

Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

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CONTINUOUS DISSOLVED OXYGEN MONITORING
IN THE CHICAGO WATERWAY SYSTEM
DURING 2003

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CONTINUOUS DISSOLVED OXYGEN MONITORING IN THE CHCAGO WATERWAY SYSTEM DURING 2003

By

Samuel G. Dennison Biologist IV

> Michael Sopcak Biologist III

Jennifer L. Wasik Biologist II

Thomas A. Minarik, Jr. Biologist I

Research and Development Department Richard Lanyon, Director

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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

More than 30 years ago, the Metropolitan Water Reclamation District of Greater Chicago (District) determined that applicable dissolved oxygen (DO) standards for deep draft navigable waterways in the Chicago area could not be maintained exclusively by improving the effluent quality from the three major District Water Reclamation Plants (WRPs) and by capturing and treating combined sewer overflows (CSOs).

In order to provide supplemental aeration, the District constructed and operated two diffused instream aeration stations and five sidestream elevated pool aeration (SEPA) stations in Chicago area waterways.

In August 1996, the District began planning a comprehensive DO monitoring study to identify reaches in the CWS where the DO concentration is less than the applicable Illinois Pollution Control Board (IPCB) water quality standards.

Initially, 20 stations were selected for monitoring from Wilmette, Illinois, on the North Shore Channel to the Lockport Powerhouse and Lock on the Chicago Sanitary and Ship Canal, using continuous water quality monitors, Models 6600 and 6920 manufactured by Yellow Springs Instruments, Incorporated, (YSI), Yellow Springs, Ohio. This monitoring was extended further downstream to Jefferson Street in Joliet, Illinois, on the Des Plaines River beginning in Additional stations were March 2000. added to the DO monitoring network in August 2001 in order to monitor the Calumet River System.

The present report includes hourly DO values at 20 stations from Wilmette to Lockport in the Chicago River System, I station in

Joliet in the Des Plaines River System, and 13 stations in the Calumet River System.

Conclusions

Chicago and Des Plaines River Systems.

The results of the continuous DO monitoring conducted in the Chicago and Des Plaines River Systems during 2003 indicated the following.

- 1. DO supersaturation occurred at Linden Street, Simpson Street, and Main Street on the North Shore Channel.
- Hourly DO concentrations of zero were recorded numerous times at Linden Street, Simpson Street, and Main Street on the North Shore Channel and at 36th Street and Interstate Highway 55 on Bubbly Creek.
- 3. Monitoring stations at the Chicago River Controlling Works and at Michigan Avenue recorded DO concentrations above the applicable IPCB standards at all times. Five monitoring stations were above the applicable IPCB DO standard at least 99 percent of the time. The five stations were Addison Street and Division Street on the North Branch of the Chicago River, Jackson Boulevard on the South Branch of the Chicago River, and B&O Railroad on the Chicago Sanitary and Ship Canal.
- 4. Monitoring stations where the DO concentration was above the DO standard 90 to 98 percent of the time included Fullerton Avenue and Kinzie Street on the North Branch of the Chicago River, Loomis Street on the South Branch of the Chicago River, River Mile 302.6 on the Chicago Sanitary and Ship Canal, and Jefferson Street on the Des Plaines River.

- 5. Monitoring stations recording DO levels above the applicable IPCB DO standards 50 to 89 percent of the time included Linden Street, Simpson Street, and Main Street on the North Shore Channel, 36th Street and Interstate Highway 55 on Bubbly Creek, and Cicero Avenue, Route 83, Romeoville Road, and Lockport on the Chicago Sanitary and Ship Canal.
- 6. Based upon the results of this study, it appears that the North Shore Channel upstream of the North Side WRP and Bubbly Creek are the main areas, of those monitored, that are experiencing problems maintaining DO above the applicable DO standard.

Calumet River System. The results of the continuous DO monitoring conducted in the Calumet River System during 2003 indicated the following.

- 1. DO supersaturation occurred at Torrence Avenue on the Grand Calumet River and at Ashland Avenue on the Little Calumet River.
- 2. None of the 13 monitoring stations recorded DO concentrations above the applicable IPCB standards at all times. However, eight monitoring stations were above the applicable IPCB DO standard at least 99 percent of the time. The eight stations were 130th Street, Division Street, Kedzie Avenue, Cicero Avenue, River Mile 311.7, Southwest Highway, 104th Avenue and Route 83 on the Calumet-Sag Channel.

- 3. Monitoring stations where the DO concentration was above the DO standard 90 to 98 percent of the time included Conrail Railroad, C&W Indiana Railroad and Halsted Street on the Little Calumet River.
- 4. Monitoring stations recording DO levels above the applicable IPCB DO standards 50 to 89 percent of the time included Torrence Avenue on the Grand Calumet River and Ashland Avenue on the Little Calumet River.
- 5. Based upon the results of this study, it appears that the Grand Calumet River at Torrence Avenue and the Little Calumet River at Ashland Avenue are experiencing problems maintaining DO above the applicable DO standard.

The database resulting from the operation of the continuous DO monitors has been found to be an important source of information for determining the oxygen levels in a complex, urbanized waterway system. This information will be useful in the future for determining the need and location for additional supplemental aeration capacity, understanding the temporal and transient impacts of CSOs, assessing the effects of reduced discretionary diversion from Lake Michigan, and calibration and verification of an unsteady-state water quality model for the Chicago, Calumet and Des Plaines River Systems.

INTRODUCTION

The Chicago Waterway System (CWS) consists of 78 miles of canals, which serve the Chicago area for two principal purposes, the drainage of urban storm water runoff and treated municipal wastewater effluent and the support of commercial navigation. Approximately 75 percent of the length is composed of man-made canals where no waterway existed previously and the remainder is composed of natural streams that have been deepened, straightened and/or widened to such an extent that reversion to the natural state is not possible. The flow of water in the CWS is artificially controlled by hydraulic structures. The CWS has two river systems, the Calumet River System and the Chicago River System (Lanyon, 2002).

Over the years, increased pollutant loading from urbanization throughout the Chicago metropolitan area and low stream velocities in Chicago area deep-draft waterways have caused DO concentrations to fall below DO standards established by the IPCB. More than 30 years ago, the District determined that applicable IPCB DO standards for Chicago area waterways could not be met exclusively by advanced wastewater treatment at its three major regional WRPs (Calumet, North Side, and Stickney) and by the capture and treatment of CSOs. In order to increase the DO concentration in the Chicago and Calumet River Systems, the District designed and constructed artificial aeration systems (instream diffuser and SEPA) during the late 1970s and early 1990s, respectively.

From October 1994 through May 1996, the Research and Development (R&D) Department conducted weekly DO surveys in the Chicago River System. Water samples were collected manually, chemically fixed in the field, and returned to the laboratory for titration. The results from these surveys showed that DO values in selected waterway reaches were less than IPCB DO standards applicable to these reaches.

In August 1996, the R&D Department began developing a comprehensive field-monitoring program in order to locate and identify reaches in the Chicago River System where the DO concentration is less than the applicable IPCB DO standard. Initially, the program was to focus on the Chicago River System for a two-year period. Subsequently, the scope of the monitoring program was extended to four years, and the study area was expanded to include the Calumet River System for the latter two years.

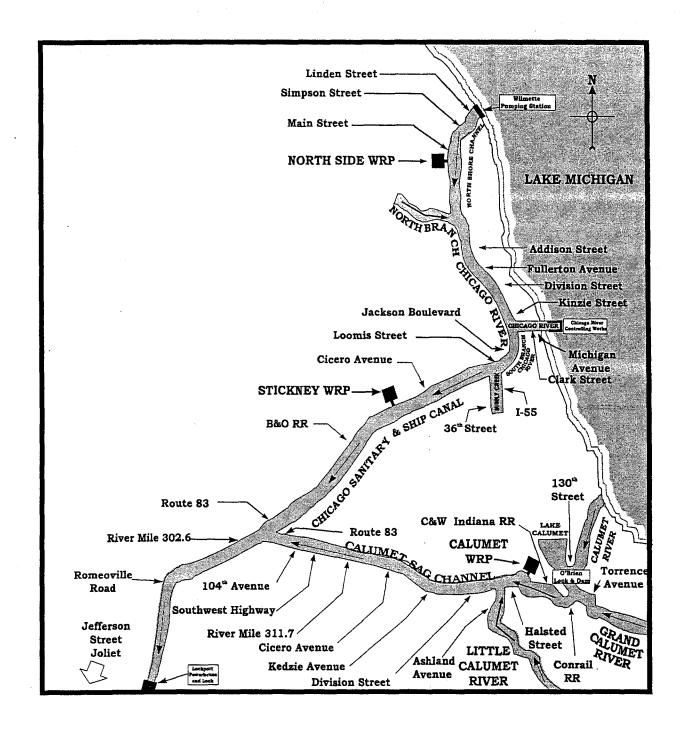
Monitoring results for the CWS have been summarized by Polls (2000) from August 1998 through July 2000, by Dennison *et al.* (2004) from August 2000 through December 2001, and by Dennison *et al.* (2004) from January 2002 through December 2002 (Chicago River System) and from August 2001 through December 2002 (Calumet River System). This report covers the monitoring results for the period January 2003 through December 2003 for the Chicago River System, Des Plaines River System, and Calumet River System.

MONITORING STATIONS

Monitoring locations for 20 stations on the Chicago River System, 1 station on the Des Plaines River System, and 13 stations on the Calumet River System are presented in this report (Figure 1). Chicago River System stations included: three stations on the North Shore Channel, four on the North Branch of the Chicago River, three on the Chicago River, one on the South Branch of the Chicago River, two on Bubbly Creek, and six on the Chicago Sanitary and Ship Canal. The one station on the Des Plaines River System was at Jefferson Street in Joliet. Calumet River System stations included one station on the Calumet River, one station on the Grand Calumet River, four stations on the Little Calumet River, and seven stations on the Calumet-Sag Channel. <u>Table 1</u> describes the locations of all the monitoring stations.

Criteria used to select monitoring stations included the following: (1) history of low DO, (2) above and below confluence of waterways, (3) proximity to instream aeration stations or sidestream elevated pool aeration (SEPA) stations, (4) below North Branch and Racine Avenue pumping stations, (5) above and below the North Side, Stickney, and Calumet WRPs, (6) below discretionary diversion locations, and (7) minimal cross-sectional DO variability.

FIGURE 1: CONTINUOUS DISSOLVED OXYGEN MONITORING STATIONS
IN THE CHICAGO WATERWAY SYSTEM



Monitoring Location	Waterway	Description of Monitoring Location
	Chic	cago River System
Linden Street	North Shore Channel	0.1 mile below Wilmette Pumping Station; 7.1 miles above North Side WRP outfall; water quality monitor under Linden Street bridge, center of channel, one foot above bottom.
Simpson Street	North Shore Channel	1.6 miles below Wilmette Pumping Station; 5.6 miles above North Side WRP outfall; water quality monitor under Simpson Street bridge, center of channel, one foot above bottom.
Main Street	North Shore Channel	3.5 miles below Wilmette Pumping Station; 0.8 miles above North Side WRP outfall; water quality monitor under Main Street bridge, center of channel, one foot above bottom.
Addison Street	North Branch Chicago River	5.2 miles below North Side WRP outfall; water quality monitor on northwest side Addison Street bridge, three feet below water surface.
Fullerton Avenue	North Branch Chicago River	7.2 miles below North Side WRP outfall; 0.4 miles above Webster Aeration Station; water quality monitor on northwest side Fullerton Avenue bridge, three feet below water surface.
Division Street	North Branch Chicago River	8.8 miles below North Side WRP outfall; 1.4 miles below Webster Aeration Station; water quality monitor on northeast side Division Street bridge, three feet below water surface.
Kinzie Street	North Branch Chicago River	9.9 miles below North Side WRP outfall; 0.2 mile above junction with Chicago River; water quality monitor on northeast side Kinzie Street bridge, three feet below water surface.
Chicago River Controlling Works	Chicago River	0.1 miles below Chicago River Controlling Works; 1.5 miles above junction with South Branch Chicago River; water quality monitor on south guidewall of lock, three feet below water surface.
Michigan Avenue	Chicago River	0.8 miles below Chicago River Controlling Works; 0.8 miles above junction with South Branch Chicago River; water quality monitor on northeast side Michigan Avenue bridge, three feet below water surface.

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Monitoring Location	Waterways	Description of Monitoring Location
	Chicago Riv	ver System (Continued)
Clark Street	Chicago River	1.2 miles below Chicago River Controlling Works; 0.4 miles above junction with South Branch Chicago River; water quality monitor on southeast side Clark Street bridge, three feet below water surface.
Jackson Boulevard	South Branch Chicago River	1.0 mile below junction with Chicago River; water quality monitor on northeast side Jackson Boulevard bridge, three feet below water surface.
Loomis Street	South Branch Chicago River	4.0 miles below junction with Chicago River; 0.4 miles below Fisk Generating Station discharge; water quality monitor on northeast side Loomis Street bridge, three feet below water surface.
36 th Street	Bubbly Creek	0.2 mile below Racine Avenue Pumping Station, 1.2 miles above junction with South Branch of the Chicago River, water quality monitor attached to concrete wall on west side of river, three feet below water surface.
I-55	Bubbly Creek	1.0 mile below Racine Avenue Pumping Station; 0.4 miles above junction with South Branch of the Chicago River; water quality monitor on northeast side I-55 bridge, three feet below water surface.
Cicero Avenue	Chicago Sanitary and Ship Canal	1.9 miles above Stickney WRP outfall; 1.0 mile below Crawford Generating Canal Station cooling water discharge; water quality monitor on northeast side Cicero Avenue bridge, three feet below water surface.
B&O Central Railroad	Chicago Sanitary and Ship Canal	3.6 miles below Stickney WRP outfall; water quality monitor in center of canal, east side B&O Central RR bridge, three feet below water surface.
Route 83	Chicago Sanitary and Ship Canal	1.0 mile above junction with Calumet-Sag Channel; 0.8 miles above Canal Junction SEPA Station; water quality monitor 0.3 miles above Route 83 bridge, center of canal, one foot above bottom.
River Mile 302.6	Chicago Sanitary and Ship Canal	1.2 miles below junction with Calumet-Sag Channel; 1.3 miles below Canal Junction SEPA Station; water quality monitor in center of canal, one foot above bottom.

Monitoring Location	Waterways	Description of Monitoring Location
	Chicago Riv	ver System (Continued)
Romeoville Road	Chicago Sanitary and Ship Canal	7.1 miles below junction with Calumet-Sag Channel; 5.1 miles above Lockport Lock; water quality monitor on southeast side Romeoville Road bridge, three feet below water surface.
Lockport	Chicago Sanitary and Ship Canal	0.1 mile above Lockport Powerhouse; 1.1 miles above junction with Des Plaines River; water quality monitor on north side of canal, in forebay area on fender wall, three feet below water surface.
	Des Pla	ines River System
Jefferson Street	Des Plaines River	3.0 miles below Lockport Lock, 2.1 miles below junction with Des Plaines River; water quality monitor on southeast side Jefferson Street bridge, three feet below water surface.
	<u>Calun</u>	net River System
130 th Street	Calumet River	6.3 miles below junction with Lake Michigan, 0.7 mile upstream of Thomas S. O'Brien Lock and Dam, water quality monitor at downstream end of LaFarge Corporation Chicago Terminal dock, three feet below water surface.
Torrence Avenue	Grand Calumet River	150 feet above junction with Calumet River, 100 feet below Torrence Avenue bridge, water quality monitor attached to bridge abutment on southeast side of river, two feet below water surface.
Conrail Railroad	Little Calumet River	0.4 mile below junction with Grand Calumet River, 1.0 mile below Thomas S. O'Brien Lock and Dam, water quality monitor on northeast side Conrail RR bridge, three feet below water surface.
C&W Indiana Railroad	Little Calumet River	3.6 miles below Thomas J. O'Brien Lock and Dam, 1.3 miles above Calumet WRP outfall, water quality monitor attached to northeast side C&W Indiana RR bridge, three feet below water surface.

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TABLE 1 (Continued): CONTINUOUS DISSOLVED OXYGEN MONITORING LOCATIONS

Monitoring Location	Waterways	Description of Monitoring Location
	Calum	et River System (Continued)
Halsted Street	Little Calumet River	1.2 miles below Calumet WRP, 0.5 mile above junction with Calumet-Sag Channel, water quality monitor attached to southeast side Halsted Street bridge, three feet below water surface.
Ashland Avenue	Little Calumet River	0.5 mile above junction with Calumet-Sag Channel, water quality monitor attached to east side Ashland Avenue bridge, two feet below water surface.
Division Street	Calumet-Sag Channel	1.0 mile below junction with Little Calumet River, 0.4 mile above SEPA 3, water quality monitor attached to southwest side Division Street bridge, three feet below water surface.
Kedzie Avenue	Calumet-Sag Channel	1.1 mile below SEPA 3, 5.3 miles above SEPA 4, water quality monitor attached to northeast side Kedzie Avenue bridge, three feet below water surface.
Cicero Avenue	Calumet-Sag Channel	3.1 miles below SEPA 3, 3.3 miles above SEPA 4, water quality monitor attached to northwest side Cicero Avenue bridge, three feet below water surface.
River Mile 311.7	Calumet-Sag Channel	6.4 miles below SEPA 3, 0.1 mile above SEPA 4, water quality monitor attached to concrete wall upstream of SEPA 4 intake structure, three feet below water surface
Southwest Highway	Calumet-Sag Channel	0.8 mile below SEPA 4, 7.0 miles above Canal Junction SEPA Station, monitor attached to southeast side Southwest Highway bridge, three feet below water surface.
104 th Avenue	Calumet-Sag Channel	4.6 miles below SEPA 4, 3.2 miles above Canal Junction SEPA Station, water quality monitor in center of channel, one foot above bottom.
Route 83	Calumet-Sag Channel	0.3 miles above junction with Chicago Sanitary & Ship Canal; 0.2 miles above Canal Junction SEPA Station; water quality monitor on southwest side Illinois Central-Gulf RR bridge, three feet below water surface.

MATERIALS AND METHODS

Water Quality Monitor

In the present study, DO was measured hourly using the YSI Model 6920 or Model 6600 continuous water quality monitor (monitor). In order to protect and safeguard the monitors from marine navigation and vandalism, the monitors were deployed in the field in stainless steel pipes. Two different installation designs were employed: (1) a 3-foot stainless steel pipe was suspended approximately 1 foot off the bottom of the waterway and orientated downstream such that the water passed through the pipe, and (2) a 12 to 15-foot pipe with multiple 2-inch circular openings was vertically mounted on the side of a bridge abutment.

Servicing the monitors followed a weekly schedule. Industrial Waste Division (IWD) personnel retrieved each monitor from the field following seven days of continuous monitoring. Prior to retrieval, a water sample for DO analysis was collected next to the protective housing. An additional monitor that had been previously calibrated and serviced in the laboratory was then deployed to replace the retrieved monitor. The retrieved monitors were returned to the laboratory for data downloading, exterior cleaning, servicing, and calibration of the DO sensors. The monitors were temporarily stored in holding tanks containing tap water for subsequent deployment during the following week.

Data Management and Review

Hourly DO data were directly exported electronically from individual monitors to a specially designed Access® database for data processing and storage. Following data

downloading, the weekly DO data was carefully reviewed for accuracy. The review process included the following: (1) Comparing a grab sample DO value measured in the field with a DO value recorded by a retrieved monitor (DO rejection criteria = difference greater than 2.0 mg/L), (2) Comparing the last hourly DO value measured by a retrieved monitor with the first hourly DO value recorded by a deployed monitor (DO rejection criteria = difference greater than 2.0 mg/L), and (3) Comparing a DO value measured in a laboratory holding tank and a DO value recorded by a retrieved monitor (DO rejection criteria = difference greater than 1.0 mg/L).

After careful review of the DO data, weekly summary statistics (mean, minimum, maximum, and percent observations above DO standard) and individual line drawings for each monitoring station showing hourly DO values were prepared.

Verification of Representative Data

During the spring, summer, and fall of 2003, cross-sectional DO surveys were conducted in the CWS to determine if a fixed continuous monitoring location represented the DO concentration across the waterway. Verification was achieved by comparing the DO concentrations measured in grab samples at multiple fixed locations and depths across the waterway with the fixed monitor measurements. The results from the cross-sectional surveys clearly showed that the differences across the waterway were minimal and equivalent to the DO value measured by the monitor at the fixed locations.

RESULTS AND DISCUSSION

The annual minimum, maximum, and mean DO concentrations measured at all 34 stations during 2003 are shown in <u>Table 2</u>.

The number and percent of DO values rejected and removed from the Access® database during 2003 are summarized in <u>Table 3</u>. Based on the data review methodology previously described, eight percent of the data were rejected. The number of DO values rejected ranged from a low of 131 (2 percent) at the Chicago River Controlling Works on the Chicago River to a high of 2,326 (36 percent) at Torrence Avenue on the Grand Calumet River.

The number and percent of DO values above the applicable IPCB DO standard for each waterway during 2003 are presented in <u>Table 4</u>. The DO data shown in <u>Table 4</u> do not include the DO values rejected during the data review.

<u>Table 5</u> shows the percent distribution of DO values from <1.0 mg/L to >5.0 mg/L at the 34 monitoring stations during 2003. The current national one-day minimum dissolved oxygen criterion for adult life stages of fish is 3.0 mg/L (Chapman, 1986).

Weekly DO summary statistics during 2003 are presented for each monitoring station in Appendices AI-1 through AI-34.

The IPCB has assigned water uses for specific water bodies within the state of Illinois. All waters in Illinois are designated for General Use, except those selected as Secondary Contact and Indigenous Aquatic Life Waters (Secondary Contact).

In the Chicago and Calumet River Systems, General Use Waters include the North Shore Channel from Lake Michigan to the North Side WRP, and the Chicago and Calumet Rivers.

Secondary Contact Waters include the North Shore Channel from the North Side WRP to the North Branch of the Chicago River, the North Branch of the Chicago River from the North Shore Channel to the Chicago River, the South Branch of the Chicago River, Bubbly Creek, the Chicago Sanitary and Ship Canal, the Grand Calumet River, the deep draft portion of the Little Calumet River, the Calumet-Sag Channel, and the Des Plaines River from its confluence with the Chicago Sanitary and Ship Canal to the Interstate Highway 55 Bridge southwest of Joliet.

The IPCB has established water quality standards for DO in both General Use and Secondary Contact Waters. In General Use Waters, the DO shall not be less than 6.0 mg/L during 16 hours of any 24-hour period, nor less than 5.0 mg/L at any time. In Secondary Contact Waters, the DO shall not be less than 4.0 mg/L at any time, except in the Calumet-Sag Channel where the DO shall not be less than 3.0 mg/L at any time. For this report, we have selected the 5.0 mg/L DO standard when calculating percent compliance for General Use Waters.

Chicago River System

North Shore Channel. Linden Street. The maximum DO value recorded at Linden Street on the North Shore Channel during 2003 was 18.1 mg/L. The minimum DO value was 0.0 mg/L. The mean DO concentration was 6.7 mg/L at Linden Street.

The IPCB requires that the DO concentration in those portions of the North Shore Channel classified as General Use Waters

TABLE 2: MINIMUM, MAXIMUM, AND MEAN HOURLY DISSOLVED OXYGEN VALUES¹

Monitoring		DO Values (mg/L)				
Location	Waterway	Minimum	Maximum	Mean		
	Chicago River System					
Linden Street	North Shore Channel	0.0	18.1	6.7		
Simpson Street	North Shore Channel	0.0	22.3	7.4		
Main Street	North Shore Channel	0.0	32.2	8.3		
Addison Street	North Branch Chicago River	0.6	10.8	7.0		
Fullerton Avenue	North Branch Chicago River	0.3	9.8	6.0		
Division Street	North Branch Chicago River	0.0	12.1	6.4		
Kinzie Street	North Branch Chicago River	0.0	11.6	6.1		
Chgo. River Controlling Works	Chicago River	5.6	12.9	9.3		
Michigan Avenue	Chicago River	5.2	12.6	8.6		
Clark Street	Chicago River	4.2	12.3	8.0		
Jackson Boulevard	South Branch Chicago River	2.0	10.2	6.4		
Loomis Street	South Branch Chicago River	1.0	9.2	6.3		
36 th Street	Bubbly Creek	0.0	20.6	5.0		
I-55	Bubbly Creek	0.0	15.6	5.3		
Cicero Avenue	Chicago Sanitary and Ship Canal	0.0	10.2	5.1		
B&O Railroad	Chicago Sanitary and Ship Canal	1.5	9.7	6.5		
Route 83	Chicago Sanitary and Ship Canal	0.0	9.6	5.4		
River Mile 302.6	Chicago Sanitary and Ship Canal	1.8	9.5	6.1		
Romeoville Road	Chicago Sanitary and Ship Canal	1.6	9.4	5.7		
Lockport	Chicago Sanitary and Ship Canal	1.6	10.8	5.5		
	Des Plaines River System					
Jefferson Street	Des Plaines River	2.5	11.7	7.3		
	Calumet River System					
130 th Street	Calumet River	4.1	15.9	10.0		
Torrence Avenue	Grand Calumet River	0.0	18.2	6.7		
Conrail Railroad	Little Calumet River	2.4	13.8	8.4		
C&W Indiana Railroad	Little Calumet River	0.3	16.0	9.6		
Halsted Street	Little Calumet River	0.6	12.0	7.3		
Ashland Avenue	Little Calumet River	1.4	20.6	7.9		
Division Street	Calumet-Sag Channel	2.2	11.6	7.1		
Kedzie Avenue	Calumet-Sag Channel	2.2	14.4	7.5		
Cicero Avenue	Calumet-Sag Channel	2.5	12.9	7.3		
River Mile 311.7	Calumet-Sag Channel	2.7	13.8	7.6		
Southwest Highway	Calumet-Sag Channel	2.1	15.5	7.2		
104 th Avenue	Calumet-Sag Channel	2.5	12.1	7.7		
Route 83	Calumet-Sag Channel	2.4	14.6	7.1		

¹Dissolved oxygen was measured hourly using a YSI model 6920 or model 6600 continuous water quality monitor.

TABLE 3: NUMBER AND PERCENT OF DISSOLVED OXYGEN VALUES NOT MEETING ACCEPTANCE CRITERIA¹

Monitoring Location	Waterway	Number of DO Values Rejected	Percent of DO Values Rejected
	Chicago River System		
Linden Street	North Shore Channel	410	5
Simpson Street	North Shore Channel	1,387	19
Main Street	North Shore Channel	235	3 ·
Addison Street	North Branch Chicago River	434	5
Fullerton Avenue	North Branch Chicago River	667	8
Division Street	North Branch Chicago River	210	2
Kinzie Street	North Branch Chicago River	171	2
Chgo. River Controlling Works	Chicago River	131	2
Michigan Avenue	Chicago River	569	7
Clark Street	Chicago River	172	2
Jackson Boulevard	South Branch Chicago River	195	2
Loomis Street	South Branch Chicago River	329	6
36 th Street	Bubbly Creek	1,005	13
I-55	Bubbly Creek	648	8
Cicero Avenue	Chicago Sanitary and Ship Canal	684	8
B&O Railroad	Chicago Sanitary and Ship Canal	729	9
Route 83	Chicago Sanitary and Ship Canal	845	11
River Mile 302.6	Chicago Sanitary and Ship Canal	698	9
Romeoville Road	Chicago Sanitary and Ship Canal	341	4
Lockport	Chicago Sanitary and Ship Canal	354	4
	Des Plaines River System		
Jefferson Street	Des Plaines River	846	11
	Calumet River System		
130 th Street	Calumet River	1,136	15
Torrence Avenue	Grand Calumet River	2,326	36
Conrail Railroad	Little Calumet River	1,875	27
C&W Indiana Railroad	Little Calumet River	143	2
Halsted Street	Little Calumet River	510	6
Ashland Avenue	Little Calumet River	534	6
Division Street	Calumet-Sag Channel	361	4
Kedzie Avenue	Calumet-Sag Channel	980	13
Cicero Avenue	Calumet-Sag Channel	322	4
River Mile 311.7	Calumet-Sag Channel	798	10
Southwest Highway	Calumet-Sag Channel	701	9
104 th Avenue	Calumet-Sag Channel	1,012	13
Route 83	Calumet-Sag Channel	1,660	23

¹Dissolved oxygen was measured hourly using a YSI model 6920 or model 6600 continuous water quality monitor. DO values were rejected based on quality control check and/or operational problems with monitor.

TABLE 4: NUMBER AND PERCENT OF DISSOLVED OXYGEN VALUES MEASURED ABOVE THE ILLINOIS POLLUTION CONTROL BOARD'S WATER QUALITY STANDARD¹

Monitoring Location	Waterway	IPCB DO Standard	Number of DO Values	Number of DO Values Above Standard	Percent of DO Values Above Standard
	Chicago River Sys	stem			
Linden Street	North Shore Channel	5	8,350	6,059	73
Simpson Street	North Shore Channel	5	7,373	4,723	64
Main Street	North Shore Channel	5	8,525	6,492	76
Addison Street	North Branch Chicago River	4	8,326	8,319	>99
Fullerton Avenue	North Branch Chicago River	4	8,093	7,726	95
Division Street	North Branch Chicago River	4	8,550	8,452	99
Kinzie Street '	North Branch Chicago River	4	8,589	8,264	96
Chicago River Controlling Works	Chicago River	5	8,629	8,629	100
Michigan Avenue	Chicago River	5	8,191	8,191	100
Clark Street	Chicago River	5	8,588	8,562	>99
Jackson Boulevard	South Branch Chicago River	4	8,565	8,491	99
Loomis Street	South Branch Chicago River	4	5,757	5,628	98
36 th Street	Bubbly Creek	4	7,755	4,680	60
I-55	Bubbly Creek	4	8,112	6,343	78 ⁻
Cicero Avenue	Chicago Sanitary and Ship Can-	al 4	8,076	6,520	81
B&O Railroad	Chicago Sanitary and Ship Can	al 4	8,031	7,965	99
Route 83	Chicago Sanitary and Ship Can	al 4	7,915	6,260	79
River Mile 302.6	Chicago Sanitary and Ship Can	al 4	8,062	7,479	93
Romeoville Road	Chicago Sanitary and Ship Can	al 4	8,419	7,251	86
Lockport	Chicago Sanitary and Ship Cana	al 4	8,406	6,763	80
	Des Plaines River S	ystem			
Jefferson Street	Des Plaines River	4	7,914	7,689	97
	Calumet River Sys	stem			
130 th Street	Calumet River	5	7,624	7,578	99
Torrence Avenue	Grand Calumet River	4	6,434	5,014	78
Conrail Railroad	Little Calumet River	4	6,885	6,775	98
C&W Indiana Railroad	Little Calumet River	4	8,617	8,308	96

TABLE 4 (Continued): NUMBER AND PERCENT OF DISSOLVED OXYGEN VALUES MEASURED ABOVE THE ILLINOIS POLLUTION CONTROL BOARD'S WATER QUALITY STANDARD

Monitoring Location	Waterway	IPCB DO Standard	Number of DO Values	Number of DO Values Above Standard	Percent of DO Values Above Standard
	Calumet River Syste	em (Continued)		
Halsted Street	Little Calumet River	4	8,250	8,083	98
Ashland Avenue	Little Calumet River	5	8,226	5,597	68
Division Street	Calumet-Sag Channel	3	8,399	8,388	>99
Kedzie Avenue	Calumet-Sag Channel	3	7,780	7,773	>99
Cicero Avenue	Calumet-Sag Channel	3	8,438	8,434	>99
River Mile 311.7	Calumet-Sag Channel	3	7,962	7,947	>99
Southwest Highway	Calumet-Sag Channel	3	8,059	7,979	99
104 th Avenue	Calumet-Sag Channel	3	7,748	7,728	>99
Route 83	Calumet-Sag Channel	3	7,100	7,013	99

¹Dissolved oxygen was measured hourly using a YSI model 6920 or model 6600 continuous water quality monitor.

