Duke Power
A Duke Energy Company

Gary R. Peterson
Vice President
Catawba Nuclear Station

Duke Power
4800 Concord Rd.
York, SC 29710
(803) 831-4251 *OFFICE*
(803) 831-3221 *FAX*
grpeters@duke-energy.com

May 16, 2002

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414
NPDES Permit # SC0004278 Renewal Application

Pursuant to the requirements of Duke's Corporate Environmental Manual, please find attached a copy of the renewal application for NPDES Permit Number SC 0004278 that was submitted to the state on March 16, 2000.

The distribution of this application to the Nuclear Regulatory Commission is delayed beyond the required thirty days. The delay is attributed to internal organizational changes without changing appropriate internal reporting guidance. Catawba generated problem investigation process (PIP) report C-02-1224 to track corrective actions to ensure future submittals are distributed within the required timeframe.

Questions regarding this submittal should be directed to Kay Nicholson at 803.831.3237.

Sincerely,

Gary R. Peterson

Attachment

xc: L. A. Reyes, Regional Administrator, Region II
C. P. Patel, NRR Senior Project Manager
D. J. Roberts, Senior Resident Inspector

C001

Catawba Nucleur Station

NPDES Permit # SC0004278

Renewal Application

3-16-2000

Duke Power
A Duke Energy Company

Duke Power
Group Environment, Health & Safety
MG03A5
13339 Hagers Ferry Road
Huntersville, NC 28078-7929

March 16, 2000

South Carolina Department of Health and Environmental Control
ATTN: Betty Lou Foster
NPDES Administration Section
2600 Bull Street
Columbia, SC 29201

Subject: Catawba Nuclear Station
NPDES Permit #SC0004278 Renewal Application
Certified: 7099 3400 0003 7612 5710

Dear Ms. Foster:

The above referenced permit expires September 30, 2000. Part II.B.5 of the subject permit requires the submittal of an application for renewal at least 180 days prior to expiration.

Attached please find a completed NPDES permit renewal application consisting of the following documents:

- Form 1 – General Information (With Quad Map)
- Supplemental Information
- Form 2C – Application for Permit to Discharge Wastewater (Existing Facility)
- Form 2E – Facilities Which Do Not Discharge Process Wastewater
- Sludge Disposal Supplement for NPDES and ND Permit Applications
- BMP Plan Summary
- Summary of Requested NPDES Permit Changes.

Please note 316(a) demonstration data was submitted with the last permit application in March 1997. Additional data is not being submitted with this permit application, however we request a continued 316(a) variance and renewal of the current thermal limits.

Also, the NOI for storm water is on file with SCDHEC and is not being included with this application. It is our understanding that storm water requirements may be removed from the permit and placed in a separate permit.

Upon completion of your review of this application, please provide notification that the application is complete. Should you have questions or need additional information please contact Margot Rott at (803) 831-3180, email at marott@duke-energy.com or Susan P. Robinson at (704) 875-5973, email at sprobins@duke-energy.com.

Sincerely,

Angela M Grooms

Angela M. Grooms, Water Protection Manager
Group Environment, Health & Safety, Environmental Protection

bc: File: CN-702.13
Group EHS Record # CN-006121
S.W. Rodgers – CN03CH
M.A. Rott – CN04EM
C.T. Peed – CN04EM
G.W. Sain – EC07D
S.P. Robinson - MG03A5
M.E. Hollis - w/o
B.E. Davis - w/o

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2040-0086. Approval expires 5-31-92

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERAL INFORMATION
Consolidated Permits Program
(Read the "General Instructions" before starting)

1. EPA I.D. NUMBER: S F SC0004278 T/A C D

LABEL ITEMS
- I. EPA I.D. NUMBER
- III. FACILITY NAME
- V. FACILITY MAILING ADDRESS
- VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area *(s)* below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms.**

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge to waters of the U.S.?** (FORM 2A)		X	
C. Is this a facility which currently results in **discharges to waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		X
E. Does or will this facility treat, store, or dispose of **hazardous wastes?** (FORM 3)	X		N/A
Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area?** (FORM 5)		X	

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge to waters of the U.S.?** (FORM 2B)		X	
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge to waters of the U.S.?** (FORM 2D)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area?** (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: CATAWBA NUCLEAR STATION

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 PEED, CHERYL, EHS MANAGER	803 831 3361

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: 3 4800 CONCORD ROAD

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 YORK	SC	29745

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 5 SC HIGHWAY 274

B. COUNTY NAME: ORK

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 NEWPORT	SC		

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES *(4 digit in order of priority)*

