Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

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

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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_5) in CSOs.

The study on organic priority pollutants and Clean Air Act VOCs in CSOs is considered an enhanced follow-up to a previous 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.

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

a rain event subsides using transfer tunnels separate from the raw sewage wet wells of the WRPs. CSOs from these two pump stations will be 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 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_4-N), and BOD_5 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 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_5, and NH_4-N, and all 1996 and 1997 samples were analyzed for TSS and BOD_5.

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:

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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

	TARP Mainstream Pumping Station		
	1995	1996	1997
Number of Compounds Detected	43	36	26
Number of Volatiles	15	18	11
Predominant Volatiles	Acetone (9/10)* TCE (9/10)** Toluene (9/10)	Acetone (8/9) Chloroform (8/9) TCE (8/9)	Acetone (7/7) Toluene (4/7) TCE (4/7)
Number of Semi-Volatiles	23	15	15
Predominant Semi-Volatiles	Phenol (7/10) Phenanthrene (6/10) 4-MP (5/10)	4-MP (5/9) Phenanthrene (5/9) Fluoranthene (4/9)	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, µg/L	198.1	327.8	1371

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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	12	15	13
Predominant Volatiles	Acetone (7/7) Chloroform (7/7) Toluene (6/7)	Acetone (7/7) MC (7/7) Toluene (6/7)	Acetone (5/5) Toluene (4/5) PCE (4/5)
Number of Semi-Volatiles	14	13	12
Predominant Semi-Volatiles	Acetophenone (6/7) Phenol (5/7) 4-MP (5/7)	4-MP (5/7) Phenol (5/7) Acetophenone (5/7)	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, $\mu g/L$	317.1	586.5	692.9

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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

	Kirie WRP Influent Pump Station		
	1995	1996	1997
Number of Compounds Detected	24	20	23
Number of Volatiles	15	13	11
Predominant Volatiles	Acetone (8/8) Chloroform (8/8) Toluene (8/8)	Acetone (10/10) Chloroform (10/10) MC (9/10)	Acetone (8/8) Chloroform (8/8) Toluene (8/8)
Number of Semi-Volatiles	8	7	7
Predominant Semi-Volatiles	4-MP (5/8) DBPh (5/8) DEPh (3/8)	DEPh (5/10) 4-MP (4/10) Phenol (2/10)	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, $\mu g/L$	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-n-butyl 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	11	12	6
Predominant Volatiles	Acetone (2/2)* 2-Butanone (2/2) PCE (2/2)	Acetone (3/3) MC (3/3)** PCE (3/3)	Acetone (2/2) PCE (2/2) Chloroform (2/2)
Number of Semi-Volatiles	9	10	8
Predominant Semi-Volatiles	2-MNPh (1/2) Naphthalene (1/2) Phenanthrene (1/2)	1,4-DCB (2/3) Bis-EHPh (1/3) 4-MP (1/3)	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	3	3	2
Predominant Volatiles	Acetone (1/1) Chloroform (1/1) Toluene (1/1)	Acetone (2/3) MC (1/3) Chloroform (1/3)	Acetone (1/1) Toluene (1/1)
Number of Semi-Volatiles	5	4	0
Predominant Semi-Volatiles	4-MP (1/1) Fluoranthene (1/1) DBPh (1/1)	Fluorathene (2/3) Pyrene (1/3) Chrysene (1/3)	
Number of Pesticides and PCBs	3	2	3
Predominant Pesticides and PCBs	4,4'-DDE (1/1) 4,4'-DDD (1/1) 4,4'-DDT (1/1)	HCE (2/3) 4,4'-DDE (1/3)	4,4'-DDE (1/1) 4,4'-DDD (1/1) 4,4'-DDT (1/1)
Compound with Highest Concentration	Acetone	Acetone	Acetone
Highest Concentration Detected, μg/L	33.4	37.9	20.6

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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-M106		CDS-13
	1996	1997	1996
Number of Compounds Detected	23	22	28
Number of Volatiles	8	7	9
Predominant Volatiles	Acetone (4/4) 1,2-DCE (total) (4/4) PCE (4/4)	Acetone (3/4) PCE (3/4) Toluene (3/4)	Chloroform (4/5) m- and/or p-Xylene (3/5) o-Xylene (3/5)
Number of Semi-Volatiles	11	12	18
Predominant Semi-Volatiles	Phenanthrene (3/4) Fluoranthene (3/4) Pyrene (3/4)	Phenanthrene (4/4) Naphthalene (3/4) Pyrene (3/4)	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-106A		CS-106B
	1996	1997	1996
Number of Compounds Detected	18	17	8
Number of Volatiles	8	6	6
Predominant Volatiles	1,2-DCE (total) (4/4) PCE (4/4) Acetone (3/4)	PCE (1/1) Acetone (1/1) Toluene (1/1)	Acetone (2/2) PCE (2/2) 1,2-DCE (total) (2/2)
Number of Semi-Volatiles	6	11	1
Predominant Semi-Volatiles	Phenanthrene (2/4) Fluoranthene (2/4) Pyrene (1/4)	Naphthalene (1/1) Phenanthrene (1/1) Pyrene (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(2-ethylhexyl)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.

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 μg/L (acetone), and for semi-volatile compounds was 454.3 μg/L (4-methylphenol). The concentrations of pesticides and PCBs in the samples collected were generally low, less than 2.4 μg /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)	Concentration** (μg/L) Minimum	Concentration** (μg/L) Maximum	Location of Maximum Concentration
<u>Volatiles</u>					
Acetone	69 (97)	5.0	16.3	1371	Mainstream
Toluene	58 (82)	1.8	1.8	108.4	Calumet
Chloroform	58 (82)	0.7	0.7	29.7	Kirie
Methylene Chloride	49 (69)	0.8	1.0	20.4	Calumet
Trichloroethene	41 (58)	0.6	0.6	19.1	Mainstream
m and/or p-Xylene	35 (49)	1.0	1.2	14.5	Kirie
<u>Semi-Volatiles</u>					
4-Methylphenol	38 (54)	3.5	5.6	454.3	Calumet
Phenol	31 (44)	0.7	1.5	327.8	Mainstream
Phenanthrene	27 (38)	0.9	1.0	15.7	Mainstream
Diethyl Phthalate	24 (34)	2.1	2.3	7.0	Kirie
Fluoranthene	21 (30)	0.9	1.0	20.5	Mainstream
Di-n-butyl Phthalate	19 (28)	1.3	1.3	3.9	Kirie

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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 (μg/L)	Concentration** (μg/L) Minimum	Concentration** (μg/L) Maximum	Location of Maximum Concentration
<u>Pesticides and PCBs</u>					
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

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

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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

Compound	Number of Detections*	Detection Limit (µg/L)	Concentration** (µg/L) Minimum	Concentration** (µg/L) Maximum	Location of Maximum Concentration
Pesticides and PCBs					
4,4'-DDE	11 (34)	0.05	0.08	0.23	DS-D45
4,4-DDT	11 (34)	0.10	0.12	0.26	DS-M106
4,4-DDD	10 (31)	0.05	0.05	0.26	DS-M106

*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 μg/L (acetone), and for semi-volatile compounds was 1845 μg/L (4-methylphenol). The concentrations of pesticides and PCBs were normally low, less than 0.3 μg/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

(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_5 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_5 from 10 to 174 mg/L, and NH_4-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_5 from 29 to 245 mg/L, and NH_4-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

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 time-weighted 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 BOD_5 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)	BOD_5 (mg/L)	NH_4-N (mg/L)
Drop Shaft Stations				
125th Street (CDS-13)	699 - 752	85 - 217	16 - 116	1.60 - 2.50
Racine Avenue (DS-M28)	389 - 662	84 - 256	14 - 94	1.62 - 2.94
Riverside (DS-D45)	324 - 626	74 - 217	10 - 186	1.07 - 2.81
Evanston (DS-M106)	N/A*	89 - 551	32 - 81	N/A
Overflow Stations				
Riverside (CS-44)	N/A	19	9	N/A
Lake Street (CS-106A)	N/A	72	22	N/A
Evanston (CS-106B)	N/A	28 - 97	7 - 23	N/A

*Not analyzed

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 follow-up 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

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FIGURE 1

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

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FIGURE 2

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

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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.

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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.

1. 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.

4. 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:

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

2. 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.
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.
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:

1. Riverside Overflow Station (CS-44) to the Des Plaines River.
2. Lake Street Overflow Station (CS-106A) to the North Shore Channel
3. 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.

3. 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_5, and NH_4-N. The analyses of these conventional pollutants followed the methods listed in Standard Methods for the Examination of Water and Wastewater (2). In the study under contract with the COE, TS and NH_4-N, along with BOD_5, were analyzed for 1995 samples, and TSS and BOD_5 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:

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

Where

C_i and C_{i+1} = the concentrations of a conventional pollutant for ith and (i+1)th samples

t_i = 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. Tables 6, 7, and 8 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 Tables 9 through 11. 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

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TABLE 6

1995 RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS

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

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TABLE 7

1996 RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS

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

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TABLE 8

1997 RAINFALL EVENTS SAMPLED FOR ORGANIC POLLUTANTS

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

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TABLE 9

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

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

*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.

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TABLE 10

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

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

*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.

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TABLE 11

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

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

*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 semi-volatiles 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 semi-volatiles, and one PCB. The predominant volatiles were acetone (7 out of 7), with concentrations ranging from 82.2 to

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TABLE 12

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
	Volatiles				
1	Acetone	9	5.0	32.9	198.1
2	Carbon disulfide	5	1.0	1.1	3.3
3	Methylene chloride	6	0.8	1.0	4.6
4	1,2-Dichloroethene (total)	7	0.6	0.7	5.0
5	Methyl tert butyl ether	2	2.0	5.0	10.5
6	2-Butanone	5	4.6	4.7	15.2
7	Chloroform	4	0.7	0.7	1.1
8	Trichloroethene	9	0.6	0.9	13.3
9	4-Methyl-2-pentanone	2	3.5	3.7	4.9
10	Toluene	8	1.8	3.6	70.7
11	Tetrachloroethene	5	1.6	1.2	6.0
12	Ethylbenzene	5	0.6	0.9	3.1
13	m- and/or p-Xylenes	7	1.0	2.1	12.7
14	o-Xylene	5	1.0	1.2	4.0
15	Styrene	1	1.5	1.6	1.6
	Semi-Volatiles				
16	Phenol	7	1.5	1.5	127.3
17	4-Methylphenol	5	5.0	5.6	92.2
18	Naphthalene	1	1.6	3.1	3.1
19	4-Chloro-3-methylphenol	1	1.7	17.7	17.7
20	2-Methylnaphthalene	1	3.8	10.0	10.0
21	Acenaphthene	1	1.2	2.1	2.1
22	Fluorene	1	1.5	2.8	2.8
23	Diethyl phthalate	1	3.2	3.4	3.4
24	Phenanthrene	6	1.3	1.5	15.7
25	Anthracene	2	1.2	1.3	2.7
26	Di-n-butyl phthalate	3	1.4	1.6	3.2
27	Fluoranthene	4	1.5	3.3	20.5
28	Pyrene	2	4.6	8.2	29.0
29	Butyl benzyl phthalate	4	2.5	2.8	10.0
30	Benzo(a)anthracene	3	1.4	2.9	9.7
31	Chrysene	3	1.5	5.4	15.0
32	Bis(2-ethylhexyl)phthalate	3	15.0	25.9	94.0
33	Di-n-octyl phthalate	1	2.7	5.9	5.9
34	Benzo(b)fluoranthene	2	2.0	4.1	13.0
35	Benzo(k)fluoranthene	2	2.2	3.1	10.0
36	Benzo(a)pyrene	1	1.6	10.4	10.4
37	Indeno(1,2,3-cd)pyrene	1	3.0	6.5	6.5
38	Benzo(ghi)perylene	1	4.0	6.3	6.3

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TABLE 12 (Continued)

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
	Pesticides and PCBs				
39	Heptachlor	1	0.02	0.02	0.02
40	PCB-1016	1	0.20	3.33	3.33
41	PCB-1248	3	0.20	0.31	0.46
42	PCB-1254	2	0.20	0.21	0.46
43	PCB-1260	2	0.20	0.20	2.35

*Number of samples in which pollutant was found out of ten samples collected.
**Concentrations of the pollutants which had detectable values.

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TABLE 13

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

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

*Number of samples in which pollutant was found out of seven samples collected.
**Concentrations of the pollutants which had detectable values.

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

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

Kirie WRP Influent Pump Station. 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. Table 14 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),

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TABLE 14

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	8	5.0	28.4	219.4
2	Carbon disulfide	5	1.0	1.9	3.2
3	Methylene chloride	6	0.8	1.1	2.5
4	1,2-Dichloroethene (total)	2	0.6	1.4	1.4
5	2-Butanone	7	4.6	5.1	18.6
6	Chloroform	8	0.7	1.2	29.7
7	1,1,1-Trichloroethane	4	0.7	0.7	2.0
8	Trichloroethene	7	0.6	0.6	1.4
9	Bromodichloromethane	1	0.7	2.2	2.2
10	Toluene	8	1.8	4.6	13.3
11	Tetrachloroethene	5	1.6	1.9	6.4
12	Ethylbenzene	1	0.6	1.9	1.9
13	m- and/or p-Xylenes	6	1.0	1.2	14.5
14	o-Xylene	2	1.0	1.3	5.0
15	Styrene	2	1.5	1.9	3.7
	Semi-Volatiles				
16	Phenol	2	1.5	1.9	4.0
17	4-Methylphenol	5	5.0	6.6	31.6
18	4-Chloro-3-methylphenol	1	1.7	1.9	1.9
19	Diethyl phthalate	3	3.2	4.4	7.0
20	Phenanthrene	2	1.3	1.5	1.8
21	Di-n-butyl phthalate	5	1.4	1.7	2.4
22	Fluoranthene	1	1.5	1.9	1.9
23	Butyl benzyl phthalate	2	2.5	2.6	3.7
	Pesticides and PCBs				
24	beta-Endosulfan	2	0.05	0.16	0.17

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

**Concentrations of the pollutants which had detectable values.

from 4.6 to 13.3 $\mu g/L$. The predominant semi-volatiles were 4-methylphenol (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, β-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 Table 15. 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 Table 16, 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

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TABLE 15

1995 RAINFALL DATA FOR TARP DROP SHAFT STATIONS DURING SAMPLING EVENTS

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

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

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TABLE 16

ORGANIC POLLUTANTS 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)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	2	5.0	58.7	73.9
2	Methylene chloride	2	0.8	1.2	1.6
3	1,2-Dichloroethene (total)	2	0.6	1.2	1.2
4	2-Butanone	2	4.6	5.0	7.0
5	Chloroform	2	0.7	1.2	2.9
6	Trichloroethene	2	0.6	2.0	3.8
7	Toluene	2	1.8	2.3	2.9
8	Tetrachloroethene	2	1.6	3.0	6.9
9	Ethylbenzene	1	0.6	2.1	2.1
10	m- and/or p-Xylenes	2	1.0	1.1	7.3
11	o-Xylene	1	1.0	3.8	3.8
	Semi-Volatiles				
12	Naphthalene	1	1.6	26.9	26.9
13	2-Methylnaphthalene	1	3.8	128.6	128.6
14	1,1'-Biphenyl	1	2.0	11.1	11.1
15	Dibenzofuran	1	2.0	5.4	5.4
16	Fluorene	1	1.5	11.7	11.7
17	Phenanthrene	1	1.3	24.8	24.8
18	Fluoranthene	1	1.5	1.5	1.5
19	Pyrene	1	4.6	4.8	4.8
20	Bis(2-ethylhexyl)phthalate	1	15.0	20.6	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.
**Concentrations of the pollutants which had detectable values.

highest single concentration detected was 2-methylnaphthalene, with a concentration of 128.6 µg/L.

Riverside TARP Drop Shaft Station. At the Riverside TARP drop shaft station (DS-D45), one sample was collected during one rainfall event in 1995. Table 17 presents the organic pollutants detected in this sample. Out of the 160 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 µg/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 Tables 18 through 20. The results of organic analyses for the samples taken at these stations in 1996 are contained in Appendix Tables AII-1 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

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TABLE 17

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

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

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

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TABLE 18

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

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

*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.

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TABLE 19

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

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

*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.

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TABLE 20

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

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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	0	0.15	27.09	
7/16/96	0	0.00	25.99	
7/17/96	1	1.55	61.20	34.66
7/18/96	1	0.91**	113.99	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 Table 21, 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 semi-volatiles. The predominant volatiles were acetone (7 out of 7), with concentrations ranging from 51.4 to 586.5 µg/L, and methylene chloride (7 out of 7), from 1.2 to 11.4 µg/L. The major semi-volatiles were phenol (5 out of 7), with concentrations ranging from 7.3 to 148.8 µg/L, acetophenone (5 out of

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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)	Concentrations (µg/L)**	
				Minimum	Maximum
	Volatiles				
1	Acetone	8	5.0	44.1	216.0
2	Carbon disulfide	4	1.0	1.2	6.8
3	Methylene chloride	7	0.8	1.1	4.2
4	1,2-Dichloroethene (total)	7	0.6	1.0	3.6
5	2-Butanone	5	4.6	8.8	27.5
6	Chloroform	8	0.7	0.8	1.6
7	Benzene	1	0.7	3.8	3.8
8	Trichloroethene	8	0.6	0.8	19.1
9	4-Methyl-2-pentanone	4	3.5	7.9	32.3
10	Toluene	6	1.8	1.8	78.8
11	Tetrachloroethene	3	1.6	2.0	2.8
12	1,2-Dibromoethane	1	2.0	2.1	2.1
13	Chlorobenzene	2	0.6	0.7	0.7
14	Ethylbenzene	4	0.6	1.0	4.6
15	m- and/or p-Xylenes	4	1.0	3.2	13.2
16	o-Xylene	4	1.0	2.2	12.0
17	Styrene	1	1.5	2.8	2.8
18	1,2-Dibromo-3-chloropropane	1	2.0	4.3	4.3
	Semi-Volatiles				
19	Phenol	3	1.5	12.2	327.8
20	Bis(2-chloroisopropyl)ether	1	2.0	4.5	4.5
21	4-Methylphenol	5	5.0	7.7	45.8
22	Naphthalene	2	1.6	2.3	2.8
23	Diethyl phthalate	4	3.2	2.4	3.7
24	Phenanthrene	5	1.3	1.0	6.1
25	Anthracene	2	1.2	0.9	1.3
26	Carbazole	1	3.6	4.7	4.7
27	Di-n-butyl phthalate	1	1.4	2.5	2.5
28	Fluoranthene	4	1.5	1.0	82.0
29	Pyrene	2	4.6	4.3	11.4
30	Benzo(a)anthracene	2	1.4	1.1	3.2
31	Chrysene	2	1.5	1.6	5.1
32	Bis(2-ethylhexyl)phthalate	3	15.0	19.9	35.9
33	Benzo(b)fluoranthene	1	2.0	4.5	4.5

TABLE 21 (Continued)

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)	Concentrations (µg/L)** Minimum	Maximum
	Pesticides and PCBs				
34	PCB-1248	2	0.20	0.52	1.26
35	PCB-1254	1	0.20	1.93	1.93
36	PCB-1260	2	0.20	0.21	0.68

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

**Concentrations of the pollutants which had detectable values.

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TABLE 22

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	7	5.0	51.4	586.5
2	Carbon disulfide	1	1.0	1.0	1.0
3	Methylene chloride	7	0.8	1.2	11.4
4	1,2-Dichloroethene (total)	1	0.8	1.3	1.3
5	2-Butanone	3	5.5	7.2	10.2
6	Chloroform	6	0.7	1.0	2.1
7	Benzene	1	1.0	1.2	1.2
8	Trichloroethene	2	0.6	0.9	1.1
9	4-Methyl-2-pentanone	2	3.5	4.2	4.2
10	Toluene	6	1.8	2.7	108.4
11	Tetrachloroethene	2	1.6	2.0	3.8
12	m- and/or p-Xylenes	3	1.4	1.9	2.9
13	o-Xylene	3	1.0	1.2	1.6
14	Styrene	4	1.5	1.6	5.6
15	Cumene	3	2.0	2.7	17.7
	Semi-Volatiles				
16	Phenol	5	0.7	7.3	148.8
17	2-Methylphenol	4	3.7	4.9	44.2
18	Acetophenone	5	1.4	2.5	27.0
19	4-Methylphenol	5	3.5	8.0	454.3
20	2,4-Dimethylphenol	3	0.7	0.8	135.0
21	Naphthalene	2	1.7	1.7	2.9
22	Diethyl phthalate	5	2.1	2.3	5.2
23	Phenanthrene	2	0.9	2.8	7.5
24	Carbazole	1	4.0	5.0	5.0
25	Fluoranthene	2	1.0	1.4	8.3
26	Pyrene	1	2.4	9.9	9.9
27	Benzo(a)anthracene	1	0.8	3.0	3.0
28	Chrysene	1	1.1	4.4	4.4
	Pesticides and PCBs				

None detected.

