

NEUSE RIVER WWTP FACT SHEET FOR 2008

- THE CITY'S COLLECTION SYSTEM IS MADE UP OF OVER 1300 MILES OF SEWER LINES. THESE LINES RANGE IN SIZE FROM 8" TO 72". THERE ARE 118 PUMP STATIONS THAT PUMP WATER TO THE PLANT. WASTEWATER IS ALSO RECEIVED FROM GARNER, KNIGHTDALE, ROLESVILLE AND WENDELL. INFLUENT FLOW ENTERS THE PLANT THROUGH A DUEL 72" SEWER MAIN.
- 4 INFLUENT SCREWS RATED AT 20 MGD EACH LIFT WASTEWATER @ 29 FEET. PLANT DESIGN FLOW IS 60 MGD. THE AVERAGE FLOW IS 45 MGD. THE HIGHEST DAILY AVERAGE WAS 76.18 MGD. THE HIGHEST PEAK FLOW WAS 102 MGD.
- 3 VERTICAL TURBINES INFLUENT PUMPS RATED AT 20 MGD EACH.
- 1 EQUALIZATION BASIN TOTAL CAPACITY IS 32 MGD; IT ALSO HAS 2 VERTICAL DRAIN PUMPS CAPABLE OF PUMPING 16 MGD PER PUMP WHICH ALLOWS THE CITY OF RALEIGH TO OPERATE THE PLANT IN THE PRIMARY TO EQ FLOW MODE.
- SCRUBBERS – 4 SCRUBBERS ARE LOCATED AROUND THE PLANT. THEY HELP REMOVE ANY ODORS FROM THE WATER TREATMENT OR SLUDGE HANDLING PROCESSES.
- 3 FINE SCREENS – REMOVES STICKS, RAGS OR ANY OTHER LARGE OBJECTS. OTHER ITEMS HAVE BEEN FOUND.
- 3 VORTEX GRIT PUMPS – REMOVE SAND, GRIT OR ANY INORGANIC MATERIAL.
- 5 PRIMARY CLARIFIERS – 250' (L) X 41' (W) X 11' (D) EACH TANK HOLDS 834,370 GALLONS. TOTAL PRIMARY CAPACITY 4,216,850 GALLONS.
- CAUSTIC & METHANOL TANKS – CAUSTIC IS PUMPED INTO INFLUENT CHANNEL FOR pH ADJUSTMENT AND ODOR CONTROL. METHANOL IS ADDED AT THE AERATION BASINS AND FILTER INFLUENT WHICH AIDES IN EFFLUENT NITROGEN REMOVAL.
- BLOWERS – 4 RATED AT 2250 HP EACH. THE ELECTRIC BILL FOR THE PLANT AVERAGES \$300,000+ PER MONTH.
- AERATION BASINS – 333' (L) X 233' (W) X 14.25' (D) EACH BASIN HOLDS 6.37 MG. TOTAL BASIN CAPACITY IS 38.22 MG. THE BASINS ARE DESIGNED FOR BNR (BIOLOGICAL NUTRIENT REMOVAL) TO REMOVE NITRATES.
- SECONDARY CLARIFIERS – CLARIFIERS 2-11 ARE 100 FEET IN DIAMETER AND ARE 12 FEET IN DEPTH. VOLUME = 704,970 GALLONS. CLARIFIERS 1 & 12 ARE 165 FEET IN DIAMETER AND 15 FEET IN DEPTH. VOLUME = 2.25 MG.
- 4 UNCOVERED AEROBIC DIGESTERS – 224' (L) X 124' (W) X 12' (D) EACH DIGESTOR HOLDS 1.62 MG. TOTAL CAPACITY 6.5 MG. DESIGN DETENTION TIME IS 20 –30 DAYS.
- 4 COVERED AEROBIC DIGESTERS – 150 FEET IN DIAMETER AND 20 FEET IN DEPTH. VOLUME IS 2.5 MG. TOTAL CAPACITY IS 10 MG.
- 12 TERTIARY FILTERS – MEDIA CONSISTS OF SAND AND GRAVEL BED.
- UV LIGHTS – TOTAL WEDECO UV SYSTEM CONTAINS 640 BULBS. EACH BULB COST \$100. UV LIGHTS USE C-WAVE. TANNING BEDS USE 'A' OR 'B' WAVE. AT A DISTANCE OF 2' FOR 20 SECONDS 'C' WAVES CAN CAUSE 2ND DEGREE BURNS.
- FARM – THE FARM PLANTS 1,000 ACRES OF CROPS (CORN, HAY, and SOYBEANS & WHEAT).
- LBS TSS INF. /YEAR – 28,450,236, LBS TSS EFF. /YEAR – 50,264, LBS REMOVED = 28,399,972, REMOVED 99.8 % PERMIT LIMIT IS 30 mg/L.
- LBS BOD INF. /YEAR – 29,093,753, LBS BOD EFF. /YEAR – 47,361, LBS. REMOVED – 29,046,392, REMOVED 99.8 % PERMIT LIMIT IS 10 mg/L IN THE WINTER AND 5 mg/L IN THE SUMMER.
- LBS INF. TOTAL NITROGEN. /YEAR – 4,228,394, LBS EFF. TOTAL NITROGEN /YEAR 8,273, LBS OF NITROGEN REMOVED – 4,220,121. REMOVED 93.89% PERMIT LIMIT IS 2 mg/L IN SUMMER AND 4 mg/L IN WINTER.