2 1.8 3.6 2.0 4.5 6.8 1.8 2.6 46.6
	Pesticides and PCBs				
23 24 25 26	4,4'-DDD 4,4'-DDT PCB-1248 PCB-1260	1 1 2 2	0.05 0.15 0.20 0.20	0.06 0.12 0.39 0.35	0.06 0.12 0.77 1.49

\*Number of samples in which pollutant was found out of three samples collected.

#### TABLE 26

ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING 1996 RAINFALL SAMPLING EVENTS

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concent: (µg/) Minimum	L)**
	Volatiles	<u> </u>			· · ·
1 2 3	Acetone Methylene chloride Chloroform	2 1 1	5.0 0.8 0.7	19.3 1.0 0.7	37.8 1.0 0.7
	Semi-Volatiles				
4 5 6 7	Phenanthrene Fluoranthene Pyrene Chrysene	1 2 1 1	0.9 1.0 2.4 1.1	1.2 1.1 2.6 2.2	1.2 3.4 2.6 2.2
	Pesticides and PCBs				
8 9	Heptachlor epoxide 4,4'-DDE	2 1	0.02 0.05	0.05 0.11	0.06 0.11

\*Number of samples in which pollutant was found out of three samples collected.

organic pollutants detected, no single compound was found in all three samples. The concentrations of the detected organic pollutants were less than 3.5  $\mu$ g/L, except for acetone, which had concentrations ranging from 19.3 to 37.8  $\mu$ g/L.

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Evanston TARP Drop Shaft Station. At this station (DS-M106), four samples were collected during two rainfall events in 1996. The results of sampling and analysis are summarized in Table 27. Out of the 160 organic pollutants, 23 were detected, including 8 volatiles, 11 semi-volatiles, and 4 pesticides. Of the 23 organics detected, three were found in all four samples, and five were found only once. The predominant volatiles were acetone (4 out of 4), with concentrations ranging from 37.3 to 134.9 µg/L, 1,2-dichloroethene (total) (4 out of 4), from 1.0 to 16.4  $\mu$ g/L, and tetrachloroethene (4 out of 4), from 2.0 to 30.6 µg/L. The predominant semi-volatiles were phenanthrene (3 out of 4), with concentrations ranging from 2.8 to 7.0 µg/L, fluoranthene (3 out of 4), from 1.4 to 4.1  $\mu$ g/L, and pyrene (3 out of 4), from 2.5 to 4.7  $\mu$ g/L. The main pesticides found were 4,4'-DDE (3 out of 4), 4,4'-DDD (3 out of 4), 4,4'-DDT (3 out of 4), and methoxychlor (3 out of-4).

125th Street Drop Shaft Station. At this station (CDS-13), five samples were collected during two rainfall events in

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#### TABLE 27

ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1996 RAINFALL SAMPLING EVENTS

		Number of	Detection Limit		L)**
	Compound	Detections*	µg/L (ppb)	Minimum	Maximum
	Volatiles		· · · · · · · · · · · · · · · · · · ·		
1 2 3 4 5 6 7 8	Acetone Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform Trichloroethene Tetrachloroethene o-Xylene	4 2 4 1 2 3 4 1	5.0 0.8 0.8 5.5 0.7 0.6 1.6 1.0	37.3 0.9 1.0 5.6 0.8 0.9 2.0 1.2	134.9 42.3 16.4 5.6 1.1 16.0 30.6 1.2
9 10 11 12 13 14 15 16 17 18 19	Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene	1 1 2 1 2 3 2 3 3 2 2 2	1.7 4.8 1.2 1.0 1.1 0.9 0.8 1.0 2.4 0.8 1.1	14.3 6.9 1.5 1.9 1.3 2.8 1.1 1.4 2.5 1.3 1.7	14.3 6.9 2.1 1.9 2.3 7.0 1.7 4.1 4.7 1.4 2.2
20 21 22 23	Pesticides and PCBs 4,4'-DDE 4,4'-DDD 4,4'-DDT Methoxychlor	3 3 3 3	0.05 0.05 0.15 0.50	0.15 0.08 0.23 0.17	0.18 0.11 0.26 0.32

\*Number of samples in which pollutant was found out of four samples collected.

1996. As presented in <u>Table 28</u>, 28 out of the 160 organic pollutants were detected in at least one sample, including 9 volatiles, 18 semi-volatiles, and 1 PCB. Of the 28 organic pollutants detected, only one semi-volatile, phenanthrene, was found in every sample, and 13 compounds were detected in only one out of five samples. The predominant volatiles were chloroform (4 out of 5), from 0.8 to 2.7 µg/L, benzene (3 out of 5), from 1.6 to 3.0 µg/L, ethylbenzene (3 out of 5), from 0.9 to 13.0 µg/L, and xylenes (3 out of 5), from 1.2 to 45.7 µg/L. The predominant semi-volatiles were phenanthrene (5 out of 5), from 2.0 to 6.0 µg/L, naphthalene (4 out of 5), from 1.4 to 2.8 µg/L. Of the PCB and pesticide group, only PCB-1016 was found in two samples at concentrations of 0.75 and 1.09 µg/L.

There was no clear pattern in the occurrence and concentration change between the samples collected in the same rainfall event.

Lake Street Overflow Station. At this station (CS-106A), four samples were collected during two rainfall events in 1996. <u>Table 29</u> presents the number and concentration range of the detected organic pollutants in these four samples. Out of 160 organic pollutants, 18 were detected in at least one of the four samples. They were eight volatiles, six semi-

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#### TABLE 28

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#### ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) DURING 1996 RAINFALL SAMPLING EVENTS

		Number of	Detection Limit	(µg/	rations L)**
	Compound	Detections*	µg/L (ppb)	Minimum	Maximum
	Volatiles			• • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·
1 2 3 4 5 6 7 8 9	Acetone Chloroform Benzene Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene Cumene	2 4 3 2 1 3 3 3 1	5.0 0.7 1.0 1.8 1.6 0.8 1.4 1.0 2.0	36.7 0.8 1.6 4.4 1.7 0.9 3.0 1.2 29.1	79.9 2.7 3.0 7.3 1.7 13.0 45.7 40.7 29.1
10 11 12 13 14 15 16 17 18 20 21 22 23 225 27	Semi-Volatiles Phenol 2-Methylphenol 4-Methylphenol 2,4-Dimethylphenol Naphthalene 2-Methylnaphthalene 1,1'-Biphenyl Dibenzofuran Fluorene Diethyl phthalate Phenanthrene Anthracene Carbazole Fluoranthene Pyrene Benzo(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate	2 1 2 1 4 2 1 1 1 5 1 1 4 2 1 1 1 1	0.7 3.7 3.5 0.7 1.7 4.8 1.7 4.4 1.1 2.1 0.9 0.8 4.0 1.0 2.4 0.8 1.1 15.0	43.6 53.0 34.2 2.4 2.5 5.0 18.1 6.6 9 2.7 2.0 1.6 1.4 2.3 1.5 66.7	52.1 53.0 1845 2.4 12.6 97.7 18.1 6.6 7.9 2.7 6.0 1.0 4.6 2.8 2.8 1.3 1.5 66.7
28	Pesticides and PCBs PCB-1016	2	0.20	0.75	1.09

\*Number of samples in which pollutant was found out of five samples collected.

## TABLE 29

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#### ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING 1996 RAINFALL SAMPLING EVENTS

		Number of	Detection Limit	Concentrations (µg/L)**	
	Compound	Detections*	µg/L (ppb)	Minimum Maximum	
	Volatiles				
1 2 3 4 5 6 7 8	Acetone Methylene chloride 1,2-Dichloroethene (total) 2-Butanone Chloroform 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	3 3 4 1 3 1 3 4	5.0 0.8 0.8 5.5 0.7 0.7 0.6 1.6	86.8       116.1         0.8       34.6         2.5       29.4         5.6       5.6         0.7       1.0         1.4       1.4         2.4       39.7         6.6       39.0	
9 10 11	Semi-Volatiles Naphthalene Phenanthrene Fluoranthene	1 2 2 1 1	1.7 0.9 1.0	2.0 2.0 1.6 2.3 1.6 2.9	
12 13 14	Pyrene Benzo(a)anthracene Chrysene	1 1 1	2.4 0.8 1.1	3.23.21.01.01.61.6	
	Pesticides and PCBs				
15 16 17 18	4,4'-DDE 4,4'-DDD 4,4'-DDT Methoxychlor	2 2 2 2	0.05 0.05 0.15 0.50	$\begin{array}{cccc} 0.10 & 0.17 \\ 0.05 & 0.10 \\ 0.17 & 0.26 \\ 0.17 & 0.35 \end{array}$	

\*Number of samples in which pollutant was found out of four samples collected.

volatiles, and four pesticides. Only two volatiles, out of the 18 organic pollutants, were found in every sample. They were 1,2-dichloroethene (total), with concentrations ranging from 2.5 to 29.4  $\mu$ g/L, and tetrachloroethene, from 6.6 to 39.0  $\mu$ g/L. Semi-volatiles and pesticides were found in no more than two out of four samples. The maximum concentrations found were 3.2  $\mu$ g/L for semi-volatiles, and 0.35  $\mu$ g/L for pesticides.

Evanston Overflow Station. At this station (CS-106B), two samples were collected during one rainfall event in 1996. <u>Table 30</u> presents the number of detections and concentration range from these two samples. Out of the 160 organic pollutants analyzed, only eight were detected. There were six volatiles, one semi-volatile, and one pesticide. The highest concentration detected was 94.2 µg/L for acetone.

#### 1997 RAINFALL EVENTS SAMPLED

Samples from the TARP Mainstream and Calumet, and Kirie WRP influent pump stations were collected for organic pollutant analyses during several rainfall events in 1997. The rainfall and pumping data from these three stations during sampling events are presented in <u>Tables 31</u>, <u>32</u>, and <u>33</u>, respectively. The results of organic pollutant analyses for the

#### TABLE 30

# ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE EVANSTON OVERFLOW STATION (CS-106B) DURING 1996 RAINFALL SAMPLING EVENTS

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		Number of	Detection Limit	Concentrations (µg/L)**	
	Compound	Detections*	µg/L (ppb)	Minimum	Maximum
	Volatiles			· · ·	<u></u>
1 2 3 4 5 6	Acetone Methylene chloride 1,2-Dichloroethene (total) Chloroform Trichloroethene Tetrachloroethene	2 1 2 2 1 2	5.0 0.8 0.8 0.7 0.6 1.6	57.0 15.2 2.2 1.0 0.6 6.2	2.5
7	<u>Semi-Volatiles</u> Fluoranthene	1	1.0	1.0	1.0
8	Pesticides and PCBs Methoxychlor	1	0.15	0.16	0.16
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\*Number of samples in which pollutant was found out of two samples collected.

## TABLE 31

			···· .
Date	Number of Samples Collected*	Accumulated Rainfall** (inches)	Accumulated Pumpback*** (MG)
6/21-6/23/97	2	1.24	925
6/25-6/30/97	1	0.44	687
8/16-8/23/97	2	2.16	1949
9/17-9/18/97	2	0.91	425
Total	7	4.75	3986

# 1997 RAINFALL AND PUMPBACK QUANTITY DATA FOR SAMPLING EVENTS FOR THE TARP MAINSTREAM PUMPING STATION

\*Samples were collected during pumpback, usually one at the beginning and the others towards the end.

\*\*Heaviest rainfall generally occurred at the beginning of the period.

\*\*\*The total quantity of pumpback during the sampling event.

# TABLE 32

Date	Number of Samples Collected*	Accumulated Rainfall** (inches)	Accumulated Pumpback*** (MG)
2/20-2/25/97	1	3.68	111
2/26-2/28/97	1	0.76	20
7/18-7/22/97	3	2.33	189
Total	5	6.77	320

1997 RAINFALL AND PUMPBACK QUANTITY DATA FOR SAMPLING EVENTS FOR THE TARP CALUMET PUMP STATION

\*Samples were collected during pumpback, usually one at the beginning and the others towards the end.

\*\*Heaviest rainfall generally occurred at the beginning of the period.

\*\*\*The total quantity of pumpback during the sampling event.

## TABLE 33

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1997 RAINFALL AND PUMPAGE FLOW DATA FOR SAMPLING EVENTS FOR THE KIRIE WRP INFLUENT PUMP STATION

Date	Number of Samples	Rainfall (inches)	Total Daily Flow (MGD)	Estimated TARP Flow* (MGD)
6/14/97 6/15/97 6/16/97	0 0 2	0.00 0.00 1.07	26.94 26.57 78.35	51.60
Subtotal	2	1.07		51.60
6/18/97 6/19/97 6/20/97 6/21/97	0 0 1 1	0.00 0.00 0.91 0.11***	32.09 30.46 30.15 38.48	0** 7.21
Subtotal	2	1.02		7.21
7/16/97 7/17/97 7/18/97	0 0 2	0.00 0.00 1.63	26.13 26.54 58.46	32.13
Subtotal	2	1.63		32.13
10/24/97 10/25/97 10/26/97 10/27/97	0 0 1 1	0.34 0.03 1.35 0.01***	28.48 25.88 42.73 62.26	15.55 35.08
Subtotal	2	1.73		50.63
Total	8			

\*Calculated by subtracting the average total daily flow for the two preceding days from the total daily flow on the rainy day.

\*\*Zero flow value was assigned because the total daily flow value was lower than the average daily flow for the two preceding days.

\*\*\*Pumpage from TARP occurred as a result of the rainfall on the preceding day.

samples collected from these stations in 1997 are provided in Appendix Tables AIII-1 through AIII-3.

TARP Mainstream Pumping Station. Seven samples were collected during four rainfall events in 1997. As shown in Table 34, 26 out of the 160 organic pollutants analyzed were detected in at least one of the seven samples. They were 11 volatiles and 15 semi-volatiles. No pesticides or PCBs were found at this location. Acetone was the only organic pollutant found in every sample, having the highest concentration of 1371 µg/L. The other predominant volatiles were chloroform (4 out of 7), with concentrations ranging from 0.9 to 1.4 µg/L, trichloroethene (4 out of 7), from 1.0 to 5.5 µg/L, and toluene (4 out of 7), from 2.7 to 43.0 µg/L. The predominant semi-volatiles were 3- and/or 4-methylphenol (6 out of 7), with concentrations ranging from 6.3 to 59.3 µg/L, phenanthrene (6 out of 7), from 1.0 to 8.3 µg/L, and fluoranthene (5 out of 7), from 1.2 to 7.2 µg/L.

TARP Calumet Pump Station. Five samples were collected during three rainfall events in 1997. <u>Table 35</u> presents the number of detections and range of concentrations for the organic pollutants detected in these five samples. Out of the 160 organic pollutants analyzed, 28 were found in at least one of the five samples. They were 13 volatiles, 12 semi-

#### TABLE 34

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	Compound	Number of	Detection Limit		Concentrations (µg/L) **	
		Detections*		Minimum		
	Volatiles					
1 2 3 4 5 6 7 8 9 10 11	o-Xylene	7 1 3 1 3 4 4 4 2 1	5.4 1.1 1.0 4.2 5.5 0.9 0.6 1.8 1.6 1.0	16.3 1.1 3.5 1.2 12.3 9.0 0.9 1.0 2.7 4.2 1.6	$1371 \\ 1.1 \\ 8.0 \\ 1.4 \\ 12.3 \\ 34.1 \\ 1.4 \\ 5.5 \\ 43.0 \\ 4.6 \\ 1.6$	
12 13 14 15 16 17 18 20 21 22 23 24 25 26	Semi-Volatiles Phenol 1,4-Dichlorobenzene 3- and/or 4-Methylphenol Naphthalene 2-Methylnaphthalene Diethyl phthalate Phenanthrene Di-n-butyl phthalate Fluoranthene Pyrene Butyl benzyl phthalate Benzo(a) anthracene Chrysene Bis(2-ethylhexyl) phthalate Di-n-octyl phthalate	4 1 6 3 1 2 6 3 5 4 4 3 4 4 1	1.3 0.8 3.7 0.6 2.7 3.6 1.0 1.3 0.9 1.7 1.8 0.7 0.9 8.2 2.6	1.6 1.1 6.3 0.7 6.0 3.8 1.0 1.7 1.2 2.3 2.0 1.0 1.0 1.0 3.5	202.3 1.1 59.3 1.8 6.0 4.1 8.3 3.7 7.2 8.4 2.6 2.0 3.4 33.8 3.5	

#### ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING 1997 RAINFALL SAMPLING EVENTS

#### Pesticides and PCBs

26 Di-n-octyl phthalate

None detected.

\*Number of samples in which pollutant was found out of seven samples collected.

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#### TABLE 35

#### ORGANIC POLLUTANTS FOUND IN PUMPBACK FROM THE TARP CALUMET PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

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	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum Maximum
	Volatiles			
1 2 4 5 6 7 8 9 10 11 2 13	Acetone Methylene chloride 2-Butanone Chloroform Benzene Trichloroethene Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes o-Xylene Styrene Cumene	5 3 2 2 4 4 1 2 2 2 3	5.4 1.0 5.5 0.9 0.7 0.6 1.8 1.6 0.8 2.0 1.0 1.5 2.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	Semi-Volatiles			
14 15 16 17 18 20 21 22 23 24 25	Phenol 1,2-Dichlorobenzene 2-Methylphenol Acetophenone 3- and/or 4-Methylphenol 1,2,4-Trichlorobenzene Naphthalene Phenanthrene Di-n-butyl phthalate Fluoranthene Bis(2-ethylhexyl)phthalate Di-n-octyl phthalate	3 1 4 2 1 2 2 1 1 1	1.3 0.7 3.6 1.8 3.7 0.9 0.6 1.0 1.3 0.9 8.2 2.6	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	Pesticides and PCBs			
26 27 28	4,4'-DDD 4,4'-DDT PCB-1260	1 1 1	0.05 0.10 0.20	0.10 0.10 0.97 0.97 0.85 0.85

\*Number of samples in which pollutant was found out of five samples collected.

volatiles, and 3 pesticides and PCBs. Acetone was the only compound which was found in every sample. Of the 28 detected pollutants, 11 were found in only one sample. In addition to acetone, with concentrations ranging from 31.4 to 692.9 µg/L, the other predominant volatiles were toluene (4 out of 5), with concentrations ranging from 4.8 to 56.5 µg/L, and tetrachloroethene (4 out of 5) from 1.9 to 18.7 µg/L. The predominant semi-volatiles were acetophenone (4 out of 5), with concentrations ranging from 5.2 to 99.9 µg/L, and phenol (3 out of 5), from 62.9 to 212.4 µg/L. Two pesticides, 4,4'-DDD and 4,4'-DDT, and one PCB, PCB-1260, were detected only once each in the five samples.

<u>Kirie WRP Influent Pump Station</u>. Eight samples were collected during four rainfall events in 1997. <u>Table 36</u> presents the number of detections and range of concentrations for organic pollutants detected in these eight samples. Out of 160 organic pollutants, 23 were found in at least one of the eight samples, including 11 volatiles, 7 semi-volatiles, and 5 pesticides and PCBs. The most frequently detected pollutants were volatiles. These were acetone (8 out of 8), with concentrations ranging from 67.1 to 131.1  $\mu$ g/L, chloroform (8 out of 8), from 1.3 to 5.7  $\mu$ g/L, and toluene (8 out of 8), from 2.8

#### TABLE 36

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#### ORGANIC POLLUTANTS FOUND IN PUMPAGE FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Number of	Detection Limit	Concentrations (µg/L) **	
	Compound	Detections*	µg/L (ppb)	Minimum	Maximun
	Volatiles			n - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 - 160 -	
1	Acetone	8	5.4	67.1	131.1
2	Carbon disulfide	2 5	1.1	1.2	2.8
3 4	Methylene chloride	5	1.0	1.2	7.2
	Chloroform	8	0.9	1.3	5.7
5	1,1,1-Trichloroethane	1	0.7	0.9	0.9
6	Trichloroethene	1	0.6	1.4	1.4
7	Toluene	1 1 8 2 1 3 2	1.8	2.8	12.6
8 9	Tetrachloroethene	2	1.6	2.1	6.4
9 10	Ethylbenzene	1	0.8	1.0	1.0
11	m- and/or p-Xylenes o-Xylene	3	2.0	2.1 1.2	3.8
£. ₀⊾.	0-vàiene	2	1.0	1.2	2.1
	Semi-Volatiles				
12	3- and/or 4-Methylphenol	1	3.7	5.6	5.6
13	Diethyl phthalate	1 3	3.6	5.4	5.4
14	Di-n-butyl phthalate	3	1.3	1.3	1.5
15	Fluoranthene	1	0.9	1.1	1.1
16	Butyl benzyl phthalate	2	1.8	2.2	3.1
17	Bis(2-ethylhexyl)phthalate	1	8.2	16.5	16.5
18	Di-n-octyl phthalate	1	2.6	265	265
	Pesticides and PCBs				
19	beta'-BHC	· 1	0 02	0.05	0.05
20	gamma-Chlordane	1	0.03	0.05	0.05
21	$4, 4^{\circ} - \text{DDE}$	1	0.05	0.03	0.05
22	4,4'-DDD	1	0.05	0.024	
23	PCB-1254	1	0.20	0.65	0.65

\*Number of samples in which pollutant was found out of eight samples collected.

to 12.6  $\mu$ g/L. The five pesticides and PCBs were detected only once each in the eight samples collected.

Three TARP drop shafts and one overflow station were sampled for organic pollutants during several rainfall events in 1997. <u>Table 37</u> presents the rainfall data for these stations during the 1997 sampling events. The results of organic pollutant analyses for the samples collected at these stations are presented in Appendix Tables AIII-4 through <u>AIII-7</u>.

Racine Avenue TARP Drop Shaft Station. At this station (DS-M28), two samples were collected during one rainfall event in 1997. As shown in <u>Table 38</u>, 14 out of the 160 organic pollutants analyzed were detected in at least one of the samples. These included six volatiles and eight semi-volatiles. No pesticides or PCBs were found in these samples. Four volatiles and four semi-volatiles were detected in both samples. The highest concentration detected was 60 µg/L for acetone.

<u>Riverside TARP Drop Shaft Station</u>. One sample was collected during a rainfall event at this station (DS-D45) in 1997. <u>Table 39</u> presents the concentrations of the organic pollutants detected. Out of the 160 organic pollutants analyzed, two volatiles, no semi-volatiles, and three pesticides were found in this sample. The volatiles were acetone (20.6

# TABLE 37

Station	Date of Sampling	Rainfall (inches)	Number of Samples Collected
Racine Avenue (DS-M28)	7/18/97	1.37	2
Riverside (DS-D45)	7/18/97	0.79	1
Evanston (DS-M106)	7 <del>/18</del> /97 8/12/97 8/16-17/97	2.17 0.65 2.51	1 1 2
Lake Street (CS-106A)	8/17/97	2.25	1

# 1997 RAINFALL DATA FOR TARP DROP SHAFT AND OVERFLOW STATIONS DURING SAMPLING EVENTS

#### TABLE 38

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ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concent (µg/ Minimum	rations L)** Maximum
-	Volatiles				
1 2 3 4 5 6	Acetone 1,2-Dichloroethene (total) Chloroform Trichloroethene Toluene Tetrachloroethene	2 2 1 1 2	5.4 1.0 0.9 0.6 1.8 1.6	56.0 1.2 1.0 7.4 7.2 3.8	60.0 1.3 1.8 7.4 7.2 7.0
7 8 9 10 11 12 13 14	Semi-Volatiles 1,4-Dichlorobenzene 3- and/or 4-Methylphenol Phenanthrene Di-n-butyl phthalate Fluoranthene Pyrene Beñzo(a)anthracene Chrysene	2 1 2 1 2 2 1 1	0.8 3.7 1.0 1.3 0.9 1.7 0.7 0.9	1.4 4.2 1.4 1.5 1.5 1.8 1.7 2.3	2.4 4.2 2.5 1.5 4.0 4.7 1.7 2.3

Pesticides and PCBs

None detected.

\*Number of samples in which pollutant was found out of eight samples collected.

# TABLE 39

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# ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1997 RAINFALL SAMPLING EVENT\*

	Compound	Detection Limit µg/L (ppb)	Concentrations (µg/L)		
	Volatiles				
1 2	Acetone Toluene	5.4 1.8	20.6 9.0		
	Semi-Volatiles				
None detected.					
	Pesticides and PCBs				
3 4 5	4,4'-DDE 4,4'-DDD 4,4'-DDT	0.05 0.05 0.10	0.17 0.10 0.14		

\*Only one sample was collected at this location in 1997.

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 $\mu$ g/L) and toluene (9.0  $\mu$ g/L), and the pesticides were 4,4'-DDE (0.17  $\mu$ g/L), 4,4'-DDD (0.10  $\mu$ g/L), and 4,4'-DDT (0.14  $\mu$ g/L).

Evanston TARP Drop Shaft Station. At this station (DS-M106), four samples were collected during three rainfall events in 1997. Table 40 presents the number of detections and range of concentrations for the organic pollutants detected in these samples. Out of the 160 organic pollutants analyzed, 22 were detected, which included 7 volatiles, 12 semi-volatiles, and 3 pesticides. None of the detected organic pollutants was found in every sample except for one semi-volatile compound, phenanthrene. The predominant volatiles were acetone (3 out of 4), with concentrations ranging from 44.5 to 173.0 µg/L, toluene (3 out of 4), from 1.8 to 13.2  $\mu$ g/L, and tetrachloroethene, from 2.1 to 63.4  $\mu$ g/L. The predominant semi-volatiles were phenanthrene (4 out of 4), with concentrations ranging from 1.3 to 3.8 µg/L, naphthalene (3 out of 4), from 2.9 to 8.2 µg/L, fluoranthene (3 out of 4), from 1.9 to 3.0  $\mu$ g/L, pyrene (3 out of 4), from 1.8 to 3.9  $\mu g/L$ , and chrysene (3 out of 4), from 1.1 to 1.6  $\mu g/L$ . The pesticides found were 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT, with the highest concentration detected of 0.26 µg/L.

Lake Street Overflow Station. One sample was collected during a rainfall event at this station (CS-106A) in 1997.

#### TABLE 40

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	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concent (µg/) Minimum	L)**
<u></u>	Volatiles		· · · ·	<b>***</b> *********************************	ч
1 2 3 4 5 6 7	Acetone 1,2-Dichloroethene (total) Chloroform Trichloroethene Toluene Tetrachloroethene Ethylbenzene	3 2 2 2 3 3 1	5.4 1.0 0.9 0.6 1.8 1.6 0.8	44.5 3.1 0.9 1.1 1.8 2.1 1.9	173.0 10.0 1.8 5.6 13.2 63.4 1.9
8 9 10 11 12 13 14 15 16 17 18 19	Semi-Volatiles 1,4-Dichlorobenzene 3- and/or 4-Methylphenol Naphthalene 2-Methylnaphthalene Acenaphthylene Phenanthrene Di-n-butyl phthalate Fluoranthene Pyrene Benzo(a) anthracene Chrysene Bis(2-ethylhexyl)phthalate	1 1 3 1 4 1 3 3 2 3 1	0.8 3.7 0.6 2.7 0.7 1.0 1.3 0.9 1.7 0.7 0.9 8.2	1.9 8.0 2.9 2.7 0.9 1.3 4.1 1.9 1.8 1.0 1.1 19.2	1.9 8.0 8.2 2.7 0.9 3.8 4.1 3.0 3.9 1.2 1.6 19.2
	Pesticides and PCBs		•		
20 21 22	4,4'-DDE 4,4'-DDD 4,4'-DDT	3 2 3	0.05 0.05 0.10	0.08 0.06 0.13	0.14 0.26 0.22

ORGANIC POLLUTANTS FOUND IN CSO OVERFLOW FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1997 RAINFALL SAMPLING EVENTS

\*Number of samples in which pollutant was found out of four samples collected.

\*\*Concentrations of the pollutants which had detectable values.

<u>Table 41</u> presents the list of organic pollutants that had detectable values. Seventeen out of the 160 organic pollutants were detected, including 6 volatiles and 11 semi-volatiles. No pesticides or PCBs were found in this sample. The highest concentrations found were 28.5  $\mu$ g/L for a volatile compound, tetrachloroethene, and 13.0  $\mu$ g/L for a semi-volatile compound, naphthalene.

#### Conventional Pollutants

#### TARP PUMP STATIONS

The CSO pumped from the TARP systems to District WRPs are sampled for conventional pollutants by the M&O Department of the District. A daily composite sample for general chemical analyses is collected when pumpage is being discharged into the WRP. Data on the BOD<sub>5</sub>, TSS, and NH<sub>4</sub>-N in the CSO pumped on the days when samples were taken for organic pollutants in 1995, 1996, and 1997 were obtained from the District's database and are presented in the following sections. The rainfall and pumping data for these sampling days are listed in <u>Tables 9</u> to <u>11</u> for 1995, <u>Tables 18</u> to <u>20</u> for 1996, and <u>Tables</u> 31 to 33 for 1997, respectively.

TARP Mainstream Pumping Station. At this station, 12 rainfall events were sampled for organic pollutants during 1995 through 1997. <u>Table 42</u> presents the TARP flow and

#### TABLE 41

#### ORGANIC POLLUTANTS IN CSO OVERFLOW FROM THE LAKE STREET TARP DROP SHAFT STATION (CS-106A) DURING THE 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Concentrations* (µg/L)
	Volatiles		
1 2 3 4 5 6	Acetone 1,2-Dichloroethene (total) Toluene Tetrachloroethene Ethylbenzene m- and/or p-Xylenes	5.4 1.0 1.8 1.6 0.8 2.0	12.7 2.7 2.8 28.5 2.4 2.2
	Semi-Volatiles		
7 8 9 10 11 12 13 14 15 16 17	Naphthalene 2-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene	0.6 2.7 0.7 0.8 1.1 1.0 1.0 0.9 1.7 0.7 0.9	13.0 5.1 2.7 1.2 2.4 11.7 3.1 4.5 6.8 2.2 2.3

#### Pesticides and PCBs

None detected.

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\*Only one sample was collected at this location in 1997.

### TABLE 42

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### CONVENTIONAL POLLUTANTS IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS 1995 TO 1997

Date	Flow	BOD <sub>5</sub>	TSS	NH4-N
	(MGD)	(mg/L)	(mg/L)	(mg/L)
			-1995	
6/30/95	150	20	54	3.19
7/2/95	112	NA*	34	1.99
10/20/95	33	NA	NA	NA
11/2/95	28	174	342	7.01
11/3/95	160	41	52	7.32
11/5/95	128	30	64	1.93
11/13/95	168	22	92	3.72
11/14/95	212	33	66	3.19
11/16/95	222	20	48	3.14
			-1996	
5/11/96	300	50	112	8.64
5/13/96	140	25	50	1.28
5/14/96	68	16	30	3.63
5/16/96	72	24	38	5.15
5/29/96	68	37	66	6.26
6/1/96	364	NA	22	1.75
6/19/96	63	83	240	9.12
6/20/96	1 <u>8</u> 0	98	356	5.78
9/27/96	81	NA	NA	NA

#### TABLE 42 (Continued)

#### CONVENTIONAL POLLUTANTS IN PUMPBACK FROM THE TARP MAINSTREAM PUMPING STATION DURING RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS 1995 TO 1997

Date	Flow (MGD)	BOD <sub>5</sub> (mg/L)	TSS (mg/L)	$NH_4-N$ (mg/L)
		1	L997	1997 - 1997 - 1997 - 1996 - 1996 - 1997 - 1996 - 1
6/21/97	179	35	54	5.16
6/23/97	175	24	52	1.87
6/30/97	70	124	112	7.34
8/19/97	330	10	14	1.63
8/23/97	106	39	62	6.49
9/17/97	81	113	172	5.58
9/18/97	344	27	24	2.8

\*NA = Not available.

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concentrations of  $BOD_5$ , TSS, and  $NH_4-N$  in the pumpback discharges corresponding to these sampling events. The concentrations ranged from 10 to 174 mg/L for  $BOD_5$ , from 14 to 356 mg/L for TSS, and from 1.28 to 9.12 mg/L for  $NH_4-N$ , respectively. No definite pattern is observed in the relationship between the number of organic pollutants detected and the concentrations of conventional pollutants in the TARP pumpback.

<u>TARP Calumet Pump Station</u>. At the TARP Calumet pump station, there were 9 rainfall events which were sampled for organic pollutants during 1995 through 1997. The TARP flow and concentrations of BOD<sub>5</sub>, TSS, and NH<sub>4</sub>-N in the TARP pumpback measured during these events are presented in <u>Table 43</u>. The concentrations of BOD<sub>5</sub> ranged from 13 to 220 mg/L, TSS from 22 to 610 mg/L, and NH<sub>4</sub>-N from 1.60 to 13.7 mg/L. There was no observable pattern between the concentrations of these pollutants and the quantity of pumpage, nor in the number of organic pollutants detected and the concentrations of conventional pollutants.

<u>Kirie WRP Influent Pump Station</u>. As was mentioned earlier, the Kirie WRP influent is considered as Kirie TARP pumpage. Samples for organic pollutants from Kirie WRP influent were collected during 13 rainfall events in 1995 through 1997. The total influent flow and concentrations of conventional

#### TABLE 43

#### CONVENTIONAL POLLUTANTS IN PUMPBACK FROM THE TARP CALUMET PUMP STATION DURING RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS 1995 TO 1997

Date	Flow	BOD <sub>5</sub>	TSS	NH <sub>4</sub> -N
	(MGD)	(mg/L)	(mg/L)	(mg/L)
			1995	
6/8/95	82	106	77	6.07
6/10/95	110	107	68	7.83
6/28/95	53	75	148	3.82
6/29/95	95	34	84	5.02
6/30/95	36	109	102	8.57
8/19/95	20	220	256	7.51
8/20/95	22	58	78	4.30
	<b></b>		1996	
5/9/96	20	96	47	9.8
5/11/96	33	NA*	86	1.6
5/15/96	64	32	46	6.9
6/17/96	45	50	62	8.9
6/23/96	134	64	36	
7/20/96	33	NA	NA	NA
7/24/96	71	29	24	4
			1997	'
2/24/97	35	46	78	3.8
2/28/97	19	13	22	4.1
7/18/97	6	160	336	13.7
7/19/97	41	102	610	1.8
7/22/97	47	39	44	5.4

\*NA = Not available.

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pollutants in the CSO corresponding to these sampling events are presented in <u>Table 44</u>. The ranges of concentrations were 29 to 245 mg/L for  $BOD_5$ , 36 to 1504 mg/L for TSS, and 2.60 to 12.51 mg/L for  $NH_4$ -N. No correlation between the concentrations of conventional pollutants and the number of organic pollutants detected was observed.

#### TARP DROP SHAFT AND OVERFLOW STATIONS

The CSOs discharged to the TARP systems within the District boundary were monitored for conventional pollutants (TS, TSS, BOD<sub>5</sub>, and NH<sub>4</sub>-N) under a joint project of the District and the COE during 1995 through 1997. The samples for conventional pollutant analyses were collected by automatic samplers at predetermined intervals when the rainfall exceeded 0.5 inches during a rainfall event. <u>Tables 45</u> through <u>47</u> present the rainfall data for the TARP drop shaft and overflow stations for the sampling events in 1995, 1996 and 1997, respectively. The results of the conventional pollutant analyses for all samples collected during 1995 through 1997 are given in Appendix Tables AIV-1 through AIV-28.

In 1995, three TARP drop shaft stations were selected to collect samples for conventional pollutant analyses during thirteen rainfall events, 3 at 125th Street (CDS-13), 4 at Racine Avenue (DS-M28) and 6 at Riverside (DS-D45). TS, BOD<sub>5</sub>,

### TABLE 44

### CONVENTIONAL POLLUTANTS IN PUMPAGE FROM THE KIRIE WRP INFLUENT PUMP STATION DURING RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS 1995 TO 1997

Date	Flow (MGD)	BOD <sub>5</sub> (mg/L)	TSS (mg/L)	$NH_4-N$ (mg/L)
	· · · · · · · · · · · · · · · · · · ·		L995	
6/27/95	67.3	165	1504	10.2
7/20/95	65.1	171	1116	9.5
8/15/95	51.9	105	172	6.8
9/7/95	52.0	132	184	9
		:	1996	
5/9/96 5/10/96	49.2 133	118 151	192 100	9.27 4.33
5/20/96 5/21/96	119 144	114 61	88 72	3.61 2.60
5/28/96 5/29/96	123 131	56 29	84 36	3.63 2.88
6/17/96 6/18/96	73.6 125	133 40	268 64	5.46 2.69
7/17/96 7/18/96	61.2 114	157 102	196 132	9.53 2.84
6/16/97	78.4	137	216	5.23

73

### TABLE 44 (Continued)

### CONVENTIONAL POLLUTANTS IN PUMPAGE FROM THE KIRIE WRP INFLUENT PUMP STATION DURING RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS 1995 TO 1997

Date	Flow (MGD)	BOD <sub>5</sub> (mg/L)	TSS (mg/L)	$NH_4-N$ (mg/L)
			1997	
6/20/97 6/21/97	30.2 38.5	142 123	178 324	11.52 8.07
7/18/97	58.5	123	196	9.93
10/26/97 10/27/97	42.7 62.3	245 128	324 192	12.51 6.39

## TABLE 45

RAINFALL	DATA	FOR	TARP	DROP	SHAFT	STATIO	NS	DURING	CONVENTIONAL	
		POL	LUTAN	T SAM	PLING	EVENTS	IN	1995		

Station	Date of Sampling	Rainfall (inches)
125th Street (CDS-13)	5/23-24/95 6/2/95 11/10/95	0.88 0.41 2.51
Racine Avenue (DS-M28)	6/2/95 7/20/95 8/15/95 11/10/95	0.29 0.96 0.97 2.87
Riverside (DS-D45)	5/23/95 6/2-3/95 6/27/95 7/20/95 7/25-26/95 11/10/95	1.04 0.48 1.92 0.93 1.59 2.15

#### TABLE 46

### RAINFALL DATA FOR TARP DROP SHAFT AND OVERFLOW STATIONS DURING CONVENTIONAL POLLUTANT SAMPLING EVENTS IN 1996

Station	Date of Sampling	Rainfall (inches)
125th Street (CDS-13)	7/17-18/96 9/26/96	5.95 2.91
Racine Avenue (DS-M28)	7/17-18/96	4.12
Riverside (DS-D45)	7/17/96	4.65
Evanston (DS-M106)	7/17-18/96	2.06
Lake Street (CS-106A)	7/17-18/96	2.06
Evanston (CS-106B)	7/17-18/96	2.06

76

#### TABLE 47

### RAINFALL DATA FOR TARP DROP SHAFT AND OVERFLOW STATIONS DURING CONVENTIONAL POLLUTANT SAMPLING EVENTS IN 1997

Station	Date of Sampling	Rainfall (inches)
125th Street (CDS-13)	7/18/97 8/16-17/97	1.78 1.61
Racine Avenue (DS-M28)	7/18/97	1.37
Riverside (DS-D45)	7/18/97	0.79
Evanston (DS-M106)	7/18/97 8/16-17/97	2.17 2.51
Riverside (CS-44)	8/16-17/97	3.38
Evanston (CS-106B)	8/17/97	2.51

and  $NH_4-N$  were analyzed for each sample collected at these The concentrations of TS, BOD5, and NH4-N of the stations. samples collected at each location and during each rain event were averaged using a time-weighted method, as the sampling intervals were different throughout a sampling event. Table 48 summarizes the results of sampling and time-weighted average concentrations of the conventional pollutants analyzed. The time-weighted average concentrations of BOD<sub>5</sub> for individual sampling events varied with rainfall events as well as sampling stations, ranging from 10 to 186 mg/L. The lowest average concentration of TS was 324 mg/L at the Riverside TARP drop shaft station (DS-D45), while the highest was 752 mg/L at the 125th Street TARP drop shaft station (CDS-13). The lowest average concentration of NH4-N was 1.07 mg/L at the Riverside TARP drop shaft station (DS-D45), while the highest was 2.94 mg/L at the Racine Avenue TARP drop shaft station (DS-M28). Both lowest and highest average concentrations of BOD5 were found at the Riverside TARP drop shaft stations (DS-D45). Figures 5 through 7 present the time-weighted average concentrations of TS, BOD5, and NH4-H versus rainfall at the three TARP drop shaft stations for 1995 sampling events.