A. FIRST	B. SECOND
4911 (specify) ELECTRIC UTILITY	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME

DUKE Energy Corporation (see attachmentfor list of owners)

B. Is the name listed in Item VIII-A also the owner? [X] YES [ ] NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other," specify.)*

F = FEDERAL S = STATE P = PRIVATE M = PUBLIC *(other than federal or state)* O = OTHER *(specify)*

P (specify)

D. PHONE *(area code & no.)*

A 704 875 5205

E. STREET OR P.O. BOX

422 South Church Street

F. CITY OR TOWN	G. STATE	H. ZIP CODE	IX. INDIAN LAND
Charlotte	NC	28242	Is the facility located on Indian lands? [ ] YES [X] NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
N SC0004278	P
B. UIC *(Underground Injection of Fluids)*	**E. OTHER** *(specify)*
U	463303-1601 (specify) SCDHEC LANDFILL
C. RCRA *(Hazardous Wastes)*	**E. OTHER** *(specify)*
R SCD070619796	2440-0070 (specify) SCDHEC Air Permit

MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

NUCLEAR FUEL STEAM ELECTRIC GENERATION

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
ddy E. Davis P Group Env. Health & Safety	BE Davis	3/21/00

COMMENTS FOR OFFICIAL USE ONLY

EPA Form 3510-1 (8-90)

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF WATER

LOCATION SUPPLEMENT FOR ND AND NPDES PERMIT APPLICATIONS

FACILITY: CATAWBA NUCLEAR STATON DATE: 3/2/00

ITEM 1: Please give a short description of the plant location, if the address is not a specific location. Example: Plant is located at the interchange of Interstate 26 and U.S. Highway #1.

The address is: Catawba Nuclear Station
4800 Concord Road
York, SC 29745

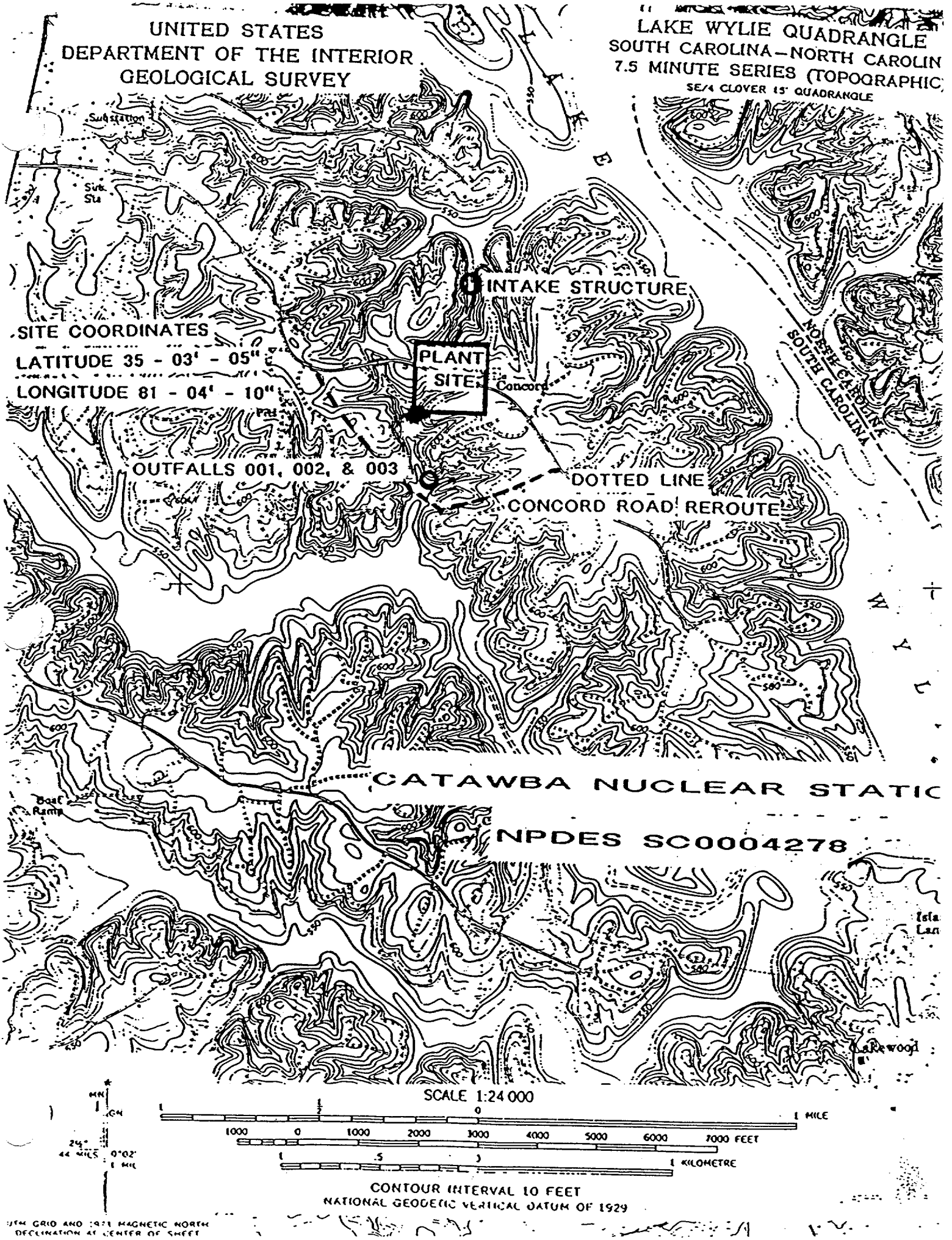
Concord Road is located off of Highway 274 approximately 2 miles south of the intersection of Highways 55, 49, and 274.