*Number of samples in which pollutant was found out of seven samples collected.
**Concentrations of the pollutants which had detectable values.

7), from 2.5 to 27.0 µg/L, and 4-methylphenol (5 out of 7), from 8.0 to 454.3 µg/L. Acetone was the organic pollutant with the highest concentration of 586.5 µg/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. Table 23 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

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TABLE 23

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	10	5.0	36.3	381.8
2	Carbon disulfide	3	1.0	1.8	2.6
3	Methylene chloride	9	0.8	1.5	4.5
4	1,2-Dichloroethene (total)	2	0.8	0.9	1.3
5	2-Butanone	3	5.5	8.1	12.5
6	Chloroform	10	0.7	1.3	4.1
7	1,1,1-Trichloroethane	1	0.7	0.8	0.8
8	Trichloroethene	5	0.6	0.6	1.5
9	Toluene	8	1.8	2.1	3.8
10	Tetrachloroethene	5	1.6	1.8	15.7
11	Ethylbenzene	1	0.8	1.2	1.2
12	m- and/or p-Xylenes	3	1.4	1.6	4.5
13	o-Xylene	2	1.0	1.7	2.1
	Semi-Volatiles				
14	Phenol	2	0.7	2.0	3.2
15	4-Methylphenol	4	3.5	6.8	16.0
16	Diethyl phthalate	5	2.1	2.3	5.5
17	Phenanthrene	1	0.9	1.0	1.0
18	Di-n-butyl phthalate	1	1.6	3.9	3.9
19	Fluoranthene	1	1.0	1.6	1.6
20	Di-n-octyl phthalate	1	5.6	44.5	44.5
	Pesticides and PCBs				
	None detected.				

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

**Concentrations of the pollutants which had detectable values.

stations are presented in Table 24. 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 µg/L. The majority of the semi-volatiles (9 out of 10) were detected only once. The highest concentration found was 46.6 µg/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. Table 26 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

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TABLE 24

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

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	4.65	1
	9/26/96	1.90	2
Evanston (DS-M106)	7/17-18/96	2.06	2
	9/26-27/96	1.51	2
125th Street (CDS-13)	7/17-19/96	5.93	3
	9/26/96	2.12	2
Lake Street (CS-106A)	7/17-18/96	2.06	2
	9/26-27/96	1.51	2
Evanston (CS-106B)	9/26-27/96	1.51	2

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TABLE 25

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

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

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

**Concentrations of the pollutants which had detectable values.

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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)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	2	5.0	19.3	37.8
2	Methylene chloride	1	0.8	1.0	1.0
3	Chloroform	1	0.7	0.7	0.7
	Semi-Volatiles				
4	Phenanthrene	1	0.9	1.2	1.2
5	Fluoranthene	2	1.0	1.1	3.4
6	Pyrene	1	2.4	2.6	2.6
7	Chrysene	1	1.1	2.2	2.2
	Pesticides and PCBs				
8	Heptachlor epoxide	2	0.02	0.05	0.06
9	4,4'-DDE	1	0.05	0.11	0.11

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

**Concentrations of the pollutants which had detectable values.

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

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 µg/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 µg/L, and pyrene (3 out of 4), from 2.5 to 4.7 µg/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

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

*Number of samples in which pollutant was found out of four samples collected.
**Concentrations of the pollutants which had detectable values.

1996. As presented in Table 28, 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 2.5 to 12.6 µg/L, and fluoranthene (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. Table 29 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

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	2	5.0	36.7	79.9
2	Chloroform	4	0.7	0.8	2.7
3	Benzene	3	1.0	1.6	3.0
4	Toluene	2	1.8	4.4	7.3
5	Tetrachloroethene	1	1.6	1.7	1.7
6	Ethylbenzene	3	0.8	0.9	13.0
7	m- and/or p-Xylenes	3	1.4	3.0	45.7
8	o-Xylene	3	1.0	1.2	40.7
9	Cumene	1	2.0	29.1	29.1
	Semi-Volatiles				
10	Phenol	2	0.7	43.6	52.1
11	2-Methylphenol	1	3.7	53.0	53.0
12	4-Methylphenol	2	3.5	34.2	1845
13	2,4-Dimethylphenol	1	0.7	2.4	2.4
14	Naphthalene	4	1.7	2.5	12.6
15	2-Methylnaphthalene	2	4.8	5.0	97.7
16	1,1'-Biphenyl	1	1.7	18.1	18.1
17	Dibenzofuran	1	4.4	6.6	6.6
18	Fluorene	1	1.1	7.9	7.9
19	Diethyl phthalate	1	2.1	2.7	2.7
20	Phenanthrene	5	0.9	2.0	6.0
21	Anthracene	1	0.8	1.0	1.0
22	Carbazole	1	4.0	4.6	4.6
23	Fluoranthene	4	1.0	1.4	2.8
24	Pyrene	2	2.4	2.6	2.8
25	Benzo(a)anthracene	1	0.8	1.3	1.3
26	Chrysene	1	1.1	1.5	1.5
27	Bis(2-ethylhexyl)phthalate	1	15.0	66.7	66.7
	Pesticides and PCBs				
28	PCB-1016	2	0.20	0.75	1.09

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

**Concentrations of the pollutants which had detectable values.

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TABLE 29

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	3	5.0	86.8	116.1
2	Methylene chloride	3	0.8	0.8	34.6
3	1,2-Dichloroethene (total)	4	0.8	2.5	29.4
4	2-Butanone	1	5.5	5.6	5.6
5	Chloroform	3	0.7	0.7	1.0
6	1,1,1-Trichloroethane	1	0.7	1.4	1.4
7	Trichloroethene	3	0.6	2.4	39.7
8	Tetrachloroethene	4	1.6	6.6	39.0
	Semi-Volatiles				
9	Naphthalene	1	1.7	2.0	2.0
10	Phenanthrene	2	0.9	1.6	2.3
11	Fluoranthene	2	1.0	1.6	2.9
12	Pyrene	1	2.4	3.2	3.2
13	Benzo(a)anthracene	1	0.8	1.0	1.0
14	Chrysene	1	1.1	1.6	1.6
	Pesticides and PCBs				
15	4,4'-DDE	2	0.05	0.10	0.17
16	4,4'-DDD	2	0.05	0.05	0.10
17	4,4'-DDT	2	0.15	0.17	0.26
18	Methoxychlor	2	0.50	0.17	0.35

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

**Concentrations of the pollutants which had detectable values.

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 µg/L, and tetrachloroethene, from 6.6 to 39.0 µg/L. Semi-volatiles and pesticides were found in no more than two out of four samples. The maximum concentrations found were 3.2 µg/L for semi-volatiles, and 0.35 µg/L for pesticides.

Evanston Overflow Station. At this station (CS-106B), two samples were collected during one rainfall event in 1996. Table 30 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 Tables 31, 32, and 33, respectively. The results of organic pollutant analyses for the

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TABLE 30

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	2	5.0	57.0	94.2
2	Methylene chloride	1	0.8	15.2	15.2
3	1,2-Dichloroethene (total)	2	0.8	2.2	2.5
4	Chloroform	2	0.7	1.0	1.0
5	Trichloroethene	1	0.6	0.6	0.6
6	Tetrachloroethene	2	1.6	6.2	6.2
	Semi-Volatiles				
7	Fluoranthene	1	1.0	1.0	1.0
	Pesticides and PCBs				
8	Methoxychlor	1	0.15	0.16	0.16

*Number of samples in which pollutant was found out of two samples collected.
**Concentrations of the pollutants which had detectable values.

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TABLE 31

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

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

*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.

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TABLE 32

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

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

*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.

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TABLE 33

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	0	0.00	26.94	
6/15/97	0	0.00	26.57	
6/16/97	2	1.07	78.35	51.60
Subtotal	2	1.07		51.60
6/18/97	0	0.00	32.09	
6/19/97	0	0.00	30.46	
6/20/97	1	0.91	30.15	0**
6/21/97	1	0.11***	38.48	7.21
Subtotal	2	1.02		7.21
7/16/97	0	0.00	26.13	
7/17/97	0	0.00	26.54	
7/18/97	2	1.63	58.46	32.13
Subtotal	2	1.63		32.13
10/24/97	0	0.34	28.48	
10/25/97	0	0.03	25.88	
10/26/97	1	1.35	42.73	15.55
10/27/97	1	0.01***	62.26	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. Table 35 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-

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 34

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)**	
				Minimum	Maximum
	Volatiles				
1	Acetone	7	5.4	16.3	1371
2	Carbon disulfide	1	1.1	1.1	1.1
3	Methylene chloride	3	1.0	3.5	8.0
4	1,2-Dichloroethene (total)	3	1.0	1.2	1.4
5	Methyl tert butyl ether	1	4.2	12.3	12.3
6	2-Butanone	3	5.5	9.0	34.1
7	Chloroform	4	0.9	0.9	1.4
8	Trichloroethene	4	0.6	1.0	5.5
9	Toluene	4	1.8	2.7	43.0
10	Tetrachloroethene	2	1.6	4.2	4.6
11	o-Xylene	1	1.0	1.6	1.6
	Semi-Volatiles				
12	Phenol	4	1.3	1.6	202.3
13	1,4-Dichlorobenzene	1	0.8	1.1	1.1
14	3- and/or 4-Methylphenol	6	3.7	6.3	59.3
15	Naphthalene	3	0.6	0.7	1.8
16	2-Methylnaphthalene	1	2.7	6.0	6.0
17	Diethyl phthalate	2	3.6	3.8	4.1
18	Phenanthrene	6	1.0	1.0	8.3
19	Di-n-butyl phthalate	3	1.3	1.7	3.7
20	Fluoranthene	5	0.9	1.2	7.2
21	Pyrene	4	1.7	2.3	8.4
22	Butyl benzyl phthalate	4	1.8	2.0	2.6
23	Benzo(a)anthracene	3	0.7	1.0	2.0
24	Chrysene	4	0.9	1.0	3.4
25	Bis(2-ethylhexyl)phthalate	4	8.2	11.0	33.8
26	Di-n-octyl phthalate	1	2.6	3.5	3.5
	Pesticides and PCBs				

None detected.

*Number of samples in which pollutant was found out of seven samples collected.
**Concentrations of the pollutants which had detectable values.

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TABLE 35

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	5	5.4	31.4	692.9
2	Methylene chloride	3	1.0	2.4	20.4
3	2-Butanone	3	5.5	8.0	9.0
4	Chloroform	3	0.9	1.0	1.7
5	Benzene	2	0.7	2.6	4.4
6	Trichloroethene	2	0.6	0.8	1.6
7	Toluene	4	1.8	4.8	56.5
8	Tetrachloroethene	4	1.6	1.9	18.7
9	Ethylbenzene	1	0.8	1.3	1.3
10	m- and/or p-Xylenes	2	2.0	2.6	5.7
11	o-Xylene	2	1.0	1.4	2.7
12	Styrene	2	1.5	2.3	2.4
13	Cumene	3	2.0	4.0	52.8
	Semi-Volatiles				
14	Phenol	3	1.3	62.9	212.4
15	1,2-Dichlorobenzene	1	0.7	0.9	0.9
16	2-Methylphenol	1	3.6	3.8	3.8
17	Acetophenone	4	1.8	5.2	99.9
18	3- and/or 4-Methylphenol	2	3.7	16.4	29.7
19	1,2,4-Trichlorobenzene	1	0.9	1.2	1.2
20	Naphthalene	2	0.6	1.1	1.6
21	Phenanthrene	2	1.0	1.3	1.5
22	Di-n-butyl phthalate	1	1.3	3.0	3.0
23	Fluoranthene	1	0.9	1.6	1.6
24	Bis(2-ethylhexyl)phthalate	1	8.2	115.8	115.8
25	Di-n-octyl phthalate	1	2.6	7.5	7.5
	Pesticides and PCBs				
26	4,4'-DDD	1	0.05	0.10	0.10
27	4,4'-DDT	1	0.10	0.97	0.97
28	PCB-1260	1	0.20	0.85	0.85

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

**Concentrations of the pollutants which had detectable values.

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.

Kirie WRP Influent Pump Station. Eight samples were collected during four rainfall events in 1997. Table 36 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 µg/L, chloroform (8 out of 8), from 1.3 to 5.7 µg/L, and toluene (8 out of 8), from 2.8

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TABLE 36

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

	Compound	Number of Detections*	Detection Limit µg/L (ppb)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	8	5.4	67.1	131.1
2	Carbon disulfide	2	1.1	1.2	2.8
3	Methylene chloride	5	1.0	1.2	7.2
4	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	8	1.8	2.8	12.6
8	Tetrachloroethene	2	1.6	2.1	6.4
9	Ethylbenzene	1	0.8	1.0	1.0
10	m- and/or p-Xylenes	3	2.0	2.1	3.8
11	o-Xylene	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	3.6	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	0.03	0.05	0.05
20	gamma-Chlordane	1	0.05	0.05	0.05
21	4,4'-DDE	1	0.05	0.07	0.07
22	4,4'-DDD	1	0.05	0.024	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.

**Concentrations of the pollutants which had detectable values.

to 12.6 µg/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. Table 37 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 AIII-7.

Racine Avenue TARP Drop Shaft Station. At this station (DS-M28), two samples were collected during one rainfall event in 1997. As shown in Table 38, 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.

Riverside TARP Drop Shaft Station. One sample was collected during a rainfall event at this station (DS-D45) in 1997. Table 39 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 37

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

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)	7/18/97	2.17	1
	8/12/97	0.65	1
	8/16-17/97	2.51	2
Lake Street (CS-106A)	8/17/97	2.25	1

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TABLE 38

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)	Concentrations (µg/L)** Minimum	Maximum
	Volatiles				
1	Acetone	2	5.4	56.0	60.0
2	1,2-Dichloroethene (total)	2	1.0	1.2	1.3
3	Chloroform	2	0.9	1.0	1.8
4	Trichloroethene	1	0.6	7.4	7.4
5	Toluene	1	1.8	7.2	7.2
6	Tetrachloroethene	2	1.6	3.8	7.0
	Semi-Volatiles				
7	1,4-Dichlorobenzene	2	0.8	1.4	2.4
8	3- and/or 4-Methylphenol	1	3.7	4.2	4.2
9	Phenanthrene	2	1.0	1.4	2.5
10	Di-n-butyl phthalate	1	1.3	1.5	1.5
11	Fluoranthene	2	0.9	1.5	4.0
12	Pyrene	2	1.7	1.8	4.7
13	Benzo(a)anthracene	1	0.7	1.7	1.7
14	Chrysene	1	0.9	2.3	2.3
	Pesticides and PCBs				
None detected.					

*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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TABLE 39

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	Acetone	5.4	20.6
2	Toluene	1.8	9.0
	Semi-Volatiles		
None detected.			
	Pesticides and PCBs		
3	4,4'-DDE	0.05	0.17
4	4,4'-DDD	0.05	0.10
5	4,4'-DDT	0.10	0.14

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

μg/L) and toluene (9.0 μg/L), and the pesticides were 4,4'-DDE (0.17 μg/L), 4,4'-DDD (0.10 μg/L), and 4,4'-DDT (0.14 μg/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 μg/L, and tetrachloroethene, from 2.1 to 63.4 μg/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 μg/L, pyrene (3 out of 4), from 1.8 to 3.9 μg/L, and chrysene (3 out of 4), from 1.1 to 1.6 μg/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.

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TABLE 40

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

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

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

**Concentrations of the pollutants which had detectable values.

Table 41 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 µg/L for a volatile compound, tetrachloroethene, and 13.0 µg/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_5, TSS, and NH_4-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 Tables 9 to 11 for 1995, Tables 18 to 20 for 1996, and Tables 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. Table 42 presents the TARP flow and

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

None detected.

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

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TABLE 42

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

Date	Flow (MGD)	BOD_5 (mg/L)	TSS (mg/L)	NH_4-N (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	180	98	356	5.78
9/27/96	81	NA	NA	NA

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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_5 (mg/L)	TSS (mg/L)	NH_4-N (mg/L)
		1997		
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.

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.

TARP Calumet Pump Station. 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_5, TSS, and NH_4-N in the TARP pumpback measured during these events are presented in Table 43. The concentrations of BOD_5 ranged from 13 to 220 mg/L, TSS from 22 to 610 mg/L, and NH_4-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.

Kirie WRP Influent Pump Station. 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

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TABLE 43

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

Date	Flow (MGD)	BOD_5 (mg/L)	TSS (mg/L)	NH_4-N (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
		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	7.3
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.

pollutants in the CSO corresponding to these sampling events are presented in Table 44. 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_5, and NH_4-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. Tables 45 through 47 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_5,

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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_5 (mg/L)	TSS (mg/L)	NH_4-N (mg/L)
		1995		
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	49.2	118	192	9.27
5/10/96	133	151	100	4.33
5/20/96	119	114	88	3.61
5/21/96	144	61	72	2.60
5/28/96	123	56	84	3.63
5/29/96	131	29	36	2.88
6/17/96	73.6	133	268	5.46
6/18/96	125	40	64	2.69
7/17/96	61.2	157	196	9.53
7/18/96	114	102	132	2.84
6/16/97	78.4	137	216	5.23

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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_5 (mg/L)	TSS (mg/L)	NH_4-N (mg/L)
		--------1997--------		
6/20/97	30.2	142	178	11.52
6/21/97	38.5	123	324	8.07
7/18/97	58.5	123	196	9.93
10/26/97	42.7	245	324	12.51
10/27/97	62.3	128	192	6.39

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TABLE 45

RAINFALL DATA FOR TARP DROP SHAFT STATIONS DURING CONVENTIONAL POLLUTANT SAMPLING EVENTS IN 1995

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

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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	5.95
	9/26/96	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

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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 stations. The concentrations of TS, BOD_5, and NH_4-N of the 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_5 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 NH_4-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 BOD_5 were found at the Riverside TARP drop shaft stations (DS-D45). Figures 5 through 7 present the time-weighted average concentrations of TS, BOD_5, 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

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TABLE 48

TOTAL SOLIDS, BOD_5, AND AMMONIUM NITROGEN IN CSOs FROM TARP DROP SHAFT STATIONS DURING RAINFALL SAMPLING EVENTS IN 1995

Station	Date of Sampling	Number of Samples Collected	Total Solids (mg/L)			BOD_5 (mg/L)			NH_4-N (mg/L)		
			Average*	Min.	Max.	Average*	Min.	Max.	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.