TABLE 5: PERCENT OF DISSOLVED OXYGEN (DO) VALUES IN SELECTED RANGES

Monitoring		(Per	cent o	f DO	Values	in Ra	inge)
Location	Waterway	<1	1-2	2-3	3-4	4-5	>5
	Chicago Divor System	· · · · · · · · · · · · · · · · · · ·		· ,	-		
	Chicago River System		_	_		_	
Linden Street	North Shore Channel	11	3	3	4	5	73
Simpson Street	North Shore Channel	10	8	6	6	6	64
Main Street	North Shore Channel	6	1	2	6	9	76
Addison Street	North Branch Chicago River	<1	<1	</td <td><l< td=""><td>1</td><td>99</td></l<></td>	<l< td=""><td>1</td><td>99</td></l<>	1	99
Fullerton Avenue	North Branch Chicago River	</td <td><1</td> <td>1</td> <td>3</td> <td>17</td> <td>79</td>	<1	1	3	17	79
Division Street	North Branch Chicago River	<1	<1	<1	1	9	89
Kinzie Street	North Branch Chicago River	<1	<1	<l< td=""><td>3</td><td>17</td><td>79</td></l<>	3	17	79
Chgo. River Controlling Works	Chicago River	0	0	0	0	0	100
Michigan Avenue	Chicago River	0	0	0	0	0	100
Clark Street	Chicago River	0	0	0	0	<1	>99
Jackson Boulevard	South Branch Chicago River	0	0	<l< td=""><td>1</td><td>6</td><td>93</td></l<>	1	6	93
Loomis Street	South Branch Chicago River	.0	<1	i	1	4	94
36 th Street	Bubbly Creek	14	6	10	10	14	47
I-55	Bubbly Creek	6	3	4	8	16	62
Cicero Avenue	Chicago Sanitary and Ship Canal	i	2	5	12	27	54
B&O Railroad	Chicago Sanitary and Ship Canal	0	<1	<l< td=""><td>1</td><td>8</td><td>91</td></l<>	1	8	91
Route 83	Chicago Sanitary and Ship Canal	3	1	3	14	21	58
River Mile 302.6	Chicago Sanitary and Ship Canal	0	<1	1	6	19	73
Romeoville Road	Chicago Sanitary and Ship Canal	0	<1	1	12	25	61
Lockport	Chicago Sanitary and Ship Canal	0	<1	3	16	28	. 53
	Des Plaines River System						
Jefferson Street	Des Plaines River	0	0	<1	3	13	84
	Calumet River System						
130 th Street	Calumet River	0	0	0	0	1	99
Torrence Avenue	Grand Calumet River	5	4	7	7	9	69
Conrail Railroad	Little Calumet River	0	0	<1	i	4	94
C&W Indiana Railroad	Little Calumet River	1	1	1	2	4	93
Halsted Street	Little Calumet River	<1	<1	<1	2	4	94
Ashland Avenue	Little Calumet River	0	1	5	10	16	68

TABLE 5 (Continued): PERCENT OF DISSOLVED OXYGEN (DO) VALUES IN SELECTED RANGES

Monitoring			(Percent of DO Values in Range)						
Location	Waterway	<i< th=""><th>1-2</th><th>2-3</th><th></th><th>4-5</th><th>>5</th></i<>	1-2	2-3		4-5	>5		
	Calumet River System								
Division Street	Calumet-Sag Channel	0	0	<1	2	7	92		
Kedzie Avenue	Calumet-Sag Channel	0	0	<l< td=""><td><1</td><td>4</td><td>96</td></l<>	<1	4	96		
Cicero Avenue	Calumet-Sag Channel	0	0	<1	2	6	93		
River Mile 311.7	Calumet-Sag Channel	0	0	<1	2	5	93		
Southwest Highway	Calumet-Sag Channel	0	0	1	3	6	90		
104 th Avenue	Calumet-Sag Channel	0	0	<1	3	6	91		
Route 83	Calumet-Sag Channel	0	0	1	3	6	90		

shall not be less than 5.0 mg/L at any time. During 2003, 6,059 of 8,350 DO values at Linden Street (73 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 5.0 mg/L standard occurred in all months, except February (Figure 2). Eighteen percent of the DO values recorded at Linden Street were below 3.0 mg/L (Table 5).

Simpson Street. During 2003, the DO concentration measured at Simpson Street on the North Shore Channel ranged from a low of 0.0 mg/L to a high of 22.3 mg/L. The mean DO value at Simpson Street was 7.4 mg/L.

The IPCB DO standard applicable to Simpson Street on the North Shore Channel is 5.0 mg/L. During 2003, 4,723 of 7,373 DO observations at Simpson Street (64 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 5.0 mg/L standard occurred from April through July and September through December (Figure 3). Twenty-four percent of the DO values recorded at Simpson Street were below 3.0 mg/L (Table 5).

Main Street. The maximum DO value recorded at Main Street on the North Shore Channel during 2003 was 32.2 mg/L. The minimum DO value was 0.0 mg/L. The mean DO concentration was 8.3 mg/L at Main Street.

The IPCB requires that the DO concentration in those portions of the North Shore Channel classified as General Use Waters shall not be less than 5.0 mg/L at any time. During 2003, 6,492 of 8,525 DO values at

Main Street (76 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 5.0 mg/L standard occurred from March through December 2003 (Figure 4). Nine percent of the DO values recorded at Main Street were below 3.0 mg/L (Table 5).

Addison Street. During 2003, the DO concentration measured at Addison Street on the North Branch of the Chicago River ranged from a low of 0.6 mg/L to a high of 10.8 mg/L. The mean DO value at Addison Street was 7.0 mg/L.

The IPCB DO standard applicable to Addison Street on the North Branch of the Chicago River is 4.0 mg/L. During 2003, 8,319 of 8,326 DO observations at Addison Street (>99 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred during July (Figure 5). Less than one percent of the DO values recorded at Addison Street were below 3.0 mg/L (Table 5).

Fullerton Avenue. The maximum DO value recorded at Fullerton Avenue on the North Branch of the Chicago River during 2003 was 9.8 mg/L. The minimum DO value was 0.3 mg/L. The mean DO concentration was 6.0 mg/L at Fullerton Avenue.

The IPCB requires that the DO concentration in those portions of the North Branch of the Chicago River classified as Secondary Contact Waters shall not be less than 4.0 mg/L at any time. During 2003, 7,726 of 8,093 DO values at Fullerton Avenue (95 percent) were above the IPCB Secondary Contact DO standard.

FIGURE 2: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT LINDEN STREET ON THE NORTH SHORE CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

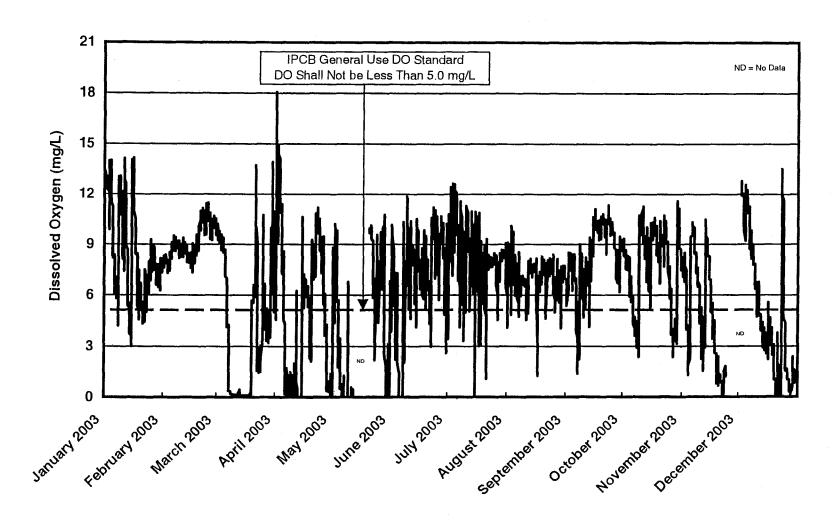


FIGURE 3: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT SIMPSON STREET ON THE NORTH SHORE CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

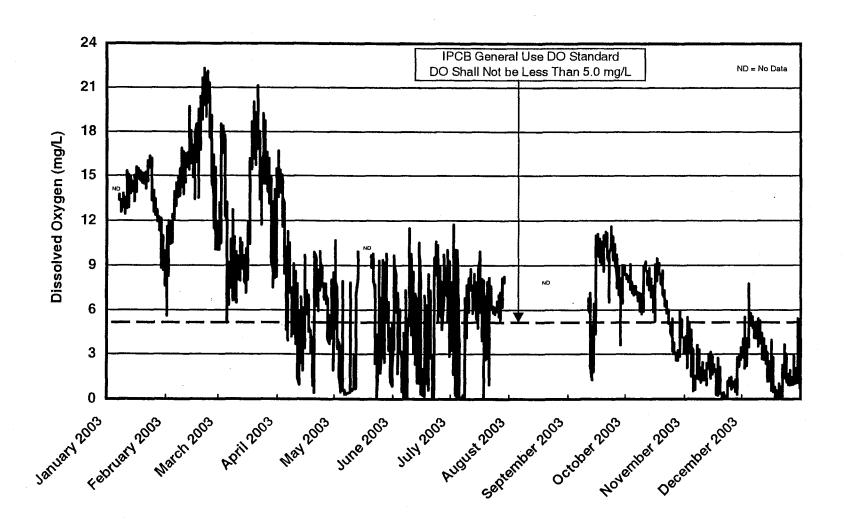


FIGURE 4: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT MAIN STREET ON THE NORTH SHORE CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

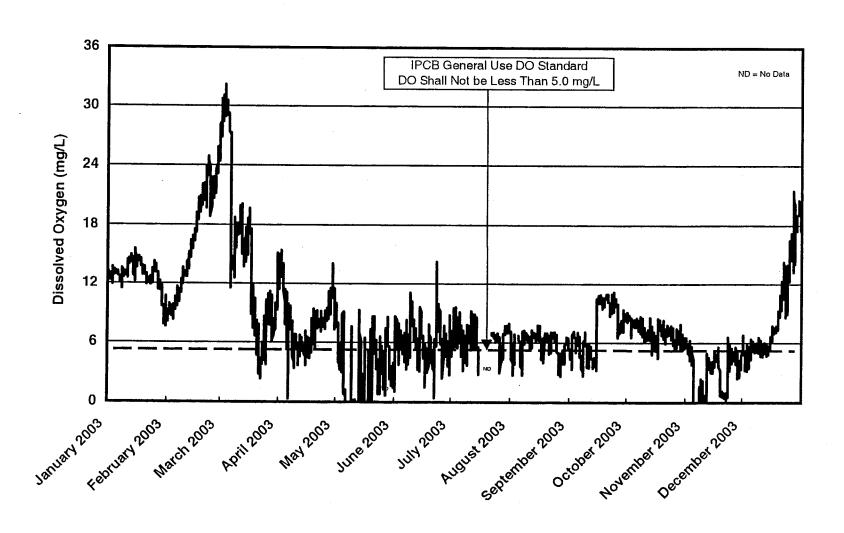
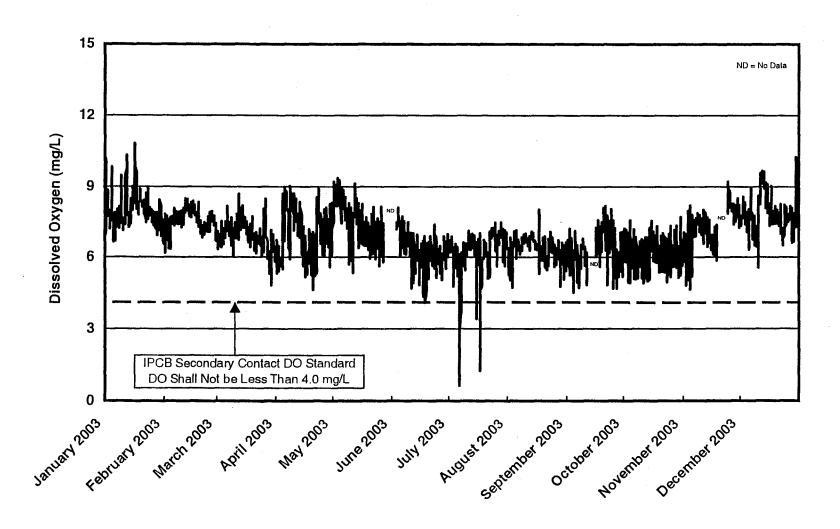


FIGURE 5: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT ADDISON STREET ON THE NORTH BRANCH OF THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003



DO measurements below the 4.0 mg/L standard occurred from April through September 2003 (Figure 6). One percent of the DO values recorded at Fullerton Avenue were below 3.0 mg/L (Table 5).

Division Street. During 2003, the DO concentration measured at Division Street on the North Branch of the Chicago River ranged from a low of 0.0 mg/L to a high of 12.1 mg/L. The mean DO value at Division Street was 6.4 mg/L.

The IPCB DO standard applicable to Division Street on the North Branch of the Chicago River is 4.0 mg/L. During 2003, 8,452 of 8,550 DO observations at Division Street (99 percent) were above the Secondary Contact DO standard.

DO measurements below the 4.0 mg/L standard occurred from April through October 2003 (Figure 7). Less than one percent of the DO values recorded at Division Street were below 3.0 mg/L (Table 5).

Kinzie Street. The maximum DO value recorded at Kinzie Street on the North Branch of the Chicago River during 2003 was 11.6 mg/L. The minimum DO value was 0.0 mg/L. The mean DO concentration was 6.1 mg/L at Kinzie Street.

The IPCB requires that the DO concentration in those portions of the North Branch of the Chicago River classified as Secondary Contact Waters shall not be less than 4.0 mg/L at any time. During 2003, 8,264 of 8,589 DO values at Kinzie Street (96 percent) were above the IPCB Secondary Contact DO standard.

DO measurements below the 4.0 mg/L standard occurred during April through November 2003 (Figure 8). One percent of the DO values recorded at Kinzie Street were below 3.0 mg/L (Table 5).

Chicago River. Chicago River Controlling Works (CRCW). During 2003, the DO concentration measured at CRCW on the Chicago River ranged from a low of 5.6 mg/L to a high of 12.9 mg/L. The mean DO value at CRCW was 9.3 mg/L.

The IPCB DO standard applicable to CRCW on the Chicago River is 5.0 mg/L. During 2003, 100 percent of the 8,629 observations at CRCW were above the IPCB General Use DO standard.

During the 12-month monitoring period, no DO measurements occurred below the 5.0 mg/L standard (Figure 9). No DO values recorded at CRCW were below 3.0 mg/L (Table 5).

Michigan Avenue. During 2003, the DO concentration measured at Michigan Avenue on the Chicago River ranged from a low of 5.2 mg/L to a high of 12.6 mg/L. The mean DO value was 8.6 mg/L at Michigan Avenue.

The IPCB DO standard applicable to Michigan Avenue on the Chicago River is 5.0 mg/L. During 2003, 100 percent of the 8,191 DO observations at Michigan Avenue were above the IPCB General Use DO standard.

During the 12-month monitoring period, no DO measurements occurred below the 5.0 mg/L standard (Figure 10). No DO values recorded at Michigan Avenue were below 3.0 mg/L (Table 5).

Clark Street. During 2003, the DO concentration measured at Clark Street on the Chicago River ranged from a low of 4.2 mg/L to a high of 12.3 mg/L. The mean DO value at Clark Street was 8.0 mg/L.

The IPCB DO standard applicable to Clark Street on the Chicago River is 5.0 mg/L. During 2003, 8,562 of 8,588 DO

FIGURE 6: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT FULLERTON AVENUE ON THE NORTH BRANCH OF THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

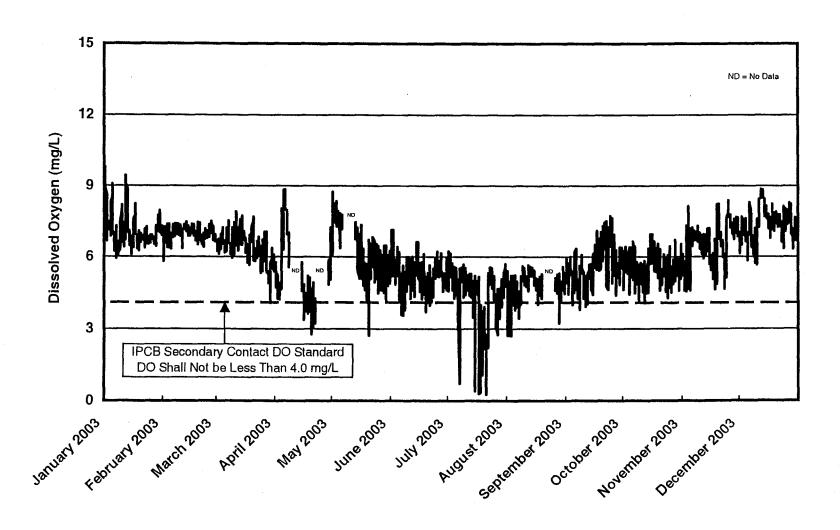


FIGURE 7: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT DIVISION STREET ON THE NORTH BRANCH OF THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

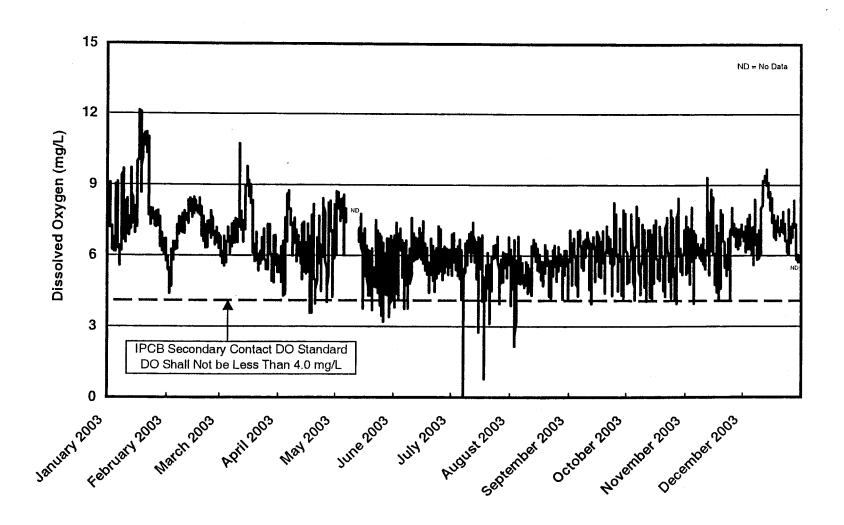


FIGURE 8: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT KINZIE STREET ON THE NORTH BRANCH OF THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

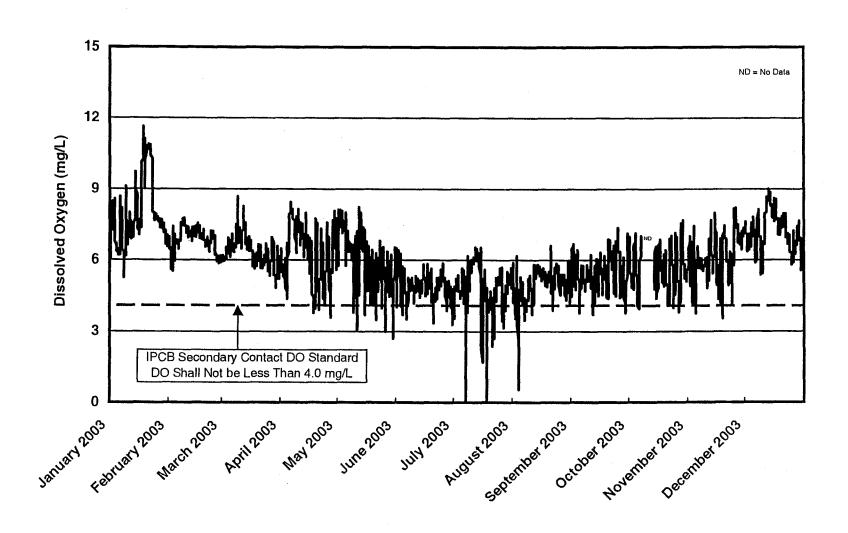


FIGURE 9: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT THE CHICAGO RIVER CONTROLLING WORKS ON THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

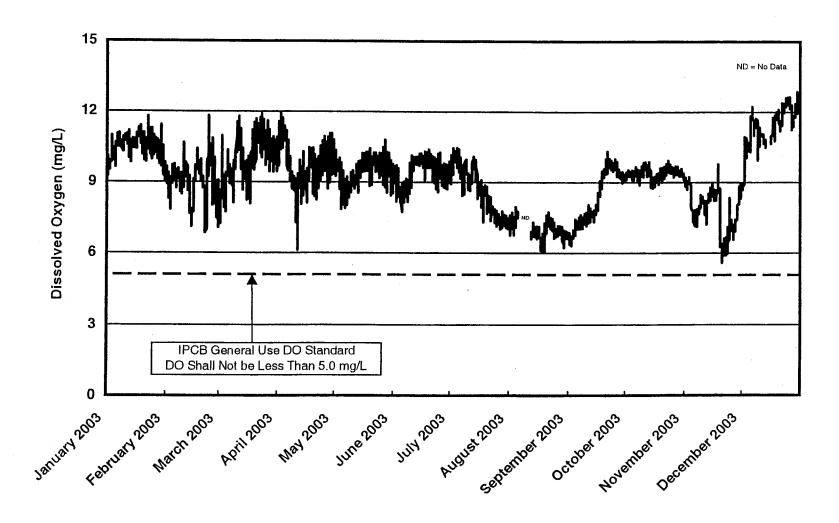
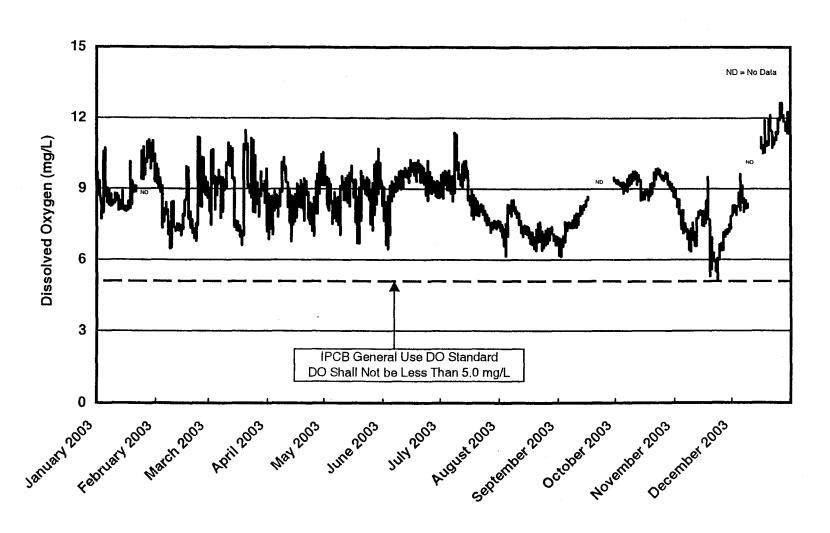


FIGURE 10: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT MICHIGAN AVENUE ON THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003



observations at Clark Street (>99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 5.0 mg/L standard occurred in November 2003 (Figure 11). No DO values recorded at Clark Street were below 3.0 mg/L (Table 5).

South Branch of the Chicago River. Jackson Boulevard. The maximum DO value recorded at Jackson Boulevard on the South Branch of the Chicago River during 2003 was 10.2 mg/L. The minimum DO value was 2.0 mg/L. The mean DO concentration was 6.4 mg/L at Jackson Boulevard.

The IPCB requires that the DO concentration in the South Branch of the Chicago River shall not be less than 4.0 mg/L at any time. During 2003, 8,491 of 8,565 DO values at Jackson Boulevard (99 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred during April-May, July-August, and November 2003 (Figure 12). Less than one percent of the DO values recorded at Jackson Boulevard were below 3.0 mg/L (Table 5).

Loomis Street. During 2003, the DO concentration measured at Loomis Street on the South Branch of the Chicago River ranged from a low of 1.0 mg/L to a high of 9.2 mg/L. The mean DO value was 6.3 mg/L.

The IPCB DO standard applicable to Loomis Street on the South Branch of the Chicago River is 4.0 mg/L. During 2003, 5,628 of 5,757 DO observations at Loomis Street (98 percent) were above the IPCB Secondary Contact DO standard.

DO measurements below the 4.0 mg/L standard occurred from May through August and in November 2003 (Figure 13). One percent of the DO values recorded at Loomis Street were below 3.0 mg/L (Table 5).

Bubbly Creek. 36th Street. During 2003, the DO concentration measured at 36th Street on Bubbly Creek ranged from a low of 0.0 mg/L to a high of 20.6 mg/L. The mean DO value was 5.0 mg/L.

The IPCB DO standard applicable to 36th Street on the South Branch of the Chicago River is 4.0 mg/L. During 2003, 4,680 of 7,755 DO observations at 36th Street (60 percent) were above the IPCB Secondary Contact DO standard.

DO measurements below the 4.0 mg/L standard occurred during all months except March and December 2003 (Figure 14). Thirty percent of the DO values recorded at 36th Street were below 3.0 mg/L (Table 5).

Interstate Highway 55 (I-55). The maximum DO value recorded at I-55 on Bubbly Creek during 2003, was 15.6 mg/L. The minimum DO value was 0.0 mg/L. The mean DO concentration was 5.3 mg/L.

The IPCB requires that the DO concentration in Bubbly Creek shall not be less than 4.0 mg/L at any time. During 2003, 6,343 of 8,112 DO values at I-55 (78 percent) were above the IPCB Secondary Contact DO standard.

DO measurements below the 4.0 mg/L standard occurred from April through December 2003 (Figure 15). Thirteen percent of the DO values recorded at I-55 were below 3.0 mg/L (Table 5).