ITEM 2: Please give a description of the location of the discharge point into the receiving stream using some landmark as a reference point, i.e., bridge, stream, road junction, the plant itself, etc. Give the direction and the distance in feet from the reference point. Example: Discharge #001 is into Johnny Creek approximately 300 feet directly behind the plant. Discharge #002 is into Doris Creek 150 feet downstream from U.S. Highway #30 bridge.

Outfalls #001, 002, and 003 discharge into the Big Allison Creek arm of Lake Wylie, approximately 1500 feet north of the Concord Road Bridge that crosses Big Allison Creek.. Looking north from the bridge the discharge points for Outfall 001 and 003 are visible. From the facility site, the discharge points are located immediately south of the perimeter fencing. Outfalls #004 and 005 are internal to Outfall #001.

ITEM 3: Please locate the discharge on a U.S. Geological Survey 7 ½ minute quad sheet (or a 15 minute quad sheet if a 7 ½ quad is not available for the area). The entire quad sheet need not be submitted. An 8 ½ by 11 inch photocopy of the applicable portion of the map is sufficient. The quad sheet name must be provided on the copy submitted to the Department. USGS Maps are available at the SC Dept. Of Natural Resources/Map Division, 2221 Devine Street, Suite 222, Columbia, SC 29205. Phone number is 734-9108

The 7 ½ minute Lake Wylie Quadrangle, South Carolina – North Carolina, SE/4 Clover 15' Quadrangle is attached. Please note that Concord Road was rerouted since this USGS map was produced.


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
LAKE WYLIE QUADRANGLE
SOUTH CAROLINA–NORTH CAROLIN
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 CLOVER 15' QUADRANGLE
INTAKE STRUCTURE
SITE COORDINATES
LATITUDE 35 - 03' - 05"
LONGITUDE 81 - 04' - 10"
PLANT SITE
Concord
OUTFALLS 001, 002, & 003
DOTTED LINE
CONCORD ROAD REROUTE
NORTH CAROLINA
SOUTH CAROLINA
CATAWBA NUCLEAR STATIC
NPDES SC0004278
Boat Ramp
Substation
Lakewood
SCALE 1:24 000
1 MILE
7000 FEET
1 KILOMETRE
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

CATAWBA NUCLEAR STATION

NPDES PERMIT #SC0004278

Supplemental Information

03/16/00

1.0 General Station Description

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4.1.4 Turbine Building Sumps

4.1.5 Auxiliary Building Floor Drain Sumps

4.1.6 Diesel Generator Catchment Sumps

4.1.7 Step-up Transformers Base Drainage Sumps

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8.4 Miscellaneous System and Component Cleanings

8.4.1 Mechanical Cleanings

8.4.2 Chemical Cleanings

8.5 Storm Water Discharges

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9.1 Landfill

9.2 Air Permit

9.3 RCRA Hazardous Waste

9.4 Underground Storage Tank Permits

9.5 Asbestos

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10.1 Hazardous and Toxic Substances, Table 2c-3

10.2 Hazardous Substances Under 40 CFR 117 and CERCLA

11.0 Thermal 316(a) and Impingement/Entrainment 316(b) Demonstrations

12.0 Site Layout/Drawing

General Site Layout and Identification of Outfall Locations

1.0 General Station Description

The Catawba Nuclear Station is a two unit nuclear fission steam electric generating station. It is owned by Duke Energy Corporation, North Carolina Electric Membership Corporation, North Carolina Municipal Power Agency Number #1, Piedmont Municipal Power Agency, and the Saluda River Electric Cooperative, Inc. Duke Power Company operates the facility.