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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

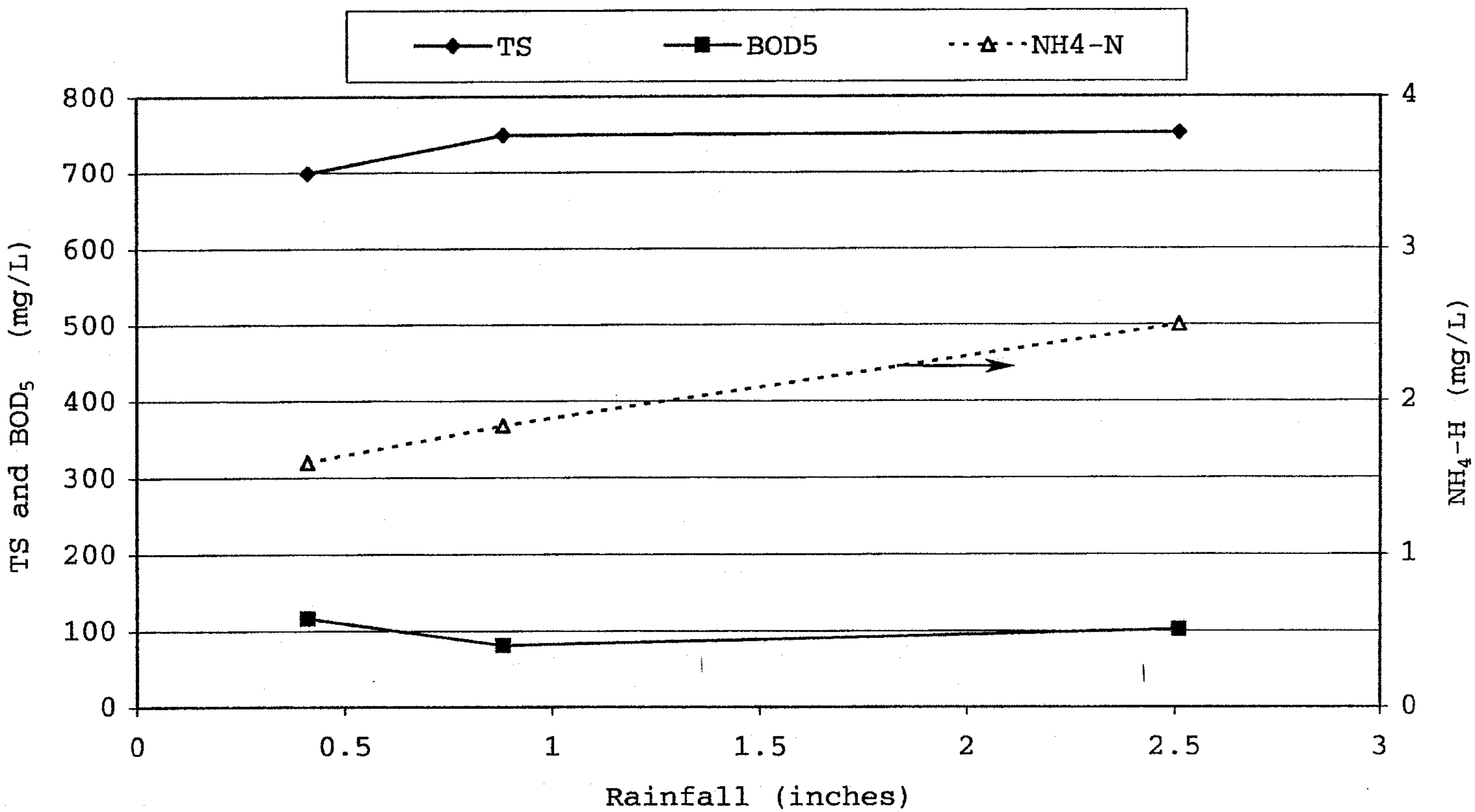

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FIGURE 6

TIME-WEIGHTED AVERAGE CONCENTRATIONS OF CONVENTIONAL POLLUTANTS VERSUS RAINFALL AT THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28) RAINFALL SAMPLING EVENTS IN 1995

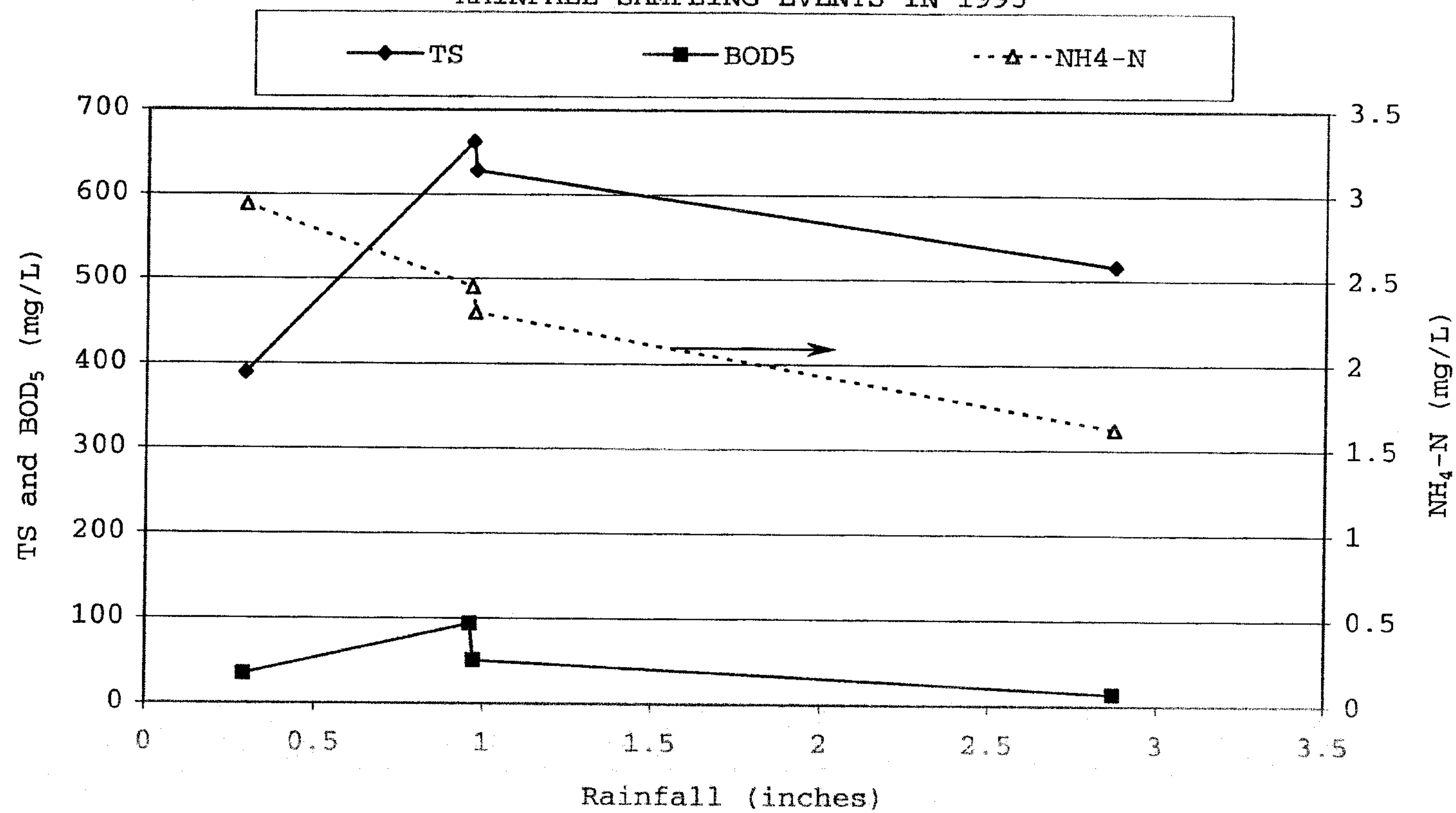

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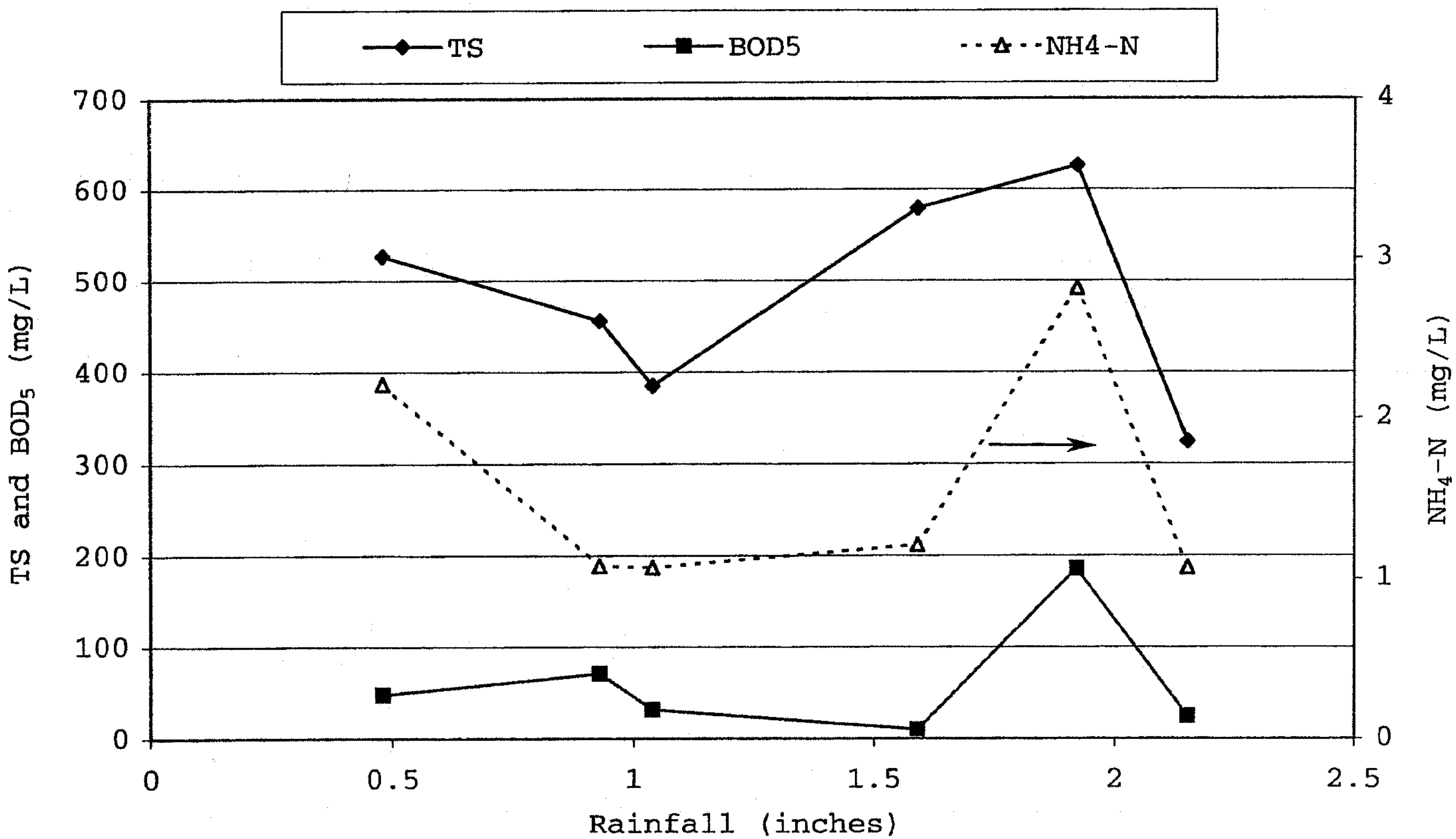
FIGURE 7

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



by the COE. Table 49 presents the results of sampling at each location with corresponding time-weighted average concentrations of TSS and BOD_5 and the concentration ranges for each sampling event. The highest time-weighted average concentrations of TSS and BOD_5 were 217 and 64 mg/L, respectively, and were found at the 125th Street TARP drop shaft station (CDS-13).

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_5 would decrease as rain proceeded, this was not true in all cases. Peak concentrations of TSS and BOD_5 were found in the middle or even at the end of a storm. Figures 8 through 14 present the concentrations of TSS and BOD_5 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_5 during 8 rainfall

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TABLE 49

TOTAL SUSPENDED SOLIDS AND BOD_5 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	49	85	20	743	35	10	262
	9/26/96	25	217	62	610	64	21	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

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

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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

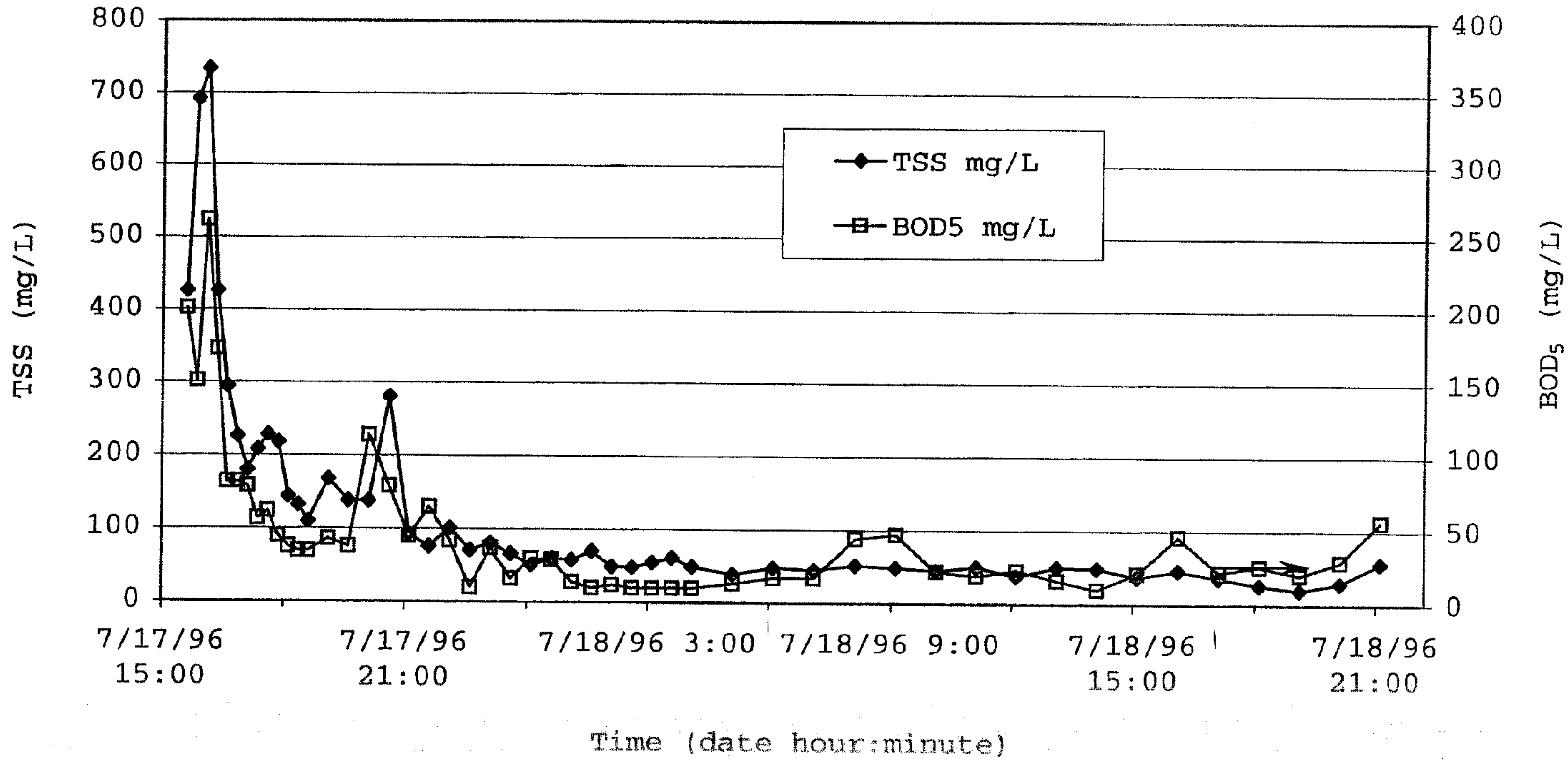

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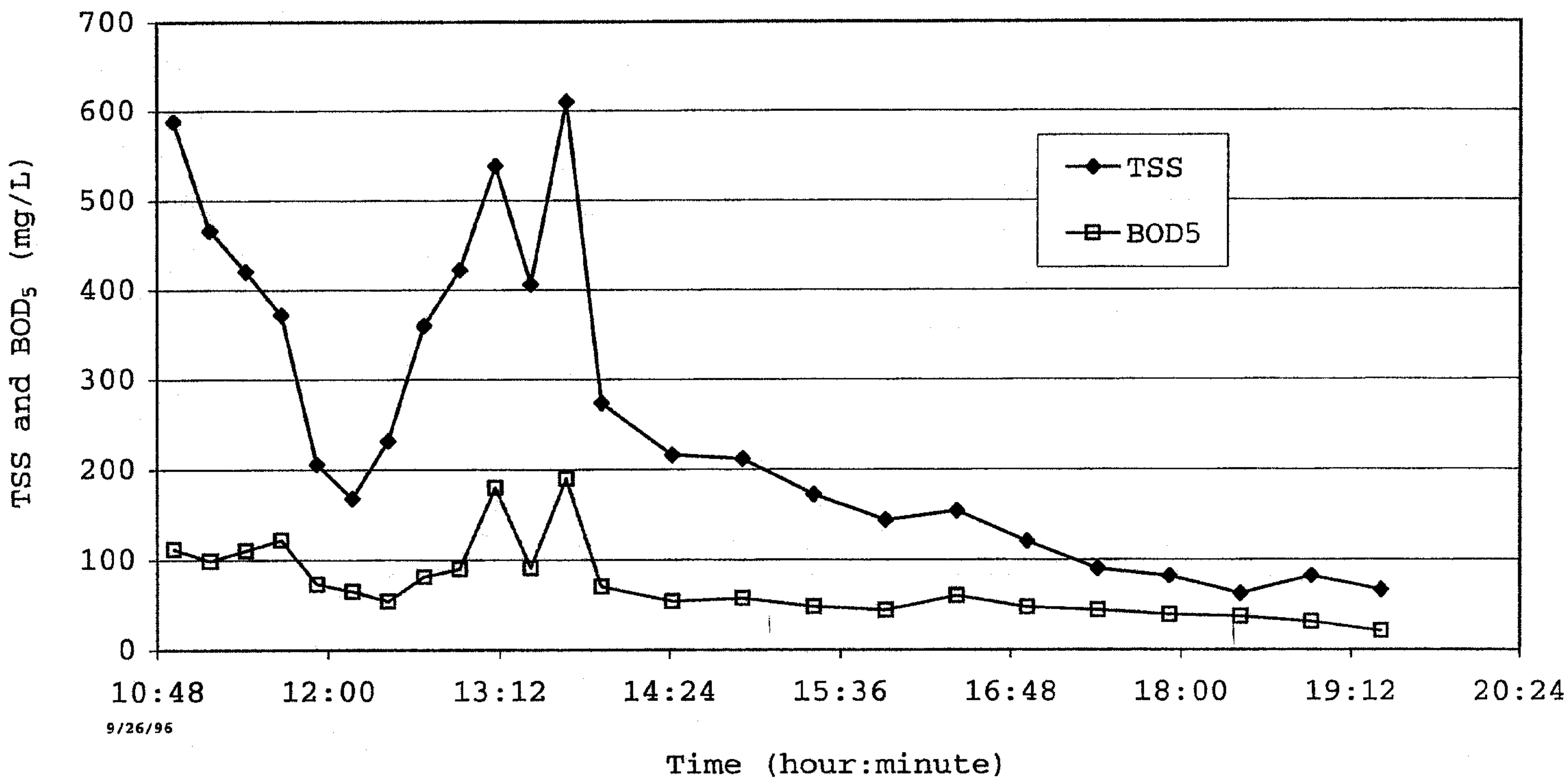
FIGURE 9