In 1996, during seven rainfall events, six TARP drop shaft and overflow stations were sampled for TSS and  $BOD_5$  instead of TS,  $BOD_5$ , and  $NH_4-N$ , as a result of the request made

#### TABLE 48

#### TOTAL SOLIDS, BOD5, AND AMMONIUM NITROGEN IN CSOS FROM TARP DROP SHAFT STATIONS DURING RAINFALL SAMPLING EVENTS IN 1995

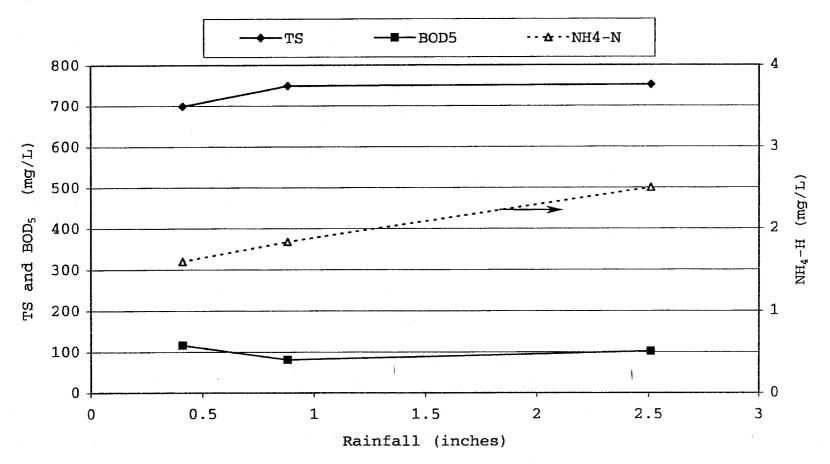
	Date of	Number of Date of Samples		Total Solids (mg/L)			(mg/I	.)	$NH_4 - N (mg/L)$			
Station	Sampling	Collected	Average*	Min.	Max.	Average*			Average*	Min.	Max.	
125th Street (CDS-13)	5/23-24/95	24	749	535	1355	81	33	235	1.84	0.87	3.77	
	6/2/95	20	699	520	1040	116	52	205	1.60	0.23	4.74	
	11/10/95	12	752	566	875	102	35	166	2.50	0.79	4.03	
Racine Avenue (DS-M28)	6/2/95	12	389	318	498	35	20	55	2.94	1.58	5.04	
	7/20/95	12	662	400	1118	94	36	240	2.45	1.38	3.78	
	8/15/95	17	628	406	1430	51	38	75	2.30	0.60	3.92	
	11/10/95	24	516	252	1290	14	6	21	1.62	0.10	5.26	
Riverside (DS-D45)	5/23/95	74	385	186	636	32	11	133	1.07	0.40	5.02	
	6/2-3/95	71	527	222	4190	48	17	760	2.21	0.78	8.72	
	6/27/95	48	626	296	3156	186	46	2621	2.81	0.67	5.50	
	7/20/95	24	456	384	648	71	24	188	1.08	0.60	1.77	
	7/25-26/95	60	579	120	720	10	2	50	1.21	0.48	2.13	
	11/10/95	23	324	130	730	25	5	134	1.07	0.19	5.52	

\*Average values were calculated using a time-weighted method. RacinexAvenuex(DS-M28) 7/25-26/95 Collected Average\* Min. Max. Average\* Min. Max. Average\* Min. Max.

RacinexAvenuex(DS-M28) 7/25-26/95 Collected Average\* Min. Max. Average\* Min. Max. Average\* Min. Max.

#### FIGURE 5

## TIME-WEIGHTED AVERAGE CONCENTRATIONS OF CONVENTIONAL POLLUTANTS VERSUS RAINFALL AT 125TH STREET TARP DROP SHAFT STATION (CDS-13) RAINFALL SAMPLING EVENTS IN 1995



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#### FIGURE 6

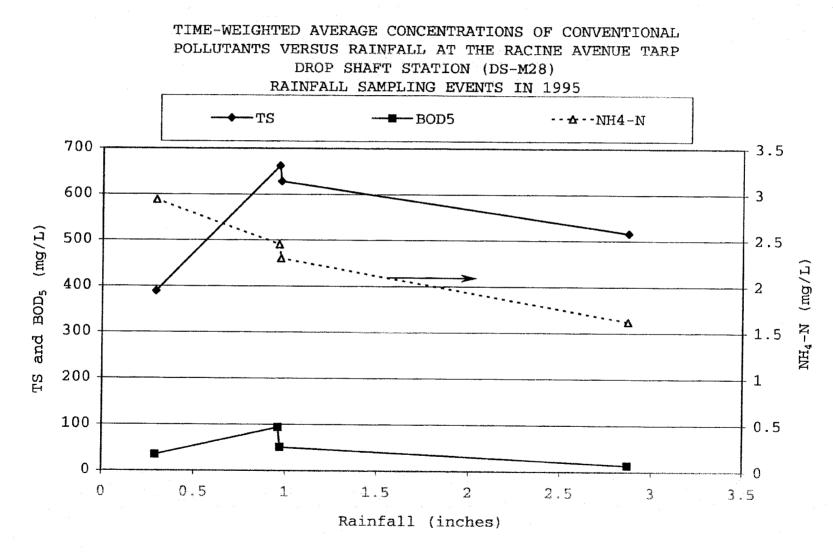
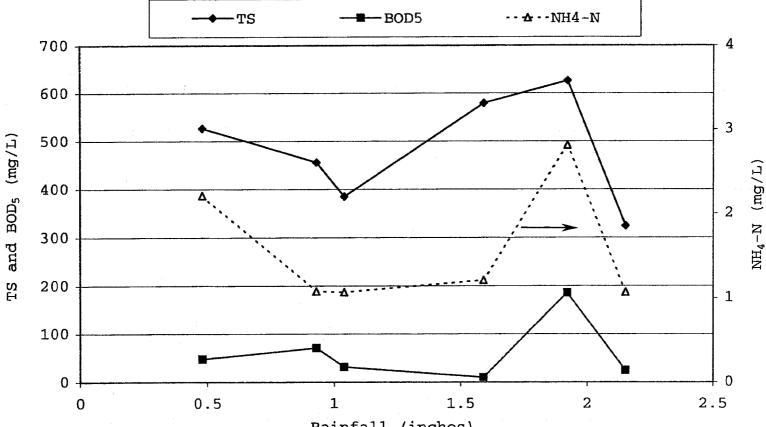


FIGURE 7

## TIME-WEIGHTED AVERAGE CONCENTRATIONS OF CONVENTIONAL POLLUTANTS VERSUS RAINFALL AT RIVERSIDE TARP DROP SHAFT STATION (DS-D45) RAINFALL SAMPLING EVENTS IN 1995



Rainfall (inches)

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by the COE. <u>Table 49</u> presents the results of sampling at each location with corresponding time-weighted average concentrations of TSS and BOD<sub>5</sub> and the concentration ranges for each sampling event. The highest time-weighted average concentrations of TSS and BOD<sub>5</sub> were 217 and 64 mg/L, respectively, and were found at the 125th Street TARP drop shaft station (CDS-13).

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The concentrations of TSS and  $BOD_5$  of each individual sample at any location varied in a wide range within one rainfall event. The highest concentration of TSS of an individual sample was 932 mg/L at the Riverside TARP drop shaft station (DS-D45), and the lowest 10 mg/L at the Evanston overflow station (CS-106B). The highest concentration of  $BOD_5$  of an individual sample was 262 mg/L at the 125th Street TARP drop shaft station (CDS-13), and the lowest 6 mg/L at the Lake Street (CS-106A) and Evanston overflow stations (CS-106B).

Although there appeared to be a trend that concentrations of TSS and BOD<sub>5</sub> would decrease as rain proceeded, this was not true in all cases. Peak concentrations of TSS and BOD<sub>5</sub> were found in the middle or even at the end of a storm. <u>Figures 8</u> through <u>14</u> present the concentrations of TSS and BOD<sub>5</sub> versus time for each rainfall event sampled in 1996.

In 1997, six TARP drop shaft and overflow stations continued to be sampled for TSS and BOD<sub>5</sub> during 8 rainfall

#### TABLE 49

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#### TOTAL SUSPENDED SOLIDS AND BOD5 IN CSOS FROM TARP DROP SHAFT AND OVERFLOW STATIONS DURING RAINFALL SAMPLING EVENTS IN 1996

Station	Date of Sampling	Number of Samples Collected	Total Suspended Solids (mg/L)			$BOD_5$ (mg/L)		
			Average*	Min.	Max.	Average*	Min.	Max.
125th Street (CDS-13)	7/17-18/96 9/26/96	49 25	85 217	20 62	743 610	35 64	10 21	262 190
Racine Avenue (DS-M28)	7/17-18/96	48	84	22	406	23	10	78
Riverside (DS-D45)	7/17/96	21	74	40	932	17	10	143
Evanston (DS-M106)	7/17-18/96	24	89	30	196	42	20	150
Lake Street (CS-106A)	7/17-18/96	34	72	12	260	22	6	67
Evanston (CS-106B)	7/17-18/96	38	97	10	526	23	6	55

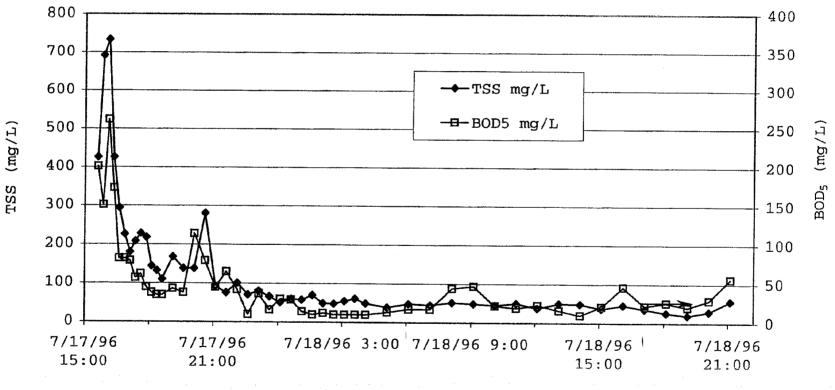
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\*Average values were calculated using a time-weighted method.

#### FIGURE 8

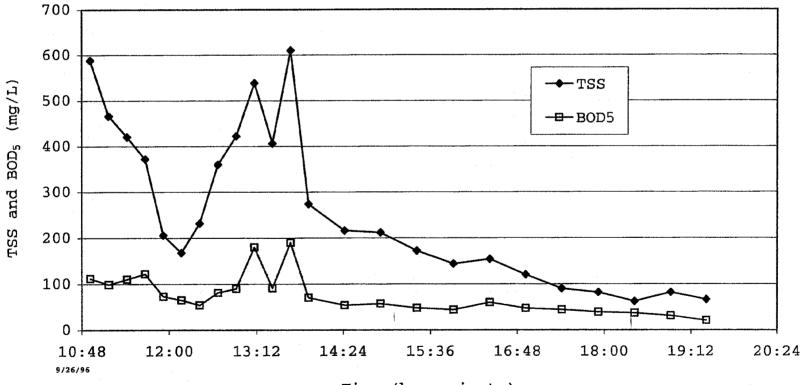
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



Time (date hour:minute)

FIGURE 9

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) THE RAINFALL SAMPLING EVENT - SEPTEMBER 26, 1996



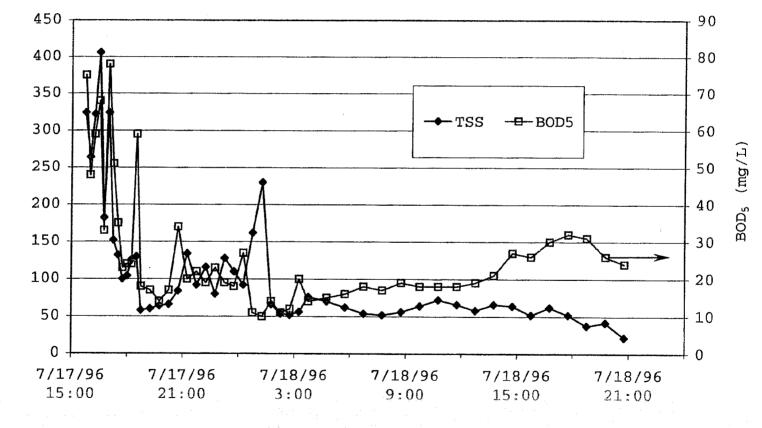
Time (hour:minute)

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FIGURE 10

## TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



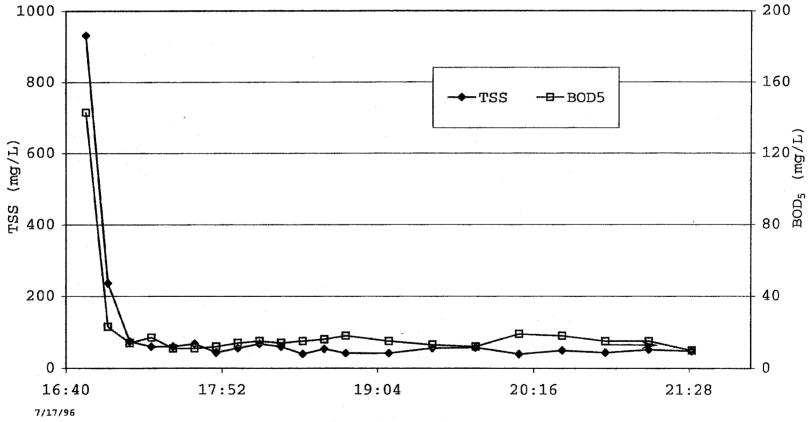
Time (date hour:minute)

87

TSS (mg/L)

FIGURE 11

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) THE RAINFALL SAMPLING EVENT - JULY 17, 1996



Time (hour:minute)

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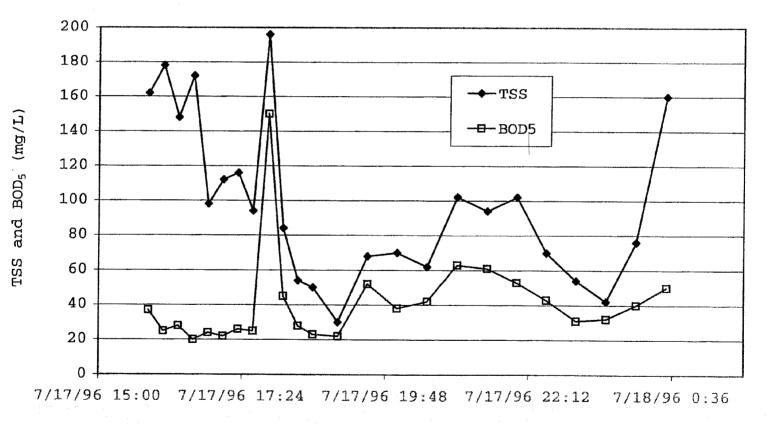
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FIGURE 12

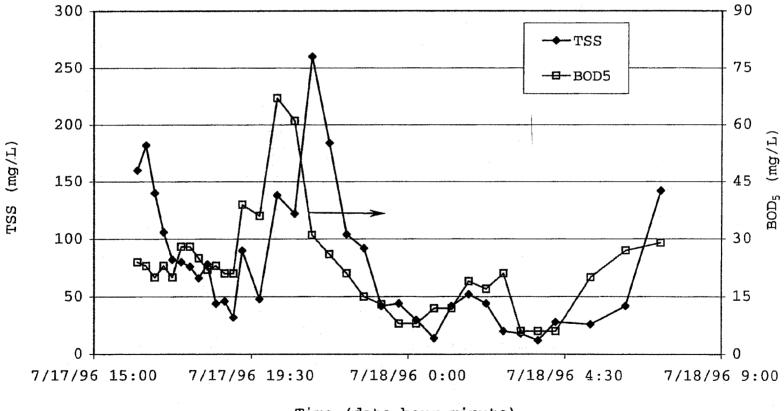
## TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE EVANSTON TARP DROP SHAFT STATION (DS-M106) THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



Time (date hour:minute)

FIGURE 13

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE LAKE STREET TARP OVERFLOW STATION (CS-106A) THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



Time (date hour:minute)

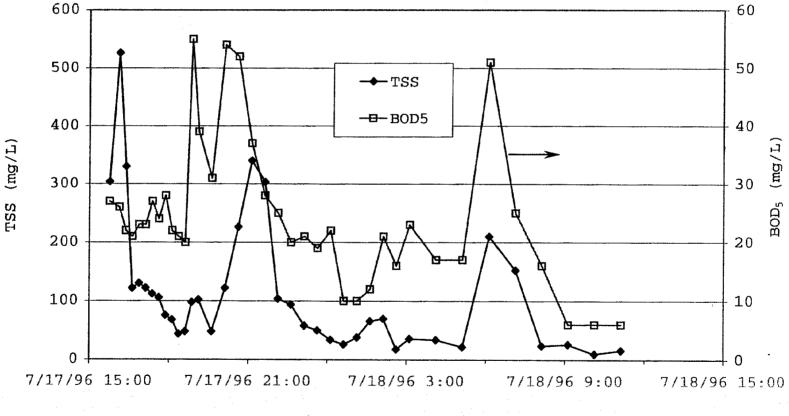
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FIGURE 14

## TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE EVANSTON TARP OVERFLOW STATION (CS-106B) THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



Time (date hour:minute)

events, as directed by the COE. The sampling location and date, number of samples collected and range of concentrations are presented in <u>Table 50</u>. The time-weighted average concentrations of TSS and BOD<sub>5</sub> varied in a wide range from location to location and rainfall event to rainfall event. The highest average concentration of TSS was 551 mg/L at the Evanston TARP drop shaft station (DS-M106), and the lowest 19 mg/L at the Riverside overflow station (CS-44). The highest average concentration of BOD<sub>5</sub> was 81 mg/L at the Evanston TARP drop shaft station (DS-M106), and the lowest on the the Evanston TARP drop shaft station (DS-M106).

The concentrations of TSS and BOD<sub>5</sub> versus time for each rainfall event sampled in 1997 are illustrated in <u>Figures 15</u> through <u>22</u>. Similar trends as observed in the rainfall sampling events in 1996 were also observed in the 1997 rainfall sampling events.

In most cases, the difference between the lowest and highest concentrations of TSS and  $BOD_5$  within one rainfall event was large, ranging from 4 to nearly 50 times. With a few exceptions, high TSS average concentrations were associated with high  $BOD_5$  average concentration values.

#### TABLE 50

TOTAL SUSPENDED SOLIDS AND BOD, IN CSOS FROM TARP DROP SHAFT AND OVERFLOW STATIONS DURING RAINFALL SAMPLING EVENTS IN 1997

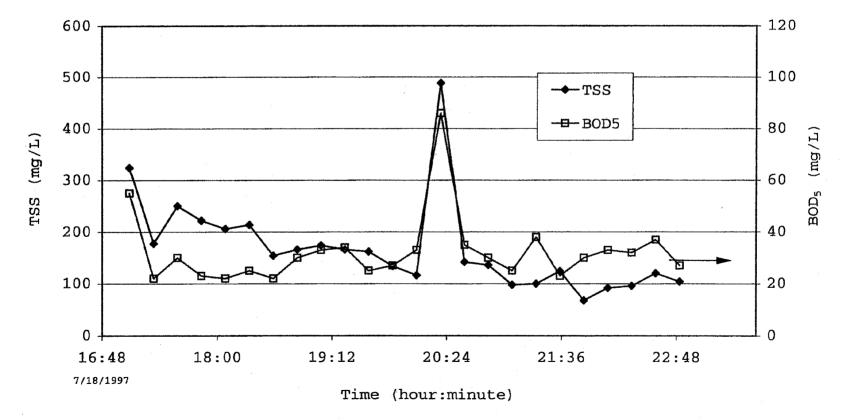
Station	Date of Sampling	Number of Samples Collected	Total Suspended Solids (mg/L)			$BOD_{s}$ (mg/L)		
			Average*	Min.	Max.	Average**	Min.	Max.
125th Street (CDS-13)	7/18/97	24	166	68	488	32	22	86
	8/16-17/97	24	92	12	238	16	<10	43
Racine Avenue (DS-M28)	7/18/97	16	256	78	2442	38	19	172
Riverside (DS-D45)	7/18/97	13	217	32	422	75	18	121
Evanston (DS-M106)	7/18/97	15	551	152	1570	81	33	158
	8/16-17/97	42	99	10	488	32	6	154
Riverside (CS-44)	8/16-17/97	45	19	5	81	9	4	31
Evanston (CS-106B)	8/17/97	11	28	14	46	7	5	11

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\*Average values were calculated using a time-weighted method. \*\*A value of 10 was used to calculate the time-weighted average when a concentration was less than 10.

#### FIGURE 15

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) THE RAINFALL SAMPLING EVENT - JULY 18, 1997

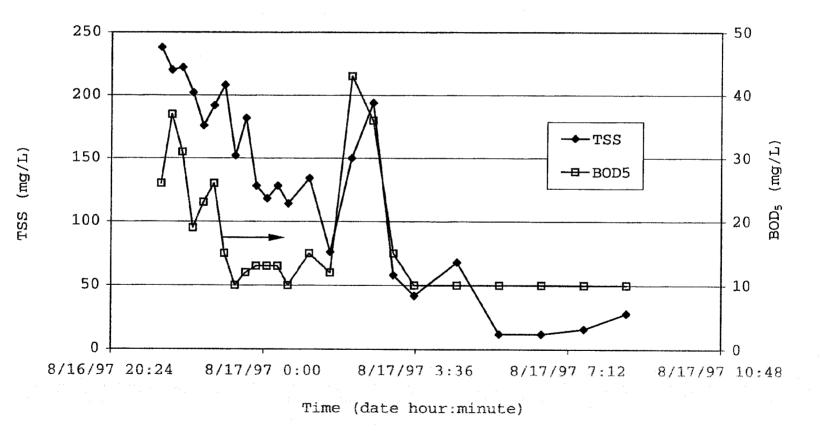


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FIGURE 16

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) THE RAINFALL SAMPLING EVENT - AUGUST 16-17, 1997

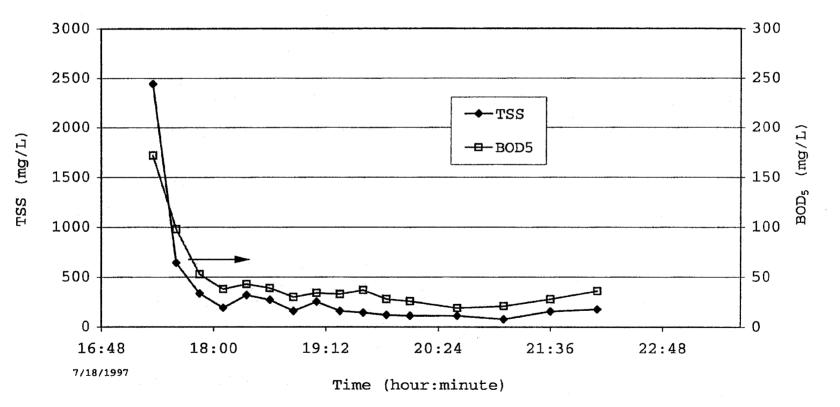


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#### FIGURE 17

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) THE RAINFALL SAMPLING EVENT - JULY 18, 1997



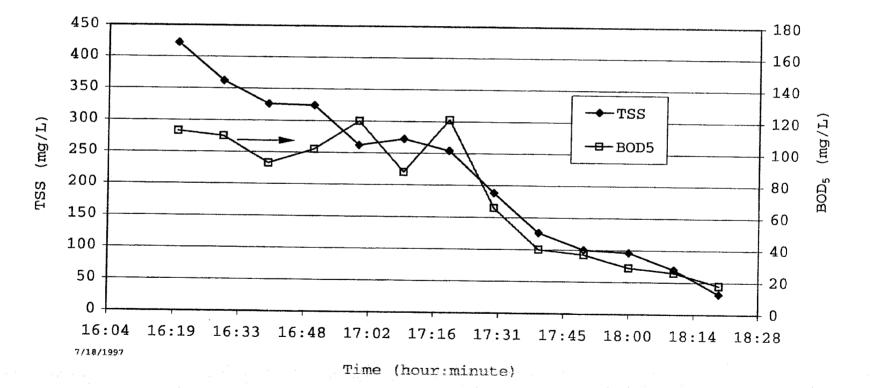
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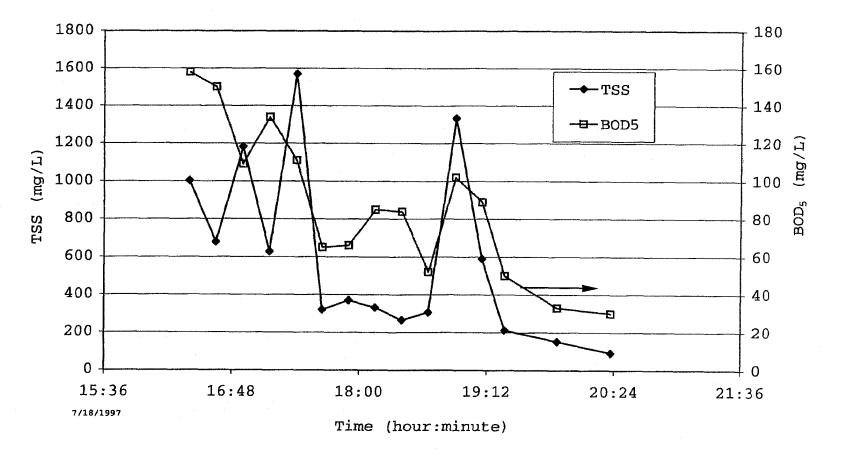
FIGURE 18

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) THE RAINFALL SAMPLING EVENT - JULY 18, 1997



### FIGURE 19

## TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE EVANSTON TARP DROP SHAFT STATION (DS-M106) THE RAINFALL SAMPLING EVENT - JULY 18, 1997

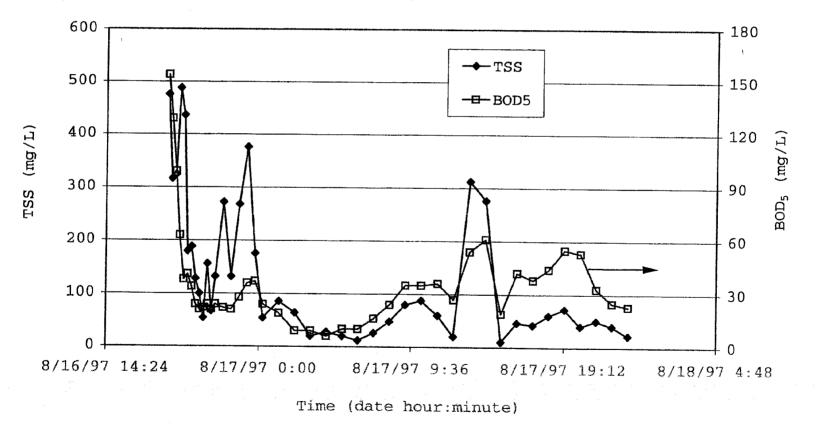


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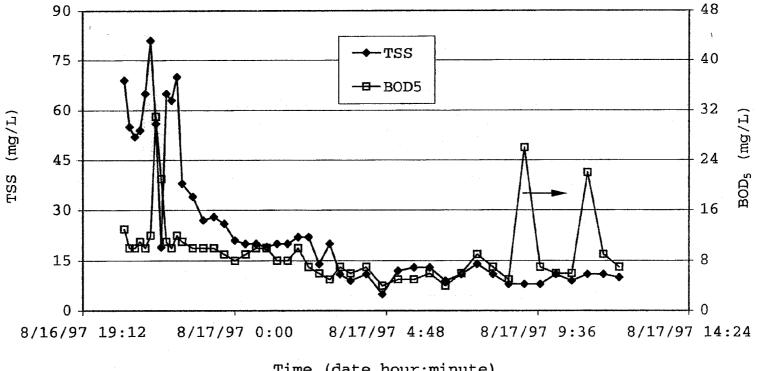
FIGURE 20

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE EVANSTON TARP DROP SHAFT STATION (DS-M106) THE RAINFALL SAMPLING EVENT - AUGUST 16-17, 1997



#### FIGURE 21

### TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE RIVERSIDE OVERFLOW STATION (CS-44) THE RAINFALL SAMPLING EVENT - AUGUST 16-17, 1997



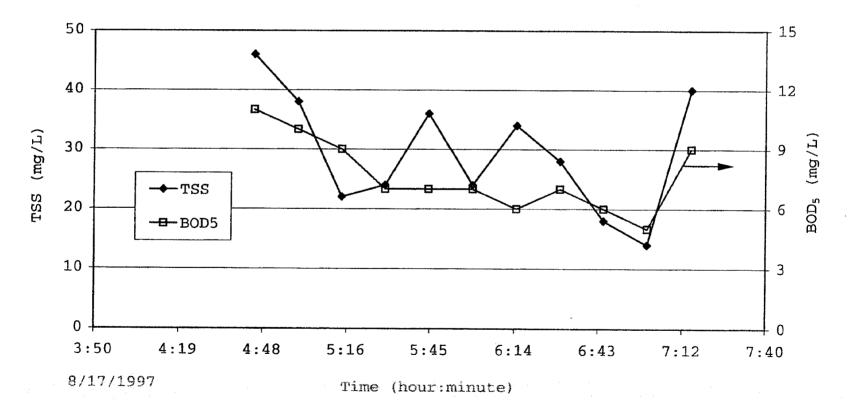
Time (date hour:minute)

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FIGURE 22

TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES AT THE EVANSTON OVERFLOW STATION (CS-106B) THE RAINFALL SAMPLING EVENT - AUGUST 17, 1997



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# APPENDIX I

# ORGANIC POLLUTANTS IN WASTEWATER FROM TARP PUMP AND DROP SHAFT STATIONS DURING 1995 RAINFALL SAMPLING EVENTS

#### TABLE AI-1

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection				Sam	pling Dat	es and T	imes			
(	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
Ţ	Volatiles										1	
1 (	Chloromethane	1.0										
	Vinyl chloride	0.7		~~								
	Acetaldehyde	20.0										
4 6	Bromomethane	3.5										
5 (	Chloroethane	1.7										
6 I	Propylene oxide	20.0										
7	Acrolein	15.0										
8 '	1,1-Dichloroethene	0.6						-		~~		
9 I	Propionaldehyde	20.0										
10	Acetone	5.0	59.8	65.0	34.0	198.1	141.0	130.0	82.5	52.7		32.9
11 (	Carbon disulfide	1.0	1.1	2.6	1.1	3.3					1.2	
	Iodomethane	5.0										
13	Acetonitrile	2.0							/			
14	Allyl chloride	2.0							'			
15 I	Methylene chloride	0.8	4.1		1.0	3.4				4.6	1.8	2.1
16	1,2-Dichloroethene (total)	0.6	0.7	2.3	2.9	5.0			1.2	1.2		0.7
17	Acrylonitrile	5.0					~-		~-	-	-	***
18 1	Methyl tert butyl ether	2.0		10.5		-		5.0	6 m 1998		-	
19	Hexane	2.0	-			43 Hz	an ni	mana .	(A) (99)	na	A2 = 2	18 MA
20	1,1-Dichloroethane	0.6		10-10	~	***				No. 57	Q-4	(15.00)
	Vinyl acetate	5.0										
22*	Chloroprene	2.0						<del>-</del>				

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# TABLE AI-1 (Continued)

		Detection	· .			Sam	pling Dat	tes and T	imes			
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
23	2-Butanone	4.6	11.7	11.6	4.7	15.2		5.2	***		, _~	
24	Chloroform	0.7	1.0	0.8	0.7			-			1.1	
25	1,1,1-Trichloroethane	0.7									~=	
26	Carbon tetrachloride	0.6										
27	1,2-Dichloroethane	1.6						-				
28	Benzene	0.7										
29	2,2,4-Trimethylpentane	2.0				<b>stices</b> .						
30	Trichloroethene	0.6	1.0	2.1	9.8	1.1		13.3	1.7	0.9	1.6	2.2
31	Ethyl acrylate	2.0	**	-								
32	1,2-Dichloropropane	0.8				***						
33	Methyl methacrylate	Z										
34	Bromodichloromethane	0.7	**					~-				
35	1,4-Dioxane	50.0					~-		'			
36	Epichlorohydrin	5.0										
37	trans-1,3-Dichloropropene	0.9										
38	4-Methyl-2-pentanone	3.5				4.9			3.7			
39	Toluene	1.8	8.0	47.0	15.0	70.7	6.7	3.6	8.8		8.5	
40	cis-1,3-Dichloropropene	· 1.7									***	÷
41	1,1,2-Trichloroethane	2.5							-			
42	Tetrachloroethene	1.6	1.2	2.0	4.0						1.8	6.0
43	2-Hexanone	4.6							~~			
44	Dibromochloromethane	1.8	the last	-								
45	1,2-Dibromoethane	2.0							·			
46	Chlorobenzene	0.6	<b>~</b> =									

# TABLE AI-1 (Continued)

		Detection				Sam	pling Da	tes and T	imes			
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
47	Ethylbenzene	0.6	0.9	2.1		2.4		3.1			1.5	
48	m- and/or p-Xylenes	1.0	3.7	9.2	1.8	10.2		12.7			5.9	2.1
49	o-Xylene	1.0	1.2	2.7	67 M	4.0	<b></b>	1.5	<b>8</b> .92	<b>6</b> 20 300	2.1	
50	Styrene	1.5									1.6	
51	Bromoform	4.0										
52	Cumene	2.0					***				**	
53	1,1,2,2-Tetrachloroethane	3.9			-							
54	Benzyl chloride	2.0										
55	1,2-Dibromo-3-chloropropane	2.0					·					
	Semi-Volatiles											
56	Phenol	1.5	15.6	11.5	1.5	127.3		24.3	4.8		4.5	
57	Bis(2-chloroethyl)ether	2.6										
58	2-Chlorophenol	2.3		·				***				
59	1,3-Dichlorobenzene	1.8										
60	1,4-Dichlorobenzene	1.8		1					L			
61	1,2-Dichlorobenzene	1.8	<b>2</b> 0	<b>.</b>	99 (JP)	<b></b>		-			rtinto.	2= 6A
62	Bis(2-chloroisopropyl)ether	2.0	-	-	-	-	gili aya	ati 17.	-			**
63	2-Methylphenol	5.0	A.9 WQ.	104 al-	-iwian	ata 604	0.144	dia net-	Isroit	Kat out	500.000	#10-2017
64	Styrene oxide	5.0	that case	88-740.	12.48	<i>26-22</i>	-		6-1 <b>-1</b>			
65	Acetophenone	2.0	-		wi tea							
66	o-Toluidine	2.0			***							

# TABLE AI-1 (Continued)

		Detection				Sam	pling Dat	es and T	īmes			
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/1
67	Hexachloroethane	1.6	ar 100	u=10	<b>7</b> 44							
68	N-Nítrose-di-n-propylamine	1.8										
69	4-Methylphenol	5.0	5.6	17.3	3.5	92.2	15.5		29.2			
70	N,N-Dimethylaniline	2.0										
71	Nitrobenzene	3.7										
72	Isophorone	1.4							*			
73	2-Nitrophenol	1.9					*****					
74	2,4-Dimethylphenol	6.4					~~					<b></b>
75	Bis(2-chloroethoxy)methane	1.8										
76	2,4-Dichlorophenol	2.0										
77	1,2,4-Trichlorobenzene	1.6			-							
78	Naphthalene	1.6				3.1						
79	4-Chloroaniline	2.0										
80	Hexachlorobutadiene	1.7							• •••			
81	N,N-Diethylaniline	2.0	<b>e</b> t 100									
82	4-Chloro-3-methylphenol	1.7		17.7								
83	2-Methylnaphthalene	3.8				10.0						
84	Hexachlorocyclopentadiene	3.4		· _ 1					4-			
85	2,4,6-Trichlorophenol	1.4								-		
86	2,4,5-Trichlorophenol	3.3						**			~	
87	1,1'-Biphenyl	2.0						<b></b>				
88	2-Chloronapthalene	1.1										
89	2-Nitroaniline	5.0			<b></b> .			-	· `			
90	Acenaphthylene	1.0										

#### TABLE AI-1 (Continued)

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection				Sam	pling Dat	es and T	ïmes			
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
91	Dimethyl phthalate	1.9		<b></b>			4-			~~	<b>6</b> 20	
	2,6-Dinitrotoluene	1.2										-
93	3-Nitroaniline	5.0										
94	Acenaphthene	1.2	407-400			2.1						
95	2,4-Dinitrotoluene	20.0				****						
96	Dibenzofuran	2.0				60° 50						
97	4-Nitrophenol	3.2										
98	2,4-Dinitrotoluene	1.4	8×10		641 (SP							
99	Fluorene	1.5				2.8				****	<b></b>	****
00	Diethyl phthalate	3.2	<b>Jiketi</b>	dan dah	Date:	ats ###	un cat	3.4	No An	And both	415	
101	4-Chlorophenyl phenyl ether	1.1										
02	4-Nitroaniline	5.0		<u></u>								
103	4,6-Dinitro-2-methylphenol	15.0						**				
104	N-Nitrosodiphenylamine	1.5										
105	4-Bromophenyl phenyl ether	1.7										
106	Hexachlorobenzene	<b>1.8</b> .										
07	Pentachlorophenol	7.2										
108	Pentachloronitrobenzene	5.0										
09	Phenanthrene	1.3	1.5	3.0	-ab-+ex	15.7	No. 464	1.7	6.9	1.8		~~~~
10	Anthracene	1.2	ee 100	#1+1 MM	-	2.7	கல்	20 Mar	1.3	yy 40	ft) an	ville Hills
111	Carbazole	3.6	week	1999 HOLE	MP-1054 .	3646	20.0%	7±54,	Martaja .	væ-æ-	-1.40	-
12	4-Nitrobiphenyl	2.0		Lations	(37 MB)		***	-40100	case logar	ing and	4.0 <b>T</b> D	64 <b>4</b> 0
13	Di-n-butyl phthalate	1.4	1.6	1.8	-	3.2			·			
	Fluoranthene	1.5		3.9		20.5		<b></b> .	8.3	3.3		

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# TABLE AI-1 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection				Sam	oling Dat	es and T	imes			
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
115	Pyrene	4.6		<u>يت بر</u>		29.0			8.2	<b>8</b> 1 w		
116	Butyl benzyl phthalate	2.5	2.8	7.8		10.2		****	3.4			
117	2-Acetylaminofluorene	3.0					-				·	
118	Benzo(a)anthracene	1.4		1.5		9.7			2.9	-		
119	3,3'-Dimethoxybenzidine	30.0		~~								
120	3,3'-Dichlorobenzidine	7.5										*** ***
121	Chrysene	1.5		2.1		15.0			5.4			
122	Bis(2-ethylhexyl)phthalate	15.0				94.2	-		25.9	33.8		
123	Di-n-octyl phthalate	2.7				5.9	-					
124	Benzo(b)fluoranthene	2.0				13.0			4.1			
125	Benzo(k)fluoranthene	2.2				10.0			3.1			
126	Benzo(a)pyrene	1.6				10.4						
127	Indeno(1,2,3-cd)pyrene	3.0				6.5	-					
128	Dibenz(a,h)anthracene	3.7										
129	Benzo(ghi)perylene	4.0			-	6.3	-					
	Pesticides and PCBs	•										
130	Trifluralin	0.05*			. <b></b>							
131	alpha-BHC	0.02	-	-					**			
i32	beta-BHC	0.03			-							
133	gamma-BHC	0.02			-				·			
134	delta-BHC	0.02										

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# TABLE AI-1 (Continued)

		Detection				Sam	pling Dat	es and T	imes			
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
135	Heptachlor	0.02	*-	0.02								
	Aldrin	0.02				-						
137	Heptachlor epoxide	0.02								***		
138	gamma-Chlordane	0.05	-									
139	alpha-Chlordane	0.05										
140	alpha-Endosulfan	0.05					'					
141	Dieldrin	0.05			-+		<b>66</b>					
142	4,4'-DDE	0.05					~~					
143	Endrin	0.1									****	
144	Chlorobenzilate	0.30*							'			
145	beta-Endosulfan	0.05		**		-	<b>1</b> 1		<b>**</b> .	276 STL		
146	4,4'-DDD	0.05		**								
147	Endosulfan sulfate	0.1										
148	4,4'-DDT	0.15						<u></u>				
149	Methoxychlor	0.5		-	ur 40							
150	Captan	0.05*		<del></del> .		au - 10		***				
151	Endrin ketone	0.1				-			<b></b>	-		
152	Endrin aldehyde	0.1				4 <b>4</b>						
153	Toxaphene	. 0.5										
154	PCB-1016	0.2	Weids	-	- enter	3.33	10-84	an das	60×400	ani 194	<b>1</b> 0-11-	40. m.
155	PCB-1221	0.2	******	ale nu		فشيتم	gab-sata	All takes		-		-
156	PCB-1232	0.2	19 dis	****		20020	्र क				***	-101 Mai
157	PCB-1242	0.2	Re 481	100-070				****	· <b></b>			
158	PCB-1248	0.2	an			-	0.43		0.46		0.31	

### TABLE AI-1 (Continued)

		Detection	Sampling Dates and Times										
	Compound	Limit µg/L (ppb)	6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16	
159	PCB-1254	0.2							0.21			0.46	
160	PCB-1260	0.2				2.35	0.20						

#### TABLE AI-2

		Detection			Sampling	Dates an	d Times		
C	Compound	Limit µg/L (ppb)	6/8/95	6/10/95	6/28/95 7:00	6/29/95 11:55	6/30/95 10:30	8/19/95 10:00	8/20/95 9:00
7	Volatiles								
1 (	Chloromethane	1.0							
2 \	Vinyl chloride	0.7							
3 A	Acetaldehyde	20.0				di- 01			
	Bromomethane	3.5							
5 C	Chloroethane	1.7			-				
6 F	Propylene oxide	20.0							
	Acrolein	15.0							
	1,1-Dichloroethene	0.6		***	-		***		
9 F	Propionaldehyde	20.0	-	<u></u>					
	Acetone	5.0	175.9	317.1*	253.5**	158.6	140.7	82.2	203.2
	Carbon disulfide	1.0						****	*** +**
	odomethane	5.0							
	Acetonitrile	2.0							
	Allyl chloride	2.0							
15 N	Methylene chloride	0.8				2.7	1.3		4.1
16 1	1,2-Dichloroethene (total)	0.6	<b></b> <sup>1</sup>	0.7	0.7	1.2	1.4		
17 A	Acrylonitrile	5.0		**					rate into
18 N	Methyl tert butyl ether	2.0	<b>.</b>		Ann Inde	au 14	يد مد '	***	
19 H	lexane	2.0	erader -	-	men	10.00	00 AD		e
20 1	1,1-Dichloroethane	0.6	Cut Ite		-	89 <b>-</b>	***		
21 V	/inyl acetate	5.0							
22 C	Chloroprene	2.0							

# TABLE AI-2 (Continued)

		Detection			Sampling	Dates an	d Times		
	Compound	Limit µg/L (ppb)	6/8/95	6/10/95	6/28/95 7:00	6/29/95 11:55	6/30/95 10:30	8/19/95 10:00	8/20/95 9:00
23	2-Butanone	4.6		6.9		6.0	5.3	# <b>-</b>	4.6
24	Chloroform	0.7	1.2	1.0	0.9	1.3	0.7	1.0	1.0
25	1,1,1-Trichloroethane	0.7							
26	Carbon tetrachloride	0.6							
27	1,2-Dichloroethane	1.6							
28	Benzene	0.7							
29	2,2,4-Trimethylpentane	2.0							
30	Trichloroethene	0.6		1.1		2.7	1.2		
31	Ethyl acrylate	2.0					****		
32	1,2-Dichloropropane	0.8							
33	Methyl methacrylate	Z							
34	Bromodichloromethane	0.7							
35	1,4-Dioxane	50.0				**			
36	Epichlorohydrin	5.0							
37	trans-1,3-Dichloropropene	0.9			-			143 M	
38	4-Methyl-2-pentanone	3.5					·		
39	Toluene	1.8	7.0	19.6	40.6	48.7	87.1		15.6
40	cis-1,3-Dichloropropene	1.7	-				4		
41	1,1,2-Trichloroethane	2.5					-		
42	Tetrachloroethene	1.6	3.7	4.9	2.8	11.5	5.3		1.8
43	2-Hexanone	4.6							
44	Dibromochloromethane	1.8							
45	1,2-Dibromoethane	2.0	-				· `		**
46	Chlorobenzene	0.6		**				a	

#### TABLE AI-2 (Continued)

		Detection			Sampling	Dates an	d Times		
	Compound	Limit µg/L (ppb)	6/8/95	6/10/95	6/28/95 7:00	6/29/95 11:55	6/30/95 10:30	8/19/95 10:00	8/20/95 9:00
	Compound				7.00		10.00		5.00
47	Ethylbenzene	0.6			0.7	0.7			
48	m- and/or p-Xylenes	1.0	1.5	1.3	2.0	2.3	1.4		2.0
49	o-Xylene	1.0				1.3			
50	Styrene	1.5				32.1	1.5		
51	Bromoform	4.0		***					
52	Cumene	2.0							
53	1,1,2,2-Tetrachloroethane	3.9							
54	Benzyl chloride	2.0							
55	1,2-Dibromo-3-chloropropane	2.0							
	Semi-Volatiles								
56	Phenol	1.5		79.6	4.8	89.2	8.8		6.7
57	Bis(2-chloroethyl)ether	2.6							
58	2-Chlorophenol	2.3							
59	1,3-Dichlorobenzene	1.8							
60	1,4-Dichlorobenzene	1.8					****		
61	1,2-Dichlorobenzene	1.8			ani-cao	ais and	** **	-	
62	Bis(2-chloroisopropyl)ether	2.0		-			6.7 Be	****	(an 147
63	2-Methylphenol	5.0	(de stat	Month	ear ath	(#+43	je o mar	-	10.3
64	Styrene oxide	5.0	<b>444 146</b>	<b>2</b> 2448	-			946 ACM	Air da
65	Acetophenone	2.0	18.0	24.3	14.2	19.6	10.8	'	21.9
66	o-Toluidine	2.0							

# TABLE AI-2 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection			Sampling	Dates an	d Times		
	Compound	Limit µg/L (ppb)	6/8/95	6/10/95	6/28/95 7:00	6/29/95 11:55	6/30/95 10:30	8/19/95 10:00	8/20/95 9:00
67	Hexachloroethane	1.6							
68	N-Nitrose-di-n-propylamine	1.8							
69	4-Methylphenol	5.0		32.7	15.8	20.7	41.6		13.4
70	N,N-Dimethylaniline	2.0							
71	Nitrobenzene	3.7	-		had app				
72	Isophorone	1.4					<b></b>		-
73	2-Nitrophenol	1.9							
74	2,4-Dimethylphenol	6.4				~~			
75	Bis(2-chloroethoxy)methane	1.8							
76	2,4-Dichlorophenol	2.0		<b></b>				<u> </u>	
77	1,2,4-Trichlorobenzene	1.6							
78	Naphthalene	1.6							
79	4-Chloroaniline	2.0							1.6
80	Hexachlorobutadiene	1.7							
81	N,N-Diethylaniline	2.0						**	
82	4-Chloro-3-methylphenol	1.7	·					~~	
83	2-Methylnaphthalene	3.8			~~				
84	Hexachlorocyclopentadiene	3.4						<b></b>	
85	2,4,6-Trichlorophenol	1.4							
86	2,4,5-Trichlorophenol	3.3							
87	1,1'-Biphenyl	2.0	'						
88	2-Chloronapthalene	1.1							
89	2-Nitroaniline	5.0					·		
90	Acenaphthylene	1.0							

W.

