

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )
)
PROPOSED AMENDMENTS TO ) R04-25
DISSOLVED OXYGEN STANDARD ) (Rulemaking - Water)
35 ILL. ADM. CODE 302.206 )

NOTICE OF FILING

TO: SEE ATTACHED SERVICE LIST.

PLEASE TAKE NOTICE that on August 30th, 2007, we filed the attached Public Comments of the Metropolitan Water Reclamation District of Greater Chicago to the First Notice of Adoption of Proposed Amendments to the Illinois General Use Water Quality Standard for Dissolved Oxygen (35 Ill. Adm. Code 302.206) with the Pollution Control Board, Dorothy Gunn, Clerk, JRTC, 100 W. Randolph Street, Suite 11-500, Chicago, Illinois 60601, a copy of which is herewith served upon you.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

By: [Signature] Frederick M. Feldman, Its Attorney

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CERTIFICATE OF SERVICE

I, Gabrielle Giannasutti, being duly sworn on oath, certify that I caused a copy of the above Notice and attached Public Comments of the Metropolitan Water Reclamation District of Greater Chicago to the First Notice of Adoption of Proposed Amendments to the Illinois General Use Water Quality Standard for Dissolved Oxygen (35 Ill. Adm. Code 302.206) to be sent via first-class U.S. Mail to the individuals identified on the attached service list, at their address as shown, with proper postage prepaid, from 100 East Erie Street, Chicago, Illinois, at or near the hour of 4:30 p.m. this 30th day of August, 2007.

[Signature]

Subscribed and Sworn to
Before me this 30th day of
August, 2007.

[Signature]
Notary Public



**ILLINOIS POLLUTION CONTROL BOARD**

**IN THE MATTER OF** )  
 )  
**PROPOSED AMENDMENTS TO R04-25** ) **R04-25**  
**DISSOLVED OXYGEN STANDARD** ) **(Rulemaking – Water)**  
**35 ILL. ADM. CODE 302.206**

**PUBLIC COMMENTS OF METROPOLITAN WATER RECLAMATION  
DISTRICT OF GREATER CHICAGO IN RESPONSE TO FIRST NOTICE OF  
ADOPTION OF PROPOSED AMENDMENTS TO GENERAL USE WATER  
QUALITY STANDARD FOR DISSOLVED OXYGEN (35 ILL.ADM. CODE 302.206)**

The Metropolitan Water Reclamation District of Greater Chicago, and in response to the First Notice of the Opinion and Order of the Illinois Pollution Control Board adopting the proposed amendments to the Illinois' general use water quality standard for dissolved oxygen or "DO" (35 Ill. Adm. Code 302.206), published in the Illinois Register on August 3, 2007, submits the following public comments:

1. Section 302.206 (d) (3) states that "the measurements of dissolved oxygen used to determine attainment or lack of attainment with any of the dissolved oxygen standards in this Section must assure daily minima and daily means that represent the true daily minima and daily means." This language suggests that some degree of continuous monitoring will be required, but it does not identify how many daily values should be captured in order to "assure" they are representative. The necessary sampling intensity is the crux of determining how resource intensive dissolved oxygen (DO) monitoring projects will have to be to comply with proposed standards. On page 92, the Illinois Pollution Control Board (Board) explains that they are not required to develop implementation rules in order to promulgate water quality standards. While we acknowledge this to be the case, the lack of guidance on this matter leaves the regulated community with an unfortunate level of uncertainty regarding the implementation of the proposed

standards. The complexity of determining whether DO data is “truly representative” (page 93) warrants that some guidelines be set forth initially for public comment.

2. Based on our 2005-2007 hourly DO data, significant portions of the Des Plaines River System will immediately be in non-compliance upon implementation of the DO standards outlined in the proposed Rule. Tables 1, 2, and 3 (attached) outline the percent compliance of hourly DO concentrations from 2005, 2006, and 2007, respectively, with the proposed daily minimum, 7-day mean of daily minima, and 30-day mean of daily means. In the Des Plaines River, compliance with the 30-day mean of daily means would have been as low as 50 percent at Irving Park Road in 2005. So far this year, compliance with the proposed daily minimum, the 7-day mean of daily minima, and the 30-day mean of daily means at Irving Park Road would have been 85, 70, and 63 percent, respectively. At Jefferson Street on the Des Plaines River, compliance with the daily minimum standard would have been 83, 87, and 75 percent for 2005, 2006, and 2007, respectively. Compliance for the 7-day mean of daily minima would have only been 65, 69, and 55 percent during those years. Similarly, compliance with the 30-day mean of daily means would have ranged from 63-75 percent.