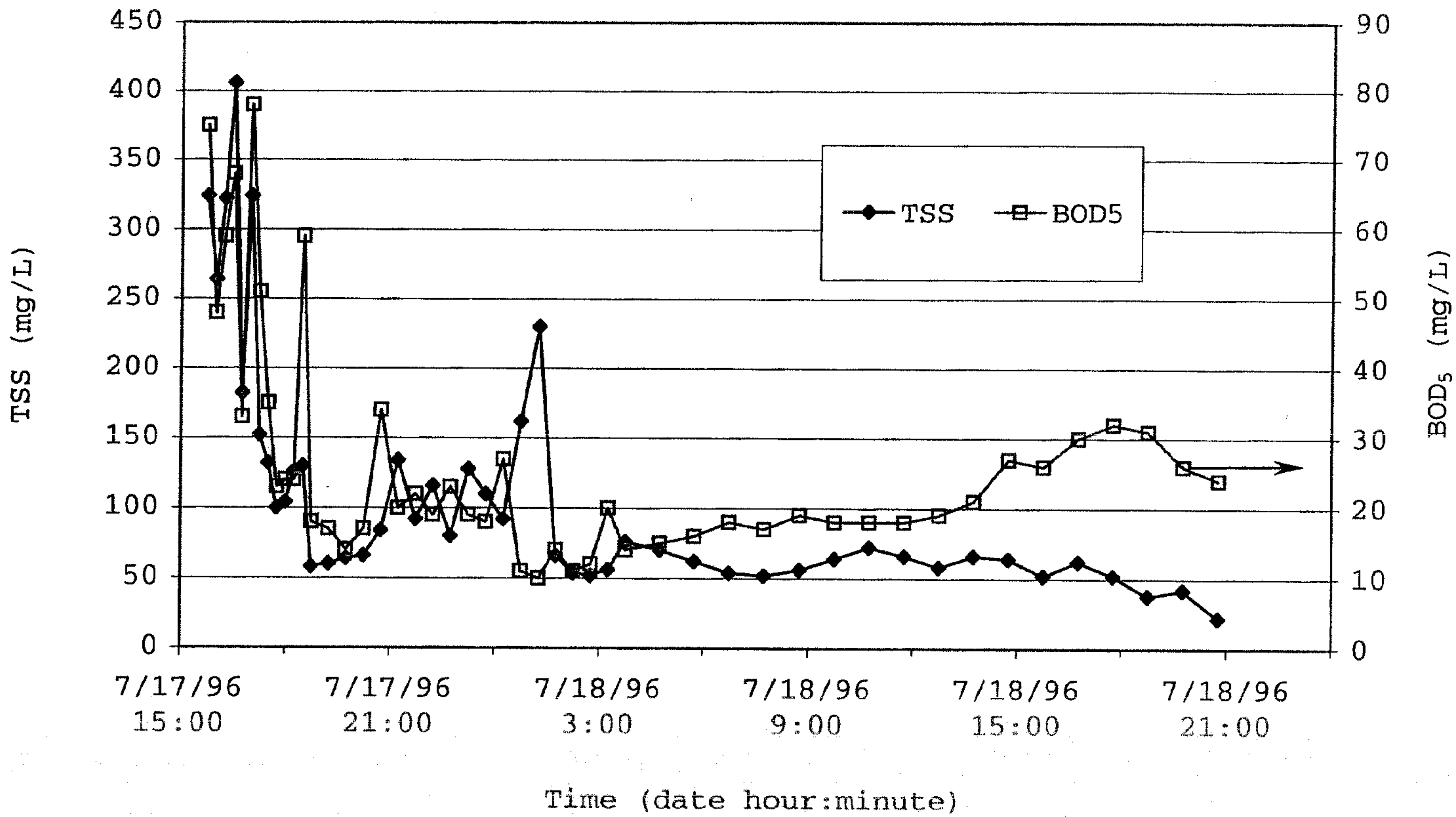
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13)
THE RAINFALL SAMPLING EVENT - SEPTEMBER 26, 1996



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 10

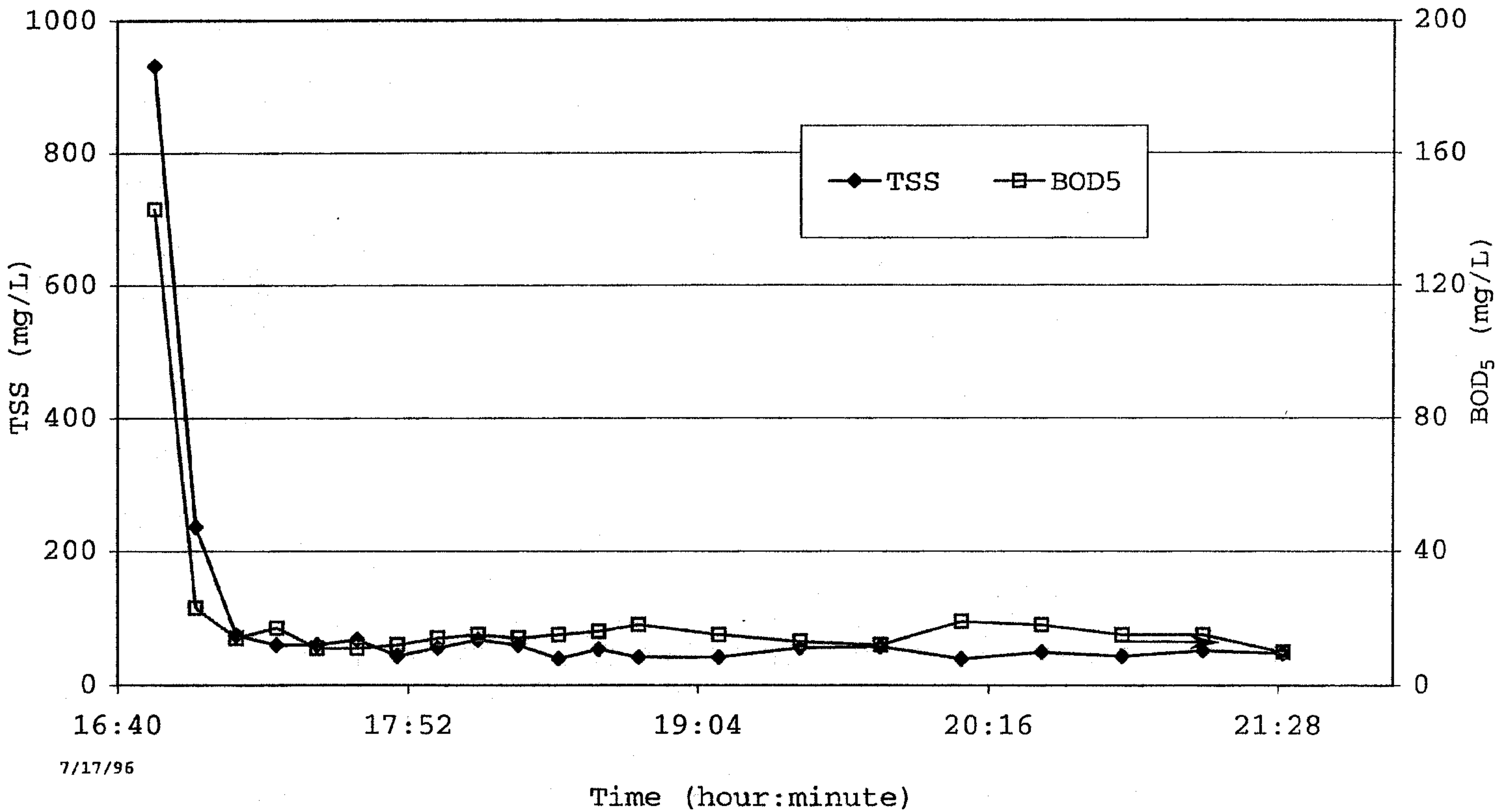
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28)
THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 11

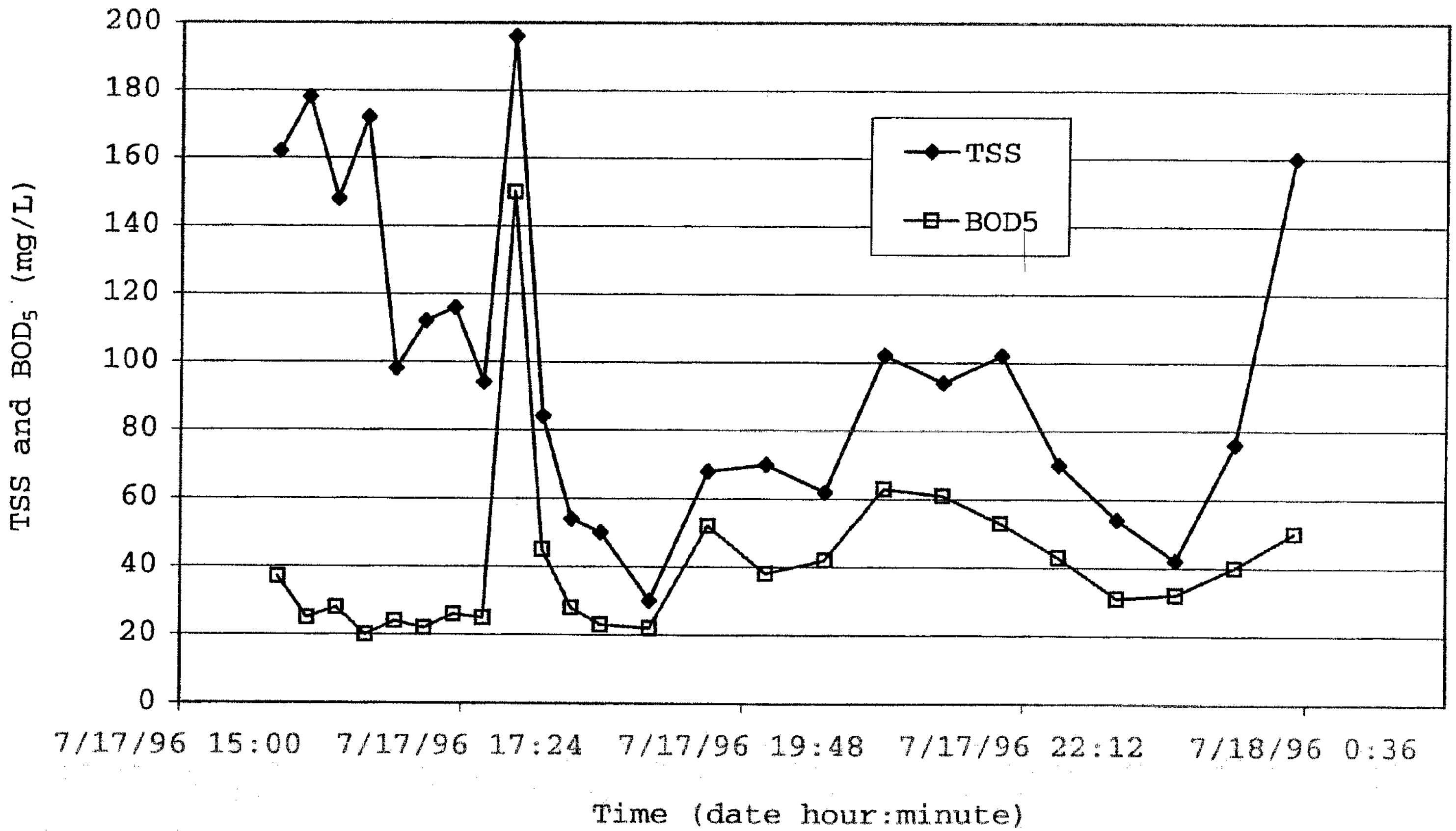
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45)
THE RAINFALL SAMPLING EVENT - JULY 17, 1996



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 12

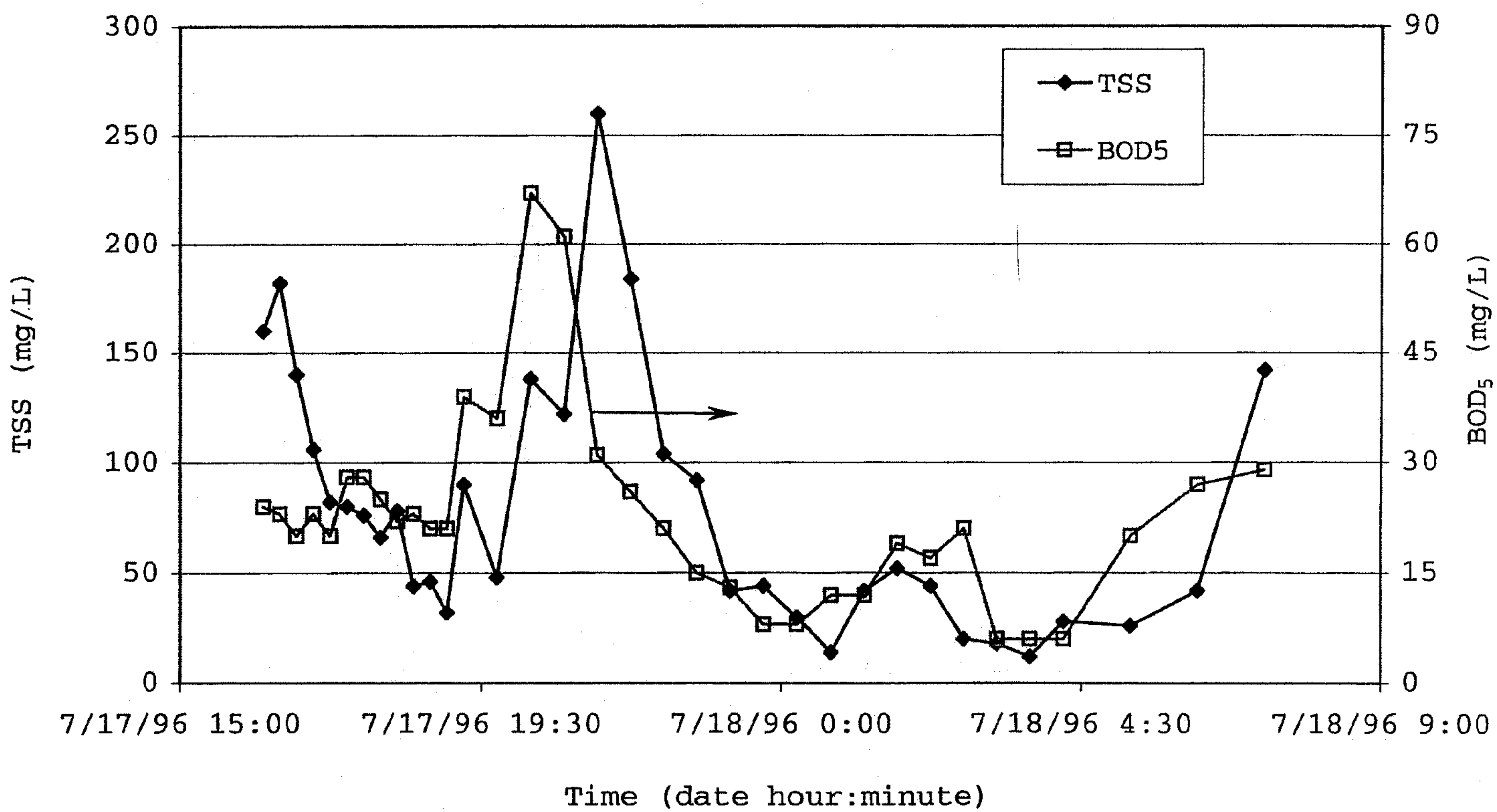
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE EVANSTON TARP DROP SHAFT STATION (DS-M106)
THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 13

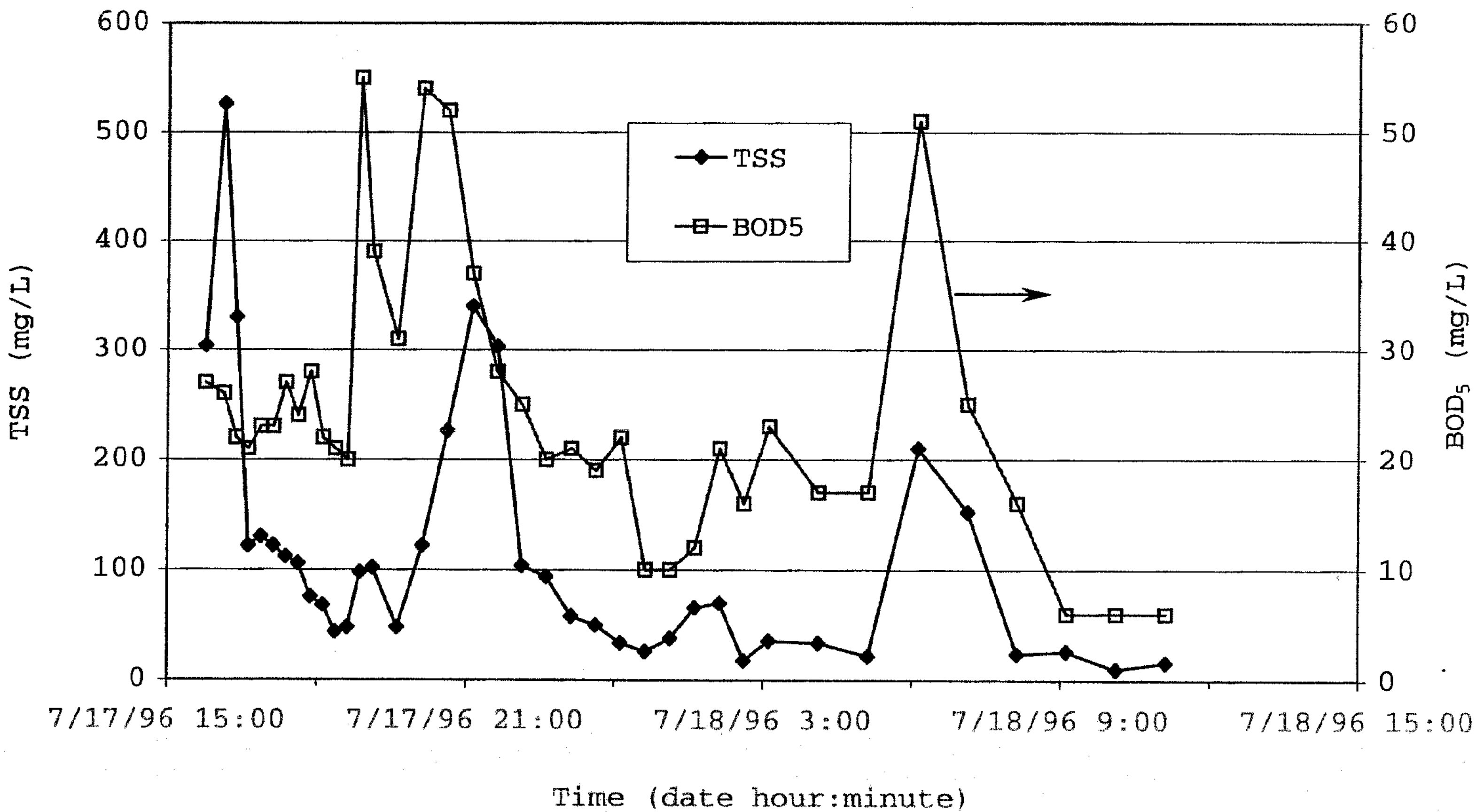
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE LAKE STREET TARP OVERFLOW STATION (CS-106A)
THE RAINFALL SAMPLING EVENT - JULY 17-18, 1996



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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



events, as directed by the COE. The sampling location and date, number of samples collected and range of concentrations are presented in Table 50. The time-weighted average concentrations of TSS and BOD_5 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_5 was 81 mg/L at the Evanston TARP drop shaft station (DS-M106), and the lowest was 7 mg/L at the Evanston overflow station (CS-106B).