Chicago Sanitary and Ship Canal. Cicero Avenue. During 2003, the DO concentration

FIGURE 11: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT CLARK STREET ON THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

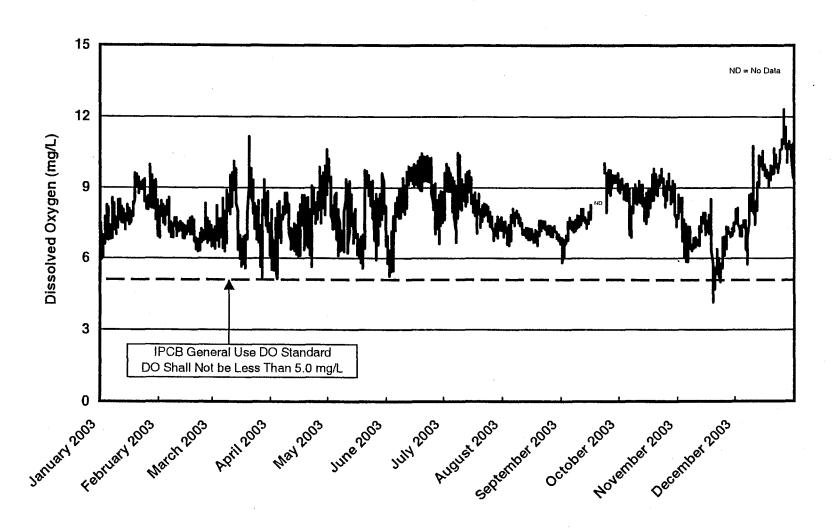


FIGURE 12: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT JACKSON BOULEVARD ON THE SOUTH BRANCH OF THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

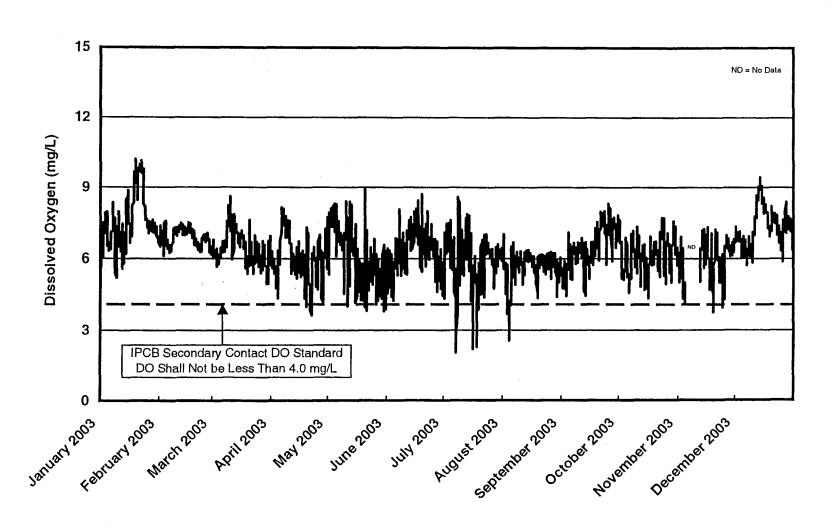


FIGURE 13: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT LOOMIS STREET ON THE SOUTH BRANCH OF THE CHICAGO RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

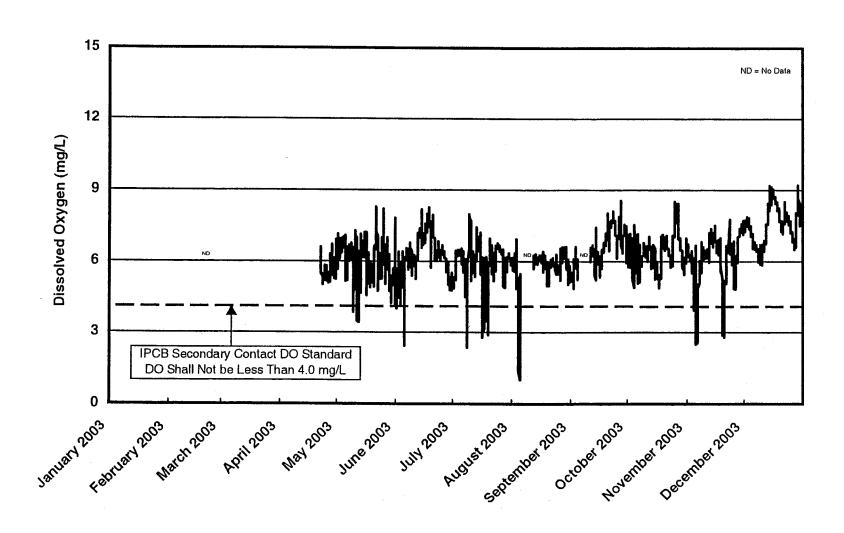


FIGURE 14: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT 36th STREET ON BUBBLY CREEK FROM JANUARY 2003 THROUGH DECEMBER 2003

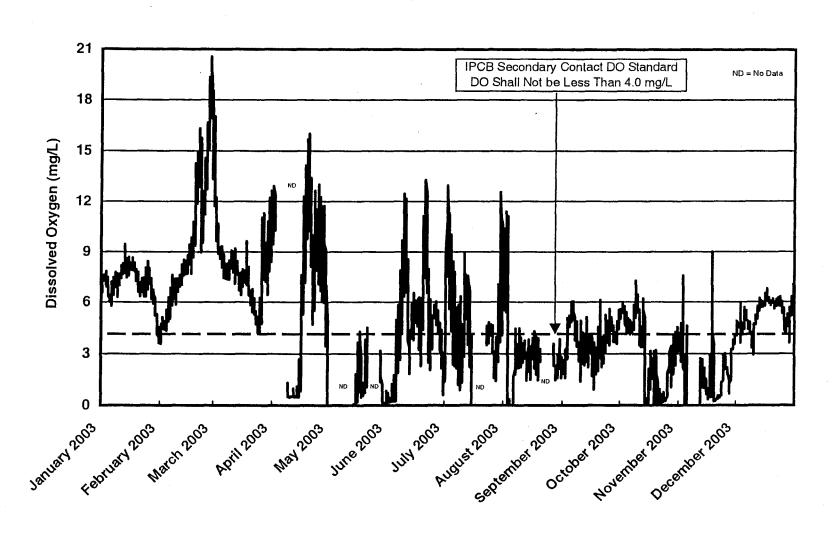
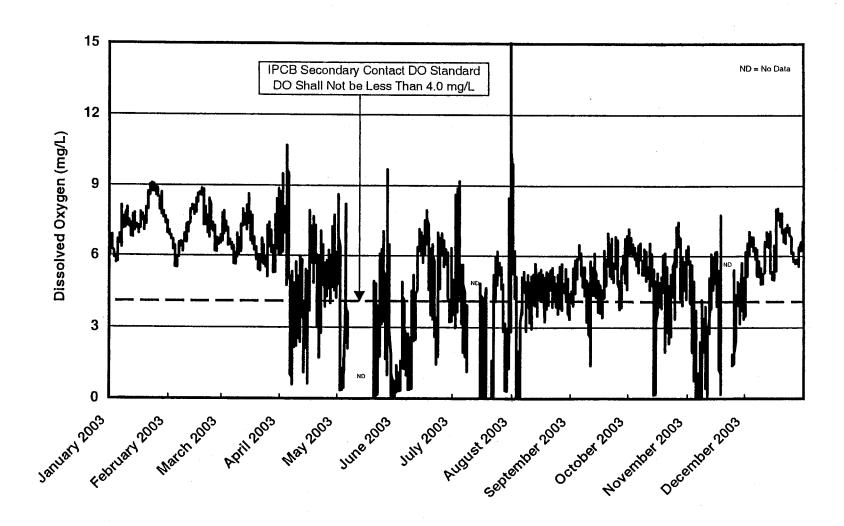


FIGURE 15: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT INTERSTATE HIGHWAY 55 ON BUBBLY CREEK FROM JANUARY 2003 THROUGH DECEMBER 2003



measured at Cicero Avenue on the Chicago Sanitary and Ship Canal ranged from a low of 0.0 mg/L to a high of 10.2 mg/L. The mean DO value at Cicero Avenue was 5.1 mg/L.

The IPCB DO standard applicable to Cicero Avenue on the Chicago Sanitary and Ship Canal is 4.0 mg/L. During 2003, 6,520 of 8,076 DO observations at Cicero Avenue (81 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from March through December 2003 (Figure 16). Eight percent of the DO values recorded at Cicero Avenue were below 3.0 mg/L (Table 5).

B&O Central Railroad. The maximum DO value recorded at B&O Central Railroad on the Chicago Sanitary and Ship Canal during 2003 was 9.7 mg/L. The minimum DO value was 1.5 mg/L. The mean DO concentration was 6.5 mg/L at B&O Central Railroad.

The IPCB requires that the DO concentration in the Chicago Sanitary and Ship Canal shall not be less than 4.0 mg/L at any time. During 2003, 7,965 of 8,031 DO values at B&O Central Railroad (99 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from May through August and November 2003 (Figure 17). Less than one percent of the DO values recorded at B&O Central Railroad were below 3.0 mg/L (Table 5).

Route 83. During 2003, the DO concentration measured at Route 83 on the Chicago

Sanitary and Ship Canal ranged from a low of 0.0 mg/L to a high of 9.6 mg/L. The mean DO value at Route 83 was 5.4 mg/L.

The IPCB DO standard applicable to Route 83 on the Chicago Sanitary and Ship Canal is 4.0 mg/L. During 2003, 6,260 of 7,915 DO observations at Route 83 (79 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from March through November 2003 (Figure 18). Seven percent of the DO values recorded at Route 83 were below 3.0 mg/L (Table 5).

River Mile 302.6. The maximum DO value recorded at River Mile 302.6 on the Chicago Sanitary and Ship Canal during 2003 was 9.5 mg/L. The minimum DO value was 1.8 mg/L. The mean DO concentration was 6.1 mg/L at River Mile 302.6.

The IPCB requires that the DO concentration in the Chicago Sanitary and Ship Canal shall not be less than 4.0 mg/L at any time. During 2003, 7,479 of 8,062 DO values at River Mile 302.6 (93 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from April through November 2003 (Figure 19). One percent of the DO values recorded at River Mile 302.6 were below 3.0 mg/L (Table 5).

Romeoville Road. During 2003, the DO concentration measured at Romeoville Road on the Chicago Sanitary and Ship Canal ranged from a low of 1.6 mg/L to a high of 9.4 mg/L. The mean DO value at Romeoville Road was 5.7 mg/L.

FIGURE 16: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT CICERO AVENUE ON THE CHICAGO SANITARY AND SHIP CANAL FROM JANUARY 2003 THROUGH DECEMBER 2003

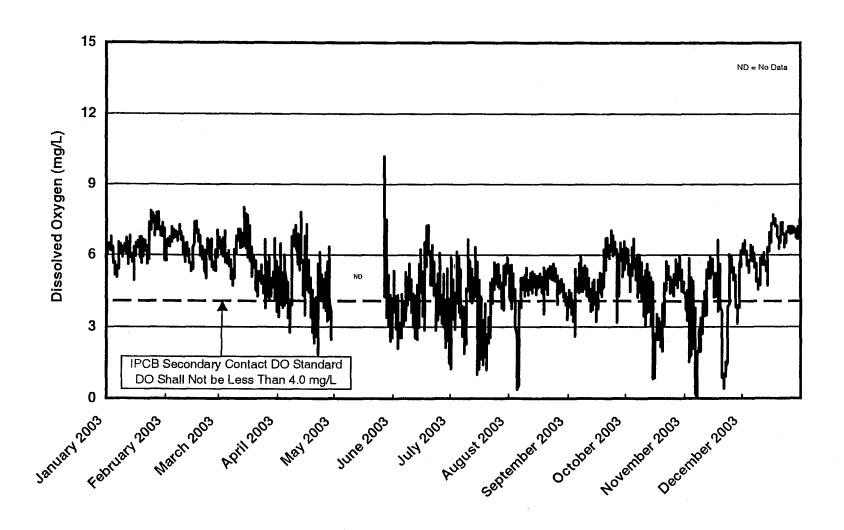


FIGURE 17: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT B&O CENTRAL RAILROAD ON THE CHICAGO SANITARY AND SHIP CANAL FROM JANUARY 2003 THROUGH DECEMBER 2003

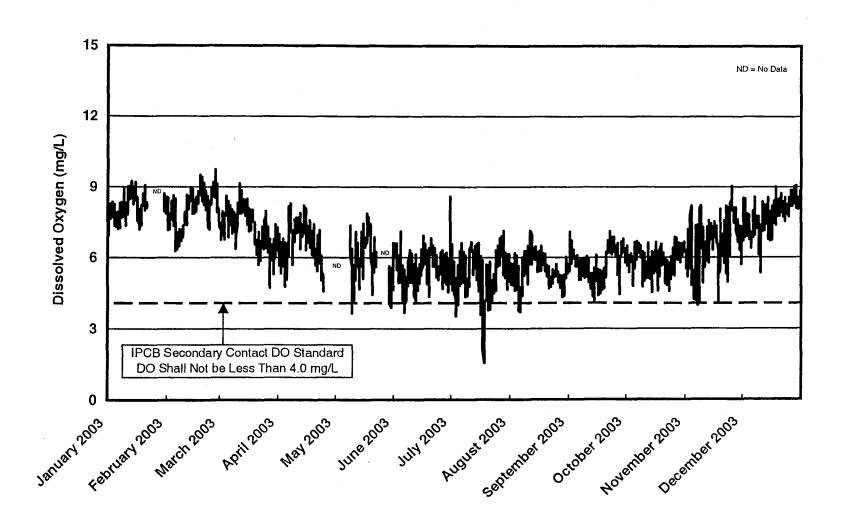


FIGURE 18: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT ROUTE 83 ON THE CHICAGO SANITARY AND SHIP CANAL FROM JANUARY 2003 THROUGH DECEMBER 2003

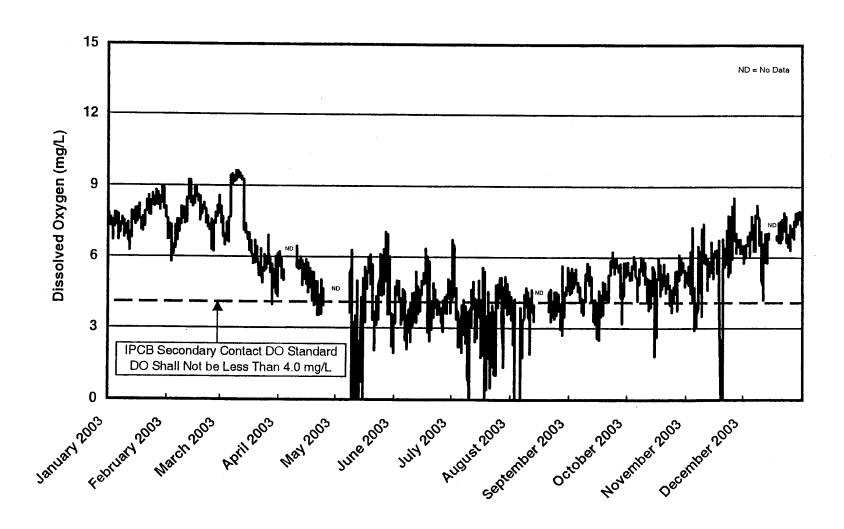
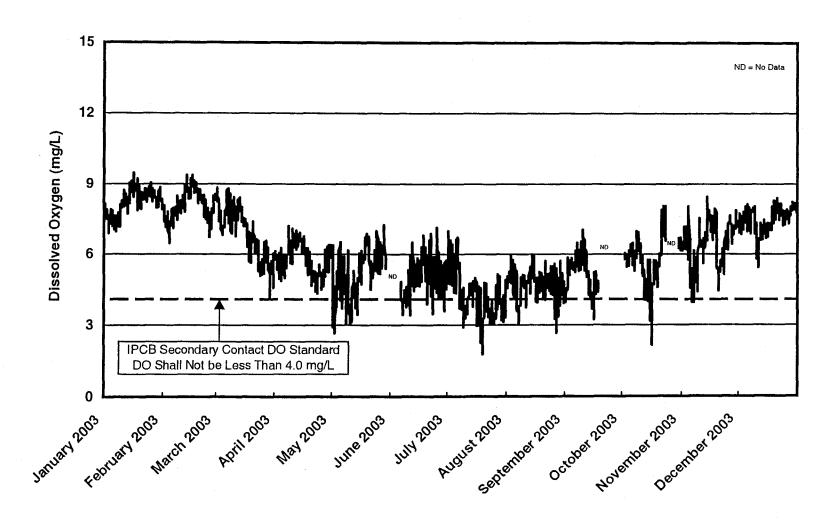


FIGURE 19: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT RIVER MILE 302.6 ON THE CHICAGO SANITARY AND SHIP CANAL FROM JANUARY 2003 THROUGH DECEMBER 2003



The IPCB DO standard applicable to Romeoville Road on the Chicago Sanitary and Ship Canal is 4.0 mg/L. During 2003, 7,251 of 8,419 DO observations at Romeoville Road (86 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from April through November 2003 (Figure 20). Two percent of the DO values recorded at Romeoville Road were below 3.0 mg/L (Table 5).

Lockport. The maximum DO value recorded at Lockport on the Chicago Sanitary and Ship Canal during 2003 was 10.8 mg/L. The minimum DO value was 1.6 mg/L. The mean DO concentration was 5.5 mg/L at Lockport.

The IPCB requires that the DO concentration in the Chicago Sanitary and Ship Canal shall not be less than 4.0 mg/L at any time. During 2003, 6,763 of 8,406 DO values at Lockport (80 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred during April through December 2003 (Figure 21). Three percent of the DO values recorded at Lockport were below 3.0 mg/L (Table 5).

Des Plaines River System

Des Plaines River. Jefferson Street. During 2003, the DO concentration measured at Jefferson Street on the Des Plaines River ranged from a low of 2.5 mg/L to a high of 11.7 mg/L. The mean DO value at Jefferson Street was 7.3 mg/L.

The IPCB DO standard applicable to Jefferson Street on the Des Plaines River is 5.0 mg/L. During 2003, 7,689 of 7,914 DO

observations at Jefferson Street (97 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 5.0 mg/L standard occurred from May through September 2003 (Figure 22). Less than one percent of the DO values recorded at Jefferson Street on the Des Plaines River were below 3.0 mg/L (Table 5).

Calumet River System

Calumet River. 130th Street. During 2003, the DO concentration measured at 130th Street on the Calumet River ranged from a low of 4.1 mg/L to a high of 15.9 mg/L. The mean DO value at 130th Street was 10.0 mg/L.

The IPCB DO standard applicable to 130th Street on the Calumet River is 5.0 mg/L. During 2003, 7,578 of 7,624 DO observations at 130th Street (99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 5.0 mg/L standard occurred during July 2003 (Figure 23). No DO values recorded at 130th Street on the Calumet River were below 5.0 mg/L (Table 5).

Grand Calumet River. Torrence Avenue. During 2003, the DO concentration measured at Torrence Avenue on the Grand Calumet River ranged from a low of 0.0 mg/L to a high of 18.2 mg/L. The mean DO value at Torrence Avenue was 6.7 mg/L.

The IPCB DO standard applicable to Torrence Avenue on the Grand Calumet River is 4.0 mg/L. During 2003, 5,014 of 6,434 DO observations at Torrence Avenue (78 percent) were above the IPCB General Use DO standard.

FIGURE 20: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT ROMEOVILLE ROAD ON THE CHICAGO SANITARY AND SHIP CANAL FROM JANUARY 2003 THROUGH DECEMBER 2003

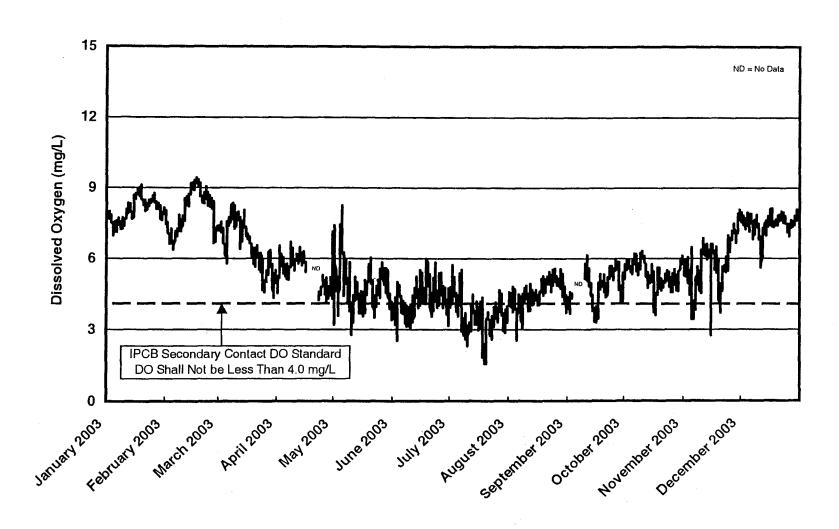


FIGURE 21: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT LOCKPORT POWERHOUSE ON THE CHICAGO SANITARY AND SHIP CANAL FROM JANUARY 2003 THROUGH DECEMBER 2003

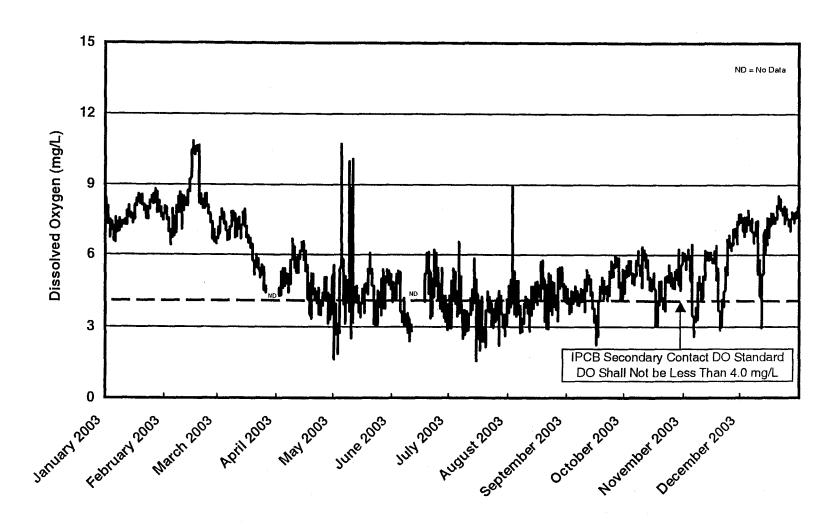


FIGURE 22: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT JEFFERSON STREET ON THE DES PLAINES RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

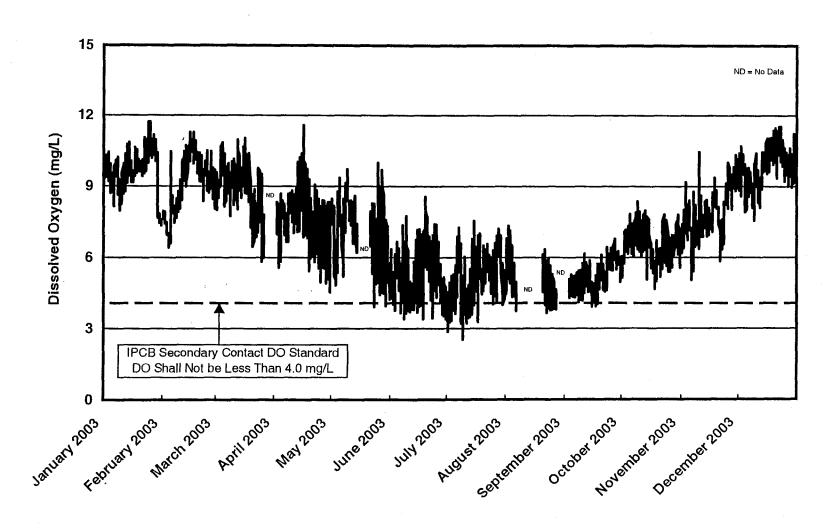
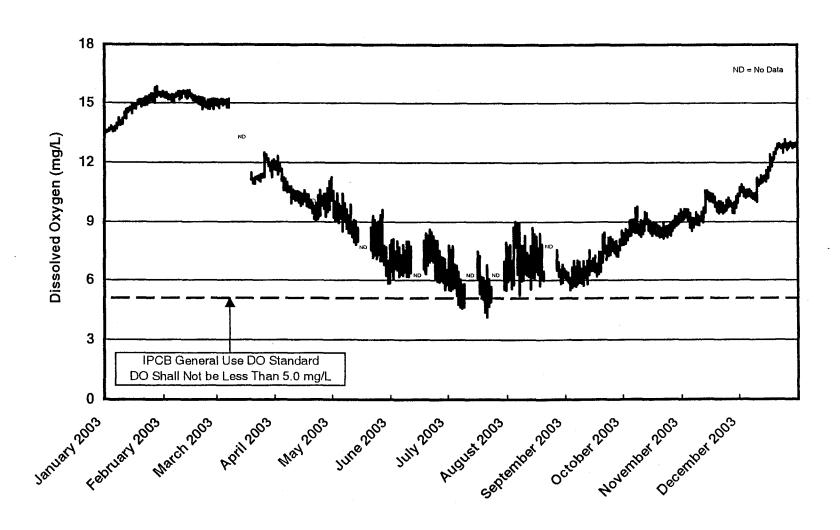


FIGURE 23: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT 130th STREET ON THE CALUMET RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003



During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from April through December 2003 (Figure 24). Fifteen percent of the DO values recorded at Torrence Avenue on the Grand Calumet River were below 3.0 mg/L (Table 5).

Little Calumet River. Conrail Railroad. During 2003, the DO concentration measured at Conrail Railroad on the Little Calumet River ranged from a low of 2.4 mg/L to a high of 13.8 mg/L. The mean DO value at Conrail Railroad was 8.4 mg/L.

The IPCB DO standard applicable to Conrail Railroad on the Little Calumet River is 4.0 mg/L. During 2003, 6,775 of 6,885 DO observations at Conrail Railroad (98 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred during July 2003 (Figure 25). Less than one percent of the DO values recorded at Conrail Railroad on the Little Calumet River were below 3.0 mg/L (Table 5).

C&W Indiana Railroad. During 2003, the DO concentration measured at C&W Indiana Railroad on the Little Calumet River ranged from a low of 0.3 mg/L to a high of 16.0 mg/L. The mean DO value at C&W Indiana Railroad was 9.6 mg/L.

The IPCB DO standard applicable to C&W Indiana Railroad on the Little Calumet River is 4.0 mg/L. During 2003, 8,308 of 8,617 DO observations at C&W Indiana Railroad (96 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from June through August 2003 (Figure 26). Two percent of the DO values

recorded at C&W Indiana Railroad on the Little Calumet River were below 3.0 mg/L (Table 5).

Halsted Street. During 2003, the DO concentration measured at Halsted Street on the Little Calumet River ranged from a low of 0.6 mg/L to a high of 12.0 mg/L. The mean DO value at Halsted Street was 7.3 mg/L.

The IPCB DO standard applicable to Halsted Street on the Little Calumet River is 4.0 mg/L. During 2003, 8,083 of 8,250 DO observations at Halsted Street (98 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from May through July 2003 (Figure 27). Less than one percent of the DO values recorded at Halsted Street on the Little Calumet River were below 3.0 mg/L (Table 5).

Ashland Avenue. During 2003, the DO concentration measured at Ashland Avenue on the Little Calumet River ranged from a low of 1.4 mg/L to a high of 20.6 mg/L. The mean DO value at Ashland Avenue was 7.9 mg/L.

The IPCB DO standard applicable to Ashland Avenue on the Little Calumet River is 4.0 mg/L. During 2003, 5,597 of 8,226 DO observations at Ashland Avenue (68 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 4.0 mg/L standard occurred from April through October 2003 (Figure 28). Six percent of the DO values recorded at Ashland Avenue on the Little Calumet River were below 3.0 mg/L (Table 5).

FIGURE 24: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT TORRENCE AVENUE ON THE GRAND CALUMET RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

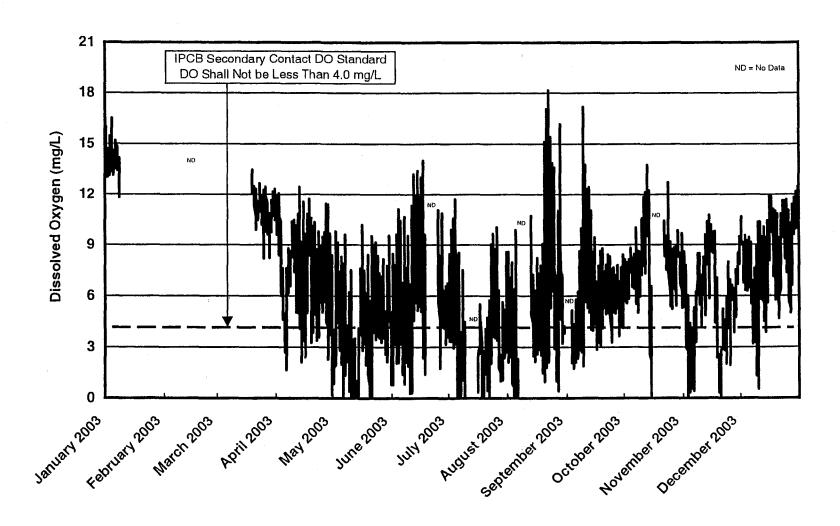


FIGURE 25: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT CONRAIL RAILROAD ON THE LITTLE CALUMET RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

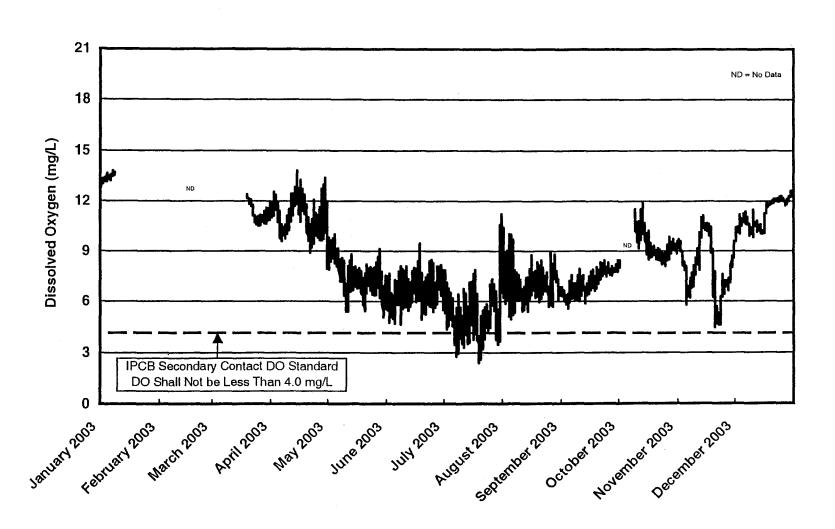


FIGURE 26: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT C&W INDIANA RAILROAD ON THE LITTLE CALUMET RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

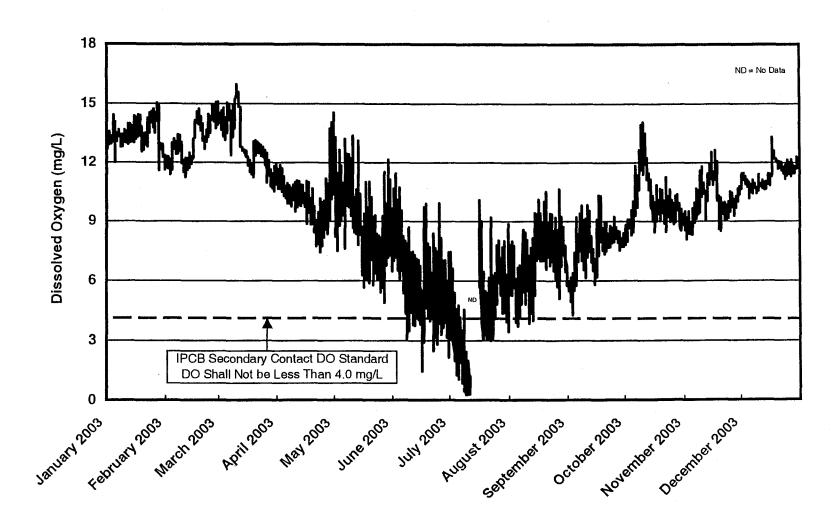


FIGURE 27: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT HALSTED STREET ON THE LITTLE CALUMET RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003

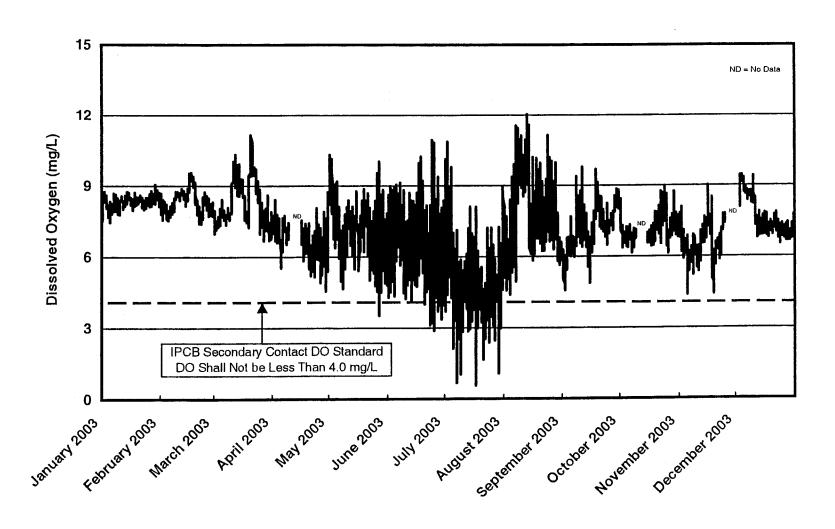
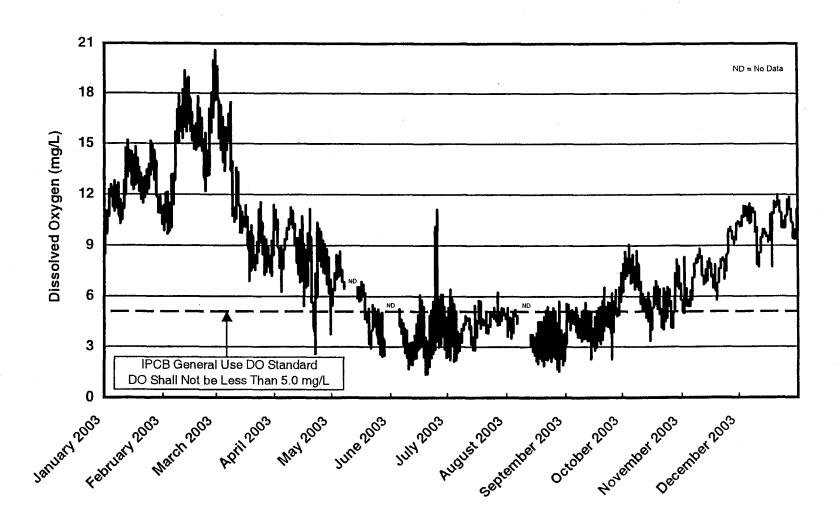


FIGURE 28: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT ASHLAND AVENUE ON THE LITTLE CALUMET RIVER FROM JANUARY 2003 THROUGH DECEMBER 2003



Calumet-Sag Channel. Division Street. During 2003, the DO concentration measured at Division Street on the Calumet-Sag Channel ranged from a low of 2.2 mg/L to a high of 11.6 mg/L. The mean DO value at Division Street was 7.1 mg/L.

