

"RE-BUILDING THE CITY'S WATER SYSTEMS FOR THE 21ST CENTURY"

Sewerage & Water Board of New ORLEANS

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Date: June, 2014

- To: Sewerage and Water Board Customers
- From: Robert Jackson, Director Community & Intergovernmental Relations
- Re: Water Quality 2013 Report

Every Sewerage and Water Board customer will receive an informational insert in their water bill advising them that their drinking water, supplied by the Sewerage and Water Board of New Orleans, is of the highest quality. It also describes the water treatment process. The mailer is called 2013 Report of the State of Tap Water in New Orleans "Quality Water 2013."

This is the 16th time the Board has distributed this Consumer Confidence Report. It is a requirement of the U. S. Environmental Protection Agency (EPA) and must be mailed to all customers once a year, advertised in the Times-Picayune newspaper, posted on the Board's website and be available at government offices and libraries.

It is named "Quality Water 2013" because all of the water tests results are from 2013. You may have some questions, simply because the report is technical in nature and many chemical names and terms are used. While we would have liked to make it simpler, most of the wording used (including the names of all the chemical compounds) is required by the EPA.

If you have any questions that are technical in nature, please call the S&WB Water Quality Laboratory, (504) 865-0420. We are pleased to provide this very positive report, which shows that the water supplied by the Sewerage and Water Board is of the highest quality. The entire report is posted here on the website. We hope that you will review it to learn about the purification process and the high quality of your drinking water.

Please scroll to view the entire report.

A REPORT ON THE STATE OF TAP WATER IN NEW ORLEANS The Sewerage and Water Board is pleased to provide you with this Annual Water Quality Report (also known as the Consumer Confidence Report) for the year 2013. (Este informe contiene información muy importante sobre su aqua potable. Tradúzcalo o hable con alguen que lo entirnda bien.) The Board is proud to provide the citizens of New Orleans each day with an abundant supply of quality water for personal and business needs and fire protection.



Algiers Bank Water Purification Plant

Water Department Provides Citizens with 55 Billion Gallons of Highest Quality Water Each Year

The Sewerage & Water Board of New Orleans has been providing the citizens of New Orleans with water, sewerage and drainage services since the 1890s.

It also operates its own power plant which sometimes serves as a primary power source for Board operations and sometimes as a secondary source when commercial power is not available.

While much of the systems were destroyed by Hurricane Katrina, the men and women of the Board stayed on the job and had all the systems back up and running in record time.

This report—the Consumer Confidence Report (CCR) —focuses on water, but much more information on the Board's recovery and all other services can be found on this website, including info on the Board's own power system.

Because the S&WB's excellent record of presenting specific and timely documentation for Federal assistance, the Federal Emergency Management Assistance (FEMA) has obligated, to date, Project Worksheets for all neighborhoods

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SOURCE & TREATMENT

Presented by the Sewerage and Water Board of New Orleans. Serving the East and West Banks of Orleans Parish.

Our source water is the Mississippi River, a surface water source. This water is treated at the Carrollton Water Purification Plant for East Bank customers and at the Algiers Water Purification Plant for West Bank customers. In 2013 the Carrollton Water Purification Plant provided an average of 143.75 million gallons of drinking water per day to a population estimated to be about 330,021 people. The Algiers Water Purification Plant provided an average of 10.4 million gallons of drinking water per day to a population estimated to be about 53,053 people.* The treatment process at each plant is similar. The raw river water is treated with chemicals called "coagulants" which cause the small particles in the water to come together to form larger particles which are then allowed to settle out of the water. Rapid sand filtration is used to remove even smaller particles. During the process chloramine is added to disinfect the water. Lime is added to provide corrosion control and to increase the pH of the water to stabilize the disinfectant. Fluoride is added to prevent tooth decay.

How contaminants can get into

SOURCE WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **Environmental Protection** Agency's Safe Drinking Water Hotline:

1-800-426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

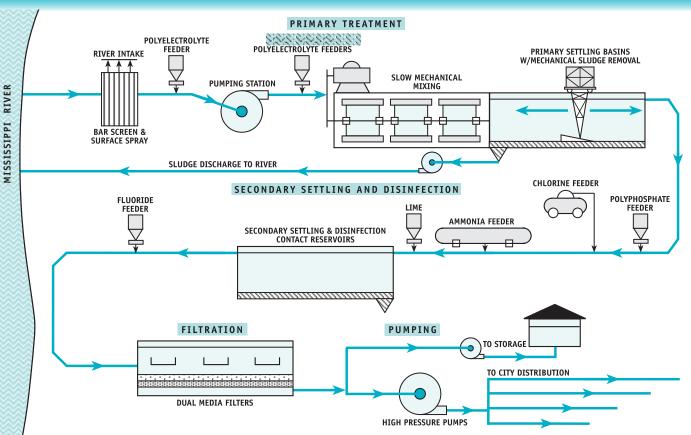
- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulates and establishes limits for contaminants in bottled water. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with **HIV/AIDS** or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/ CDC guidelines on appropriate means to lessen the risk of infection by **Cryptosporidium and other** microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

A Source Water Assessment has been conducted by the State of Louisiana Department of **Environmental Quality. This is an** assessment of a delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources. According to the Source Water Assessment, our water system had a susceptibility rating of high. If you would like to review the Source Water Assessment, contact the Sewerage and Water Board Laboratory at (504) 865-0420.



General flow diagram of water purification process



Cryptosporidium

Cryptosporidium parvum is a microscopic organism which, if ingested, can cause diarrhea, nausea, cramps, fever, and other gastrointestinal symptoms. It is found in sewage and animal waste which is washed into rivers and streams when it rains. Cryptosporidium can be found in nearly all surface waters in the United States. The best defense a water utility can provide is an effective treatment process which includes the multiple barriers of effective and continuous coagulation, disinfection, and filtration.

In healthy persons, symptoms usually last two to three days. However, cryptosporidiosis can be very serious for people with severely weakened immune systems, such as chemotherapy and transplant patients and people with HIV infections. These people should consult a physician about extra protection, including boiling water, using a certified bottle water, or using a home water filter capable of removing Cryptosporidium.

While we occasionally detect low levels of Cryptosporidium in our source water (in 2013, Cryptosporidium was detected in one of twelve monthly samples), it has only been detected in our tap water three times—twice in 1998 and once in March 2014. In each instance the concentration in our tap water was 1 oocyst or less per 100 liters. The test for Cryptosporidium cannot determine if an oocyst is viable or capable of causing illness, and an occasional oocyst in the drinking water of utilities that use surface water is not unusual and does not necessarily indicate a health problem.

DRINKING WATER **Quality Results**

from 2013 Compliance Monitoring

From January 1st thru December 31st 2013, monitoring was carried out to determine if the quality of the drinking water met State and Federal Regulations. This is called compliance monitoring.

definitions

Parts per million (ppm) – This is a measure of concentration which corresponds to one milligram of a substance in one liter of water (mg/L), or about one drop in 10 gallons.

Parts per billion (ppb) – This is a measure of concentration which corresponds to one microgram of a substance in one liter of water (μ g/L), or about one drop in 10,000 gallons.

Parts per trillion (ppt) – This is a measure of concentration which corresponds to one nanogram of a substance in one liter of water (ng/L), or about one drop in 10,000,000 gallons.

Running Annual Average (RAA) – average of data from the previous 12 months, calculated after each monitoring event or period.

Nephelometric Turbidity Unit (NTU) – This is a measure of the cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the average person. We monitor turbidity because it is a good indicator of the effectiveness of our treatment system.

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level (MRDL) – The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) -