The concentrations of TSS and BOD_5 versus time for each rainfall event sampled in 1997 are illustrated in Figures 15 through 22. 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 50

TOTAL SUSPENDED SOLIDS AND BOD_5 IN CSOs FROM TARP DROP SHAFT AND OVERFLOW STATIONS DURING RAINFALL SAMPLING EVENTS IN 1997

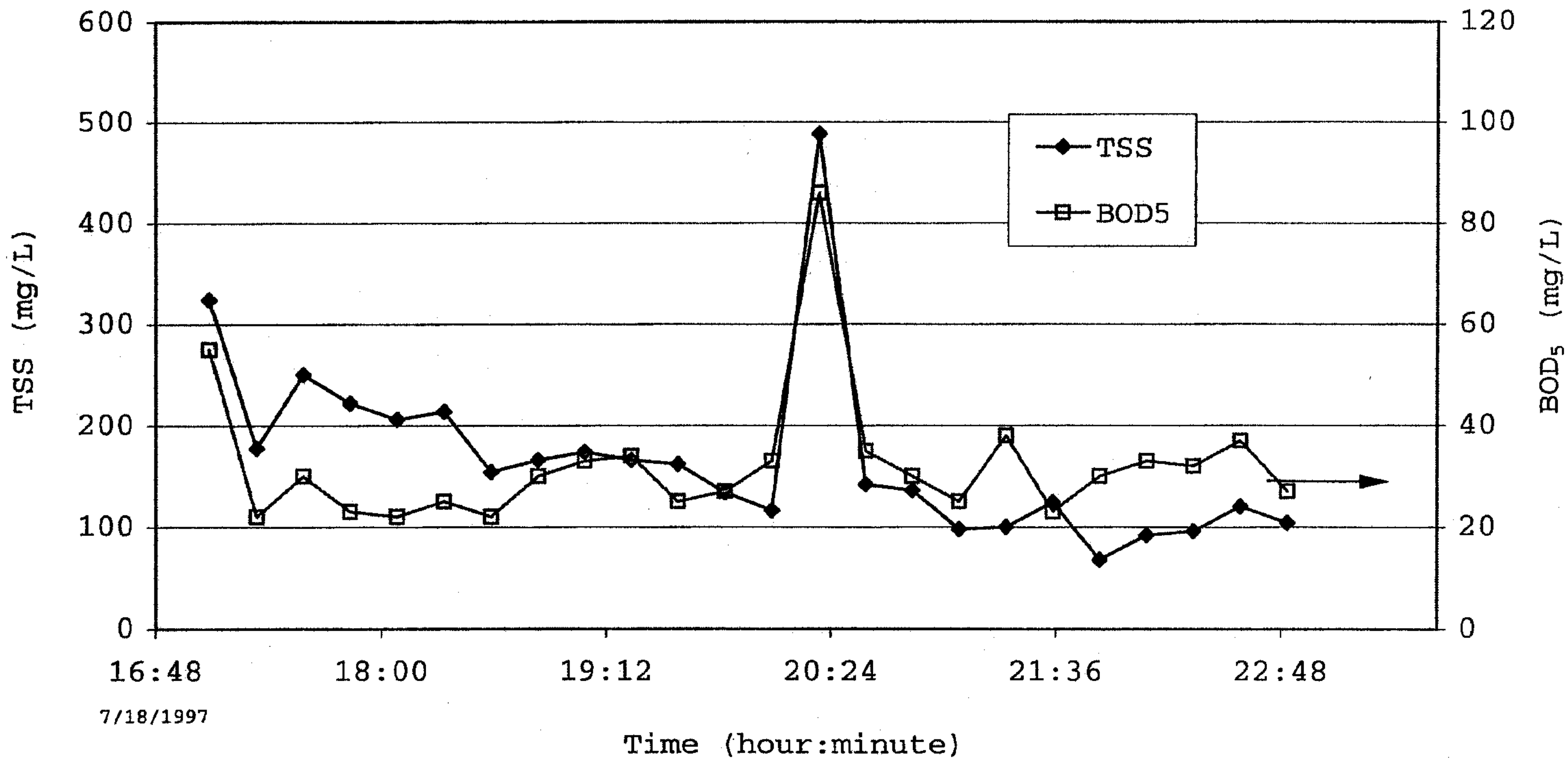
Station	Date of Sampling	Number of Samples Collected	Total Suspended Solids (mg/L)			BOD_5 (mg/L)		
			Average*	Min.	Max.	Average**	Min.	Max.
125th Street (CDS-13)	7/18/97	24	166	68	488	32	22	86
	8/16-17/97	24	92	12	238	16	<10	43
Racine Avenue (DS-M28)	7/18/97	16	256	78	2442	38	19	172
Riverside (DS-D45)	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

*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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 15

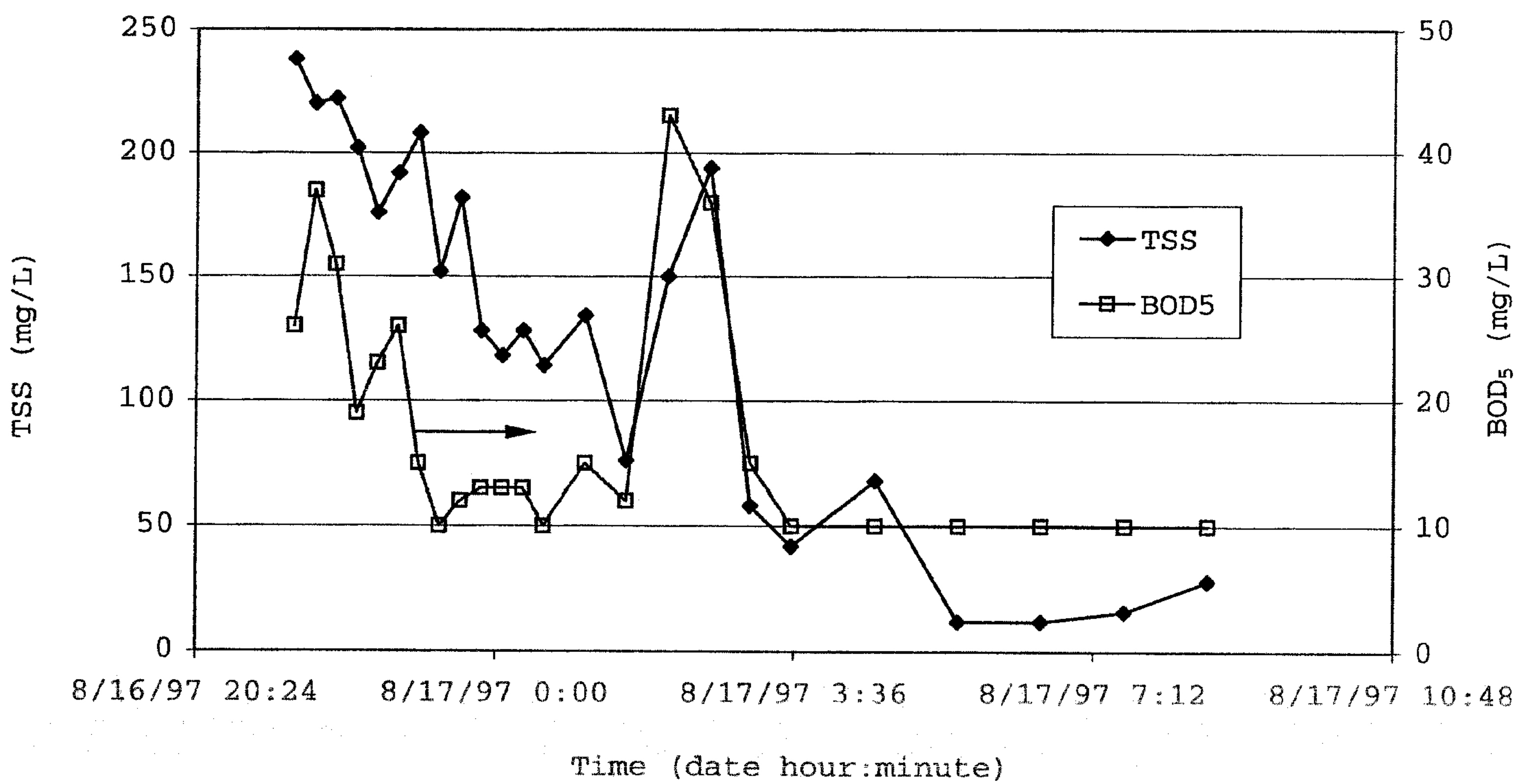
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13)
THE RAINFALL SAMPLING EVENT - JULY 18, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 16

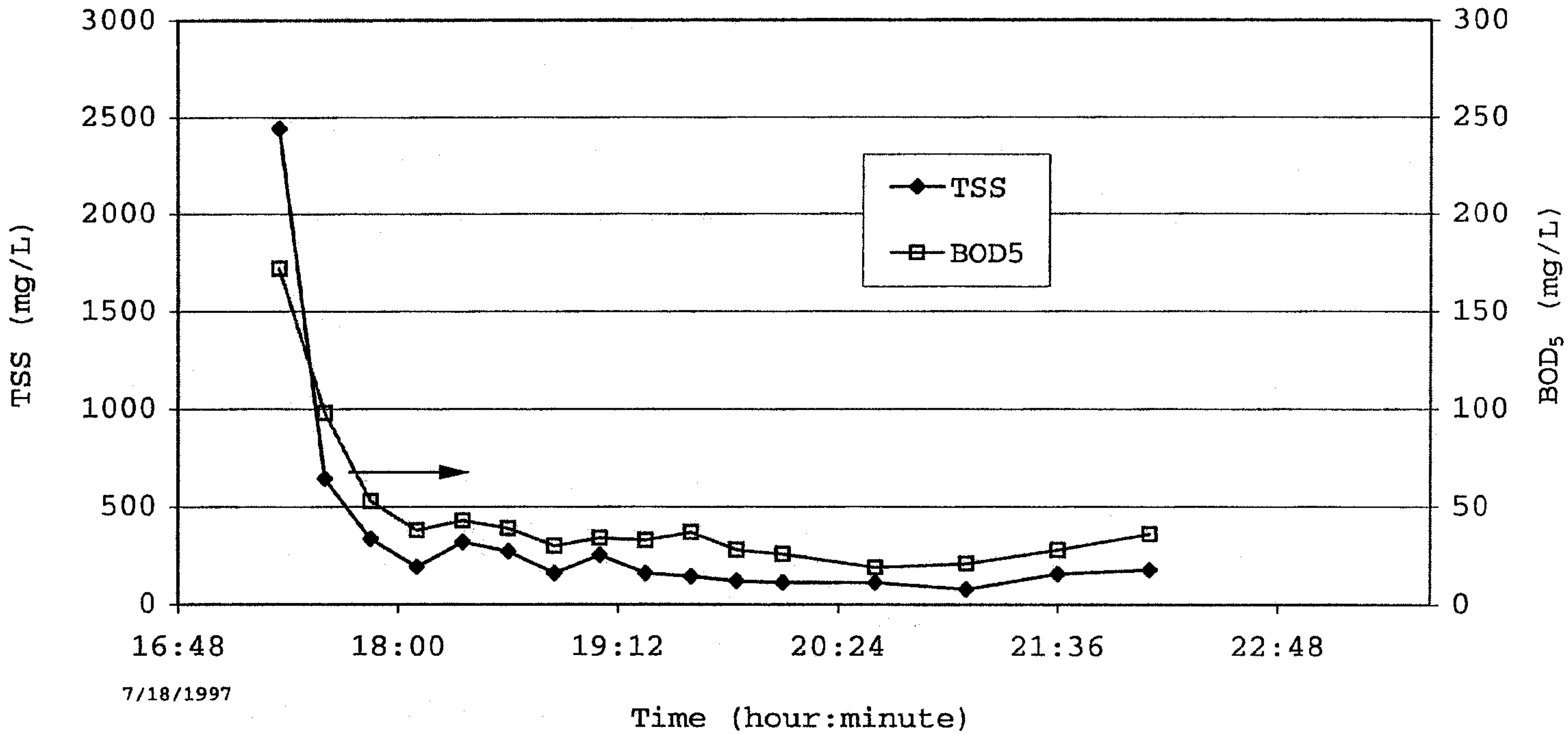
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE 125TH STREET TARP DROP SHAFT STATION (CDS-13)
THE RAINFALL SAMPLING EVENT - AUGUST 16-17, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 17

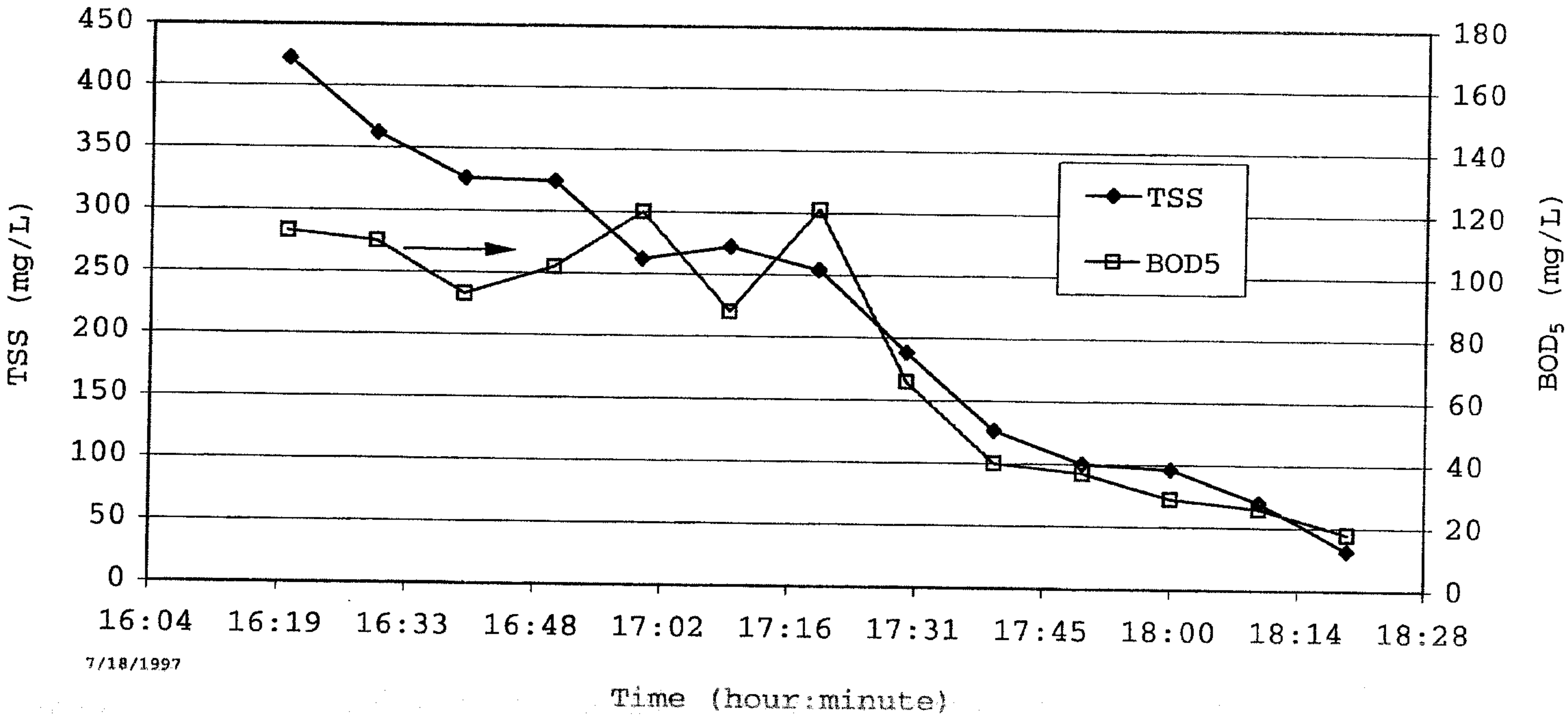
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE RACINE AVENUE TARP DROP SHAFT STATION (DS-M28)
THE RAINFALL SAMPLING EVENT - JULY 18, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 18

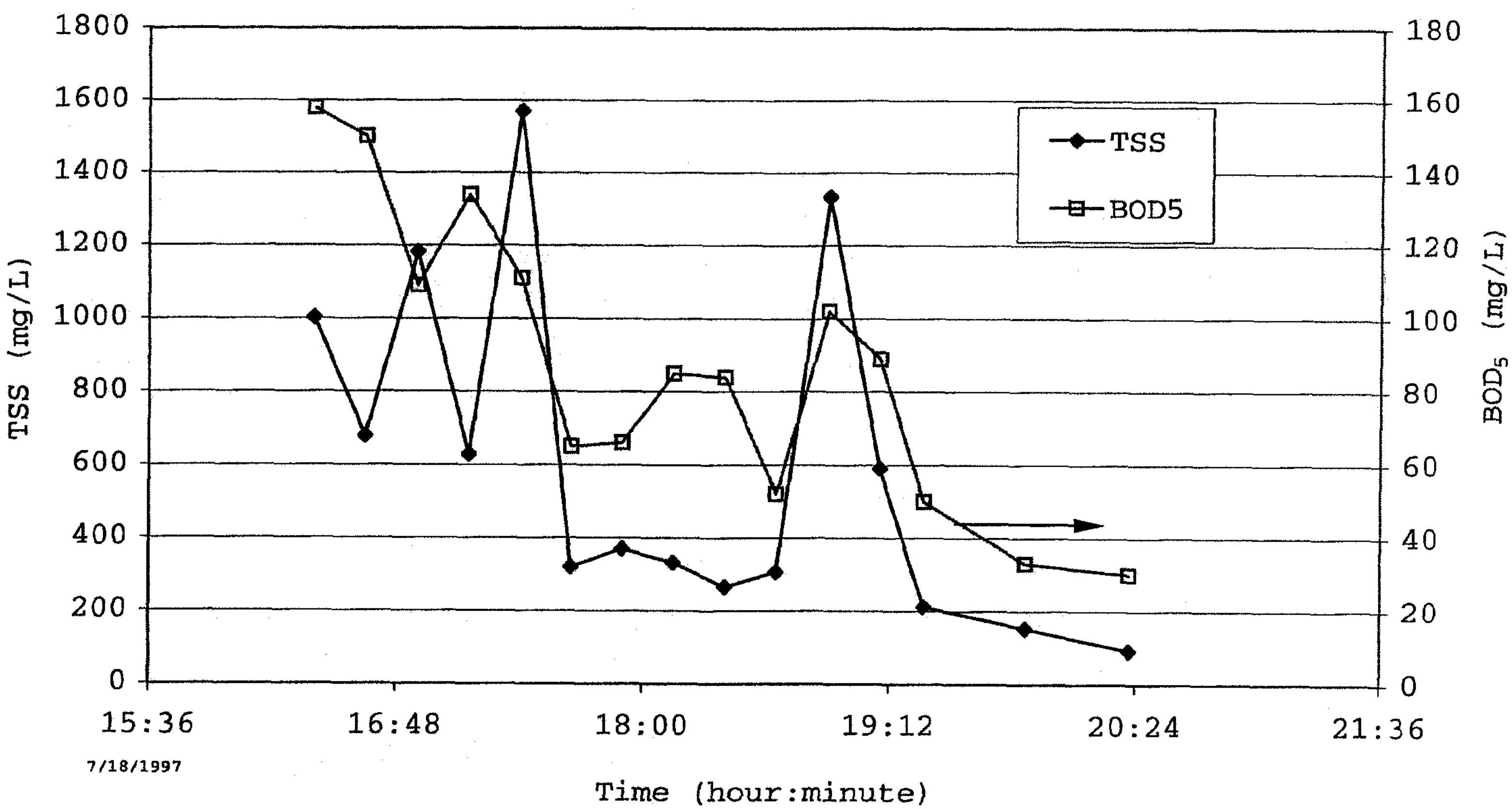
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE RIVERSIDE TARP DROP SHAFT STATION (DS-D45)
THE RAINFALL SAMPLING EVENT - JULY 18, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 19

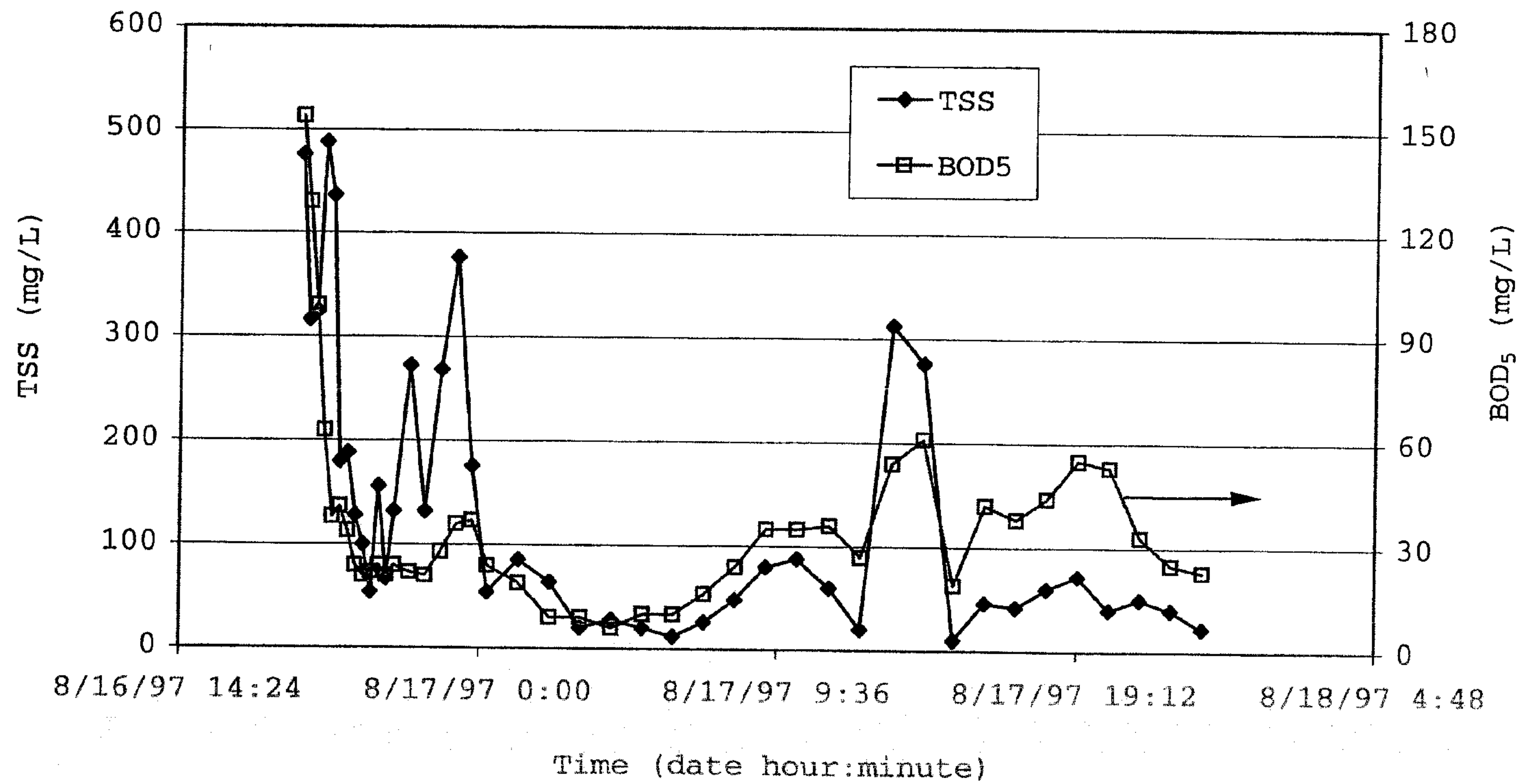
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE EVANSTON TARP DROP SHAFT STATION (DS-M106)
THE RAINFALL SAMPLING EVENT - JULY 18, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 20

