City of Raleigh
North Carolina

EM Johnson Water Treatment Facility
2010 Finished Water Quality Report

Microbiologicals

Contaminant	Your water	MCL	Sources of Contaminant
Cryptosporidium, Oocysts/L	0	NA	Human and animal fecal waste
Giardia lambia, cyst/L	0	NA	Human and animal fecal waste
Heterotrophic Plate Count, CFU/ml	2.8	NA	HPC measures a range of baceria that are naturally present in the environment
Total Coliform (240 per month)	0.81% were positive	No more than 5% samples are positive	Coliforms are naturally present in the environment
E Coli (240 per month)	0	0 (Note:The MCL is exceeded if a routine sample and repeat sample are total coliform positive and one is also fecal coliform or E Coli positive)	Human and animal fecal waste
Viruses	0	NA	Human and animal fecal waste

Disinfection ByProducts

Contaminant	Your water	MCL	Sources of Contaminant
Bromate, mg/l	<0.005	0.01	Byproduct of drinking water disinfection
Haloacetic Acids (HAA5), ppb	23.7	60	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHMs), ppb	22.7	80	Byproduct of drinking water disinfection
Total Organic Carbon, ppm	2.12	na	Naturally present in the environment
Chloramines, ppm	3.48	MRDL = 4	Water additive used to control microbes

Lead and Copper

Contaminant	Your water	MCL	Sources of Contaminant
Copper (ppm) (90th percentile)	0.05	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	<3	AL = 15	Corrosion of household plumbing systems, erosionof natural deposits

Nitrate and Nitrite

Contaminant	Your water	MCL	Sources of Contaminant
Nitrate, ppm	<1.0	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite, ppm	<0.1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Minerals

Contaminant	Your water	MCL
Calcium, mg/l	6.49	N/A
Sodium, mg/l	30.5	N/A
Magnesium, mg/l	1.90	N/A
Potassium, mg/l	2.90	N/A

Inorganic Chemicals

Contaminant	Your water	MCL	Sources of Contaminant
Antimony, mg/l	<0.003	0.006	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic, mg/l	<0.005	0.01	Erosion of natrual deposits; runoff from orchards, runoff from glass & electronic production wastes
Barium, mg/l	<0.400	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium, mg/l	<0.002	0.004	Discharge from metal refineries and coal-buring factories; discharge from electrical, aerospace, and defense industries
Cadmium, mg/l	<0.001	0.005	Corrosion of galvanized pipes; erosion of natural depositis; discharge from metal refineries; runoff from waste batteries and paints
Chromium (Total), mg/l	<0.020	0.1	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide, mg/l	<0.050	0.2	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride, mg/l	0.95	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Mercury, mg/l	<0.0004	0.002	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands
Selenium, mg/l	<0.010	0.05	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines
Thallium, mg/l	<0.001	0.002	Leaching from ore-processing sites; discharge from electronics, glass and drug factories

Organic Chemical

Contaminant	Your water	MCL	Sources of Contaminant
Alachlor, mg/l	<0.0002	0.002	Runoff from herbicide used on row crops
Atrazine, mg/l	<0.0001	0.003	Runoff from herbicide used on row crops
Benzene, mg/l	<0.0005	0.005	Discharge from factories; leaching from gas storage tanks and landfills
Benzo(a)pyrene, gm/l	<0.00002	0.0002	Leaching from linings of water storage tanks and distribution lines
Carbofuran, mg/l	<0.0009	0.04	Leaching of solil fumigant used on rice and alfalfa
Carbon Tetrachloride, mg/l	<0.0005	0.005	Discharge from chemical plants and other industrial activities
Chlordane, mg/l	<0.0002	0.002	Residue of banned termiticide
Chlorobenzene, mg/l	<0.0005	0.1	Discharge from chemical and agricultural chemical factories
2,4-D, mg/l	<0.0001	0.07	Runoff from herbicide used on row crops
Dalapon, mg/l	<0.001	0.2	Runoff from herbicide used on row crops
o-Dichlorobenzene, mg/l	<0.0005	0.6	Discharge from industrial chemical factories
p-Dichlorobenzene, mg/l	<0.0005	0.075	Discharge from industrial chemical factories
1,2-Dichloroethane, mg/l	<0.0005	0.005	Discharge from industrial chemical factories
1,1-Dichloroethylene, mg/l	<0.0005	0.007	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene, mg/l	<0.0005	0.07	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene, mg/l	<0.0005	0.1	Discharge from industrial chemical factories
Dichloromethane, mg/l	<0.0005	0.005	Discharge from industrial chemical factories
1,2-Dichloropropane, mg/l	<0.0005	0.005	Discharge from industrial chemical factories