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Contaminant Meets Requireme		? Units	<u>Amounts Detected</u> East Bank West Bank		Highest Level Allowed (MCL)	<u>MCL Goal</u> (MCLG)	Likely Sources	
Guitanniant	meets nequirements?	oms		west ballk				
REGULATED CONTAMINAN	TS detected in 2013							
Total Coliform Bacteria	Yes	% Positive samples per month	0 - 0.5	0 - 1.0	5	0	Naturally present in the environment	
Turbidity ¹	Yes	NTU: Lowest monthly % of samples ≤ 0.3:	0.02 - 0.3 100 %	0.03 - 0.3 100 %	1.49 for any one sample; 95% of samples each month should be ≤ 0.3	N/A	Soil runoff	
Fluoride	Yes	ppm	0.44 - 0.89 Avg. = 0.69	0.38 - 1.10 Avg. = 0.70	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	
Nitrate (as Nitrogen)	Yes	ppm	1	1	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	
Copper	Yes	90th percentile ppm: No. sites exceeding AL:	0.1 0 of 53 sampled	0.0 0 of 31 sampled	Action Level = 1.3 for 90th percentile	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	
Lead	Yes	90th percentile ppb: No. of sites exceeding AL:	6 1 of 53 sampled	2 0 of 31 sampled	Action Level = 15 for 90th percentile	0	Corrosion of household plumbing systems, erosion of natural deposits	
Arsenic	Yes	ppb	0	1	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	
Dalapon	Yes	ppb	18	35 - 40	200	200	Runoff from herbicide used on rights of way	
Di(2-ethylhexyl)phthalate	Yes	ppb	0.46 - 0.97	0.84 - 0.96	6	0	Discharge from rubber and chemical factories	
Uranium	Yes	ppb	1	1	30	0	Erosion of natural deposits	
Total Chlorine Residual	Yes	ppm	0.3 - 4.0 highest RAA = 3.3	1.1 - 3.8 highest RAA = 3.1	MDRL: RAA should be \leq 4	$\begin{array}{l} MDRLG:\\ RAA \leq 4 \end{array}$	Disinfectant added during water treatment	
Total Organic Carbon Remo	val ² Yes	ratio	1.00 -1.61 Iowest RAA = 1.09	1.00 - 1.00 lowest RAA = 1.00	TT RAA should be ≥ 1	N/A	Naturally present in the environment	
Total Trihalomethanes (TTHMs)	Yes	ppb	14 - 40 highest RAA = 26	8 - 41 highest RAA = 26	RAA should be \leq 80	N/A	Byproduct of drinking water disinfection	
Total Haloacetic Acids (HAA5s)	Yes	ррb	10 - 34 highest RAA = 19	8 - 36 highest RAA = 25	RAA should be \leq 60	N/A	Byproduct of drinking water disinfection	
UNREGULATED CONTAMIN	ANTS ³ detected in 200	9 and 2010 (from EPA's Unregulated	Contaminant Monitoring	J Regulation 2)				
N-nitrosodimethylamine (NDMA)	Yes	ppt	8 - 36 Avg. = 16	14 - 33 Avg. = 20	N/A	N/A	Byproduct of chemical synthesis and manufacture of rubber, leather, and plastic goods; nitrate reducing bacteria; Foods such as bacon and malt beverages can contain nitrosamines.	

N-nitrosodimethylamine (NDMA)	Yes	ppt	8 - 36 Avg. = 16	14 - 33 Avg. = 20	N/A					

¹ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Its sources include soil runoff. ² TOC Removal is reported here as the ratio of TOC removal credits to that required by regulation.

³ Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. Monitoring for these contaminants helps EPA decide whether these contaminants should have a standard. Monitoring of our tap water for Asbestos, Nitrite, and Dioxin was not carried out due to waivers granted by the US EPA for these specific contaminants only. N/A = not applicable

Frequently Asked Questions

Why is my water milky white at times? Will cloudy water make me sick?

The cloudy or milky appearance is caused by tiny air bubbles in the water. As the water sits, the bubbles will rise to the top, and the water will look clear. This cloudy appearance occurs most often in the winter when the water is cold.

Do we have hard water? What is the hardness of our water?

Yes, New Orleans tap water is considered hard water. Some believe that the term arises from the fact that it is difficult or "hard" to make suds or a lather with soap in hard water. Others say that "hardness" is associated with the fact that it is "hard" to remove the soap ring from the bathtub. Hard water is caused primarily by two harmless minerals—calcium and magnesium. The total hardness is the sum of the two expressed as milligrams per liter (mg/L) of calcium carbonate or grains/gallon of calcium carbonate. In 2013, the average total hardness in tap water was 163 mg/L on the East Bank, and 114 mg/L on the West Bank. For comparison, in terms of mg/L of calcium carbonate, soft water ranges from 0 to 75, moderately hard water from 75 to 150, hard water from 150 to 300, and water above 300 is considered very hard.

Who Tests Your Water?

Testing to determine if New Orleans' drinking water complies with State and Federal drinking water quality standards is performed by the Louisiana Department of Health and Hospitals, the Sewerage and Water Board Water Quality Laboratory, and DHH certified contract laboratories. Where a contaminant was detected in compliance monitoring, we have reported it in the table on pages 4-5.

In addition to the compliance monitoring required by drinking water regulations, the S&WB performs daily quality control testing in its laboratory as well as continuous online monitoring of important water quality parameters.

Checking for Chemical Spills in the Mississippi River

The Sewerage and Water Board participates in a program set up by the Louisiana Department of Environmental Quality called the Early Warning Organic Compound Detection System (EWOCDS). DEQ has provided equipment at locations along the Mississippi River from Baton Rouge to New Orleans to check for volatile organic contaminants in the river.