The IPCB DO standard applicable to d at Division Street on the Calumet-Sag Channel is 3.0 mg/L. During 2003, 8,388 of 8,399 DO observations at Division Street (>99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard occurred during July 2003 (Figure 29). Less than one percent of the DO values recorded at Division Street on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

Kedzie Avenue. During 2003, the DO concentration measured at Kedzie Avenue on the Calumet-Sag Channel ranged from a low of 2.2 mg/L to a high of 14.4 mg/L. The mean DO value at Kedzie Avenue was 7.5 mg/L.

The IPCB DO standard applicable to Kedzie Avenue on the Calumet-Sag Channel is 3.0 mg/L. During 2003, 7,773 of 7,780 DO observations at Kedzie Avenue (>99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard occurred during July 2003 (Figure 30). Less than one percent of the DO values recorded at Kedzie Avenue on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

Cicero Avenue. During 2003, the DO concentration measured at Cicero Avenue on the Calumet-Sag Channel ranged from a low of 2.5 mg/L to a high of 12.9 mg/L. The

mean DO value at Cicero Avenue was 7.3 mg/L.

The IPCB DO standard applicable to Cicero Avenue on the Calumet-Sag Channel is 3.0 mg/L. During 2003, 8,434 of 8,438 DO observations at Cicero Avenue (>99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard occurred during July 2003 (Figure 31). Less than one percent of the DO values recorded at Cicero Avenue on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

River Mile 311.7. During 2003, the DO concentration measured at River Mile 311.7 on the Calumet-Sag Channel ranged from a low of 2.7 mg/L to a high of 13.8 mg/L. The mean DO value at River Mile 311.7 was 7.6 mg/L during the 18-month period.

The IPCB DO standard applicable to River Mile 311.7 on the Calumet-Sag Channel is 3.0 mg/L. During 2003, 7,947 of 7,962 DO observations at River Mile 311.7 (>99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard occurred during July 2003 (Figure 32). Less than one percent of the DO values recorded at River Mile 311.7 on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

Southwest Highway. During 2003, the DO concentration measured at Southwest Highway on the Calumet-Sag Channel ranged from a low of 2.1 mg/L to a high of 15.5 mg/L. The mean DO value at Southwest Highway was 7.2 mg/L.

The IPCB DO standard applicable to Southwest Highway on the Calumet-Sag

FIGURE 29: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT DIVISION STREET ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

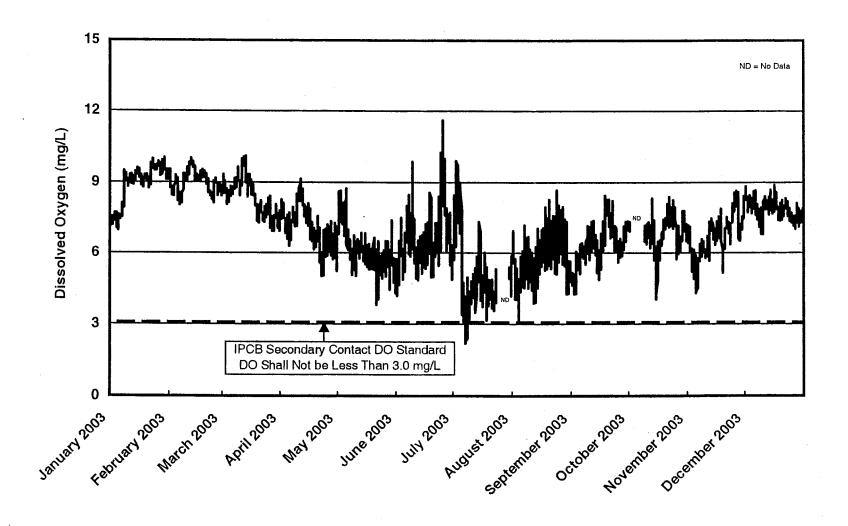


FIGURE 30: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT KEDZIE AVENUE ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

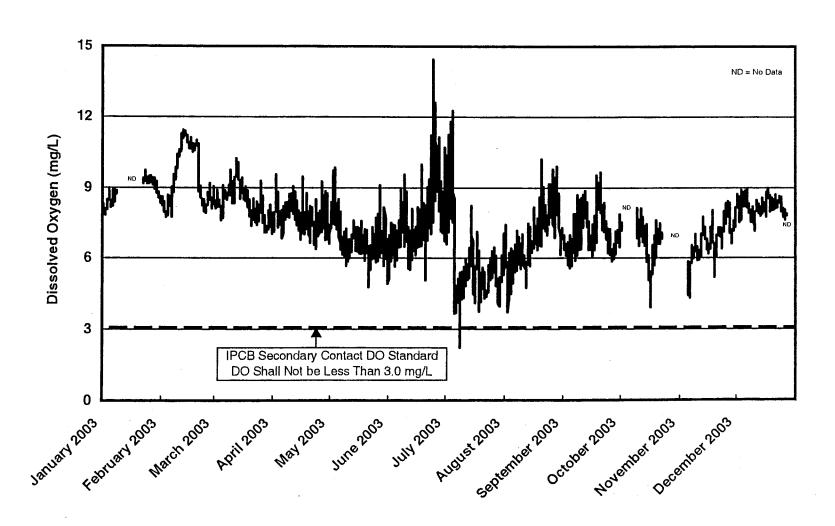


FIGURE 31: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT CICERO AVENUE ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

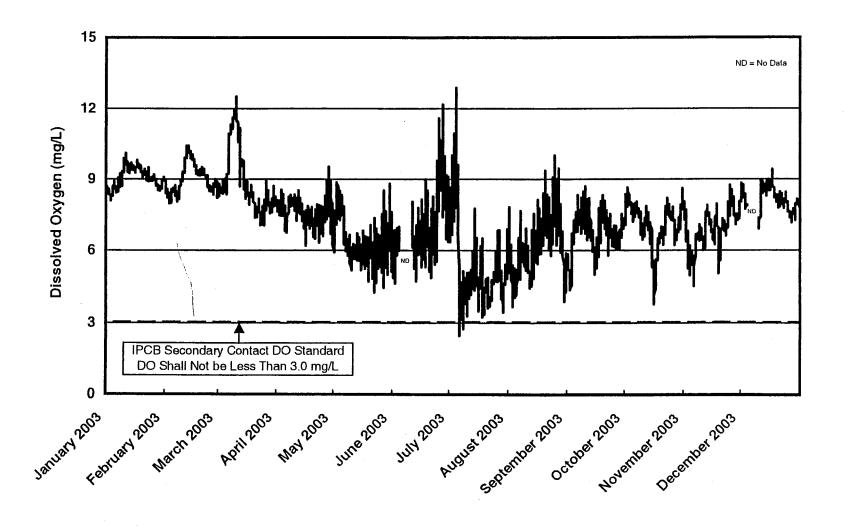
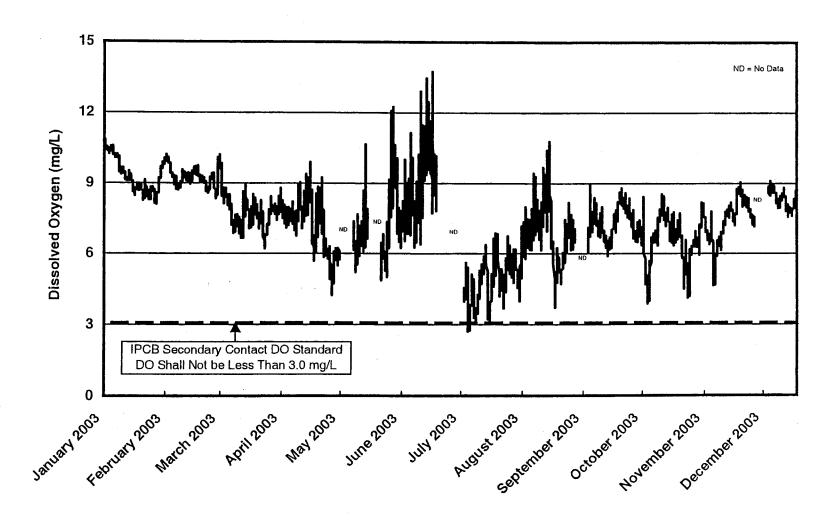


FIGURE 32: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT RIVER MILE 311.7 ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003



Channel is 3.0 mg/L. During 2003, 7,979 of 8,059 DO observations at Southwest Highway (99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard occurred during July 2003 (Figure 33). One percent of the DO values recorded at Southwest Highway on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

104th Avenue. During 2003, the DO concentration measured at 104th Avenue on the Calumet-Sag Channel ranged from a low of 2.5 mg/L to a high of 12.1 mg/L. The mean DO value at 104th Avenue was 7.7 mg/L.

The IPCB DO standard applicable to 104th Avenue on the Calumet-Sag Channel is 3.0 mg/L. During 2003, 7,728 of 7,748 DO observations at 104th Avenue (>99 percent) were above the IPCB General Use DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard

occurred during July 2003 through September (Figure 34). Less than one percent of the DO values recorded at 104th Avenue on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

Route 83. During 2003, the DO concentration measured at Route 83 on the Calumet-Sag Channel ranged from a low of 2.4 mg/L to a high of 14.6 mg/L. The mean DO value at Route 83 was 7.1 mg/L.

The IPCB DO standard applicable to Route 83 on the Calumet-Sag Channel is 3.0 mg/L. During 2003, 7,013 of 7,100 DO observations at Route 83 (99 percent) were above the IPCB Secondary Contact DO standard.

During the 12-month monitoring period, DO measurements below the 3.0 mg/L standard occurred during July 2003 (Figure 35). One percent of the DO values recorded at Route 83 on the Calumet-Sag Channel were below 3.0 mg/L (Table 5).

FIGURE 33: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT SOUTHWEST HIGHWAY ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

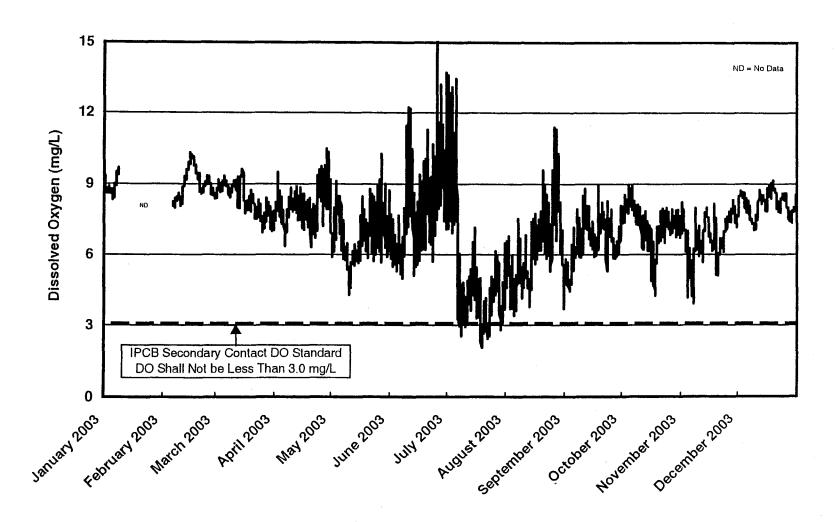


FIGURE 34: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT 104th AVENUE ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003

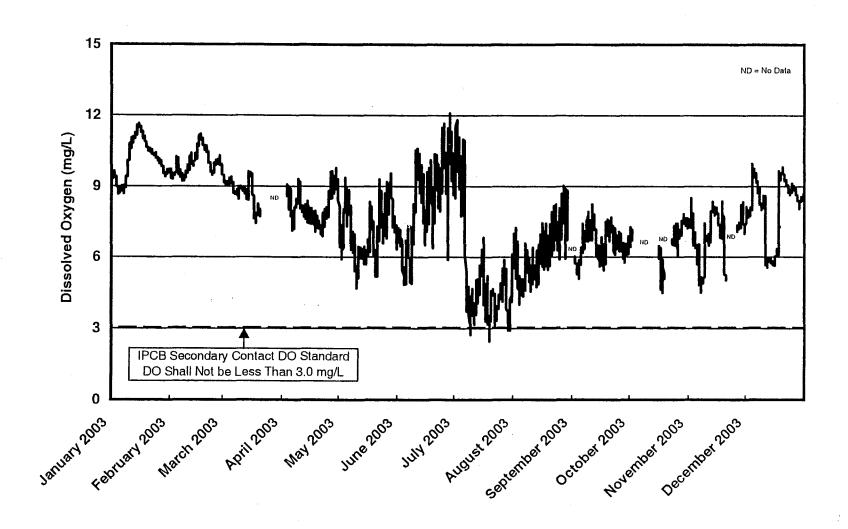
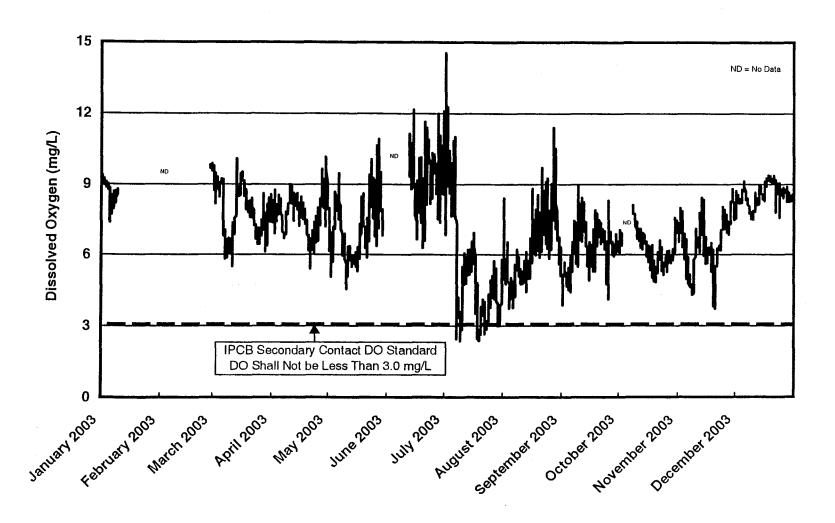


FIGURE 35: DISSOLVED OXYGEN CONCENTRATION MEASURED HOURLY AT ROUTE 83 ON THE CALUMET-SAG CHANNEL FROM JANUARY 2003 THROUGH DECEMBER 2003



LITERATURE CITED

Chapman, G., "Ambient Water Quality Criteria for Dissolved Oxygen," EPA 440/5-86-003, United States Environmental Protection Agency, Office of Water Regulations and Standards, Washington, D.C., 1986.

Dennison, S. G., M. Sopcak, J. Wasik, M. L. Hartford, and I. Polls, "Continuous Dissolved Oxygen Monitoring from Wilmette to Joliet in the Chicago Waterway System During August 2000 through December 2001," Research and Development Department Report No. 04-6, Metropolitan Water Reclamation District of Greater Chicago, Chicago, Illinois, May 2004.

Dennison, S. G., M. Sopcak, J. Wasik, "Continuous Dissolved Oxygen Monitoring in the Chicago Waterway System During 2001 and 2002," Research and Development Department Report No. 04-18, Metropolitan Water Reclamation District of Greater Chicago, Chicago, Illinois, October 2004.

Lanyon, R., "Description of the Chicago Waterway System," Use Attainability Analysis Study Conducted by Illinois Environmental Protection Agency in Cooperation with Metropolitan Water Reclamation District of Greater Chicago, May 2002.

Polls, I., "Continuous Dissolved Oxygen Monitoring from Wilmette to Lockport in the Chicago Waterway System During August 1998 through July 2000," Research and Development Department Report No. 02-11, Metropolitan Water Reclamation District of Greater Chicago, Chicago, Illinois, November 2002.

APPENDIX AI

WEEKLY DO SUMMARY STATISTICS AT ALL MONITORING STATIONS DURING 2003

TABLE AI-1: WEEKLY DO SUMMARY STATISTICS AT LINDEN STREET ON THE NORTH SHORE CHANNEL DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Value
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 01/05/03	120	8.2	14.0	11.9	100
01/06/03 01/12/03	168	4.2	14.1	9.1	92
01/13/03 - 01/19/03	168	3.0	14.2	7.4	75
01/20/03 - 01/26/03	168	4.3	9.3	6.4	83
01/27/03 - 02/02/03	168	6.3	8.9	7.6	100
02/03/03 - 02/09/03	168	7.3	9.5	8.6	100
2/10/03 - 02/16/03	168	7.4	9.4	8.4	100
02/17/03 - 02/23/03	168	7.9	11.4	9.7	100
02/24/03 - 03/02/03	168	9.0	11.5	10.0	100
03/03/03 - 03/09/03	168	0.2	9.6	5.0	
3/10/03 - 03/16/03	168	0.0	0.4	0.1	53
3/17/03 - 03/23/03	168	0.1	13.7	3.7	0
03/24/03 - 03/30/03	168	1.5	13.7		38
13/31/03 = 03/36/03 13/31/03 = 04/06/03	168	0.2	18.1	5.3	38
14/07/03 = 04/00/03 14/07/03 = 04/13/03	165	0.2		8.7	. 82
)4/14/03 = 04/15/03)4/14/03 = 04/20/03	168		6.2	0.6	2
		0.0	10.6	4.8	64
04/21/03 - 04/27/03 04/28/03 - 05/04/03	168	3.6	11.2	8.4	92
14/28/03 - 05/04/03 15/05/03 - 05/11/03	166	1.0	10.2	3.9	39
05/05/03 - 05/11/03	167	0.0	6.8	0.4	1
5/12/03 - 05/18/03	40	0.0	0.5	0.0	0
5/19/03 - 05/25/03	127	2.2	10.1	7.8	92
5/26/03 - 06/01/03	168	0.0	10.8	5.5	59
6/02/03 - 06/08/03	168	0.0	10.3	4.0	45
6/09/03 - 06/15/03	168	4.1	11.9	8.7	98
6/16/03 - 06/22/03	168	3.0	10.6	7.3	89
6/23/03 – 06/29/03	168	4.9	11.2	9.0	99
6/30/03 – 07/06/03	168	2.6	12.6	9.1	92
7/07/03 07/13/03	168	3.3	11.6	8.4	93
7/14/03 – 07/20/03	168	0.0	10.9	7.5	87
7/21/03 – 07/27/03	168	1.1	9.3	7.6	94
7/28/03 – 08/03/03	168	4.1	10.1	7.9	95
8/04/03 - 08/10/03	168	4.7	9.8	7.2	99
8/11/03 – 08/17/03	168	1.2	8.2	6.8	89
8/18/03 08/24/03	168	4.6	8.3	7.5	99
8/25/03 - 08/31/03	168	4.1	8.4	6.9	96
9/01/03 – 09/07/03	168	1.4	8.5	6.5	83
9/08/03 - 09/14/03	168	2.2	9.4	7.1	91
9/15/03 - 09/21/03	168	8.3	11.1	10.0	100
9/22/03 - 09/28/03	168	6.7	11.3	9.2	100
9/29/03 - 10/05/03	168	5.6	9.5	7.8	100
0/06/03 - 10/12/03	159	2.4	11.3	7.1	55
0/13/03 - 10/19/03	168	5.3	10.6	9.0	100
0/20/03 - 10/26/03	168	3.7	10.7	8.2	97
0/27/03 - 11/02/03	168	2.4	11.6	6.9	64
1/03/03 - 11/09/03	168	1.3	10.3	6.9	75
1/10/03 – 11/16/03	168	1.5	10.5	5.9	75 58
1/17/03 – 11/23/03	168	0.1	5.5	1.9	
1/24/03 - 11/30/03	16	1.2	1.8		4
2/01/03 - 12/07/03	128	8.2		1.5	0
2/01/03 = 12/07/03 2/08/03 = 12/14/03	128	2.8	12.8	10.6	100
2/08/03 = 12/14/03 2/15/03 = 12/21/03			9.0	5.5	52
2/13/03 - 12/21/03 2/22/03 - 12/28/03	167	0.0	5.6	2.7	1
	168	0.0	13.5	2.8	20
2/29/03 - 12/31/03	39	0.5	2.4	1.4	0

TABLE AI-2: WEEKLY DO SUMMARY STATISTICS AT SIMPSON STREET ON THE NORTH SHORE CHANNEL DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Value
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03			NO DATA		
01/06/03 - 01/12/03	128	12.5	15.3	13.6	100
01/13/03 - 01/19/03	168	13.3	15.6	14.8	100
01/20/03 - 01/26/03	168	12.4	16.4	14.5	100
01/27/03 - 02/02/03	168	5.6	12.7	10.3	100
02/03/03 - 02/09/03	168	10.4	16.9	13.4	100
02/10/03 - 02/16/03	168	13.4	19.7	15.8	100
02/17/03 - 02/23/03	168	13.6	22.3	19.5	100
02/24/03 - 03/02/03	168	10.1	21.3	14.0	100
03/03/03 - 03/09/03	168	5.1	18.4	10.8	100
03/10/03 - 03/16/03	168	6.5	11.9	9.0	100
03/17/03 - 03/23/03	168	10.4	21.1	16.2	100
03/24/03 - 03/30/03	168	7.5	19.2	13.9	100
03/31/03 - 04/06/03	168	3.9	16.7	11.7	95
04/07/03 - 04/13/03	165	0.9	10.5	5.9	66
04/14/03 - 04/20/03	168	0.4	9.9	4.6	41
04/21/03 - 04/27/03	168	4.0	10.0	7.5	98
04/28/03 - 05/04/03	168	0.5	10.7	4.9	49
05/05/03 - 05/11/03	168	0.3	7.9	1.3	8
05/12/03 - 05/18/03	40	0.7	9.9	4.2	43
05/19/03 - 05/25/03	128	0.2	9.8	6.2	73
05/26/03 - 06/01/03	168	0.9	9.8	5.4	48
06/02/03 - 06/08/03	168	0.0	8.4	3.7	35
06/09/03 - 06/15/03	168	0.4	11.5	6.0	61
06/16/03 - 06/22/03	168	0.0	9.5	3.2	33
06/23/03 - 06/29/03	168	4.7	10.6	7.9	98
06/30/03 - 07/06/03	167	0.0	11.7	3.8	38
07/07/03 - 07/13/03	168	0.0	8.7	5.3	73
07/14/03 - 07/20/03	168	0.0	9.9	6.2	76
07/21/03 - 07/27/03	168	0.9	8.2	6.2	95
07/28/03 - 08/03/03	40	6.2	8.3	7.6	100
08/04/03 - 08/10/03			NO DATA		
08/11/03 - 08/17/03			NO DATA		
08/18/03 08/24/03			NO DATA		
08/25/03 - 08/31/03			NO DATA		
09/01/03 – 09/07/03			NO DATA		
09/08/03 – 09/14/03	81	1.3	7.1	4.4	31
09/15/03 - 09/21/03	168	4.3	11.3	9.8	98
09/22/03 – 09/28/03	168	3.6	11.6	9.2	99
09/29/03 – 10/05/03	168	6.5	9.1	8.0	100
10/06/03 - 10/12/03	168	5.7	9.3	7.4	100
10/13/03 – 10/19/03	168	5.2	9.4	7.8	100
10/20/03 – 10/26/03	168	3.0	8.6	5.5	66
10/27/03 – 11/02/03	168	2.1	5.9	3.7	18
11/03/03 – 11/09/03	168	0.5	5.2	2.2	1
11/10/03 - 11/16/03	168	0.9	3.1	2.1	0
11/17/03 – 11/23/03	168	0.0	2.8	0.7	0
11/24/03 – 11/30/03	168	0.3	3.4	1.6	0
12/01/03 – 12/07/03	168	2.0	7.8	4.5	33
12/08/03 – 12/14/03	168	1.2	5.4	3.7	5
12/15/03 – 12/21/03	168	0.0	3.9	0.9	0
12/22/03 - 12/28/03	168	0.0	3.6	1.4	0
12/29/03 – 12/31/03	72	0.7	5.4	1.8	1

TABLE AI-3: WEEKLY DO SUMMARY STATISTICS AT MAIN STREET ON THE NORTH SHORE CHANNEL DURING 2003

	Number of	DO	Concentration	n (mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	11.9	13.7	12.9	100
01/06/03 - 01/12/03	168	11.5	14.6	13.1	100
01/13/03 - 01/19/03	168	12.2	15.5	14.0	100
01/20/03 - 01/26/03	168	11.9	14.3	12.9	100
01/27/03 - 02/02/03	168	7.6	13.1	10.0	100
02/03/03 - 02/09/03	168	8.3	13.7	10.6	100
02/10/03 - 02/16/03	168	12.7	19.3	15.3	100
02/17/03 - 02/23/03	168	18.5	24.9	21.2	100
02/24/03 03/02/03	168	19.8	31.1	24.8	100
03/03/03 - 03/09/03	168	11.5	32.2	21.5	100
03/10/03 03/16/03	168	13.7	20.1	17.2	100
03/17/03 - 03/23/03	168	2.3	17.6	7.2	69
03/24/03 - 03/30/03	168	3.7	11.2	7.9	90
03/31/03 04/06/03	168	0.3	15.4	10.6	90
04/07/03 - 04/13/03	167	3.4	9.7	6.0	81
04/14/03 - 04/20/03	168	3.7	9.4	6.1	80
04/21/03 - 04/27/03	168	7.1	11.2	8.3	100
04/28/03 - 05/04/03	168	3.0	14.1	7.9	85
05/05/03 - 05/11/03	167	0.0	9.1	1.1	10
05/12/03 - 05/18/03	168	0.0	9.3	1.5	12
05/19/03 05/25/03	168	0.0	8.7	3.7	30
05/26/03 - 06/01/03	168	0.7	8.7	3.9	29
06/02/03 - 06/08/03	168	3.3	8.3	5.9	76
06/09/03 – 06/15/03	168	3.1	11.1	7.0	80
06/16/03 - 06/22/03	168	0.4	7.8	4.5	33
06/23/03 - 06/29/03	168	2.4	14.3	6.7	80
06/30/03 – 07/06/03	168	2.7	9.6	7.0	93
07/07/03 – 07/13/03	168	3.1	9.2	6.2	81
07/14/03 – 07/20/03	41	2.8	8.6	5.9	78
07/21/03 – 07/27/03	129	2.9	7.0	6.1	82
07/28/03 08/03/03	159	2.7	8.0	6.1	75
08/04/03 - 08/10/03	130	2.7	7.3	6.0	81
08/11/03 – 08/17/03	168	4.3	7.8	6.5	98
08/18/03 – 08/24/03	149	4.0	7.1	6.4	97
08/25/03 – 08/31/03	168	2.6	6.9	5.1	51
09/01/03 – 09/07/03	168	3.3	7.2	5.6	68
09/08/03 - 09/14/03	168	2.6	7.1	4.6	35
09/15/03 - 09/21/03	168	3.2	11.0	9.6	91
09/22/03 – 09/28/03	168	6.5	11.2	9.2	100
09/29/03 - 10/05/03	168	6.6	9.4	8.3	100
10/06/03 – 10/12/03	168	6.2	8.6	7.3	100
10/13/03 – 10/19/03	168	4.5	8.6	6.7	98
10/20/03 – 10/26/03	168	5.4	8.3	6.8	100
10/27/03 – 11/02/03	168	5.0	7.9	6.1	99
11/03/03 - 11/09/03	168	0.0	6.3	1.8	13
11/10/03 – 11/16/03	167	0.0	5.1	2.4	Ĭ,
11/17/03 - 11/23/03	168	0.2	6.6	2.2	7
11/24/03 - 11/30/03	168	2.4	5.8	4.2	21
12/01/03 – 12/07/03	168	3.1	6.8	4.9	55
12/08/03 - 12/14/03	168	4.6	6.6	5.5	92
12/15/03 – 12/21/03	168	5.2	12.3	7.9	100
12/22/03 - 12/28/03	168	8.6	21.5	14.2	100
12/29/03 - 12/31/03	72	17.4	20.5	18.9	100