Di(2-ethylhexyl) adipate, mg/l	<0.0006	0.4	Discharge from chemical factories
Di(2-ethylhexyl) phthalate, mg/l	<0.00132	0.006	Discharge from rubber and chemical factories
Dinoseb, mg/l	<0.0002	0.007	Runoff from herbicide used on soybeans and vegetables
Endrin, mg/l	<0.00001	0.002	Residue of banned insecticide
Ethylbenzene, mg/l	<0.0005	0.7	Discharge from petroleum refineries
Ethylene dibromide, mg/l	<0.00001	0.00005	Discharge from petroleum refineries
Heptachlor, mg/l	<0.00004	0.004	Residue of banned termiticide
Heptachlor epoxide, mg/l	<0.00002	0.0002	Breakdown of heptachor
Hexachlorobenzene, mg/l	<0.0001	0.001	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene, mg/l	<0.0001	0.05	Discharge from chemical factories
Lindane, mg/l	<0.00002	0.0002	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor, mg/l	<0.0001	0.04	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl (Vydate), mg/l	<0.002	0.2	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes
Pentachlorophenol, mg/l	<0.00004	0.001	Runoff from landfills; discharge of waste chemicals
Picloram, mg/l	<0.0001	0.5	Herbicide runoff
Simazine, mg/l	<0.00007	0.004	Herbicide runoff
Styrene, mg/l	<0.0005	0.1	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene, mg/l	<0.0005	0.005	Discharge from factories and dry cleaners
Toluene, mg/l	<0.0005	1	Discharge from petroleum factories
Toxaphene, mg/l	<0.001	0.003	Runoff/leaching from insecticide used on cotton and cattle
2,4,5-TP (Silvex), mg/l	<0.0002	0.05	Residue of banned herbicide
1,2,4-Trichlorobenzene, mg/l	<0.0005	0.07	Discharge from textile finishing factories
1,1,1-Trichoroethane, mg/l	<0.0005	0.2	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane, mg/l	<0.0005	0.005	Discharge from industrial chemical factories
Trichloroethylene, mg/l	<0.0005	0.005	Discharge from metal degreasing sites and other factories
Vinyl chloride, mg/l	<0.0005	0.002	Leaching from PVC pipes; discharge from plastic factories
Xylenes (Total), mg/l	<0.0005	10	Discharge from petroleum factories; discharge from chemical factories

Radionuclides

Contaminant	Your water	MCL	Sources of Contaminant
Alpha Particles, pCi/L	10.8	15	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
Beta particles and photon emitters, pCi/L	17.4	50	Decay of natural and man made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
Radium 226 and Radium 228 (combined), pCi/L	<1	5	Erosion of natural deposits
Uranium, pCi/L	<0.67	20.1	Erosion of natural deposits

Water Quality Characteristics

Contaminant	Your water	MCL
Alkalinity, mg/l as CaCO3	28.1	NA
Alumimium, mg/l	<0.01	0.2
Ammonia, mg/l	0.51	NA
Bromide, mg/l	0.024	NA
Carbon Dioxide, mg/l	0.26	NA
Chloride, mg/l	12.9	250
Color, CU	0.65	15