3. In Salt Creek, compliance with the daily minimum and the 30-day standard are generally close to or above 90 percent. However, compliance with the 7-day standard is lower at J. F. Kennedy Boulevard, Thorndale Avenue, and Wolf Road because of the diurnal DO fluctuations at all of these stations.

4. Clearly, hourly DO monitoring indicates that several reaches within the Des Plaines River System cannot be reasonably expected to comply with the standards set forth in the proposed Rule. It is stated on page 96 of the subject Opinion that the Board “does not establish

an ambient water quality standard for DO based on whether Illinois waters presently comply with the standard.” However, the District asserts that the DO standard should be consistent with natural ecological processes expected in aquatic systems. As noted on page 27 of the subject Opinion, “DO concentrations fluctuate even in pristine natural systems, causing organisms to move or tolerate occasional occurrence of hypoxia.” The physical conditions and habitat along reaches of the Des Plaines River System are conducive to significant water column algae growth and, consequently, high magnitude diurnal DO fluctuations, especially during the summer months. The District would like to express our concern over the promulgation of standards which will immediately result in such widespread water quality violations due, in large part, to natural processes.

Respectfully Submitted,

Metropolitan Water Reclamation District of  
Greater Chicago



BY: Louis Kollias, Director of Research &  
Development

#### References

Doudoroff, P. and D. L. Shumway, “Dissolved Oxygen Requirements of Freshwater Fishes,” Food and Agriculture Organization of the United Nations, FAO Technical Paper No. 86, 291 pp., 1970.

Fry, F. E. J., “The Aquatic Respiration of Fish,” M.E. Brown, ed., *The Physiology of Fishes, Volume I – Metabolism*, New York, Academic Press, 1957.

Jones, J. R. E., *Fish and River Pollution*, Butterworths, London, 1964.

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METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

PERCENT COMPLIANCE WITH PROPOSED DISSOLVED OXYGEN STANDARDS  
IN THE DES PLAINES RIVER SYSTEM DURING 2005

Station ID	Station Name	Waterway	Proposed Standard	No. of Obs	Percent Compliance	Limit (mg/L)*
58	Devon Avenue	Des Plaines River	Daily minimum	1,594	100.0	(3.5,5.0)
58	Devon Avenue	Des Plaines River	7-Day mean of daily minima	61	100.0	(4.0,6.0)
58	Devon Avenue	Des Plaines River	30-Day mean of daily means	3	100.0	5.5
62	Irving Park Road	Des Plaines River	Daily minimum	4,120	83.5	(3.5,5.0)
62	Irving Park Road	Des Plaines River	7-Day mean of daily minima	167	77.8	(4.0,6.0)
62	Irving Park Road	Des Plaines River	30-Day mean of daily means	6	50.0	5.5
63	Ogden Avenue	Des Plaines River	Daily minimum	4,122	99.7	(3.5,5.0)
63	Ogden Avenue	Des Plaines River	7-Day mean of daily minima	168	89.3	(4.0,6.0)
63	Ogden Avenue	Des Plaines River	30-Day mean of daily means	6	100.0	5.5
64	Material Service Road	Des Plaines River	Daily minimum	1,029	100.0	(3.5,5.0)
64	Material Service Road	Des Plaines River	7-Day mean of daily minima	38	100.0	(4.0,6.0)
64	Material Service Road	Des Plaines River	30-Day mean of daily means	3	100.0	5.5
23	Jefferson Street	Des Plaines River	Daily minimum	8,059	82.9	(3.5,5.0)
23	Jefferson Street	Des Plaines River	7-Day mean of daily minima	335	65.4	(4.0,6.0)
23	Jefferson Street	Des Plaines River	30-Day mean of daily means	12	66.7	5.5
68	Busse Lake Dam	Salt Creek	Daily minimum	1,547	100.0	(3.5,5.0)
68	Busse Lake Dam	Salt Creek	7-Day mean of daily minima	59	100.0	(4.0,6.0)
68	Busse Lake Dam	Salt Creek	30-Day mean of daily means	3	100.0	5.5
59	JFK Boulevard	Salt Creek	Daily minimum	4,058	96.4	(3.5,5.0)
59	JFK Boulevard	Salt Creek	7-Day mean of daily minima	167	88.0	(4.0,6.0)
59	JFK Boulevard	Salt Creek	30-Day mean of daily means	6	100.0	5.5
60	Thorndale Avenue	Salt Creek	Daily minimum	4,136	96.4	(3.5,5.0)
60	Thorndale Avenue	Salt Creek	7-Day mean of daily minima	169	88.2	(4.0,6.0)
60	Thorndale Avenue	Salt Creek	30-Day mean of daily means	6	100.0	5.5
61	Wolf Road	Salt Creek	Daily minimum	4,247	96.5	(3.5,5.0)
61	Wolf Road	Salt Creek	7-Day mean of daily minima	172	89.0	(4.0,6.0)
61	Wolf Road	Salt Creek	30-Day mean of daily means	6	100.0	5.5