TABLE AI-4: WEEKLY DO SUMMARY STATISTICS AT ADDISON STREET ON THE NORTH BRANCH CHICAGO RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	6.6	10.2	8.1	100
01/06/03 - 01/12/03	168	6.7	10.3	7.8	100
01/13/03 - 01/19/03	168	7.3	10.8	8.4	100
01/20/03 - 01/26/03	168	7.3	9.0	7.9	100
01/27/03 - 02/02/03	168	6.2	8.4	7.3	100
02/03/03 - 02/09/03	168	6.3	8.1	7.5	100
02/10/03 - 02/16/03	168	7.3	8.5	7.9	100
02/17/03 - 02/23/03	168	6.8	8.3	7.5	100
02/24/03 - 03/02/03	168	6.3	7.9	7.2	100
03/03/03 - 03/09/03	168	6.0	8.2	7.0	100
03/10/03 - 03/16/03	168	6.7	8.7	7.4	100
03/17/03 - 03/23/03	168	6.2	7.7	6.8	100
03/24/03 - 03/30/03	168	4.8	8.5	6.5	100
03/31/03 - 04/06/03	168	5.3	9.0	6.7	100
04/07/03 - 04/13/03	167	5.9	9.0	7.7	100
04/14/03 - 04/20/03	168	4.6	7.9	6.2	100
04/21/03 - 04/27/03	168	5.2	8.9	7.0	100
04/28/03 - 05/04/03	168	5.6	9.4	8.0	100
05/05/03 - 05/11/03	168	5.4	9.0	7.9	100
05/12/03 - 05/18/03	168	6.4	9.1	7.5	100
05/19/03 – 05/25/03	168	5.6	8.1	6.9	100
05/26/03 - 06/01/03	38	5.8	8.1	7.0	100
06/02/03 – 06/08/03	130	6.1	8.1	7.0 7.0	100
06/09/03 - 06/15/03	168	4.7	7.5	6.3	100
06/16/03 - 06/22/03	168	4.1	6.9	5.9	100
06/23/03 - 06/29/03	168	5.1	7.4	6.1	100
06/30/03 - 07/06/03	168	0.6	7.0	6.0	98
07/07/03 - 07/13/03	168	3.7	7.1	6.3	99
07/14/03 - 07/20/03	168	1.2	7.0	6.1	98
07/21/03 - 07/27/03	167	5.1	7.5	6.7	100
07/28/03 - 08/03/03	168	4.7	7.5 7.5	6.4	100
08/04/03 - 08/10/03	168	5.9	7.1	6.6	100
08/11/03 - 08/17/03	168	5.3	8.0	6.6	100
08/18/03 - 08/24/03	168	5.5	7.1	6.3	
08/25/03 - 08/31/03	168	4.8	6.7	6.0	100
09/01/03 - 09/07/03	168	4.5	7.2	6.0	100
09/08/03 - 09/14/03	85	4.8	6.8	6.2	100
09/15/03 - 09/21/03	131	5.6	8.2	7.1	100
09/22/03 - 09/28/03	167	4.7	8.0	6.5	100
09/29/03 - 10/05/03	168	4.9	7.6	6.2	100
10/06/03 - 10/12/03	168	4.9	7.0		100
10/13/03 - 10/19/03	168	5.0	7.6	6.1 6.3	100
10/20/03 - 10/26/03	168	5.0	7.3		100
10/20/03 - 10/20/03	168	4.8	7.3 7.7	6.1 6.2	100
11/03/03 - 11/09/03	168	4.6 4.6	8.2	6.2 7.2	100
11/10/03 - 11/16/03	168	4.0 6.1	8.2 8.0		100
11/17/03 = 11/10/03	40	5.9		7.0 6.6	100
11/1//03 = 11/23/03 11/24/03 = 11/30/03	154	3.9 7.2	7.4	6.6 8.0	100
12/01/03 - 12/07/03	168		9.2	8.0	100
12/01/03 - 12/07/03 12/08/03 - 12/14/03		6.3	8.9	7.7	100
	168	5.6	9.7	8.2	100
12/15/03 – 12/21/03 12/22/03 – 12/28/03	168	7.3	9.1	7.8	100
12/22/03 - 12/28/03 12/29/03 - 12/31/03	167	6.5	8.3	7.5	100
12127103 - 12131/03	72 -	6.7	10.3	8.2	100

TABLE AI-5: WEEKLY DO SUMMARY STATISTICS AT FULLERTON AVENUE ON THE NORTH BRANCH CHICAGO RIVER DURING 2003

	Number of	DO (Concentration	Percent DO Values	
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 – 01/05/03	120	6.7	9.8	7.6	100
01/06/03 - 01/12/03	168	5.9	9.4	6.9	100
01/13/03 - 01/19/03	168	6.1	8.9	6.9	100
01/20/03 - 01/26/03	168	6.4	7.3	6.8	100
01/27/03 - 02/02/03	168	5.8	7.9	7.0	100
02/03/03 - 02/09/03	168	6.3	7.4	7.0	100
02/10/03 - 02/16/03	168	6.4	7.5	7.1	100
02/17/03 - 02/23/03	168	6.4	7.4	6.9	100
02/24/03 - 03/02/03	168	6.1	7. 4 7.5	6.9	
03/03/03 - 03/09/03	168	6.0			100
03/10/03 - 03/16/03	168		7.5	6.6	100
		6.1	7.9	6.9	100
03/17/03 - 03/23/03	168	5.7	7.7	6.3	100
03/24/03 - 03/30/03	168	4.1	7.1	5.7	100
03/31/03 - 04/06/03	168	4.2	8.8	6.1	100
04/07/03 - 04/13/03	38	5.6	8.0	7.0	100
04/14/03 - 04/20/03	131	2.8	5.8	4.1	52
04/21/03 - 04/27/03	37	3.0	4.9	3.8	32
04/28/03 - 05/04/03	131	4.8	8.7	7.3	100
05/05/03 05/11/03	37	6.4	7.8	7.5	100
05/12/03 - 05/18/03	131	4.6	7.5	6.0	100
05/19/03 - 05/25/03	168	2.7	6.8	5.6	93
05/26/03 – 06/01/03	168	4.2	7.1	5.5	100
06/02/03 - 06/08/03	168	3.6	7.1	5.2	92
06/09/03 - 06/15/03	168	4.2	6.6	5.4	100
06/16/03 - 06/22/03	168	3.7	6.1	4.8	97
06/23/03 - 06/29/03	168	4.3	6.2	5.3	100
06/30/03 - 07/06/03	168	3.7	6.2	5.1	98
07/07/03 - 07/13/03	168	0.7	5.7	4.8	97
07/14/03 - 07/20/03	168	0.3	5.2	3.8	44
07/21/03 - 07/27/03	168	0.3	5.5	4.1	58
07/28/03 - 08/03/03	168	2.7	5.7	4.4	74
08/04/03 - 08/10/03	168	3.4	5.6	4.6	87
08/11/03 - 08/17/03	168	4.0	5.7	5.0	100
08/18/03 - 08/24/03	40	4.3	5.3	4.8	100
08/25/03 - 08/31/03	133	3.2	5.6	4.9	96
09/01/03 - 09/07/03	168	4.0	6.3	5.3	99
09/08/03 - 09/14/03	168	3.8			
09/15/03 - 09/21/03	168	4.4	6.1	5.0	98
09/22/03 - 09/28/03	168	4.4	7.4	6.3	100
09/29/03 - 10/05/03	168	4.4	7.7	6.2	100
.0/06/03 - 10/12/03	168		6.4	5.7 5.3	100
		4.1	6.6	5.3	100
0/13/03 - 10/19/03	168	4.5	6.9	5.8	100
0/20/03 - 10/26/03	168	4.3	6.4	5.4	100
0/27/03 - 11/02/03	168	4.6	6.7	5.5	100
1/03/03 - 11/09/03	168	4.5	8.1	6.7	100
1/10/03 - 11/16/03	168	5.4	7.2	6.4	100
1/17/03 – 11/23/03	168	4.6	8.2	6.4	100
1/24/03 – 11/30/03	167	5.1	8.4	7.2	100
2/01/03 - 12/07/03	168	5.8	8.3	7.0	100
2/08/03 - 12/14/03	168	5.7	8.9	7.5	100
2/15/03 – 12/21/03	168	6.8	8.2	7.5	100
12/22/03 - 12/28/03	168	6.3	8.3	7.4	100
12/29/03 - 12/31/03	72	6.3	7.6	7.0	100

TABLE AI-6: WEEKLY DO SUMMARY STATISTICS AT DIVISION STREET ON THE NORTH BRANCH CHICAGO RIVER DURING 2003

	Number of	DO (Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	6.2	9.1	7.4	100
01/06/03 - 01/12/03	168	5.6	9.7	7.2	100
01/13/03 - 01/19/03	168	7.0	12.1	9.1	100
01/20/03 - 01/26/03	168	7.2	11.2	8.7	100
01/27/03 - 02/02/03	168	4.4	7.9	6.4	100
02/03/03 - 02/09/03	168	4.7	7.8	6.6	100
02/10/03 - 02/16/03	168	6.9	8.5	7.8	001
02/17/03 - 02/23/03	168	6.3	8.4	7.3	100
02/24/03 - 03/02/03	168	5.7	7.9	6.6	100
03/03/03 - 03/09/03	168	5.6	7.6	6.6	100
03/10/03 - 03/16/03	168	6.6	10.7	8.1	100
03/17/03 - 03/23/03	168	5.4	9.0	6.6	100
03/24/03 - 03/30/03	168	4.9	7.3	6.0	100
03/31/03 - 04/06/03	168	4.3	8.8	6.2	100
04/07/03 - 04/13/03	. 167	5.0	8.0	6.6	100
04/14/03 - 04/20/03	168	3.6	8.2	5.7	89
04/21/03 - 04/27/03	166	4.0	8.4	6.2	100
04/28/03 - 05/04/03	167	4.2	8.7	7.6	100
05/05/03 - 05/11/03	37	6.0	8.6	7.7	100
05/12/03 - 05/18/03	132	3.8	7.8	6.0	99
05/19/03 - 05/25/03	168	3.5	7.5	5.3	93
05/26/03 - 06/01/03	168	3.2	6.9	5.4	89
06/02/03 - 06/08/03	168	3.7	7.4	5.7	97
06/09/03 - 06/15/03	168	4.8	7.6	6.3	100
06/16/03 - 06/22/03	167	4.4	7.5	5.8	100
06/23/03 - 06/29/03	168	5.0	7.2	5.9	100
06/30/03 - 07/06/03	168	4.1	7.0	5.8	100
07/07/03 - 07/13/03	168	0.0	7.4	5.9	95
07/14/03 - 07/20/03	168	0.8	6.9	5.3	90
07/21/03 - 07/27/03	167	3.1	6.8	5.5	98
07/28/03 - 08/03/03	168	2.2	6.8	5.5	96
08/04/03 - 08/10/03	168	3.2	6.8	5.2	98
08/11/03 - 08/17/03	168	4.3	6.7	5.7	100
08/18/03 - 08/24/03	168	4.2	6.5	5.5	100
08/25/03 - 08/31/03	168	4.1	6.4	5.5	100
09/01/03 - 09/07/03	168	4.3	7.1	6.0	100
09/08/03 - 09/14/03	168	4.0	7.0	5.9	99
09/15/03 - 09/21/03	168	4.4	7.3	6.1	100
09/22/03 - 09/28/03	168	4.3	8.2	6.1	100
09/29/03 – 10/05/03	168	4. I	7.9	6.0	100
10/06/03 - 10/12/03	168	4.1	8.1	6.2	100
10/13/03 - 10/19/03	168	4.1	7.5	5.9	100
10/20/03 - 10/26/03	168	4.1	7.9	5.7	001
10/27/03 11/02/03	168	4.0	8.4	6.2	99
11/03/03 – 11/09/03	168	4.0	8.0	6.2	99
11/10/03 - 11/16/03	168	4.7	9.3	6.4	100
11/17/03 - 11/23/03	168	4.1	7.9	6.2	100
11/24/03 – 11/30/03	168	4.2	8.0	6.7	100
12/01/03 - 12/07/03	168	5.6	8.4	6.8	100
12/08/03 - 12/14/03	168	5.8	9.7	7.9	100
12/15/03 – 12/21/03	168	6.7	8.7	7.4	100
12/22/03 - 12/28/03	167	6.1	8.3	7.0	100
12/29/03 - 12/31/03	36	5.7	7.3	6.4	100

TABLE AI-7: WEEKLY DO SUMMARY STATISTICS AT KINZIE STREET ON THE NORTH BRANCH CHICAGO RIVER DURING 2003

	Number of	DO (Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	6.0	8.6	7.1	100
01/06/03 - 01/12/03	168	5.3	9.1	7.1	100
01/13/03 - 01/19/03	168	6.9	11.6	8.7	100
01/20/03 - 01/26/03	168	7.6	10.9	9.1	100
01/27/03 - 02/02/03	168	5.6	7.7	7.0	100
02/03/03 - 02/09/03	168	5.5	7.8	6.9	100
02/10/03 - 02/16/03	168	6.8	7.5	7.2	100
02/17/03 - 02/23/03	168	6.3	7.4	6.9	100
02/24/03 - 03/02/03	168	5.9	7.2	6.3	100
03/03/03 - 03/09/03	168	6.0	8.7	6.7	100
03/10/03 - 03/16/03	167	6.4	8.3	6.9	100
03/17/03 - 03/23/03	168	5.7	6.6	6.0	100
03/24/03 - 03/30/03	168	4.8	6.9	5.9	100
03/31/03 - 04/06/03	168	4.4	8.4	6.2	100
04/07/03 - 04/13/03	167	6.1	8.1	7.3	
04/14/03 - 04/20/03	168	3.8	8.0	6.1	100
04/21/03 - 04/27/03	168	3.6	7.6		95 01
04/28/03 - 05/04/03	168	5.5	8.1	5.5	91
05/05/03 - 05/11/03	168	3.1	8.0	7.2	100
05/12/03 - 05/18/03	168			6.3	96
05/19/03 = 05/25/03	168	3.7	8.2	6.1	. 99
05/26/03 – 06/01/03	168	3.5	6.8	5.5	98
06/02/03 - 06/08/03	168	2.7	6.5	5.0	85
06/09/03 - 06/15/03	168	3.5	6.4	5.1	96
06/16/03 - 06/22/03	168	4.2	5.8	5.0	100
06/23/03 - 06/29/03	168	3.4	5.8	4.8	92
06/30/03 - 07/06/03	168	3.9	5.9	4.9	97
00/30/03 = 07/00/03 07/07/03 = 07/13/03		3.3	5.7	4.7	86
07/14/03 = 07/20/03 07/14/03 = 07/20/03	168 168	0.0	6.5	5.4	90
07/21/03 = 07/27/03 07/21/03 = 07/27/03	168	0.0	6.5	4.3	68
07/28/03 - 08/03/03	168	2.4	5.7	4.5	72
08/04/03 - 08/10/03		3.3	6.2	4.9	90
08/11/03 - 08/17/03	168 168	0.6	5.4	4.3	76
08/18/03 - 08/24/03	168	3.7	5.8	5.3	98
08/25/03 = 08/24/03 08/25/03 = 08/31/03	168	3.9	6.6	5.2	99
09/01/03 - 09/07/03	168	4.2	6.0	5.1	100
09/08/03 = 09/14/03	168	3.8 3.7	6.7	5.5	95
09/15/03 - 09/21/03			6.2	5.2	97
09/22/03 – 09/28/03	168	4.4	6.9	5.6	100
· ·	168	4.4	7.3	5.9	. 100
09/29/03 - 10/05/03	168	3.8	7.1	5.6	96
0/06/03 - 10/12/03	36	3.9	7.0	5.5	97
0/13/03 - 10/19/03	131	4.4	6.8	5.6	100
0/20/03 - 10/26/03	168	4.0	7.1	5.7	99
.0/27/03 - 11/02/03	168	3.8	7.7	5.7	95
1/03/03 – 11/09/03	168	3.8	7.4	5.7	99
1/10/03 – 11/16/03	168	4.8	8.0	6.2	100
1/17/03 – 11/23/03	168	3.5	7.4	5.7	96
1/24/03 - 11/30/03	168	4.2	8.2	6.8	100
2/01/03 - 12/07/03	168	5.9	7.8	7.0	100
2/08/03 12/14/03	168	5.4	9.0	7.5	100
2/15/03 – 12/21/03	168	7.0	8.6	7.8	100
2/22/03 - 12/28/03	168	5.8	8.0	6.8	100
2/29/03 - 12/31/03	72	5.6	7.7	6.6	100

TABLE AI-8: WEEKLY DO SUMMARY STATISTICS AT CHICAGO RIVER CONTROLLING WORKS ON THE CHICAGO RIVER DURING 2003

	Number of	DO	Concentration 4 1	n (mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	9.3	11.0	10.0	100
01/06/03 - 01/12/03	143	10.0	11.2	10.7	100
01/13/03 - 01/19/03	168	9.8	11.4	10.8	100
01/20/03 - 01/26/03	168	9.9	11.8	10.7	100
01/27/03 - 02/02/03	168	8.3	11.4	9.8	100
02/03/03 - 02/09/03	168	7.8	9.8	9.2	100
02/10/03 - 02/16/03	167	7.1	10.7	8.8	100
02/17/03 - 02/23/03	167	6.9	11.8	9.3	100
02/24/03 - 03/02/03	168	7.1	11.0	9.0	100
03/03/03 - 03/09/03	168	7.8	10.4	9.3	100
03/10/03 - 03/16/03	168	8.2	11.8	10.0	100
03/17/03 - 03/23/03	168	8.1	11.9	10.6	100
03/24/03 - 03/30/03	168	9.4	11.7	10.5	100
03/31/03 - 04/06/03	168	9.4	11.9	10.7	100
04/07/03 - 04/13/03	167	6.1	10.1	9.0	100
04/14/03 - 04/20/03	168	8.1	10.5	9.5	100
04/21/03 - 04/27/03	168	8.3	10.9	9.9	100
04/28/03 - 05/04/03	168	7.9	11.1	9.8	100
05/05/03 - 05/11/03	168	7.9	9.5	8.9	100
05/12/03 - 05/18/03	168	8.6	10.3	9.7	100
05/19/03 - 05/25/03	168	8.8	10.4	9.8	100
05/26/03 - 06/01/03	168	8.4	10.8	9.5	100
06/02/03 - 06/08/03	168	7.8	9.7	8.7	100
06/09/03 - 06/15/03	168	8.5	10.2	9.8	100
06/16/03 - 06/22/03	167	9.0	10.4	9.8	100
06/23/03 - 06/29/03	168	8.6	10.3	9.4	100
06/30/03 - 07/06/03	168	8.9	10.5	9.9	100
07/07/03 - 07/13/03	168	8.4	10.1	9.3	100
07/14/03 - 07/20/03	168	7.3	10.0	8.8	100
07/21/03 - 07/27/03	168	7.0	8.4	7.7	100
07/28/03 - 08/03/03	168	6.8	7.8	7.3	100
08/04/03 - 08/10/03	34	7.1	8.0	7.5 7.5	
08/11/03 - 08/17/03	133	6.1	7.3	6.8	100 100
08/18/03 - 08/24/03	168	6.1	7.7	7.0	
08/25/03 - 08/31/03	168	6.2	7.1	6.8	100
09/01/03 - 09/07/03	167	6.3	7.6	6.9	100
09/08/03 - 09/14/03	168	7.0	8.0	7.5	100
09/15/03 - 09/21/03	168	7.6	10.3	9.0	100
09/22/03 - 09/28/03	168	9.2	10.0	9.6	100
09/29/03 - 10/05/03	168	9.0	9.5	9.3	001
10/06/03 - 10/12/03	168	8.9	9.8	9.5	100
10/13/03 - 10/19/03	168	8.8	9.9	9.2	100
10/20/03 - 10/26/03	168	9.0	9.9	9.5	100
10/27/03 11/02/03	168	8.7	9.7		100
11/03/03 - 11/09/03	168	7.1	9.7	9.3 8.0	100
11/10/03 - 11/16/03	168	7.1	9.2	8.0 8.3	100
11/17/03 – 11/23/03	168	5.6	9.0	8.3 7.2	100
11/24/03 – 11/30/03	168	6.6	9.8 9.0		100
12/01/03 - 12/07/03	168	8.7	12.2	7.6 10.6	100
12/08/03 - 12/14/03	131	9.9	11.7	10.6	100
2/15/03 - 12/21/03	132	10.7		11.0	100
2/22/03 – 12/28/03	168	11.3	12.1 12.6	11.6	100
2/29/03 – 12/31/03	72	11.3	12.6	12.1	100
	14	11.0	14.9	12.3	100

TABLE AI-9: WEEKLY DO SUMMARY STATISTICS AT MICHIGAN AVENUE ON THE CHICAGO RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	7.7	10.7	9.2	100
01/06/03 - 01/12/03	168	8.1	9.0	8.5	100
01/13/03 - 01/19/03	168	8.0	10.2	8.3	100
01/20/03 - 01/26/03	106	8.9	10.8	9.6	100
01/27/03 - 02/02/03	168	9.0	11.1	10.2	100
02/03/03 - 02/09/03	168	6.5	9.5	7.8	100
02/10/03 - 02/16/03	168	7.0	8.5	7.5	100
02/17/03 - 02/23/03	168	6.8	11.2	8.0	100
02/24/03 - 03/02/03	168	7.5	11.2	9.0	100
03/03/03 - 03/09/03	168	7.8	10.7	9.2	100
03/10/03 - 03/16/03	168	7.2	11.0	9.1	100
03/17/03 - 03/23/03	168	6.6	11.5	9.1	100
03/24/03 - 03/30/03	168	7.8	11.1	9.0	100
03/31/03 - 04/06/03	168	6.9	9.8	8.3	100
04/07/03 - 04/13/03	167	6.8	10.3	8.9	100
04/14/03 - 04/20/03	167	7.5	9.4	8.5	100
04/21/03 - 04/27/03	168	7.0	9.6	8.4	100
04/28/03 - 05/04/03	168	8.1	10.5	9.4	100
05/05/03 - 05/11/03	168	7.1	9.5	8.4	100
05/12/03 - 05/18/03	168	6.7	10.0	8.8	100
05/19/03 – 05/25/03	168	6.7	9.8	8.9	100
05/26/03 – 06/01/03	168	7.2	10.7	9.0	100
16/02/03 - 06/08/03	168	6.5	9.5	8.6	100
6/09/03 - 06/15/03	168	9.0	10.3	9.6	100
6/16/03 - 06/22/03	168	9.2	10.2	9.8	100
6/23/03 - 06/29/03	168	8.5	10.2	9.2	
6/30/03 - 07/06/03	168	8.6	9.8	9.3	100 100
7/07/03 - 07/13/03	168	8.5	11.4	9.7	100
17/14/03 - 07/20/03	168	7.7	10.2	8.7	100
7/21/03 – 07/27/03	167	7.2	8.3	7.9	
7/28/03 - 08/03/03	168	6.6	7.7	7.4 7.4	100
8/04/03 - 08/10/03	168	6.2	8.5	7.4 7.9	100
8/11/03 - 08/17/03	168	6.7	8.0	7.3	100
8/18/03 – 08/24/03	168	6.4	7.6	7.0	100
8/25/03 - 08/31/03	168	6.6	7.4	7.0 7.0	100 100
9/01/03 - 09/07/03	168	6.1	7.6	7.1	100
9/08/03 - 09/14/03	168	7.3	8.3	7.1	100
9/15/03 - 09/21/03	36	8.3	8.7	8.5	001
9/22/03 - 09/28/03	30	6.5	NO DATA	6.5	100
9/29/03 - 10/05/03	133	8.8	9.5	9.2	100
0/06/03 - 10/12/03	168	8.9	9.7	9.4	
0/13/03 - 10/19/03	167	8.5	9.6	8.9	100
0/20/03 - 10/26/03	168	8.8	9.9	9.5	100
0/27/03 - 11/02/03	168	8.2	9.7	9.0	100
1/03/03 - 11/09/03	168	6.4	8.5	7.5	100
1/10/03 - 11/16/03	168	6.6	8.1	7.5 7.5	100 100
1/17/03 - 11/23/03	168	5.2	9.5	7.5 6.6	100
1/24/03 - 11/30/03	168	6.0	7.8	7.0	
2/01/03 – 12/07/03	168	7.9	7.8 9.6	7.0 8.4	100
2/08/03 - 12/14/03	35	8.2	8.5	8.4	100
2/15/03 = 12/14/03 2/15/03 = 12/21/03	133	10.5			100
2/22/03 = 12/21/03 2/22/03 = 12/28/03	168	10.3	12.1 12.6	11.2	100
2/22/03 = 12/26/03 2/29/03 = 12/31/03	72		12.6	11.7	100
- LAIJ 11UJ	14	11.3	14.5	11.8	100

TABLE AI-10: WEEKLY DO SUMMARY STATISTICS AT CLARK STREET ON THE CHICAGO RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Value
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	5.9	8.3	7.1	100
01/06/03 - 01/12/03	168	6.8	8.6	7.7	100
01/13/03 - 01/19/03	168	7.2	9.6	8.0	100
01/20/03 - 01/26/03	168	8.1	9.6	8.9	100
01/27/03 - 02/02/03	168	6.9	10.0	8.3	100
02/03/03 - 02/09/03	168	6.9	8.6	7.7	100
02/10/03 - 02/16/03	168	6.8	7.7	7.3	100
02/17/03 - 02/23/03	168	6.3	7.8	7.0	100
02/24/03 - 03/02/03	168	6.4	8.3	7.1	100
03/03/03 - 03/09/03	167	6.3	8.9	7.5	100
03/10/03 - 03/16/03	168	5.6	10.1	8.0	100
03/17/03 - 03/23/03	167	5.6	11.2	8.0	100
03/24/03 - 03/30/03	168	5.2	9.3	7.6	100
03/31/03 - 04/06/03	168	5.1	8.4	6.8	100
04/07/03 - 04/13/03	167	6.3	8.8	7.6	100
04/14/03 - 04/20/03	168	6.1	8.7	7.5	100
04/21/03 - 04/27/03	168	5.6	9.9	8.2	100
04/28/03 - 05/04/03	168	7.2	10.6	8.8	100
05/05/03 - 05/11/03	168	6.1	9.4	7.5	100
05/12/03 - 05/18/03	168	5.8	9.3	7.2	100
05/19/03 - 05/25/03	168	5.6	9.8	8.3	100
05/26/03 - 06/01/03	168	5.8	9.6	7.8	100
06/02/03 - 06/08/03	168	5.2	9.0	7.5	100
06/09/03 - 06/15/03	168	7.9	10.0	9.3	100
06/16/03 - 06/22/03	168	8.9	10.5	9.8	100
06/23/03 – 06/29/03	168	6.6	10.3	8.6	100
06/30/03 – 07/06/03	168	7.5	10.0	9.0	100
07/07/03 - 07/13/03	168	6.7	10.5	8.8	100
07/14/03 – 07/20/03	167	7.1	9.7	8.4	100
07/21/03 - 07/27/03	168	6.7	8.3	7.8	100
07/28/03 - 08/03/03	168	6.6	7.8	7.3	100
08/04/03 - 08/10/03	168	6.5	8.1	7.6	100
08/11/03 - 08/17/03	168	6.7	7.5	7.1	100
08/18/03 - 08/24/03	168	6.5	7.6	7.2	100
08/25/03 - 08/31/03	168	6.6	7.4	7.0	100
09/01/03 - 09/07/03	168	5.8	7.7	7.0	100
09/08/03 – 09/14/03	168	7.2	8.1	7.6	100
09/15/03 - 09/21/03	35	7.5	8.3	7.8	100
09/22/03 – 09/28/03	133	7.9	10.0	9.3	100
09/29/03 – 10/05/03	168	8.4	9.6	9.1	100
10/06/03 10/12/03	168	6.9	9.3	8.5	100
10/13/03 10/19/03	168	7.5	9.8	8.5	100
10/20/03 - 10/26/03	168	8.2	9.8	9.1	100
10/27/03 - 11/02/03	168	7.4	9.6	8.6	100
11/03/03 – 11/09/03	168	5.9	8.6	6.8	100
11/10/03 – 11/16/03	168	6.5	7.9	7.2	100
11/17/03 – 11/23/03	168	4.2	8.5	6.0	85
11/24/03 - 11/30/03	168	5.6	7.5	6.9	100
12/01/03 – 12/07/03	168	5.7	8.1	7.2	100
12/08/03 – 12/14/03	168	7.4	10.8	8.9	100
12/15/03 – 12/21/03	168	9.0	10.7	9.8	100
12/22/03 - 12/28/03	168	9.7	12.3	10.6	100
12/29/03 – 12/31/03	72	9.4	11.0	10.6	100

TABLE AI-11: WEEKLY DO SUMMARY STATISTICS AT JACKSON BOULEVARD ON THE SOUTH BRANCH CHICAGO RIVER DURING 2003

	Number of	DO (Concentration	(mg/L)	Percent DO Values Above Standard
Monitoring Dates	DO Values	Min	Max	Mean	
01/01/03 - 01/05/03	120	5.6	8.0	6.7	100
01/06/03 - 01/12/03	168	5.2	8.3	6.9	100
01/13/03 - 01/19/03	168	5.8	10.2	7.9	100
01/20/03 - 01/26/03	168	7.1	10.1	8.7	100
01/27/03 - 02/02/03	168	6.5	7.6	7.1	100
02/03/03 - 02/09/03	168	6.1	7.6	6.7	100
02/10/03 - 02/16/03	168	6.9	7.5	7.2	
02/17/03 - 02/23/03	168	6.3	7.5	6.8	100
02/24/03 - 03/02/03	168	6.0	7.1	6.6	100
03/03/03 - 03/09/03	168	5.7	8.2		100
03/10/03 - 03/16/03	168	6.0	8.6	6.6	100
03/17/03 - 03/23/03	168	5.4	7.6	7.1	100
03/24/03 - 03/30/03	168	4.9	6.7	6.2	100
03/31/03 - 04/06/03	168	4.3		5.9	100
04/07/03 - 04/13/03	167		8.1	6.0	100
04/14/03 - 04/20/03		5.4	8.1	6.7	100
04/21/03 - 04/27/03	168	4.0	7.3	5.8	99
	168	3.6	7.0	5.5	95
04/28/03 - 05/04/03	168	4.2	8.3	7.0	100
05/05/03 - 05/11/03	168	4.0	8.4	6.7	100
05/12/03 - 05/18/03	168	4.2	8.4	6.1	100
05/19/03 - 05/25/03	168	3.8	8.9	5.7	98
05/26/03 - 06/01/03	168	3.8	6.6	5.3	97
06/02/03 - 06/08/03	168	4.3	8.1	5.9	100
06/09/03 - 06/15/03	168	5.3	8.0	6.8	100
06/16/03 – 06/22/03	168	5.5	8.7	7.1	100
06/23/03 - 06/29/03	168	4.6	7.4	6.1	100
06/30/03 - 07/06/03	168	4.3	7.6	6.2	100
07/07/03 - 07/13/03	168	2.0	8.6	6.1	94
07/14/03 - 07/20/03	168	2.2	7.8	5.2	87
07/21/03 - 07/27/03	168	4.4	7.0	6.0	100
07/28/03 - 08/03/03	168	3.7	7.0	5.8	99
08/04/03 - 08/10/03	168	2.5	6.7	5.5	89
08/11/03 - 08/17/03	168	4.9	6.4	5.9	100
08/18/03 - 08/24/03	168	4.4	6.2	5.7	100
08/25/03 - 08/31/03	168	4.4	6.3	5.7	100
09/01/03 - 09/07/03	168	4.4	7.1	5.7	100
09/08/03 - 09/14/03	168	4.5	6.9	6.2	100
09/15/03 - 09/21/03	168	5.1	8.0	6.6	100
09/22/03 - 09/28/03	168	5.8	8.3	7.3	100
09/29/03 - 10/05/03	168	5.1	7.8	6.4	100
10/06/03 - 10/12/03	167	4.6	7.3	6.0	100
10/13/03 - 10/19/03	168	4.3	6.9	5.8	100
10/20/03 - 10/26/03	168	4.9	7.7	6.4	100
10/27/03 - 11/02/03	168	5.0	7.6	6.2	
11/03/03 - 11/09/03	36	4.1	6.4	5.1	100
11/10/03 – 11/16/03	108	5.0	7.3	6.4	100
11/17/03 – 11/23/03	167	3.8	7.3 7.2	5.7	100
11/24/03 – 11/30/03	168	4.0	7.2		98
12/01/03 - 12/07/03	168	5.7	7.0 7.3	6.2	99
12/08/03 - 12/14/03	168	5.8		6.6 7.6	100
12/15/03 - 12/21/03	168		9.4	7.6	100
12/22/03 - 12/28/03		6.9 5.0	9.1	7.9	100
12/29/03 – 12/28/03 12/29/03 – 12/31/03	168 72	5.9	8.4	7.1	100
12100 - 12100	12	6.4	7.8	7.3	100