# TABLE AI-2 (Continued)

		Detection			Sampling	Dates an	d Times		
		Limit	6/8/95	6/10/95	6/28/95	6/29/95	6/30/95	8/19/95	8/20/95
	Compound	µg/L (ppb)			7:00	11:55	10:30	10:00	9:00
91	Dimethyl phthalate	1.9							
92	2,6-Dinitrotoluene	1.2							
93	3-Nitroaniline	5.0							
94	Acenaphthene	1.2							
95	2,4-Dinitrotoluene	20.0							
96	Dibenzofuran	2.0							
97	4-Nitrophenol	3.2							
98	2,4-Dinitrotoluene	1.4							~-
99	Fluorene	1.5							
100	Diethyl phthalate	3.2	3.3	3.8		3.3	3.4		4.2
101	4-Chlorophenyl phenyl ether	1.1						<b>*</b> **	
102	4-Nitroaniline	5.0							
103	4,6-Dinitro-2-methylphenol	15.0					· · ·		
104	N-Nitrosodiphenylamine	1.5					'		
105	4-Bromophenyl phenyl ether	1.7							
106	Hexachlorobenzene	1.8							
107	Pentachlorophenol	7.2							
108	Pentachloronitrobenzene	5.0	-						
109	Phenanthrene	1.3			2.6			3.0	1.4
110	Anthracene	1.2	01411	akt with	and edge	Section 1	antas	60 Jan	-
111	Carbazole	3.6	dire etc.	atesti			en is	7.0	the star
112	4-Nitrobiphenyl	2.0	#***01	3343		***	1011-0 <b>1</b>		
113	Di-n-butyl phthalate	1.4			1.8				1.9
114	Fluoranthene	1.5			3.4			1.8	

# TABLE AI-2 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection			Sampling	Dates an	d Times		
		Limit	6/8/95	6/10/95	6/28/95	6/29/95	6/30/95	8/19/95	8/20/95
	Compound	µg/L (ppb)			7:00	11:55	10:30	10:00	9:00
115	Pyrene	4.6							
116	Butyl benzyl phthalate	2.5							
117	2-Acetylaminofluorene	3.0					-		
118	Benzo(a)anthracene	1.4			1.5		<b></b>		
119	3,3'-Dimethoxybenzidine	30.0						·	
120	3,3'-Dichlorobenzidine	7.5							
121	Chrysene	1.5	***		2.0			****	
122	Bis(2-ethylhexyl)phthalate	15.0	-					19.0	
123	Di-n-octyl phthalate	2.7			3.8		14.2		
124	Benzo(b)fluoranthene	2.0							
125	Benzo(k)fluoranthene	2.2							
126	Benzo(a)pyrene	1.6							
127	Indeno(1,2,3-cd)pyrene	3.0							
128	Dibenz(a,h)anthracene	3.7					-		-
129	Benzo(ghi)perylene	4.0							
	Pesticides and PCBs	•							
130	Trifluralin	0.05***							-
131	alpha-BHC	0.02	-						
132	beta-BHC	0.03	-	***					
133	gamma-BHC	0.02							
134	delta-BHC	0.02							

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### TABLE AI-2 (Continued)

		Detection			Sampling	Dates an	d Times		
		Limit	6/8/95	6/10/95	6/28/95	6/29/95	6/30/95	8/19/95	8/20/95
	Compound	µg/L (ppb)			7:00	11:55	10:30	10:00	9:00
135	Heptachlor	0.02		n					
136	Aldrin	0.02							
137	Heptachlor epoxide	0.02	~~			<b>1</b>			
138	gamma-Chlordane	0.05							
139	alpha-Chlordane	0.05							
140	alpha-Endosulfan	0.05					=		i
141	Dieldrin	0.05							
142	4,4'-DDE	0.05							
143	Endrin	0.1							
144	Chlorobenzilate	0.30***							
145	beta-Endosulfan	0.05							65 ha
146	4,4'-DDD	0.05							
147	Endosulfan sulfate	0.1							
148	4,4'-DDT	0.15		<b></b>					
149	Methoxychlor	0.5		-	-				
150	Captan	0.05***	**						
151	Endrin ketone	0.1							
152	Endrin aldehyde	0.1		**					
153	Toxaphene	0.5							••
154	PCB-1016	0.2	01/100						**
155	PCB-1221	0.2		0× #2	08 PM		1	Zin we	444 MB .
156	PCB-1232	0.2	-			****	andi esta	Nibalm	Winds.
157	PCB-1242	0.2	-					jan - can	Au- 184
158	PCB-1248	0.2							

#### TABLE AI-2 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection			Sampling	Dates an	d Times		
	Compound	Limit µg/L (ppb)	6/8/95	6/10/95	6/28/95 7:00	6/29/95 11:55	6/30/95 10:30	8/19/95 10:00	8/20/95 9:00
159	PCB-1254	0.2	+-				·		Pr
160	PCB-1260	0.2							1.82

-- Not found, below detection limit.

\*A dilution of 1:2 was made for quantitation of this compound from the linear calibration curve.

\*\*A dilution of 1:5 was made for quantitation of this compound from the linear calibration curve.

\*\*\*Estimated instrument detection limit.

### TABLE AI-3

		Detection				Samplin	g Dates			
	Compound	Limit µg/L (ppb)	6/27/95 13:10	6/27/95 15:00	7/20/95 13:10	7/20/95 14:10	8/15/95 14:00	8/15/95 15:00	9/7/95 15:45	9/7/95 19:30
	Volatiles	· ·								
1	Chloromethane	1.0								
2	Vinyl chloride	0.7								
3	Acetaldehyde	20.0								
4	Bromomethane	3.5								
5	Chloroethane	1.7								
6	Propylene oxide	20.0								
7	Acrolein	15.0				**				
8	1,1-Dichloroethene	0.6							·	
9	Propionaldehyde	20.0								
10	Acetone	5.0	95.0	40.0	28.4	63.8	219.4	190.2	99.8	123.4
11	Carbon disulfide	1.0	2.5	3.2			2.8	1.9	<del>~~</del>	1.9
12	lodomethane	5.0	<b>~~</b>					Proge		
13	Acetonitrile	2.0								
14	Allyl chloride	2.0								
15	Methylene chloride	0.8								~~
16	1,2-Dichloroethene (total)	0.6			1.3	1.2	2.5	2.0	1.1	1.9
17	AcryInitrile	5.0					1.4	1.4		
18	Methyl tert butyl ether	2.0		ap. 144.	-661.919	Die mi	eite gez	cite sea	-17 545	
19	Hexane	2.0	NZ dia	siar with	14 M		-		an nig	60 47
20	1,1-Dichloroethane	0.6	~	***		ony bas	See the		-	
21	Vinyl acetate	5.0	Mt+0	4.03						
22	Chloroprene	2.0	tes eur		-					

# TABLE AI-3 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

	•	Detection	·			Samplir	ng Dates			
	Compound	Limit µg/L (ppb)	6/27/95 13:10	6/27/95 15:00	7/20/95 13:10	7/20/95 14:10	8/15/95 14:00	8/15/95 15:00	9/7/95 15:45	9/7/95 19:30
23	2-Butanone	4.6	12.6	# <del>*</del> ;	7.6	10.9	13.0	18.6	5.1	
24	Chloroform	0.7	3.8	1.5	1.7	5.1	29.7	3.0	1.7	1.2
25	1,1,1-Trichloroethane	0.7	2.0				1.9	1.5	.7	
26	Carbon tetrachloride	0.6			**					
27	1,2-Dichloroethane	1.6		-			-			
28	Benzene	0.7	~=							
29	2,2,4-Trimethylpentane	2.0								
30	Trichloroethene	0.6	0.9	0.6		0.7	0.8	0.8	1.4	0.7
31	Ethylacrylate	2.0								
32	1,2-Dichloropropane	0.8					***		<u> </u>	
33	Methyl methacrylate	Z								
34	Bromodichloromethane	0.7				2.2				
35	1,4-Dioxane	50.0						-		
36	Epichlorohydrin	5.0	'							
37	trans-1,3-Dichloropropene	0.9								
38	4-Methyl-2-pentanone	3.5		~=						
39	Toluene	1.8	5.7	9.8	6.6	6.3	5.9	13.3	6.8	4.6
40	cis-1,3-Dichloropropene	1.7								
41	1,1,2-Trichloroethane	2.5						· •••		
42	Tetrachloroethene	1.6				1.9	3.3	3.8	6.4	2.4
43	2-Hexanone	4.6								
44	Dibromochloromethane	1.8				-			-	
45	1,2-Dibromoethane	2.0						· 🔔		
46	Chlorobenzene	0.6				~-	1.9			

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# TABLE AI-3 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

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		Detection				Samplir	ig Dates			
		Limit	6/27/95	6/27/95	7/20/95	7/20/95	8/15/95	8/15/95	9/7/95	9/7/95
	Compound	µg/L (ppb)	13:10	15:00	13:10	14:10	14:00	15:00	15:45	19:30
47	Ethylbenzene	0.6		÷	*=	1.2	14.5	3.9	1.5	1.2
48	m- and/or p-Xylenes	1.0					5.0	1.3		
49	o-Xylene	1.0					1.9	3.7		
50	Styrene	1.5			at 149					
51	Bromoform	4.0								
52	Cumene	2.0								
53	1,1,2,2-Tetrachloroethane	3.9								
54	Benzyl chloride	2.0	'							
55	1,2-Dibromo-3-chloropropane	2.0								
	Semi-Volatiles									
56	Phenol	1.5	4.0		1.9					
57	Bis(2-chloroethyl)ether	2.6		~-						
58	2-Chlorophenol	2.3								
59	1,3-Dichlorobenzene	1.8		÷						
60	1,4-Dichlorobenzene	1.8		~-			*-			
61	1,2-Dichlorobenzene	1.8	~~							
62	Bis(2-chloroisopropyl)ether	2.0	190 APD	(6) 540	+at-feat	130 VQ.	lieute	( <del>14.17)</del>		
63	2-Methylphenol	5.0	125466	. wias	Évo sag		-11768			
64	Styrene oxide	5.0	्रीस: अस् 		19 in	-	-			
65	Acetophenone	2.0	300 <b>4</b> 5		-					0- 40
66	o-Toluidine	2.0						· (4 as		

# TABLE AI-3 (Continued)

		Detection				Samplir	ng Dates			
		Limit	6/27/95	6/27/95	7/20/95	7/20/95	8/15/95	8/15/95	9/7/95	9/7/95
	Compound	µg/L (ppb)	13:10	15:00	13:10	14:10	14:00	15:00	15:45	19:30
67	Hexachloroethane	1.6						÷-		
68	N-Nitroso-di-n-propylamine	1.8								
69	4-Methylphenol	5.0	31.6		17.0	6.6	13.4	10.6		
70	N,N-Dimethylaniline	2.0				844 MB	****		***	
71	Nitrobenzene	3.7								
72	Isophorone	1.4		-					·	
73	2-Nitrophenol	1.9								
74	2,4-Dimethylphenol	6.4	-					4an 100		
75	Bis(2-chloroethoxy)methane	1.8								
76	2,4-Dichlorophenol	2.0			<b>60</b> -40			-		
77	1,2,4-Trichlorobenzene	1.6			-			***		
78	Naphthalene	1.6			<del></del> .					
79	4-Chloroaniline	2.0								
80	Hexachlorobutadiene	1.7	·	-						
81	N,N-Diethylaniline	2.0				**				
82	4-Chloro-3-methylphenol	1.7						1.9		
83	2-Methylnaphthalene	3.8	·	-						
84	Hexachlorocyclopentadiene	3.4		<b>1</b> 1/10						
85	2,4,6-Trichlorophenol	1.4		-						
86	2,4,5-Trichlorophenol	3.3	<b></b>	-						
87	1,1'-Biphenyl	2.0								
88	2-Chloronaphthalene	1.1		· 						
89	2-Nitroaniline	5.0						·		-
90	Acenaphthylene	1.0	****	-						

### TABLE AI-3 (Continued)

		Detection				Samplir	ng Dates			**
		Limit	6/27/95	6/27/95	7/20/95		8/15/95	8/15/95	9/7/95	9/7/95
	Compound	µg/L (ppb)	13:10	15:00	13:10	14:10	14:00	15:00	15:45	19:30
91	Dimethyl phthalate	1.9	***							
92	2,6-Dinitrotoluene	1.2								
93	3-Nitroaniline	5.0								
94	Acenaphthene	1.2								
95	2,4-dinitrophenol	20.0								
96	Dibenzofuran	2.0						***		
97	4-Nitrophenol	3.2			=+-					
98	2,4-Dinitrotoluene	1.4								
.99	Fluorene	1.5								
100	Diethyl phthalate	3.2	7.0		5.9	4.4				
101	4-Chlorophenyl phenyl ether	1.1	tim ing		the star	ar 100	AN 600			
102	4-Nitroaniline	5.0								
103	4,6-Dinitro-2-methylphenol	15.0							***	
104	N-Nitrosodiphenylamine	1.5								~-
105	4-Bromophenyl phenyl ether	1.7					~-	-		
106	Hexachlorobenzene	1.8								
107	Pentachlorophenol	7.2	600 GAL							
108	Pentachloronitrobenzene	5.0								
109	Phenanthrene	1.3		1.8			1.5			
110	Anthracene	1.2	870 MAP		Mark 1	gia ne.		*4 ***	70100	
111	Carbazole	3.6		3099		634 <b>6</b> 8		harry	1994 - C	
112	4-Nitrobiphenyl	2.0		-		wate	-	-		
113	Di-n-butyl phthalate	1.4	1.7		2.2	2.2	2.4			2.4
114	Fluoranthene	1.5		1.9		An : An	<b>4</b> ⊷1 <sup>−</sup> T			<u>د.</u> ب

# TABLE AI-3 (Continued)

		Detection				Samplir	ng Dates			•
		Limit	6/27/95	6/27/95	7/20/95	7/20/95		8/15/95	<b>9/7/</b> 95	9/7/95
	Compound	µg/L (ppb)	13:10	15:00	13:10	14:10	14:00	15:00	15:45	19:30
115	Pyrene	4.6								
116	Butyl benzyl phthalate	2.5					3.7	2.6		
117	2-Acetylaminofluorene	3.0								
118	Benzo(a)anthracene	1.4						-		-
119	3,3'-Dimethoxybenzidine	30.0				-				
120	3,3'-Dichlorobenzidine	7.5								
121	Chrysene	1.5			****	244 M				
122	Bis(2-ethylhexyl)phthalate	15.0						-		
123	Di-n-octyl phthalate	2.7				Po 24	-			÷-
124	Benzo(b)fluoranthene	2.0								
125	Benzo(k)fluoranthene	2.2			-					
126	Benzo(a)pyrene	1.6								
127	Indeno(1,2,3-cd)pyrene	3.0								
128	Dibenz(a,h)anthracene	3.7			· ••			-		
129	Benzo(ghi)perylene	4.0								
		•								
	Pesticides and PCBs									
130	Trifluralin	0.05*								
131	aipha-BHC	0.02								
132	beta-BHC	0.03								
133	gamma-BHC (Lindane)	0.02								-
134	delta-BHC	0.02								

#### TABLE AI-3 (Continued)

		Detection				Samplir	ng Dates			
		Limit	6/27/95	6/27/95	7/20/95	7/20/95	8/15/95	8/15/95	9/7/95	9/7/95
	Compound	µg/L (ppb)	13:10	15:00	13:10	14:10	14:00	15:00	15:45	19:30
135	Heptachlor	0.02								1
136	Aldrin	0.02			~~					
137	Heptachlor epoxide	0.02			~~					
138	gamma-Chlordane	0.05								
139	alpha-Chlordane	0.05								
140	alpha-Endosulfan	0.05								
141	Dieldrin	0.05								
142	4,4'-DDE	0.05								
143	Endrin	0.10								
144	Chlorobenzilate	0.30*								
145	beta-Endosulfan	0.05			-	31 <b>B</b>				
146	4,4'-DDD	0.05				-				
147	Endosulfan sulfate	0.10								
148	4,4'-DDT	0.15								
149	Methoxychlor	0.50	- 140			***				
150	Captan	0.05*							-	
151	Endrin ketone	0.10								
152	Endrin aldehyde	0.10								
153	Toxaphene	0.50						100.001	~~	
154	PCB-1016	0.20		94 ML.	ennes	-04-186	ده بو	** 84	Ger Star	286.000
155	PCB-1221	0.20		pr-ma-	losinjik	2.4 ×2+	an ::P		· .	
156	PCB-1232	0.20	-	-	S. A. A.		·.	-		~~
157	PCB-1242	0.20						*		
158	PCB-1248	0.20								

# TABLE AI-3 (Continued)

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1995 RAINFALL SAMPLING EVENTS

		Detection	Sampling Dates									
		Limit	Limit 6/27/95		7/20/95	7/20/95	8/15/95	8/15/95	9/7/95	9/7/95		
	Compound	μg/L (ppb) 13:		15:00	13:10	14:10	14:00	15:00	15:45	19:30		
159	PCB-1254	0.20								\ 		
160	PCB-1260	0.20										

-- Not found, below detection limit.

\*Estimated instrument detection limit.

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#### TABLE AI-4

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection	Sampling Date	
		Limit	8/16/95	8/16/95
	Compound	µg/L (ppb)	15:00	22:00
	Volatiles			an a
1	Chloromethane	1.0		16.75
2	Vinyl chloride	0.7	<b>.</b>	
3	Acetaldehyde	20.0		
4	Bromomethane	3.5		\$1 <b>4</b>
5	Chloroethane	1.7	<b></b>	-
6	Propylene oxide	20.0		
7	Acrolein	15.0		· •
8	1,1-Dichloroethene	0.6		. 40.10
9	Propionaldehyde	20.0		in an
10	Acetone	5.0	58.7	73.9
11	Carbon disulfide	1.0		\$2.0P
12	lodomethane	5.0		100 alter
13	Acetonitrile	2.0		-
14	Allyl chloride	2.0		-
15	Methylene chloride	0.8	1.2	1.6
16	1,2-Dichloroethene (total)	0.6	1.2	1.2
17	Acrylonitrile	5.0		
18	Methyl tert butyl ether	2.0		
19	Hexane	2.0	-	
20	1,1-Dichloroethane	0.6	~~	
21	Vinyl acetate	5.0		***
22	Chloroprene	2.0		alkan
23	2-Butanone	4.6	5.0	7.0
24	Chloroform	0.7	1.2	2.9
25	1,1,1-Trichloroethane	0.7		
26	Carbon tetrachloride	0.6		
27	1,2-Dichloroethane	1.6		
28	Benzene	0.7		
29	2,2,4-Trimethylpentane	2.0	*-	
30	Trichloroethene	0.6	3.8	2.0
31	Ethyl acrylate	2.0		
32	1,2-Dichloropropane	0.8		-
33	Methyl methacrylate	Z		**
34	Bromodichloromethane	0.7		<del>97 - 33</del> -

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# TABLE AI-4 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection	Sampling Date	
	and the second	Limit	8/16/95	8/16/95
	Compound	µg/L (ppb)	15:00	22:00
35	1,4-Dioxane	50.0		
36	Epichlorohydrin	5.0		
37	trans-1,3-Dichloropropene	0.9		
38	4-Methyl-2-pentanone	3.5		an Art
39	Toluene	1.8	2.9	2.3
40	cis-1,3-Dichloropropene	1.7		
41	1,1,2-Trichloroethane	2.5		<b></b> .
42	Tetrachloroethene	1.6	6.9	3.0
43	2-Hexanone	4.6		
44	Dibromochloromethane	1.8		
45	1,2-Dibromoethane	2.0		
46	Chlorobenzene	0.6		
47	Ethylbenzene	0.6	2.1	
48	m- and/or p-Xylenes	1.0	7.3	1.1
49	o-Xylene	1.0	3.8	
50	Styrene	1.5		
51	Bromoform	4.0		
52	Cumene	2.0		
53	1,1,2,2-Tetrachloroethane	3.9		
54	Benzyl chloride	2.0		<b></b>
55	1,2-Dibromo-3-chloropropane	2.0		<b>.</b>
	Semi-Volatiles			
56	Phenol	1.5		
57	Bis(2-chloroethyl)ether	2.6	<b></b> *	
58	2-Chlorophenol	2.3		
59	1,3-Dichlorobenzene	1.8		
60	1,4-Dichlorobenzene	1.8	-	
61	1,2-Dichlorobenzene	1.8		
62	Bis(2-chloroisopropyl)ether	2.0		
63	2-Methylphenol	5.0		
64	Styrene oxide	5.0		
65	Acetophenone	2.0		
66	o-Toluidine	2.0		

# TABLE AI-4 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Date	
•			8/16/95	8/16/95
	Compound	µg/L (ppb)	15:00	22:00
67	Hexachloroethane	1.6		(b) ar
68	N-Nitrose-di-n-propylamine	1.8		
69	4-Methylphenol	5.0		10.45
70	N,N-Dimethylaniline	2.0		
71	Nitrobenzene	3.7		Alto alt
72	Isophorone	1.4		4 <b>.</b>
73	2-Nitrophenol	1.9		
74	2,4-Dimethylphenol	6.4		
75	Bis(2-chloroethoxy)methane	1.8		:
76	2,4-Dichlorophenol	2.0		
77	1,2,4-Trichlorobenzene	1.6		107 CA.
78	Naphthalene	1.6	26.9	
79	4-Chloroaniline	2.0		
80	Hexachlorobutadiene	1.7		the ser
81	N,N-Diethylaniline	2.0		 87-54
82	4-Chloro-3-methylphenol	1.7	<b>P</b>	at-20
83	2-Methylnaphthalene	3.8	128.6	20 m
<b>8</b> 4	Hexachlorocyclopentadiene	3.4		· ••••
85	2,4,6-Trichlorophenol	1.4		35-40
86	2,4,5-Trichlorophenol	3.3		80 <del>40</del>
87	1,1'-Biphenyl	2.0	11.1	
88	2-Chloronapthalene	1.1		5 W
89	2-Nitroaniline	5.0		
90	Acenaphthylene	1.0		-
91	Dimethyl phthalate	1.9		
92	2,6-Dinitrotoluene	1.2		
93	3-Nitroaniline	5.0		
<b>9</b> 4	Acenaphthene	1.2		
95	2,4-Dinitrotoluene	20.0	-	<b>2</b> -02
<b>9</b> 6	Dibenzofuran	2.0	5.4	Antonio
97	4-Nitrophenol	3.2	-	an a
98	2,4-Dinitrotoluene	1.4		
99	Fluorene	1.5	11.7	
100	Diethyl phthalate	3.2		
101	4-Chlorophenyl phenyl ether	1.1		<b></b>
102	4-Nitroaniline	5.0		

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# TABLE AI-4 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection	Sampling Date	
		Limit	8/16/95	8/16/95
	Compound	µg/L (ppb)	15:00	22:00
103	4,6-Dinitro-2-methylphenol	15.0	·	
104	N-Nitrosodiphenylamine	1.5		
105	4-Bromophenyl phenyl ether	1.7		. <b></b>
106	Hexachlorobenzene	1.8		
107	Pentachlorophenol	7.2		
108	Pentachloronitrobenzene	5.0		
109	Phenanthrene	1.3	24.8	
110	Anthracene	1.2		
111	Carbazole	3.6		
112	4-Nitrobiphenyl	2.0		
113	Di-n-butyl phthalate	1.4		
114	Fluoranthene	1.5	1.5	
115	Pyrene	4.6	4.8	
116	Butyl benzyl phthalate	2.5	• • • •	
117	2-Acetylaminofluorene	3.0		
118	Benzo(a)anthracene	1.4		
119	3,3'-Dimethoxybenzidine	30.0	==,	
120	3,3'-Dichlorobenzidine	7.5	ě.	
121	Chrysene	1.5	- -	
122	Bis(2-ethylhexyl)phthalate	15.0	<b>2</b> 14	20.6
123	Di-n-octyl phthalate	2.7	•••	
124	Benzo(b)fluoranthene	2.0	-	
125	Benzo(k)fluoranthene	2.2		
126	Benzo(a)pyrene	1.6		
127	Indeno(1,2,3-cd)pyrene	3.0		<sup>`</sup>
128	Dibenz(a,h)anthracene	3.7		
129	Benzo(ghi)perylene	4.0	60-10	
	Pesticides and PCBs			
130	Trifluralin	0.05*	. · ·	
131	alpha-BHC	0.02		
132	beta-BHC	0.03		
132	gamma-BHC	0.02		
133	delta-BHC	0.02		
134		0.02		

#### TABLE AI-4 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Date	
			8/16/95 15:00	8/16/95 22:00
	Compound	µg/L (ppb)		
135	Heptachlor	0.02		2014C
136	Aldrin	0.02		· · · · · ·
137	Heptachlor epoxide	0.02		
138	gamma-Chlordane	0.05		•••
139	alpha-Chlordane	0.05		
140	alpha-Endosulfan	0.05		2016
141	Dieldrin	0.05		
142	4,4'-DDE	0.05		· · · · ·
143	Endrin	0.10		. 1946
144	Chlorobenzilate	0.30*		30-740-1
145	beta-Endosulfan	0.05		
146	4,4'-DDD	0.05		
147	Endosulfan sulfate	0.10		691-991
148	4,4'-DDT	0.15		-
149	Methoxychlor	0.50		<b></b>
150	Captan	0.05*		167#
151	Endrin ketone	0.10		10 M
152	Endrin aldehyde	0.10		
153	Toxaphene	0.50		
154	PCB-1016	0.20	-	
155	PCB-1221	0.20		Dire
156	PCB-1232	0.20		
157	PCB-1242	0.20	<b></b> .	**
158	PCB-1248	0.20		-
159	PCB-1254	0.20	**	
160	PCB-1260	0.20	——	3.71

--Not found, below detection limit.

\*Estimated instrument detection limit.

#### TABLE AI-5

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Date 8/15/95
	Compound	μg/L (ppb)	11:25
	Volatiles		
1	Chloromethane	1.0	
2	Vinyl chloride	0.7	·
3	Acetaldehyde	20.0	
4	Bromomethane	3.5	
5	Chloroethane	1.7	<b></b>
6	Propylene oxide	20.0	
7	Acrolein	15.0	
8	1,1-Dichloroethene	0.6	•••
9	Propionaldehyde	20.0	
10	Acetone	5.0	33.4
11	Carbon disulfide	1.0	
12	lodomethane	5.0	
13	Acetonitrile	2.0	
14	Allyl chloride	2.0	
15	Methylene chloride	0.8	
16	1,2-Dichloroethene (total)	0.6	
17	Acrylonitrile	5.0	
18	Methyl tert butyl ether	2.0	
19	Hexane	2.0	<b></b>
20	1,1-Dichloroethane	0.6	
21	Vinyl acetate	5.0	· · · · ·
22	Chloroprene	2.0	· · · · · · · · · · · · · · · · · · ·
23	2-Butanone	4.6	
24	Chloroform	0.7	1.4
25	1,1,1-Trichloroethane	0.7	
26	Carbon tetrachloride	0.6	
27	1,2-Dichloroethane	1.6	. <b></b> .
28	Benzene	0.7	tas na
29	2,2,4-Trimethylpentane	2.0	. <del></del>
30	Trichloroethene	0.6	
31	Ethyl acrylate	2.0	
32	1,2-Dichloropropane	0.8	
33	Methyl methacrylate	Z	
34	Bromodichloromethane	0.7	

# TABLE AI-5 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1995 RAINFALL SAMPLING EVENT

ł	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/15/95 11:25
	1,4-Dioxane	50.0	•
	Epichlorohydrin	5.0	210 <b>PB</b>
	trans-1,3-Dichloropropene	0.9	<b>وي</b> د <u>ر</u>
	4-Methyl-2-pentanone	3.5	i and a second s
-	Toluene	1.8	12.7
	cis-1,3-Dichloropropene	1.7	-234 <b>em</b>
	1,1,2-Trichloroethane	2.5	दोर के
	Tetrachloroethene	1.6	20- mai -
	2-Hexanone	4.6	dur ear
	Dibromochloromethane	1.8	-9, #A
	1,2-Dibromoethane	2.0	25- <b>4</b> 4
	Chlorobenzene	0.6	
	Ethylbenzene	0.6	2000 1
	m- and/or p-Xylenes	1.0	1R-em
	o-Xylene	1.0	40. · · · ·
	Styrene	1.5	9-900 -
	Bromoform	4.0	560- <b>629</b>
	Cumene	2.0	
	1,1,2,2-Tetrachloroethane	3.9	45. dae
	Benzyl chloride	2.0	30 <b>49</b> 0
55	1,2-Dibromo-3-chloropropane	2.0	recine
	Semi-Volatiles		•
87	1,1'-Biphenyl	2.0	
	Phenol	1.5	
	Bis(2-chloroethyl)ether	2.6	195 <del>09</del> 6
	2-Chlorophenol	2.3	405 MQ3
59	1,3-Dichlorobenzene	1.8	- 50.99
60	1,4-Dichlorobenzene	1.8	German .
61	1,2-Dichlorobenzene	1.8	1004 tale
62	Bis(2-chloroisopropyl)ether	2.0	an an
63	2-Methylphenol	5.0	8- <b>6</b>
64	Styrene oxide	5.0	.aik-ma
65	Acetophenone	2.0	na-ap
-	•		

#### TABLE AI-5 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1995 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/15/95 11:25
66	o-Toluidine	2.0	
67	Hexachloroethane	1.6	
68	N-Nitrose-di-n-propylamine	1.8	
69	4-Methylphenol	5.0	9.3
70	N,N-Dimethylaniline	2.0	
71	Nitrobenzene	3.7	
72	Isophorone	1.4	а. •
73	2-Nitrophenol	1.9	
74	2,4-Dimethylphenol	6.4	
75	Bis(2-chloroethoxy)methane	1.8	<b></b>
76	2,4-Dichlorophenol	2.0	
77	1,2,4-Trichlorobenzene	1.6	
78	Naphthalene	1.6	· •
79	4-Chloroaniline	2.0	
80	Hexachlorobutadiene	1.7	
81	N,N-Diethylaniline	2.0	
82	4-Chloro-3-methylphenol	1.7	
83	2-Methylnaphthalene	3.8	
84	Hexachlorocyclopentadiene	3.4	
85	2,4,6-Trichlorophenol	1.4	••••••••••••••••••••••••••••••••••••••
86	2,4,5-Trichlorophenol	3.3	
88	2-Chloronapthalene	1.1	
89	2-Nitroaniline	5.0	<b>***</b>
90	Acenaphthylene	· 1.0 1.9	
91	Dimethyl phthalate	1.2	
92	2,6-Dinitrotoluene	5.0	
93	3-Nitroaniline	5.0 1.2	
94	Acenaphthene	20.0	
95 00	2,4-Dinitrotoluene	2.0	
96	Dibenzofuran	3.2	
97	4-Nitrophenol	3.2 1.4	
98	2,4-Dinitrotoluene		
99	Fluorene	1.5	
100	Diethyl phthalate	3.2	**
101	4-Chlorophenyl phenyl ether	1.1	•
102	4-Nitroaniline	5.0	50 mg

#### TABLE AI-5 (Continued)

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/15/95 11:25
103	4,6-Dinitro-2-methylphenol	15.0	70 <b>00</b>
104	N-Nitrosodiphenylamine	1.5	100 <b>m</b>
105	4-Bromophenyl phenyl ether	1.7	. Monte
106	Hexachlorobenzene	1.8	1 <b>9</b> 7 min
107	Pentachlorophenol	7.2	No.28
108	Pentachloronitrobenzene	5.0	600 an-
109	Phenanthrene	1.3	1.4
110	Anthracene	1.2	ana jan
111	Carbazole	3.6	Q4 au
112		2.0	645ga
113	Di-n-butyl phthalate	1.4	2.3
114	Fluoranthene	1.5	2.6
115	Pyrene	4.6	and the
116	Butyl benzyl phthalate	2.5	行動
117	2-Acetylaminofluorene	3.0	يود البل
118	Benzo(a)anthracene	1.4	. dz 🖛
119	3,3'-Dimethoxybenzidine	30.0	- ayum
120	3,3'-Dichlorobenzidine	7.5	สังงา
121	Chrysene	1.5	1.6
122	Bis(2-ethylhexyl)phthalate	15.0	a
123	Di-n-octyl phthalate	2.7	
124	Benzo(b)fluoranthene	2.0	the sea
125	Benzo(k)fluoranthene	2.2	ateries .
126	Benzo(a)pyrene	1.6	es:0
127	Indeno(1,2,3-cd)pyrene	3.0	್ರಾಯ್
128	Dibenz(a,h)anthracene	3.7	Root
129	Benzo(ghi)perylene	4.0	67.44
	Pesticides and PCBs		
130	Trifluralin	0.05*	
131	alpha-BHC	0.02	40 mil
132	beta-BHC	0.03	arius.
133	gamma-BHC	0.02	****
134	delta-BHC	0.02	acuón.
		· · · · · · ·	

#### TABLE AI-5 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1995 RAINFALL SAMPLING EVENT

		Detection	Sampling Date
	· · · · ·	Limit	8/15/95
	Compound	µg/L (ppb)	11:25
135	Heptachlor	0.02	
136	Aldrin	0.02	
137	Heptachlor epoxide	0.02	· •••
138	gamma-Chlordane	0.05	
139	alpha-Chlordane	0.05	
140	alpha-Endosulfan	0.05	
141	Dieldrin	0.05	••
142	4,4'-DDE	0.05	0.23
143	Endrin	0.10	
144	Chlorobenzilate	0.30*	
145	beta-Endosulfan	0.05	
146	4,4'-DDD	0.05	0.16
147	Endosulfan sulfate	0.10	
148	4,4'-DDT	0.15	0.17
149	Methoxychlor	0.50	<b></b>
150	Captan	0.05*	
151	Endrin ketone	0.10	
152	Endrin aldehyde	0.10	<b></b> '
153	Toxaphene	0.50	• •
154	PCB-1016	0.20	
155	PCB-1221	0.20	
156	PCB-1232	0.20	
157	PCB-1242	0.20	
158	PCB-1248	0.20	
59	PCB-1254	0.20	
160	PCB-1260	0.20	

--Not found, below detection limit.

\*Estimated instrument detection limit.