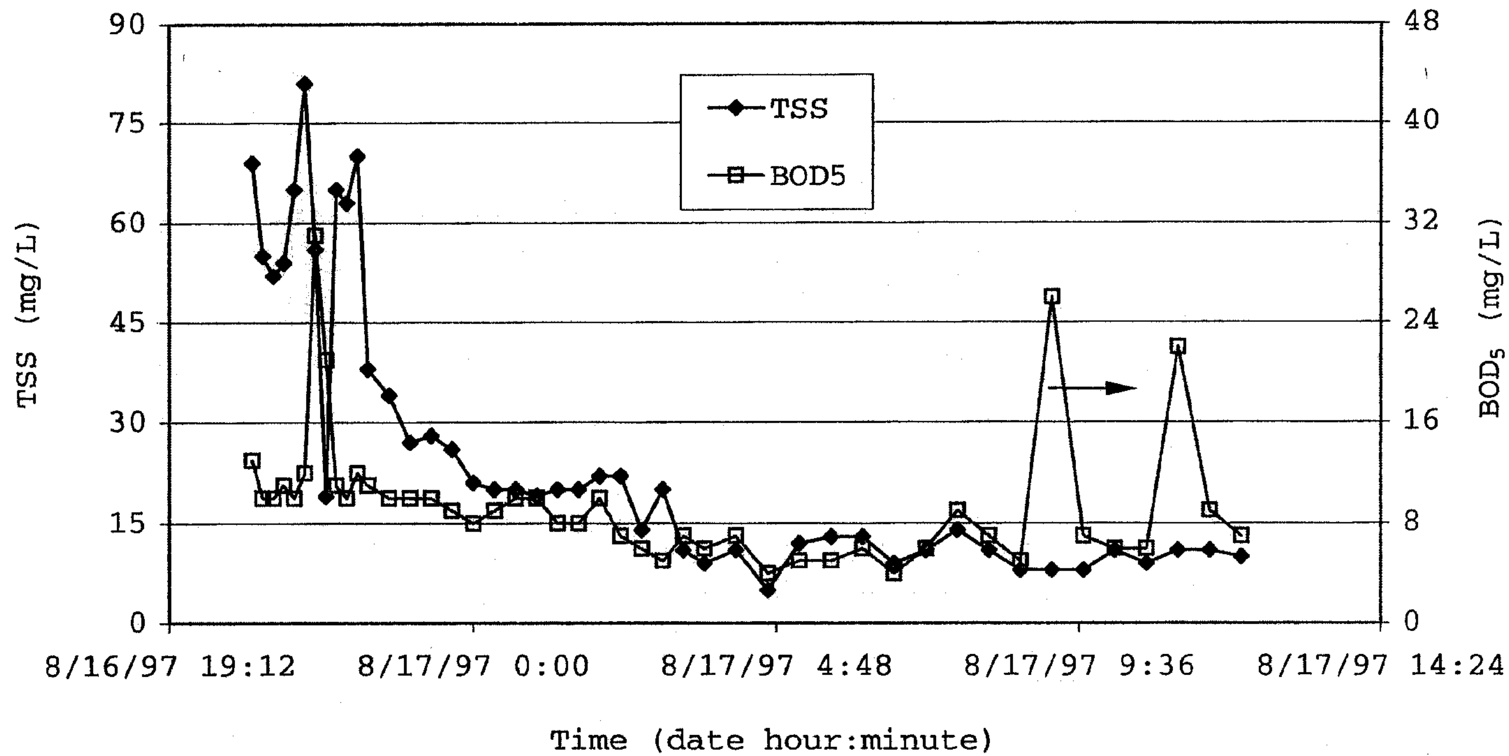
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE EVANSTON TARP DROP SHAFT STATION (DS-M106)
THE RAINFALL SAMPLING EVENT - AUGUST 16-17, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 21

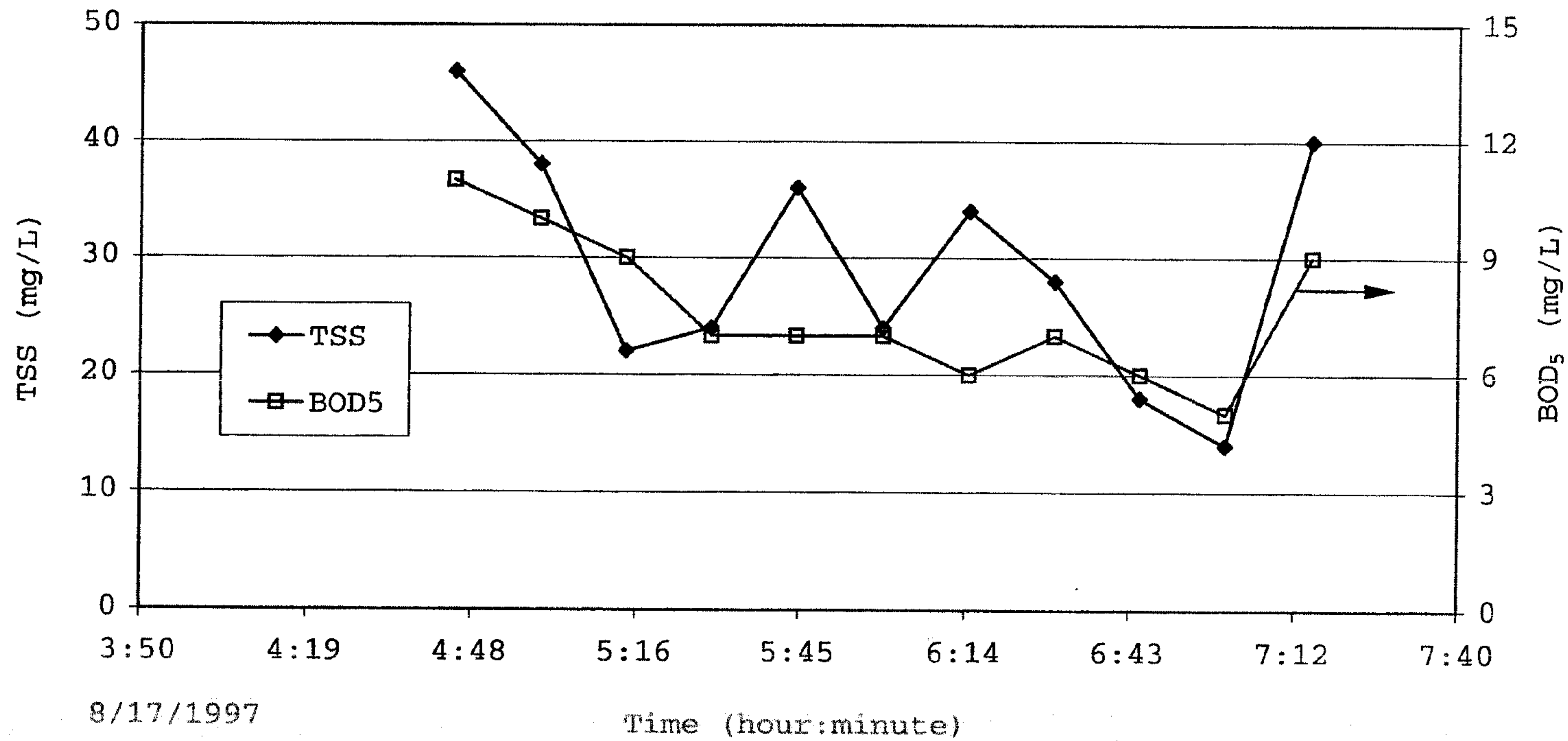
TOTAL SUSPENDED SOLIDS (TSS) AND BOD5 CONCENTRATION PROFILES
AT THE RIVERSIDE OVERFLOW STATION (CS-44)
THE RAINFALL SAMPLING EVENT - AUGUST 16-17, 1997



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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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1. Lordi, D. T., T. B. S. Prakasam, D. R. Zenz, C. Lue-Hing. "Organic Priority Pollutants Found in Combined Sewer Overflows and Tunnel and Reservoir Plan Flows." Metropolitan Water Reclamation District of Greater Chicago, Research and Development Department Report No. 94-27, December 1994.

2. APHA, AWWA, WEF. Standard Methods for the Examination of Water and Wastewater, 18th Edition. American Public Heath Association, Washington, D.C., 1992.

APPENDIX I

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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times									
			6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
	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	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	--
12	Iodomethane	5.0	--	--	--	--	--	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--	--	--	--	--	--
14	Allyl chloride	2.0	--	--	--	--	--	--	--	--	--	--
15	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	Methyl tert butyl ether	2.0	--	10.5	--	--	--	5.0	--	--	--	--
19	Hexane	2.0	--	--	--	--	--	--	--	--	--	--
20	1,1-Dichloroethane	0.6	--	--	--	--	--	--	--	--	--	--
21	Vinyl acetate	5.0	--	--	--	--	--	--	--	--	--	--
22	Chloroprene	2.0	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times									
			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	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--
45	1,2-Dibromoethane	2.0	--	--	--	--	--	--	--	--	--	--
46	Chlorobenzene	0.6	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times									
			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	--	4.0	--	1.5	--	--	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	--	--	--	--	--	--	--	--	--	--
	<u>Semi-Volatiles</u>											
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	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times									
			6/30 8:00	6/30 12:00	7/2	10/20	11/2	11/3	11/5	11/13	11/14	11/16
67	Hexachloroethane	1.6	--	--	--	--	--	--	--	--	--	--
68	N-Nitrose-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	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--
82	4-Chloro-3-methylphenol	1.7	--	17.7	--	--	--	--	--	--	--	--
83	2-Methylnaphthalene	3.8	--	--	--	10.0	--	--	--	--	--	--
84	Hexachlorocyclopentadiene	3.4	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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	--	--	--	--	--	--	--	--	--	--
92	2,6-Dinitrotoluene	1.2	--	--	--	--	--	--	--	--	--	--
93	3-Nitroaniline	5.0	--	--	--	--	--	--	--	--	--	--
94	Acenaphthene	1.2	--	--	--	2.1	--	--	--	--	--	--
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	--	--	--	2.8	--	--	--	--	--	--
100	Diethyl phthalate	3.2	--	--	--	--	--	3.4	--	--	--	--
101	4-Chlorophenyl phenyl ether	1.1	--	--	--	--	--	--	--	--	--	--
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	1.5	3.0	--	15.7	--	1.7	6.9	1.8	--	--
110	Anthracene	1.2	--	--	--	2.7	--	--	1.3	--	--	--
111	Carbazole	3.6	--	--	--	--	--	--	--	--	--	--
112	4-Nitrobiphenyl	2.0	--	--	--	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.4	1.6	1.8	--	3.2	--	--	--	--	--	--
114	Fluoranthene	1.5	--	3.9	--	20.5	--	--	8.3	3.3	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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	--	--	--	29.0	--	--	8.2	--	--	--
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	--	--	--	--	--	--
	<u>Pesticides and PCBs</u>											
130	Trifluralin	0.05*	--	--	--	--	--	--	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--	--	--	--	--	--	--
132	beta-BHC	0.03	--	--	--	--	--	--	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times									
			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	--	--	--	--	--	--	--	--
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	0.1	--	--	--	--	--	--	--	--	--	--
144	Chlorobenzilate	0.30*	--	--	--	--	--	--	--	--	--	--
145	beta-Endosulfan	0.05	--	--	--	--	--	--	--	--	--	--
146	4,4'-DDD	0.05	--	--	--	--	--	--	--	--	--	--
147	Endosulfan sulfate	0.1	--	--	--	--	--	--	--	--	--	--
148	4,4'-DDT	0.15	--	--	--	--	--	--	--	--	--	--
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	--	--	--	3.33	--	--	--	--	--	--
155	PCB-1221	0.2	--	--	--	--	--	--	--	--	--	--
156	PCB-1232	0.2	--	--	--	--	--	--	--	--	--	--
157	PCB-1242	0.2	--	--	--	--	--	--	--	--	--	--
158	PCB-1248	0.2	--	--	--	--	0.43	--	0.46	--	0.31	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times									
			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	--	--	--	--	--

-- Not found, below detection limit.

*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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
	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	175.9	317.1*	253.5**	158.6	140.7	82.2	203.2
11	Carbon disulfide	1.0	--	--	--	--	--	--	--
12	Iodomethane	5.0	--	--	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--	--	--
14	Allyl chloride	2.0	--	--	--	--	--	--	--
15	Methylene chloride	0.8	--	--	--	2.7	1.3	--	4.1
16	1,2-Dichloroethene (total)	0.6	--	0.7	0.7	1.2	1.4	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times						
			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	--	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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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
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	--	--	--	--	--	--	--
	<u>Semi-Volatiles</u>								
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	--	--	--	--	--	--	--
62	Bis(2-chloroisopropyl)ether	2.0	--	--	--	--	--	--	--
63	2-Methylphenol	5.0	--	--	--	--	--	--	10.3
64	Styrene oxide	5.0	--	--	--	--	--	--	--
65	Acetophenone	2.0	18.0	24.3	14.2	19.6	10.8	--	21.9
66	o-Toluidine	2.0	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times						
			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	--	--	--	--	--	--	--
72	Isophorone	1.4	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
111	Carbazole	3.6	--	--	--	--	--	7.0	--
112	4-Nitrobiphenyl	2.0	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.4	--	--	1.8	--	--	--	1.9
114	Fluoranthene	1.5	--	--	3.4	--	--	1.8	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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
115	Pyrene	4.6	--	--	--	--	--	--	--
116	Butyl benzyl phthalate	2.5	--	--	--	--	--	--	--
117	2-Acetylaminofluorene	3.0	--	--	--	--	--	--	--
118	Benzo(a)anthracene	1.4	--	--	1.5	--	--	--	--
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	--	--	--	--	--	--	--
	<u>Pesticides and PCBs</u>								
130	Trifluralin	0.05***	--	--	--	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--	--	--	--
132	beta-BHC	0.03	--	--	--	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times 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
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	0.1	--	--	--	--	--	--	--
144	Chlorobenzilate	0.30***	--	--	--	--	--	--	--
145	beta-Endosulfan	0.05	--	--	--	--	--	--	--
146	4,4'-DDD	0.05	--	--	--	--	--	--	--
147	Endosulfan sulfate	0.1	--	--	--	--	--	--	--
148	4,4'-DDT	0.15	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
155	PCB-1221	0.2	--	--	--	--	--	--	--
156	PCB-1232	0.2	--	--	--	--	--	--	--
157	PCB-1242	0.2	--	--	--	--	--	--	--
158	PCB-1248	0.2	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates and Times						
			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	--	--	--	--	--	--	--
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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	1.9
12	Iodomethane	5.0	--	--	--	--	--	--	--	--
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	Acrylnitrile	5.0	--	--	--	--	1.4	1.4	--	--
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	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	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	--	--	--	--	--	--	--	--
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	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
63	2-Methylphenol	5.0	--	--	--	--	--	--	--	--
64	Styrene oxide	5.0	--	--	--	--	--	--	--	--
65	Acetophenone	2.0	--	--	--	--	--	--	--	--
66	o-Toluidine	2.0	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	--	--	--	--	--	--	--	--
71	Nitrobenzene	3.7	--	--	--	--	--	--	--	--
72	Isophorone	1.4	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	1.9	--	--
83	2-Methylnaphthalene	3.8	--	--	--	--	--	--	--	--
84	Hexachlorocyclopentadiene	3.4	--	--	--	--	--	--	--	--
85	2,4,6-Trichlorophenol	1.4	--	--	--	--	--	--	--	--
86	2,4,5-Trichlorophenol	3.3	--	--	--	--	--	--	--	--
87	1,1'-Biphenyl	2.0	--	--	--	--	--	--	--	--
88	2-Chloronaphthalene	1.1	--	--	--	--	--	--	--	--
89	2-Nitroaniline	5.0	--	--	--	--	--	--	--	--
90	Acenaphthylene	1.0	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates							
			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
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	--	--	--	--	--	--	--	--
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	--	1.8	--	--	1.5	--	--	--
110	Anthracene	1.2	--	--	--	--	--	--	--	--
111	Carbazole	3.6	--	--	--	--	--	--	--	--
112	4-Nitrobiphenyl	2.0	--	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.4	1.7	--	2.2	2.2	2.4	--	--	2.4
114	Fluoranthene	1.5	--	1.9	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	--	--	--	--	--	--	--	--
122	Bis(2-ethylhexyl)phthalate	15.0	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
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 (Lindane)	0.02	--	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	0.30*	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
159	PCB-1254	0.20	--	--	--	--	--	--	--	--
160	PCB-1260	0.20	--	--	--	--	--	--	--	--

-- Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-4

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/16/95 15:00	8/16/95 22:00
	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	58.7	73.9
11	Carbon disulfide	1.0	--	--
12	Iodomethane	5.0	--	--
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	--	--
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	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/16/95 15:00	Sampling Date 8/16/95 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	--	--
39	Toluene	1.8	2.9	2.3
40	cis-1,3-Dichloropropene	1.7	--	--
41	1,1,2-Trichloroethane	2.5	--	--
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	--	--
55	1,2-Dibromo-3-chloropropane	2.0	--	--
	Semi-Volatiles			
56	Phenol	1.5	--	--
57	Bis(2-chloroethyl)ether	2.6	--	--
58	2-Chlorophenol	2.3	--	--
59	1,3-Dichlorobenzene	1.8	--	--
60	1,4-Dichlorobenzene	1.8	--	--
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	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/16/95 15:00	8/16/95 22:00
67	Hexachloroethane	1.6	--	--
68	N-Nitrose-di-n-propylamine	1.8	--	--
69	4-Methylphenol	5.0	--	--
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	--	--
75	Bis(2-chloroethoxy)methane	1.8	--	--
76	2,4-Dichlorophenol	2.0	--	--
77	1,2,4-Trichlorobenzene	1.6	--	--
78	Naphthalene	1.6	26.9	--
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	128.6	--
84	Hexachlorocyclopentadiene	3.4	--	--
85	2,4,6-Trichlorophenol	1.4	--	--
86	2,4,5-Trichlorophenol	3.3	--	--
87	1,1'-Biphenyl	2.0	11.1	--
88	2-Chloronapthalene	1.1	--	--
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	--	--
94	Acenaphthene	1.2	--	--
95	2,4-Dinitrotoluene	20.0	--	--
96	Dibenzofuran	2.0	5.4	--
97	4-Nitrophenol	3.2	--	--
98	2,4-Dinitrotoluene	1.4	--	--
99	Fluorene	1.5	11.7	--
100	Diethyl phthalate	3.2	--	--
101	4-Chlorophenyl phenyl ether	1.1	--	--
102	4-Nitroaniline	5.0	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/16/95 15:00	8/16/95 22:00
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	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	--	--
121	Chrysene	1.5	--	--
122	Bis(2-ethylhexyl)phthalate	15.0	--	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	--	--
128	Dibenz(a,h)anthracene	3.7	--	--
129	Benzo(ghi)perylene	4.0	--	--
	<u>Pesticides and PCBs</u>			
130	Trifluralin	0.05*	--	--
131	alpha-BHC	0.02	--	--
132	beta-BHC	0.03	--	--
133	gamma-BHC	0.02	--	--
134	delta-BHC	0.02	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 8/16/95 15:00	8/16/95 22:00
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	--	--
143	Endrin	0.10	--	--
144	Chlorobenzilate	0.30*	--	--
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	--	--
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	--	--
159	PCB-1254	0.20	--	--
160	PCB-1260	0.20	--	3.71

--Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AI-5

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
	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	33.4
11	Carbon disulfide	1.0	--
12	Iodomethane	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	--
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	--
28	Benzene	0.7	--
29	2,2,4-Trimethylpentane	2.0	--
30	Trichloroethene	0.6	--
31	Ethyl acrylate	2.0	--
32	1,2-Dichloropropane	0.8	--
33	Methyl methacrylate	z	--
34	Bromodichloromethane	0.7	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
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	12.7
40	cis-1,3-Dichloropropene	1.7	--
41	1,1,2-Trichloroethane	2.5	--
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	0.6	--
48	m- and/or p-Xylenes	1.0	--
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	2.0	--
55	1,2-Dibromo-3-chloropropane	2.0	--
	Semi-Volatiles		
87	1,1'-Biphenyl	2.0	--
56	Phenol	1.5	--
57	Bis(2-chloroethyl)ether	2.6	--
58	2-Chlorophenol	2.3	--
59	1,3-Dichlorobenzene	1.8	--
60	1,4-Dichlorobenzene	1.8	--
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	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	--
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	--
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	--
90	Acenaphthylene	1.0	--
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	--
101	4-Chlorophenyl phenyl ether	1.1	--
102	4-Nitroaniline	5.0	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
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	1.4
110	Anthracene	1.2	--
111	Carbazole	3.6	--
112	4-Nitrobiphenyl	2.0	--
113	Di-n-butyl phthalate	1.4	2.3
114	Fluoranthene	1.5	2.6
115	Pyrene	4.6	--
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	--
121	Chrysene	1.5	1.6
122	Bis(2-ethylhexyl)phthalate	15.0	--
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	--
128	Dibenz(a,h)anthracene	3.7	--
129	Benzo(ghi)perylene	4.0	--
	<u>Pesticides and PCBs</u>		
130	Trifluralin	0.05*	--
131	alpha-BHC	0.02	--
132	beta-BHC	0.03	--
133	gamma-BHC	0.02	--
134	delta-BHC	0.02	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
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	--
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	--
159	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates								
			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
	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	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	Iodomethane	5.0	--	--	--	--	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--	--	--	--	--
14	Allyl chloride	2.0	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--
19	Hexane	2.0	--	--	--	--	--	--	--	--	--
20	1,1-Dichloroethane	0.6	--	--	--	--	--	--	--	--	--
21	Vinyl acetate	5.0	--	--	--	--	--	--	--	--	--
22	Chloroprene	2.0	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--	--	--
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	67.8	--	--	--	--	--	--	--	--	--
36	Epichlorohydrin	20.0	--	--	--	--	--	--	--	--	--
37	trans-1,3-Dichloropropene	0.9	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	2.1
46	Chlorobenzene	0.6	--	--	--	--	--	--	0.7	--	0.7

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates								
			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	--	--	--	--	--	--	--	--	4.3
	<u>Semi-Volatiles</u>										
56	Phenol	0.7	12.2	--	--	--	--	--	--	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	--	--	--	--	--	--	--	--	--
61	1,2-Dichlorobenzene	1.1	--	--	--	--	--	--	--	--	--
62	Bis(2-chloroisopropyl)ether	1.0	--	--	--	--	--	--	--	--	--
63	2-Methylphenol	3.7	--	--	--	--	--	--	--	--	4.5
64	Styrene oxide	4.9	--	--	--	--	--	--	--	--	--
65	Acetophenone	1.4	--	--	--	--	--	--	--	--	--
66	o-Toluidine	1.2	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	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	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--	--	--
99	Fluorene	1.1	--	--	--	--	--	--	--	--	--
100	Diethyl phthalate	2.1	2.4	--	--	--	--	--	3.2	3.3	3.7
101	4-Chlrophenyl 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	1.0	2.6	--	--	--	--	6.0	1.7	6.1
110	Anthracene	0.8	--	--	--	--	--	--	0.9	--	1.3
111	Carbazole	4.0	--	--	--	--	--	--	--	--	4.7
112	4-Nitrobiphenyl	1.7	--	--	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.6	--	--	--	--	--	--	--	--	2.5
114	Fluoranthene	1.0	1.0	--	--	--	--	--	8.2	1.5	5.3

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	--	--	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	--	--	--	--	--	--	--	--	--
129	Benzo(ghi)perylene	1.1	--	--	--	--	--	--	--	--	--
	<u>Pesticides and PCBs</u>										
130	Trifluralin	0.05*	--	--	--	--	--	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--	--	--	--	--	--
132	beta-BHC	0.03	--	--	--	--	--	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	0.10	--	--	--	--	--	--	--	--	--
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	PCB-1221	0.20	--	--	--	--	--	--	--	--	--
156	PCB-1232	0.20	--	--	--	--	--	--	--	--	--
157	PCB-1242	0.20	--	--	--	--	--	--	--	--	--
158	PCB-1248	0.20	--	--	--	--	--	--	0.52	--	1.26

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 5/9/96	5/11/96	5/15/96	6/17/96	6/23/96	7/20/96	7/24/96
	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	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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates						
			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	--	--	--	--	--	--	--
	<u>Semi-Volatiles</u>								
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
63	2-Methylphenol	3.7	23.3	--	44.2	4.9	7.0	--	--
64	Styrene oxide	4.9	--	--	--	--	--	--	--
65	Acetophenone	1.4	2.5	--	17.2	5.5	27.0	--	13.6
66	o-Toluidine	1.2	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates						
			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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
71	Nitrobenzene	1.8	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--
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-Chlrophenyl 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	--	--	--	2.8	--	7.5	--
110	Anthracene	0.8	--	--	--	--	--	--	--
111	Carbazole	4.0	--	--	--	5.0	--	--	--
112	4-Nitrobiphenyl	1.7	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.6	--	--	--	--	--	--	--
114	Fluoranthene	1.0	--	--	--	1.4	--	8.3	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit μg/L (ppb)	Sampling Dates						
			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	--	--	--	--	--	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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
	<u>Pesticides and PCBs</u>								
130	Trifluralin	0.05**	--	--	--	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--	--	--	--
132	beta-BHC	0.03	--	--	--	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--
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	0.10	--	--	--	--	--	--	--
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	PCB-1221	0.20	--	--	--	--	--	--	--
156	PCB-1232	0.20	--	--	--	--	--	--	--
157	PCB-1242	0.20	--	--	--	--	--	--	--
158	PCB-1248	0.20	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
	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	36.3	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	Iodomethane	5.0	--	--	--	--	--	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--	--	--	--	--	--
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	--	--	--	1.3	--	0.9	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates									
			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
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	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates									
			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
47	Ethylbenzene	0.8	--	1.2	--	--	--	--	--	--	--	--
48	m- and/or p-Xylenes	1.4	--	4.5	--	--	1.6	--	--	2.4	--	--
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	--	--	--	--	--	--	--	--	--	--
54	Benzyl chloride	2.4	--	--	--	--	--	--	--	--	--	--
55	1,2-Dibromo-3-chloropropane	2.9	--	--	--	--	--	--	--	--	--	--
	<u>Semi-Volatiles</u>											
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	--	--	--	--	--	--	--	--	--	--
60	1,4-Dichlorobenzene	1.1	--	--	--	--	--	--	--	--	--	--
61	1,2-Dichlorobenzene	1.1	--	--	--	--	--	--	--	--	--	--
62	Bis(2-chloroisopropyl)ether	1.0	--	--	--	--	--	--	--	--	--	--
63	2-Methylphenol	3.7	--	--	--	--	--	--	--	--	--	--
64	Styrene oxide	4.9	--	--	--	--	--	--	--	--	--	--
65	Acetophenone	1.4	--	--	--	--	--	--	--	--	--	--
66	o-Toluidine	1.2	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--	--	--	--
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	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	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--	--	--	--
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-Chlrophenyl 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	--	--	--	--	1.0	--	--	--	--	--
110	Anthracene	0.8	--	--	--	--	--	--	--	--	--	--
111	Carbazole	4.0	--	--	--	--	--	--	--	--	--	--
112	4-Nitrobiphenyl	1.7	--	--	--	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.6	--	--	--	--	--	--	--	--	3.9	--
114	Fluoranthene	1.0	--	--	--	--	1.6	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
115	Pyrene	2.4	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--
121	Chrysene	1.1	--	--	--	--	--	--	--	--	--	--
122	Bis(2-ethylhexyl)phthalate	15.0	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--	--	--	--	--	--
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	0.10	--	--	--	--	--	--	--	--	--	--
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	PCB-1221	0.20	--	--	--	--	--	--	--	--	--	--
156	PCB-1232	0.20	--	--	--	--	--	--	--	--	--	--
157	PCB-1242	0.20	--	--	--	--	--	--	--	--	--	--
158	PCB-1248	0.20	--	--	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-3 (Continued)

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

Compound		Detection Limit µg/L (ppb)	Sampling Dates 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.
**Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-4

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 16:00	7/17/96 23:10	7/19/96 9:30
	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	20.0	--	--	--
10	Acetone	5.0	52.1	37.4	129.2
11	Carbon disulfide	1.0	--	--	--
12	Iodomethane	5.0	--	--	--
13	Acetonitrile	2.0	--	--	--
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	--	--	--
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	--	--	--
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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 16:00	7/17/96 23:10	7/19/96 9:30
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	13.4	--	--
40	cis-1,3-Dichloropropene	1.7	--	--	--
41	1,1,2-Trichloroethane	2.5	--	--	--
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	--	--	--
54	Benzyl chloride	2.4	--	--	--
55	1,2-Dibromo-3-chloropropane	2.9	--	--	--
	<u>Semi-Volatiles</u>				
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	--	--	--
64	Styrene oxide	4.9	--	--	--
65	Acetophenone	1.4	--	--	--
66	o-Toluidine	1.2	--	--	--

TABLE AII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 16:00	7/17/96 23:10	7/19/96 9:30
67	Hexachloroethane	1.4	--	--	--
68	N-Nitrose-di-n-propylamine	1.7	--	--	--
69	4-Methylphenol	3.5	7.2	--	--
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	1.8	--	--
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	--	--	--
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	1.1	--	--	--
100	Diethyl phthalate	2.1	--	--	--
101	4-Chlirophenyl phenyl ether	1.0	--	--	--
102	4-Nitroaniline	4.1	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 16:00	7/17/96 23:10	7/19/96 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	--	--
110	Anthracene	0.8	--	--	--
111	Carbazole	4.0	--	--	--
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	--	--
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	--	--	--
128	Dibenz(a,h)anthracene	0.8	--	--	--
129	Benzo(ghi)perylene	1.1	--	--	--
	<u>Pesticides and PCBs</u>		--		
130	Trifluralin	0.05*	--	--	--
131	alpha-BHC	0.02	--	--	--
132	beta-BHC	0.03	--	--	--
133	gamma-BHC	0.02	--	--	--
134	delta-BHC	0.02	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 16:00	7/17/96 23:10	7/19/96 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	--	--	--
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	0.06	--	--
147	Endosulfan sulfate	0.10	--	--	--
148	4,4'-DDT	0.15	0.12	--	--
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	0.77	0.39	--
159	PCB-1254	0.20	--	--	--
160	PCB-1260	0.20	1.49	0.35	--

-- Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-5

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/96 12:35	9/26/96 10:15	9/26/96 20:15
	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	20.0	--	--	--
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	--	--	--
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	--	--	--
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	--	--	--
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	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-5 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/96 12:35	9/26/96 10:15	9/26/96 20:15
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	--	--	--
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	--	--	--
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	--	--	--
62	Bis(2-chloroisopropyl)ether	1.0	--	--	--
63	2-Methylphenol	3.7	--	--	--
64	Styrene oxide	4.9	--	--	--
65	Acetophenone	1.4	--	--	--
66	o-Toluidine	1.2	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-5 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/96 12:35	9/26/96 10:15	9/26/96 20:15
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	--	--	--
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	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	1.1	--	--	--
100	Diethyl phthalate	2.1	--	--	--
101	4-Chlrophenyl phenyl ether	1.0	--	--	--
102	4-Nitroaniline	4.1	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-5 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/96 12:35	9/26/96 10:15	9/26/96 20:15
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	--	--	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	--	--	--
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	--	--	--
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	--	--	--
	<u>Pesticides and PCBs</u>				
130	Trifluralin	0.05*	--	--	--
131	alpha-BHC	0.02	--	--	--
132	beta-BHC	0.03	--	--	--
133	gamma-BHC	0.02	--	--	--
134	delta-BHC	0.02	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-5 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/96 12:35	9/26/96 10:15	9/26/96 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	--	--	--
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	--	--	--
159	PCB-1254	0.20	--	--	--
160	PCB-1260	0.20	--	--	--

-- Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-6

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

	Compound	Detection Limit μg/L (ppb)	Sampling Dates 7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96
	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	20.0	--	--	--	--
10	Acetone	5.0	41.8	52.4	37.3	134.9
11	Carbon disulfide	1.0	--	--	--	--
12	Iodomethane	5.0	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--
14	Allyl chloride	2.0	--	--	--	--
15	Methylene chloride	0.8	--	0.9	--	42.3
16	1,2-Dichloroethene (total)	0.8	16.4	10.3	1.0	3.5
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	--	--	--	--
23	2-Butanone	5.5	5.6	--	--	--
24	Chloroform	0.7	--	0.8	--	1.1
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	14.0	16.0	--	0.9
31	Ethyl acrylate	4.5	--	--	--	--
32	1,2-Dichloropropane	0.8	--	--	--	--
33	Methyl methacrylate	2.0	--	--	--	--
34	Bromodichloromethane	0.7	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96
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	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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
63	2-Methylphenol	3.7	--	--	--	--
64	Styrene oxide	4.9	--	--	--	--
65	Acetophenone	1.4	--	--	--	--
66	o-Toluidine	1.2	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96
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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
99	Fluorene	1.1	--	2.3	--	1.3
100	Diethyl phthalate	2.1	--	--	--	--
101	4-Chlrophenyl phenyl ether	1.0	--	--	--	--
102	4-Nitroaniline	4.1	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	2.8	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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
	<u>Pesticides and PCBs</u>					
130	Trifluralin	0.05*	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--
132	beta-BHC	0.03	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--
134	delta-BHC	0.02	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 15:40	7/18/96 1:20	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	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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
159	PCB-1254	0.20	--	--	--	--
160	PCB-1260	0.20	--	--	--	--

-- Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-7

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates				
			35263 17:45	35263 21:30	7/19/96 8:30	9/26/96 11:05	9/26/96 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	Iodomethane	5.0	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--
14	Allyl chloride	2.0	--	--	--	--	--
15	Methylene chloride	0.8	--	--	--	--	--
16	1,2-Dichloroethene (total)	0.8	--	--	--	--	--
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	--	--	--	--	--
23	2-Butanone	5.5	--	--	--	--	--
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	--	--	3.0	1.8	1.6
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	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-7 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--
38	4-Methyl-2-pentanone	3.5	--	--	--	--	--
39	Toluene	1.8	--	4.4	--	7.3	--
40	cis-1,3-Dichloropropene	1.7	--	--	--	--	--
41	1,1,2-Trichloroethane	2.5	--	--	--	--	--
42	Tetrachloroethene	1.6	--	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	--	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	--	1.2
50	Styrene	1.5	--	--	--	--	--
51	Bromoform	4.0	--	--	--	--	--
52	Cumene	2.0	--	29.1	--	--	--
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	--	--	52.1	43.6	--
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	--	--	--	--	--
63	2-Methylphenol	3.7	--	--	53.0	--	--
64	Styrene oxide	4.9	--	--	--	--	--
65	Acetophenone	1.4	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-7 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	--	--	--	--	--
72	Isophorone	1.8	--	--	--	--	--
73	2-Nitrophenol	2.2	--	--	--	--	--
74	2,4-Dimethylphenol	0.7	--	--	2.4	--	--
75	Bis(2-chloroethoxy)methane	1.9	--	--	--	--	--
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	--	--	--	--	--
83	2-Methylnaphthalene	4.8	--	97.7	5.0	--	--
84	Hexachlorocyclopentadiene	37.9	--	--	--	--	--
85	2,4,6-Trichlorophenol	1.7	--	--	--	--	--
86	2,4,5-Trichlorophenol	5.7	--	--	--	--	--
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	--	--	--	--	--
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	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-7 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--
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	2.0	6.0	2.4	2.8	2.0
110	Anthracene	0.8	--	1.0	--	--	--
111	Carbazole	4.0	--	--	4.6	--	--
112	4-Nitrobiphenyl	1.7	--	--	--	--	--
113	Di-n-butyl phthalate	1.6	--	--	--	--	--
114	Fluoranthene	1.0	2.3	2.8	--	2.6	1.4
115	Pyrene	2.4	--	2.8	--	2.6	--
116	Butyl benzyl phthalate	7.9	--	--	--	--	--
117	2-Acetylaminofluorene	2.7	--	--	--	--	--
118	Benzo(a)anthracene	0.8	--	1.3	--	--	--
119	3,3'-Dimethoxybenzidine	14.6	--	--	--	--	--
120	3,3'-Dichlorobenzidine	6.4	--	--	--	--	--
121	Chrysene	1.1	--	1.5	--	--	--
122	Bis(2-ethylhexyl)phthalate	15.0	--	66.7	--	--	--
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	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-7 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--	--
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	0.10	--	--	--	--	--
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	0.75	1.09	--	--	--
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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-8

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates			
			7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96
	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	20.0	--	--	--	--
10	Acetone	5.0	--	95.4	86.8	116.1
11	Carbon disulfide	1.0	--	--	--	--
12	Iodomethane	5.0	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--
14	Allyl chloride	2.0	--	--	--	--
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	--	--	--	--
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	--	--	--	--
23	2-Butanone	5.5	5.6	--	--	--
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	--	--	--	--
28	Benzene	1.0	--	--	--	--
29	2,2,4-Trimethylpentane	2.0	--	--	--	--
30	Trichloroethene	0.6	39.7	22.6	2.4	--
31	Ethyl acrylate	4.5	--	--	--	--
32	1,2-Dichloropropane	0.8	--	--	--	--
33	Methyl methacrylate	2.0	--	--	--	--
34	Bromodichloromethane	0.7	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-8 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates			
			7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96
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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
63	2-Methylphenol	3.7	--	--	--	--
64	Styrene oxide	4.9	--	--	--	--
65	Acetophenone	1.4	--	--	--	--
66	o-Toluidine	1.2	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-8 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 15:40	7/18/96 1:20	9/26/96	9/27/96
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	--	--	--	--
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	--	--	2.0	--
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	--	--	--	--
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	--	--	--	--
102	4-Nitroaniline	4.1	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-8 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates			
			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	--	--	--	--
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	--	--	--
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	--	--	--	--
	<u>Pesticides and PCBs</u>					
130	Trifluralin	0.05*	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--
132	beta-BHC	0.03	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--
134	delta-BHC	0.02	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-8 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/17/96 15:40	7/18/96 1:20	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	0.17	0.10	--	--
143	Endrin	0.10	--	--	--	--
144	Chlorobenzilate	0.03*	--	--	--	--
145	beta-Endosulfan	0.05	--	--	--	--
146	4,4'-DDD	0.05	0.10	0.05	--	--
147	Endosulfan sulfate	0.10	--	--	--	--
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	--	--	--	--
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	--	--	--	--
159	PCB-1254	0.20	--	--	--	--
160	PCB-1260	0.20	--	--	--	--

-- Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-9

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 9/26/96	9/27/96
	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	20.0	--	--
10	Acetone	5.0	57.0	94.2
11	Carbon disulfide	1.0	--	--
12	Iodomethane	5.0	--	--
13	Acetonitrile	2.0	--	--
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	--	--
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	--	--
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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 9/26/96	9/27/96
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	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	--	--
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	--	--
62	Bis(2-chloroisopropyl)ether	1.0	--	--
63	2-Methylphenol	3.7	--	--
64	Styrene oxide	4.9	--	--
65	Acetophenone	1.4	--	--
66	o-Toluidine	1.2	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-9 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 9/26/96	9/27/96
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	--	--
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	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	1.1	--	--
100	Diethyl phthalate	2.1	--	--
101	4-Chlrophenyl phenyl ether	1.0	--	--
102	4-Nitroaniline	4.1	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-9 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--
110	Anthracene	0.8	--	--
111	Carbazole	4.0	--	--
112	4-Nitrobiphenyl	1.7	--	--
113	Di-n-butyl phthalate	1.6	--	--
114	Fluoranthene	1.0	1.0	--
115	Pyrene	2.4	--	--
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	--	--
121	Chrysene	1.1	--	--
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	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AII-9 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--
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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates						
			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
	Volatiles								
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	--	--	--	--	--	--	--
9	Propionaldehyde	20.0	--	--	--	--	--	--	--
10	Acetone	5.4	163.8	83.4	1,371*	16.3	97.6	244.3	146.8
11	Carbon disulfide	1.1	--	--	--	1.1	--	--	--
12	Iodomethane	5.0	--	--	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--	--	--
14	Allyl chloride	2.2	--	--	--	--	--	--	--
15	Methylene chloride	1.0	3.5	6.0	--	--	8.0	--	--
16	1,2-Dichloroethene (total)	1.0	1.2	--	--	--	--	1.3	1.4
17	Acrylonitrile	5.0	--	--	--	--	--	--	--
18	Methyl tert butyl ether	4.2	12.3	--	--	--	--	--	--
19	Hexane	2.0	--	--	--	--	--	--	--
20	1,1-Dichloroethane	0.7	--	--	--	--	--	--	--
21	Vinyl acetate	5.0	--	--	--	--	--	--	--
22	Chloroprene	4.9	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates						
			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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
46	Chlorobenzene	0.6	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
47	Ethylbenzene	0.8	--	--	--	--	--	--	--
48	m- and/or p-Xylenes	2.0	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
	<u>Semi-Volatiles</u>								
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	--	--	--	--	1.1	--	--
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	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	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	--	--	--	--	--	--	--
87	1,1'-Biphenyl	1.7	--	--	--	--	--	--	--
88	2-Chloroapthalene	0.8	--	--	--	--	--	--	--
89	2-Nitroaniline	4.8	--	--	--	--	--	--	--
90	Acenaphthylene	0.7	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates						
			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
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	3.8	--	4.1	--	--	--	--
101	4-Chlrophenyl 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	--	--	--	--	--	--	--
108	Pentachloronitrobenzene	6.8	--	--	--	--	--	--	--
109	Phenanthrene	1.0	1.0	2.0	8.3	--	5.5	2.3	1.8
110	Anthracene	1.0	--	--	--	--	--	--	--
111	Carbazole	3.9	--	--	--	--	--	--	--
112	4-Nitrobiphenyl	3.2	--	--	--	--	--	--	--
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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates						
			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	--
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	--	--	--	--	--	--	--
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	--	--
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	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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
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	0.10	--	--	--	--	--	--	--
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	PCB-1221	0.20	--	--	--	--	--	--	--
156	PCB-1232	0.20	--	--	--	--	--	--	--
157	PCB-1242	0.20	--	--	--	--	--	--	--
158	PCB-1248	0.20	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-1 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-2

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 2/24/97	2/28/97	7/18/97	7/19/97 21:00	7/22/97 11:15
	Volatiles						
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	--	--	--	--	--
9	Propionaldehyde	20.0	--	--	--	--	--
10	Acetone	5.4	182.3	692.9*	31.4	219.0	365.1**
11	Carbon disulfide	1.1	--	--	--	--	--
12	Iodomethane	5.0	--	--	--	--	--
13	Acetonitrile	2.0	--	--	--	--	--
14	Allyl chloride	2.2	--	--	--	--	--
15	Methylene chloride	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	--	--	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	0.8	1.6	--	--	--
31	Ethyl acrylate	4.5	--	--	--	--	--
32	1,2-Dichloropropane	0.8	--	--	--	--	--
33	Methyl methacrylate	2.3	--	--	--	--	--
34	Bromodichloromethane	0.8	--	--	--	--	--
35	1,4-Dioxane	67.8	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--
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	--	--	--	--	--
55	1,2-Dibromo-3-chloropropane	4.6	--	--	--	--	--
	<u>Semi-Volatiles</u>						
56	Phenol	1.3	--	212.4	--	126.2	62.9
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	--	--	0.9	--	--
62	Bis(2-chloroisopropyl)ether	1.0	--	--	--	--	--
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	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 2/24/97	2/28/97	7/18/97	7/19/97 21:00	7/22/97 11:15
69	4-Methylphenol	3.7	--	16.4	--	--	29.7
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	--	--	--	--	--
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	--	--	--	--	--
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-Chlrophenyl 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	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 2/24/97	2/28/97	7/18/97	7/19/97 21:00	7/22/97 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	Carbazole	3.9	--	--	--	--	--
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-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	115.8	--	--	--	--
123	Di-n-octyl phthalate	2.6	--	7.5	--	--	--
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	--	--	--	--	--
	<u>Pesticides and PCBs</u>						
130	Trifluralin	0.05***	--	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--	--
132	beta-BHC	0.03	--	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--
135	Heptachlor	0.02	--	--	--	--	--
136	Aldrin	0.02	--	--	--	--	--
137	Heptachlor epoxide	0.02	--	--	--	--	--
138	gamma-Chlordane	0.05	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-2 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 2/24/97	2/28/97	7/18/97	7/19/97 21:00	7/22/97 11:15
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	--	--	0.10	--	--
147	Endosulfan sulfate	0.10	--	--	--	--	--
148	4,4'-DDT	0.10	--	--	0.97	--	--
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	--	--	--	--	--
159	PCB-1254	0.20	--	--	--	--	--
160	PCB-1260	0.20	--	--	--	0.85	--

--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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 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
	Volatiles									
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	--	--	--	--	--	--	--	--
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	Iodomethane	5.0	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date							
			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
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	--	--	--	--	--
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	--	--	--	--	--	1.4	--	--
31	Ethyl acrylate	4.5	--	--	--	--	--	--	--	--
32	1,2-Dichloropropane	0.8	--	--	--	--	--	--	--	--
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	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	--	--	--	--	--	--	--	--
42	Tetrachloroethene	1.6	--	6.4	--	--	2.1	--	--	--
43	2-Hexanone	4.6	--	--	--	--	--	--	--	--
44	Dibromochloromethane	1.8	--	--	--	--	--	--	--	--
45	1,2-Dibromoethane	2.0	--	--	--	--	--	--	--	--
46	Chlorobenzene	0.6	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit μg/L (ppb)	Sampling Date 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	--	--	--	--	--
48	m- and/or p-Xylenes	2.0	2.1	--	3.8	2.1	--	--	--	--
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	--	--	--	--	--	--	--	--
55	1,2-Dibromo-3-chloropropane	4.6	--	--	--	--	--	--	--	--
	<u>Semi-Volatiles</u>									
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	--	--	--	--	--	--	--	--
63	2-Methylphenol	3.6	--	--	--	--	--	--	--	--
64	Styrene oxide	5.4	--	--	--	--	--	--	--	--
65	Acetophenone	1.8	--	--	--	--	--	--	--	--
66	o-Toluidine	1.3	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 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
67	Hexachloroethane	0.9	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date							
			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
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	--	--	--	--	--	--	5.4	--
101	4-Chlrophenyl 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	--	--	--	--	--	--	--	--
108	Pentachloronitrobenzene	6.8	--	--	--	--	--	--	--	--
109	Phenanthrene	1.0	--	--	--	--	--	--	--	--
110	Anthracene	1.0	--	--	--	--	--	--	--	--
111	Carbazole	3.9	--	--	--	--	--	--	--	--
112	4-Nitrobiphenyl	3.2	--	--	--	--	--	--	--	--
113	Di-n-butyl phthalate	1.3	--	1.3	--	--	1.4	--	1.5	--
114	Fluoranthene	0.9	--	--	--	--	1.1	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 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
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
	<u>Pesticides and PCBs</u>									
130	Trifluralin	0.05*	--	--	--	--	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--	--	--	--	--
132	beta-BHC	0.03	--	--	--	0.05	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--	--	--	--	--
134	delta-BHC	0.02	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 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
135	Heptachlor	0.02	--	--	--	--	--	--	--	--
136	Aldrin	0.02	--	--	--	--	--	--	--	--
137	Heptachlor epoxide	0.02	--	--	--	--	--	--	--	--
138	gamma-Chlordane	0.05	0.05	--	--	--	--	--	--	--
139	alpha-Chlordane	0.05	--	--	--	--	--	--	--	--
140	alpha-Endosulfan	0.05	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-3 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Date 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
159	PCB-1254	0.20	0.65	--	--	--	--	--	--	--
160	PCB-1260	0.20	--	--	--	--	--	--	--	--

--Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-4

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 6/16/97 5:40	6/16/97 10:30
	Volatiles			
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	--	--
9	Propionaldehyde	20.0	--	--
10	Acetone	5.4	56.0	60.0
11	Carbon disulfide	1.1	--	--
12	Iodomethane	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	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 6/16/97 5:40	6/16/97 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	--	--
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	--	--
57	Bis(2-chloroethyl)ether	1.0	--	--
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	--	--
63	2-Methylphenol	3.6	--	--
64	Styrene oxide	5.4	--	--
65	Acetophenone	1.8	--	--
66	o-Toluidine	1.3	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 6/16/97 5:40	6/16/97 10:30
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	--	--
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-Chlrophenyl phenyl ether	1.1	--	--
102	4-Nitroaniline	3.0	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 6/16/97 5:40	6/16/97 10:30
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	2.5	1.4
110	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
115	Pyrene	1.7	4.7	1.8
116	Butyl benzyl phthalate	1.8	--	--
117	2-Acetylaminofluorene	5.5	--	--
118	Benzo(a)anthracene	0.7	1.7	--
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	--	--
	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	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-4 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 6/16/97 5:40	6/16/97 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	--	--
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	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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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		
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	--
9	Propionaldehyde	20.0	--
10	Acetone	5.4	20.6
11	Carbon disulfide	1.1	--
12	Iodomethane	5.0	--
13	Acetonitrile	2.0	--
14	Allyl chloride	2.2	--
15	Methylene chloride	1.0	--
16	1,2-Dichloroethene (total)	1	--
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	--
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	--
31	Ethyl acrylate	4.5	--
32	1,2-Dichloropropane	0.8	--
33	Methyl methacrylate	2.3	--
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	--
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	--
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	--
63	2-Methylphenol	3.6	--
64	Styrene oxide	5.4	--
65	Acetophenone	1.8	--
66	o-Toluidine	1.3	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
67	Hexachloroethane	0.9	--
68	N-Nitrose-di-n-propylamine	1.7	--
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	--
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-Chlrophenyl phenyl ether	1.1	--
102	4-Nitroaniline	3.0	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	--
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	--
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	--
127	Indeno(1,2,3-cd)pyrene	1.1	--
128	Dibenz(a,h)anthracene	1.0	--
129	Benzo(ghi)perylene	0.8	--
	<u>Pesticides and PCBs</u>		
130	Trifluralin	0.05*	--
131	alpha-BHC	0.02	--
132	beta-BHC	0.03	--
133	gamma-BHC	0.02	--
134	delta-BHC	0.02	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
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	0.17
143	Endrin	0.10	--
144	Chlorobenzilate	0.03*	--
145	beta-Endosulfan	0.05	--
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	--
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	--
159	PCB-1254	0.20	--
160	PCB-1260	0.20	--

--Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-6

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/97	8/12/97	8/16/97 20:00	8/17/97
	Volatiles					
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	--	--	--	--
9	Propionaldehyde	20.0	--	--	--	--
10	Acetone	5.4	173.0	44.5	--	118.8
11	Carbon disulfide	1.1	--	--	--	--
12	Iodomethane	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	--	--	--	--
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	1.8	--	--	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	--	--	--	--
33	Methyl methacrylate	2.3	--	--	--	--
34	Bromodichloromethane	0.8	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/97	8/12/97	8/16/97 20:00	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	13.2	--	2.3	1.8
40	cis-1,3-Dichloropropene	1.7	--	--	--	--
41	1,1,2-Trichloroethane	2.5	--	--	--	--
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	--	--	--	--
46	Chlorobenzene	0.6	--	--	--	--
47	Ethylbenzene	0.8	--	--	--	1.9
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	--	--	--	--
	<u>Semi-Volatiles</u>					
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	18.4	--	--	--
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	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 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	--	--	--	--
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	--	--	--	--
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	--	--	--	--
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	--	--	--	0.9
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-Chlrophenyl phenyl ether	1.1	--	--	--	--
102	4-Nitroaniline	3.0	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates			
			7/18/97	8/12/97	8/16/97 20:00	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	3.8	1.3	3.2	3.0
110	Anthracene	1.0	--	--	--	--
111	Carbazole	3.9	--	--	--	--
112	4-Nitrobiphenyl	3.2	--	--	--	--
113	Di-n-butyl phthalate	1.3	--	--	--	4.1
114	Fluoranthene	0.9	3.3	1.9	3.0	--
115	Pyrene	1.7	3.9	1.8	2.8	--
116	Butyl benzyl phthalate	1.8	--	--	--	--
117	2-Acetylaminofluorene	5.5	--	--	--	--
118	Benzo(a)anthracene	0.7	1.2	--	1.0	--
119	3,3'-Dimethoxybenzidine	19.6	--	--	--	--
120	3,3'-Dichlorobenzidine	5.8	--	--	--	--
121	Chrysene	0.9	1.6	1.1	1.4	--
122	Bis(2-ethylhexyl)phthalate	8.2	--	19.2	--	--
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	--	--	--	--
	<u>Pesticides and PCBs</u>					
130	Trifluralin	0.05*	--	--	--	--
131	alpha-BHC	0.02	--	--	--	--
132	beta-BHC	0.03	--	--	--	--
133	gamma-BHC	0.02	--	--	--	--
134	delta-BHC	0.02	--	--	--	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE AIII-6 (Continued)

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

	Compound	Detection Limit µg/L (ppb)	Sampling Dates 7/18/97	8/12/97	8/16/97 20:00	8/17/97
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	--	--	--	--
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	--	--	--	--
159	PCB-1254	0.20	--	--	--	--
160	PCB-1260	0.20	--	--	--	--

--Not found, below detection limit.
*Estimated instrument detection limit.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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		
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	--
9	Propionaldehyde	20.0	--
10	Acetone	5.4	12.7
11	Carbon disulfide	1.1	--
12	Iodomethane	5.0	--
13	Acetonitrile	2.0	--
14	Allyl chloride	2.2	--
15	Methylene chloride	1.0	--
16	1,2-Dichloroethene (total)	1.0	2.7
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	--
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	--
31	Ethyl acrylate	4.5	--
32	1,2-Dichloropropane	0.8	--
33	Methyl methacrylate	2.3	--
34	Bromodichloromethane	0.8	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
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	--
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	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	--
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	--
76	2,4-Dichlorophenol	1.7	--
77	1,2,4-Trichlorobenzene	0.9	--
78	Naphthalene	0.6	13.0
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	5.1
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	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	--
98	2,4-Dinitrotoluene	1.4	--
99	Fluorene	1.1	2.4
100	Diethyl phthalate	3.6	--
101	4-Chlrophenyl phenyl ether	1.1	--
102	4-Nitroaniline	3.0	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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
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	--
	<u>Pesticides and PCBs</u>		
130	Trifluralin	0.05*	--
131	alpha-BHC	0.02	--
132	beta-BHC	0.03	--
133	gamma-BHC	0.02	--
134	delta-BHC	0.02	--

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	--
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	0.10	--
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	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 IV

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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Solids mg/L	BOD_5 mg/L	Ammonium-N mg/L
5/23/95	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
5/24/95	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
	3:29	646	46	1.57
	3:59	574	41	1.28
	4:29	577	33	1.50
	4:59	610	37	2.30
	5:59	797	42	1.84
	6:59	535	33	0.95
	7:59	602	33	0.87
	8:59	628	33	0.89
Weighted Average		749	81	1.84
Min		535	33	0.87
Max		1355	235	3.77

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Solids mg/L	BOD_5 mg/L	Ammonium-N mg/L
6/2/95	15:20	1040	157	4.74
	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 Average		699	116	1.60
Min		520	52	0.23
Max		1040	205	4.74

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Solids mg/L	BOD_5 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 Average		752	102	2.50
Min		566	35	0.79
Max		875	166	4.03

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		389	35	2.94
Min		318	20	1.58
Max		498	55	5.04

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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_5 mg/L	Ammonium-N mg/L
7/20/95	14:39	474	54	1.38
	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
	16:54	982	240	2.66
	17:09	880	129	2.59
	17:24	744	138	3.78
Weighted Average		662	94	2.45
Min		400	36	1.38
Max		1118	240	3.78

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-6

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		516	14	1.62
Min		252	6	0.10
Max		1290	21	5.26

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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
	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-8 (Continued)

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-8 (Continued)

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	BOD_5 mg/L	Ammonium-N mg/L
5/23/95	16:02	474	17	0.85
	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 Average		385	32	1.07
Min		186	11	0.40
Max		636	133	5.02

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Solids mg/L	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L	Ammonium-N mg/L
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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		527	48	2.21
Min		222	17	0.78
Max		4190	760	8.72

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Solids mg/L	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		626	186	2.81
Min		296	46	0.67
Max		3156	2621	5.50

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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
	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 Average		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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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	3	1.15
	3:32	622	2	1.15
	3:47	652	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		579	10	1.21
Min		120	2	0.48
Max		720	50	2.13

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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	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
Weighted Average		324	25	1.07
Min		130	5	0.19
Max		730	134	5.52

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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
Weighted Average		85	35
Min		20	10
Max		734	262

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L
9/26/96	10:55	588	112
	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-16

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		84	23
Min		22	10
Max		406	78

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Suspended Solids mg/L	BOD_5 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		74	17
Min		40	10
Max		932	143

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		89	42
Min		30	20
Max		196	150

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-19

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L
	5:14	26	20
	6:14	42	27
	7:14	142	29
Weighted Average		72	22
Min		12	6
Max		260	67

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L
7/17/96	15:45	304	27
	16:07	526	26
	16:22	330	22
	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L
7/18/96	4:07	34	17
	5:07	22	17
	6:07	210	51
	7:07	152	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		166	32
Min		68	22
Max		488	86

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L
8/16/97	21:34	238	26
	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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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

Date	Time	Total Suspended Solids mg/L	BOD_5 mg/L
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
Weighted Average		256	38
Min		78	19
Max		2442	172

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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 Average		217	75
Min		32	18
Max		422	121

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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		551	81
Min		152	33
Max		1570	158

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 mg/L
8/17/97	12:15	20	27
	13:15	312	54
	14:15	276	61
	15:15	10	19
	16:15	46	42
	17:15	42	38
	18:15	60	44
	19:15	72	55
	20:15	40	53
	21:15	50	33
	22:15	40	25
	23:15	22	23
Weighted Average		99	32
Min		10	6
Max		488	154

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

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	BOD_5 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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-27 (Continued)

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	BOD_5 mg/L
8/17/97			
	5:10	12	5
	5:40	13	5
	6:10	13	6
	6:40	9	4
	7:10	11	6
	7:40	14	9
	8:10	11	7
	8:40	8	5
	9:10	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
Weighted Average		19	9
Min		5	4
Max		81	31

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AIV-28

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

Date	Time	Total Suspended Solids mg/L	BOD_5 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 Average		28	7
Min		14	5
Max		46	11