Conductivity, uS/cm	206	NA
Dissolved Oxygen, mg/l	8.61	NA
Hardness, Total, mg/l as CaCO3	25.7	Classified as "Soft"
Hardness, Total, grains per gallon	1.50	Classified as "Soft"
Iron, mg/l	<0.060	0.3
Manganese, mg/l	<0.010	0.05
Nickel, mg/l	<0.100	NA
Odor, TON	0.42	3
pH, SU	8.37	6.5 to 8.5
Silica, mg/l	6.71	NA
Sulfate, mg/l	52	250
Temperature, C	19	NA
Total Dissolved Solids, mg/l	137	500
Turbidity, ntu	0.07	NA
Zinc, mg/l	<0.01	5

Unregulated Contaminant Monitoring Regulation Second Cycle (UCMR2)

Location: Finished Water

Contaminant	Your water, ug/l	MRL
Dimethoate	<0.7	0.7
2,2,4,4,5,5-Hexabromobiphenyl (HBB)	<0.7	0.7
2,2,4,4,5,5-Hexabromodiphenyl ether (BDE-153)	<0.8	0.8
2,2,4,4,5-Pentabromodiphenyl ether (BDE-99)	<0.9	0.9
2,2,4,4,6-Pentabromodiphehyl ether (BDE-100)	<0.5	0.5
Terbufos-sulfone	<0.4	0.4
2,2,4,4-Tetrabromodiphenyl ehter (BDE-47)	<0.3	0.3
1,3-Dinitrobenzene	<0.8	0.8
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	<1.0	1
TNT (2,4,6-Trinitrotoluene)	<0.8	0.8
N-Nitrosodiethylamine (NDEA)	<0.0050	0.005
N-Nitrosodimethylamine (NDMA)	<0.0020	0.002
N-Nitrosodi-N-butylamine (NDBA)	<0.0040	0.004
N-Nitrosodi-N-propylamine (NDPA)	<0.0070	0.007
N-Nitrosomethylethylamine (NMEA)	<0.0030	0.003
N-Nitrosopyrrolidine (NPYR)	<0.0020	0.002
Acetochlor	<2.0	2
Alachlor	<2.0	2
Metolachlor	<1.0	1
Acetochlor ESA	<1.0	1
Acetochlor OA	<2.0	2
Alachlor ESA	<1.0	1
Alachlor OA	<2.0	2
Metolachlor ESA	<1.0	1
Metolachlor OA	<2.0	2

Unregulated Contaminant Monitoring Regulation Second Cycle (UCMR2)

Location: Distribution System Maximum Residence Time

Contaminant	Your water, ug/l	MRL
N-Nitrosodiethylamine (NDEA)	<0.0050	0.005
N-Nitrosodimethylamine (NDMA)	0.0062	0.002
N-Nitrosodi-N-butylamine (NDBA)	<0.0040	0.004
N-Nitrosodi-N-propylamine (NDPA)	<0.0070	0.007
N-Nitrosomethylethylamine (NMEA)	<0.0030	0.003
N-Nitrosopyrrolidine (NPYR)	<0.0020	0.002

Treatment Process Information

Chemical	Typical Dosage Range	Purpose of Treatment
Ozone, ppm	1 - 3	Oxidant
Potassium Permanganate, ppm	1 - 4	Pre Oxidant
Ferric Sulfate, ppm	50 - 80	Coagulant
Polymer, ppm	.05 - .08	Coagulant Aid
Sodium Hydroxide, ppm	15 - 35	pH Control
Carbon, ppm	1 - 3	Taste and Odor and organics removal
Silicate, ppm	1.5 - 13	Corrosion control
Hydrofluorosilicic Acid, ppm	.95 - 1	Fluoride Additive
Chlorine, ppm	6 - 7	Disinfectant
Ammonia, ppm	3.5:1 Cl2:NH3 Ratio	Disinfectant when use in conjuction with chlorine to form chloramines