TABLE AI-12: WEEKLY DO SUMMARY STATISTICS AT LOOMIS STREET ON THE SOUTH BRANCH CHICAGO RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03			NO DATA		
01/06/03 - 01/12/03			NO DATA		
01/13/03 - 01/19/03			NO DATA		
01/20/03 - 01/26/03			NO DATA		
01/27/03 - 02/02/03			NO DATA		
02/03/03 - 02/09/03			NO DATA		
02/10/03 - 02/16/03			NO DATA		
02/17/03 - 02/23/03			NO DATA		
02/24/03 - 03/02/03			NO DATA		
03/03/03 - 03/09/03			NO DATA		
03/10/03 - 03/16/03			NO DATA		
03/17/03 - 03/23/03			NO DATA		
03/24/03 - 03/30/03			NO DATA		
03/31/03 04/06/03			NO DATA		
04/07/03 - 04/13/03			NO DATA		
04/14/03 - 04/20/03			NO DATA		
04/21/03 - 04/27/03	134	5.0	6.6	5.5	100
04/28/03 - 05/04/03	167	5.3	7.1	6.3	100
05/05/03 - 05/11/03	168	3.4	7.3	6.1	98
05/12/03 - 05/18/03	168	3.5	7.2	6.0	98
05/19/03 - 05/25/03	168	4.8	8.3	6.1	100
05/26/03 - 06/01/03	168	4.0	7.8	5.4	99
06/02/03 - 06/08/03	168	2.4	6.8	5.7	99
06/09/03 – 06/15/03	168	5.3	8.2	6.4	100
06/16/03 - 06/22/03	167	5.7	8.2	7.1	100
06/23/03 - 06/29/03	168	4.8	6.8	6.0	100
06/30/03 - 07/06/03	168	4.8	6.5	5.8	100
07/07/03 - 07/13/03	167	2.3	8.0	6.0	95
07/14/03 - 07/20/03	167	2.8	7.2	5.5	84
07/21/03 - 07/27/03	168	4.9	6.8	6.3	100
07/28/03 – 08/03/03	168	4.9	6.9	5.8	100
08/04/03 - 08/10/03	43	1.0	5.5	3.0	26
08/11/03 - 08/17/03	134	5.6	6.4	6.1	100
08/18/03 - 08/24/03	168	5.0	6.3	5.8	100
08/25/03 - 08/31/03	167 88	5.0	6.6	5.9	100
09/01/03 09/07/03 09/08/03 09/14/03	86	4.9 5.2	6.6	5.7	100
09/15/03 = 09/21/03	168	5.3	7.4	6.3	100
09/22/03 - 09/28/03	168	6.1	8.0 8.5	6.6	100
09/29/03 - 10/05/03	165	4.9	7.6	7.3 6.4	100
10/06/03 - 10/12/03	168	5.1	7.0 7.2	6.4	100
10/13/03 - 10/19/03	168	4.9	7.1	6.0	100 100
10/20/03 - 10/26/03	168	5.8	8.5	6.9	100
10/27/03 - 11/02/03	168	5.5	8.4	6.5	100
11/03/03 - 11/09/03	168	2.5	6.8	5.4	86
11/10/03 – 11/16/03	168	6.0	7.5	6.7	100
11/17/03 – 11/23/03	168	2.8	7.8 7.8	5.7	82
11/24/03 - 11/30/03	168	4.8	7.7	6.7	100
12/01/03 - 12/07/03	168	6.4	7.9	7.2	100
12/08/03 - 12/14/03	168	5.9	9.2	7.0	100
12/15/03 - 12/21/03	168	7.2	9.1	8.2	100
12/22/03 - 12/28/03	168	6.5	8.5	7.4	100
	72	7.5	9.2	8.0	

TABLE AI-13: WEEKLY DO SUMMARY STATISTICS AT INTERSTATE HIGHWAY 55 ON BUBBLY CREEK DURING 2003

	Number of	DO (Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	5.7	6.9	6.2	100
01/06/03 - 01/12/03	168	6.4	8.1	7.3	100
01/13/03 - 01/19/03	168	6.8	7.9	7.4	100
01/20/03 - 01/26/03	168	7.3	9.1	8.5	100
01/27/03 - 02/02/03	168	6.7	8.7	7.5	100
02/03/03 - 02/09/03	168	5.5	6.9	6.3	100
02/10/03 - 02/16/03	168	6.6	8.6	7.8	100
02/17/03 - 02/23/03	168	6.8	8.9	7.9	100
02/24/03 - 03/02/03	168	6.2	7.9	6.9	100
03/03/03 - 03/09/03	167	5.6	7.4	6.5	100
03/10/03 - 03/16/03	168	6.1	8.6	7.2	100
03/17/03 - 03/23/03	168	5.4	7.7	6.2	100
03/24/03 - 03/30/03	168	5.1	8.4	6.4	100
03/31/03 - 04/06/03	168	1.0	10.7	6.5	88
04/07/03 - 04/13/03	167	0.6	6.0	3.6	42
04/14/03 - 04/20/03	168	0.6	7.9	5.1	70
04/21/03 - 04/27/03	168	1.7	7.0	5.0	83
04/28/03 - 05/04/03	168	0.4	8.6	3.9	61
05/05/03 - 05/11/03	35	2.1	8.2	4.8	63
05/12/03 - 05/18/03			NO DATA		
05/19/03 - 05/25/03	134	0.0	7.0	3.4	39
05/26/03 - 06/01/03	168	0.1	9.7	2.1	17
06/02/03 - 06/08/03	168	0.3	4.9	1.7	8
06/09/03 - 06/15/03	168	0.4	7.1	5.0	69
06/16/03 - 06/22/03	168	1.5	7.9	5.0	66
06/23/03 - 06/29/03	168	1.8	7.0	5.4	79
06/30/03 - 07/06/03	168	1.9	9.2	4.8	67
07/07/03 - 07/13/03	34	1.1	4.5	2.6	6
07/14/03 - 07/20/03	133	0.0	4.8	1.0	8
07/21/03 - 07/27/03	168	0.0	6.2	4.1	68
07/28/03 - 08/03/03	168	0.0	15.6	4.4	49
08/04/03 - 08/10/03	168	0.0	5.3	3.3	59
08/11/03 - 08/17/03	168	2.9	5.7	4.6	89
08/18/03 - 08/24/03	168	3.2	5.5	4.6	83
08/25/03 - 08/31/03	168	3.3	5.7	4.6	84
09/01/03 - 09/07/03	168	3.9	6.5	5.2	99
09/08/03 - 09/14/03	168	1.4	6.1	4.5	79
09/15/03 - 09/21/03	168	3.4	7.0	4.9	78
09/22/03 - 09/28/03	168	3.8	6.8	5.3	92
09/29/03 10/05/03	168	4.6	7.1	6.1	100
10/06/03 - 10/12/03	168	4.6	6.6	5.6	100
10/13/03 - 10/19/03	168	0.2	6.1	4.3	80
10/20/03 - 10/26/03	168	2.0	7.2	4.6	68
10/27/03 - 11/02/03	168	3.9	7.4	5.6	99
11/03/03 – 11/09/03	168	0.1	5.6	2.3	22
11/10/03 – 11/16/03	168	0.1	6.2	3.8	60
11/17/03 – 11/23/03	36	0.2	7.8	3.8	58
11/24/03 - 11/30/03	158	1.4	5.7	3.7	43
12/01/03 – 12/07/03	168	3.5	7.0	6.1	99
12/08/03 12/14/03	168	4.8	7.1	5.9	100
12/15/03 – 12/21/03	168	5.0	8.0	6.8	100
12/22/03 - 12/28/03	168	5.7	7.4	6.4	100
12/29/03 - 12/31/03	72	5.6	7.5	6.4	100

TABLE AI-14: WEEKLY DO SUMMARY STATISTICS AT 36th STREET ON BUBBLY CREEK DURING 2003

	Number of	DO	Concentration	Percent DO Values	
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 – 01/05/03	120	6.0	7.8	6.9	100
01/06/03 - 01/12/03	168	5.8	8.3	7.3	100
01/13/03 - 01/19/03	168	7.2	9.5	8.1	100
01/20/03 - 01/26/03	168	6.3	8.4	7.2	100
01/27/03 - 02/02/03	168	3.6	7.4	5.2	86
02/03/03 - 02/09/03	168	4.3	7.6	5.9	100
02/10/03 - 02/16/03	168	6.6	9.4	7.8	100
02/17/03 - 02/23/03	168	7.7	16.3	11.5	100
02/24/03 - 03/02/03	168	9.6	20.6	14.8	100
03/03/03 - 03/09/03	168	7.3	10.7	8.4	100
03/10/03 - 03/16/03	168	6.4	9.2	7.8	100
03/17/03 - 03/23/03	168	4.7	9.6	6.5	100
03/24/03 - 03/30/03	168	4.2	12.2	7.4	100
03/31/03 - 04/06/03	61	8.4	12.9	10.6	100
04/07/03 - 04/13/03	107	0.5	1.3	0.5	0
04/14/03 - 04/20/03	168	0.5	16.0	6.9	64
04/21/03 - 04/27/03	168	4.7	13.4	9.3	100
04/28/03 - 05/04/03	61	0.0	11.8	6.2	77
05/05/03 - 05/11/03			NO DATA		,,
05/12/03 - 05/18/03	110	0.0	4.3	1.2	3
05/19/03 - 05/25/03	62	0.6	4.5	1.4	3
05/26/03 - 06/01/03	111	0.1	3.2	0.5	0
06/02/03 - 06/08/03	168	0.2	9.7	2.6	33
06/09/03 - 06/15/03	168	1.8	12.5	6.0	86
06/16/03 - 06/22/03	168	2.3	13.3	6.4	84
06/23/03 - 06/29/03	168	2.0	6.1	4.4	70
06/30/03 – 07/06/03	168	0.6	13.0	5.5	62
07/07/03 - 07/13/03	168	0.9	8.9	4.1	49
07/14/03 – 07/20/03	62	0.0	6.6	2.0	19
07/21/03 – 07/27/03	106	1.6	4.8	3.8	60
07/28/03 – 08/03/03	168	0.0	12.6	6.1	71
08/04/03 - 08/10/03	169	0.0	4.5	1.7	4
08/11/03 - 08/17/03	168	1.4	4.3	2.9	2
08/18/03 - 08/24/03	57	1.4	4.0	2.8	0
08/25/03 - 08/31/03	106	1.4	3.8	2.2	Ō
09/01/03 - 09/07/03	168	1.6	6.0	4.1	57
09/08/03 - 09/14/03	168	1.4	5.1	3.2	18
09/15/03 - 09/21/03	168	0.9	6.1	2.9	8
09/22/03 09/28/03	168	2.4	5.6	4.1	57
09/29/03 - 10/05/03	168	3.6	6.0	4.9	92
10/06/03 - 10/12/03	167	3.4	7.3	4.9	86
0/13/03 - 10/19/03	168	0.0	6.2	2.1	16
.0/20/03 - 10/26/03	168	0.0	3.2	0.7	0
0/27/03 - 11/02/03	167	0.1	4.8	3.1	13
1/03/03 - 11/09/03	169	0.0	7.6	0.9	10
1/10/03 - 11/16/03	168	0.0	2.7	0.8	0
1/17/03 - 11/23/03	168	0.2	9.0	1.5	11
1/24/03 - 11/30/03	168	0.7	4.1	2.5	2
2/01/03 - 12/07/03	168	3.6	6.0	4.7	98
2/08/03 - 12/14/03	168	2.9	6.2	4.9	85
2/15/03 - 12/21/03	168	5.6	6.8	6.0	100
2/22/03 - 12/28/03	168	4.1	6.3	5.4	100
2/29/03 – 12/31/03	72	3.6	7.0	5.6	99

TABLE AI-15: WEEKLY DO SUMMARY STATISTICS AT CICERO AVENUE ON THE CHICAGO SANITARY AND SHIP CANAL DURING 2003

Monitoring Dates	Number of	DO	Concentration	(mg/L)	Percent DO Value
	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	5.2	6.8	6.1	100
01/06/03 - 01/12/03	168	5.1	6.7	6.1	100
01/13/03 - 01/19/03	168	4.9	6.8	6.2	100
01/20/03 - 01/26/03	168	5.6	7.9	6.8	100
01/27/03 02/02/03	168	5.8	7.8	6.9	100
02/03/03 - 02/09/03	167	6.4	7.3	6.8	100
02/10/03 - 02/16/03	167	5.3	7.4	6.2	100
02/17/03 - 02/23/03	168	5.0	7.4	6.3	100
02/24/03 - 03/02/03	168	5.3	7.1	6.1	
03/03/03 - 03/09/03	168	4.7	7.0	5.8	100
03/10/03 - 03/16/03	168	5.9	8.0		100
03/17/03 - 03/23/03	168	4.3	7.2	6.7	100
03/24/03 - 03/30/03	168			5.4	100
03/31/03 - 04/06/03	168	3.8	6.7	4.8	99
		3.4	6.5	4.6	87
04/07/03 - 04/13/03	167	2.8	7.8	5.8	85
04/14/03 - 04/20/03	168	2.3	7.3	4.5	70
04/21/03 - 04/27/03	168	1.9	6.1	4.3	70
04/28/03 - 05/04/03	33	2.5	6.3	4.0	48
05/05/03 - 05/11/03			NO DATA		
05/12/03 – 05/18/03			NO DATA		
05/19/03 – 05/25/03			NO DATA		
05/26/03 - 06/01/03	135	2.4	10.2	4.2	48
06/02/03 - 06/08/03	168	2.1	5.3	3.6	29
06/09/03 - 06/15/03	168	2.5	6.2	4.4	73
06/16/03 - 06/22/03	166	2.9	7.3	5.5	91
06/23/03 - 06/29/03	168	2.1	6.1	3.8	35
06/30/03 - 07/06/03	167	1.2	6.1	3.9	56
07/07/03 - 07/13/03	167	1.9	6.7	4.3	62
07/14/03 - 07/20/03	167	1.0	6.3	3.3	32
07/21/03 - 07/27/03	167	2.3	5.7	4.5	
07/28/03 - 08/03/03	168	3.7	5.9	4.9	80
08/04/03 - 08/10/03	168	0.4	5.5		90
08/11/03 - 08/17/03	168	4.3		3.8	62
08/18/03 - 08/24/03	168	3.5	5.3	4.9	100
08/25/03 - 08/31/03	167		5.6	5.0	98
09/01/03 – 09/07/03	168	3.3	5.4	4.6	88
09/08/03 = 09/07/03		2.6	6.0	4.4	71
09/15/03 - 09/21/03	168	3.6	5.6	4.6	93
	168	3.2	6.7	5.0	89
09/22/03 - 09/28/03	168	3.2	7.0	6.1	99
09/29/03 10/05/03	168	4.5	6.7	5.7	100
10/06/03 - 10/12/03	168	3.0	6.0	4.7	<u>7</u> 5
10/13/03 - 10/19/03	168	0.8	5.3	3.1	18
10/20/03 – 10/26/03	168	2.0	5.7	4.5	80
10/27/03 - 11/02/03	168	3.3	6.0	4.7	77
11/03/03 - 11/09/03	168	0.0	5.9	2.7	17
11/10/03 – 11/16/03	167	2.7	5.9	4.8	78
11/17/03 – 11/23/03	168	0.4	6.6	3.0	39
1/24/03 - 11/30/03	168	3.1	6.2	5.0	82
12/01/03 – 12/07/03	168	5.3	6.6	6.0	100
12/08/03 12/14/03	168	4.6	6.3	5.4	100
12/15/03 - 12/21/03	168	6.1	7.7	7.0	100
12/22/03 - 12/28/03	167	6.3	7.4	6.9	100
12/29/03 - 12/31/03	72	6.7	7.5	7.0	100

TABLE AI-16: WEEKLY DO SUMMARY STATISTICS AT B&O CENTRAL RAILROAD ON THE CHICAGO SANITARY AND SHIP CANAL DURING 2003

Monitoring Dates	Number of	DO	Concentration	Percent DO Values	
	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	6.9	8.4	7.7	100
01/06/03 - 01/12/03	168	7.2	9.0	8.1	100
01/13/03 - 01/19/03	168	7.2	9.2	8.3	100
01/20/03 - 01/26/03	33	8.0	9.1	8.5	100
01/27/03 - 02/02/03	86	7.2	8.7	8.0	100
02/03/03 - 02/09/03	168	6.3	8.6	7.2	100
02/10/03 - 02/16/03	168	7.4	9.0	8.2	100
02/17/03 - 02/23/03	168	7.2	9.5	8.5	100
02/24/03 - 03/02/03	168	6.7	9.7	8.2	
03/03/03 - 03/09/03	168	6.4	8.6	8.2 7.6	100
03/10/03 - 03/16/03	168	7.1	9.1		100
03/17/03 - 03/23/03	168	5.7	8.0	8.1	100
03/24/03 - 03/30/03	168	3.7 4.7		6.9	100
03/31/03 - 04/06/03	168		8.0	6.5	100
04/07/03 - 04/13/03		4.8	8.2	6.2	100
	167	5.7	8.3	7.2	100
04/14/03 - 04/20/03	168	5.7	8.2	6.9	100
04/21/03 04/27/03	81	4.6	7.2	5.9	100
04/28/03 - 05/04/03	2.0		NO DATA		
05/05/03 - 05/11/03	80	3.7	7.4	5.6	98
05/12/03 - 05/18/03	168	4.7	7.9	6.5	100
05/19/03 - 05/25/03	83	4.4	7.4	6.2	100
05/26/03 - 06/01/03	86	3.9	6.6	5.5	98
06/02/03 - 06/08/03	168	3.7	7.1	5.3	97
06/09/03 – 06/15/03	168	4.1	6.4	5.4	100
06/16/03 - 06/22/03	168	4.4	6.9	6.1	100
06/23/03 - 06/29/03	168	4.6	6.3	5.5	100
06/30/03 - 07/06/03	168	3.5	8.6	5.3	95
07/07/03 - 07/13/03	168	4.4	6.7	5.6	100
07/14/03 - 07/20/03	168	1.5	6.6	4.8	81
07/21/03 – 07/27/03	168	3.8	6.9	5.5	98
07/28/03 - 08/03/03	168	4.6	7.1	5.6	100
08/04/03 - 08/10/03	168	3.7	6.5	5.3	92
08/11/03 - 08/17/03	168	5.4	7.1	6.0	100
08/18/03 08/24/03	167	4.7	6.2	5.4	100
08/25/03 - 08/31/03	168	4.3	6.0	5.2	100
09/01/03 - 09/07/03	168	5.1	7.1	5.9	100
09/08/03 – 09/14/03	168	4.2	6.1	5.2	100
09/15/03 - 09/21/03	168	4.4	6.7	5.4	100
09/22/03 - 09/28/03	168	4.4	7.1	6.3	100
09/29/03 - 10/05/03	168	4.8	6.8	5.9	100
10/06/03 - 10/12/03	168	4.8	6.7	5.8	
10/13/03 - 10/19/03	168	4.5	6.6	5.8	100
10/20/03 - 10/26/03	168	4.6	6.9	5.7	100
10/27/03 – 11/02/03	168	5.2	7.2	6.2	100
11/03/03 - 11/09/03	168	4.0	8.2		100
11/10/03 - 11/16/03	168	4.9	6. <i>2</i> 7.6	6.0 6.7	99
11/17/03 – 11/23/03	168	4.1	7.6 8.2	6.7	100
11/24/03 - 11/30/03	168	5.7	8.2 9.0	6.5	100
12/01/03 - 12/07/03	168			7.5	100
12/01/03 - 12/14/03	168	6.4 5.3	8.6	7.4	100
12/15/03 - 12/21/03		5.3	8.5	7.5	100
12/13/03 - 12/21/03 12/22/03 - 12/28/03	168	6.7	9.0	7.9	100
	168	7.5	9.0	8.3	100
12/29/03 - 12/31/03	72	8.0	9.1	8.5	100

TABLE AI-17: WEEKLY DO SUMMARY STATISTICS AT ROUTE 83 ON THE CHICAGO SANITARY AND SHIP CANAL DURING 2003

	Number of	DO	Concentration	1 (mg/L)	Percent DO Value
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	6.7	7.9	7.5	100
01/06/03 - 01/12/03	168	6.3	7.8	7.1	100
01/13/03 - 01/19/03	168	6.8	8.2	7.6	100
01/20/03 - 01/26/03	168	7.3	8.8	8.2	100
01/27/03 - 02/02/03	168	6.7	9.0	8.0	
02/03/03 - 02/09/03	168	5.8	8.1	7.1	100
02/10/03 - 02/16/03	168	7.4			100
02/17/03 - 02/23/03	167	7.4	9.2	8.4	100
02/24/03 - 03/02/03	168	6.2	8.6	7.9	100
			8.6	7.5	100
03/03/03 - 03/09/03	167	6.5	9.6	8.2	100
03/10/03 - 03/16/03	168	6.3	9.6	8.2	100
03/17/03 - 03/23/03	144	4.9	6.7	5.9	100
03/24/03 - 03/30/03	168	4.0	6.9	5.5	99
03/31/03 - 04/06/03	82	4.3	6.2	5.5	100
04/07/03 - 04/13/03	85	4.8	6.5	5.6	100
04/14/03 - 04/20/03	168	3.9	5.9	5.1	99
04/21/03 – 04/27/03	82	3.5	5.0	4.1	54
04/28/03 05/04/03			NO DATA		
05/05/03 - 05/11/03	81	0.0	6.3	1.4	19
05/12/03 - 05/18/03	168	0.0	6.0	3.1	48
05/19/03 - 05/25/03	168	2.1	6.1	4.4	63
05/26/03 - 06/01/03	168	2.0	7.1	4.6	60
06/02/03 - 06/08/03	167	2.1	5.0	3.8	40
06/09/03 - 06/15/03	168	2.4	5.4	4.1	58
06/16/03 - 06/22/03	168	2.5	6.4		
06/23/03 - 06/29/03	168	2.8		4.7	80
06/30/03 - 07/06/03	168		5.1	4.0	43
07/07/03 = 07/00/03		2.0	6.7	3.9	45
	168	0.0	4.9	3.3	25
07/14/03 - 07/20/03	168	0.1	5.5	3.1	28
7/21/03 - 07/27/03	168	0.5	5.1	3.5	49
07/28/03 - 08/03/03	168	0.0	5.2	3.8	52
08/04/03 - 08/10/03	168	0.0	4.7	2.4	32
08/11/03 - 08/17/03	59	1.9	4.6	3.8	36
08/18/03 – 08/24/03	79	3.3	4.6	3.9	38
8/25/03 - 08/31/03	159	2.7	5.6	4.2	61
9/01/03 - 09/07/03	167	3.7	5.5	4.8	96
9/08/03 - 09/14/03	168	3.2	5.7	4.5	64
9/15/03 – 09/21/03	168	2.5	5.2	4.2	70
9/22/03 - 09/28/03	168	3.2	6.2	5.5	95
9/29/03 ~ 10/05/03	168	4.4	6.0	5.5	100
0/06/03 - 10/12/03	168	3.8	6.0	5.1	99
0/13/03 - 10/19/03	169	8.1	5.9	4.6	
0/20/03 - 10/26/03	167	3.7	5.7		80
0/27/03 - 11/02/03	168	3.7	6.1	4.7 5.2	92
1/03/03 - 11/09/03	168	2.9	7.3	5.3	97
1/10/03 - 11/16/03				4.8	72
1/17/03 - 11/23/03	168	4.6	7.4	5.9	100
	168	0.0	7.8	4.8	80
1/24/03 – 11/30/03	168	5.4	8.5	6.8	100
2/01/03 - 12/07/03	168	5.8	7.8	6.7	100
2/08/03 - 12/14/03	151	4.2	8.2	6.6	100
2/15/03 - 12/21/03	85	6.6	7.6	7.1	100
2/22/03 - 12/28/03	168	6.3	7.9	7.2	100
2/29/03 - 12/31/03	72	7.4	8.0	7.7	100

TABLE AI-18: WEEKLY DO SUMMARY STATISTICS AT RIVER MILE 302.6 ON THE CHICAGO SANITARY AND SHIP CANAL DURING 2003

	Number of	DO	Concentration	Percent DO Values	
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	6.9	8.2	7.6	100
01/06/03 - 01/12/03	168	6.9	8.7	7.8	100
01/13/03 - 01/19/03	168	7.7	9.5	8.6	100
01/20/03 - 01/26/03	168	7.9	9.0	8.5	001
01/27/03 - 02/02/03	168	7.1	8.8	8.1	100
02/03/03 - 02/09/03	168	6.5	8.5	7.6	100
02/10/03 - 02/16/03	168	7.7	9.4	8.6	100
02/17/03 - 02/23/03	168	7.5	9.1	8.4	100
02/24/03 - 03/02/03	168	6.7	8.8	7.9	100
03/03/03 - 03/09/03	168	6.8	8.8	7.7	100
03/10/03 - 03/16/03	168	6.8	8.4	7.7	100
03/17/03 - 03/23/03	168	5.3	7.4	6.4	100
03/24/03 - 03/30/03	168	4.1	6.6	5.6	100
03/31/03 - 04/06/03	168	4.6	6.3	5.6	100
04/07/03 - 04/13/03	167	5.4	7.2	6.4	100
04/14/03 - 04/20/03	168	4.7	6.9	6.0	100
04/21/03 - 04/27/03	168	4.3	6.2	5.0	100
04/28/03 - 05/04/03	168	2.7	6.4	5.1	85
05/05/03 - 05/11/03	168	3.0	6.5	4.5	67
05/12/03 - 05/18/03	168	3.4	6.7	5.2	90
05/19/03 - 05/25/03	168	4.5	7.0	5.8	100
05/26/03 - 06/01/03	83	5.2	7.2	6.1	100
06/02/03 - 06/08/03	60	3.4	4.8	4.1	60
06/09/03 - 06/15/03	168	3.4	6.5	4.9	90
06/16/03 - 06/22/03	168	3.9	6.9	5.5	99
06/23/03 - 06/29/03	168	3.5	7.1	4.9	93
06/30/03 - 07/06/03	168	4.3	7.0	5.5	100
07/07/03 - 07/13/03	168	2.9	5.6	4.1	58
07/14/03 - 07/20/03	168	1.8	5.0	3.7	45
07/21/03 - 07/27/03	168	3.0	5.1	3.8	30
07/28/03 - 08/03/03	168	3.1	5.9	4.4	67
08/04/03 - 08/10/03	168	3.1	5.8	4.7	81
08/11/03 - 08/17/03	168	3.8	6.0	4.8	95
08/18/03 - 08/24/03	168	4.1	5.7	4.8	100
08/25/03 08/31/03	168	2.7	5.7	4.6	90
09/01/03 - 09/07/03	168	4.0	6.5	5.4	99
09/08/03 09/14/03	168	4.2	7.1	5.5	100
09/15/03 - 09/21/03	83	3.2	5.3	4.4	80
09/22/03 - 09/28/03			NO DATA		00
09/29/03 - 10/05/03	84	5.5	6.4	5.9	100
0/06/03 - 10/12/03	168	4.1	7.0	5.8	100
0/13/03 - 10/19/03	168	2.2	5.8	4.7	88
0/20/03 - 10/26/03	84	5.5	8.1	6.6	100
0/27/03 - 11/02/03	85	6.2	7.2	6.5	100
1/03/03 - 11/09/03	168	3.9	8.0	5.5	99
1/10/03 - 11/16/03	168	5.6	8.5	7.0	100
1/17/03 - 11/23/03	168	4.4	8.0	6.2	100
1/24/03 - 11/30/03	168	6.2	7.9	7.1	100
2/01/03 - 12/07/03	168	6.9	8.1	7.5	100
2/08/03 - 12/14/03	168	5.4	8.0	7.1	100
2/15/03 - 12/21/03	168	6.7	8.4	7.5	100
2/22/03 - 12/28/03	168	7.2	8.2	7.7	100
2/29/03 - 12/31/03	72	7.8	8.2	8.0	100

TABLE AI-19: WEEKLY DO SUMMARY STATISTICS AT ROMEOVILLE ROAD ON THE CHICAGO SANITARY AND SHIP CANAL DURING 2003

	Number of	_ DO (Concentration	Percent DO Values	
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	7.0	8.0	7.6	100
01/06/03 – 01/12/03	168	7.1	8.4	7.6	100
01/13/03 - 01/19/03	168	7.7	9.1	8.5	100
01/20/03 - 01/26/03	168	8.0	8.8	8.4	100
01/27/03 - 02/02/03	168	7.1	8.4	7.9	100
02/03/03 - 02/09/03	168	6.4	7.8	7.0	100
02/10/03 - 02/16/03	168	7.4	9.3	8.5	100
02/17/03 - 02/23/03	168	8.2	9.4	8.8	100
02/24/03 - 03/02/03	168	6.7	8.7	7.6	100
03/03/03 - 03/09/03	167	5.8	8.3	7.4	100
03/10/03 - 03/16/03	168	6.4	8.1	7.4 7.4	
03/17/03 - 03/23/03	168	5.4	6.9	6.1	100
03/24/03 - 03/30/03	168	4.3	6.4	5.3	100
03/31/03 - 04/06/03	168	4.5	6.6		100
04/07/03 - 04/13/03	167	5.1		5.5	100
04/14/03 - 04/20/03	58	5.4	6.7 6.3	6.0	100
04/21/03 - 04/27/03	110	4.2	5.3	5.9	100
04/28/03 - 05/04/03	168	3.2		4.7	100
05/05/03 - 05/11/03	168	2.8	7.4	5.1	94
05/12/03 - 05/18/03	168		8.2	5.0	73
		3.5	5.2	4.4	79
05/19/03 – 05/25/03 05/26/03 – 06/01/03	168	3.5	6.0	4.8	90
	168	3.4	5.8	4.7	71
06/02/03 - 06/08/03	168	2.5	5.0	4.0	43
06/09/03 - 06/15/03	168	3.1	5.5	4.1	53
06/16/03 - 06/22/03	168	3.6	6.0	4.7	91
06/23/03 - 06/29/03	168	3.6	5.8	4.5	88
06/30/03 - 07/06/03	168	3.2	5.7	4.4	79
07/07/03 - 07/13/03	168	2.3	5.5	3.4	11
07/14/03 - 07/20/03	168	1.6	4.3	3.1	12
07/21/03 - 07/27/03	168	2.6	4.7	3.6	15
07/28/03 - 08/03/03	168	2.9	4.8	3.9	48
08/04/03 - 08/10/03	168	2.6	4.9	4.0	55
08/11/03 - 08/17/03	168	3.8	4.9	4.4	96
08/18/03 - 08/24/03	167	4.4	5.5	4.9	100
08/25/03 - 08/31/03	168	3.7	5.6	4.8	94
09/01/03 - 09/07/03	58	3.7	4.6	4.2	74
09/08/03 - 09/14/03	110	3.8	6.2	5.0	95
09/15/03 - 09/21/03	167	3.3	5.3	4.4	66
09/22/03 09/28/03	168	4.5	5.9	5.4	100
9/29/03 - 10/05/03	168	4.1	6.0	5.4	100
0/06/03 - 10/12/03	168	5.2	6.3	5.8	100
0/13/03 - 10/19/03	168	3.6	5.8	4.9	90
0/20/03 - 10/26/03	168	4.6	5.5	5.0	100
0/27/03 - 11/02/03	168	4.6	6.1	5.5	100
1/03/03 - 11/09/03	167	3.4	6.5	4.8	80
1/10/03 - 11/16/03	168	2.8	6.9	6.2	99
1/17/03 – 11/23/03	168	3.7	6.5	5.4	91
1/24/03 - 11/30/03	168	5.5	8.1	7.1	100
2/01/03 – 12/07/03	168	6.8	8.0	7.5	100
2/08/03 – 12/14/03	168	5.6	7.9	7.1	100
2/15/03 – 12/21/03	168	7.3	8.1	7.6	100
2/22/03 - 12/28/03	168	6.9	8.0	7.5	100
2/29/03 - 12/31/03	72	7.4	8.1	7.8	100