The New Orleans location is the Sewerage and Water Board Water Quality Laboratory. Lab personnel analyze river samples each day and report any contamination to DEQ. The S&WB in turn benefits from advance notification of spills provided by upriver EWOCDS locations.

Is There Lead in New Orleans' Tap Water?

No lead was present in the treated water leaving our treatment plants; however, homes that are unoccupied and homes that are undergoing or have recently undergone plumbing renovation may experience elevated lead concentrations in their tap water. Homeowners should thoroughly flush all household plumbing before re-occupying the property.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Sewerage and Water Board of New Orleans is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the US EPA Safe Drinking Water Hotline (1-800-426-4791) or at http://www.epa.gov/safewater/lead.



Carrollton Water Purification Plant

continued from cover

in the amount of \$124,323,799 for water line replacements.

Versions are being drafted to incorporate permanent paving, program management, testing, and updates to survey/construction estimates.

The work is being conducted in partnership with the City of New Orleans Department Of Public Works from development of an integrated schedule to community outreach. Work is underway in all phases from survey, design and construction for neighborhoods on the East Bank.

At the Carrollton Water Purification Plant, design is underway through the water hammer hazard mitigation project to install two water storage tanks on site for surge protection and to reduce the risk of low water pressure and repair the distribution pumps at both the Claiborne and Panola Pump Stations. Katrina related damage repairs to the chemical buildings and filter galleries have been completed. Staff rehabilitated the flocculation-sedimentation basins G3 and G4 (replacing gearboxes, upgrading the mono-rake system and replacing the piping).

The water quality laboratory increased its abilities with the addition of a new Total Organic Carbon (TOC) analyzer. Routine monitoring of the TOC removal through the treatment process has been implemented. Staff also overhauled the Eimco Clairifier No. 3 at the Algiers Water Purification Plant.

The muddy Mississippi River, which flows past New Orleans at an average rate of 300 billion gallons per day, is the city's most reliable source of raw water. On a normal day, the city uses approximately 150 million gallons of water for vital health, industrial and fire-fighting purposes. In periods of emergency, such as prolonged freezes, water consumption in Orleans Parish has approached the system's capacity of 250 million gallons per day.

approached the system's capacity of 250 million gallons per day.
Raw water is taken from the river through intakes in both
Algiers and the East Bank plants. After being drawn from the river,
raw water flows through underground pipelines into the Carrolltonmillion gallons per day of water. Combined, the two plants treat
approximately 55 billion gallons of water per year, removing about
20,000 tons of solid material from the raw river water.



and the Algiers purification plants.

The city's purification plants employ modern processes, which remove suspended matter, and destroy disease- causing substances. Those processes produce drinking water exceeding all federal and state standards.

There are two separate intake stations, which can continuously pump Mississippi River water to the East Bank's Carrollton Water Purification Plant. One station draws water from below the river's surface through two 48-inch diameter pipelines and a 72-inch pipeline over the levee, with four electrically driven pumps. The other station draws water from below the river's surface with three electrically driven pumps, which have a combined capacity of 210 million gallons per day.

There are two intake stations serving the West Bank's Algiers Water Purification Plant. Intake Station #1 draws water from below the river's surface with three electrically driven pumps whose combined capacity is 45 million gallons per day.

Intake #2 draws water from below the river's surface with two electrically driven pumps whose combined capacity is 10 million gallons per day.

The purification process at the Algiers Plant is similar to that of Carrollton, utilizing a complex system of chemicals.

Two of the three up-flow treatment units in Algiers have a capacity of 12 Million Gallons per Day (MGD) each with the third capable of 8 MGD.

The Carrollton Water Purification Plant normally yields about 139 million gallons per day of finished water for the east bank of Orleans Parish. The Algiers Plant, which serves the predominately residential west bank portion of the parish, purifies about 11



The City's aging infrastructure, soft soils, Katrina damage and the high number of tree roots result in numerous breaks in underground water, sewerage and drainage pipes and mains. And, even though the Sewerage and Water Board has crews on duty 24 hours a day to repair thousands of broken pipes, the number of new breaks continue to rise. A good example, shown here, is the repair of a break in a major 30-inch water main in the Carrollton area which also supplies water to other parts of the City. Complicating the repair of the 80-year-old pipe was the difficulty identifying other utility lines in the area and having them shut down. Because of the age and design of the old pipe, the Board's own Machine Shop of the Facilities Maintenance Department made sleeves and fittings to match with the old main. Their work shortened the repair time and saved money for customers.