## APPENDIX II

ORGANIC POLLUTANTS IN WASTEWATER FROM TARP PUMP, DROP SHAFT, AND OVERFLOW STATIONS DURING 1996 RAINFALL SAMPLING EVENTS

#### TABLE AII-1

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit				San	npling Da	tes			
	Compound	µg/L (ppb)	5/11/96	5/13/96	5/14/96				6/19/96	6/20/96	9/27/96
	Volatiles					<u></u>					
1	Chloromethane	1.3									
2	Vinyl chloride	0.7		~~							-
3	Acetaldehyde	25.9	~~								
4	Bromomethane	3.5								***	
5	Chloroethane	1.7									
6	Propylene oxide	20.0									
7	Acrolein	15.0									
8	1,1-Dichloroethene	0.6									
9	Propionaldehyde	20.1	·								
10	Acetone	5.0	198.6	125.5		44.1	92.6	62.9	216.0	52.9	115.4
11	Carbon disulfide	1.0	1.2				6.7			1.4	6.8
12	lodomethane	5.0		<b></b> '							
13	Acetonitrile	2.0									
14	Allyl chloride	2.0		1							
15	Methylene chloride	0.8		1.1	****	1.8	4.2	2.5	2.8	2.4	1.2
16	1,2-Dichloroethene (total)	0.8		1.0		1.2	1.2	1.1	2.8	3.5	3.6
17	Acrylonitrile	5.0		***							
18	Methyl tert butyl ether	4.2	1966 FEB 1	too ani		etjá vez	131 <b>**</b>	with	148 x72	an 24	the rise
19	Hexane	2.0	-	ojn mir		5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5		ças içer	47x 444		19 min.
20	1,1-Dichloroethane	0.6	400 Mai		to ge	danta		un que		Call vision	****
21	Vinyl acetate	5.0		-			· .	<b></b>			
22	Chloroprene	2.0					*•				

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## TABLE AII-1 (Continued)

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit				San	npling Da	tes			
	Compound	µg/L (ppb)	5/11/96	5/13/96	5/14/96	5/16/96	5/29/96	6/1/96	6/19/96	6/20/96	9/27/96
23	2-Butanone	5.5	8.8	÷.			9.2		22.6	12.7	27.5
24	Chloroform	0.7	1.6	1.6	1.2	0.8	0.9	1.3	1.0	1.5	
25	1,1,1-Trichloroethane	0.7									
26	Carbon tetrachloride	0.9									
27	1,2-Dichloroethane	1.6	<b>B</b> 2 4 4 5	-	-						
28	Benzene	1.0				***					3.8
29	2,2,4-Trimethylpentane	2.0									
30	Trichloroethene	0.6		19.1	1.5	0.8	1.2	1.1	1.1	1.7	1.1
31	Ethyl acrylate	4.5		~~							
32	1,2-Dichloropropane	0.8									
33	Methyl methacrylate	2.0									
34	Bromodichloromethane	0.7									**
35	1,4-Dioxane	67. <b>8</b>									
36	Epichlorohydrin	20.0									
37	trans-1,3-Dichloropropene	0.9							<b>b</b> er er:		
38	4-Methyl-2-pentanone	3.5					32.3		31.5	7.9	16.3
39	Toluene	1.8	3.8			1.8	9.7		17.1	13.4	78.8
40	cis-1,3-Dichloropropene	1.7		1							
41	1,1,2-Trichloroethane	2.5							·		
42	Tetrachloroethene	1.6		2.8			2.8	2.0			
43	2-Hexanone	4.6									
44	Dibromochloromethane	1.8			-						·
45	1,2-Dibromoethane	2.0							: <b></b>		2.1
46	Chlorobenzene	0.6		`				***	0.7		0.7

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## TABLE AII-1 (Continued)

		Detection Limit				San	pling Da	tee	•		
	Compound	µg/L (ppb)	5/11/96	5/13/96	5/14/96	5/16/96	5/29/96	6/1/96	6/19/96	6/20/96	9/27/96
47	Ethylbenzene	0.8					3.4		3.1	1.0	4.6
48	m- and/or p-Xylenes	1.4					10.1		9.2	3.2	13.2
49	o-Xylene	1.0					9.2		11.2	2.2	12.0
50	Styrene	1.5									2.8
51	Bromoform	4.0	~-								
52	Cumene	2.0		** **							
53	1,1,2,2-Tetrachloroethane	3.9	~-								
54	Benzyl chloride	2.4									
55	1,2-Dibromo-3-chloropropane	2.9	<b></b>								4.3
	Semi-Volatiles										
56	Phenol	0.7	12.2	8- 4 <b>9</b>						327.8	37.3
57	Bis(2-chloroethyl)ether	1.0									
58	2-Chlorophenol	1.2									
59	1,3-Dichlorobenzene	1.1									
60	1,4-Dichlorobenzene	1.1	مەنى			-	-				
61	1,2-Dichlorobenzene	1.1		80 mil		<b>19-14</b>	ek an		111 jan	44 BA	
62	Bis(2-chloroisopropyl)ether	1.0	-	00 64		#2 (M	-	475-078	siler opti-	siken	105-00
63	2-Methylphenol	3.7	40 GM	Que	-sa NRC	wa (ch	প্ৰতি কথ		-16-550	-स्थ्रा ध्या	4.5
64	Styrene oxide	4.9	يەنىر	ani ata	يىرە يولۇر بىلەر يولۇر	line ethic	199 PM	-10 -40	344.543	-75. 641	
	Acetophenone	1.4								~-	
65	Accopricitorie	1									

## TABLE AII-1 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit				San	npling Da	tes			
	Compound	μg/L (ppb)	5/11/96	5/13/96	5/14/96	5/16/96	5/29/96	6/1/96	<b>6/19/</b> 96	6/20/96	9/27/96
67	Hexachloroethane	1.4									****
68	N-Nitrose-di-n-propylamine	1.7									
69	4-Methylphenol	3.5	45.8			7.7			21.3	18.9	45.5
70	N,N-Dimethylaniline	1.2									
71	Nitrobenzene	1.8		***							
72	Isophorone	1.8								·	
73	2-Nitrophenol	2.2	<b>1</b> 00 mm								
74	2,4-Dimethylphenol	0.7					-		-		-
75	Bis(2-chloroethoxy)methane	1.9									
76	2,4-Dichlorophenol	1.5								′ <del></del>	
77	1,2,4-Trichlorobenzene	1.8					·				
78	Naphthalene	1.7								2.3	2.8
79	4-Chloroaniline	6.0						****	~*		
80	Hexachlorobutadiene	1.4				-		· .			
81	N,N-Diethylaniline	1.4									
82	4-Chloro-3-methylphenol	1.3									
83	2-Methylnaphthalene	4.8							-		
84	Hexachlorocyclopentadiene	37.9									
85	2,4,6-Trichlorophenol	1.7				6-16					
86	2,4,5-Trichlorophenol	5.7									
87	1,1'-Biphenyl	1.7									
88	2-Chloroapthalene	1.0									
89	2-Nitroaniline	6.7						·	-		
90	Acenaphthylene	1.2						. <b></b> .			

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#### TABLE AII-1 (Continued)

		Detection Limit				San	npling Da	tes			
	Compound	µg/L (ppb)	5/11/96	5/13/96	5/14/96	5/16/96	5/29/96	6/1/96	6/19/96	6/20/96	9/27/96
91	Dimethyl phthalate	1.4									
92	2,6-Dinitrotoluene	1.8					-				
93	3-Nitroaniline	5.0									
94	Acenaphthene	1.0									
95	2,4-Dinitrotoluene	25.6									
96	Dibenzofuran	4.4				***				•••	~*
97	4-Nitrophenol	8.7									
98	2,4-Dinitrotoluene	1.7									
<b>99</b>	Fluorene	1.1									
100	Diethyl phthalate	2.1	2.4						3.2	3.3	3.7
101	4-Chirophenyi phenyi ether	1.0									48 eX
102	4-Nitroaniline	4.1							-		
103	4,6-Dinitro-2-methylphenol	27.4									
104	N-Nitrosodiphenylamine	1.0			'						
105	4-Bromophenyl phenyl ether	1.4	<b>tes tes</b>								
106	Hexachlorobenzene	1.2									
107	Pentachlorophenol	17.5									
108	Pentachloronitrobenzene	3.9									
109	Phenanthrene	0.9	1.0	2.6					6.0	1.7	6.1
110	Anthracene	0.8	349 Apr	, with the	na tir	vac-stat	<del>11</del> 47	617 274	0.9	****	1.3
111	Carbazole	4.0	941 HB		able into the		41 MA		44 HZ	an in	4.7
112	4-Nitrobiphenyl	1.7		38- 128	10.94						
113	Di-n-butyl phthalate	1.6					···-				2.5
114	Fluoranthene	1.0	1.0						8.2	1.5	5.3

## TABLE AII-1 (Continued)

		Detection Limit				San	npling Da	tes			
	Compound	µg/L (ppb)	5/11/96	5/13/96	5/14/96				6/19/96	6/20/96	9/27/96
115	Pyrene	2.4			~~~				11.4		4.3
116	Butyl benzyl phthalate	7.9					***				
117	2-Acetylaminofluorene	2.7									
118	Benzo(a)anthracene	0.8							3.2		1.1
119	3,3'-Dimethoxybenzidine	14.6									
120	3,3'-Dichlorobenzidine	6.4									
121	Chrysene	1.1							5.1		1.6
122	Bis(2-ethylhexyl)phthalate	15.0		19.9	29.0	<b>~~</b>		35.9			
123	Di-n-octyl phthalate	5.6									
124	Benzo(b)fluoranthene	1.3							4.5		
125	Benzo(k)fluoranthene	1.4									
126	Benzo(a)pyrene	1.3									
127	Indeno(1,2,3-cd)pyrene	1.2									
128	Dibenz(a,h)anthracene	0,8			60 mi				· • • • • • • • • • • • • • • • • • • •		
129	Benzo(ghi)perylene	1.1									
	Pesticides and PCBs										
130	Trifluralin	0.05*									
131	alpha-BHC	0.02							· •••		
132	beta-BHC	0.03		·							
133	gamma-BHC	0.02		. +				<b></b> '	, <del></del>		**
134	delta-BHC	0.02			<b>.</b>	-					

# TABLE AII-1 (Continued)

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		Detection				San	npling Da	tes			
	Compound	Limit µg/L (ppb)	5/11/96	5/13/96	5/14/96	5/16/96	5/29/96	6/1/96	6/19/96	<b>6/20</b> /96	9/27/96
135	Heptachlor	0.02									
136	Aldrin	0.02									
137	Heptachlor epoxide	0.02			~			20143	Det aus		
138	gamma-Chlordane	0.05									
139	alpha-Chlordane	0.05									
140	alpha-Endosulfan	0.05									
140	Dieldrin	0.05							·		,
141	4,4'-DDE	0.05							·		
	Endrin	0.10									
143	Chlorobenzilate	0.03*									
144	beta-Endosulfan	0.05									
145	4,4'-DDD	0.05									
146	4,4-000 Endosulfan sulfate	0.10									
147		0.10					:				
148	4,4'-DDT	0.15									
149	Methoxychlor	0.05*									
150	Captan	0.00									
151	Endrin ketone	0.10				-			——		
152	Endrin aldehyde	0.10	-								
153	Toxaphene					04.48					-
154	PCB-1016	0.20				(ابد مواد	***	į srae	. Bp. 61	unité	ar-14,
155	PCB-1221	0.20	Talisti	un ya	10-10 10-10	no ine	10-150		11 m	640 MP	
156	PCB-1232	0.20	20.93	10-10 <b>2</b>							
157	PCB-1242	0.20							0.52		1.26
158	PCB-1248	0.20				· ••		,	0.02		

# TABLE AII-1 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit				San	npling Da	tes			
	Compound	μg/L (ppb)	5/11/96	5/13/96	5/14/96	5/16/96	5/29/96	6/1/96	6/19/96	6/20/96	9/27/96
159	PCB-1254	0.20	1.93		*****				· ••••		
160	PCB-1260	0.20							0.21		0.68

-- Not found, below detection limit.

\*Estimated instrument detection limit.

#### TABLE AII-2

		Detection Limit				mpling Da			***
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
	Volatiles	<u> </u>		<u></u>			<u></u>		1
1	Chloromethane	1.3						-	
2	Vinyl chloride	0.7							
3	Acetaldehyde	25.9							***
4	Bromomethane	3.5							
5	Chloroethane	1.7							
6	Propylene oxide	20.0							
7	Acrolein	15.0							
8	1,1-Dichloroethene	0.6							
9	Propionaldehyde	20.1							
10	Acetone	5.0	131.1	51.4	586.5*	90.8	387.2	53.8	256.5
11	Carbon disulfide	1.0	1.0						
12	Iodomethane	5.0							
13	Acetonitrile	2.0					B24	÷	***
14	Allyl chloride	2.0							
15	Methylene chloride	0.8	11.4	1.2	4.8	2.2	2.8	1.9	2.2
16	1,2-Dichloroethene (total)	0.8					1.3		
17	Acrylonitrile	5.0	77.40p	023 L <b>W</b> 2	107110	-10-00			an. air,
18	Methyl tert butyl ether	4.2	ton cat	nio sili	10-10a	446.7 <b>89</b>		Dya can	6/11 465
19	Hexane	2.0	rib an		-	an an	*****		28 WS
20	1,1-Dichloroethane	0.6		rgai ette		Barla	40 G	çus em	***
21	Vinyl acetate	5.0				<b>E1</b> ,554			
22	Chloroprene	2.0				` <b></b>			

## TABLE AII-2 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit Sampling Dates									
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96		
23	2-Butanone	5.5	7.9				10.2		7.2		
24	Chloroform	0.7	1.1	1.0	2.0	1.4	1.6		2.1		
25	1,1,1-Trichloroethane	0.7									
26	Carbon tetrachloride	0.9						-			
27	1,2-Dichloroethane	1.6							** **		
28	Benzene	1.0				1.2			aller fan		
29	2,2,4-Trimethylpentane	2.0									
30	Trichloroethene	0.6					1.1	0.9			
31	Ethyl acrylate	4.5									
32	1,2-Dichloropropane	0.8									
33	Methyl methacrylate	2.0									
34	Bromodichloromethane	0.7		-	·						
35	1,4-Dioxane	67.8									
36	Epichlorohydrin	20.0				-					
37	trans-1,3-Dichloropropene	0.9									
38	4-Methyl-2-pentanone	3.5		-	4.2		4.2				
39	Toluene	1.8	18.7		2.7	6.8	23.3	108.4	20.6		
40	cis-1,3-Dichloropropene	1.7									
41	1,1,2-Trichloroethane	2.5									
42	Tetrachloroethene	1.6					2.0	3.8			
43	2-Hexanone	4.6		-		-					
44	Dibromochloromethane	1.8									
45	1,2-Dibromoethane	2.0									
46	Chlorobenzene	0.6				~~					

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#### TABLE AII-2 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit			Sa	mpling Da	ites		
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
47	Ethylbenzene	0.8							÷-
48	m- and/or p-Xylenes	1.4	2.0		2.9		1.9		
49	o-Xylene	1.0	1.3		1.6		1.2		
50	Styrene	1.5	1.7		3.7		1.6		5.6
51	Bromoform	4.0							
52	Cumene	2.0			2.8		2.7		17.7
53	1,1,2,2-Tetrachloroethane	3.9							
54	Benzyl chloride	2.4							
55	1,2-Dibromo-3-chloropropane	2.9							
	Semi-Volatiles								
56	Phenol	0.7	128.8		64.5		148.8	7.3	69
57	Bis(2-chloroethyl)ether	1.0							
58	2-Chlorophenol	· 1.2							
		1.4							
<b>59</b>	1,3-Dichlorobenzene	1.1							
59 60			1						 
	1,3-Dichlorobenzene	1.1							
60	1,3-Dichlorobenzene 1,4-Dichlorobenzene	1.1 1.1							
60 61	1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene	1.1 1.1 1.1	23.3				  7.0		
60 61 62	1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene Bis(2-chloroisopropyl)ether	1.1 1.1 1.1 1.0			  44.2	<del></del>			
60 61 62 63	1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene Bis(2-chloroisopropyl)ether 2-Methylphenol	1.1 1.1 1.1 1.0 3.7	23.3	ala not	  44.2  17.2	4.9	7.0		    13.6

AII-11

# TABLE AII-2 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit			Sa	mpling Da	ites		
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
67	Hexachloroethane	1.4	、		ant top			<b></b>	80 HZ
68	N-Nitrose-di-n-propylamine	1.7							
69	4-Methylphenol	3.5	454.3*		55.7		98.1	129.9	8.0
70	N,N-Dimethylaniline	1.2					<b>+-</b>		
71	Nitrobenzene	1.8					**		<del></del>
72	Isophorone	1.8							
73	2-Nitrophenol	2.2							
74	2,4-Dimethylphenol	0.7	2.9		13.5		0.8		
75	Bis(2-chloroethoxy)methane	1.9							
76	2,4-Dichlorophenol	1.5							~~
77	1,2,4-Trichlorobenzene	1.8		***					
78	Naphthalene	1.7				2.9	1.7		
79	4-Chloroaniline	6.0							
80	Hexachlorobutadiene	1.4							
81	N,N-Diethylaniline	1.4					***		
82	4-Chloro-3-methylphenol	1.3						~~	
83	2-Methylnaphthalene	4.8	***						
84	Hexachlorocyclopentadiene	37.9					-		
85	2,4,6-Trichlorophenol	1.7							
86	2,4,5-Trichlorophenol	5.7					-		
87	1,1'-Biphenyl	1.7							
88	2-Chloroapthalene	1.0		-					
89	2-Nitroaniline	6.7							
90	Acenaphthylene	1.2			, <b></b>				

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## TABLE AII-2 (Continued)

		Detection Limit			Sa	mpling Da	ites		
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
91	Dimethyl phthalate	1.4					10 - 11 - 11 - 11 - 11 - 11 - 11 - 11 -		an an
92	2,6-Dinitrotoluene	1.8		-					
93	3-Nitroaniline	5.0							
94	Acenaphthene	1.0							
95	2,4-Dinitrotoluene	25.6							
96	Dibenzofuran	4.4							
97	4-Nitrophenol	8.7							
98	2,4-Dinitrotoluene	1.7							
99	Fluorene	1.1							
100	Diethyl phthalate	2.1	4.2		5.2	2.8	3.8		2.3
101	4-Chirophenyl phenyl ether	1.0							
102	4-Nitroaniline	4.1							
103	4,6-Dinitro-2-methylphenol	27.4							
104	N-Nitrosodiphenylamine	1.0							
105	4-Bromophenyl phenyl ether	1.4			-				
106	Hexachlorobenzene	1.2							
107	Pentachlorophenol	17.5			~-				
108	Pentachloronitrobenzene	3.9		-					
109	Phenanthrene	0.9	pre-see	(p4	~~~	2.8	ua ser	7.5	
110	Anthracene	0.8	anti-size	4842×		et.up			- all year
111	Carbazole	4.0		un Nie	-	5.0	10 atm	dels logi	
112	4-Nitrobiphenyl	1.7	**		400 CB4	**		64 Se	को बाग
113	Di-n-butyl phthalate	1.6						**	<del></del>
114	Fluoranthene	1.0				1.4	, <b></b>	8.3	<del></del>

## TABLE AII-2 (Continued)

ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit			ça	mpling Da	itae		
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
115	Pyrene	2.4				<b></b>		9.9	
116	Butyl benzyl phthalate	7.9							
117	2-Acetylaminofluorene	2.7							
118	Benzo(a)anthracene	0.8						3.0	
119	3,3'-Dimethoxybenzidine	14.6		AND 1980			4718		
120	3,3'-Dichlorobenzidine	6.4							
121	Chrysene	1.1		~~				4.4	
122	Bis(2-ethylhexyl)phthalate	15.0	-					~~	
123	Di-n-octyl phthalate	5.6					<b>***</b>		
124	Benzo(b)fluoranthene	1.3					-		
125	Benzo(k)fluoranthene	1.4							
126	Benzo(a)pyrene	1.3							
127	Indeno(1,2,3-cd)pyrene	1.2					<b></b>		
128	Dibenz(a,h)anthracene	0.8		-					
129	Benzo(ghi)perylene	1.1	:				<b>22-12</b>		
	Pesticides and PCBs		I				ł		
130	Trifluralin	0.05**							
131	alpha-BHC	0.02	<b></b>	-					
132	beta-BHC	0.02							, 
133	gamma-BHC	0.02							
134	delta-BHC	0.02							

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# TABLE AII-2 (Continued)

		Detection Limit			Sa	mpling Da	ites		
	Compound	μg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
135	Heptachlor	0.02							
136	Aldrin	0.02							
137	Heptachlor epoxide	0.02							
138	gamma-Chlordane	0.05			<b>69</b> -48				
139	alpha-Chlordane	0.05	·						
140	alpha-Endosulfan	0.05							
141	Dieldrin	0.05				-			
142	4,4'-DDE	0.05			80-40				
143	Endrin	0.10			~~				
144	Chlorobenzilate	0.03**							
145	beta-Endosulfan	0.05							
146	4,4'-DDD	0.05							****
147	Endosulfan sulfate	0.10							
148	4,4'-DDT	0.10							
149	Methoxychlor	0.15					***		
150	Captan	0.05**							
151	Endrin ketone	0.10		**-*					
152	Endrin aldehyde	0.10					-		
153	Toxaphene	0.50		<b>(5, 42)</b>		50 M	in		
154	PCB-1016	0.20	ITC460	Na utit	. even	Sector	· pur rik ·	154 (B <sup>10</sup> )	·wis aller
155	PCB-1221	0.20			and the			28. cm	
156	PCB-1232	0.20	- mai năr	ficiae				500 -800	(19 M)
157	PCB-1242	0.20							
158	PCB-1248	0.20		15.05		<b>4</b> 11-112	, <b></b>		

#### TABLE AII-2 (Continued)

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit			Sa	mpl <b>ing</b> Da	ites		
	Compound	µg/L (ppb)	5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
159	PCB-1254	0.20		**		+			
160	PCB-1260	0.20							

-- Not found, below detection limit.

\*A dilution of 1:5 was made for quantitation of this compound from the linear calibration curve.

\*\*Estimated instrument detection limit.

#### TABLE AII-3

		Detection Limit					Sampli	ng Dates				
	Compound	µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96				6/18/96	7/17/96	7/18/96
	Volatiles				<u> </u>							
1	Chloromethane	1.3										
. 2	Vinyl chloride	0.7										
3	Acetaldehyde	25.9	••••	-								
4	Bromomethane	3.5		line and								
5	Chloroethane	1.7		~~								
6	Propylene oxide	20.0	<b>1</b>									
7	Acrolein	15.0									<b></b> .	
8	1,1-Dichloroethene	0.6										
9	Propionaldehyde	20.1										
10	Acetone	5.0	36.3	60.1	381.8*	89.1	90.6	95.8	127.6	76.7	84.5	270.8
11	Carbon disulfide	1.0							1.8	2.6	2.3	
12	lodomethane	5.0										
13	Acetonitrile	2.0						das set				
14	Allyl chloride	2.0	•									
15	Methylene chloride	0.8		4.5	2.0	3.0	2.2	2.1	1.5	3.1	2.2	1.8
16	1,2-Dichloroethene (total)	0.8		<sup>i</sup>		1.3	*	0.9	<b>+</b> -			
17	Acrylonitrile	5.0	4F 8D .			interna	ada king	ipa ore	ado nam	, ' um de	ac #3	
18	Methyl tert butyl ether	4.2	-e#1000.	indo 400		10 M	.W. PL	Reta	. sein		- 10 Tap	cup liter
19	Hexane	2.0	-	- So Lety	eta ate	·	av en		function	jan és.		
20	1,1-Dichloroethane	0.6	49 au	en ch		-	iu ay	in the			abi ites	Stores.
21	Vinyl acetate	5.0								-		
22	Chloroprene	2.0					-		<b></b> ,			

## TABLE AII-3 (Continued)

		Detection					Canadi	na Datas				
	Compound	Limit µg/L (ppb)	<b>5/9</b> /96	5/10/96	5/20/96	5/21/96		ng Dates 5/29/96		6/18/96	7/17/96	7/18/96
23	2-Butanone	5.5					~=		12.5	8.1	9.5	
24	Chloroform	0.7	2.0	1.9	1.3	2.4	1.4	2.1	2.6	4.1	2.5	2.0
25	1,1,1-Trichloroethane	0.7				0.8	term					
26	Carbon tetrachloride	0.9					-	****				
27	1,2-Dichloroethane	1.6	-									
28	Benzene	1.0					~					
29	2,2,4-Trimethylpentane	2.0										
30	Trichloroethene	0.6				1.0	1.3	1.5	0.7	0.6		
31	Ethyl acrylate	4.5										
32	1,2-Dichloropropane	0.8										
33	Methyl methacrylate	2.0										
34	Bromodichloromethane	0.7										
35	1,4-Dioxane	67.8	**									
36	Epichlorohydrin	20.0								***		
37	trans-1,3-Dichloropropene	0.9										
38	4-Methyl-2-pentanone	3.5	·									
39	Toluene	1.8	2.9	2.2		2.1		2.3	3.8	3.3	3.4	2.4
40	cis-1,3-Dichloropropene	1.7										
41	1,1,2-Trichloroethane	2.5		-								
42	Tetrachloroethene	1.6	1.8	2.1		8.6		5.2				15.7
43	2-Hexanone	4.6										
44	Dibromochloromethane	1.8										
45	1,2-Dibromoethane	2.0										
46	Chlorobenzene	0.6				·•		<b></b> ,				

## TABLE AII-3 (Continued)

		Detection Limit					Sampli	ng Dates				
	Compound	µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96			6/17/96	6/18/96	7/17/96	7/18/96
47	Ethylbenzene	0.8		1.2		~~				<b></b>	~-	51 <b>-</b> 8
48	m- and/or p-Xylenes	1.4		4.5			1.6			2.4	-7.40	
49	o-Xylene	1.0		2.1						1.7	**	
50	Styrene	1.5										
51	Bromoform	4.0		-								
52	Cumene	2.0										
53	1,1,2,2-Tetrachloroethane	3.9					**		440 M			
54	Benzyl chloride	2.4	~~			~~				***		
55	1,2-Dibromo-3-chloropropane	2.9	~~						· •			
	Semi-Volatiles											
56	Phenol	0.7	3.2								2.0	
57	Bis(2-chloroethyl)ether	1.0										
58	2-Chlorophenol	1.2			***		-					
59	1,3-Dichlorobenzene	1.1			<b>D</b> e 440							
60	1,4-Dichlorobenzene	1.1						-			***	
61	1,2-Dichlorobenzene	1.1	***	10.00	****	10-780	depart	-		du te	68 q8	21.25
62	Bis(2-chloroisopropyl)ether	1.0	-		an, ma	***	. 124494	***		-	the ang-	04-85.
63	2-Methylphenol	3.7	Notified	er e-	581.0	. certhal	derter "	asanan .	· · · · ·	the also	490-594	Reas.
64	Styrene oxide	4.9	196.00	-72 <b>8</b> 1	84 WD	400 MB	-	N0.44	8+ m)	87.94		
65	Acetophenone	1.4		**								
66	o-Toluidine	1.2			~							

## TABLE AII-3 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit					Sampli	ng Dates				
	Compound	µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96	5/28/96	5/29/96	6/17/96	6/18/96	7/17/96	7/18/96
67	Hexachloroethane	1.4										~~
68	N-Nitrose-di-n-propylamine	1.7										
69	4-Methylphenol	3.5	8.1	7.2					6.8		16.0	
70	N,N-Dimethylaniline	1.2										
71	Nitrobenzene	1.8							***			
72	Isophorone	1.8						*-	-			· ••••
73	2-Nitrophenol	2.2		-					<b></b> ,			
74	2,4-Dimethylphenol	0.7										
75	Bis(2-chloroethoxy)methane	1.9	****									
76	2,4-Dichlorophenol	1.5										
77	1,2,4-Trichlorobenzene	1.8		-			-	-				
78	Naphthalene	1.7										
79	4-Chloroaniline	6.0										
80	Hexachlorobutadiene	1.4										
81	N,N-Diethylaniline	1.4					***					, <b></b>
82	4-Chloro-3-methylphenol	1.3							·			
83	2-Methylnaphthalene	4.8		~~~					204 mp			-
84	Hexachlorocyclopentadiene	37.9										401.4 <sub>10</sub>
85	2,4,6-Trichlorophenol	1.7		-					101 - 40 1			
86	2,4,5-Trichlorophenol	5.7										
87	1,1'-Biphenyl	1.7		<b>B</b> 00,000								
88	2-Chloroapthalene	1.0		****								
89	2-Nitroaniline	6.7										
90	Acenaphthylene	1.2			` <b>-</b>							

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#### TABLE AII-3 (Continued)

•		Detection Limit					Sampli	ng Dates				
	Compound	µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96	5/28/96	5/29/96	6/17/96	6/18/96	7/17/96	7/18/96
91	Dimethyl phthalate	1.4		76 <b>an</b>	<b>128 GB</b>				clar sain		90 FF	
92	2,6-Dinitrotoluene	1.8										
93	3-Nitroaniline	5.0										
94	Acenaphthene	1.0										
95	2,4-Dinitrotoluene	25.6										
96	Dibenzofuran	4.4							'			
97	4-Nitrophenol	8.7										
98	2,4-Dinitrotoluene	1.7									~~	
99	Fluorene	1.1			-							
100	Diethyl phthalate	2.1		3.1					3.2	2.8	5.5	2.3
101	4-Chirophenyl phenyl ether	1.0									~~	
102	4-Nitroaniline	4.1										
103	4,6-Dinitro-2-methylphenol	27.4						a. 10		••• <sup>`</sup>		
104	N-Nitrosodiphenylamine	1.0										
105	4-Bromophenyl phenyl ether	1.4										<b>~-</b>
106	Hexachlorobenzene	1.2	·									
107	Pentachlorophenol	17.5			11.00	<b>1</b> 2-12		dermi				
108	Pentachloronitrobenzene	3.9										
109	Phenanthrene	0.9	wine repts	-	82 HW	411 v4	1.0	atr 100		vair spis	-	
110	Anthracene	0.8	, en id	NE 1875	.00 M2	975 Big	out tare	721-978	. po co	- grave	. angt	with the
111	Carbazole	4.0	ace data	etk nith	4247-0001	in the start		an dan		Linux	- <b>See</b> 627	ini në
112	4-Nitrobiphenyl	1.7	muite.	-81 604	198 PM-1	-100 <b>-1</b> 00	00.000	the at		ana quar		
113	Di-n-butyl phthalate	1.6				10- 6al					3.9	
114	Fluoranthene	1.0				,	1.6	<b></b> .	-			

# TABLE AII-3 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

	:	Detection					Comali	na Dotas				
	Compound	Limit µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96		ng Dates 5/29/96		6/18/96	7/17/96	7/18/9
115	Pyrene	2.4	<del></del>	<u></u>	<u></u>					**	***	
116	Butyl benzyl phthalate	7.9			**							
117	2-Acetylaminofluorene	2.7							÷=			
118	Benzo(a)anthracene	0.8										
119	3,3'-Dimethoxybenzidine	14.6			÷							
120	3,3'-Dichlorobenzidine	6.4				**			-			64 - A
121	Chrysene	1.1										
122	Bis(2-ethylhexyl)phthalate	15.0					<b>27</b> 40					
123	Di-n-octyl phthalate	5.6						44.5				
124	Benzo(b)fluoranthene	1.3							-			
125	Benzo(k)fluoranthene	1.4			~~				-			
126	Benzo(a)pyrene	1.3			- Aliana maga							
127	Indeno(1,2,3-cd)pyrene	1.2	<del>~</del> -									
128	Dibenz(a,h)anthracene	0.8		-					•••			
129	Benzo(ghi)perylene	1.1										
	Pesticides and PCBs											
130	Trifluralin	0.05**										
131	alpha-BHC	0.02		<b></b>					T			
132	beta-BHC	0.03										
133	gamma-BHC	0.02				****			***			
134	delta-BHC	0.02	-			<b></b> .			~-			

1.

## TABLE AII-3 (Continued)

		Detection Limit					Samoli	ng Dates				
	Compound	µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96	5/28/96	5/29/96	6/17/96	6/18/96	7/17/96	7/18/96
135	Heptachlor	0.02			100 MP			Q10 446		<b>11</b> 49		
136	Aldrin	0.02		25.45								
137	Heptachlor epoxide	0.02										
138	gamma-Chlordane	0.05										
139	alpha-Chlordane	0.05										
140	alpha-Endosulfan	0.05							***			
141	Dieldrin	0.05			000-000				-			
142	4,4'-DDE	0.05							***			
143	Endrin	0.10					**					
144	Chlorobenzilate	0.03**						<b>4</b> 7 480				
145	beta-Endosulfan	0.05		-								
146	4,4'-DDD	0.05					<b></b>					
147	Endosulfan sulfate	0.10									**	
148	4,4'-DDT	0.10										***
149	Methoxychlor	0.15								-	**	
150	Captan	0.05**										
151	Endrin ketone	0.10	**	tas cas.								
152	Endrin aldehyde	0.10										
153	Toxaphene	0,50	2.05	METHOD .	Sali wu	-	<b>4</b> 0+644	vila care	*** ***			-
154	PCB-1016	0.20	trayalar	int non		ĝas 100	-canada		5% / R	ini 1-	-10-100	in also
155	PCB-1221	0.20	0447	- دريسه		an 123	90 XII		40.00f	ac: 04		
156	PCB-1232	0.20	-	and the		**	an 🖚	in the			****	
157	PCB-1242	0.20	****		-		~~					
158	PCB-1248	0.20						<b></b> .				

## TABLE AII-3 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1996 RAINFALL SAMPLING EVENTS

		Detection Limit					Sampli	ng Dates				
	Compound	µg/L (ppb)	5/9/96	5/10/96	5/20/96	5/21/96	5/28/96	5/29/96	6/17/96	6/18/96	7/17/96	7/18/96
159	PCB-1254	0.20			**	**						
160	PCB-1260	0.20	~~								**	

×.

-- Not found, below detection limit.

\*A dilution of 1:5 was made for quantitation of this compound from the linear calibration curve.

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\*\*Estimated instrument detection limit.

#### TABLE AII-4

		Detection	7/47/00	Sampling Dates	74000
		Limit	7/17/96	7/17/96	7/19/96
	Compound	µg/L (ppb)	16:00	23:10	9:30
	Volatiles		<u></u>		9 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 
1	Chloromethane	1.3	<b>*</b> **		
2	Vinyl chloride	0.7			
3	Acetaldehyde	25.9			
4	Bromomethane	3.5			
5	Chloroethane	1.7			, <del></del> .
6	Propylene oxide	20.0			67 <del>4</del> 4
7	Acrolein	15.0	-		
8	1,1-Dichloroethene	0.6			
9	Propionaldehyde	20.0			
10	Acetone	5.0	52.1	37.4	129.2
11	Carbon disulfide	1.0			***
12	lodomethane	5.0	·	100 mg	. Tie Gu
13	Acetonitrile	2.0			<b>₽</b> ₩
14	Allyl chloride	2.0			
15	Methylene chloride	0.8	2.7	9.6	1.5
16	1,2-Dichloroethene (total)	0.8	1.1	.1.1	1.6
17	Acrylonitrile	5.0			62 <b>4</b>
18	Methyl tert butyl ether	4.2			
19	Hexane	2.0			
20	1,1-Dichloroethane	0.6	-		هو هو
21	Vinyl acetate	5.0		<del></del> '	400 <b>ar</b> .
22	Chloroprene	2.0			20 <b></b>
23	2-Butanone	5.5	8.8		
24	Chloroform	0.7	1.4	1.6	2.8
25	1,1,1-Trichloroethane	0.7		1.6	-
26	Carbon tetrachloride	0.9			-
27	1,2-Dichloroethane	1.6			-
28	Benzene	1.0			***
29	2,2,4-Trimethylpentane	2.0			
30	Trichloroethene	0.6		2.5	0.7
31	Ethyl acrylate	4.5			
32	1,2-Dichloropropane	0.8			
33	Methyl methacrylate	2.0			
34	Bromodichloromethane	0.7			1.0

# TABLE AII-4 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1996 RAINFALL SAMPLING EVENTS

Limit 7/17/96 Compound μg/L (ppb) 16:00 35 1,4-Dioxane 67.8 36 Epichlorohydrin 20.0	npling Dates 7/17/96 23:10    	7/19/96 9:30
35 1,4-Dioxane 67.8	23:10    	9:30
36 Epichlorohydrin 20.0		<b></b>
	<sup>*</sup>	
37 trans-1,3-Dichloropropene 0.9		
38 4-Methyl-2-pentanone 3.5		
39 Toluene 1.8 13.4		
40 cis-1,3-Dichloropropene 1.7		
41 1,1,2-Trichloroethane 2.5		<b></b> '
42 Tetrachloroethene 1.6 1.8	4.4	1.7
43 2-Hexanone 4.6		
44 Dibromochloromethane 1.8		
45 1,2-Dibromoethane 2.0		
46 Chlorobenzene 0.6	·	***
47 Ethylbenzene 0.8		-
48 m- and/or p-Xylenes 1.4 1.6		1.8
49 o-Xylene 1.0 1.1		1.3
50 Styrene 1.5		
51 Bromoform 4.0 -	****	
52 Cumene 2.0		
53 1,1,2,2-Tetrachloroethane 3.9	<b></b>	
54 Benzyl chloride 2.4		, <b></b>
55 1,2-Dibromo-3-chloropropane 2.9		
	•	
Semi-Volatiles	. •	•
56 Phenol 0.7	-	
57 Bis(2-chloroethyl)ether 1.0	· · ·	
58 2-Chlorophenol 1.2		-
59 1,3-Dichlorobenzene 1.1		
60 1,4-Dichlorobenzene 1.1 1.9	1.6	
61 1,2-Dichlorobenzene 1.1		
62 Bis(2-chloroisopropyl)ether 1.0		÷-
63 2-Methylphenol 3.7		40° mb
64 Styrene oxide 4.9		
65 Acetophenone 1.4	· •••	
66 o-Toluidine 1.2		

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#### TABLE AII-4 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection		Sampling Dates	
	<ul> <li>A state of the sta</li></ul>	Limit	7/17/96	7/17/96	7/19/96
	Compound	µg/L (ppb)	16:00	23:10	9:30
67	Hexachloroethane	1.4		<u>, , , , , , , , , , , , , , , , , , , </u>	
68	N-Nitrose-di-n-propylamine	1.7	<i></i>		64.14
69	4-Methylphenol	3.5	7.2		
70	N,N-Dimethylaniline	1.2	1.2		67 <b>a</b>
71	Nitrobenzene	1.8			
72	Isophorone	1.8			
73	2-Nitrophenol	2.2			
74	2,4-Dimethylphenol	0.7			
75	Bis(2-chloroethoxy)methane	1.9			
76	2,4-Dichlorophenol	1.5			87 08
77	1,2,4-Trichlorobenzene	1.8			15 AL
78	Naphthalene	1.7	1.8		
79	4-Chloroaniline	6.0			
80	Hexachlorobutadiene	1.4			Spinets
81	N,N-Diethylaniline	1.4			
82	4-Chloro-3-methylphenol	1.3		·	
83	2-Methylnaphthalene	4.8			~-
84	Hexachlorocyclopentadiene	37.9			
85	2,4,6-Trichlorophenol	1.7	-		
86	2,4,5-Trichlorophenol	5.7			
87	1,1'-Biphenyl	1.7			-
88	2-Chloroapthalene	1.0			
89	2-Nitroaniline	6.7	***		-
90	Acenaphthylene	1.2			· · · · · · · · · · · · · · · · · · ·
91	Dimethyl phthalate	1.4			
92	2,6-Dinitrotoluene	1.8			<b></b>
93	3-Nitroaniline	5.0		<del>, -</del>	
94	Acenaphthene	1.0			
95	2,4-Dinitrotoluene	25.6			
96	Dibenzofuran	4.4	****		
97	4-Nitrophenol	8.7			
98	2,4-Dinitrotoluene	1.7	0 <b>-</b>		400 <del>60</del>
99	Fluorene	1.1			~
100	Diethyl phthalate	2.1			, <b></b>
101	4-Chirophenyl phenyl ether	1.0			
102	4-Nitroaniline	4.1			

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#### TABLE AII-4 (Continued)

		Detection		Sampling Dates	
		Limit	7/17/96	7/17/96	7/19/96
	Compound	µg/L (ppb)	16:00	23:10	9:30
103	4,6-Dinitro-2-methylphenol	27.4			
104	N-Nitrosodiphenylamine	1.0	-		
105	4-Bromophenyl phenyl ether	1.4			
106	Hexachlorobenzene	1.2			
107	Pentachlorophenol	17.5			
108	Pentachloronitrobenzene	3.9			
109	Phenanthrene	0.9	3.6		<del></del> '
110	Anthracene	0.8		· 88 M	
111	Carbazole	4.0	<b></b>	-	
112	4-Nitrobiphenyl	1.7			
113	Di-n-butyl phthalate	1.6	2.0		
114	Fluoranthene	1.0	4.5		· •••
115	Pyrene	2.4	6.8		
116	Butyl benzyl phthalate	7.9			
117	2-Acetylaminofluorene	2.7			
118	Benzo(a)anthracene	0.8	1.8	. <b></b>	
119	3,3'-Dimethoxybenzidine	14.6		÷	
120	3,3'-Dichlorobenzidine	6.4			
121	Chrysene	1.1	2.6		
122	Bis(2-ethylhexyl)phthalate	15.0			46.6
123	Di-n-octyl phthalate	5.6			
124	Benzo(b)fluoranthene	1.3			
125	Benzo(k)fluoranthene	1.4		·	
126	Benzo(a)pyrene	1.3			'
127	Indeno(1,2,3-cd)pyrene	1.2			<b>~~</b>
128	Dibenz(a,h)anthracene	0.8			
129	Benzo(ghi)perylene	1.1		·	
	-				κ.
	Pesticides and PCBs				
130	Trifluralin	0.05*			<u> </u>
131	alpha-BHC	0.02			
132	beta-BHC	0.03			
133	gamma-BHC	0.02		-	
134	delta-BHC	0.02		·	

#### TABLE AII-4 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection		Sampling Dates	
		Limit	7/17/96	7/17/96	7/19/96
	Compound	µg/L (ppb)	16:00	23:10	9:30
135	Heptachlor	0.02			
136	Aldrin	0.02			
137	Heptachlor epoxide	0.02			
138	gamma-Chlordane	0.05			-
139	alpha-Chlordane	0.05			
40	alpha-Endosulfan	0.05			
41	Dieldrin	0.05			
42	4,4'-DDE	0.05			
43	Endrin	0.10			. · · · · · · · · · · · · · · · · · · ·
44	Chlorobenzilate	0.03*			fig-en
45	beta-Endosulfan	0.05	**		- 19 m
46	4,4'-DDD	0.05	0.06		100 CD.
47	Endosulfan sulfate	0.10	<b>-</b>		
48	4, <b>4'-</b> DDT	0.15	0.12		
49	Methoxychlor	0.15			
50	Captan	0.05*			-gar stat
51	Endrin ketone	0.10		·	Nair mar
52	Endrin aldehyde	0.10		, <del></del>	ette star
53	Toxaphene	0.50			
54	PCB-1016	0.20		-	
55	PCB-1221	0.20			- <b>1</b> 00
56	PCB-1232	0.20			
57	PCB-1242	0.20		· ·	
58	PCB-1248	0.20	0.77	0.39	
59	PCB-1254	0.20	***	<b></b> `	··· <del></del>
60	PCB-1260	0.20	1.49	0.35	

-- Not found, below detection limit.

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\*Estimated instrument detection limit.