TABLE AI-20: WEEKLY DO SUMMARY STATISTICS AT LOCKPORT POWERHOUSE ON THE CHICAGO SANITARY AND SHIP CANAL DURING 2003

	Number of	DO (Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 01/05/03	120	6.6	8.4	7.4	100
01/06/03 - 01/12/03	168	6.5	7.9	7.3	100
01/13/03 - 01/19/03	168	7.3	8.6	8.0	100
01/20/03 - 01/26/03	168	7.5	8.6	8.1	100
01/27/03 - 02/02/03	168	7.5	8.8	8.0	100
02/03/03 - 02/09/03	168	6.4	8.7	7.5	100
02/10/03 - 02/16/03	167	7.1	10.8	8.9	100
02/17/03 - 02/23/03	168	8.0	10.7	9.1	100
02/24/03 - 03/02/03	168	6.5	8.1	7.2	100
03/03/03 - 03/09/03	168	6.6	8.0	7.3	100
03/10/03 - 03/16/03	168	6.7	7.9	7.2	100
03/17/03 - 03/23/03	168	5.1	6.8	5.9	100
03/24/03 03/30/03	58	4.4	5.6	5.0	100
03/31/03 04/06/03	109	4.3	5.4	4.9	100
04/07/03 - 04/13/03	167	4.4	6.7	5.6	100
04/14/03 - 04/20/03	168	3.3	6.6	5.2	92
04/21/03 - 04/27/03	168	3.5	5.1	4.2	79
04/28/03 - 05/04/03	168	1.7	5.6	3.6	33
05/05/03 - 05/11/03	166	2.5	10.7	5.5	70
05/12/03 - 05/18/03	168	3.4	4.8	4.2	73
05/19/03 - 05/25/03	168	3.0	6.1	4.3	62
05/26/03 - 06/01/03	168	3.5	5.4	4.7	90
06/02/03 - 06/08/03	168	3.1	5.3	4.1	55
06/09/03 - 06/15/03	58	2.4	3.6	3.1	0
06/16/03 - 06/22/03	109	3.4	6.1	4.8	79
06/23/03 - 06/29/03	168	3.2	6.2	4.5	70
06/30/03 07/06/03	168	2.9	6.6	4.1	51
07/07/03 - 07/13/03	168	2.5	5.1	3.6	25
07/14/03 07/20/03	160	1.6	5.8	3.5	41
07/21/03 - 07/27/03	168	2.2	4.5	3.6	20
07/28/03 – 08/03/03	167	2.6	8.9	3.9	47
08/04/03 - 08/10/03	168	2.7	5.3	3.8	33
08/11/03 - 08/17/03	168	2.8	4.9	4.2	68
08/18/03 - 08/24/03	168	2.9	5.8	4.3	67
08/25/03 - 08/31/03	168	3.3	5.5	4.5	82
09/01/03 - 09/07/03	168	3.6	4.7	4.2	77
09/08/03 - 09/14/03	168	3.6	5.4	4.5	93
09/15/03 - 09/21/03	168	2.2	5.0	4.0	58
09/22/03 - 09/28/03	167	4.1	5.9	5.3	100
09/29/03 - 10/05/03	167	4.1	5.7	5.1	100
10/06/03 - 10/12/03	168	4.6	6.3	5.6	100
10/13/03 - 10/19/03	167	3.0	5.8	4.5	73
10/20/03 - 10/26/03	168	3.7	5.6	4.7	85
10/27/03 - 11/02/03	168	4.5	6.2	5.4	100
11/03/03 - 11/09/03	168	2.6	6.5	4.5	61
11/10/03 – 11/16/03	168	4.1	6.2	5.5	100
11/17/03 - 11/23/03	168	2.9	6.4	4.7	71
11/24/03 - 11/30/03	168	5.2	7.7	6.7	100
12/01/03 - 12/07/03	168	6.8	7.9	7.4	100
12/08/03 - 12/14/03	168	2.9	7.5	6.0	92
12/15/03 - 12/21/03	168	6.4	8.5	7.5	100
12/22/03 - 12/28/03	168	7.0	8.4	7.7 7.7	100
12/29/03 - 12/31/03	72	7.4	8.0	7.7	100
Land J. L. O. J. L. O	1 2	1.7	0.0		100

TABLE AI-21: WEEKLY DO SUMMARY STATISTICS AT JEFFERSON STREET ON THE DES PLAINES RIVER DURING 2003

Monitoring Dates	Number of	DO	Concentration	Percent DO Values	
	DO Values	Min	Max	Mean	Above Standard
01/01/03 – 01/05/03	120	8.7	10.4	9.5	100
01/06/03 - 01/12/03	168	8.0	10.4	9.1	100
01/13/03 - 01/19/03	168	9.1	10.8	9.8	100
01/20/03 - 01/26/03	168	9.4	11.7	10.3	100
01/27/03 - 02/02/03	168	7.4	11.2	8.7	100
02/03/03 - 02/09/03	168	6.4	10.5	7.8	100
02/10/03 - 02/16/03	168	8.1	11.3	9.7	
02/17/03 - 02/23/03	168	8.4	11.3	9.9	100
02/24/03 - 03/02/03	168	8.0	10.5	9.0	100
03/03/03 - 03/09/03	168	7.8	10.5		100
03/10/03 = 03/16/03	168	7.8 8.0	11.0	9.2	100
03/17/03 = 03/10/03	168			9.3	100
03/24/03 - 03/30/03	59	6.5	10.4	8.2	100
03/31/03 = 03/30/03 03/31/03 = 04/06/03		5.8	9.6	7.7	100
	109	5.6	8.7	7.5	100
04/07/03 - 04/13/03	167	6.7	10.0	7.9	100
04/14/03 - 04/20/03	168	5.4	11.6	8.1	100
04/21/03 - 04/27/03	168	5.0	9.1	6.8	100
04/28/03 - 05/04/03	167	4.5	8.8	6.8	100
05/05/03 – 05/11/03	168	5.2	9.7	8.0	100
05/12/03 - 05/18/03	60	6.2	8.6	7.3	100
05/19/03 05/25/03	109	3.9	10.0	6.4	99
05/26/03 - 06/01/03	168	4.0	9.7	5.7	99
06/02/03 - 06/08/03	168	3.4	7.4	4.9	87
06/09/03 - 06/15/03	168	3.6	7.8	4.8	83
06/16/03 - 06/22/03	168	3.4	8.6	5.8	95
06/23/03 - 06/29/03	168	3.4	7.4	5.1	92
06/30/03 - 07/06/03	168	2.9	6.9	4.4	64
07/07/03 - 07/13/03	168	2.5	7.3	4.8	73
07/14/03 - 07/20/03	168	3.3	7.6	5.4	90
77/21/03 - 07/27/03	168	4.0	6.9	5.5	
77/28/03 - 08/03/03	168	4.0	7.4	5.8	100
8/04/03 - 08/10/03	59	3.8	6.5	5.1	100
8/11/03 - 08/17/03	37	3.6	NO DATA	3.1	97
08/18/03 = 08/24/03	108	. 27		4.0	•
8/25/03 – 08/31/03	58	3.7	6.4	4.9	91
9/01/03 - 09/07/03	109	3.8	5.3	4.5	78
		4.3	5.4	4.8	100
9/08/03 - 09/14/03	168	4.1	6.2	5.1	100
9/15/03 - 09/21/03	168	3.9	6.1	4.9	98
9/22/03 - 09/28/03	168	4.6	6.8	5.7	100
9/29/03 - 10/05/03	167	5.0	7.8	6.2	100
0/06/03 - 10/12/03	168	6.0	8.4	6.8	100
0/13/03 - 10/19/03	168	4.7	8.0	6.1	100
0/20/03 - 10/26/03	167	5.2	7.8	6.1	100
0/27/03 - 11/02/03	168	5.6	8.0	6.7	100
1/03/03 – 11/09/03	168	5.0	9.2	7.3	100
1/10/03 – 11/16/03	167	6.4	10.5	7.5	100
1/17/03 - 11/23/03	168	5.8	9.4	7.6	100
1/24/03 - 11/30/03	168	8.0	10.3	9.2	100
2/01/03 - 12/07/03	168	7.9	10.7	9.3	100
2/08/03 - 12/14/03	168	7.6	10.5	9.2	100
2/15/03 - 12/21/03	168	9.4	11.5	10.4	100
2/22/03 - 12/28/03	168	9.0	11.5	10.2	100
2/29/03 - 12/31/03	72	9.0	11.2	9.7	100

TABLE AI-22: WEEKLY DO SUMMARY STATISTICS AT 130th STREET ON THE CALUMET RIVER DURING 2003

	Number of	DO	Concentration	Percent DO Values	
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	13.5	13.8	13.6	100
01/06/03 - 01/12/03	168	13.6	14.7	14.1	100
01/13/03 - 01/19/03	168	14.5	15.2	14.9	100
01/20/03 - 01/26/03	168	14.8	15.5	15.2	100
01/27/03 - 02/02/03	168	15.0	15.9	15.5	100
02/03/03 - 02/09/03	168	15.0	15.6	15.4	100
02/10/03 - 02/16/03	168	15.2	15.7	15.5	100
02/17/03 - 02/23/03	168	14.7	15.4	15.2	100
02/24/03 - 03/02/03	168	14.7	15.2	15.1	100
03/03/03 - 03/09/03	108	14.8	15.2	15.1	100
03/10/03 - 03/16/03			NO DATA		
03/17/03 - 03/23/03	109	10.9	11.5	11.2	100
03/24/03 - 03/30/03	168	11.0	12.5	11.8	100
03/31/03 04/06/03	168	10.6	12.3	11.5	100
04/07/03 - 04/13/03	167	9.9	11.0	10.5	100
04/14/03 - 04/20/03	168	9.4	10.6	10.1	100
04/21/03 - 04/27/03	168	9.1	10.6	9.8	100
04/28/03 - 05/04/03	168	8.9	11.3	10.0	100
05/05/03 – 05/11/03	168	8.2	10.4	9.2	100
05/12/03 - 05/18/03	59	7.8	9.1	8.5	100
05/19/03 – 05/25/03	107	7.1	9.3	8.1	100
05/26/03 – 06/01/03	168	5.8	9.6	7.4	100
06/02/03 – 06/08/03	168	6.0	1.8	7.0	100
06/09/03 - 06/15/03	60	6.2	8.0	7.0	100
06/16/03 - 06/22/03	107	6.3	8.6	7.5	100
06/23/03 - 06/29/03	168	5.5	8.3	6.8	100
06/30/03 - 07/06/03	168	4.8	7.8	6.2	98
07/07/03 - 07/13/03	60	4.6	6.1	5.3	77
07/14/03 - 07/20/03	107	4.4	7.5	5.7	93
07/21/03 - 07/27/03	61	4.1	6.8	5.2	66
07/28/03 - 08/03/03	106	5.5	7.9	6.5	100
08/04/03 - 08/10/03	168	5.3	9.0	7.2	100
08/11/03 - 08/17/03	168	5.5	8.7	6.9	100
08/18/03 - 08/24/03	59	5.7	8.4	6.7	100
08/25/03 - 08/31/03	108	5.8	7.6	6.4	100
09/01/03 - 09/07/03	168	5.5	7.0	6.1	100
09/08/03 - 09/14/03	168	5.7	7.5	6.4	100
09/15/03 - 09/21/03	168	6.2	8.4	7.0	100
09/22/03 - 09/28/03	168	7.0	8.2	7.6	100
09/29/03 - 10/05/03	168	7.5	9.1	8.3	100
10/06/03 - 10/12/03	168	8.2	9.8	8.9	100
10/13/03 - 10/19/03	168	8.3	9.4	8.7	100
10/20/03 10/26/03	168	8.1	9.0	8.5	100
10/27/03 – 11/02/03	168	8.5	9.7	9.1	100
11/03/03 - 11/09/03	168	8.5	9.6	9.1	100
11/10/03 – 11/16/03	168	8.8	10.6	9.8	100
11/17/03 – 11/23/03	167	9.4	10.4	9.8	100
11/24/03 – 11/30/03	168	9.4	10.4	9.9	100
12/01/03 - 12/07/03	167	10.2	10.9	10.5	100
12/08/03 - 12/14/03	168	10.0	11.4	10.8	. 100
12/15/03 - 12/21/03	168	11.0	12.9	12.1	100
12/22/03 - 12/28/03	168	12.5	13.1	12.9	100
12/29/03 – 12/31/03	72	12.7	13.0	12.9	100

TABLE AI-23: WEEKLY DO SUMMARY STATISTICS AT TORRENCE AVENUE ON THE GRAND CALUMET RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Value
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	13.0	16.5	14.1	100
01/06/03 - 01/12/03	60	11.8	15.2	14.0	100
01/13/03 - 01/19/03			NO DATA		
01/20/03 - 01/26/03			NO DATA		
01/27/03 - 02/02/03			NO DATA		
02/03/03 - 02/09/03			NO DATA		
02/10/03 - 02/16/03			NO DATA		•
02/17/03 - 02/23/03			NO DATA		
02/24/03 - 03/02/03			NO DATA		
03/03/03 - 03/09/03			NO DATA		
03/10/03 - 03/16/03			NO DATA		· ·
03/17/03 - 03/23/03	109	9.9	13.5	11.6	100
03/24/03 - 03/30/03	168	8.2	12.5	10.7	100
03/31/03 - 04/06/03	168	1.7	12.3	8.0	89
04/07/03 - 04/13/03	167	4.1	12.5	8.3	100
04/14/03 - 04/20/03	168	2.1	11.7	7.3	85
04/21/03 - 04/27/03	168	3.4	11.5	7.6	96
04/28/03 - 05/04/03	168	0.2	11.4	5.3	67
05/05/03 - 05/11/03	168	0.0	9.6	2.8	22
05/12/03 - 05/18/03	168	0.1	10.2	3.4	43
05/19/03 - 05/25/03	168	0.1	9.5	4.6	61
05/26/03 - 06/01/03	168	0.8	9.5	4.8	62
06/02/03 - 06/08/03	168	0.8	11.1	5.9	79
06/09/03 - 06/15/03	168	0.3	13.4	6.8	82
06/16/03 - 06/22/03	60	1.4	14.0	7.8	93
06/23/03 06/29/03	108	1.8	11.1	6.2	89
06/30/03 07/06/03	168	0.1	11.7	5.4	69
07/07/03 - 07/13/03	60	0.2	7.5	2.3	13
07/14/03 - 07/20/03	108	0.0	5.5	2.1	12
07/21/03 – 07/27/03	168	0.0	10.0	4.6	58
07/28/03 – 08/03/03	168	0.8	8.6	4.0	48
08/04/03 - 08/10/03	61	0.0	9.9	2.1	21
08/11/03 - 08/17/03	108	2.1	10.7	4.8	54
08/18/03 - 08/24/03	168	1.0	18.2	7.4	73
08/25/03 - 08/31/03	124	0.4	16.2	6.1	72
09/01/03 - 09/07/03	107	1.7	8.6	4.1	49
09/08/03 - 09/14/03	166	1.9	17.2	7.7	90
09/15/03 - 09/21/03	168	2.8	9.4	6.0	90
09/22/03 - 09/28/03	168	3.3	8.4	6.5	98
09/29/03 - 10/05/03	168	4.1	8.8	7.2	100
10/06/03 - 10/12/03	168	5.0	12.2	8.3	100
10/13/03 - 10/19/03	59	0.1	13.8	8.2	76
10/20/03 - 10/26/03	109	5.2	12.7	8.3	100
10/27/03 - 11/02/03	167	3.0	9.8	7.4	96
11/03/03 - 11/09/03	168	0.0	8.5	4.2	47
11/10/03 - 11/16/03	168	4.3	10.8	8.4	100
11/17/03 – 11/23/03	168	0.0	9.8	3.7	39
11/24/03 - 11/30/03	168	1.9	9.5	6.5	94
12/01/03 - 12/07/03	168	3.2	10.7	7.8	96
12/08/03 - 12/14/03	168	0.5	10.4	6.4	86
12/15/03 12/21/03	168	4.7	11.9	9.0	100
12/22/03 - 12/28/03	168	5.0	11.7	9.5	100
12/29/03 - 12/31/03	. 72	9.6	12.5	11.4	100

TABLE AI-24: WEEKLY DO SUMMARY STATISTICS AT CONRAIL RAILROAD ON THE LITTLE CALUMET RIVER DURING 2003

	Number of	DO	Concentration (mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	12.8	13.7	13.3	100
01/06/03 - 01/12/03	59	13.2	13.8	13.5	100
01/13/03 - 01/19/03			NO DATA		
01/20/03 - 01/26/03			NO DATA		
01/27/03 - 02/02/03			NO DATA		
02/03/03 - 02/09/03			NO DATA		
02/10/03 - 02/16/03			NO DATA		
02/17/03 - 02/23/03			NO DATA		
02/24/03 - 03/02/03		i	NO DATA		
03/03/03 – 03/09/03			NO DATA		
03/10/03 - 03/16/03			NO DATA		
03/17/03 – 03/23/03	109	10.7	12.4	11.7	100
03/24/03 - 03/30/03	168	10.5	11.6	10.9	100
03/31/03 – 04/06/03	168	9.6	12.6	11.3	100
04/07/03 - 04/13/03	167	9.7	12.8	11.0	100
04/14/03 – 04/20/03	168	9.6	13.8	11.7	100
04/21/03 - 04/27/03	168	8.9	12.7	10.5	100
04/28/03 – 05/04/03	168	7.9	13.4	9.9	100
05/05/03 - 05/11/03	168	5.4	9.2	7.6	100
05/12/03 - 05/18/03	168	6.5	8.8	7.4	100
05/19/03 – 05/25/03	168	5.5	8.2	7.1	100
05/26/03 – 06/01/03	168	5.1	9.1	6.9	100
06/02/03 – 06/08/03	168	4.6	8.1	6.1	100
06/09/03 – 06/15/03	168	5.5	8.1	6.7	100
06/16/03 – 06/22/03	168	4.9	9.4	6.8	100
06/23/03 - 06/29/03	168	5.4	8.5	7.0	100
06/30/03 – 07/06/03	168	3.5	7.9	5.8	96
07/07/03 – 07/13/03	168	2.8	6.7	4.6	77
07/14/03 - 07/20/03	168	2.4	7.9	4.9	74
07/21/03 – 07/27/03	168	3.2	7.3	5.3	96
07/28/03 – 08/03/03	168	3.5	11.2	6.4	90
08/04/03 - 08/10/03	168	4.9	10.0	6.9	100
08/11/03 – 08/17/03	168	5.4	8.8	6.7	100
08/18/03 - 08/24/03	168	6.0	8.4	7.0	100
08/25/03 - 08/31/03	168	5.7	8.9	6.9	100
09/01/03 – 09/07/03	168	5.6	7.6	6.4	100
09/08/03 – 09/14/03	168	5.9	7.9	6.7	100
09/15/03 – 09/21/03	168	6.4	8.3	7.3	100
09/22/03 - 09/28/03	168	7.5	8.4	7.8	100
09/29/03 10/05/03	61	7.8	8.4	8.0	100
10/06/03 10/12/03	81	9.1	11.5	10.2	100
10/13/03 – 10/19/03	168	8.5	11.9	9.5	100
10/20/03 – 10/26/03	168	8.1	9.4	8.7	100
10/27/03 - 11/02/03	168	8.5	9.8	9.2	100
1/03/03 – 11/09/03	168	5.8	8.9	7.4	100
1/10/03 - 11/16/03	168	7.6	11.1	9.7	100
11/17/03 – 11/23/03	168	4.5	10.6	7.0	100
1/24/03 – 11/30/03	168	6.3	9.6	7.6	100
2/01/03 – 12/07/03	168	9.6	11.4	10.7	100
2/08/03 - 12/14/03	168	9.8	11.5	10.5	100
2/15/03 - 12/21/03	168	10.0	12.1	11.4	100
12/22/03 - 12/28/03	168	11.7	12.3	12.1	100
12/29/03 - 12/31/03	72	12.0	12.7	12.4	100

TABLE AI-25: WEEKLY DO SUMMARY STATISTICS AT C&W INDIANA RAILROAD ON THE LITTLE CALUMET RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values Above Standard
Monitoring Dates	DO Values	Min	Max	Mean	
01/01/03 - 01/05/03	120	12.0	14.4	13.2	100
01/06/03 - 01/12/03	168	12.8	14.0	13.3	100
01/13/03 - 01/19/03	168	12.6	14.4	13.6	100
01/20/03 - 01/26/03	167	12.6	14.7	13.8	100
01/27/03 - 02/02/03	168	11.6	15.0	12.8	100
02/03/03 - 02/09/03	168	11.4	13.4	12.7	100
02/10/03 - 02/16/03	168	11.2	14.2	12.3	100
02/17/03 - 02/23/03	168	12.7	14.7	13.8	100
02/24/03 - 03/02/03	168	13.5	15.1	14.3	100
03/03/03 - 03/09/03	168	12.4	15.2	14.1	100
03/10/03 - 03/16/03	168	11.9	16.0	13.5	100
03/17/03 - 03/23/03	168	11.2	13.1	12.4	100
03/24/03 - 03/30/03	168	10.5	12.8	11.7	100
03/31/03 - 04/06/03	168	9.9	11.9	11.0	100
04/07/03 - 04/13/03	167	9.5	11.1	10.5	100
04/14/03 - 04/20/03	168	8.4	11.0	9.9	100
04/21/03 - 04/27/03	168	7.4	11.2	9.0	100
04/28/03 - 05/04/03	168	7.5	14.6	11.0	100
05/05/03 - 05/11/03	168	7.6	13.4	10.5	100
05/12/03 - 05/18/03	168	5.7	13.1	8.5	100
05/19/03 - 05/25/03	168	5.4	11.0	7.4	100
05/26/03 - 06/01/03	168	4.9	12.2	8.3	100
06/02/03 - 06/08/03	168	3.1	11.5	7.4	98
06/09/03 – 06/15/03	168	3.5	8.7	5.6	97
06/16/03 – 06/22/03	168	1.5	9.9	5.5	89
06/23/03 - 06/29/03	168	2.8	9.9	5.4	85
06/30/03 - 07/06/03	168	1.1	7.5	3.8	41
07/07/03 - 07/13/03	111	0.3	4.6	1.2	. 1
07/14/03 - 07/20/03	108	3.1	10.1	5.4	. 91
07/21/03 - 07/27/03	168	3.0	9.2	5.5	82
07/28/03 - 08/03/03	168	3.5	8.9	5.8	98
08/04/03 - 08/10/03	144	3.7	8.6	5.8	99
08/11/03 - 08/17/03	168	3.9	10.1	7.0	99
08/18/03 - 08/24/03	168	6.5	10.5	8.0	100
08/25/03 - 08/31/03	168	5.1	10.6	7.3	100
09/01/03 - 09/07/03	168	4.3	9.4	6.5	100
09/08/03 - 09/14/03	168	6.1	9.8	7.8	100
09/15/03 - 09/21/03	168	5.8	10.3	8.0	100
09/22/03 - 09/28/03	168	7.5	9.2	8.2	100
09/29/03 - 10/05/03	168	7.7	10.0	8.6	100
10/06/03 - 10/12/03	168	9.3	14.1	11.7	100
10/13/03 - 10/19/03	168	8.4	11.5	9.9	100
10/20/03 - 10/26/03	168	8.5	11.2	9.7	100
10/27/03 - 11/02/03	168	8.1	10.4	9.3	100
11/03/03 - 11/09/03	168	8.3	11.6	9.4	100
11/10/03 - 11/16/03	168	9.1	12.5	11.0	100
11/17/03 - 11/23/03	168	8.5	12.6	10.1	100
11/24/03 - 11/30/03	168	9.2	10.8	10.1	100
12/01/03 - 12/07/03	168	10.2	11.5	10.9	100
12/08/03 - 12/14/03	168	10.4	11.4	10.8	100
12/15/03 - 12/21/03	168	10.8	13.3	11.8	100
12/22/03 - 12/28/03	168	11.2	12.2	11.7	100
12/29/03 – 12/31/03	72	11.4	12.3	11.9	100

TABLE AI-26: WEEKLY DO SUMMARY STATISTICS AT HALSTED STREET ON THE LITTLE CALUMET RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	7.5	8.8	8.2	100
01/06/03 - 01/12/03	168	7.8	8.7	8.3	100
01/13/03 - 01/19/03	168	8.0	8.8	8.4	100
01/20/03 - 01/26/03	168	8.0	8.7	8.4	100
01/27/03 - 02/02/03	167	7.6	9.1	8.5	100
02/03/03 - 02/09/03	168	7.5	8.8	8.1	100
02/10/03 - 02/16/03	168	8.2	9.5	8.7	100
02/17/03 - 02/23/03	168	7.4	9.6	8.4	100
02/24/03 - 03/02/03	168	7.0	8.7	8.0	100
03/03/03 03/09/03	168	7.3	8.4	7.7	100
03/10/03 - 03/16/03	168	7.8	10.3	9.1	100
03/17/03 - 03/23/03	168	7.2	11.2	9.0	100
03/24/03 - 03/30/03	168	6.7	9.2	7.8	100
03/31/03 – 04/06/03	168	5.5	8.4	7.1	100
04/07/03 – 04/13/03	60	6.5	7.7	7.1	100
04/14/03 - 04/20/03	106	5.5	7.5	6.8	100
04/21/03 - 04/27/03	168	4.9	8.1	6.4	100
04/28/03 – 05/04/03	168	4.6	10.3	7.6	100
05/05/03 - 05/11/03	168	4.7	9.2	7.1	100
05/12/03 – 05/18/03	168	5.4	8.8	7.2	100
05/19/03 – 05/25/03	168	4.8	8.9	7.0	100
05/26/03 - 06/01/03	168	3.5	10.0	6.6	99
06/02/03 06/08/03	168	4.3	9.1	7.0	100
06/09/03 06/15/03	168	4.2	8.8	6.3	100
06/16/03 – 06/22/03	168	4.0	10.2	6.7	100
06/23/03 06/29/03	168	2.9	10.9	6.2	94
06/30/03 - 07/06/03	169	2.1	10.9	6.0	91
07/07/03 – 07/13/03	167	0.7	7.2	4.4	70
7/14/03 – 07/20/03	168	0.6	8.1	4.9	77
07/21/03 - 07/27/03	168	1.6	7.2	4.7	71
07/28/03 08/03/03	168	1.1	8.9	5.7	97
08/04/03 – 08/10/03	168	4.4	11.5	8.2	100
08/11/03 – 08/17/03	168	5.8	12.0	8.5	100
08/18/03 - 08/24/03	168	6.2	11.1	7.8	100
8/25/03 - 08/31/03	168	5.6	10.2	7.3	100
9/01/03 - 09/07/03	168	4.6	7.7	6.1	100
9/08/03 - 09/14/03	167	5.6	9.8	7.2	100
9/15/03 - 09/21/03	168	4.9	9.7	7.5	100
9/22/03 – 09/28/03	168	6.5	8.6	7.5	100
9/29/03 10/05/03	168	6.4	8.9	7.4	100
0/06/03 - 10/12/03	83	6.2	7.3	6.8	100
0/13/03 – 10/19/03	107	6.4	7.9	6.9	100
0/20/03 10/26/03	168	6.1	9.0	7.6	100
0/27/03 – 11/02/03	168	6.2	8.7	7.4	100
1/03/03 - 11/09/03	167	4.4	7.1	6.2	100
1/10/03 - 11/16/03	168	5.4	9.0	6.7	100
1/17/03 - 11/23/03	168	4.4	8.5	6.6	100
1/24/03 - 11/30/03	37	7.1	7.8	7.4	100
2/01/03 – 12/07/03	108	8.1	9.4	8.9	100
2/08/03 - 12/14/03	168	6.8	9.4	8.0	100
2/15/03 - 12/21/03	168	6.8	7.8	7.3	100
2/22/03 - 12/28/03	168	6.5	7.9	7.1	100
2/29/03 - 12/31/03	72	6.6	7.8	7.1	100