\*Daily minimum DO limit is 5.0 mg/L in March through July, and 3.5 mg/L in other months.

7-day mean of daily minima DO limit is 6.0 mg/L in March through July, and 4.0 mg/L in other months.

30-Day mean of daily means DO limit is 5.5 mg/L.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2

PERCENT COMPLIANCE WITH PROPOSED DISSOLVED OXYGEN STANDARDS  
IN THE DES PLAINES RIVER SYSTEM IN 2006

Station ID	Station Name	Waterway	Proposed Standard	No. of Obs	Percent Compliance	Limit (mg/L)*
58	Devon Avenue	Des Plaines River	Daily minimum	8,421	91.2	(3.5,5.0)
58	Devon Avenue	Des Plaines River	7-Day mean of daily minima	347	80.1	(4.0,6.0)
58	Devon Avenue	Des Plaines River	30-Day mean of daily means	12	83.3	5.5
62	Irving Park Road	Des Plaines River	Daily minimum	8,574	92.0	(3.5,5.0)
62	Irving Park Road	Des Plaines River	7-Day mean of daily minima	353	79.0	(4.0,6.0)
62	Irving Park Road	Des Plaines River	30-Day mean of daily means	12	83.3	5.5
63	Ogden Avenue	Des Plaines River	Daily minimum	8,759	100.0	(3.5,5.0)
63	Ogden Avenue	Des Plaines River	7-Day mean of daily minima	359	96.7	(4.0,6.0)
63	Ogden Avenue	Des Plaines River	30-Day mean of daily means	12	100.0	5.5
64	Material Service Road	Des Plaines River	Daily minimum	7,837	99.0	(3.5,5.0)
64	Material Service Road	Des Plaines River	7-Day mean of daily minima	325	90.2	(4.0,6.0)
64	Material Service Road	Des Plaines River	30-Day mean of daily means	12	100.0	5.5
23	Jefferson Street	Des Plaines River	Daily minimum	8,589	86.9	(3.5,5.0)
23	Jefferson Street	Des Plaines River	7-Day mean of daily minima	353	68.6	(4.0,6.0)
23	Jefferson Street	Des Plaines River	30-Day mean of daily means	12	75.0	5.5
68	Busse Lake Dam	Salt Creek	Daily minimum	8,523	98.6	(3.5,5.0)
68	Busse Lake Dam	Salt Creek	7-Day mean of daily minima	353	95.2	(4.0,6.0)
68	Busse Lake Dam	Salt Creek	30-Day mean of daily means	12	100.0	5.5
59	JFK Boulevard	Salt Creek	Daily minimum	8,760	100.0	(3.5,5.0)
59	JFK Boulevard	Salt Creek	7-Day mean of daily minima	359	91.6	(4.0,6.0)
59	JFK Boulevard	Salt Creek	30-Day mean of daily means	12	100.0	5.5
60	Thorndale Avenue	Salt Creek	Daily minimum	7581	98.9	(3.5,5.0)
60	Thorndale Avenue	Salt Creek	7-Day mean of daily minima	312	83.3	(4.0,6.0)
60	Thorndale Avenue	Salt Creek	30-Day mean of daily means	11	100.0	5.5
61	Wolf Road	Salt Creek	Daily minimum	8,567	96.2	(3.5,5.0)
61	Wolf Road	Salt Creek	7-Day mean of daily minima	352	84.1	(4.0,6.0)
61	Wolf Road	Salt Creek	30-Day mean of daily means	12	100.0	5.5

\*Daily minimum DO limit is 5.0 mg/L in March through July, and 3.5 mg/L in other months.