#### TABLE AII-5

		Detection	S	Sampling Dates	
		Limit	7/18/96	9/26/96	9/26/96
	Compound	µg/L (ppb)	12:35	10:15	20:15
	Volatiles		<u></u>	<u> </u>	
1	Chloromethane	1.3			<b>1</b> 1-14
2	Vinyl chloride	0.7		<b></b>	. <b></b>
3	Acetaldehyde	25.9			
4	Bromomethane	3.5	• <b>-</b>		
5	Chloroethane	1.7			· .
6	Propylene oxide	20.0	<b></b>		
7	Acrolein	15.0			a
-8	1,1-Dichloroethene	0.6			
9	Propionaldehyde	20.0			
10	Acetone	5.0		37.8	19.3
11	Carbon disulfide	1.0			
12	Iodomethane	5.0			
13	Acetonitrile	2.0			
14	Allyl chloride	2.0			
15	Methylene chloride	0.8			1.0
16	1,2-Dichloroethene (total)	0.8		. <b></b>	
17	Acrylonitrile	5.0			
18	Methyl tert butyl ether	4.2	igi da s		
19	Hexane	2.0	~~		
20	1,1-Dichloroethane	0.6			-
21	Vinyl acetate	5.0	**		-
22	Chloroprene	2.0			
23	2-Butanone	5.5	-		
24	Chloroform	0.7			0.7
25	1,1,1-Trichloroethane	0.7			
26	Carbon tetrachloride	0.9		*-	
27	1,2-Dichloroethane	1.6			
28	Benzene	1.0			<b></b>
29	2,2,4-Trimethylpentane	2.0			
30	Trichloroethene	0.6			
31	Ethyl acrylate	4.5			
32	1,2-Dichloropropane	0.8			
33	Methyl methacrylate	2.0			
34	Bromodichloromethane	0.7			

#### TABLE AII-5 (Continued)

		Detection	S	ampling Dates	
		Limit	7/18/96	9/26/96	9/26/96
	Compound	µg/L (ppb)	12:35	10:15	20:15
والالبان ويوادونين				<u></u>	
35	1,4-Dioxane	67.8			
36	Epichlorohydrin	20.0			
37	trans-1,3-Dichloropropene	0.9			
38	4-Methyl-2-pentanone	3.5			405 GM
39	Toluene	1.8			
40	cis-1,3-Dichloropropene	1.7			
41	1,1,2-Trichloroethane	2.5			·
42	Tetrachloroethene	1.6	<b></b>		. <b></b>
43	2-Hexanone	4.6			
44	Dibromochloromethane	1.8			
45	1,2-Dibromoethane	2.0			
46	Chlorobenzene	0.6			
47	Ethylbenzene	0.8			
48	m- and/or p-Xylenes	1.4			
49	o-Xylene	1.0	<b>a</b>		
50	Styrene	1.5			
51	Bromoform	4.0	<b>2</b> -1		
52	Cumene	2.0			WF-main
53	1,1,2,2-Tetrachloroethane	3.9	-		2 <b>-</b>
54	Benzyl chloride	2.4	••• <sup>5</sup>		***
55	1,2-Dibromo-3-chloropropane	2.9			20 M
				•	
	Semi-Volatiles				
56	Phenol	0.7	8+44	-	
57	Bis(2-chloroethyl)ether	1.0	6+ <del>6</del> 1		·
58	2-Chlorophenol	1.2	-		<u>y</u> m
59	1,3-Dichlorobenzene	1.1			<b></b>
60	1,4-Dichlorobenzene	1.1			
61	1,2-Dichlorobenzene	1.1			· · · · · · · · · · · · · · · · · · ·
62	Bis(2-chloroisopropyl)ether	1.0	**		74 <b>6</b>
63	2-Methylphenol	3.7			· · ·
64		4.9			
65	Acetophenone	1.4			-
66	o-Toluidine	1.2			

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# TABLE AII-5 (Continued)

Limit         7/18/96         9/26/96         9/26/96           Compound         µg/L (ppb)         12:35         10:15         20:15           67         Hexachloroethane         1.4         -         -         -           68         N-Nitrose-di-n-propylamine         1.7         -         -         -           69         4-Methylphenol         3.5         -         -         -           70         N-Dimethylaniline         1.2         -         -         -           71         Nitrobenzene         1.8         -         -         -           72         Jvifrophenol         0.7         -         -         -           73         2-Vifrophenol         0.7         -         -         -           74         2,4-Dimethylphenol         0.7         -         -         -           74         2,4-Trichlorobenzene         1.8         -         -         -           74         2,4-Trichlorobenzene         1.8         -         -         -           74         -Chloroeniline         6.0         -         -         -           75         Ba(2,6-Trichlorobenzene         1.4         -			Detection	S	Sampling Dates	
67       Hexachloroethane       1.4            68       N-Nitrose-di-n-propylamine       1.7            69       4-Methylphenol       3.5            69       4-Methylphenol       3.5            69       1.8             70       N,N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            72       Shiftophenol       0.7            74       2,4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorophenol       1.5             71       1,2,4-Trichlorobenzene       1.8             76       2,4-Dinoroaniline       6.0              74       N,N-Diethylanklene       4.8			Limit	7/18/96	9/26/96	9/26/96
68       N-Nitrose-di-n-propylamine       1.7            69       4-Methylphenol       3.5            70       N,N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5            77       1.2.4-Trichlorobenzene       1.8            78       Naphthalene       1.7             78       Naphthalene       1.4              80       Hexachlorophenol       1.3		Compound	µg/L (ppb)	12:35	10:15	20:15
69       4-Methylphenol       3.5            70       N,N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            71       Sophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dirnethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            77       1.2.4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorocyclopentadiene       1.4            81       N,N-Diethylaniline       1.4            82       -Chloroaphthalene       4.8            82       2.4,6-Trichlorophenol       5.7            82						
70       N,N-Dimethylanilline       1.2            71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2,4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorobenzene       1.8            77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7            78       Vaphthalene       1.4            79       4-Chloroa-methylphenol       1.3            80       Hexachlorocyclopentadiene       37.9            81       Hexachlorocyclopentadiene       37.9            82       2,4,6-Trichlorophenol       5.7			1.7			
71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2,4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N.N-Diethylphinol       1.3            82       -Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            82       2,4,6-Trichlorophenol       5.7 <t< td=""><td></td><td></td><td>3.5</td><td>-</td><td>-</td><td></td></t<>			3.5	-	-	
72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5            77       1.2.4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N.N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2.4,6-Trichlorophenol       5.7			1.2			
73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorobenzene       1.8            77       1.2.4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N.N-Diethylaniline       1.3            82       2-Methylanaphthalene       4.8            83       2-Methylanaphthalene       37.9            84       Hexachlorocyclopentadiene       37.7            82       2.4.6-Trichlorophenol       5.7             82       2.4.6-Trichlorophenol       5.7			1.8			
74       2,4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N.N-Diethylaniline       1.4            82       4-Chloroa-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       5.7             85       2,4,6-Trichlorophenol       5.7             86       2,4,5-Trichlorophenol       1.7		•				
75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       5.7             86       2,4,5-Trichlorophenol       5.7             82       2-Chloroapthalene       1.0              91       Dimethyl phthalate       <						· ·
76       2,4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            81       N,N-Diethylaniline       1.3            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       5.7             86       2,4,5-Trichlorophenol       5.7             82       2-Chloroapthalene       1.0              91       Dimethyl phthalate       1.4 </td <td></td> <td></td> <td>0.7</td> <td></td> <td></td> <td></td>			0.7			
77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       5.7            85       2,4,5-Trichlorophenol       5.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            82       2-Chloroapthalene       1.0            90       Acenaphthylene       1.2		Bis(2-chloroethoxy)methane	1.9			
78       Naphthalene       1.7            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       5.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            90       Acenaphthylene       1.2             91       Dimethyl phthalate       1.4 <td< td=""><td></td><td></td><td>1.5</td><td></td><td><b></b></td><td></td></td<>			1.5		<b></b>	
79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       1.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'Biphenyl       1.7            87       1,1'Biphenyl       1.7            88       2-Chloroapthalene       1.0            99       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       1.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7             90       Acenaphthylene       1.2              91       Dimethyl phthalate       1.4              92       2,6-Dinitrotoluene <td< td=""><td></td><td>•</td><td>1.7</td><td></td><td></td><td></td></td<>		•	1.7			
81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       1.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            87       1,1'-Biphenyl       1.7            87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            99       Acenaphthylene       1.2             91       Dimethyl phthalate       1.4              91       Dimethyl phthene       1.0              92       Acenaphthene       1.0			6.0			
82       4-Chloro-3-methylphenol       1.3           83       2-Methylnaphthalene       4.8           84       Hexachlorocyclopentadiene       37.9           85       2,4,6-Trichlorophenol       1.7           86       2,4,5-Trichlorophenol       5.7           87       1,1'-Biphenyl       1.7           88       2-Chloroapthalene       1.0           89       2-Nitroaniline       6.7           90       Acenaphthylene       1.2           91       Dimethyl phthalate       1.4           92       2,6-Dinitrotoluene       1.8           93       3-Nitroaniline       5.0            94       Acenaphthene       1.0             95       2,4-Dinitrotoluene       25.6             97       4-Nitrophenol       8.7			1.4			<b></b>
83       2-Methylnaphthalene       4.8            84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       1.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0             95       2,4-Dinitrotoluene       8.7			1.4			
84       Hexachlorocyclopentadiene       37.9            85       2,4,6-Trichlorophenol       1.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            87       2,-Chloroapthalene       1.0            88       2-Chloroapthalene       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0             95       2,4-Dinitrotoluene       25.6             96       Dibenzofuran       4.4              98       2,4-Dinitrotoluene       1.7	82	4-Chloro-3-methylphenol	1.3			
85       2,4,6-Trichlorophenol       1.7            86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene<	83		4.8			-
86       2,4,5-Trichlorophenol       5.7            87       1,1'-Biphenyi       1.7            88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            90       Diethyl phthalate <td>84</td> <td>Hexachlorocyclopentadiene</td> <td>37.9</td> <td></td> <td></td> <td></td>	84	Hexachlorocyclopentadiene	37.9			
87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            95       2,4-Dinitrotoluene       8.7            96       Dibenzofuran       4.4             97       4-Nitrophenol       8.7             98       2,4-Dinitrotoluene       1.7             99       Fluorene       1.1	85	2,4,6-Trichlorophenol	1.7			
88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	86	2,4,5-Trichlorophenol	5.7			
89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2            91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            98       2,4-Dinitrotoluene       1.1            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	87	1,1'-Biphenyl	1.7			
90       Acenaphthylene       1.2 </td <td></td> <td>2-Chloroapthalene</td> <td>1.0</td> <td></td> <td></td> <td></td>		2-Chloroapthalene	1.0			
91       Dimethyl phthalate       1.4            92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0		2-Nitroaniline	6.7		'	
92       2,6-Dinitrotoluene       1.8            93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	90	Acenaphthylene	1.2			·
93       3-Nitroaniline       5.0            94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	91		1.4			
94       Acenaphthene       1.0            95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	92	2,6-Dinitrotoluene	1.8			
95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	93	3-Nitroaniline	5.0			<b></b>
96       Dibenzofuran       4.4            97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	94	Acenaphthene	1.0			
97       4-Nitrophenol       8.7            98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	95	2,4-Dinitrotoluene	25.6			
98       2,4-Dinitrotoluene       1.7            99       Fluorene       1.1            100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	96	Dibenzofuran	4.4		<b></b>	<b></b> .
99         Fluorene         1.1              100         Diethyl phthalate         2.1              101         4-Chlrophenyl phenyl ether         1.0	97	4-Nitrophenol	8.7			
100         Diethyl phthalate         2.1               101         4-Chlrophenyl phenyl ether         1.0	98	2,4-Dinitrotoluene	1.7			-
101 4-Chirophenyl phenyl ether 1.0	99	Fluorene	1.1			
101 4-Chirophenyl ether 1.0	100	Diethyl phthalate	2.1			
	101	4-Chirophenyl phenyl ether	1.0			
	102		4.1	· ·		

## TABLE AII-5 (Continued)

		Detection	S	Sampling Dates	
		Limit	7/18/96	9/26/96	9/26/96
	Compound	µg/L (ppb)	12:35	10:15	20:15
103	4,6-Dinitro-2-methylphenol	27.4			
104	N-Nitrosodiphenylamine	1.0			12 M
105	4-Bromophenyl phenyl ether	1.4			
106	Hexachlorobenzene	1.2			
107	Pentachlorophenol	17.5		<b>*-</b>	
108	Pentachloronitrobenzene	3.9			<b>*</b> =
109	Phenanthrene	0.9			1.2
110	Anthracene	0.8			
111	Carbazole	4.0			-
112	4-Nitrobiphenyl	1.7			**
113	Di-n-butyl phthalate	1.6			
114	Fluoranthene	1.0		1.1	3.4
115	Pyrene	2.4			2.6
116	Butyl benzyl phthalate	7.9			
117	2-Acetylaminofluorene	2.7			9×4
118	Benzo(a)anthracene	0.8			
119	3,3'-Dimethoxybenzidine	14.6			***
120	3,3'-Dichlorobenzidine	6.4	*=	. ==	
121	Chrysene	1.1			2.2
122	Bis(2-ethylhexyl)phthalate	15.0			nasile .
123	Di-n-octyl phthalate	5.6			
124	Benzo(b)fluoranthene	1.3			
125	Benzo(k)fluoranthene	1.4		<u></u>	
126	Benzo(a)pyrene	1.3			
127	Indeno(1,2,3-cd)pyrene	1.2			
128	Dibenz(a,h)anthracene	0.8	**		
129	Benzo(ghi)perylene	1.1			•••• ,
	Pesticides and PCBs				
130	Trifluralin	0.05*			_
130	alpha-BHC	0.05			entec
131	beta-BHC	0.02			
			₽=		-911 62
133 134	gamma-BHC delta-BHC	0.02 0.02			40 m
134		0.02			<b>201</b> 60

#### TABLE AII-5 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	\$	Sampling Dates	
		Limit	7/18/96	9/26/96	9/26/96
	Compound	µg/L (ppb)	12:35	10:15	20:15
135	Heptachlor	0.02	••		
136	Aldrin	0.02			
137	Heptachlor epoxide	0.02		0.05	0.06
138	gamma-Chlordane	0.05			
139	alpha-Chlordane	0.05		•	
140	alpha-Endosulfan	0.05			<b></b>
141	Dieldrin	0.05			· ·
142	4,4'-DDE	0.05		0.11	
143	Endrin	0.10			
144	Chlorobenzilate	0.03*			
145	beta-Endosulfan	0.05			** .
146	4,4'-DDD	0.05		· ••	
147	Endosulfan sulfate	0.10			
148	4,4'-DDT	0.15			
149	Methoxychlor	0.15			
150	Captan	0.05*			
151	Endrin ketone	0.10			
152	Endrin aldehyde	0.10		·	
153	Toxaphene	0.50			
154	PCB-1016	0.20			
155	PCB-1221	0.20			
156	PCB-1232	0.20			•••
157	PCB-1242	0.20		•	
158	PCB-1248	0.20		-	<b></b> '
159	PCB-1254	0.20	**	1. and 1.	
160	PCB-1260	0.20			

-- Not found, below detection limit.

\*Estimated instrument detection limit.

#### TABLE AII-6

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection		Sampling Dates			
		Limit	7/17/96	7/18/96	9/26/96	9/27/96	
	Compound	µg/L (ppb)	15:40	1:20			
	Volatiles		<u> </u>		- I		
1	Chloromethane	1.3			warra.		
2	Vinyl chloride	0.7			₩		
3	Acetaldehyde	25.9					
4	Bromomethane	3.5		·	the for		
5	Chloroethane	1.7			шт-(р.	<b></b> .	
6	Propylene oxide	20.0			<b></b>		
7	Acrolein	15.0					
8	1,1-Dichloroethene	0.6			∰a dit -		
9	Propionaldehyde	20.0		·	<b>4</b> 2-54		
10	Acetone	5.0	41.8	52.4	37.3	134.9	
11	Carbon disulfide	1.0	<b>*-</b>				
12	lodomethane	5.0			- 		
13	Acetonitrile	2.0					
14	Allyl chloride	2.0	-		<b>=</b> +3	••	
15	Methylene chloride	0.8		0.9	<b>Ba</b> 45	42.3	
16	1,2-Dichloroethene (total)	0.8	16.4	10.3	1.0	3.5	
17	Acrylonitrile	5.0			-	<b>6</b> -a	
18	Methyl tert butyl ether	4.2			See 12	-	
19	Hexane	2.0					
20	1,1-Dichloroethane	0.6			10-10-		
21	Vinyl acetate	5.0			<b>68</b> -167	liter	
22	Chloroprene	2.0					
23	2-Butanone	5.5	5.6	**	53-40 ·		
24	Chloroform	0.7		0.8	34 of	1.1	
25	1,1,1-Trichloroethane	0.7		***			
26	Carbon tetrachloride	0.9	<b>6</b> / <b>7</b>				
27	1,2-Dichloroethane	1.6			-		
28	Benzene	1.0	<b></b>		~-		
29	2,2,4-Trimethylpentane	2.0					
30	Trichloroethene	0.6	14.0	16.0	32-40	0.9	
31	Ethyl acrylate	4.5		·	89-40 -	·	
32	1,2-Dichloropropane	0.8			∰/#i		
33	Methyl methacrylate	2.0			80 AL		
34	Bromodichloromethane	0.7			1814D		

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#### TABLE AII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection		Sampling Dates			
		Limit	7/17/96	7/18/96	9/26/96	9/27/96	
	Compound	µg/L (ppb)	15:40	1:20		•	
35	1,4-Dioxane	67.8		· · · · ·			
36	Epichlorohydrin	20.0					
37	trans-1,3-Dichloropropene	0.9					
38	4-Methyl-2-pentanone	3.5	<b></b>				
39	Toluene	1.8				-	
40	cis-1,3-Dichloropropene	1.7			=-		
41	1,1,2-Trichloroethane	2.5			·	***** *·	
42	Tetrachloroethene	1.6	30.6	17.3	2.0	9.0	
43	2-Hexanone	4.6					
44	Dibromochloromethane	1.8					
45	1,2-Dibromoethane	2.0					
46	Chlorobenzene	0.6					
47	Ethylbenzene	0.8				<b>a</b> -m	
48	m- and/or p-Xylenes	1.4					
49	o-Xylene	1.0	1.2				
50	Styrene	1.5					
51	Bromoform	4.0				**	
52	Cumene	2.0		•		-	
53	1,1,2,2-Tetrachloroethane	3.9					
54	Benzyl chloride	2.4			·	· · · ·	
55	1,2-Dibromo-3-chloropropane	2.9					
				×			
					•		
	Semi-Volatiles						
56	Phenol	0.7					
57	Bis(2-chloroethyl)ether	1.0					
58	2-Chlorophenol	1.2		-	dia tan	**	
59	1,3-Dichlorobenzene	1.1				40-m	
60	1,4-Dichlorobenzene	1.1	° <del></del>				
61	1,2-Dichlorobenzene	1.1					
62	Bis(2-chloroisopropyl)ether	1.0			*-	8744	
63	2-Methylphenol	3.7					
64	Styrene oxide	4.9			-	-	
65	Acetophenone	1.4					
66	o-Toluidine	1.2					

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# TABLE AII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1996 RAINFALL SAMPLING EVENTS

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Limit         7/17/96         7/18/96         9/26/96         9/27/96           Compound         µg/L (ppb)         15:40         1:20         1:20           67         Hexachloroethane         1.4              68         N-Nitrose-di-n-propylamine         1.7              69         4-Methylphenol         3.5              70         N.N-Dimethylaniline         1.2              71         Nitrobenzene         1.8              73         2-Nitrophenol         0.7              74         2.4-Dimethylphenol         0.7              75         Bis(2-chloroethoxy)methane         1.9              75         A-Chlorobenzene         1.8               74         2.4-Dirokuphenol         1.3               76         2.4-Dirokuphenol         1.3			Detection	on Sampling Dat			ites		
67       Hexachloroethane       1.4            68       N-Nitrose-din-propylamine       1.7            69       4-Methylphenol       3.5            70       N.Dimethylaniline       1.2            71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       0.7            74       2,4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorophenol       1.5             76       2,4-Chlorobatzene       1.8              77       1,2,4-Trichlorobenzene       1.8			Limit	7/17/96			9/27/96		
68       N-Nitrose-di-n-propylamine       1.7            69       4-Methylphenol       3.5            70       N,N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dinethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N,N-Diethylaniline       1.4              82       4-Methoro2-methylphenol       1.7 <td< td=""><td></td><td>Compound</td><td>µg/L (ppb)</td><td>15:40</td><td>1:20</td><td></td><td>• •</td></td<>		Compound	µg/L (ppb)	15:40	1:20		• •		
68       N-Nitrose-di-n-propylamine       1.7            69       4-Methylphenol       3.5            70       N,N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dinethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N,N-Diethylaniline       1.4              82       4-Methoro2-methylphenol       1.7 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>and a summer of the sum of the sum</td><td>Same</td></td<>						and a summer of the sum	Same		
69       4-Methylphenol       3.5            70       N.N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            71       Nitrobenzene       1.8            73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5             76       2.4-Dichlorophenol       1.5             77       1.2.4-Trichlorobenzene       1.8             78       Naphthalene       1.4              78       A-Chlorobutadiene       1.4              81       N.N-Diethylaniline       1.3 <t< td=""><td>67</td><td>Hexachloroethane</td><td>1.4</td><td></td><td></td><td>589-63F</td><td></td></t<>	67	Hexachloroethane	1.4			589-63F			
70       N.N-Dimethylaniline       1.2            71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorobenzene       1.8            77       1.2.4-Trichlorobenzene       1.8            79       4-Chloroalline       6.0            79       4-Chlorobutadiene       1.4            80       Hexachlorobutadiene       37.9            81       N,N-Diethylaniline       3.7            82       4-Chloro-3-methylphenol       1.7            84       Hexachlorocyclopentadiene       37.9	68	N-Nitrose-di-n-propylamine	1.7			-			
71       Nitrobenzene       1.8            72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5            77       1.2.4-Trichlorobenzene       1.8            79       4-Chloroaniline       6.0            80       Hexachlorobutadiene       1.4            81       N.N-Diethylaniline       1.4            82       Methylaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             82       Achtylnaphthalene       1.0              82       2.4.6-Trichlorophenol       5.7	69	4-Methylphenol	3.5			<b>1</b> 000			
72       Isophorone       1.8            73       2-Nitrophenol       2.2            74       2.4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2.4-Dichlorophenol       1.5            77       1.2.4-Trichlorobenzene       1.8            78       Naphthalene       1.7       -       14.3           79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N.N-Diethylaniline       1.4             82       4-Chloro-3-methylphenol       1.3             82       4-Chlorophenol       1.7             84       Hexachlorocyclopentadiene       37.9            82       2.4,6-Trichloroph	70	N,N-Dimethylaniline	1.2	400.000					
73       2-Nitrophenol       2.2            74       2,4-Dimethylphenol       0.7            75       Bis(2-chloroethoxy)methane       1.9            76       2,4-Dichlorobenzene       1.8            77       1,2,4-Trichlorobenzene       1.8            79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N.N-Diethylaniline       1.4             81       N.N-Diethylaniline       1.4             82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       3.7.9             84       Hexachlorocyclopentadiene       37.9             84       Hexachlorocyclopentadiene       1.7	71	Nitrobenzene	1.8			<b>.</b>			
74       2,4-Dimethylphenol       0.7             75       Bis(2-chloroethoxy)methane       1.9             76       2,4-Dichlorophenol       1.5             77       1,2,4-Trichlorobenzene       1.8             78       Naphthalene       1.7        14.3           78       Naphthalene       6.0             80       Hexachlorobutadiene       1.4             81       N.N-Diethylaniline       1.4             82       4-Chloro-3-methylphenol       1.3             83       2-Methylanghthalene       4.8        6.9            84       Hexachlorocyclopentadiene       37.9	72	Isophorone	1.8						
75       Bis(2-chloropethoxy)methane       1.9             76       2,4-Dichlorophenol       1.5             77       1,2,4-Trichlorobenzene       1.8             79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N,N-Diethylanlline       1.4             82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       5.7              86       2-Chloroapthalene       1.0              90       Acenaphthylene       1.2        2.1        1.5         91	73		2.2				•		
76       2,4-Dichlorophenol       1.5            77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7        14.3           79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N.N-Diethylaniline       1.4             82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       4.8        6.9           83       2-Methylnaphthalene       37.9             84       Hexachlorocyclopentadiene       37.7 </td <td>74</td> <td>2,4-Dimethylphenol</td> <td>0.7</td> <td><b>6</b> ca</td> <td></td> <td></td> <td></td>	74	2,4-Dimethylphenol	0.7	<b>6</b> ca					
77       1,2,4-Trichlorobenzene       1.8            78       Naphthalene       1.7        14,3           79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N,N-Diethylaniline       1.4             82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       1.7             85       2,4,6-Trichlorophenol       5.7              86       2,4,5-Trichlorophenol       5.7                        <	75	Bis(2-chloroethoxy)methane	1.9						
78       Naphthalene       1.7        14.3           79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N,N-Diethylaniline       1.4             81       N,N-Diethylaniline       1.3             82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       4.8        6.9           83       2-Methylnaphthalene       37.9             84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       5.7              86       2,4,5-Trichlorophenol       5.7	76	2,4-Dichlorophenol	1.5			-			
79       4-Chloroaniline       6.0             80       Hexachlorobutadiene       1.4             81       N,N-Diethylaniline       1.4             82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       1.7             86       2,4,5-Trichlorophenol       5.7             87       1,1'-Biphenyl       1.7              88       2-Chloroaniline       6.7              90       Acenaphthylene       1.2        2.1        1.5         91	77	1,2,4-Trichlorobenzene	1.8	-		<b></b>			
80       Hexachlorobutadiene       1.4            81       N,N-Diethylaniline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       1.7             85       2,4,5-Trichlorophenol       5.7             86       2.4,5-Trichlorophenol       6.7             87       1,1'-Biphenyl       1.7             88       2-Chloroapthalene       1.0              90       Acenaphtylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.0        1.	78	Naphthalene	1.7		14.3				
81       N,N-Diethylanlline       1.4            82       4-Chloro-3-methylphenol       1.3            83       2-Methylnaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       1.7             86       2,4,5-Trichlorophenol       5.7             87       1,1'-Biphenyl       1.7             87       2,4,5-Trichlorophenol       5.7             88       2-Chloroapthalene       1.0              90       Acenaphtylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       5.0	79	4-Chloroaniline	6.0	No. 410			'		
82       4-Chloro-3-methylphenol       1.3             83       2-Methylnaphthalene       4.8 $6.9$ 84       Hexachlorocyclopentadiene $37.9$ 85       2,4,6-Trichlorophenol $1.7$ 86       2,4,5-Trichlorophenol $5.7$ 87       1,1'-Biphenyl $1.7$ 87       1,1'-Biphenyl $1.7$ 88       2-Chloroapthalene $1.0$ 89       2-Nitroaniline $6.7$ 90       Acenaphthylene $1.2$ $2.1$ $1.5$ 91       Dimethyl phthalate $1.4$ 92       2,6-Dinitrotoluene $5.0$ <td>80</td> <td>Hexachlorobutadiene</td> <td>1.4</td> <td></td> <td></td> <td>and the second se</td> <td></td>	80	Hexachlorobutadiene	1.4			and the second se			
83       2-Methylnaphthalene       4.8        6.9           84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       1.7             86       2,4,5-Trichlorophenol       5.7             87       1,1'-Biphenyl       1.7             87       1,1'-Biphenyl       1.7             88       2-Chloroapthalene       1.0             89       2-Nitroaniline       6.7             90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8              93       3-Nitroaniline       5.0              95       2,4-Dinitrotoluene <td>81</td> <td>N,N-Diethylaniline</td> <td>1.4</td> <td></td> <td></td> <td></td> <td></td>	81	N,N-Diethylaniline	1.4						
84       Hexachlorocyclopentadiene       37.9             85       2,4,6-Trichlorophenol       1.7             86       2,4,5-Trichlorophenol       5.7             87       1,1'-Biphenyl       1.7             87       1,1'-Biphenyl       1.7             88       2-Chloroapthalene       1.0             90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8              93       3-Nitroaniline       5.0                                <	82	4-Chloro-3-methylphenol	1.3						
85       2,4,6-Trichlorophenol       1.7             86       2,4,5-Trichlorophenol       5.7             87       1,1'-Biphenyl       1.7             87       1,1'-Biphenyl       1.7             88       2-Chloroapthalene       1.0             90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8             93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9            95       2,4-Dinitrotoluene       25.6              96       Dibenzofuran       4.4              98       2,4-Dinitrotoluene </td <td>83</td> <td>2-Methylnaphthalene</td> <td>4.8</td> <td><b>e</b> • •</td> <td>6.9</td> <td></td> <td>-</td>	83	2-Methylnaphthalene	4.8	<b>e</b> • •	6.9		-		
86       2,4,5-Trichlorophenol       5.7             87       1,1'-Biphenyl       1.7             88       2-Chloroapthalene       1.0             89       2-Nitroaniline       6.7             90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8             92       2,6-Dinitrotoluene       1.0        1.9           93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9            95       2,4-Dinitrotoluene       25.6              95       2,4-Dinitrotoluene       1.7              98       2,4-Dinitrotolu	84	Hexachlorocyclopentadiene	37.9		<del></del> .	<b>.</b>	·		
87       1,1'-Biphenyl       1.7            88       2-Chloroapthalene       1.0            89       2-Nitroaniline       6.7            90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8             93       3-Nitroaniline       5.0             93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9           94       Acenaphthene       1.0        1.9           95       2,4-Dinitrotoluene       25.6             97       4-Nitrophenol       8.7             98       2,4-Dinitrotoluene       1.7 <td>85</td> <td>2,4,6-Trichlorophenol</td> <td>1.7</td> <td></td> <td></td> <td></td> <td><b></b></td>	85	2,4,6-Trichlorophenol	1.7				<b></b>		
88       2-Chloroapthalene       1.0             89       2-Nitroaniline       6.7             90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8             93       3-Nitroaniline       5.0             93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9           94       Acenaphthene       25.6             95       2,4-Dinitrotoluene       8.7             97       4-Nitrophenol       8.7             98       2,4-Dinitrotoluene       1.7             99       Fluorene       1.1        2.3      <	<b>8</b> 6	2,4,5-Trichlorophenol	5.7			-			
89       2-Nitroaniline       6.7             90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8             93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9           94       Acenaphthene       25.6             95       2,4-Dinitrotoluene       25.6             96       Dibenzofuran       4.4              97       4-Nitrophenol       8.7              98       2,4-Dinitrotoluene       1.7              99       Fluorene       1.1        2.3        1.3         100       Diethyl phthalate       2.1	87	1,1'-Biphenyl	1.7			11. 477	-		
90       Acenaphthylene       1.2        2.1        1.5         91       Dimethyl phthalate       1.4             92       2,6-Dinitrotoluene       1.8             93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9           94       Acenaphthene       25.6             95       2,4-Dinitrotoluene       25.6             96       Dibenzofuran       4.4             97       4-Nitrophenol       8.7             98       2,4-Dinitrotoluene       1.7              98       2,4-Dinitrotoluene       1.7              99       Fluorene       1.1        2.3        1.3         100       Diethyl phthalate       2.1 <t< td=""><td>88</td><td>2-Chloroapthalene</td><td>1.0</td><td></td><td></td><td></td><td></td></t<>	88	2-Chloroapthalene	1.0						
91       Dimethyl phthalate       1.4                    92       2,6-Dinitrotoluene       1.8             93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9          94       Acenaphthene       1.0        1.9          95       2,4-Dinitrotoluene       25.6           96       Dibenzofuran       4.4             97       4-Nitrophenol       8.7          97       4-Nitrophenol       8.7          97       9       Fluorene       1.7          9       9       9       9       1.1        2.3        1.3       1.3       100       Diethyl phthalate       2.1           1.4	89	2-Nitroaniline	6.7			•••	· ·		
92       2,6-Dinitrotoluene       1.8                        93       3-Nitroaniline       5.0             94       Acenaphthene       1.0        1.9          94       Acenaphthene       25.6             95       2,4-Dinitrotoluene       25.6            96       Dibenzofuran       4.4                  97       4-Nitrophenol       8.7           99       9       74.0        1.7           99       9       9       71.0        1.3       1.3       1.0       1.3       1.3       1.3       1.0       1.0            1.1        1.0	90	Acenaphthylene	1.2		2.1		1.5		
93       3-Nitroaniline       5.0 </td <td>91</td> <td>Dimethyl phthalate</td> <td></td> <td></td> <td></td> <td></td> <td></td>	91	Dimethyl phthalate							
94       Acenaphthene       1.0        1.9           95       2,4-Dinitrotoluene       25.6             96       Dibenzofuran       4.4             97       4-Nitrophenol       8.7             98       2,4-Dinitrotoluene       1.7             98       2,4-Dinitrotoluene       1.7             99       Fluorene       1.1        2.3        1.3         100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	92	2,6-Dinitrotoluene	1.8						
95       2,4-Dinitrotoluene       25.6  1.3       1.0       1.0	93	3-Nitroaniline	5.0						
96       Dibenzofuran       4.4             97       4-Nitrophenol       8.7             98       2,4-Dinitrotoluene       1.7             99       Fluorene       1.1        2.3        1.3         100       Diethyl phthalate       2.1            101       4-Chlrophenyl phenyl ether       1.0	94	Acenaphthene	1.0		1.9				
97       4-Nitrophenol       8.7  1.3       100       Diethyl phthalate       2.1          1.3       100       10            1.3       100       1	95	2,4-Dinitrotoluene	25.6			-			
98       2,4-Dinitrotoluene       1.7             99       Fluorene       1.1        2.3        1.3         100       Diethyl phthalate       2.1             101       4-Chlrophenyl phenyl ether       1.0	96	Dibenzofuran	4.4						
99       Fluorene       1.1        2.3        1.3         100       Diethyl phthalate       2.1             101       4-Chlrophenyl phenyl ether       1.0	97	4-Nitrophenol	8.7						
100         Diethyl phthalate         2.1 <td>98</td> <td>2,4-Dinitrotoluene</td> <td>1.7</td> <td></td> <td></td> <td></td> <td>·</td>	98	2,4-Dinitrotoluene	1.7				·		
101 4-Chirophenyl phenyl ether 1.0	99	Fluorene	1.1		2.3		1.3		
101 4-Chirophenyl phenyl ether 1.0	100	Diethyl phthalate	2.1			-			
	101		1.0		~-	-			
	102	4-Nitroaniline	4.1						

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# TABLE AII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	Sampling Dates				
	Compound	Limit µg/L (ppb)	7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96	
103	4,6-Dinitro-2-methylphenol	27.4					
104	N-Nitrosodiphenylamine	1.0					
105	4-Bromophenyl phenyl ether	1.4	-		· · ·	-	
106	Hexachlorobenzene	1.2	54-52		·		
107	Pentachlorophenol	17.5					
108	Pentachloronitrobenzene	3.9	-			-	
109	Phenanthrene	0.9	2.8	7.0		3.5 ·	
110	Anthracene	0.8		-	1.7	1.1	
111	Carbazole	4.0					
112	4-Nitrobiphenyl	1.7			·	-	
113	Di-n-butyl phthalate	1.6	۰			<b>e</b>	
114	Fluoranthene	1.0	4.1	3.2		1.4	
115	Pyrene	2.4	4.5	4.7	·	2.5	
116	Butyl benzyl phthalate	7.9		-			
117	2-Acetylaminofluorene	2.7	-		· 		
118	Benzo(a)anthracene	0.8	1.4	1.3			
119	3,3'-Dimethoxybenzidine	14.6	-		<b></b>		
120	3,3'-Dichlorobenzidine	6.4					
121	Chrysene	1.1	2.2	1.7			
122	Bis(2-ethylhexyl)phthalate	15.0		-			
123	Di-n-octyl phthalate	5.6		-		-	
124	Benzo(b)fluoranthene	1.3					
125	Benzo(k)fluoranthene	1.4			•••	-	
126	Benzo(a)pyrene	1.3		-		'	
127	Indeno(1,2,3-cd)pyrene	1.2					
128	Dibenz(a,h)anthracene	0.8					
129	Benzo(ghi)perylene	1.1					
	Pesticides and PCBs						
130	Trifluralin	0.05*		•			
131	alpha-BHC	0.02					
132	beta-BHC	0.03			·		
133	gamma-BHC	0.02			-		
134	delta-BHC	0.02				•	

#### TABLE AII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	·	Samplin	g Dates	
		Limit	7/17/96	7/18/96	9/26/96	9/27/96
	Compound	μg/L (ppb)	15:40	1:20		
135	Heptachlor	0.02				
136	Aldrin	0.02				
137	Heptachlor epoxide	0.02			100-9(3	
138	gamma-Chlordane	0.05			**	
139	alpha-Chlordane	0.05			<b>**</b> **	
140	alpha-Endosulfan	0.05				
141	Dieldrin	0.05			<b>*</b> **	
142	4,4'-DDE	0.05	0.16	0.15	0.18	
143	Endrin	0.10				
144	Chlorobenzilate	0.03*		_ ==		
145	beta-Endosulfan	0.05				
146	4,4'-DDD	0.05	0.10	0.11	_ 0.08	
147	Endosulfan sulfate	0.10			Burn.	
148	4,4'-DDT	0.15	0.26	0.26	0.23	
149	Methoxychlor	0.50	0.32	0.25	0.17	
150	Captan	0.05*				
151	Endrin ketone	0.10				647-96
152	Endrin aldehyde	0.10		<b></b> ,		
153	Toxaphene	0.50	-			
154	PCB-1016	0.20	<b></b>			
155	PCB-1221	0.20			100 Mg.	
156	PCB-1232	0.20				
157	PCB-1242	0.20			• •	
158	PCB-1248	0.20			47.8	<u> </u>
159	PCB-1254	0.20				-
160	PCB-1260	0.20				

-- Not found, below detection limit.

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\*Estimated instrument detection limit.