TABLE AI-27: WEEKLY DO SUMMARY STATISTICS AT ASHLAND AVENUE ON THE LITTLE CALUMET RIVER DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Value
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 – 01/05/03	120	8.5	12.6	11.0	100
01/06/03 - 01/12/03	168	10.3	14.7	11.8	100
01/13/03 - 01/19/03	168	12.2	15.2	13.4	100
01/20/03 - 01/26/03	168	11.5	15.1	12.9	100
01/27/03 - 02/02/03	168	9.9	14.6	11.6	100
02/03/03 - 02/09/03	168	9.7	17.9	13.1	100
02/10/03 - 02/16/03	168	15.2	19.3	16.7	100
02/17/03 - 02/23/03	168	12.2	17.8	15.2	100
02/24/03 - 03/02/03	168	13.1	20.6	16.7	100
03/03/03 - 03/09/03	168	10.8	17.5	14.9	100
03/10/03 - 03/16/03	168	9.8	13.6	11.0	100
3/17/03 - 03/23/03	168	6.9	11.1	8.9	100
3/24/03 - 03/30/03	168	7.2	11.5	8.7	100
03/31/03 - 04/06/03	168	6.3	11.4	9.1	100
04/07/03 - 04/13/03	167	7.3	11.2	9.7	100
)4/14/03 - 04/20/03	164	5.4	11.2	8.3	100
04/21/03 - 04/27/03	168	2.6	10.4	7.3	80
04/28/03 - 05/04/03	168	3.8	8.8	7.0	99
05/05/03 - 05/11/03	60	6.5	8.7	7. 0 7.4	
05/12/03 - 05/18/03	109	4.7	6.9	6.2	100 98
05/19/03 - 05/25/03	168	2.9	5.5	4.3	
05/26/03 - 06/01/03	58	2.4	5.0	3.4	11
06/02/03 - 06/08/03	83	2.6	5.2	4.0	2
06/09/03 - 06/15/03	168	1.7	4.9	2.9	8
06/16/03 - 06/22/03	168	1.4	6.1	3.4	0
06/23/03 - 06/29/03	167	2.6	11.1	4.7	14 32
06/30/03 – 07/06/03	168	2.1	6.4	3.8	12
07/07/03 - 07/13/03	168	2.8	4.8	4.1	0
07/14/03 - 07/20/03	168	2.8	5.8	4.3	5
7/21/03 - 07/27/03	168	3.8	6.2	4.6	8
7/28/03 – 08/03/03	168	3.5	5.3	4.7	22
8/04/03 - 08/10/03	63	3.8	5.2	4.8	38
08/11/03 - 08/17/03	108	2.0	4.5	3.0	0
08/18/03 - 08/24/03	168	1.9	5.4	3.4	4
8/25/03 - 08/31/03	168	1.5	5.7	3.1	6
9/01/03 - 09/07/03	168	3.3	5.6	4.6	23
9/08/03 - 09/14/03	168	2.3	5.6	4.1	10
9/15/03 - 09/21/03	168	2.8	6.5	4.1	16
9/22/03 - 09/28/03	168	2.3	6.4	4.9	47
9/29/03 - 10/05/03	168	4.9	9.0	7.1	98
0/06/03 - 10/12/03	168	5.2	8.7	6.6	100
0/13/03 - 10/19/03	168	3.4	6.9	5.3	66
0/20/03 - 10/26/03	167	4.0	6.5	5.3	61
0/27/03 - 11/02/03	168	4.1	8.3	6.2	88
1/03/03 - 11/09/03	168	5.4	8.4	6.8	
1/10/03 - 11/16/03	168	6.7	8.8	7.7	100 100
1/17/03 – 11/23/03	168	5.8	8.3	7.7	100
1/24/03 - 11/30/03	168	7.5	10.5	9.4	100
2/01/03 – 12/07/03	168	1.01	11.5	10.8	
2/08/03 - 12/14/03	168	7.7	11.2	9.6	100
2/15/03 – 12/21/03	168	7.7	12.0	10.6	100 100
2/22/03 - 12/28/03	168	10.0	11.9	10.0	
2/29/03 - 12/31/03	72	9.4	11.2	9.9	100 100

TABLE AI-28: WEEKLY DO SUMMARY STATISTICS AT DIVISION STREET ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	_ DO (Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	7.0	7.7	7.4	100
01/06/03 - 01/12/03	168	7.4	9.5	8.7	100
01/13/03 - 01/19/03	168	8.8	9.6	9.2	100
01/20/03 - 01/26/03	168	8.8	10.0	9.5	100
01/27/03 - 02/02/03	168	8.5	10.0	9.3	100
02/03/03 - 02/09/03	168	8.0	9.4	8.7	100
02/10/03 - 02/16/03	168	9.0	10.0	9.5	100
02/17/03 - 02/23/03	168	8.3	9.5	9.0	100
02/24/03 - 03/02/03	168	8.1	9.3	8.8	
03/03/03 - 03/09/03	168	8.1	9.6	8.7	100
	168				100
03/10/03 - 03/16/03		8.4	1.01	9.2	100
03/17/03 - 03/23/03	168	7.3	8.9	7.9	100
03/24/03 - 03/30/03	168	6.9	8.4	7.5	100
03/31/03 – 04/06/03	168	6.3	8.3	7.2	100
04/07/03 - 04/13/03	167	7.1	9.1	8.0	100
04/14/03 - 04/20/03	168	6.2	8.1	7.1	100
04/21/03 - 04/27/03	168	5.0	7.3	6.3	100
04/28/03 - 05/04/03	168	5.2	8.6	7.1	100
05/05/03 05/11/03	168	5.0	8.7	6.3	100
05/12/03 - 05/18/03	167	5.3	6.9	6.0	100
05/19/03 - 05/25/03	168	3.8	6.6	5.6	100
05/26/03 - 06/01/03	168	4.2	7.4	5.5	100
06/02/03 - 06/08/03	168	4.7	8.5	6.3	100
06/09/03 – 06/15/03	168	4.9	9.9	6.1	100
06/16/03 - 06/22/03	168	5.0	8.6	6.4	
06/23/03 - 06/29/03	168	5.5	11.6		100
06/30/03 = 07/06/03	168	3.1	9.9	7.5	100
07/07/03 = 07/13/03	168			6.5	100
		2.2	5.9	4.3	93
07/14/03 ~ 07/20/03	168	3.2	7.3	4.8	100
07/21/03 - 07/27/03	60	3.6	5.3	4.1	100
07/28/03 – 08/03/03	109	4.0	6.9	5.1	100
08/04/03 - 08/10/03	168	3.1	7.2	5.3	100
08/11/03 - 08/17/03	168	3.9	7.1	5.6	100
08/18/03 - 08/24/03	168	5.1	8.7	6.4	100
08/25/03 – 08/31/03	168	4.3	8.0	6.0	100
09/01/03 - 09/07/03	168	4.3	6.4	5.4	100
09/08/03 - 09/14/03	168	5.2	7.4	6.3	100
09/15/03 - 09/21/03	168	4.9	8.4	6.8	100
09/22/03 - 09/28/03	168	5.6	8.2	6.5	100
09/29/03 - 10/05/03	60	6.5	7.4	7.1	100
10/06/03 - 10/12/03	84	6.2	7.3	6.8	100
10/13/03 - 10/19/03	168	4.1	8.3	6.3	100
10/20/03 - 10/26/03	168	5.7	8.4	7.3	100
10/27/03 - 11/02/03	168	5.9	7.8	6.8	
11/03/03 - 11/09/03	168				100
11/10/03 = 11/16/03	168	4.3 5.7	6.6 7.5	5.8	100
		5.7 5.2	7.5	6.6	100
11/17/03 – 11/23/03	168	5.2	7.9	6.8	100
11/24/03 - 11/30/03	168	6.5	8.6	7.7	100
12/01/03 - 12/07/03	168	7.4	8.8	8.1	100
12/08/03 - 12/14/03	168	6.8	8.7	7.8	100
12/15/03 – 12/21/03	168	7.4	8.9	8.0	100
12/22/03 - 12/28/03	168	7.0	8.3	7.6	100
12/29/03 - 12/31/03	72	7.1	7.9	7.6	100

TABLE AI-29: WEEKLY DO SUMMARY STATISTICS AT KEDZIE AVENUE ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	7.8	8.9	8.3	100
01/06/03 - 01/12/03 01/13/03 - 01/19/03	58	8.2	8.9 NO DATA	8.6	100
01/20/03 - 01/26/03	109	9.2	9.7	9.3	100
01/27/03 - 02/02/03	168	8.0	9.4	8.7	100
02/03/03 - 02/09/03	167	7.8	10.4	8.8	100
02/10/03 - 02/16/03	168	10.3	11.4	10.9	100
02/17/03 - 02/23/03	168	8.0	11.0	9.6	100
02/24/03 - 03/02/03	168	7.9	9.2	8.4	100
03/03/03 - 03/09/03	168	7.6	, 9.8	8.6	100
03/10/03 - 03/16/03	168	8.3	10.2	9.1	100
03/17/03 - 03/23/03	168	7.4	9.1	8.1	100
03/24/03 - 03/30/03	168	7.1	9.3	7.8	100
03/31/03 - 04/06/03	168	6.8	9.6	7.8 7.8	100
04/07/03 - 04/13/03	167	7.4	9.1	8.1	001
04/14/03 - 04/20/03	168	6.6	9.5	7.6	100
04/21/03 - 04/27/03	168	6.4	9.3	7.5	100
04/28/03 - 05/04/03	168	6.6	9.8	7.7 7.7	100
05/05/03 - 05/11/03	168	5.7	8.5	6.8	100
05/12/03 - 05/18/03	168	6.2	7.6	6.8	100
05/19/03 - 05/25/03	168	4.8	7.7	6.3	100
05/26/03 - 06/01/03	168	4.9	9.1	6.7	
06/02/03 - 06/08/03	168	5.6	9.0	6.9	100 100
06/09/03 - 06/15/03	168	5.5	9.6	6.9	100
06/16/03 – 06/22/03	168	5.1	10.0	7.5	100
06/23/03 – 06/29/03	168	7.0	14.4	9.0	100
06/30/03 - 07/06/03	168	3.7	12.3	7.6	100
07/07/03 - 07/13/03	168	2.2	6.4	5.0	96
07/14/03 - 07/20/03	168	3.7	8.2	5.4	100
07/21/03 - 07/27/03	168	4.3	6.4	5.2	100
07/28/03 - 08/03/03	168	3.7	7.4	5.3	100
08/04/03 - 08/10/03	168	4.5	7.2	6.0	100
08/11/03 - 08/17/03	168	4.7	8.2	6.4	100
08/18/03 - 08/24/03	167	6.3	10.2	7.6	
08/25/03 - 08/31/03	169	6.1	9.9	7.9	100 100
09/01/03 - 09/07/03	168	5.6	7.9	6.4	100
09/08/03 - 09/14/03	168	6.1	8.9	7.4	100
09/15/03 - 09/21/03	168	6.1	9.7	7.5	
09/22/03 - 09/28/03	168	5.9	8.4	6.7	100 100
09/29/03 - 10/05/03	60	6.5	7.9	7.1	
10/06/03 - 10/12/03	84	6.5	8.1	7.2	100 100
10/13/03 – 10/19/03	168	3.9	7.6	6.2	
10/20/03 - 10/26/03	60	6.6	7.5	6.9	100
10/27/03 - 11/02/03	00	0.0	NO DATA	0.7	100
11/03/03 - 11/09/03	107	4.3	7.0	5.9	100
11/10/03 - 11/16/03	168	5.9	7.8	6.6	100
11/17/03 - 11/23/03	168	5.2	8.0	6.8	100
11/24/03 - 11/30/03	168	6.6	8.4	7.6	100
12/01/03 - 12/07/03	168	7.5	8.9	8.3	100
12/08/03 - 12/14/03	168	7.2	8.6		100
12/15/03 - 12/21/03	168	7.2 7.8		7.9	100
12/22/03 - 12/28/03	128		9.0 8.6	8.4	100
12/29/03 - 12/31/03	120	7.6	8.6	8.2	100
LUI C 141 - CO 1/4 141			NO DATA		

TABLE AI-30: WEEKLY DO SUMMARY STATISTICS AT CICERO AVENUE ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	DO (Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	8.1	8.9	8.5	100
01/06/03 - 01/12/03	168	8.4	10.1	9.2	100
01/13/03 - 01/19/03	168	9.2	9.8	9.5	100
01/20/03 - 01/26/03	168	8.9	9.5	9.1	100
01/27/03 - 02/02/03	167	8.2	9.1	8.7	100
02/03/03 - 02/09/03	168	8.0	8.9	8.4	100
02/10/03 - 02/16/03	168	8.9	10.4	9.8	100
02/17/03 - 02/23/03	168	8.7	9.6	9.2	100
02/24/03 - 03/02/03	168	8.2	9.0	8.6	100
03/03/03 - 03/09/03	168	8.4	11.9	10.1	100
03/10/03 - 03/16/03	168	8.2	12.5	9.9	100
03/17/03 - 03/23/03	168	7.1	8.7	7.9	100
03/24/03 - 03/30/03	167	7.0	9.0	7.9	100
03/31/03 - 04/06/03	168	6.7	8.6	7.7	100
04/07/03 - 04/13/03	167	7.2	8.5	8.0	100
04/14/03 - 04/20/03	168	6.2	8.0	7.3	100
04/21/03 - 04/27/03	168	6.3	8.9	7.4	100
04/28/03 - 05/04/03	168	5.9	9.5	7.7	100
05/05/03 - 05/11/03	168	5.2	8.3	6.5	100
05/12/03 - 05/18/03	168	5.2	6.8	6.0	100
05/19/03 - 05/25/03	168	4.3	7.3	5.8	100
05/26/03 - 06/01/03	168	4.5	8.8	6.4	100
06/02/03 - 06/08/03	61	4.6	7.0	6.2	100
06/09/03 - 06/15/03	109	4.7	8.0	6.3	100
06/16/03 - 06/22/03	168	4.9	9.0	6.6	100
06/23/03 – 06/29/03	168	5.4	12.2	8.5	100
06/30/03 - 07/06/03	168	2.5	12.9	7.8	99
07/07/03 – 07/13/03	168	2.7	5.9	4.4	99
07/14/03 - 07/20/03	168	3.2	7.7	4.8	100
07/21/03 – 07/27/03	168	3.6	6.8	4.9	100
07/28/03 – 08/03/03	168	3.4	7.8	5.1	100
08/04/03 - 08/10/03	168	4.1	7.7	5.5	100
08/11/03 - 08/17/03	168	4.4	8.1	5.9	100
08/18/03 - 08/24/03	168	5.8	9.4	7.1	100
08/25/03 - 08/31/03	168	3.9	10.0	6.7	100
09/01/03 - 09/07/03	168	4.4	8.3	6.4	100
09/08/03 - 09/14/03	168	5.9	8.7	7.1	100
09/15/03 - 09/21/03	168	5.0	8.3	6.8	100
09/22/03 – 09/28/03	168	5.8	7.5	6.6	100
09/29/03 - 10/05/03	168	6.5	8.6	7.6	100
10/06/03 - 10/12/03	168	6.5	8.0	7.3	100
10/13/03 - 10/19/03	168	3.8	7.6	6.0	100
10/20/03 - 10/26/03	168	6.2	8.2	7.3	100
10/27/03 - 11/02/03	168	6.2	8.6	7.2	100
11/03/03 - 11/09/03	168	4.5	7.1	6.0	100
11/10/03 - 11/16/03	168	6.0	7.9	6.9	100
11/17/03 - 11/23/03	168	5.0	8.0	6.7	100
11/24/03 – 11/30/03	168	6.9	8.8	7.7	100
12/01/03 - 12/07/03	74	7.7	8.8	8.3	100
12/08/03 - 12/14/03	109	6.9	9.0	8.3	100
12/15/03 – 12/21/03	168	7.8	9.4	8.5	
12/13/03 = 12/21/03 12/22/03 = 12/28/03	168	7.8	9.4 8.5	8.3 7.8	100
12/22/03 - 12/28/03	72	7.2	8.1	7.8 7.9	100 100
- LEIJHUJ LEIJHUJ	12	1.4	0.1	1.7	100

TABLE AI-31: WEEKLY DO SUMMARY STATISTICS AT RIVER MILE 311.7 ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 – 01/05/03	120	7.2	7.8	7.5	100
01/06/03 - 01/12/03	168	7.5	10.8	9.2	100
01/13/03 - 01/19/03	168	10.2	10.9	10.5	100
01/20/03 - 01/26/03	168	9.1	10.2	9.7	100
01/27/03 - 02/02/03	168	8.5	9.5	8.9	100
02/03/03 - 02/09/03	168	8.1	9.1	8.6	100
02/10/03 - 02/16/03	168	8.1	10.2	9.5	100
02/17/03 - 02/23/03	168	8.7	9.9	9.2	100
02/24/03 - 03/02/03	168	9.0	9.7	9.3	100
3/03/03 - 03/09/03	168	8.6	9.7	9.1	100
3/10/03 - 03/16/03	168	8.1	10.2	9.1	100
3/17/03 - 03/23/03	168	6.9	8.8	7.8	100
03/24/03 - 03/30/03	168	6.7	9.0	7.6	100
3/31/03 - 04/06/03	168	6.2	8.5	7.5	100
4/07/03 - 04/13/03	167	6.8	8.4	7.7	100
04/14/03 - 04/20/03	168	7.1	8.8	7.6	100
04/21/03 - 04/27/03	168	6.8	9.4	7.8	100
04/28/03 - 05/04/03	168	5.7	9.9	7.8	100
05/05/03 - 05/11/03	168	4.2	9.2	6.2	100
05/12/03 - 05/18/03	59	5.5	6.2	5.9	100
5/19/03 - 05/25/03	108	5.2	7.7	6.4	100
5/26/03 - 06/01/03	59	6.1	10.7	7.3	100
6/02/03 - 06/08/03	107	4.9	9.2	6.4	100
6/09/03 - 06/15/03	168	6.2	12.2	8.3	100
6/16/03 - 06/22/03	168	6.3	11.1	7.8	100
6/23/03 - 06/29/03	168	6.4	13.5	9.8	100
6/30/03 – 07/06/03	60	7.7	13.8	9.3	100
7/07/03 – 07/13/03			NO DATA		
7/14/03 - 07/20/03	109	2.7	5.6	4.1	86
7/21/03 – 07/27/03	168	3.1	6.4	4.6	100
7/28/03 - 08/03/03	168	3.0	6.9	4.9	100
8/04/03 - 08/10/03	168	3.7	6.7	5.2	100
8/11/03 - 08/17/03	168	4.0	8.0.	5.9	100
8/18/03 - 08/24/03	168	6.2	9.4	7.3	100
8/25/03 - 08/31/03	168	3.7	10.8	7.3	100
9/01/03 - 09/07/03	168	4.7	8.2	6.0	100
9/08/03 - 09/14/03	58	6.2	7.7	6.8	100
9/15/03 - 09/21/03	110	6.0	8.9	7.5	100
9/22/03 - 09/28/03	168	5.9	8.0	6.8	100
9/29/03 – 10/05/03	168	6.2	8.8	7.7	100
0/06/03 - 10/12/03	168	6.5	8.6	7.3	100
0/13/03 - 10/19/03	168	3.9	8.4	5.9	100
0/20/03 - 10/26/03	168	6.3	8.5	7.3	100
0/27/03 - 11/02/03	169	6.3	8.0	7.0	100
1/03/03 - 11/09/03	168	4.1	6.8	5.7	100
1/10/03 - 11/16/03	168	5.9	8.2	7.0	100
1/17/03 - 11/23/03	168	4.6	7.8	6.2	100
1/24/03 - 11/30/03	168	6.9	8.2	7.6	100
2/01/03 - 12/07/03	168	7.7	9.1	8.4	100
2/08/03 - 12/14/03	59	7.2	7.9	7.6	100
2/15/03 - 12/21/03	109	8.2	9.1	8.7	100
2/22/03 - 12/28/03	168	7.6	8.8	8.2	100
2/29/03 - 12/31/03	72	7.6	8.7	8.1	100

TABLE AI-32: WEEKLY DO SUMMARY STATISTICS AT SOUTHWEST HIGHWAY ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	8.3	9.4	8.8	100
01/06/03 - 01/12/03	58	8.4	9.7	9.1	100
01/13/03 - 01/19/03			NO DATA		
01/20/03 - 01/26/03			NO DATA		
01/27/03 - 02/02/03			NO DATA		
02/03/03 - 02/09/03	84	8.0	8.6	8.3	100
02/10/03 - 02/16/03	168	8.1	10.3	9.3	100
02/17/03 - 02/23/03	168	8.6	10.2	9.2	100
02/24/03 - 03/02/03	168	8.4	9.4	8.8	100
03/03/03 - 03/09/03	168	8.4	9.3	8.8	100
03/10/03 - 03/16/03	168	7.8	9.6	8.8	100
03/17/03 - 03/23/03	168	7.5	8.7	8.1	100
03/24/03 - 03/30/03	168	6.9	8.4	7.6	100
03/31/03 - 04/06/03	167	6.4	9.5	7.7	100
04/07/03 - 04/13/03	167	7.0	8.9	8.1	100
04/14/03 - 04/20/03	168	6.3	8.9	7.7	100
04/21/03 - 04/27/03	168	6.7	9.8	8.3	100
04/28/03 - 05/04/03	168	5.9	10.5	7.9	100
05/05/03 - 05/11/03	168	4.3	8.5	6.2	100
05/12/03 - 05/18/03	168	5.5	8.5	6.4	100
05/19/03 - 05/25/03	168	5.7	9.0	7.0	100
05/26/03 - 06/01/03	168	5.7	10.3	7.2	100
06/02/03 - 06/08/03	168	5.0	8.0	6.2	100
06/09/03 - 06/15/03	168	5.1	12.2	8.0	100
06/16/03 - 06/22/03	168	5.7	11.3	7.8	100
06/23/03 - 06/29/03	168	5.7	15.5	9.2	100
06/30/03 - 07/06/03	168	3.2	13.7	8.7	100
07/07/03 - 07/13/03	168	2.6	6.0	4.0	96
07/14/03 – 07/20/03	168	2.1	7.1	4.1	80
07/21/03 - 07/27/03	168	2.4	6.2	4.1	79
07/28/03 - 08/03/03	168	2.8	6.8	4.6	97
08/04/03 - 08/10/03	168	3.4	7.5	4.9	100
08/11/03 - 08/17/03	168	3.8	7.8	5.7	001
08/18/03 - 08/24/03	168	5.3	9.6	6.9	100
08/25/03 - 08/31/03	168	3.7	11.4	7.4	100
09/01/03 - 09/07/03	168	4.5	7.9	5.6	100
09/08/03 - 09/14/03	168	5.9	8.8	7.1	100
09/15/03 - 09/21/03	168	5.9	9.0	7.0	100
09/22/03 - 09/28/03	168	5.3	8.3	6.8	100
09/29/03 - 10/05/03	168	6.0	8.9	7.8	100
10/06/03 - 10/12/03	168	6.2	9.0	7.6	100
10/13/03 – 10/19/03 10/20/03 – 10/26/03	167	4.2	7.9	6.2	100
10/20/03 - 10/20/03 10/27/03 - 11/02/03	168	6.5	8.0	7.2	100
	168	6.7	8.2	7.4 5.0	100
11/03/03 - 11/09/03	168	3.9	8.0	5.9	100
11/10/03 - 11/16/03	168	5.7	8.0	6.9	100
11/17/03 – 11/23/03	168	5. I	8.1	6.4	100
11/24/03 - 11/30/03	168	7.0	8.3	7.6	100
12/01/03 - 12/07/03	168	7.5	8.7	8.2	100
12/08/03 - 12/14/03	168	7.0	8.7	7.9	100
12/15/03 - 12/21/03	168	7.8	9.1	8.6	100
12/22/03 - 12/28/03	168	7.4	8.6	8.1	100
12/29/03 — 12/31/03	72	7.4	8.5	7.9	100

TABLE AI-33: WEEKLY DO SUMMARY STATISTICS AT $104^{\rm th}$ AVENUE ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	DO	Concentration	Percent DO Values	
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	. 120	8.7	9.6	9.2	100
01/06/03 - 01/12/03	168	8.7	11.1	9.8	100
01/13/03 - 01/19/03	168	10.7	11.6	11.2	100
01/20/03 - 01/26/03	168	10.0	10.6	10.3	100
01/27/03 - 02/02/03	168	9.3	10.1	9.6	100
2/03/03 - 02/09/03	168	9.2	10.2	9.6	100
02/10/03 - 02/16/03	168	9.6	11.1	10.2	100
02/17/03 - 02/23/03	168	9.5	11.2	10.4	100
2/24/03 - 03/02/03	168	9.1	10.3	9.7	100
3/03/03 - 03/09/03	168	8.5	9.4	9.0	100
03/10/03 - 03/16/03	168	8.4	9.6	9.0	100
3/17/03 - 03/23/03	83	7.4	8.6	7.9	100
3/24/03 - 03/30/03		•••	NO DATA	7.7	100
3/31/03 - 04/06/03	85	7.1	9.1	8.2	100
04/07/03 - 04/13/03	167	7.2	9.3	8.1	100
04/14/03 - 04/20/03	168	7.1	8.4	7.6	100
04/21/03 - 04/27/03	168	6.9	9.7	8.0	100
04/28/03 - 05/04/03	168	5.9	9.8	8.1	100
5/05/03 - 05/11/03	168	4.7	8.9	6.8	100
05/12/03 - 05/18/03	168	5.7	8.3	6.5	100
5/19/03 - 05/25/03	168	5.2	9.3	6.9	100
5/26/03 - 06/01/03	168	6.3	9.6	7,7	100
6/02/03 - 06/08/03	168	4.8	7.3	5.9	100
6/09/03 - 06/15/03	168	6.5	10.6	8.6	100
6/16/03 - 06/22/03	168	6.4	10.4	8.5	100
6/23/03 - 06/29/03	168.	5.9	12.1	9.7	100
6/30/03 - 07/06/03	168	6.1	11.8	9.3	100
7/07/03 – 07/13/03	168	2.7	5.4	4.0	97
7/14/03 – 07/20/03	168	2.5	6.8	4.5	92
7/21/03 - 07/27/03	168	3.1	5.9	4.3	100
7/28/03 - 08/03/03	168	2.9	7.2	4.9	99
8/04/03 - 08/10/03	168	4.0	6.6	5.1	100
8/11/03 - 08/17/03	168	4.8	7.4	5.8	100
8/18/03 - 08/24/03	168	5.5	8.2	6.8	100
8/25/03 - 08/31/03	107	5.9	9.0	7.5	100
9/01/03 - 09/07/03	133	5.1	7.4	6.0	100
9/08/03 - 09/14/03	168	6.0	8.2	7.0	100
9/15/03 - 09/21/03	168	5.4	7.7	6.5	100
9/22/03 - 09/28/03	168	5.8	7.3	6.6	100
9/29/03 - 10/05/03	84	6.1	7.3	6.6	100
0/06/03 - 10/12/03			NO DATA	0.0	100
0/13/03 - 10/19/03	67	4.5	6.5	5.5	100
0/20/03 - 10/26/03	85	6.1	7.4	6.9	100
0/27/03 - 11/02/03	168	6.8	8.5	7.4	100
1/03/03 - 11/09/03	168	4.5	7.8	6.0	100
1/10/03 - 11/16/03	168	6.5	8.3	7.5	100
1/17/03 – 11/23/03	84	5.0	8.4	6.8	100
1/24/03 - 11/30/03	109	7.0	8.3	7.5	100
2/01/03 - 12/07/03	168	7.4	10.0	8.6	100
2/08/03 - 12/14/03	168	5.6	9.0	7.0	100
2/15/03 - 12/21/03	168	5.6	9.8	7.7	100
2/22/03 - 12/28/03	168	8.4	9.3	8.9	100
2/29/03 – 12/31/03	72	8.0	8.7	8.4	100

TABLE AI-34: WEEKLY DO SUMMARY STATISTICS AT ROUTE 83 ON THE CALUMET-SAG CHANNEL DURING 2003

	Number of	DO	Concentration	(mg/L)	Percent DO Values
Monitoring Dates	DO Values	Min	Max	Mean	Above Standard
01/01/03 - 01/05/03	120	7.4	9.4	8.9	100
01/06/03 - 01/12/03	83	7.7	8.8	8.4	100
01/13/03 - 01/19/03			NO DATA		
01/20/03 - 01/26/03			NO DATA		
01/27/03 02/02/03			NO DATA		
02/03/03 - 02/09/03			NO DATA		
02/10/03 - 02/16/03			NO DATA		
02/17/03 - 02/23/03			NO DATA		
02/24/03 - 03/02/03	84	8.2	9.9	9.5	100
03/03/03 - 03/09/03	168	5.8	9.3	7.8	100
03/10/03 - 03/16/03	168	5.5	10.1	8.0	100
03/17/03 - 03/23/03	168	6.7	9.1	8.0	100
03/24/03 - 03/30/03	168	6.1	8.6	7.3	
03/31/03 - 04/06/03	168	6.9	8.7	7.3 7.9	100
04/07/03 - 04/13/03	167	6.7	9.0		100
04/14/03 - 04/20/03	168	6.2		8.0	100
			8.6	7.6	100
04/21/03 - 04/27/03	168	5.4	9.7	7.2	100
04/28/03 - 05/04/03	168	5.1	10.1	7.7	100
05/05/03 - 05/11/03	168	4.6	9.5	6.8	100
05/12/03 - 05/18/03	168	5.3	8.5	6.2	100
05/19/03 - 05/25/03	168	5.9	10.1	7.6	100
05/26/03 - 06/01/03	84	6.4	10.9	8.2	100
06/02/03 - 06/08/03			NO DATA		
06/09/03 - 06/15/03	84	7.7	12.2	9.4	100
06/16/03 - 06/22/03	168	6.3	11.6	8.6	100
06/23/03 – 06/29/03	168	7.4	12.0	9.3	100
06/30/03 – 07/06/03	168	6.8	14.6	9.3	100
07/07/03 – 07/13/03	168	2.4	7.3	4.4	90
07/14/03 – 07/20/03	168	2.4	6.9	4.6	77
07/21/03 – 07/27/03	168	2.7	5.7	3.9	81
07/28/03 - 08/03/03	168	3.0	8.4	4.7	99
08/04/03 - 08/10/03	168	3.7	6.2	4.8	100
08/11/03 - 08/17/03	168	4.4	8.8	5.7	100
8/18/03 - 08/24/03	168	5.9	9.7	7.1	100
8/25/03 - 08/31/03	168	5.1	11.4	7.2	100
9/01/03 - 09/07/03	168	3.9	7.4	5.3	100
9/08/03 - 09/14/03	168	5.5	9.0	6.9	100
9/15/03 - 09/21/03	168	4.9	7.9	6.4	100
9/22/03 - 09/28/03	168	4.1	8.3	6.4	100
9/29/03 - 10/05/03	84	6.0	7.0	6.4	100
0/06/03 - 10/12/03	107	6.3	8.1	7.1	100
0/13/03 - 10/19/03	168	4.9	6.9	6.1	100
0/20/03 - 10/26/03	168	4.8	6.6	5.7	100
0/27/03 - 11/02/03	168	5.7	8.0	6.6	100
1/03/03 - 11/09/03	168	4.3	7.8	5.6	100
1/10/03 - 11/16/03	168	5.6	8.4	6.8	100
1/17/03 – 11/23/03	167	3.7	7.0	5.8	
1/24/03 - 11/30/03	168	6.8	8.8		100
2/01/03 - 12/07/03	168	0.8 7.5		7.7	100
2/08/03 - 12/14/03 2/08/03 - 12/14/03			9.1	8.4	100
	168	7.5	9.0	8.2	100
2/15/03 12/21/03 2/22/03 12/28/03	168	8.3	9.4	9.0	100
2/22/03 - 12/28/03	168	7.6	9.2	8.8	100
2/29/03 – 12/31/03	72	8.3	8.6	8.4	100