Each unit is a four loop pressurized water reactor. Reactor fuel is sintered uranium oxide pellets with zirconium alloy cladding. Reactor heat from each unit is absorbed by the reactor coolant system and produces steam in four steam generators sufficient to drive a turbine generator unit with a design net electrical rating of 1129 megawatts.

The nuclear reaction is controlled by control rods and chemical neutron absorption. Boric acid is used as a chemical neutron absorber and to provide borated water for safety injection. During reactor operation, changes are made in the reactor coolant boron concentration.

A schematic diagram of water use and discharges indicating average rates of flow for individual waste streams of Catawba Nuclear Station is attached. Actual flow through individual systems may vary significantly depending on need to operate and meteorological conditions. The following is a brief description of the major water systems inputs and discharges.

The station has 5 permitted Outfalls, three of which discharge directly into Lake Wylie. Outfall 001 discharges the Low Pressure Service water, Outfall 002 discharges the Conventional Wastewater Treatment system, and Outfall 003 discharges the Sanitary Wastewater system. Outfall 004 is an internal Outfall discharging low level radioactive effluents through Outfall 001. Outfall 005 is also an internal Outfall discharging cooling tower blowdown through Outfall 001.

2.0 Station Intakes

There are two intake structures to withdraw raw water from Lake Wylie, one for the Low Pressure Service Water System and one for the Nuclear Service Water System. Lake water enters each intake structure through trash racks that remove large debris. Intake water then flows through traveling screens, which remove smaller debris.

2.1 Low Pressure Service Water Intake Structure

There are a total of six pumps on the Low Pressure Service Water intake structure. Three are for the Low Pressure Service Water System and three are for the Fire Protection System. Each Low Pressure Service Water pump is in a separate bay equipped with a trash rack and traveling screen. The trash racks and traveling screens remove trash and prevent debris from entering the pumps.

Accumulated trash is cleaned from the racks by hand and from the screens by a backwash system. The intake screens can be backwashed manually or automatically, or as frequently as the differential pressure alarms on each pump bay indicate the need. Each screen is backwashed every eight hours for approximately 10 minutes per screen. The water is returned to Lake Wylie at the intake bay. The trash and debris collected from the racks and screens are disposed in a permitted landfill. No chemicals are used in the backwash operation.

The three low pressure service water pumps are separated by precast concrete wall panels that form pump wells. Each pump withdraws water from its well and discharges to a common header. After leaving the common header, flow is divided into two main headers, A and B. Both headers are in service during normal operations, however a single header can provide sufficient flow to meet system demands with both units in operation.

Upon entering both headers A and B, flow passes through a strainer designed to remove still finer debris from the lake water. These strainers backwash automatically based upon either a set time interval or increase in differential pressure. This backwash water passes through each strainer and drains back to the lake in the vicinity it was originally withdrawn.

2.2 Nuclear Service Water System Intake Structure

The Nuclear Service Water System is a once-through, non-contact plant cooling water system. This system supplies cooling water to various heat loads in the Auxiliary and Reactor Buildings other than the secondary (steam) side of the station. It is served by two bodies of water - Lake Wylie and the Standby Nuclear Service Water Pond - but only one pump structure. The intake in each water body is completely submerged approximately 30 feet below the surface of the water. The Standby Nuclear Service Water Pond and the pump structure are seismically designed with sufficient water to bring the station to a cold shutdown in case of the loss of Lake Wylie Dam. Pond level is maintained via an

overflow pipe to the lake and pumping capability from the lake. Water from either the pond or the lake is piped to the nuclear service water pump structure. The pump structure consists of two 330,000 gallon pits that serve to provide suction to the pumps. There are two pumps per pit. In normal Nuclear Service Water System operation, pump suction is from Lake Wylie. Pump suction can be switched to the Standby Nuclear Service Water Pond.

Additionally, during testing required by the Nuclear Regulatory Commission, in order to verify flow balance, and certain times during plant operation, the Nuclear Service Water system is aligned to discharge to the Standby Nuclear Service Water Pond rather than Outfall 001. When discharge is aligned in this manner, the pump suction can be either from the lake or the pond.