7-day mean of daily minima DO limit is 6.0 mg/L in March through July, and 4.0 mg/L in other months.

30-Day mean of daily means DO limit is 5.5 mg/L.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 3

PERCENT COMPLIANCE WITH PROPOSED DISSOLVED OXYGEN STANDARDS  
IN THE DES PLAINES RIVER SYSTEM IN 2007

Station ID	Station Name	Waterway	Proposed Standard	No. of Obs	Percent Compliance	Limit (mg/L)*
58	Devon Avenue	Des Plaines River	Daily minimum	5,098	87.2	(3.5,5.0)
58	Devon Avenue	Des Plaines River	7-Day mean of daily minima	207	72.9	(4.0,6.0)
58	Devon Avenue	Des Plaines River	30-Day mean of daily means	8	75.0	5.5
62	Irving Park Road	Des Plaines River	Daily minimum	5,099	85.2	(3.5,5.0)
62	Irving Park Road	Des Plaines River	7-Day mean of daily minima	207	70.0	(4.0,6.0)
62	Irving Park Road	Des Plaines River	30-Day mean of daily means	8	62.5	5.5
63	Ogden Avenue	Des Plaines River	Daily minimum	4,781	100.0	(3.5,5.0)
63	Ogden Avenue	Des Plaines River	7-Day mean of daily minima	196	96.9	(4.0,6.0)
63	Ogden Avenue	Des Plaines River	30-Day mean of daily means	8	100.0	5.5
64	Material Service Road	Des Plaines River	Daily minimum	5,119	98.4	(3.5,5.0)
64	Material Service Road	Des Plaines River	7-Day mean of daily minima	208	71.2	(4.0,6.0)
64	Material Service Road	Des Plaines River	30-Day mean of daily means	8	100.0	5.5
23	Jefferson Street	Des Plaines River	Daily minimum	4,956	75.2	(3.5,5.0)
23	Jefferson Street	Des Plaines River	7-Day mean of daily minima	202	54.5	(4.0,6.0)
23	Jefferson Street	Des Plaines River	30-Day mean of daily means	8	62.5	5.5
68	Busse Lake Dam	Salt Creek	Daily minimum	4,762	98.2	(3.5,5.0)
68	Busse Lake Dam	Salt Creek	7-Day mean of daily minima	194	88.1	(4.0,6.0)
68	Busse Lake Dam	Salt Creek	30-Day mean of daily means	7	100.0	5.5
59	JFK Boulevard	Salt Creek	Daily minimum	5,084	98.4	(3.5,5.0)
59	JFK Boulevard	Salt Creek	7-Day mean of daily minima	207	80.7	(4.0,6.0)
59	JFK Boulevard	Salt Creek	30-Day mean of daily means	8	87.5	5.5
60	Thorndale Avenue	Salt Creek	Daily minimum	4,928	95.2	(3.5,5.0)
60	Thorndale Avenue	Salt Creek	7-Day mean of daily minima	201	62.7	(4.0,6.0)
60	Thorndale Avenue	Salt Creek	30-Day mean of daily means	8	87.5	5.5
61	Wolf Road	Salt Creek	Daily minimum	4,952	92.4	(3.5,5.0)
61	Wolf Road	Salt Creek	7-Day mean of daily minima	202	62.9	(4.0,6.0)
61	Wolf Road	Salt Creek	30-Day mean of daily means	8	87.5	5.5

\*Daily minimum DO limit is 5.0 mg/L in March through July, and 3.5 mg/L in other months.

7-day mean of daily minima DO limit is 6.0 mg/L in March through July, and 4.0 mg/L in other months.

30-Day mean of daily means DO limit is 5.5 mg/L.



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