#### TABLE AII-7

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## ORGANIC POLLUTANTS IN WASTEWATER FROM THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection			mpling Da		·
		Limit	35263	35263	7/19/96	9/26/96	9/26/96
	Compound	µg/L (ppb)	17:45	21:30	8:30	11:05	20:50
	Volatiles						
	· · · · · · · · · · · · · · · · · · ·						
1	Chloromethane	1.3					
2	Vinyl chloride	0.7					
3	Acetaldehyde	25.9					
4	Bromomethane	3.5					
5	Chloroethane	1.7		**			
6	Propylene oxide	20.0					***
7	Acrolein	15.0					
8	1,1-Dichloroethene	0.6				. ==	
9	Propionaldehyde	20.1					
10	Acetone	5.0			-	36.7	79.9
11	Carbon disulfide	1.0	·				
12	lodomethane	5.0				e,	
13	Acetonitrile	2.0					
14	Allyl chloride	2.0					
15	Methylene chloride	0.8		-			
16	1,2-Dichloroethene (total)	0.8	-		<b>.</b>		
17	Acrylonitrile	5.0			<b></b>		
18	Methyl tert butyl ether	4.2		Notes 1			
19	Hexane	2.0					
20	1,1-Dichloroethane	0.6					
21	Vinyl acetate	5.0	-		· • •		
22	Chloroprene	2.0					· ••• •
23	2-Butanone	5.5			-		دنه
24	Chloroform	0.7		0.9	2.7	0.8	1.4
25	1,1,1-Trichloroethane	0.7			**		
26	Carbon tetrachloride	0.9			-		-
27	1,2-Dichloroethane	1.6					
28	Benzene	1.0	<b>41</b> ***		3.0	1.8	1.6
20 29	2,2,4-Trimethylpentane	2.0					
29 30	Trichloroethene	0.6					
30	Ethyl acrylate	4.5					
		0.8					
32	1,2-Dichloropropane	2.0					
33	Methyl methacrylate	0.7					
34	Bromodichloromethane	0.7					

# TABLE AII-7 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) DURING 1996 RAINFALL SAMPLING EVENTS

5

		Detection	Sampling Dates				
	Compound	Limit µg/L (ppb)	7/17/96 17:45	7/17/96 21:30	7/19/96 8:30	9/26/96 11:05	9/26/96 20:50
35	1,4-Dioxane	67.8					
36	Epichlorohydrin	20.0					
37	trans-1,3-Dichloropropene	0.9				10 CP	••
38	4-Methyl-2-pentanone	3.5	****			<b>W</b> webs	<b>80 13</b>
39	Toluene	1.8		4.4		7.3	
40	cis-1,3-Dichloropropene	1.7				-	-
41	1,1,2-Trichloroethane	2.5				<b>B</b> (1.1.1)	
42	Tetrachloroethene	1.6		1.7			
43	2-Hexanone	4.6	<b>*</b> *	<b></b>		<b>8</b> 112	30 m
44	Dibromochloromethane	1.8				<b>B</b> indar	· ·
45	1,2-Dibromoethane	2.0				***	
46	Chlorobenzene	0.6				900 X00	
47	Ethylbenzene	0.8		13.0	2.1		0.9
48	m- and/or p-Xylenes	1.4		45.7	4.3		3.0
49	o-Xylene	1.0		40.7	3.5	-10 ×0	1.2
50	Styrene	1.5				*****	
51	Bromoform	4.0	-				
52	Cumene	2.0	lar-siz	29.1		485.000	**
53	1,1,2,2-Tetrachloroethane	3.9				€BL VID	**
54	Benzyl chloride	2.4		-	-		
55	1,2-Dibromo-3-chloropropane	2.9					- <b>48-ca</b>
	Semi-Volatiles						· ·
56	Phenol	0.7			52.1	43.6	**
57	Bis(2-chloroethyl)ether	1.0				<b>19</b> -40	•••
58	2-Chlorophenol	1.2					
59	1,3-Dichlorobenzene	1.1					Ger 3-
60	1,4-Dichlorobenzene	1.1				<b>.</b>	Sine radi
61	1,2-Dichlorobenzene	1.1					
62	Bis(2-chloroisopropyl)ether	1.0					
63	2-Methylphenol	3.7	· •••		53.0	<b>**</b> **	50
64	Styrene oxide	4.9			-	100 at	
65	Acetophenone	1.4		500 KW	100 00	<b>10</b> .24	

AII-41

## TABLE AII-7 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	Sampling Dates					
		Limit	7/17/96	7/17/96	7/19/96	<del>-9</del> /26/96	9/26/96	
	Compound	µg/L (ppb)	17:45	21:30	8:30	11:05	20:50	
66	o-Toluidine	1.2		~-	,=-			
67	Hexachloroethane	1.4						
68	N-Nitrose-di-n-propylamine	1.7						
69	4-Methylphenol	3.5			1,845*	34.2		
70	N,N-Dimethylaniline	1.2						
71	Nitrobenzene	1.8	-				<b></b> .	
72	Isophorone	1.8						
73	2-Nitrophenol	2.2						
74	2,4-Dimethylphenol	0.7			2.4			
75	Bis(2-chloroethoxy)methane	1.9		<b></b> .		**		
76	2,4-Dichlorophenol	1.5						
77	1,2,4-Trichlorobenzene	1.8						
78	Naphthalene	1.7		12.6	4.9	3.1	2.5	
79	4-Chloroaniline	6.0						
80	Hexachlorobutadiene	1.4						
81	N,N-Diethylaniline	1.4						
82	4-Chloro-3-methylphenol	1.3			<b></b> .			
83	2-Methylnaphthalene	4.8		97.7	5.0	-	<b></b>	
84	Hexachlorocyclopentadiene	37.9		Brank .			<b></b> , * .	
85	2,4,6-Trichlorophenol	1.7					4-4	
86	2,4,5-Trichlorophenol	5.7			**	<b></b> '		
87	1,1'-Biphenyl	1.7		18.1				
88	2-Chloroapthalene	1.0			-			
89	2-Nitroaniline	6.7					***	
90	Acenaphthylene	1.2			-			
91	Dimethyl phthalate	1.4						
92	2,6-Dinitrotoluene	1.8						
93	3-Nitroaniline	5.0	**	<b>1</b> 0 m				
94	Acenaphthene	1.0				***	-	
95	2,4-Dinitrotoluene	25.6						
96	Dibenzofuran	4.4		6.6				
97	4-Nitrophenol	8.7						
98	2,4-Dinitrotoluene	1.7						
99	Fluorene	1.1		7.9				
100	Diethyl phthalate	2.1				2.7		

#### TABLE AII-7 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) DURING 1996 RAINFALL SAMPLING EVENTS

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		Detection	Sampling Dates					
-	Compound	Limit µg/L (ppb)	7/17/96 17:45	7/17/96 21:30	7/19/96 8:30	9/26/96 11:05	9/26/96 20:50	
101	4-Chlrophenyl phenyl ether	1.0				integra		
102	4-Nitroaniline	4.1				190 (Se		
103	4,6-Dinitro-2-methylphenol	27.4						
104	N-Nitrosodiphenylamine	1.0				uji dar	-	
105	4-Bromophenyl phenyl ether	1.4			-	Notes		
106	Hexachlorobenzene	1.2				600 Her)	<b></b> ,	
107	Pentachlorophenol	17.5						
108	Pentachloronitrobenzene	3.9			20-10	18.00	·	
109	Phenanthrene	0.9	2.0	6.0	2.4	2.8	2.0	
110	Anthracene	0.8		1.0		64.40		
111	Carbazole	4.0			4.6	10 A		
112	4-Nitrobiphenyl	1.7						
113	Di-n-butyl phthalate	1.6				<b>64-3</b>		
114	Fluoranthene	1.0	2.3	2.8		2.6	1.4	
115	Pyrene	2.4		2.8		2.6	1 - <b></b>	
116	Butyl benzyl phthalate	7.9						
117	2-Acetylaminofluorene	2.7			<b></b> .	84F		
118	Benzo(a)anthracene	0.8		1.3		5.0 Hz		
119	3,3'-Dimethoxybenzidine	14.6				<b>40 cm</b>	:	
120	3,3'-Dichlorobenzidine	6.4				84		
121	Chrysene	1.1		1.5		419 min		
122	Bis(2-ethylhexyl)phthalate	15.0		66.7		10.4T	'	
123	Di-n-octyl phthalate	5.6				62.94	, mag	
124	Benzo(b)fluoranthene	1.3				wit-se		
125	Benzo(k)fluoranthene	1.4				-		
126	Benzo(a)pyrene	1.3				1042		
127	Indeno(1,2,3-cd)pyrene	1.2				50 m		
128	Dibenz(a,h)anthracene	0.8				***		
129	Benzo(ghi)perylene	1.1				67 ap		
	Pesticides and PCBs							
130	Trifluralin	0.05**						
131	alpha-BHC	0.02		<b></b>	~-	82 WS		

#### TABLE AII-7 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE 125TH STREET TARP DROP SHAFT STATION (CDS-13) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	Sampling Dates					
	Compound	Limit µg/Ľ (ppb)	7/17/96 17:45	7/17/96 21:30	7/19/96 8:30	9/26/96 11:05	9/26/96 20:50	
132	beta-BHC	0.03						
133	gamma-BHC	0.02						
134	delta-BHC	0.02		**				
135	Heptachlor	0.02		<b>4</b> -				
136	Aldrin	0.02						
137	Heptachlor epoxide	0.02						
138	gamma-Chlordane	0.05						
139	alpha-Chlordane	0.05					*=	
140	alpha-Endosulfan	0.05						
141	Dieldrin	0.05					4	
142	4,4'-DDE	0.05						
143	Endrin	0.10					-	
144	Chlorobenzilate	0.03**				-		
145	beta-Endosulfan	0.05						
146	4,4'-DDD	0.05						
147	Endosulfan sulfate	0.10						
148	4,4'-DDT	0.10						
149	Methoxychlor	0.15						
150	Captan	0.05**	, , <b></b>				· ·	
151	Endrin ketone	0.10						
152	Endrin aldehyde	0.10						
153	Toxaphene	0.50				·	-	
154	PCB-1016	0.20	0.75	1.09			<del></del> .	
155	PCB-1221	0.20						
156	PCB-1232	0.20				***		
157	PCB-1242	0.20						
158	PCB-1248	0.20						
159	PCB-1254	0.20						
160	PCB-1260	0.20			·			

-- Not found, below detection limit.

\*A dilution of 1:10 was made for quantitation of this compound from the linear calibration curve.

\*\*Estimated instrument detection limit.

## TABLE AII-8

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING 1996 RAINFALL SAMPLING EVENTS

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		Detection	Sampling Dates				
	0	Limit	7/17/96	7/18/96	9/26/96	9/27/96	
	Compound	µg/L (ppb)	15:40	1:20			
ann martain failligin <sub>fa</sub>	Volatiles					8, <b>7 - 5 - 6</b> - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	
1	Chloromethane	1.3				·	
2	Vinyl chloride	0.7					
3	Acetaldehyde	<b>25.9</b>					
4	Bromomethane	3.5			C1404	-	
5	Chloroethane	1.7		**	10-10-1	<u> </u>	
6	Propylene oxide	20.0			<b>*</b> 4-		
7	Acrolein	15.0			80-10		
8	1,1-Dichloroethene	0.6					
9	Propionaldehyde	20.0			<b>de</b> en		
10	Acetone	5.0		95.4	86.8	116.1	
11	Carbon disulfide	1.0		-	-		
12	lodomethane	5.0			****		
13	Acetonitrile	2.0			-		
14	Allyl chloride	2.0		*-	aliteta .		
15	Methylene chloride	0.8	1.9	-	0.8	34.6	
16	1,2-Dichloroethene (total)	0.8	29.4	19.4	4.3	2.5	
17	Acrylonitrile	5.0			tin se	-	
18	Methyl tert butyl ether	4.2			1875 B		
19	Hexane	2.0			din su		
20	1,1-Dichloroethane	0.6			an az	**	
21	Vinyl acetate	5.0				'	
22	Chloroprene	2.0				· · · ·	
23	2-Butanone	5.5	5.6		<b>an</b> ca		
24	Chloroform	0.7		0.7	1.0	1.0	
25	1,1,1-Trichloroethane	0.7		1.4			
26	Carbon tetrachloride	0.9					
27	1,2-Dichloroethane	1.6			dia ma		
28	Benzene	1.0					
29	2,2,4-Trimethylpentane	2.0		· ••••	60-0		
30	Trichloroethene	0.6	39.7	22.6	2.4		
31	Ethyl acrylate	4.5			-		
32	1,2-Dichloropropane	0.8			<b>U</b> rcs	-	
33	Methyl methacrylate	2.0			80-141		
34	Bromodichloromethane	0.7			•**	-	

### TABLE AII-8 (Continued)

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## ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	Sampling Dates				
		Limit	7/17/96	7/18/96	9/26/96	9/27/96	
	Compound	µg/L (ppb)	15:40	1:20		•	
35	1,4-Dioxane	67.8					
36	Epichlorohydrin	20.0				-	
37	trans-1,3-Dichloropropene	0.9					
38	4-Methyl-2-pentanone	3.5					
39	Toluene	1.8					
40	cis-1,3-Dichloropropene	1.7					
41	1,1,2-Trichloroethane	2.5				·	
42	Tetrachloroethene	1.6	9.7	39.0	13.3	6.6	
43	2-Hexanone	4.6					
44	Dibromochloromethane	1.8			-		
45	1,2-Dibromoethane	2.0					
46	Chlorobenzene	0.6					
47	Ethylbenzene	0.8					
48	m- and/or p-Xylenes	1.4			-		
49	o-Xylene	1.0	-		. <b></b>		
50	Styrene	1.5					
51	Bromoform	4.0					
52	Cumene	2.0		<b></b> ·			
53	1,1,2,2-Tetrachloroethane	3.9		'			
54	Benzyl chloride	2.4					
55	1,2-Dibromo-3-chloropropane	2.9				-	
	Semi-Volatiles						
56	Phenol	0.7					
57	Bis(2-chloroethyl)ether	1.0					
58	2-Chlorophenol	1.2					
59	1,3-Dichlorobenzene	1.1					
60	1,4-Dichlorobenzene	1.1		-			
61	1,2-Dichlorobenzene	1.1	<b>~</b> - '	<b></b>			
62	Bis(2-chloroisopropyl)ether	1.0					
63	2-Methylphenol	3.7	<b>*</b> **				
64	Styrene oxide	4.9					
65	Acetophenone	1.4			÷		
66	o-Toluidine	1.2					

#### TABLE AII-8 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING 1996 RAINFALL SAMPLING EVENTS

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		Detection	Sampling Dates				
		Limit	7/17/96	7/18/96	9/26/96	9/27/96	
	Compound	hð\r (bbp)	15:40	1:20		•	
67	Hexachloroethane	1.4				: :	
68	N-Nitrose-di-n-propylamine	1.7					
69	4-Methylphenol	3.5					
70	N,N-Dimethylaniline	1.2					
71	Nitrobenzene	1.8					
72	Isophorone	1.8					
73	2-Nitrophenol	2.2				, <del></del> •	
74	2,4-Dimethylphenol	0.7				2 <b>-</b>	
75	Bis(2-chloroethoxy)methane	1.9			**		
76	2,4-Dichlorophenol	1.5			****		
77	1,2,4-Trichlorobenzene	1.8					
78	Naphthalene	1.7			2.0		
79	4-Chloroaniline	6.0				. No mai	
80	Hexachlorobutadiene	1.4	=*				
81	N,N-Diethylaniline	1.4				+-	
82	4-Chloro-3-methylphenol	1.3	<b>1</b> 00-00				
83	2-Methylnaphthalene	4.8			90-40	10 40	
84	Hexachlorocyclopentadiene	37.9				20	
85	2,4,6-Trichlorophenol	1.7					
86	2,4,5-Trichlorophenol	5.7					
87	1,1'-Biphenyl	1.7					
88	2-Chloroapthalene	1.0			-		
89	2-Nitroaniline	6.7					
<b>9</b> 0	Acenaphthylene	1.2			-	-	
91	Dimethyl phthalate	1.4	<b></b>				
92	2,6-Dinitrotoluene	1.8			140 m		
93	3-Nitroaniline	5.0					
94	Acenaphthene	1.0					
95	2,4-Dinitrotoluene	25.6		-	-	Q	
96	Dibenzofuran	4.4					
97	4-Nitrophenol	8.7					
98	2,4-Dinitrotoluene	1.7			-		
99	Fluorene	1.1	<b>8</b> 40			~-	
100	Diethyl phthalate	2.1			-		
101	4-Chirophenyl phenyl ether	1.0					
102	4-Nitroaniline	4.1				**	

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#### TABLE AII-8 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection	Sampling Dates				
	Compound	Limit µg/L (ppb)	7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96	
103	4,6-Dinitro-2-methylphenol	27.4		·			
104	N-Nitrosodiphenylamine	1.0					
105	4-Bromophenyl phenyl ether	1.4					
106	Hexachlorobenzene	1.2					
107	Pentachlorophenol	17.5					
108	Pentachloronitrobenzene	3.9					
109	Phenanthrene	0.9	2.3	1.6		·	
110	Anthracene	0.8					
111	Carbazole	4.0				tra	
112	4-Nitrobiphenyl	1.7					
113	Di-n-butyl phthalate	1.6					
114	Fluoranthene	1.0	2.9	1.6			
115	Pyrene	2.4	3.2				
116	Butyl benzyl phthalate	7.9					
117	2-Acetylaminofluorene	2.7					
118	Benzo(a)anthracene	0.8	1.0				
119	3,3'-Dimethoxybenzidine	14.6					
120	3,3'-Dichlorobenzidine	6.4	-				
121	Chrysene	1.1	1.6		dia ma	· · ·	
122	Bis(2-ethylhexyl)phthalate	15.0	·	<b></b>			
123	Di-n-octyl phthalate	5.6					
124	Benzo(b)fluoranthene	1.3				<b>-</b>	
125	Benzo(k)fluoranthene	1.4			-		
126	Benzo(a)pyrene	1.3				· ·	
127	Indeno(1,2,3-cd)pyrene	1.2			-		
128	Dibenz(a,h)anthracene	0.8					
129	Benzo(ghi)perylene	1.1					
	Pesticides and PCBs						
	Convictor and CODO						
130	Trifluralin	0.05*				•••	
131	alpha-BHC	0.02			-		
132	beta-BHC	0.03					
133	gamma-BHC	0.02					
134	delta-BHC	0.02					
104		0.02					

#### TABLE AII-8 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING 1996 RAINFALL SAMPLING EVENTS

		Detection			Sampling Dates				
		Limit	7/17/96	7/18/96	9/26/96	9/27/96			
	Compound	μg/L (ppb)	15:40	1:20		·			
135	Heptachlor	0.02				₩ <i>₩\$\$#</i> ₩ <b>₩₩₩</b> ₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩			
136	Aldrin	0.02							
137	Heptachlor epoxide	0.02				13- <b>1</b> 0			
138	gamma-Chlordane	0.05	-			-			
139	alpha-Chlordane	0.05	-						
140	alpha-Endosulfan	0.05				***			
141	Dieldrin	0.05			-				
142	4,4'-DDE	0.05	0.17	0.10		~-			
143	Endrin	0.10				-			
144	Chlorobenzilate	0.03*			-	60- <b>80</b>			
145	beta-Endosulfan	0.05							
146	4,4'-DDD	0.05	0.10	0.05		19-14			
147	Endosulfan sulfate	0.10	***		<b>1</b>	-			
148	4,4'-DDT	0.15	0.26	0.17	-				
149	Methoxychlor	0.50	0.35	0.17		· •••			
150	Captan	0.05*							
151	Endrin ketone	0.10			نب <del>مع</del> .				
152	Endrin aldehyde	0.10							
153	Toxaphene	0.50			:	-			
154	PCB-1016	0.20			· ••••				
155	PCB-1221	0.20							
156	PCB-1232	0.20	(in 10)	——		gas ma			
157	PCB-1242	0.20							
158	PCB-1248	0.20	49-69						
159	PCB-1254	0.20							
160	PCB-1260	0.20	(m m)		-				

-- Not found, below detection limit.

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\*Estimated instrument detection limit.

#### TABLE AII-9

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON OVERFLOW STATION (CS-106B) DURING A 1996 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Dates			
	Compound	µg/L (ppb)	9/26/96	9/27/96		
· · · · · · · · · · · ·	Volatiles	in an		******		
1.	Chloromethane	1.3	<b></b>			
2	Vinyl chloride	0.7				
3	Acetaldehyde	25.9				
4	Bromomethane	3.5				
5	Chloroethane	1.7		·		
6	Propylene oxide	20.0				
7	Acrolein	15.0				
8	1,1-Dichloroethene	0.6				
9	Propionaldehyde	20.0				
10	Acetone	5.0	57.0	94.2		
11	Carbon disulfide	1.0				
12	lodomethane	5.0				
13	Acetonitrile	2.0	<b></b>			
14	Allyl chloride	2.0				
15	Methylene chloride	0.8		15.2		
16	1,2-Dichloroethene (total)	0.8	2.2	2.5		
17	Acrylonitrile	5.0				
18	Methyl tert butyl ether	4.2				
19	Hexane	2.0				
20	1,1-Dichloroethane	0.6				
21	Vinyl acetate	5.0				
22	Chloroprene	2.0	<b></b>	*		
23	2-Butanone	5.5				
24	Chloroform	0.7	1.0	1.0		
25	1,1,1-Trichloroethane	0.7				
26	Carbon tetrachloride	0.9				
27	1,2-Dichloroethane	1.6				
28	Benzene	1.0				
29	2,2,4-Trimethylpentane	2.0				
30	Trichloroethene	0.6	0.6			
31	Ethyl acrylate	4.5	<b>10</b>			
32	1,2-Dichloropropane	0.8				
-33	Methyl methacrylate	2.0				
34	Bromodichloromethane	0.7				

# TABLE AII-9 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON OVERFLOW STATION (CS-106B) DURING A 1996 RAINFALL SAMPLING EVENT

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		Detection Limit	Sampli	ng Dates
	Compound	μg/L (ppb)	9/26/96	9/27/96
35	1,4-Dioxane	67.8		<b></b>
36	Epichlorohydrin	20.0	·	
37	trans-1,3-Dichloropropene	0.9		
38	4-Methyl-2-pentanone	3.5		
39	Toluene	1.8		
40	cis-1,3-Dichloropropene	1.7		
41	1,1,2-Trichloroethane	2.5		
42	Tetrachloroethene	1.6	6.2	6.2
43	2-Hexanone	4.6		
44	Dibromochloromethane	1.8		
45	1,2-Dibromoethane	2.0	*-	
46	Chlorobenzene	0.6		
47	Ethylbenzene	0.8		
48	m- and/or p-Xylenes	1.4		-
49	o-Xylene	1.0		
50	Styrene	1.5		
51	Bromoform	4.0		
52	Cumene	2.0	<b></b> '	
53	1,1,2,2-Tetrachloroethane	3.9	· •-	<b></b>
54	Benzyl chloride	2.4	<b>to =</b>	<b></b>
55	1,2-Dibromo-3-chloropropane	2.9		
	Semi-Volatiles		• •	
56	Phenol	0.7		
57	Bis(2-chloroethyl)ether	1.0		
58	2-Chlorophenol	1.2		
59	1.3-Dichlorobenzene	1.1		
60	1,4-Dichlorobenzene	1.1		
61	1,2-Dichlorobenzene	1.1		-
62	Bis(2-chloroisopropyl)ether	1.0	<b>4</b> -1	
63	2-Methylphenol	3.7		- 
64	Styrene oxide	4.9		
65	Acetophenone	1.4		
66	o-Toluidine	1.2		

## TABLE AII-9 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON OVERFLOW STATION (CS-106B) DURING A 1996 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Dates			
	Compound	µg/L (ppb)	9/26/96	9/27/96		
	Compound	р <u>а</u> ,с (ррр)	5720750	5/2/150		
67	Hexachloroethane	1.4				
68	N-Nitrose-di-n-propylamine	1.7				
69	4-Methylphenol	3.5				
70	N,N-Dimethylaniline	1.2		·		
71	Nitrobenzene	1.8		<b>**</b>		
72	Isophorone	1.8	·	<b>*</b> -		
73	2-Nitrophenol	2.2	<b></b>	<sup>`</sup>		
74	2,4-Dimethylphenol	0.7	· · · · · · · · · · · · · · · · · · ·	·		
75	Bis(2-chloroethoxy)methane	1.9		-		
76	2,4-Dichlorophenol	1.5				
77	1,2,4-Trichlorobenzene	1.8				
78	Naphthalene	1.7	-			
79	4-Chloroaniline	6.0				
80	Hexachlorobutadiene	1.4				
81	N,N-Diethylaniline	1.4				
82	4-Chloro-3-methylphenol	1.3				
83	2-Methylnaphthalene	4.8	-			
84	Hexachlorocyclopentadiene	37.9	<b></b> '			
85	2,4,6-Trichlorophenol	1.7				
86	2,4,5-Trichlorophenol	5.7				
87	1,1'-Biphenyl	1.7				
88	2-Chloroapthalene	1.0				
89	2-Nitroaniline	6.7	· •••			
90	Acenaphthylene	1.2				
91	Dimethyl phthalate	1.4				
92	2,6-Dinitrotoluene	1.8	<b></b>			
93	3-Nitroaniline	5.0				
94	Acenaphthene	1.0	· •••			
95	2,4-Dinitrotoluene	25.6				
96	Dibenzofuran	4.4				
97	4-Nitrophenol	8.7				
98	2,4-Dinitrotoluene	1.7				
99	Fluorene	1.1				
100	Diethyl phthalate	2.1	·			
101	4-Chirophenyl phenyl ether	1.0				
102	4-Nitroaniline	4.1	<del></del>	·		

# TABLE AII-9 (Continued)

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# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON OVERFLOW STATION (CS-106B) DURING A 1996 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Dates			
	Compound	μg/L (ppb)	9/26/96	9/27/96		
103	4,6-Dinitro-2-methylphenol	27.4				
104	N-Nitrosodiphenylamine	1.0		40 <b>=</b>		
105	4-Bromophenyl phenyl ether	1.4		tr 🖜		
106	Hexachlorobenzene	1.2		<del></del>		
107	Pentachlorophenol	17.5		. 84-59		
108	Pentachloronitrobenzene	3.9		•		
109	Phenanthrene	0.9		****		
110	Anthracene	0.8				
111	Carbazole	4.0		**		
112	4-Nitrobiphenyl	1.7		<b>r</b> =		
113	Di-n-butyl phthalate	1.6		***		
114	Fluoranthene	1.0	1.0	iter aller		
115	Pyrene	2.4				
116	Butyl benzyl phthalate	7.9		ten mer		
117	2-Acetylaminofluorene	2.7		NC MARK		
118	Benzo(a)anthracene	0.8		1910 1910		
119	3,3'-Dimethoxybenzidine	14.6		· · · · · ·		
120	3,3'-Dichlorobenzidine	6.4	<b>~~</b> '	÷		
121	Chrysene	1.1		<b>10</b>		
122	Bis(2-ethylhexyl)phthalate	15.0		40 <del>0</del>		
123	Di-n-octyl phthalate	5.6		6 <b>m</b>		
124	Benzo(b)fluoranthene	1.3		· • • • • • •		
125	Benzo(k)fluoranthene	1.4		·		
126	Benzo(a)pyrene	1.3				
127	Indeno(1,2,3-cd)pyrene	1.2		19-94		
128	Dibenz(a,h)anthracene	0.8		. <b></b>		
129	Benzo(ghi)perylene	1.1		<b></b>		
	Pesticides and PCBs					
130	Trifluralin	0.05*		äs ma		
131	alpha-BHC	0.02		E-m		
132	beta-BHC	0.03				
133	gamma-BHC	0.02	<b></b>			
134	delta-BHC	0.02		. <b>63 6</b> 0		
	nger vart vanget ββααπτά π. Ner	0.02				

#### TABLE AII-9 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON OVERFLOW STATION (CS-106B) DURING A 1996 RAINFALL SAMPLING EVENT

		Detection Limit	Sampling Dates		
	Compound	µg/L (ppb)	9/26/96	9/27/96	
135	Heptachlor	0.02			
136	Aldrin	0.02			
137	Heptachlor epoxide	0.02			
138	gamma-Chlordane	0.05			
139	alpha-Chlordane	0.05			
140	alpha-Endosulfan	0.05			
141	Dieldrin	0.05			
142	4,4'-DDE	0.05			
143	Endrin	0.10			
144	Chlorobenzilate	0.03*			
145	beta-Endosulfan	0.05			
146	4,4'-DDD	0.05			
147	Endosulfan sulfate	0.10			
148	4,4'-DDT	0.15		-	
149	Methoxychlor	0.50	0.16	·	
150	Captan	0.05*	=-	-	
151	Endrin ketone	0.10	***		
152	Endrin aldehyde	0.10			
153	Toxaphene	0.50	-		
154	PCB-1016	0.20	. <b>-</b> •	'	
155	PCB-1221	0.20			
156	PCB-1232	0.20			
157	PCB-1242	0.20			
158	PCB-1248	0.20		••• ·	
159	PCB-1254	0.20			
160	PCB-1260	0.20			

-- Not found, below detection limit.

\*Estimated instrument detection limit.

## APPENDIX III

# ORGANIC POLLUTANTS IN WASTEWATER FROM TARP PUMP, DROP SHAFT, AND OVERFLOW STATIONS DURING 1997 RAINFALL SAMPLING EVENTS

#### TABLE AIII-1

		Detection			Sa	mpling Da	tes		
	Compound	Limit µg/L (ppb)	6/21/97 17:32	6/23/97	6/30/97 7:35	8/19/97 19:15	8/23/97 11:40	9/17/97	9/18/97
	Compound								
Vola	atiles								
1 Chl	oromethane	1.8							
2 Ving	yl chloride	1.0							
3 Ace	taldehyde	28.7							
4 Bro	momethane	3.5							
5 Chl	oroethane	1.8						÷	-
6 Pro	pylene oxide	20.0					lest and		
7 Acr	olein	15.0							
8 1,1-	Dichloroethene	0.9		•••					
9 Pro	pionaldehyde	20.0							
10 Ace	tone	5.4	163.8	83.4	1,371*	16.3	97.6	244.3	146.8
11 Car	bon disulfide	1.1				1.1			
12 lode	omethane	5.0							
13 Ace	tonitrile	2.0		<b>t</b> m <b>co</b>					
14 Ally	I chloride	2.2		~	~~				
15 Met	hylene chloride	1.0	3.5	6.0			8.0		
16 1,2-	Dichloroethene (total)	1.0	1.2					1.3	1.4
17 Acr	ylonitrile	5.0	uguka	1.5.10	201 arts	127 AD.	age an.	20120	
18 Met	hyl tert butyl ether	4.2	12.3	A.V. 1.4.	dan 194	****	181 Que	ven ikk	04 M
19 Hex	ane	2.0	Sinter	भर्म-स	شکار اولیا	ina gov	·	الناسية	1920 <b>- 19</b> 4
20 1,1-	Dichloroethane	0.7	675 Kb1		Sinte again	<b>144.</b> 175.	angan malaka		644 145
21 Viny	/i acetate	5.0		**			<u></u>		
22 Chi	oroprene	4.9				*			

# TABLE AIII-1 (Continued)

		Detection	Detection Sampling Dates						
	Compound	Limit µg/L (ppb)	6/21/97 17:32	6/23/97	6/30/97 7:35	8/19/97 19:15	8/23/97 11:40	9/17/97	9/18/97
23	2-Butanone	5.5	9.0					34.1	16.3
24	Chloroform	0.9	1.0	0.9				0.9	1.4
25	1,1,1-Trichloroethane	0.7							
26	Carbon tetrachloride	0.9		10 ga.		·			
27	1,2-Dichloroethane	1.6							
28	Benzene	0.7		**					
29	2,2,4-Trimethylpentane	2.0							
30	Trichloroethene	0.6	4.5	5.5		1.0			3.2
31	Ethyl acrylate	4.5							
32	1,2-Dichloropropane	0.8					<sup>`</sup> ·		
33	Methyl methacrylate	2.3							
34	Bromodichloromethane	0.8							
35	1,4-Dioxane	67.8					· · · ·		
36	Epichlorohydrin	20.0				**			
37	trans-1,3-Dichloropropene	0.9							
38	4-Methyl-2-pentanone	3.5			-				
39	Toluene	1.8	6.2	2,7	11.1		43.0		
40	cis-1,3-Dichloropropene	1.7					·		
41	1,1,2-Trichloroethane	2.5		'					
42	Tetrachloroethene	1.6		4.2		4.6			
43	2-Hexanone	4.6	-		-				
44	Dibromochloromethane	1.8	'						
45	1,2-Dibromoethane	2.0					<u></u>		***
46	Chlorobenzene	0.6							

#### TABLE AIII-1 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection	ection Sampling Dates						
		Limit	6/21/97	6/23/97	6/30/97	8/19/97	8/23/97	9/17/97	9/18/97
	Compound	µg/L (ppb)	17:32		7:35	19:15	11:40		
47	Ethylbenzene	0.8	996 499						
48	m- and/or p-Xylenes	2.0				6-1-1			
49	o-Xylene	1.0				1.6			
50	Styrene	1.5					****		
51	Bromoform	4.0			****	***			
52	Cumene	2.0							
53	1,1,2,2-Tetrachloroethane	3.9							
54	Benzyl chloride	3.6							
55	1,2-Dibromo-3-chloropropane	4.6			***				
	Semi-Volatiles								
56	Phenol	1.3	202.3	1.6	40.8		2.3		
57	Bis(2-chloroethyl)ether	1.0							
58	2-Chlorophenol	. 1.9							
59	1,3-Dichlorobenzene	0.7							
60	1,4-Dichlorobenzene	0.8	<b>#</b> *				1.1		
61	1,2-Dichlorobenzene	0.7		tas ella		AV-01	<b>101 m</b>	sko ura	
62	Bis(2-chloroisopropyl)ether	1.0	540. <b>0</b> 0	600 (SA)	NEND.	. Muniter	Date off	- 400 · 100	tie w
63	2-Methylphenol	3.6	480.220	dia way	3640		1999-1966	10.	20 IP)
64	Styrene oxide	5.4	,	and the	cite and	<b>CH 4</b> 3	~~	**	
65	Acetophenone	1.8					<u> </u>		
66	o-Toluidine	1.3			·				

AIII-3

# TABLE AIII-1 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection			Sa	mpling Da	tes		
	Compound	Limit µg/L (ppb)	6/21/97 17:32	6/23/97	6/30/97 7:35	8/19/97 19:15	8/23/97 11:40	9/17/97	9/18/97
67	Hexachloroethane	0.9							
68	N-Nitrose-di-n-propylamine	1.7							
69	4-Methylphenol	3.7	17.9	9.1	59.3		53.8	6.3	10.5
70	N,N-Dimethylaniline	1.4							
71	Nitrobenzene	0.9							
72	Isophorone	1.8							-
73	2-Nitrophenol	1.6							
74	2,4-Dimethylphenol	1.4							
75	Bis(2-chloroethoxy)methane	1.9							
76	2,4-Dichlorophenol	1.7				-			
77	1,2,4-Trichlorobenzene	0.9							
78	Naphthalene	0.6	<b>5</b> -10	0.7	1.8				1.3
79	4-Chloroaniline	2.3							
80	Hexachlorobutadiene	1.2	·			**			
81	N,N-Diethylaniline	1.3							
82	4-Chloro-3-methylphenol	1.5							
83	2-Methylnaphthalene	2.7			6.0				
84	Hexachlorocyclopentadiene	26.8							
85	2,4,6-Trichlorophenol	1.8							
86	2,4,5-Trichlorophenol	5.6						20 M	
87	1,1'-Biphenyl	1.7				-			
88	2-Chloroapthalene	0.8							
89	2-Nitroaniline	4.8							
90	Acenaphthylene	0.7		<b></b>			'		

AIII-4

## TABLE AIII-1 (Continued)

		Detection			Sai	mpling Da	tes	·····				
		Limit	6/21/97	6/23/97	6/30/97	8/19/97	8/23/97	9/17/97	9/18/97			
	Compound	µg/L (ppb)	17:32		7:35	19:15	11:40					
91	Dimethyl phthalate	1.1				****	· · ·					
92	2,6-Dinitrotoluene	1.1										
93	3-Nitroaniline	5.6				-						
94	Acenaphthene	0.8			**			-				
95	2,4-Dinitrotoluene	25.0										
96	Dibenzofuran	3.5										
97	4-Nitrophenol	10.3					144 PM	***				
98	2,4-Dinitrotoluene	1.4										
99	Fluorene	1.1										
100	Diethyl phthalate	3.6	3.8		4.1			-				
101	4-Chirophenyl phenyl ether	1.1										
102	4-Nitroaniline	3.0										
103	4,6-Dinitro-2-methylphenol	25.0				~~						
104	N-Nitrosodiphenylamine	1.0	~~									
105	4-Bromophenyl phenyl ether	1.2										
106	Hexachlorobenzene	. 1.2		**								
107	Pentachlorophenol	25.0						47 FD	PBI 40			
108	Pentachloronitrobenzene	6.8					**					
109	Phenanthrene	1.0	1.0	2.0	8.3	<b>North</b>	5.5	2.3	1.8			
110	Anthracene	1.0		-66-0P	Maria	ajaa riis	aber en di		177.940			
111	Carbazole	3.9	: 28.6%	Land App	يته، اللهِ	-ter tria	<b>98</b> .00	<b>40</b> 21	10.400			
112	4-Nitrobiphenyl	3.2		**	1974 4 <b>3</b> 6	400 MB	600-600	det wi	Nil-age			
113	Di-n-butyl phthalate	1.3			1.7		——	2.2	3.7			
114	Fluoranthene	0.9		2.1	6.9		7.2	2.7	1.2			

### TABLE AIII-1 (Continued)

		Detection			Sampling Dates							
	Compound	Limit µg/L (ppb)	6/21/97 17:32	6/23/97	6/30/97 7:35	8/19/97 19:15	8/23/97 11:40	9/17/97	9/18/97			
115	Pyrene	1.7		2.3	7.6		8.4	3.2	j			
116	Butyl benzyl phthalate	1.8	2.4		2.6			2.3	2.0			
117	2-Acetylaminofluorene	5.5					~**					
118	Benzo(a)anthracene	0.7			1.8		2.0	1.0				
119	3,3'-Dimethoxybenzidine	19.6										
120	3,3'-Dichlorobenzidine	5.8			ter dit							
121	Chrysene	0.9		1.0	3.0		3.4	1.3				
122	Bis(2-ethylhexyl)phthalate	8.2	15.5	11.0	23.1		33.8		<b>~~</b> `			
123	Di-n-octyl phthalate	2.6			3.5							
124	Benzo(b)fluoranthene	0.7										
125	Benzo(k)fluoranthene	0.8										
126	Benzo(a)pyrene	1.3			<u> </u>							
127	Indeno(1,2,3-cd)pyrene	1.1			<del></del> .							
128	Dibenz(a,h)anthracene	1.0										
129	Benzo(ghi)perylene	0.8										
	Pesticides and PCBs											
130	Trifluralin	0.05**										
131	alpha-BHC	0.02			****		-					
132	beta-BHC	0.03				<b></b>	<b></b> .					
133	gamma-BHC	0.02										
134	delta-BHC	0.02		-								

## TABLE AIII-1 (Continued)

		Detection			Sa	mpling Da	tes		04007
		Limit	6/21/97	6/23/97	6/30/97	8/19/97	8/23/97	9/17/97	9/18/97
	Compound	µg/L (ppb)	17:32		7:35	19:15	11:40		
135	Heptachlor	0.02			<u></u>				~~
136	Aldrin	0.02				~-			
137	Heptachlor epoxide	0.02				~-			
138	gamma-Chlordane	0.05		~~					
139	alpha-Chlordane	0.05							<b></b> '
140	alpha-Endosulfan	0.05		-					
141	Dieldrin	0.05							
142	4,4'-DDE	0.05		-					
143	Endrin	0.10							
144	Chlorobenzilate	0.03**							
145	beta-Endosulfan	0.05							
146	4,4'-DDD	0.05	**						
147	Endosulfan sulfate	0.10		101 mil					
148	4,4'-DDT	0.10			44				
149	Methoxychlor	0.15			****				
150	Captan	0.05**		iles iles					
151	Endrin ketone	0.10							
152	Endrin aldehyde	0.10			\$10 MB				
153	Toxaphene	0.50		ac.46	Aur GD	pres			
154	PCB-1016	0.20	attribue.	actives	•10 04;			attar dat.	
155	PCB-1221	0.20	the call			. ·		-	
156	PCB-1232	0.20	-	en. eta.	au cag	10-41			#7 # <b>*</b>
157	PCB-1242	0.20			war bes				
158	PCB-1248	0.20							

#### TABLE AIII-1 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP MAINSTREAM PUMPING STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection	Detection Sampling Dates						
	Compound	Limit µg/L (ppb)	6/21/97 17:32	6/23/97	6/30/97 7:35	8/19/97 19:15	8/23/97 11:40	9/17/97	9/18/97
159	PCB-1254	0.20							
160	PCB-1260	0.20							

--Not found, below detection limit.

\*A dilution of 1:10 was made for quantitation of this compound from the linear calibration curve.

\*\*Estimated instrument detection limit.

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#### TABLE AIII-2

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#### Detection Sampling Dates 2/24/97 2/28/97 7/18/97 Limit 7/19/97 7/22/97 Compound µg/L (ppb) 21:00 11:15 Volatiles 1 Chloromethane 1.8 -------2 Vinvl chloride 1.0 --------3 Acetaldehyde 28.7 \_\_\_ --..... .... ---4 Bromomethane 3.5 ------\_ ----..... 5 Chloroethane 1.8 ---••• ---6 Propylene oxide 20.0 -----.... 7 Acrolein 15.0 \_\_\_ \_\_\_ ------\_\_\_\_\_ 8 1.1-Dichloroethene 0.9 ------\_\_\_ ----9 Propionaldehyde 20.0 -----\_\_\_ -10 Acetone 5.4 182.3 692.9\* 31.4 365.1\*\* 219.0 11 Carbon disulfide 1.1 ---•--\_\_ -12 lodomethane 5.0 -----------.... 13 Acetonitrile 2.0 -------..... ----\_\_\_ 14 Allyl chloride 2.2 ---------..... Methylene chloride 15 1.0 2.4 20.4 2.4 16 1,2-Dichloroethene (total) 1.0 -----------. 17 Acrylonitrile 5.0 ---\_ \_\_\_ -----18 Methyl tert butyl ether 4.2 -------19 Hexane 2.0 -------..... 20 1,1-Dichloroethane 0.7 -----21 Vinyl acetate 5.0 ---\_\_\_ ----------22 Chloroprene 4.9 .... --------23 2-Butanone 5.5 8.0 9.0 <u>.</u>... 8.7 \_\_\_ 24 Chloroform 0.9 1.1 1.7 1.0 -----25 1,1,1-Trichloroethane 0.7 ---------26 Carbon tetrachloride 0.9 ---\_\_\_ --------27 1.2-Dichloroethane 1.6 ---\_\_\_ -------\_\_\_ 28 Benzene 0.7 4.4 2.6 --------29 2,2,4-Trimethylpentane 2.0 \_\_\_ --\_\_\_ -.... 30 Trichloroethene 0.6 1.6 0.8 ----..... 31 Ethyl acrylate 4.5 --.... ter tr ---..... 32 1,2-Dichloropropane 0.8 \_\_\_ ----\_\_\_ \_ 33 Methyl methacrylate 2.3 --------------34 Bromodichloromethane 0.8 **69** 41 --------..... 35 1,4-Dioxane 67.8 \_\_\_ --

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

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# TABLE AIII-2 (Continued)

		Detection			mpling Da	ites	
•	Compound	Limit µg/L (ppb)	2/24/97	2/28/97	7/18/97	7/19/97 21:00	7/22/97 11:15
36	Epichlorohydrin	20.0	**			*=	•••
37	trans-1,3-Dichloropropene	0.9					****
38	4-Methyl-2-pentanone	3.5					
39	Toluene	1.8		23.9	4.8	8.4	56.5
40	cis-1,3-Dichloropropene	1.7					
41	1,1,2-Trichloroethane	2.5					
42	Tetrachloroethene	1.6	18.7	4.8		3.9	1.9
43	2-Hexanone	4.6					
44	Dibromochloromethane	1.8					
45	1,2-Dibromoethane	2.0				· ••	
46	Chlorobenzene	0.6					
47	Ethylbenzene	0.8		1.3			
48	m- and/or p-Xylenes	2.0	2.6	5.7			
49	o-Xylene	1.0	1.4	2.7		<b>.</b>	
50	Styrene	1.5		2.3	2.4	'	
51	Bromoform	4.0					·
52	Cumene	2.0		26.3		4.0	52.8
53	1,1,2,2-Tetrachloroethane	3.9					
54	Benzyl chloride	3.6				-	yja ma
55	1,2-Dibromo-3-chloropropane	4.6				<b></b> 1	
	Semi-Volatiles						
56	Phenol	1.3		212.4		126.2	62.9
57	Bis(2-chloroethyl)ether	1.0					<del></del> .
58	2-Chlorophenol	1.9					
59	1,3-Dichlorobenzene	0.7					
60	1,4-Dichlorobenzene	0.8					
61	1,2-Dichlorobenzene	0.7			0.9	-	
62	Bis(2-chloroisopropyl)ether	1.0	***			<b></b> .	
63	2-Methylphenol	3.6		3.8			
64	Styrene oxide	5.4					
65	Acetophenone	1.8	5.2	99.9		28.5	37.0
66	o-Toluidine	1.3					
67	Hexachloroethane	0.9				-	**
68	N-Nitrose-di-n-propylamine	1.7					

## TABLE AIII-2 (Continued)

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## ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection		Sa	mpling Da	ites	
		Limit	2/24/97	2/28/97	7/18/97	7/19/97	7/22/97
	Compound	µg/L (ppb)			•.	21:00	11:15
69	4-Methylphenol	3.7		16.4			29.7
70	N,N-Dimethylaniline	1.4		<b>1</b> -11		<b>*</b> =	·
71	Nitrobenzene	0.9			÷		
72	Isophorone	1.8					at en
73	2-Nitrophenol	1.6			<b>1</b> 1	**	्रम् स.
74	2,4-Dimethylphenol	1.4	*-				<b></b>
75	Bis(2-chloroethoxy)methane	1.9					60 <b>-</b>
76	2,4-Dichlorophenol	1.7				-	
77	1,2,4-Trichlorobenzene	0.9			1.2		
78	Naphthalene	0.6			1.6	1.1	
79	4-Chloroaniline	2.3					
80	Hexachlorobutadiene	1.2				•••• ·	
81	N,N-Diethylaniline	1.3					**
82	4-Chloro-3-methylphenol	1.5			· ·		2.4
83	2-Methylnaphthalene	2.7					
84	Hexachlorocyclopentadiene	26.8					-
85	2,4,6-Trichlorophenol	1.8					
86	2,4,5-Trichlorophenol	5.6				un .	50 00
87	1,1'-Biphenyl	1.7	*-		_		-
88	2-Chloroapthalene	0.8			<b></b> .		
89	2-Nitroaniline	4.8					
90	Acenaphthylene	0.7					99 Pr
91	Dimethyl phthalate	1.1					. anat
92	2,6-Dinitrotoluene	1.1					
93	3-Nitroaniline	5.6				***	-
94	Acenaphthene	0.8					-
95	2,4-Dinitrotoluene	25.0					Bereni
96	Dibenzofuran	3.5				<b>90 42</b> 7	
97	4-Nitrophenol	10.3				-	
98	2,4-Dinitrotoluene	1.4					
99	Fluorene	1.1					
100	Diethyl phthalate	3.6					*****
101	4-Chirophenyl phenyl ether	1.1				<del></del>	
102	4-Nitroaniline	3.0				-	8940 1
103	4,6-Dinitro-2-methylphenol	25.0					 
104	N-Nitrosodiphenylamine	1.0				<b></b>	<b>8</b> 1.41
105	4-Bromophenyl phenyl ether	1.2	-				

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#### TABLE AIII-2 (Continued)

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#### Detection Sampling Dates 2/28/97 7/18/97 Limit 2/24/97 7/19/97 7/22/97 Compound µg/L (ppb) 21:00 11:15 106 Hexachlorobenzene 1.2 ..... -----107 Pentachlorophenol 25.0 -------------108 Pentachloronitrobenzene 6.8 -----\_ 109 Phenanthrene 1.0 1.5 1.3 \_\_\_ -----110 Anthracene 1.0 \_\_ ----\_---~~ 111 3.9 Carbazole \_\_\_ -------112 4-Nitrobiphenyl 3.2 -----------113 Di-n-butyl phthalate 1.3 3.0 ----\_\_\_ ----\_--114 Fluoranthene 0.9 1.6 ----------115 Pyrene 1.7 --------\_\_\_ 116 Butyl benzyl phthalate 1.8 ---\_\_\_ 117 2-Acetvlaminofluorene 5.5 ------118 Benzo(a)anthracene 0.7 \_\_\_ ---\_\_\_ ----119 3,3'-Dimethoxybenzidine 19.6 \_ ---\_-120 3.3'-Dichlorobenzidine 5.8 ----..... ---121 0.9 Chrysene ---122 Bis(2-ethylhexyl)phthalate 8.2 115.8 ----\_ ----123 Di-n-octyl phthalate 2.6 7.5 \_\_ -------124 Benzo(b)fluoranthene 0.7 ---\_\_\_ ----125 Benzo(k)fluoranthene 8.0 --------\_\_\_ 126 Benzo(a)pyrene 1.3 -----127 Indeno(1,2,3-cd)pyrene 1.1 --------128 Dibenz(a,h)anthracene 1.0 ------------129 Benzo(ghi)perylene 0.8 Pesticides and PCBs 0.05\*\*\* 130 Trifluralin ----------131 0.02 alpha-BHC ---132 0.03 beta-BHC ----..... 133 0.02 gamma-BHC -------134 delta-BHC 0.02 ----------135 Heptachlor 0.02 -----136 Aldrin 0.02 -----------137 0.02 Heptachlor epoxide ----------0.05 138 gamma-Chlordane ----

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

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#### TABLE AIII-2 (Continued)

		Detection		Sa	mpling Da	ites	
		Limit	2/24/97	2/28/97	7/18/97	7/19/97	7/22/97
	Compound	µg/L (ppb)			: ·	21:00	11:15
139	alpha-Chiordane	0.05				<b>.</b>	
140	alpha-Endosulfan	0.05					
141	Dieldrin	0.05					
142	4,4'-DDE	0.05			·		+
143	Endrin	0.10					<del></del>
144	Chlorobenzilate	0.03***					100 m
145	beta-Endosulfan	0.05					****
146	4,4'-DDD	0.05			0.10	<b>10</b> -11	20.00
147	Endosulfan sulfate	0.10				20 m	
148	4,4'-DDT	0.10			0.97	<b>-</b>	ar 14
149	Methoxychlor	0.15	20-12	<b>6</b> 7-44		<b>a</b> 90	· · · · ·
150	Captan	0.05***		-		teres .	41-M
151	Endrin ketone	0.10					-
152	Endrin aldehyde	0.10				***	
153	Toxaphene	0.50					919 1
154	PCB-1016	0.20					
155	PCB-1221	0.20					
156	PCB-1232	0.20					
157	PCB-1242	0.20			<b></b> .		Borre.
158	PCB-1248	0.20				<b></b>	
159	PCB-1254	0.20				-	
160	PCB-1260	0.20			***	0.85	

#### ORGANIC POLLUTANTS IN WASTEWATER FROM THE TARP CALUMET PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

--Not found, below detection limit.