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State-of-the-art Water Laboratory Can Test for 150,000 Compounds

In 1986, after more than four years of planning and construction, the Board opened its new Water Quality Laboratory. Occupying 8,500 square feet of floor space in the Carrollton Water Purification Plant, the lab is an advanced environmental analysis facility, utilizing state-of-the-art technology for detecting and identifying contaminants in water at sub part per billion concentrations. The overall laboratory is divided into areas specifically designed and equipped for organic, inorganic, microbiological and plant production analyses.

The Water Quality Laboratory is staffed by chemists, microbiologists and technicians. Major items of instrumentation include a gas chromatograph-mass spectrometer system, a gas chromatograph, and a total carbon analyzer. The laboratory performs analyses for monitoring the quality of river water and finished water sampled from locations throughout the East Bank and Algiers sections of the city. Information generated in the laboratories is used for controlling plant treatment processes and researching methods of improving those processes and the drinking water.

S&WB Water Meets All EPA Quality Requirements and is Delivered to Customers Via 2,000 Miles of Pipes and Mains

For pumping purified water into the distribution system at 70 per square inch pressure, the Board uses eight high pressure pumps, located at the Carrollton Water Purification Plant having a total

pumping capacity of 350 million gallons per day. Six of these pumps are driven by electrical power and two by steam turbines. The Algiers Pumping Station has a capacity of 34 million gallons per day, provided by six electrically driven pumps.

The water purified and pumped at the two plants is distributed through more than 2,000 miles of mains, ranging in size from 4 inches to 54 inches in diameter. It is distributed to consumers through more than 143,600 service connections, ranging in size from 5/8 inch to 16 inches in diameter. Practically all of these services are metered.

The S&WB also provides water for firefighting purposes via 17,000 hydrants located throughout the city. S&WB personnel are called to duty during larger fires to assist the Fire Department in locating various size mains and provide other necessary services.

Water Quality Report

Since 1998, the U.S. Environmental Protection Agency (EPA) requires all water utilities to produce and distribute annual water quality reports. The report is extensive and elaborates in its discussions on how the board meets EPA water standards and regulations.

The EPA, with further enforcement by the Louisiana Department of Health and Hospitals (DHH), regulates for containments that are selected for enforcement. The board has been vigilant and proactive in its water purification mandates and complies with any regulation. The Board must be able in the future to continue to act expediently.

Sewerage and Water Board of New Orleans Mavor Mitchell J. Landrieu Wm. Ray Manning President President Pro Tem **BOARD MEMBERS** Marion B. Bracy Florence W. Schornstein Charles F. Webb Kerri T. Kane Mark M. Moody Dr. Beverly Wright

Robert K. Miller Interim Executive Director

Glen Pilie

Joseph R. Becker General Superintendent

Loyce P. Wright

Drinking water is one

of the essential ingredients for life. We at the Sewerage and Water Board of New Orleans are committed to supplying safe drinking water of a quality that surpasses the requirements of State and Federal Regulations.

Conclusion

We are confident that a review of this report will help you better understand your water system and the complete dedication of the Sewerage and Water Board members and staff to provide the highest quality water for its customers-the citizens of New Orleans. After all, the Board members and employees are customers too. We are proud of our water, which has been judged the "Best Tasting" in competition with other water from cities throughout the United States. Taste is important, but equally important are the other water quality parameters described in this report. The Sewerage and Water Board will continue to produce high quality water through the use of proven treatment processes, as well as modern technology.

FOR MORE INFORMATION — Sewerage and Water Board of New Orleans

Laboratory: (504) 865-0420 | Emergency Department: (504) 52-WATER (529-2837) | E-mail address: waterinfo@swbno.org Internet Home Page: www.swbno.org

More information can be obtained at Sewerage and Water Board meetings which are held on the third Wednesday of every month at 10 a.m. at 625 St. Joseph Street, New Orleans, Louisiana, 70165.

U.S. E.P.A. Safe Drinking Water Hotline: 1-800-426-4791 U.S. E.P.A. Drinking Water Internet Home Page: www.epa.gov/safewater/dwh

*Estimated population figures provided by GCR, Inc.



Work is underway by the Corps of Engineers to strengthen and storm proof the Boiler Room of the S&WB Power Plant. This post-Katrina work will structurally strengthen the building in the event of another catastrophic storm. This project provides for storm proofing the Carrollton Power Plant and the Old River and New River water intake buildings. It will provide protection for the power production and distribution system that is needed to run massive water pumps for distribution to homes, buildings and fire hydrants.