

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT
RENEWAL

PERMITTEE

Metropolitan Water Reclamation District of Greater Chicago
Attn: Chief of Maintenance and Operations
100 East Erie Street
Chicago, Illinois 60611

Application No.: 75060002

I.D. No.: 031288ABL

Applicant's Designation:

Date Received: May 18, 2006

Subject: Northside Water Reclamation Plant

Date Issued:

Expiration Date:

Location: 3500 West Howard Street, Skokie, Cook County, 60076

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of 2 natural gas-fired boilers (28.0 mmBtu/hour, each), 7 natural gas-fired water heaters (1.3 mmBtu/hour, total), 10 natural gas-fired furnaces (1.6 mmBtu/hour, total), 3 diesel-powered electric generators (50, 250, and 350 kW), 2 ozone generators, one 4,000 gallon gasoline storage tank and one 250 gallon diesel storage tank pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
 - i. To limit the emissions of air pollutants from the source to less than the levels at which the source would be a major source, (i.e., 100 tons/year for nitrogen oxide (NO_x) and carbon monoxide (CO) and volatile organic material (VOM)) as further described in Attachment A. As a result the source is excluded from the requirements to obtain a Clean Air Act Permit Program permit.
 - ii. To limit the potential emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirement of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit, pursuant to 35 Ill. Adm. Code 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.

- b. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 meters (1000 feet) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period, pursuant to 35 Ill. Adm. Code 212.123(b).
- 3a. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hour), burning liquid fuel exclusively to exceed 0.46 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu), pursuant to 35 IAC 214.122(b)(2).
- b. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emissions of sulfur dioxide into the atmosphere from any process emission source to exceed 2,000 ppm.
- c. Pursuant to 35 Ill. Adm. Code 214.304, the emissions from the burning of fuel at process emission sources located in the Chicago or St. Louis (Illinois) major metropolitan areas shall comply with applicable 35 Ill. Adm. Code 214 Subparts B through F (i.e., 35 Ill. Adm. Code 214.122(b)(2)), except as follows: No person shall cause or allow the emissions of sulfur into the atmosphere in any one hour period from burning tea leaves as fuel to exceed 0.70 pounds of sulfur dioxide per mmBtu of actual heat input.
- 4. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air.
- 5. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 liters (250 gallons), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with 35 Ill. Adm. Code 218.108, or unless such tank is a pressure tank as described in 35 Ill. Adm. Code 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).
- 6. Pursuant to 35 Ill. Adm. Code 218.583(a), no person shall cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank with a capacity of 575 gallons or more (unless tank has a capacity of 2,000 gallons or less and was in place and

operational prior to January 1, 1979) at a gasoline dispensing operation unless:

- i. The tank is equipped with a submerged loading pipe; and
 - ii. The vapors displaced from the storage tank during filling are processed by a vapor control system that includes one or more of the following:
 - A. A vapor collection system that meets the requirements of 35 Ill. Adm. Code 218.583(d)(4); or
 - B. A refrigeration-condensation system or any other system approved by the Illinois EPA that recovers at least 90 percent by weight of all vaporized organic material from the equipment being controlled; and
 - C. The delivery vessel displays the appropriate sticker pursuant to the requirements of 35 Ill. Adm. Code 218.584(b) or (d); and
 - iii. All tank vent pipes are equipped with pressure/vacuum relief valves with the following design specifications:
 - A. The pressure/vacuum relief valve shall be set to resist a pressure of at least 3.5 inches water column and to resist a vacuum of no less than 6.0 inches water column; or
 - B. The pressure/vacuum relief valve shall meet the requirements of 35 Ill. Adm. Code 218.586(c); and
 - iv. The owner or operator of a gasoline dispensing operation demonstrates compliance with 35 Ill. Adm. Code 218.583(a)(3), 30 days after installation of each pressure/vacuum relief valve, whichever is later, and at least annually thereafter, by measuring and recording the pressure indicated by a pressure/vacuum gauge at each tank vent pipe. The test shall be performed on each tank vent pipe within two hours after product delivery into the respective storage tank. For manifold tank vent systems, observations at any point within the system shall be adequate. The owner or operator shall maintain any records required by 35 Ill. Adm. Code 218.583 for a period of three years.
- c. Pursuant to 35 Ill. Adm. Code 218.583(c), each owner of a gasoline dispensing operation shall:
- i. Install all control systems and make all process modifications required by 35 Ill. Adm. Code 218.583(a);
 - ii. Provide instructions to the personnel operating the gasoline dispensing facility describing necessary maintenance operations

and procedures for prompt notification of the owner in case of any malfunction of a vapor balance system; and

- iii. Repair, replace or modify any worn out or malfunctioning component or element of design.
- d. Pursuant to 35 Ill. Adm. Code 218.583(d), each operator of a gasoline dispensing operation shall:
 - i. Maintain and operate the system in accordance with the established procedures and instructions;
 - ii. Promptly notify the owner of any scheduled maintenance or malfunction requiring replacement or repair of a major component of a vapor control system;
 - iii. Maintain gauges, meters, or other specified testing devices in proper working order; and
 - iv. Operate the vapor balance system and delivery vessel unloading points in a manner that prevents:
 - A. A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B [35 Ill. Adm. Code 218.583(d)(4)(A)]; and
 - B. Avoidable leaks of liquid during the filling of storage tank.
- 7a. The Permittee shall not utilize distillate fuel oil (Grades No. 1 and 2) at this source with a sulfur content greater than the larger of the following two values:
 - i. 0.28 weight percent; or
 - ii. The wt. percent given by the formula: Maximum wt. percent sulfur = (0.00015) x (Gross heating value of oil, Btu/lbs).
- b. Organic liquid by-products or waste materials shall not be used in these fuel combustion emission sources.
- c. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 8a. Emissions and operation of the 2 boilers (combined) shall not exceed the following limits:
 - i. Natural Gas Usage:

(mmscf/Month)

(mmscf/Year)

50

500

ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmscf)</u>	<u>Emissions (Tons/Month)</u>	<u>Emissions (Tons/Year)</u>
Nitrogen Oxides (NO _x)	100	2.50	25.00
Carbon Monoxide (CO)	84	2.10	21.00
Particulate Matter (PM)	7.6	0.19	1.90
Volatile Organic Material (VOM)	5.5	0.14	1.40
Sulfur Dioxide (SO ₂)	0.6	0.02	0.20

These limits are based on the maximum firing rate (56 mmBtu/hour, total), maximum operating time (8,760 hours/year), and Standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

b. Emissions and operation of the 7 water heaters and 10 furnaces (combined) shall not exceed the following limits:

<u>Natural Gas Usage</u>		<u>Pollutant</u>	<u>Emission Factor (Lbs/mmscf)</u>	<u>Emissions</u>	
<u>(mmscf/Mo)</u>	<u>(mmscf/Yr)</u>			<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
5	50	NO _x	100	0.25	2.50
		CO	84	0.21	2.10
		PM	7.6	0.02	0.19
		VOM	5.5	0.01	0.14
		SO ₂	0.6	0.01	0.02

These limits are based on the maximum firing rate (5.6 mmBtu/hour, total), maximum operating time (8,760 hours/year), and Standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

c. Emissions and operation of the 3 diesel-powered electric generators (combined) shall not exceed the following limits:

<u>Diesel Fuel Usage</u>		<u>Pollutant</u>	<u>Emission Factor (Lbs/1000 Gal)</u>	<u>Emissions</u>	
<u>(Gallons/Mo)</u>	<u>(Gallons/Yr)</u>			<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
10,000	100,000	NO _x	618	3.09	30.87
		CO	133	0.67	6.65
		PM	43.4	.022	2.17
		VOM	50.4	0.26	2.52
		SO ₂	40.6	0.21	2.03

These limits are based on the maximum fuel usage and Standard emission factors (Table 3.3-1, AP-42, Fifth Edition, Volume I, Supplement, October 1996).

- d. Emissions and operation of the 2 ozone generators shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Factor (Lbs/lb Ozone)</u>	<u>Emissions (Tons/Month)</u>	<u>Emissions (Tons/Year)</u>
NO _x	0.03	0.01	0.08
SO ₂	0.26	0.07	0.67

These limits are based on the maximum ozone production rate (14 lbs/day) and the ozone generator manufacturer's specifications.

- e. This permit is issued based on negligible emissions of VOM from the gasoline storage tank and the diesel storage tank. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- g. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 9. This permit is issued based on the Potential to Emit (PTE) for Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act being less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program (CAAPP) Permit.
- 10a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
 - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
 - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon

request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.

- b. Testing required by Condition 10 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 11a. Pursuant to 35 Ill. Adm. Code 212.107, for both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR Part 60, Appendix A, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301, pursuant to 35 Ill. Adm. Code 212.107.
- b. Pursuant to 35 Ill. Adm. Code 212.109, except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, incorporated by reference in 35 Ill. Adm. Code 212.113, except that for roadways and parking areas the number of readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged, pursuant to 35 Ill. Adm. Code 212.109.
- c. Pursuant to 35 Ill. Adm. Code 212.110(a), measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR Part 60, Appendix A, Methods 5, 5A, 5D, or 5E, pursuant to 35 Ill. Adm. Code 212.110(a).
- d. Pursuant to 35 Ill. Adm. Code 212.110(b), the volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4, pursuant to 35 Ill. Adm. Code 212.110(b).
- e. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA

within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA, pursuant to 35 Ill. Adm. Code 212.110(c).

12. Pursuant to 35 Ill. Adm. Code 218.583(d)(5), within 15 business days after discovery of the leak by the owner, operator, or the Illinois EPA, the owner of a gasoline dispensing operation shall repair and retest a vapor collection system which exceeds the limits of 218.583(d)(4)(A).
13. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
14. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
15. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified in 35 Ill. Adm. Code 218.119 shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 Ill. Adm. Code Part 218 other than those required by

maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.

- 16a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
- i. Natural gas usage (mmscf/month and mmscf/year);
 - ii. Diesel fuel usage (gallons/month and gallons/year);
 - iii. Sulfur content of diesel fuel (percent by weight); and
 - vi. Monthly and annual emissions of CO, NO_x, PM, SO₂, VOM and HAPs, with supporting calculations (tons/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
17. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
18. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
19. Two (2) copies of required reports and notifications shall be sent to:
- Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276
- and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

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Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

If you have any questions on this, please call George Kennedy at
217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:GMK:psj

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the water reclamation plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (e.g., 100 tons/yr for NO_x, CO, and VOM) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

<u>Equipment</u>	E M I S S I O N S (Tons/Year)				
	<u>NO_x</u>	<u>CO</u>	<u>VOM</u>	<u>SO₂</u>	<u>PM</u>
2 Boilers	25.00	21.00	1.40	0.20	1.90
7 Water Heaters and 10 Furnaces	2.50	2.10	0.14	---	0.19
3 Electric Generators	30.87	6.65	2.52	2.03	2.17
2 Ozonators	0.08			0.67	
2 Storage Tanks			0.44		
Totals	<u>58.45</u>	<u>29.75</u>	<u>4.50</u>	<u>2.90</u>	<u>4.26</u>

GMK:psj