\*

\*A dilution of 1:10 was made for quantitation of this compound from the linear calibration curve.

\*\*A dilution of 1:5 was made for quantitation of this compound from the linear calibration curve.

\*\*\*Estimated instrument detection limit.

#### TABLE AIII-3

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date			
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97	
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00
	Volatiles									
1	Chloromethane	1.8						·		
2	Vinyl chloride	1.0								
3	Acetaldehyde	28.7		<del>~~</del> .						~~
4	Bromomethane	3.5		-		at				
5	Chloroethane	1.8	-		*****					-
6	Propylene oxide	20.0					~-			
7	Acrolein	15.0								
8	1,1-Dichloroethene	0.9				· ••	**			
9	Propionaldehyde	20.0								
10	Acetone	5.4	107.0	90.6	131.1	106.9	74.9	94.0	95.1	67.1
11	Carbon disulfide	1.1			2.8	1.2				~~~
12	lodomethane	5.0	<b></b> `							
13	Acetonitrile	2.0			·	·				
14	Allyl chloride	2.2					**			
15	Methylene chloride	1.0		3.5	5.0	7.2		1.2	5.2	
16	1,2-Dichloroethene (total)	1.0								
17	Acrylonitrile	5.0								
18	Methyl tert butyl ether	4.2								
19	Hexane	2.0	~~			***				
20	1,1-Dichloroethane	0.7			-					
21	Vinyl acetate	5.0				-		·		
22	Chloroprene	4.9	-				<del></del> ,			

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#### TABLE AIII-3 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date			
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97	10/27/97
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00
23	2-Butanone	5.5					~~			
24	Chloroform	0.9	1.5	2.2	5.7	5.6	2.6	1.5	1.8	1.3
25	1,1,1-Trichloroethane	0.7			0.9	~~	na 777			
26	Carbon tetrachloride	0.9						<b></b> '		
27	1,2-Dichloroethane	1.6							<b>21 03</b>	
28	Benzene	0.7								
29	2,2,4-Trimethylpentane	2.0								
30	Trichloroethene	0.6						1.4		
31	Ethyl acrylate	4.5		~~						
32	1,2-Dichloropropane	0.8	<b>TD</b>						<b>6</b> 27.95	
33	Methyl methacrylate	2.3						'		
34	Bromodichloromethane	0.8		~~						
35	1,4-Dioxane	67.8								
36	Epichlorohydrin	20.0	<b></b> '	<b>au</b> >		8-10				
37	trans-1,3-Dichloropropene	0.9								
38	4-Methyl-2-pentanone	<b>3.5</b> .					****			
39	Toluene	1.8	11.4	3.1	2.8	3.2	10.6	13.7	5.1	12.6
40	cis-1,3-Dichloropropene	1.7								
41	1,1,2-Trichloroethane	2.5	No. 1941			a co	~**			sit an
42	Tetrachloroethene	1.6	127.54b	6.4	62 (3)	. 41,06	2.1	ute coli		10 TO
43	2-Hexanone	4.6	104 (FZ)	To predite	. Anciesa	See all	-14-101	cerine .	obes	.vic.cov
44	Dibromochloromethane	1.8				dis 977	60 av	108-401	Null Inte	-00 Min
45	1,2-Dibromoethane	2.0	01 M				~~	-		
46	Chlorobenzene	0.6								

### TABLE AIII-3 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

	ч.	Detection				Sampl	ing Date			
	Compound	Limit µg/L (ppb)	6/16/97 5:40	6/16/97 10:30	6/20/97	6/21/97	7/18/97 20:00	7/18/97 22:35	10/26/97 19:30	10/27/97 1:00
47	Ethylbenzene	0.8		**	1.0		11		<b>~</b> *	
48	m- and/or p-Xylenes	2.0	2.1		3.8	2.1	-	<b>.</b>		
49	o-Xylene	1.0			2.1	1.2				
50	Styrene	1.5								
51	Bromoform	4.0								
52	Cumene	2.0	****							
53	1,1,2,2-Tetrachloroethane	3.9			**		~~			
54	Benzyl chloride	3.6		an ing	4= 10 ·	a.e.			8+64	
55	1,2-Dibromo-3-chloropropane	4.6				<u></u>	-	·	***	
	Semi-Volatiles				`					
56	Phenol	1.3	·						'	
57	Bis(2-chloroethyl)ether	1.0					~	<b></b> '		
58	2-Chlorophenol	1.9		-			~~	<b></b>		
59	1,3-Dichlorobenzene	0.7								
60	1,4-Dichlorobenzene	0.8	~~							
61	1,2-Dichlorobenzene	0.7	-				~~			
62	Bis(2-chloroisopropyl)ether	1.0								
63	2-Methylphenol	3.6								
64	Styrene oxide	5.4						~~		
65	Acetophenone	1.8						· ·		
66	o-Toluidine	1.3			~~					

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#### TABLE AIII-3 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date			
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97	10/27/97
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00
67	Hexachloroethane	0.9								<u></u>
68	N-Nitrose-di-n-propylamine	1.7								
69	4-Methylphenol	3.7							5.6	
70	N,N-Dimethylaniline	1.4								
71	Nitrobenzene	0.9								
72	Isophorone	1.8				<b>1</b> 740				
73	2-Nitrophenol	1.6								
74	2,4-Dimethylphenol	1.4	**							
75	Bis(2-chloroethoxy)methane	1.9								
76	2,4-Dichlorophenol	1.7								
77	1,2,4-Trichlorobenzene	0.9								
78	Naphthalene	0.6						**		
79	4-Chloroaniline	2.3								
80	Hexachlorobutadiene	1.2	·							
81	N,N-Diethylaniline	1.3								
82	4-Chloro-3-methylphenol	1.5.		**	-					
83	2-Methylnaphthalene	2.7								
84	Hexachlorocyclopentadiene	26.8						┝		
85	2,4,6-Trichlorophenol	1.8			-				and the	(m. 1871
86	2,4,5-Trichlorophenol	5.6	20.02	104-100	-	10×10	<u>भ्य</u> २७.	-944 BAA	1000 AND	
87	1,1'-Biphenyl	1.7	cep ins	58-40)	-	-	98-69	-	and they	194 196
88	2-Chloroapthalene	0.8	-07 00	93-93	04 MA		an 760	R9	400 MQ .	186 mai
89	2-Nitroaniline	4.8						- <u></u>		
90	Acenaphthylene	0.7		ato 410	<del></del> .				*** ***	

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## TABLE AIII-3 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date			
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97	10/27/97
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00
91	Dimethyl phthalate	1.1		-	**					
92	2,6-Dinitrotoluene	1.1		<b>**</b>		**		~~~~		
93	3-Nitroaniline	5.6								
94	Acenaphthene	0.8								~
95	2,4-Dinitrotoluene	25.0		-						
96	Dibenzofuran	3.5						-		
97	4-Nitrophenol	10.3							-	
98	2,4-Dinitrotoluene	1.4			** **					· •••
99	Fluorene	1.1								
100	Diethyl phthalate	3.6	-	*****					5.4	
101	4-Chirophenyl phenyl ether	1.1								
102	4-Nitroaniline	3.0								
103	4,6-Dinitro-2-methylphenol	25.0								
104	N-Nitrosodiphenylamine	1.0								
105	4-Bromophenyl phenyl ether	1.2						-		
106	Hexachlorobenzene	1.2.	-			ingene .	-	-		
107	Pentachlorophenol	25.0								
108	Pentachloronitrobenzene	6.8						<b></b> '		
109	Phenanthrene	1.0		*=	65-12-	-				
110	Anthracene	1.0				-				'
111	Carbazole	3.9		. <b></b>						
112	4-Nitrobiphenyl	3.2								
113	Di-n-butyl phthalate	1.3	<b>8</b> 1.00	1.3	<b>67-14</b>		1.4		1.5	
114	Fluoranthene	0.9					1.1			

### TABLE AIII-3 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date				
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97		
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00	
115	Pyrene	1.7									
116	Butyl benzyl phthalate	1.8					2.2		3.1		
117	2-Acetylaminofluorene	5.5		-							
118	Benzo(a)anthracene	0.7									
119	3,3'-Dimethoxybenzidine	19.6	-						~~		
120	3,3'-Dichlorobenzidine	5.8									
121	Chrysene	0.9					~=				
122	Bis(2-ethylhexyl)phthalate	8.2							16.5		
123	Di-n-octyl phthalate	2.6	265	-							
124	Benzo(b)fluoranthene	0.7				40.90					
125	Benzo(k)fluoranthene	0.8									
126	Benzo(a)pyrene	1.3					~=				
127	Indeno(1,2,3-cd)pyrene	1.1									
128	Dibenz(a,h)anthracene	1.0									
129	Benzo(ghi)perylene	0.8									
	Pesticides and PCBs										
130	Trifluralin	0.05*	ias en	কাৰ কৰ	-18-14	<b>16-1</b>	<b>300</b> 7-451	200 wegi	**	200 Au.	
131	alpha-BHC	0.02		100 qui	196.649	40.20	the 0.0	-10.46		14 AP	
132	beta-BHC	0.03	100 GA	iin adi		0.05	ap 479	100 QQ	9- <b>3</b> 4	17. ал	
133	gamma-BHC	0.02									
134	delta-BHC	0.02									

### TABLE AIII-3 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date			
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97	10/27/97
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00
135	Heptachlor	0.02		<b>n-</b>				<b></b>		
136	Aldrin	0.02		***					·	
137	Heptachlor epoxide	0.02		<b>4</b> 1.00		**				***
138	gamma-Chlordane	0.05	0.05			-				
139	alpha-Chlordane	0.05	****						-	
140	alpha-Endosulfan	0.05			-		100 atta			
141	Dieldrin	0.05								
142	4,4'-DDE	0.05	0.07	~~		***				
143	Endrin	0.10		***		-				
144	Chlorobenzilate	0.03*								
145	beta-Endosulfan	0.05								
146	4,4'-DDD	0.05	0.24			~~	-			
147	Endosulfan sulfate	0.10								
148	4,4'-DDT	0.10							-	
149	Methoxychlor	0.15		<b>~~</b> ,					18-14	
150	Captan	0.05*					a			
151	Endrin ketone	0.10		·						-
152	Endrin aldehyde	0.10					**		-	
153	Toxaphene	0.50								
154	PCB-1016	0.20								
155	PCB-1221	0.20	-						****	
156	PCB-1232	0.20								**
157	PCB-1242	0.20								
158	PCB-1248	0.20								600 au

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### TABLE AIII-3 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE KIRIE WRP INFLUENT PUMP STATION DURING 1997 RAINFALL SAMPLING EVENTS

		Detection				Sampl	ing Date			
		Limit	6/16/97	6/16/97	6/20/97	6/21/97	7/18/97	7/18/97	10/26/97	10/27/97
	Compound	µg/L (ppb)	5:40	10:30			20:00	22:35	19:30	1:00
159	PCB-1254	0.20	0.65				4 <b>-</b>			
160	PCB-1260	0.20								

--Not found, below detection limit.

\*Estimated instrument detection limit.

#### TABLE AIII-4

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## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection	Samplir	ng Dates
	•	Limit	6/16/97	6/16/97
	Compound	μg/L (ppb)	5:40	10:30
	Volatiles			
1	Chloromethane	1.8		
2	Vinyl chloride	1.0	97 48	
3	Acetaldehyde	28.7		
4	Bromomethane	3.5		
5	Chloroethane	1.8		
6	Propylene oxide	20.0		·
7	Acrolein	15.0		
8	1,1-Dichloroethene	0.9	gab aur	
9	Propionaldehyde	20.0		
10	Acetone	5.4	56.0	60.0
11	Carbon disulfide	1.1		
12	lodomethane	5.0		
13	Acetonitrile	2.0		
14	Allyl chloride	2.2		
15	Methylene chloride	1.0		
16	1,2-Dichloroethene (total)	1	1.2	1.3
17	Acrylonitrile	5.0		
18	Methyl tert butyl ether	4.2		
19	Hexane	2.0		
20	1,1-Dichloroethane	0.7		
21	Vinyl acetate	5.0		
22	Chloroprene	4.9		
23	2-Butanone	5.5		'
24	Chloroform	0.9	1.0	1.8
25	1,1,1-Trichloroethane	0.7		
26	Carbon tetrachloride	0.9		
27	1,2-Dichloroethane	1.6		
28	Benzene	0.7		
29	2,2,4-Trimethylpentane	2.0		
30	Trichloroethene	0.6		7.4
31	Ethyl acrylate	4.5		· · ·
32	1,2-Dichloropropane	0.8		
33	Methyl methacrylate	2.3		
34	Bromodichloromethane	0.8		

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## TABLE AIII-4 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection	Samplir	ng Dates
		Limit	6/16/97	6/16/97
	Compound	µg/L (ppb)	5:40	10:30
35	1,4-Dioxane	67.8		
36	Epichlorohydrin	20.0		
37	trans-1,3-Dichloropropene	0.9	•••	
38	4-Methyl-2-pentanone	3.5		
39	Toluene	1.8		7.2
40	cis-1,3-Dichloropropene	1.7		-
41	1,1,2-Trichloroethane	2.5		
42	Tetrachloroethene	1.6	7.0	3.8 ·
43	2-Hexanone	4.6		····
44	Dibromochloromethane	1.8		
45	1,2-Dibromoethane	2.0		· <del></del>
46	Chlorobenzene	0.6		· · ·
47	Ethylbenzene	0.8		
48	m- and/or p-Xylenes	2.0		
49	o-Xylene	1.0		
50	Styrene	1.5		
51	Bromoform	4.0		
52	Cumene	2.0		***
53	1,1,2,2-Tetrachloroethane	3.9		
54	Benzyl chloride	3.6		
55	1,2-Dibromo-3-chloropropane	4.6		
	Semi-Volatiles			
56	Phenol	1.3	<b></b>	
57	Bis(2-chloroethyl)ether	1.0		(ter ee-
58	2-Chlorophenol	1.9		
59	1,3-Dichlorobenzene	0.7		
60	1,4-Dichlorobenzene	0.8	1.4	2.4
61	1,2-Dichlorobenzene	0.7		·
62	Bis(2-chloroisopropyl)ether	1.0		. <del></del>
63	2-Methylphenol	3.6		-
64	Styrene oxide	5.4		
65	Acetophenone	1.8		
66	o-Toluidine	1.3		• • • •

## TABLE AIII-4 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1997 RAINFALL SAMPLING EVENTS

Limit         6/16/97         6/16           Compound         µg/L (ppb)         5:40         10:           67         Hexachloroethane         0.9             68         N-Nitrose-di-n-propylamine         1.7             69         3- and/or 4-Methylphenol         3.7         4.2            70         N,N-Dimethylaniline         1.4	
67Hexachloroethane0.968N-Nitrose-di-n-propylamine1.7693- and/or 4-Methylphenol3.74.270N,N-Dimethylaniline1.4	30
68         N-Nitrose-di-n-propylamine         1.7   1.4               1.4           1.4          1.4          1.4         1.4         1.4         1.4 <th1.4< th=""> <th1.4< th="">         1.4</th1.4<></th1.4<>	• • • •
69         3- and/or 4-Methylphenol         3.7         4.2            70         N,N-Dimethylaniline         1.4	•
70 N,N-Dimethylaniline 1.4	•
	•
	•
71 Nitrobenzene 0.9	
72 Isophorone 1.8	
73 2-Nitrophenol 1.6	
74 2,4-Dimethylphenol 1.4	•
75 Bis(2-chloroethoxy)methane 1.9	
76 2,4-Dichlorophenol 1.7	
77 1,2,4-Trichlorobenzene 0.9	•
78 Naphthalene 0.6	•
79 4-Chloroaniline 2.3	•
80 Hexachlorobutadiene 1.2	• .
81 N,N-Diethylaniline 1.3	•
82 4-Chloro-3-methylphenol 1.5	•
83 2-Methylnaphthalene 2.7	•
84 Hexachlorocyclopentadiene 26.8	•
85 2,4,6-Trichlorophenol 1.8	•
86 2,4,5-Trichlorophenol 5.6	•
87 1,1'-Biphenyl 1.7	•
88 2-Chloroapthalene 0.8	
89 2-Nitroaniline 4.8	•
90 Acenaphthylene 0.7	•
91 Dimethyl phthalate 1.1	• •
92 2,6-Dinitrotoluene 1.1	•
93 3-Nitroaniline 5.6	•
94 Acenaphthene 0.8	•
95 2,4-Dinitrotoluene 25.0	-
96 Dibenzofuran 3.5	•
97 4-Nitrophenol 10.3	•
98 2,4-Dinitrotoluene 1.4	-
99 Fluorene 1.1	-
100 Diethyl phthalate 3.6	-
101 4-Chirophenyl ether 1.1	-
102 4-Nitroaniline 3.0	•

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#### TABLE AIII-4 (Continued)

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## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection		ng Dates
		Limit	6/16/97	6/16/97
	Compound	µg/L (ppb)	5:40	10:30
103	4,6-Dinitro-2-methylphenol	25.0		e me di kanan di kana Nanan
104	N-Nitrosodiphenylamine	1.0		
105	4-Bromophenyl phenyl ether	1.2		
106	Hexachlorobenzene	1.2		
107	Pentachlorophenol	25.0		·
108	Pentachloronitrobenzene	6.8		
09	Phenanthrene	1	2.5	1.4
10	Anthracene	1.0		
111	Carbazole	3.9		
112	4-Nitrobiphenyl	3.2		·
113	Di-n-butyl phthalate	1.3		1.5
114	Fluoranthene	0.9	4.0	1.5
15	Pyrene	1.7	4.7	1.8
16	Butyl benzyl phthalate	1.8		
17	2-Acetylaminofluorene	5.5		
18	Benzo(a)anthracene	0.7	. 1.7	
19	3,3'-Dimethoxybenzidine	19.6		
20	3,3'-Dichlorobenzidine	5.8		***
21	Chrysene	0.9	2.3	
22	Bis(2-ethylhexyl)phthalate	8.2		
123	Di-n-octyl phthalate	2.6		
24	Benzo(b)fluoranthene	0.7	27-14	
25	Benzo(k)fluoranthene	0.8		444 aut
126	Benzo(a)pyrene	1.3		
27	Indeno(1,2,3-cd)pyrene	1.1		
28	Dibenz(a,h)anthracene	1.0		- - 
29	Benzo(ghi)perylene	0.8		191 <b>4</b>
	Contraides and DODs			
	Pesticides and PCBs			
130	Trifluralin	0.05*		
131	alpha-BHC	0.02		
132	beta-BHC	0.03		
133	gamma-BHC	0.02		
134	delta-BHC	0.02		4. <b>10</b>

#### TABLE AIII-4 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection	Samplin	ng Dates
	· · · · · · · · · · · · · · · · · · ·	Limit	6/16/97	6/16/97
	Compound	µg/L (ppb)	5:40	10:30
135	Heptachlor	0.02		
136	Aldrin	0.02		
137	Heptachlor epoxide	0.02		
138	gamma-Chlordane	0.05		
139	alpha-Chlordane	0.05		
140	alpha-Endosulfan	0.05		
141	Dieldrin	0.05		
142	4,4'-DDE	0.05		
143	Endrin	0.10	<b></b> '	
144	Chlorobenzilate	0.03*		
145	beta-Endosulfan	0.05		
146	4,4'-DDD	0.05		
147	Endosulfan sulfate	0.10		
148	4,4'-DDT	0.10		
149	Methoxychlor	0.15		
150	Captan	0.05*		
151	Endrin ketone	0.10		
152	Endrin aldehyde	0.10		
153	Toxaphene	0.50		
154	PCB-1016	0.20		
155	POB-1221	0.20	·	
156	PCB-1232	0.20		
157	PCB-1242	0.20	· ·	
158	PCB-1248	0.20	· •••	
159	PCB-1254	0.20		<b></b> '
160	PCB-1260	0.20		

--Not found, below detection limit.

\*Estimated instrument detection limit.

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#### TABLE AIII-5

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 7/18/97 16:20
	Volatiles		ter en la gélé d'historia de la sur en la
1	Chloromethane	1.8	· . • ·
2	Vinyl chloride	1.0	
3	Acetaldehyde	28.7	
4	Bromomethane	3.5	
5	Chloroethane	1.8	
6	Propylene oxide	20.0	
7	Acrolein	15.0	
8	1,1-Dichloroethene	0.9	a a a
9	Propionaldehyde	20.0	98-30
10	Acetone	5.4	20.6
11	Carbon disulfide	1.1	**
12	lodomethane	5.0	Takka
13	Acetonitrile	2.0	- mar-state
14	Allyl chloride	2.2	. <b> </b>
15	Methylene chloride	1.0	e e
16	1,2-Dichloroethene (total)	1	
17	Acrylonitrile	5.0	and the second se
18	Methyl tert butyl ether	4.2	
19	Hexane	2.0	
20	1,1-Dichloroethane	0.7	
21	Vinyl acetate	5.0	- 55 - 55 - 55 - 55 - 55 - 55 - 55 - 5
22	Chloroprene	4.9	(20-m) .
23	2-Butanone	5.5	
24	Chloroform	0.9	Q#-30-
25	1,1,1-Trichloroethane	0.7	
26	Carbon tetrachloride	0.9	(10) van
27	1,2-Dichloroethane	1.6	- 680 mi
28	Benzene	0.7	ء بيش-ste
29	2,2,4-Trimethylpentane	2.0	- Aircon
30	Trichloroethene	0.6	,CP /r
31	Ethyl acrylate	4.5	-
32	1,2-Dichloropropane	0.8	58×185
33	Methyl methacrylate	. 2.3	<b>16-15</b>
34	Bromodichloromethane	0.8	

#### TABLE AIII-5 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 7/18/97 16:20
35	1,4-Dioxane	67.8	
36	Epichlorohydrin	20.0	
37	trans-1,3-Dichloropropene	0.9	
38	4-Methyl-2-pentanone	3.5	
39	Toluene	1.8	9.0
40	cis-1,3-Dichloropropene	1.7	
41	1,1,2-Trichloroethane	2.5	<b></b> •
42	Tetrachloroethene	1.6	
43	2-Hexanone	4.6	
44	Dibromochloromethane	1.8	
45	1,2-Dibromoethane	2.0	
46	Chlorobenzene	0.6	
47	Ethylbenzene	0.8	
48	m- and/or p-Xylenes	2.0	
49	o-Xylene	1.0	
50	Styrene	1.5	
51	Bromoform	4.0	
52	Cumene	2.0	<b></b>
53	1,1,2,2-Tetrachloroethane	3.9	
54	Benzyl chloride	3.6	
55	1,2-Dibromo-3-chloropropane	4.6	•
	Semi-Volatiles		
56	Phenol	1.3	
57	Bis(2-chloroethyl)ether	1.0	
58	2-Chlorophenol	1.9	
59	1,3-Dichlorobenzene	0.7	· · · · · · · · · · · · · · · · · · ·
60	1,4-Dichlorobenzene	0.8	
61	1,2-Dichlorobenzene	0.7	
62	Bis(2-chloroisopropyl)ether	1.0	<del></del> *
63	2-Methylphenol	3.6	-
64	Styrene oxide	5.4	<b></b>
65	Acetophenone	1.8	
66	o-Toluidine	1.3	

#### TABLE AIII-5 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1997 RAINFALL SAMPLING EVENT

67Hexachloroethane0.968N-Nitrose-di-n-propylamine1.7693- and/or 4-Methylphenol3.770N,N-Dimethylaniline1.471Nitrobenzene0.972Isophorone1.8732-Nitrophenol1.6742,4-Dimethylphenol1.475Bis(2-chloroethoxy)methane1.9762,4-Dichlorophenol1.7	te
68N-Nitrose-di-n-propylamine1.7693- and/or 4-Methylphenol3.770N,N-Dimethylaniline1.471Nitrobenzene0.972Isophorone1.8732-Nitrophenol1.6742,4-Dimethylphenol1.475Bis(2-chloroethoxy)methane1.9	
69       3- and/or 4-Methylphenol       3.7          70       N,N-Dimethylaniline       1.4          71       Nitrobenzene       0.9          72       Isophorone       1.8          73       2-Nitrophenol       1.6          74       2,4-Dimethylphenol       1.4          75       Bis(2-chloroethoxy)methane       1.9	
70N,N-Dimethylaniline1.471Nitrobenzene0.972Isophorone1.8732-Nitrophenol1.6742,4-Dimethylphenol1.475Bis(2-chloroethoxy)methane1.9	
71       Nitrobenzene       0.9          72       Isophorone       1.8          73       2-Nitrophenol       1.6          74       2,4-Dimethylphenol       1.4          75       Bis(2-chloroethoxy)methane       1.9	
72Isophorone1.8732-Nitrophenol1.6742,4-Dimethylphenol1.475Bis(2-chloroethoxy)methane1.9	
732-Nitrophenol1.6742,4-Dimethylphenol1.475Bis(2-chloroethoxy)methane1.9	
742,4-Dimethylphenol1.475Bis(2-chloroethoxy)methane1.9	
75 Bis(2-chloroethoxy)methane 1.9	•
76 2,4-Dichlorophenol 1.7	
77 1,2,4-Trichlorobenzene 0.9	
78 Naphthalene 0.6	
79 4-Chloroaniline 2.3	
80 Hexachlorobutadiene 1.2	
81 N,N-Diethylaniline 1.3	
82 4-Chloro-3-methylphenol 1.5	
83 2-Methylnaphthalene 2.7	
84 Hexachlorocyclopentadiene 26.8	
85 2,4,6-Trichlorophenol 1.8	
86 2,4,5-Trichlorophenol 5.6	
87 1,1'-Biphenyl 1.7	
88 2-Chloroapthalene 0.8	
89 2-Nitroaniline 4.8	
90 Acenaphthylene 0.7	
91 Dimethyl phthalate 1.1	
92 2,6-Dinitrotoluene 1.1	
93 3-Nitroaniline 5.6	
94 Acenaphthene 0.8	
95 2,4-Dinitrotoluene 25.0	
96 Dibenzofuran 3.5	
97 4-Nitrophenol 10.3	
98 2,4-Dinitrotoluene 1.4	
99 Fluorene 1.1	
100 Diethyl phthalate 3.6	
1014-Chirophenyl phenyl ether1.1	
102 4-Nitroaniline 3.0	

### TABLE AIII-5 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 7/18/97 16:20
103	4,6-Dinitro-2-methylphenol	25.0	<del></del>
104	N-Nitrosodiphenylamine	1.0	· · · · · · · · · · · · · · · · · · ·
105	4-Bromophenyl phenyl ether	1.2	
106	Hexachlorobenzene	1.2	
107	Pentachlorophenol	25.0	
108	Pentachloronitrobenzene	6.8	
109	Phenanthrene	1	. Et we
110	Anthracene	1.0	
111	Carbazole	3.9	
112	4-Nitrobiphenyl	3.2	
113	Di-n-butyl phthalate	1.3	
114	Fluoranthene	0.9	
115	Pyrene	1.7	
116	Butyl benzyl phthalate	1.8	
117	2-Acetylaminofluorene	5.5	
118	Benzo(a)anthracene	0.7	
119	3,3'-Dimethoxybenzidine	19.6	
120	3,3'-Dichlorobenzidine	5.8	
121	Chrysene	0.9	
122	Bis(2-ethylhexyl)phthalate	8.2	
123	Di-n-octyl phthalate	2.6	
124	Benzo(b)fluoranthene	0.7	
125	Benzo(k)fluoranthene	0.8	• ••
126	Benzo(a)pyrene	1.3	<b></b>
127	Indeno(1,2,3-cd)pyrene	1.1	
128	Dibenz(a,h)anthracene	1.0	
129	Benzo(ghi)perylene	0.8	
	Pesticides and PCBs		
130	Trifluralin	0.05*	
131	alpha-BHC	0.02	
132	beta-BHC	0.03	
133	gamma-BHC	0.02	tati en
134	delta-BHC	0.02	

#### TABLE AIII-5 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Limit	
		µg/L (ppb)	7/18/97 16:20
135	Heptachior	0.02	 Tra
136	Aldrin	0.02	190-8 <b>9</b> -
137	Heptachlor epoxide	0.02	
138	gamma-Chlordane	0.05	· · · · · · · · · · · · · · · · · · ·
139	alpha-Chlordane	0.05	
140	alpha-Endosulfan	0.05	·
141	Dieldrin	0.05	
142	4,4'-DDE	0.05	0.17
143	Endrin	0.10	
144	Chlorobenzilate	0.03*	the Alex
145	beta-Endosulfan	0.05	tat tip
146	4,4'-DDD	0.05	0.10
147	Endosulfan sulfate	0.10	
148	4,4'-DDT	0.10	0.14
149	Methoxychlor	0.15	-tar ite
150	Captan	0.05*	an 14
151	Endrin ketone	0.10	33 ap
152	Endrin aldehyde	0.10	tiper tipe
153	Toxaphene	0.50	38 1 M
154	PCB-1016	0.20	dias mas
155	PCB-1221	0.20	रेड्न अड़ा
156	PCB-1232	0.20	
157	PCB-1242	0.20	agi 455
158	PCB-1248	0.20	agkung ,
159	PCB-1254	0.20	18-88
160	PCB-1260	0.20	28-49 -

--Not found, below detection limit.

\*Estimated instrument detection limit.

#### TABLE AIII-6

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1997 RAINFALL SAMPLING EVENTS

1

		Detection			ng Dates	
	Compound	Limit µg/L (ppb)	7/18/97	8/12/97	8/16/97 20:00	8/17/97
-	······	<u> </u>			<u></u>	······································
	<u>Volatiles</u>					
1	Chloromethane	1.8			-	
2	Vinyl chloride	1.0				
3	Acetaldehyde	28.7				
4	Bromomethane	3.5				
5	Chloroethane	1.8		• <b>•-</b>		
6	Propylene oxide	20.0		·		
7	Acrolein	15.0				
. 8	1,1-Dichloroethene	0.9				
9	Propionaldehyde	20,0		,		
10	Acetone	5.4	173.0	44.5		118.8
11	Carbon disulfide	1.1		<u></u>		
12	lodomethane	5.0	-			
13	Acetonitrile	2.0		÷-		
14	Allyl chloride	2.2	-			
15	Methylene chloride	1.0				-
16	1,2-Dichloroethene (total)	1.0	10.0			3.1
17	Acrylonitrile	5.0			·	
18	Methyl tert butyl ether	4.2				<del></del> .
19	Hexane	2.0				
20	1,1-Dichloroethane	0.7				
21	Vinyl acetate	5.0			<del></del> .	·
22	Chloroprene	4.9				
23	2-Butanone	5.5	-			***
24	Chloroform	0.9	1.8			0.9
25	1,1,1-Trichloroethane	0.7				
26	Carbon tetrachloride	0.9	-			
27	1,2-Dichloroethane	1.6				
28	Benzene	0.7				
29	2,2,4-Trimethylpentane	2.0				
30	Trichloroethene	0.6	5.6			1.1
31	Ethyl acrylate	4.5				
32	1,2-Dichloropropane	0.8	~~	10-00		
33	Methyl methacrylate	2.3				40-49
34	Bromodichloromethane	0.8				

#### TABLE AIII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection		Samplir	ng Dates	
	Compound	Limit µg/L (ppb)	7/18/97	8/12/97	8/16/97 20:00	8/17/97
35	1,4-Dioxane	67.8				
36	Epichlorohydrin	20.0				₩.33
37	trans-1,3-Dichloropropene	0.9				
38	4-Methyl-2-pentanone	3.5				
39	Toluene	1.8	13.2		2.3	1.8
40	cis-1,3-Dichloropropene	1.7				1114 A.F.
41	1,1,2-Trichloroethane	2.5				den ver
42	Tetrachloroethene	1.6	63.4		2.1	20.6
43	2-Hexanone	4.6				
44	Dibromochloromethane	1.8				-
45	1,2-Dibromoethane	2.0				# 01
46	Chlorobenzene	0.6				•
47	Ethylbenzene	0.8			'	1.9
48	m- and/or p-Xylenes	2.0		**		an 14
49	o-Xylene	1.0				
50	Styrene	1.5				
51	Bromoform	4.0				
52	Cumene	2.0				ale da.
53	1,1,2,2-Tetrachloroethane	3.9			·	
54	Benzyl chloride	3.6		,		- 600 600
55	1,2-Dibromo-3-chloropropane	4.6		<b></b> .		
					• .	
	Semi-Volatiles					
56	Phenol	1.3				in the second
57	Bis(2-chloroethyl)ether	1.0		60 <b>10</b>		
58	2-Chlorophenol	1.9				-10 m 4 m
59	1,3-Dichlorobenzene	0.7				· •
60	1,4-Dichlorobenzene	0.8	18.4			фж.
61	1,2-Dichlorobenzene	0.7				50 M
62	Bis(2-chloroisopropyl)ether	1.0				== .
63	2-Methylphenol	3.6				ie- 49
64	Styrene oxide	5.4				
65	Acetophenone	1.8				
66	o-Toluidine	1.3				€130

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#### TABLE AIII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection		Samplir	ng Dates	
	Compound	Limit µg/L (ppb)	7/18/97	8/12/97	8/16/97 20:00	8/17/97
67	Hexachloroethane	0.9			**	· •••
68	N-Nitrose-di-n-propylamine	1.7		**		
69	4-Methylphenol	3.7	8.0			
70	N,N-Dimethylaniline	1.4			**	
71	Nitrobenzene	0.9			to an a	
72	Isophorone	1.8				**
73	2-Nitrophenol	1.6				
74	2,4-Dimethylphenol	1.4	**			
75	Bis(2-chloroethoxy)methane	1.9				·
76	2,4-Dichlorophenol	1.7			**	·
77	1,2,4-Trichlorobenzene	0.9		÷-		
78	Naphthalene	0.6	2.9		3.3	8.2
79	4-Chloroaniline	2.3				
80	Hexachlorobutadiene	1.2			t eren	
81	N,N-Diethylaniline	1.3				
82	4-Chloro-3-methylphenol	1.5				
83	2-Methylnaphthalene	2.7				2.7
84	Hexachlorocyclopentadiene	26.8	***		-	
85	2,4,6-Trichlorophenol	1.8			-	
<b>8</b> 6	2,4,5-Trichlorophenol	5.6				
87	1,1'-Biphenyl	1.7			-	
88	2-Chloroapthalene	0.8		-		
89	2-Nitroaniline	4.8				
90	Acenaphthylene	0.7		ality days		0.9
91	Dimethyl phthalate	1.1				
92	2,6-Dinitrotoluene	1.1				
93	3-Nitroaniline	5.6				
94	Acenaphthene	0.8				
<b>9</b> 5	2,4-Dinitrotoluene	25.0				
96	Dibenzofuran	3.5				
97	4-Nitrophenol	10.3				
98	2,4-Dinitrotoluene	1.4				
99	Fluorene	1.1		-	-	
100	Diethyl phthalate	3.6				
101	4-Chirophenyl phenyl ether	1.1				·
102	4-Nitroaniline	3.0		-		

## TABLE AIII-6 (Continued)

# ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1997 RAINFALL SAMPLING EVENTS

			Detection Sampling Dates			
	Compound	Limit µg/L (ppb)	7/18/97	8/12/97	8/16/97 20:00	8/17/97
103	4,6-Dinitro-2-methylphenol	25.0				
103	N-Nitrosodiphenylamine	1.0				
104	4-Bromophenyl phenyl ether	1.2				
105	Hexachlorobenzene	1.2				
107	Pentachlorophenol	25.0				Gurant
107	Pentachioronitrobenzene	6.8				
109	Phenanthrene	1.0	3.8	1.3	3.2	3.0
110	Anthracene	1.0	5.0		0.2	
111	Carbazole	3.9				
112	4-Nitrobiphenyl	3.5				
113	Di-n-butyl phthalate	1.3				4.1
113	Fluoranthene	0.9	3.3	1.9	3.0	· · · ·
115	Pyrene	1.7	3.9	1.8	2.8	-
116	Butyl benzyl phthalate	1.7	J.8 	1.0		
117	2-Acetylaminofluorene	5.5				-
118	Benzo(a)anthracene	0.7	1.2		1.0	
119	3,3'-Dimethoxybenzidine	19.6	1.2			
120	3,3'-Dichlorobenzidine	5.8				
120	Chrysene	0.9	1.6	1.1	1.4	
121	Bis(2-ethylhexyl)phthalate	8.2	1.0	19.2	1.4	
12.2	Di-n-octyl phthalate	2.6		15.2		
12.3	Benzo(b)fluoranthene	0.7				
124	Benzo(k)fluoranthene	0.8				
125		1.3				
	Benzo(a)pyrene	1.1				
127	Indeno(1,2,3-cd)pyrene	1.0				
128	Dibenz(a,h)anthracene	0.8	-			
129	Benzo(ghi)perylene	0.8		-		
	Pesticides and PCBs					
130	Trifluralin	0.05*	<b>-</b> 10			
131	alpha-BHC	0.02				
132	beta-BHC	0.03	500 di j			10 mg
133	gamma-BHC	0.02	80 m			***
134	delta-BHC	0.02				. <b>n</b> ata
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#### TABLE AIII-6 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE EVANSTON TARP DROP SHAFT STATION (DS-M106) DURING 1997 RAINFALL SAMPLING EVENTS

		Detection Sampling Dates				
		Limit	7/18/97	8/12/97	8/16/97	8/17/97
	Compound	µg/L (ppb)		·	20 <u>:</u> 00	
135	Heptachlor	0.02	**			
136	Aldrin	0.02	**			
137	Heptachlor epoxide	0.02				
138	gamma-Chlordane	0.05			·	
139	alpha-Chlordane	0.05				
140	alpha-Endosulfan	0.05				
141	Dieldrin	0.05		-		
142	4,4'-DDE	0.05	0.14	0.08	0.10	
143	Endrin	0.10				
144	Chlorobenzilate	0.03*				
145	beta-Endosulfan	0.05				
146	4,4'-DDD	0.05	0.26		0.06	-
147	Endosulfan sulfate	0.10				
148	4,4'-DDT	0.10	0.22	0.2	0.13	
149	Methoxychlor	0.15				
150	Captan	0.05*				
151	Endrin ketone	0.10				
152	Endrin aldehyde	0.10	**			
153	Toxaphene	0.50	<b></b>		·	~~
154	PCB-1016	0.20				-
155	PCB-1221	0.20	**			
156	PCB-1232	0.20			** **	
157	PCB-1242	0.20			<b></b> .	
158	PCB-1248	0.20				
159	PCB-1254	0.20				
160	PCB-1260	0.20				

--Not found, below detection limit.

\*Estimated instrument detection limit.

#### TABLE AIII-7

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/17/97
	Volatiles		na na mana na m
1	Chloromethane	1.8	- 354 <b>m</b>
2	Vinyl chloride	1.0	***
3	Acetaldehyde	28.7	Tel + 📾
4	Bromomethane	3.5	Sin-set
5	Chloroethane	1.8	a~en •
6	Propylene oxide	20.0	€×#
7	Acrolein	15.0	40 am
8	1,1-Dichloroethene	0.9	ar-48
9	Propionaldehyde	20.0	A00 MM
10	Acetone	5.4	12.7
11	Carbon disulfide	1.1	49 m
12	lodomethane	5.0	
13	Acetonitrile	2.0	58 MB
14	Allyl chloride	2.2	20100
15	Methylene chloride	1.0	20.76
16	1,2-Dichloroethene (total)	1.0	2.7
17	Acrylonitrile	5.0	
18	Methyl tert butyl ether	4.2	e
19	Hexane	2.0	200 GB
20	1,1-Dichloroethane	0.7	. · 98-98
21	Vinyl acetate	5.0	•
22	Chloroprene	4.9	200 MJ.
23	2-Butanone	5.5	476 at 4
24	Chloroform	0.9	≈a.∉r
25	1,1,1-Trichloroethane	0.7	104000
26	Carbon tetrachloride	0.9	
27	1,2-Dichloroethane	1.6	a gapana i
28	Benzene	0.7	
29	2,2,4-Trimethylpentane	2.0	
30	Trichloroethene	0.6	ymen x
31	Ethyl acrylate	4.5	
32	1,2-Dichloropropane	0.8	-se m
33	Methyl methacrylate	2.3	71.03
34	Bromodichloromethane	0.8	aartaat
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# TABLE AIII-7 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING A 1997 RAINFALL SAMPLING EVENT

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	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/17/97
35	1,4-Dioxane	67.8	
36	Epichlorohydrin	20.0	
37	trans-1,3-Dichloropropene	0.9	
38	4-Methyl-2-pentanone	3.5	
39	Toluene	1.8	2.8
40	cis-1,3-Dichloropropene	1.7	
41	1,1,2-Trichloroethane	2.5	·
42	Tetrachloroethene	1.6	28.5
43	2-Hexanone	4.6	
44	Dibromochloromethane	1.8	
45	1,2-Dibromoethane	2.0	
46	Chlorobenzene	0.6	
47	Ethylbenzene	0.8	2.4
48	m- and/or p-Xylenes	2.0	2.2
49	o-Xylene	1.0	
50	Styrene	1.5	
51	Bromoform	4.0	
52	Cumene	2.0	
53	1,1,2,2-Tetrachloroethane	3.9	
54	Benzyl chloride	3.6	
55	1,2-Dibromo-3-chloropropane	4.6	
	Semi-Volatiles		
-56	Phenol	1.3	· · · · · · · · · · · · · · · · · · ·
57	Bis(2-chloroethyl)ether	1.0	·
58	2-Chlorophenol	1.9	
59	1,3-Dichlorobenzene	0.7	· <b></b>
60	1,4-Dichlorobenzene	0.8	_
61	1,2-Dichlorobenzene	0.7	
62	Bis(2-chloroisopropyl)ether	1.0	· · · · · ·
63	2-Methylphenol	3.6	
64	Styrene oxide	5.4	
65	Acetophenone	1.8	
66	o-Toluidine	1.3	

#### TABLE AIII-7 (Continued)

### ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date - 8/17/97
67	Hexachloroethane	0.9	
68	N-Nitrose-di-n-propylamine	1.7	gant.
69	3- and/or 4-Methylphenol	3.7	iya wa
70	N,N-Dimethylaniline	1.4	۱۹۷۹ (۱۹۷۵)
71	Nitrobenzene	0.9	
72	Isophorone	1.8	
73	2-Nitrophenol	1.6	. in a
74	2,4-Dimethylphenol	1.4	20 m
75	Bis(2-chloroethoxy)methane	1.9	
76	2,4-Dichlorophenol	1.7	na ce
77	1,2,4-Trichlorobenzene	0.9	32-45
78	Naphthalene	0.6	13.0
79	4-Chloroaniline	2.3	
80	Hexachlorobutadiene	1.2	90.48
81	N,N-Diethylaniline	1.3	
82	4-Chloro-3-methylphenol	1.5	and the second se
83	2-Methylnaphthalene	2.7	5.1
84	Hexachlorocyclopentadiene	26.8	
85	2,4,6-Trichlorophenol	1.8	2 <b>3</b> 4 - 184
86	2,4,5-Trichlorophenol	5.6	- 
87	1,1'-Biphenyl	1.7	100 (B)
88	2-Chloroapthalene	0.8	386.er
89	2-Nitroaniline	4.8	- -
90	Acenaphthylene	0.7	2.7
91	Dimethyl phthalate	1.1	
92	2,6-Dinitrotoluene	1.1	
93	3-Nitroaniline	5.6	·
94	Acenaphthene	0.8	1.2
95	2,4-Dinitrotoluene	25.0	
96	Dibenzofuran	3.5	
97	4-Nitrophenol	10.3	(a. m)
98	2,4-Dinitrotoluene	1.4	40 ML
99	Fluorene	1.1	2.4
100	Diethyl phthalate	3.6	<b>*</b> *
101	4-Chirophenyl phenyl ether	1.1	
102	4-Nitroaniline	3.0	. <b>6. 60</b>

# TABLE AIII-7 (Continued)

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# ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/17/97
103	4,6-Dinitro-2-methylphenol	25.0	
104	N-Nitrosodiphenylamine	1.0	
105	4-Bromophenyl phenyl ether	1.2	
106	Hexachlorobenzene	1.2	
107	Pentachlorophenol	25.0	
108	Pentachloronitrobenzene	6.8	
109	Phenanthrene	1.0	11.7
110	Anthracene	1.0	3.1
111	Carbazole	3.9	
112	4-Nitrobiphenyl	3.2	
113	Di-n-butyl phthalate	1.3	
114	Fluoranthene	0.9	4.5
115	Pyrene	1.7	6.8
116	Butyl benzyl phthalate	1.8	
117	2-Acetylaminofluorene	5.5	
118	Benzo(a)anthracene	0.7	2.2
119	3,3'-Dimethoxybenzidine	19.6	
120	3,3'-Dichlorobenzidine	5.8	
121	Chrysene	0.9	2.3
122	Bis(2-ethylhexyl)phthalate	8.2	
123	Di-n-octyl phthalate	2.6	·
124	Benzo(b)fluoranthene	0.7	
125	Benzo(k)fluoranthene	0.8	
126	Benzo(a)pyrene	1.3	
127	Indeno(1,2,3-cd)pyrene	1.1	
128	Dibenz(a,h)anthracene	1.0	
129	Benzo(ghi)perylene	0.8	<b>—</b> .
	Pesticides and PCBs		
130	Trifluralin	0.05*	
131	alpha-BHC	0.02	
132	beta-BHC	0.03	·
133	gamma-BHC	0.02	<del></del>
134	delta-BHC	0.02	
	А	III-40	

#### TABLE AIII-7 (Continued)

## ORGANIC POLLUTANTS IN WASTEWATER FROM THE LAKE STREET OVERFLOW STATION (CS-106A) DURING A 1997 RAINFALL SAMPLING EVENT

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/17/97
135	Heptachlor	0.02	43 Ko
136	Aldrin	0.02	aan Adu
137	Heptachlor epoxide	0.02	óip nas
138	gamma-Chlordane	0.05	ini≢ so-
139	alpha-Chlordane	0.05	+3/8e
140	alpha-Endosulfan	0.05	Agrae
141	Dieldrin	0.05	gan Ba-
142	4,4'-DDE	0.05	5.0°%*
143	Endrin	0.10	(1) alk
144	Chlorobenzilate	0.03*	
145	beta-Endosulfan	0.05	
146	4,4'-DDD	0.05	7 <b>4 12</b>
147	Endosulfan sulfate	0.10	723 <b>38</b> 1
148	4,4'-DDT	0.10	· ~
149	Methoxychlor	0.15	forte .
150	Captan	0.05*	974 <b>60</b>
151	Endrin ketone	0.10	. 25 <b>.05</b> .
152	Endrin aldehyde	0.10	- 1.6496
153	Toxaphene	0.50	· (2) (20)
154	PCB-1016	0.20	Standar
155	PCB-1221	0.20	
156	PCB-1232	0.20	63 <b>9</b>
157	PCB-1242	0.20	•
158	PCB-1248	0.20	- News
159	PCB-1254	0.20	<b>10.0408</b>
160	PCB-1260	0.20	

--Not found, below detection limit.

\*Estimated instrument detection limit.

#### APPENDIX IV

CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOWS FROM TARP DROP SHAFT AND OVERFLOW STATIONS AT VARIOUS LOCATIONS DURING 1995 THROUGH 1997 RAINFALL SAMPLING EVENTS

#### AIV-1

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON MAY 23 AND 24, 1995

22:29	1330	200	3.57
22:44	1340	214	3.53
22:59	1302	209	3.77
23:14	1355	235	3.06
23:29	1262	197	2.54
23:44	1060	230	2.00
23:59	908	140	1.67
0:14	892	129	3.03
0:29	936	144	3.65
0:44	950	170	3.26
0:59	1032	167	3.71
1:14	612	78	2.02
1:29	611	159	1.84
1:59	656	56	1.65
2:29	608	48	1.32
2:59	634	37	1.28
		46	1.57
3:59	574	41	1.28
4:29	577	33	1.50
4:59	610	37	2.30
	797	42	1.84
		33	0.95
			0.87
8:59	628	33	0.89
10	749	81	1.84
30			0.87
			3.77
	3:29 3:59 4:29 4:59 5:59 6:59 7:59	3:296463:595744:295774:596105:597976:595357:596028:59628	3:29       646       46         3:59       574       41         4:29       577       33         4:59       610       37         5:59       797       42         6:59       535       33         7:59       602       33         8:59       628       33

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#### AIV-2

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON JUNE 2, 1995

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Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
6/2/95	15:20	1040	157	4.74
0/2/90	15:35	798		
			174	2.52
	15:50	748	205	0.65
	16:05	890	194	0.66
	16:20	900	190	0.78
	16:35	792	159	0.23
	16:50	726	176	0.29
•	17:05	700	108	0.94
	17:20	784	99	1.04
	17:35	966	81	2.57
	17:50	654	92	1.35
	18:05	698	93	1.19
	18:20	762	64	3.18
	18:50	826	98	3.74
	19:20	842	164	2.46
	19:50	764	187	1.29
	20:20	544	78	1.13
	20:50	520	79	1.20
	21:50	522	83	1.21
	22:50	524	52	1.52
Weighted A	verage	699	116	1.60
Min		520	52	0.23
Max		1040	205	4.74

#### AIV-3

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON NOVEMBER 10, 1995

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Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
11/10/95	17:00	875	166	4.03
	17:15	812	156	3.14
	17:30	795	164	3.27
	17:45	802	124	2.49
	18:00	833	98	2.52
	18:15	734	35	3.55
	18:30	701	77	2.79
	18:45	730	90	2.53
	19:00	746	102	2.18
	19:15	697	80	1.54
	19:30	697	65	1.10
	19:45	566	86	0.79
Weighted Ave	race	752	102	2.50
Min	0	566	35	0.79
Max		875	166	4.03

#### AIV-4

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON JUNE 2, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
6/2/95	20:01	376	20	3.56
	20:16	404	28	3.41
	20:31	318	24	1.58
	20:46	376	39	2.53
	21:01	498	37	3.77
	21:16	480	34	5.04
	21:31	388	46	3.53
	21:46	366	31	2.44
	22:01	368	55	2.36
	22:16	368	38	2.40
	22:31	344	26	2.36
	22:46	358	44	2.37
Weighted A	verage	389	35	2.94
Min		318	20	1.58
Max ·		498	55	5.04

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#### AIV-5

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON JULY 20, 1995

Date	Time	Total Solids mg/L	BOD <sub>5</sub> mg/L	Ammonium-N mg/L
7/20/95	14:39	474	54	1.38
1720:00	14:54	452	36	1.41
	15:09	476	52	1.40
	15:24	584	61	2.47
	15:39	400	36	1.41
	15:54	454	60	2.89
	16:09	588	98	3.48
	16:24	734	118	2.64
	16:39	1118	103	3.43
. 1 A	16:54	982	240	2.66
	17:09	880	129	2.59
	17:24	744	138	3.78
Weighted Av	verage	662	94	2.45
Min		400	36	1.38
Max -		1118	240	3.78

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#### AIV-6

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## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON AUGUST 15, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
8/15/95	15:00	520	43	0.99
	15:15	594	39	0.78
	15:30	592	63	1.92
	15:45	906	60	2.90
	16:00	972	45	2.48
	16:15	1430	72	3.92
	16:30	808	53	0.60
	16:45	682	75	0.60
	17:00	594	50	3.08
	17:15	700	57	3.13
	17:30	538	57	3.22
	17:45	484	50	2.82
	18:00	406	44	1.77
	18:30	458	38	2.22
	19:00	554	40	2.63
	19:30	442	50	2.64
•	20:00	492	55	2.50
Weighted Average		628	51	2.30
Min		406	38	0.60
Max		1430	75	3.92

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#### AIV-7

CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON NOVEMBER 10, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
11/10/95	19:30	260	12	0.40
	20:30	252	10	0.24
	21:30	296	12	0.14
	22:30	310	18	0.22
	23:30	308	17	0.10
	0:30	292	17	0.24
	1:30	362	16	0.14
	2:30	406	12	1.48
	3:30	350	21	0.72
	4:30	400	20	0.50
	5:30	462	16	0.65
	6:30	468	18	2.29
	7:30	604	21	1.51
	8:30	724	10	2.37
	9:30	694	15	2.80
	10:30	504	12	1.55
· · · . •	11:30	382	6	1.79
	12:30	474	10	2.23
	13:30	526	14	2.54
	14:30	608	12	2.57
	15:30	700	12	2,88
	16:30	858	10	3.11
	17:30	1108	17	4.27
	18:30	1290	16	5.26
Weighted Ave	rade	516	14	1.62
Min		252	6	0.10
Max		1290	21	5.26

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#### AIV-8

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON MAY 23, 1995

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Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
5/23/95	10:42	186	26	0.80
	10:47	216	22	0.73
	10:52	232	20	0.72
	10:57	210	17	0.53
	11:02	234	14	0.45
	11:12	258	16	0.45
	11:22	346	20	0.64
- · · · ·	11:32	246	20	0.72
1	11:42	266	14	0.76
	11:52	318	20	0.80
	12:02	322	23	0.63
	12:12	360	46	0.41
	12:22	392	37	0.40
	12:32	410	23	0.67
	12:42	302	19	0.57
	12:52	396	23	0.79
	13:02	374	21	1.07
	13:12	408	20	1.07
	13:22	396	19	1.02
	13:32	424	33	0.92
	13:42	438	38	0.99
	13:52	402	28	1.09
	14:02	392	22	0.64
	14:17	358	28	0.84
	14:32	428	22	0.70
	14:47	374	18	0.82
	15:02	368	22	0.78
	15:17	372	19	0.69
	15:32	394	16	0.80
	15:47	436	16	0.84
	16:02	474	17	0.85

### AIV-8 (Continued)

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# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON MAY 23, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
5/23/95	16:17	490	21	0.98
	10:42	186	26	0.80
	10:47	216	22	0.73
	10:52	232	20	0.72
	10:57	210	17	0.53 ,
	11:02	234	14	0.45
	11:12	258	16	0.45
	11:22	346	20	0.64
	11:32	246	20	0.72
	11:42	266	14	0.76
	11:52	318	20	0.80
	12:02	322	23	0.63
	12:12	360	46	0.41
	12:22	392	37	0.40
	12:32	410	23	0.67
	12:42	302	19	0.57
	12:52	396	23	0.79
	13:02	374	21	1.07
	13:12	408	20	1.07
	13:22	396	19	1.02
	13:32	424	33	0.92
	13:42	438	38	0.99
	13:52	402	28	1.09
	14:02	392	22	0.64
	14:17	358	28	0.84
	14:32	428	22	0.70
	14:47	374	18	0.82
	15:02	368	22	0.78
	15:17	372	19	0.69
	15:32	394	16	0.80
	15:47	436	16	0.84

### AIV-8 (Continued)

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# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON MAY 23, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
5/23/95	16:02	474	17	0.85
0/20/00	16:17	490	21	0.98
	16:32	420	21	0.81
	16:47	408	24	0.77
	17:02	412	28	1.06
	17:17	454	27	1.07
	17:32	514	30	0.94
	17:47	514	33	1.10
	18:02	476	24	0.96
	18:17	574	21	1.45
	18:32	556	14	1.44
	18:47	546	11	1.56
Weighted Av	verage	385	32	1.07
Min	iciayo	186	11	0.40
Max		636	133	5.02

### AIV-9

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JUNE 2 AND 3, 1995

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Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
6/2/95	14:50	4190	760	8.72
	14:55	1196	244	3.62
	15:00	1076	178	3.28
	15:05	1338	193	2.79
	15:10	1360	202	2.28
	15:15	1128	199	1.68
	15:20	880	164	1.38
	15:25	746	175	1.33
	15:30	710	189	1.21
	15:35	540	156	1.04
	15:40	452	111	1.11
	15:45	424	70	1.06
	15:50	388	64	1.00
	15:55	364	80	0.87
	16:00	338	75	1.03
	16:05	298	68	0.90
	16:10	278	56	0.83
	16:15	278	64	0.82
	16:20	290	68	0.95
	16:25	302	58	0.78
	16:30	294	94	0.94
	16:35	280	33	0.84
	16:40	288	31	0.84
	16:45	258	74	0.98
	16:50	280	46	0.91
	16:55	260	32	0.91
	17:00	256	28	0.97
	17:05	298	25	1.03
	17:10	222	24	1.14
	17:15	252	24	0.99
	17:20	282	31	1.04

# AIV-9 (Continued)

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### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JUNE 2 AND 3, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
			<b>.</b>	
6/2/99	17:25	300	27	1.06
	17:30	276	17	1.50
	17:35	292	28	1.41
	17:40	276	18	1.47
	17:45	328	19	1.46
	17:50	310	30	1.23
	17:55	316	18	1.19
	18:05	326	20	1.37
	18:15	344	22	1.20
	18:25	344	21	1.07
	18:35	356	30	1.35
	18:45	374	19	1.68
	18:55	380	21	1.51
	19:05	408	23	1.76
	19:15	410	21	1.44
	19:25	438	22	1.68
	19:35	424	35	1.45
-	19:45	432	39	1.86
	19:55	446	24	2.03
	20:05	516	33	2.18
	20:20	476	32	2.34
	20:35	508	28	2.80
	20:50	518	32	2.56
	21:05	558	44	2.90
	21:20	522	35	2.98
	21:35	564	22	2.47
	21:50	596	55	2.28
	22:05	574	34	3.16
	22:20	602	36	2.94
	22:35	562	26	3.09
	22:50	596	28	3.20

### AIV-9 (Continued)

CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JUNE 2 AND 3, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
6/2/99	23:05	792	29	3.18
	23:20	620	24	3.22
	23:35	612	23	3.36
	23:50	620	24	3.45
6/3/95	0:05	604	24	3.25
	0:20	608	37	3.22
	0:35	604	34	3.22
	0:50	636	30	3.46
	1:05	598	24	3.40
Weighted A	Vorago	507	40	0.04
Min	veidye	527	48	2.21
Max		222	17	0.78
		4190	760	8.72

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#### AIV-10

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JUNE 27, 1995

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Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
6/27/95	16:27	3156	2621	5.50
	16:32	742	260	0.67
	16:37	702	175	1.31
	16:42	634	139	0.98
	16:47	570	169	1.39
	16:52	554	139	1.44
	16:57	898	173	1.26
· · · · ·	17:02	914	235	1.03
	17:07	922	246	1.79
	17:12	888	176	1.61
	17:17	718	136	1.70
	17:22	1618	375	2.49
	17:27	1088	340	2.32
	17:32	974	293	2.18
	17:37	928	268	2.45
	17:42	928	357	3.01
	17:47	980	304	2.93
	17:52	1056	388	2.96
	17:57	1050	429	3.22
	18:02	1098	353	2.96
	18:07	958	352	2.90
	18:12	984	300	2.88
	18:17	878	258	3.04
	18:22	766	245	3.17
	18:27	812	239	2.60
	18:32	716	161	2.57
	18:37	626	243	2.73
	18:42	582	173	2.53
	18:47	570	103	2.69
	18:52	554	114	2.88
	18:57	520	112	2.90

### AIV-10 (Continued)

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JUNE 27, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
6/27/95	19:02	508	188	3.26
	19:07	500	88	3.16
	19:12	508	74	3.03
	19:17	516	146	3.59
	19:22	488	105	3.80
	19:32	464	117	3.27
	19:42	458	92	2.21
•	19:52	386	62	2.47
	20:02	374	64	2.80
	20:12	354	84	3.01
	20:22	334	111	3.35
	20:32	326	53	3.35
	20:42	316	178	3.73
	20:52	344	131	3.48
	21:02	296	55	3.56
	21:12	302	86	3.65
,	21:37	362	46	3.51
Weighted Av	verage	626	186	2.81
Min	-	296	46	0.67
Max		3156	2621	5.50

#### AIV-11

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JULY 20, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
7/20/95	13:41	648	188	1.66
····	13:46	384	112	0.72
	13:51	418	114	0.60
	13:56	462	120	0.71
	14:01	426	98	0.89
	14:06	446	93	0.89
	14:11	442	91	0.83
	14:16	542	128	0.92
	14:21	444	76	0.84
	14:26	452	73	0.83
	14:31	416	90	1.77
	14:36	562	74	0.91
	14:41	506	61	1.18
	14:46	540	65	1.12
	14:51	506	42	1.12
	14:56	480	46	1.27
	15:01	436	45	1.24
•	15:06	448	39	1.24
	15:11	416	48	1.24
	15:16	458	37	1.25
en e	15:21	406	29	1.24
	15:26	390	27	1.25
	15:31	392	28	1.27
	15:36	386	24	1.29
Weighted Av	erage	456	71	1.08
Min		384	24	0.60
Max		648	188	1.77

#### AIV-12

CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JULY 25 AND 26, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
	·	·····		
7/25/95	19:18	184	20	0.51
	19:23	176	11	0.72
	19:28	170	10	0.48
	19:33	120	17	0.56
	19:38	204	17	0.80
	19:43	168	15	0.74
	19:48	250	20	0.81
	19:53	326	23	0.75
	19:58	248	20	0.74
	20:03	252	19	0.63
	20:08	306	34	0.58
	20:13	274	50	0.58
	21:45	480	13	0.79
	21:50	472	13	0.85
	21:55	462	8	0.84
	22:00	518	7	1.01
	22:05	500	20	0.94
	22:10	476	15	0.91
	22:15	494	28	0.89
•	22:20	504	16	1.01
	22:25	510	15	0.94
	22:30	544	12	0.96
	22:35	550	11	0.96
	22:40	590	12	0.99
	22:54	548	7	0.98
	22:59	586	15	1.26
	23:04	560	14	1.06
	23:09	554	11	1.09
	23:19	564	13	1.22

#### AIV-12 (Continued)

CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JULY 25 AND 26, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
7/25/95	23:29	578	15	1.19
	23:39	578	13	1.20
	23:49	582	16	1.20
	23:59	602	14	1.30
7/26/95	0:09	604	23	1.53
	0:18	612	22	1.46
	0:28	566	17	1.15
	1:02	620	9	1.27
	1:17	620	9	1.40
	1:32	628	8	1.36
	1:47	642	7	1.41
	2:02	638	7	1.45
	2:17	672	8	1.35
	2:32	720	6	1.25
	2:47	694	9	1.20
	3:02	652	7	1.20
	3:17	654	<b>3</b> .	1.15
	3:32	622	2	1.15
r	3:47	652	3. 2 3 3	1.08
	4:02	704	3	0.99
	4:17	644	3	1.01
	4:32	652	2	1.19
	5:11	680	8	1.22
	5:26	644	8	1.35
	5:41	616	7	1.31
	5:56	634	4	1.34
	6:11	634	4	1.44
	6:26	608	4	1.64

#### AIV-12 (Continued)

CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JULY 25 AND 26, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N mg/L
7/26/95	6:41	622	7	1.74
	6:56	588	8	1.71
	7:11	348	9	2.13
Weighted Av	erage	579	10	1.21
Min		120	2	0.48
Max		720	50	2.13

### AIV-13

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON NOVEMBER 10 AND 11, 1995

Date	Time	Total Solids mg/L	BOD₅ mg/L	Ammonium-N – mg/L
11/10/95	10:13	618	110	2.47
	10:23	608	114	3.33
	10:33	726	134	0.91
	10:43	448	85	1.64
	10:53	578	104	3.08
	11:03	730	120	1.28
	11:13	382	73	0.85
	11:23	296	55	0.89
•	11:33	230	35	0.81
	11:43	170	26	0.98
	11:53	136	16	0.74
	12:03	130	11	0.83
	19:27	236	6	0.38
	19:31	220	8	0.32
	20:01	262	8 8	0.19
	21:01	340	10	0.59
	21:31	310	6	0.63
*	22:01	218	6	0.36
	22:31	186	5	0.31
	23:01	254	6	0.37
	23:31	324	5	5.52
11/11/95	0:01	386	5	0.62
	0:31	388	6	0.48
Maighted Aver	200	324	25	1.07
Weighted Aver	aye	130	5	0.19
Min Max		730	134	5.52

#### AIV-14

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/17/96	15:36	426	201
	15:51	692	151
	16:06	734	262
	16:21	426	173
	16:36	294	82
	16:51	226	82
	17:06	180	79
	17:21	208	57
	17:36	228	62
	17:51	218	45
	18:06	144	38
	18:21	132	35
	18:36	110	35
	19:06	168	43
	19:36	138	38
	20:06	138	114
	20:36	280	79
	21:06	92	45
	21:36	76	65
	22:06	101	42
	22:36	71	10
	23:06	80	37
	23:36	66	-16
7/18/96	0:06	51	30
	0:36	60	29
	1:06	58	14
	1:36	70	10
	2:06	49	12
	2:36	48	10
	3:06	55	10

### AIV-14 (Continued)

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/18/96	3:36	61	10
	4:06	49	10
	5:06	39	13
	6:06	48	17
	7:06	45	17
	8:06	52	44
	9:06	49	47
	10:06	45	22
	11:06	50	19
	12:06	38	23
	13:06	50	16
	14:06	49	10
	15:06	37	21
	16:06	46	46
	17:06	36	22
	18:06	26	26
	19:06	20	20
	20:06	29	29
	21:06	56	56
Mainhtod Arran		05	25
Weighted Avera	ge	85	35
Min Max		20 734	10 262

### AIV-15

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON SEPTEMBER 26, 1996

Date	Time	Total Suspended Solids mg/L		BOD₅ mg/L
9/26/96	10:55	588	n n n ar fa Grego ang Grego dan sha na sh	112
0/2.0/00	11:10	466		99
	11:25	420		110
	11:40	372		122
	11:55	206		73
	12:10	168		65
	12:25	232		54
	12:40	360		81
	12:55	422		90
	13:10	538		180
	13:25	406		91
	13:40	610		190
	13:55	274		70
	14:25	216		54
	14:55	212		57
	15:25	172		48
	15:55	144		44
•	16:25	154		60
	16:55	120		47
	17:25	90		44
	17:55	82		39
	18:25	62		37
	18:55	82		31
	19:25	66		21
	19:55	116		22
Weighted Average		217		64
Min		62		21
Max		610		190

### AIV-16

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# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/17/96	15:45	324	75
	16:00	264	48
	16:15	322	59
	16:30	406	68
	16:45	182	.33
	17:00	324	78
	17:15	152	51
	17:30	132	35
·	17:45	100	23
	18:00	104	24
	18:15	126	24
	18:30	130	59
	18:45	58	18
	19:15	60	17
	19:45	64	14
	20:15	66	17
•	20:45	84	34
•	21:15	134	20
	21:45	92	22
	22:15	116	19
	22:45	80	23
	23:15	128	19
	23:45	110	18
7/18/96	0:15	92	27
	0:45	162	11
	1:15	230	10
	1:45	66	14
	2:15	54	11
	2:45	52	12

# AIV-16 (Continued)

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/18/96	3:15	56	20
	3:45	76	14
	4:45	70	15
	5:45	62	16
	6:45	54	18
	7:45	52	17
	8:45	56	19
	9:45	64	18
	10:45	72	18
	11:45	66	18
	12:45	58	19
	13:45	66	21
	14:45	64	27
	15:45	52	26
	16:45	62	30
	17:45	52	32
	18:45	38	31
•	19:45	42	26
	20:45	22	24
			•
Weighted Avera	ige	84	23
Min		22	10
Max		406	78

#### AIV-17

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JULY 17, 1996

1

Date	Time	Total Suspended Solids mg/L	• •	BOD <sub>5</sub> mg/L
7/17/96	16:50	932		143
	17:00	236		23
	17:10	74		14
	17:20	60		17
	17:30	60		11
	17:40	68		11
	17:50	44		12
	18:00	56		14
•	18:10	68		15
	18:20	60		14
	18:30	40		15
	18:40	54		16
	18:50	42		18
	19:10	42		15
	19:30	56		13
	19:50	58		12
	20:10	40		19
•	20:30	50		18
	20:50	44		15
	21:10	52		15
	21:30	48		10
Weighted Average	<b>a</b>	74		17
Min		40		10
Max		932		143

#### AIV-18

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE EVANSTON DROP SHAFT STATION DS-M106 ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/17/96	15:50	162	37
	16:05	178	25
	16:20	148	28
	16:35	172	20
	16:50	98	24
	17:05	112	22
	17:20	116	26
	17:35	94	25
	17:50	196	150
×.	18:05	84	45
	18:20	54	28
	18:35	50	23
	19:00	30	22
	19:30	68	52
	20:00	70	38
	20:30	62	42
· •	21:00	102	63
	21:30	94	61
	22:00	102	53
	22:30	70	43
	23:00	54	31
	23:30	42	32
7/18/96	0:00	76	40
	0:30	160	50
Weighted Avera	ge	89	42
Min	~	30	20
Max		196	150

#### AIV-19

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### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE LAKE STREET OVERFLOW STATION CS-106A ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/17/96	16:14	160	24
	16:29	182	23
	16:44	140	20
	16:59	106	23
	17:14	82	20
	17:29	80	28
	17:44	76	28
×	17:59	66	25
	18:14	78	22
	18:29	44	23
	18:44	46	21
	18:59	32	21
	19:14	90	39
	19:44	48	36
	20:14	138	67
	20:44	122	61
	21:14	260	31
	21:44	184	26
	22:14	104	21
	22:44	92	· 15
	23:14	42	13
	23:44	44	8
7/18/96	0:14	30	8
	0:44	14	12
	1:14	42	12
	1:44	52	19
	2:14	44	17
	2:44	20	21
	3:14	18	6
	3:44	12	6
7/18/96	4:14	28	6

### AIV-19 (Continued)

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE LAKE STREET OVERFLOW STATION CS-106A ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	_	BOD₅ mg/L
	5:14 6:14 7:14	26 42 142		20 27 29
Weighted Average Min Max		72 12 260		22 6 67

#### AIV-20

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE EVANSTON OVERFLOW STATION CS-106B ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/17/96	15:45	304	27
1/11/00	16:07	526	26
	16:22	330	20
	16:37	122	21
	16:52	130	23
	17:07	122	23
	17:22	112	27
	17:37	106	24
	17:52	76	28
	18:07	68	22
	18:22	44	21
	18:37	48	20
	18:52	98	55
	19:07	102	39
	19:37	48	31
	20:07	122	54
,	20:37	226	52
	21:07	340	37
	21:37	303	28
	22:07	104	25
	22:37	94	20
	23:07	58	21
	23:37	50	19
	0:07	34	22
	0:37	26	10
	1:07	38	10
	1:37	66	12
	2:07	70	21
	2:37	18	16
	3:07	36	23

# AIV-20 (Continued)

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE EVANSTON OVERFLOW STATION CS-106B ON JULY 17 AND 18, 1996

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/18/96	4:07	34	17
	5:07 6:07	22 210	17
	7:07	152	51 25
	8:07	24	16
	9:07	26	6
	10:07	10	6
	11:07	16	6
Weighted Average		97	23
Min		10	6
Max		526	55
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#### AIV-21

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON JULY 18, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/18/97	17:05	324	55
	17:20	178	22
	17:35	250	30
	17:50	222	23
	18:05	206	22
	18:20	214	25
	18:35	154	22
	18:50	166	30
	19:05	174	33
	19:20	166	34
	19:35	162	25
	19:50	134	27
	20:05	116	33
	20:20	488	86
	20:35	142	35
	20:50	136	30
	21:05	98	25
	21:20	100	38
	21:35	124	23
	21:50	68	30
	22:05	92	33
	22:20	96	32
	22:35	120	37
	22:50	104	27
Weighted Averag	e	166	32
Min	-	68	22
Max		488	86

#### AIV-22

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON AUGUST 16 AND 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
8/16/97	21:34	238	26
0, 10,01	21:49	220	37
	22:04	222	31
	22:19	202	19
	22:34	176	23
	22:49	192	26
	23:04	208	15
	23:19	152	10
	23:34	182	12
	23:49	128	13
8/17/97	0:04	118	13
	0:19	128	13
	0:34	114	10
	1:04	134	15
	1:34	76	12
	2:04	150	43
	2:34	194	36
	3:04	58	15
	3:34	42	<10
	4:34	68	<10
	5:34	12	<10
	6:34	12	<10

#### AIV-22

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE TARP CALUMET SYSTEM AT THE 125TH STREET DROP SHAFT STATION CDS-13 ON AUGUST 16 AND 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
	7:34	16	<10
	8:34	28	<10
Weighted Average		92	16*
Min		12	10
Max		238	43

\*A value of 10 was used to calculate the time-weighted average when the value was less than 10.

### AIV-23

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE RACINE AVENUE DROP SHAFT STATION DS-M28 ON JULY 18, 1997

7/18/97       17:21       2442       172         17:36       644       98         17:51       336       53         18:06       192       38         18:21       320       43         18:36       272       39         18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36	Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
17:36       644       98         17:51       336       53         18:06       192       38         18:21       320       43         18:36       272       39         18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36	7/18/97	17:21	2442	172
17:51       336       53         18:06       192       38         18:21       320       43         18:36       272       39         18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
18:06       192       38         18:21       320       43         18:36       272       39         18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
18:21       320       43         18:36       272       39         18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
18:36       272       39         18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
18:51       160       30         19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
19:06       254       34         19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
19:21       160       33         19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36				
19:36       144       37         19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36         Weighted Average       256       38         Min       78       19	•			
19:51       120       28         20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36         Weighted Average       256       38         Min       78       19				
20:06       112       26         20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36         Weighted Average       256       38         Min       78       19				
20:36       112       19         21:06       78       21         21:36       156       28         22:06       178       36         Weighted Average       256       38         Min       78       19				
21:06       78       21         21:36       156       28         22:06       178       36         Weighted Average       256       38         Min       78       19				
21:36       156       28         22:06       178       36         Weighted Average       256       38         Min       78       19				
22:06       178       36         Weighted Average       256       38         Min       78       19		21:36		
Weighted Average 256 38 Min 78 19				
Min 78 19				
Min 78 19	Weighted Average		256	38
			78	19
	Max		2442	

#### AIV-24

## CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE DES PLAINES TARP SYSTEM AT THE RIVERSIDE DROP SHAFT STATION DS-D45 ON JULY 18, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/18/97	16:20	422	113
	16:30	362	110
	16:40	326	93
	16:50	324	102
	17:00	262	120
· -	17:10	272	88
	17:20	254	121
	17:30	188	66
	17:40	126	40
	17:50	100	37
	18:00	96	29
	18:10	70	26
	18:20	32	18
Weighted Avera	ae	217	75
Min		32	18
Max		422	121

#### AIV-25

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE EVANSTON DROP SHAFT STATION DS-M106 ON JULY 18, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
7/18/97	16:24	1002	158
	16:39	678	150
	16:54	1182	109
	17:09	628	134
	17:24	1570	111
	17:39	320	65
	17:54	370	66
	18:09	332	85
	18:24	266	84
	18:39	306	52
	18:54	1334	102
	19:09	590	89
	19:22	212	50
	19:52	152	33
	20:22	92	30
Weighted Average		EE1	04
Min		551	81
Max		152	33
MUA		1570	158

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#### AIV-26

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE EVANSTON DROP SHAFT STATION DS-M106 ON AUGUST 16 AND 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
8/16/97	18:15	476	154
	18:30	316	129
	18:45	324	99
	19:00	488	63
	19:15	436	38
	19:30	180	41
	19:45	188	34
	20:00	128	24
	20:15	100	21
	20:30	54	22
	20:45	156	24
	21:00	67	21
	21:15	132	24
	21:45	272	22
	22:15	132	21
	22:45	268	28
, · · ,	23:15	376	36
· ·	23:45	176	37
8/17/97	0:15	54	24
	1:15	86	19
	2:15	64	9
	3:15	20	9
	4:15	28	6
	5:15	20	10
	6:15	12	10
	7:15	26	16
	8:15	48	24
	9:15	80	35
	10:15	88	35
	11:15	60	36

#### AIV-26 (Continued)

# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW DISCHARGED TO THE MAINSTREAM TARP SYSTEM AT THE EVANSTON DROP SHAFT STATION DS-M106 ON AUGUST 16 AND 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
8/17/97	12:15 13:15 14:15 15:15 16:15 16:15 17:15 18:15 19:15 20:15 21:15 22:15 23:15	20 312 276 10 46 42 60 72 40 50 40 22	27 54 61 19 42 38 44 55 53 33 25 23
Weighted Average Min Max		99 10 488	32 6 154

### AIV-27

### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE RIVERSIDE OVERFLOW STATION CS-44 ON AUGUST 16 AND 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
8/16/97	20:30	69	13
	20:40	55	10
	20:50	52	10
	21:00	54	11
	21:10	65	10
	21:20	81	12
	21:30	56	_31
	21:40	19	21
	21:50	65	11
	22:00	63	10
	22:10	70	12
	22:20	38	11
	22:40	34	10
	23:00	27	10
	23:20	28	10
	23:40	26	9
8/17/97	0:00	21	8
	0:20	20	9
	0:40	20	10
	1:00	19	10
	1:20	20	8
	1:40	20	8
	2:00	22	10
	2:20	22	7
	2:40	14	6
	3:00	20	5
	3:20	11	7
	3:40	9	6
	, 4:10	11	7
	4:40	5	4

### AIV-27 (Continued)

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# CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE RIVERSIDE OVERFLOW STATION CS-44 ON AUGUST 16 AND 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
8/17/97	V		
	5:10	12	5
	5:40	13	5
	6:10	13	5 6
	6:40	9	4
	7:10	11	6
	7:40	14	9
	8:10	11	9 7
	8:40	8	5
	9:10	8 8	26
	9:40	8	7
	10:10	11	6
	10:40	9	6
	11:10	11	22
	11:40	11	9
	12:10	10	7
Maished Aug		40	
Weighted Average	9	19	9
Min		5	4
Max		81	31

#### AIV-28

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### CONVENTIONAL POLLUTANTS IN COMBINED SEWER OVERFLOW AT THE EVANSTON OVERFLOW STATION CS-106B ON AUGUST 17, 1997

Date	Time	Total Suspended Solids mg/L	BOD₅ mg/L
8/17/97	4:45	46	11
	5:00	38	10
	5:15	22	9
	5:30	24	7
	5:45	36	7
	6:00	24	7
	6:15	34	6
	6:30	28	7
•	6:45	18	6
	7:00	14	5
	7:15	40	9
Weighted Avera	ade	28	7
Min	- <b>U</b> -	14	5
Max		46	11