In order to maintain the temperature of the Standby Nuclear Service Water Pond within limits imposed by the Nuclear Regulatory Commission, cooler water from Lake Wylie is periodically pumped to the pond. This is dependent on current weather conditions, and the amount of time in such alignment will vary.

The typical temperature change of the water removed from and returned to the Standby Nuclear Service Water Pond is 2 ^{o}F. The temperature change would be greater if alignment to the pond should occur during the process of shutdown. The discharge line to the pond splits and discharges flow to separate points of the pond to assure that cooling will be uniform across the surface.

Periodically to ensure operability, the nuclear service water pump bearings are cleaned to remove silt and sediment deposits, which restrict pump cooling water flow. Approximately fifty gallons of cleaning solution are injected into the bearing cooling water flow path for each pump. A soda ash (Na_2CO_3) solution is used for rinsing the pump bearings. The cleaning solutions are captured in drums and are used as treatment chemicals in the conventional treatment ponds. This cleaning is not considered a chemical metal cleaning and does not attack the base metal of the piping.

3.0 Outfall 001

3.1 Inputs

Outfall 001 discharges subsurface through a concrete structure directly into the Big Allison Creek arm of Lake Wylie and is comprised of the:

- Low Pressure Service Water System
- Liquid Radioactive Waste Outfall 004
- Cooling Tower Blowdown Outfall 005
- Nuclear Service Water System.

A detailed description of each input follows.

3.1.1 Low Pressure Service Water

The Low Pressure Service Water System supplies raw water from Lake Wylie for makeup and cooling of various secondary plant systems. This system also receives discharges from the Nuclear Service Water System, Liquid Radioactive Waste System (Outfall 004), and Cooling Tower Blowdown (Outfall 005).

3.1.2 Liquid Radioactive Waste – Internal Outfall 004

Outfall 004 discharges flow from the liquid radioactive waste system. This flow combines with plant once through cooling water before discharging through Outfall 001.

The liquid radioactive waste system collects waste from floor and equipment drains, laundry waste, and ventilation unit drains. All waste is processed to Nuclear Regulatory Commission (NRC) requirements (10 CFR Part 20 and 10 CFR Part 50) prior to release with the type of processing dependent on the type of waste. The maximum discharge rate from radioactive waste is 250 gpm. Chemicals that may be present in the liquid radioactive waste system include:

boric acid	borax	nitrate
ammonia	morpholine	lithium hydroxide
ethylene glycol	Tolytriazone (TTA)	nitrite/borax corrosion inhibitor
detergents	biocides	Hydrazine
carbohydrazide	chlorine or hypochlorite	hydrogen peroxide
ethylene diamine tetracetic acid (EDTA)	3-MPA and DMA	organic phosphonates used in heat exchanger lay-up
pump bearing cleaning chemicals	laboratory chemicals	surfactants
polyelectrolytes	industrial cleaning products	degreasers
defoamer (to control foam during periods of high laundry waste)	dispersant	

Non-contaminated sumps can become contaminated with radioactivity. When this occurs, the liquid can be pumped to the liquid radioactive waste system for treatment. The decision on the method of treatment depends on the amount of waste needing treatment and the quality of the water being treated. Chemicals listed as being in the Turbine Building Sump (in Section 4.0, titled Outfall 002) could then be in the radioactive waste system (Outfall 004). Solids or concentrated radioactive by-product generated in the treatment process are disposed of in a State and Nuclear Regulatory Commission licensed low level radioactive waste disposal facility.

3.1.3 Cooling Tower Blowdown – Internal Outfall 005

The Condenser Circulating Water System provides the heat sink for the main condenser and the feedwater pump turbine condensers. This is a closed loop cooling system containing 7.5 million gallons of service water per unit.

After passing through condensers, the warm water is pumped to the top of the cooling towers. This water is distributed uniformly across the top of the cooling towers (three per unit) and cascades by gravity to the floor of each cooling tower. Falling water cascades over fill material, which breaks the water into droplets. Fans on the top of the towers pull ambient air in from the sides and past the falling water. From the floor of the cooling tower, water flows by gravity back to the condenser.

Due to the concentrating effect of evaporation, a blowdown rate of approximately 5000 gallons per minute is maintained per unit. Blowdown rates can be higher or lower depending upon system water quality. The Low Pressure Service Water system provides makeup to maintain the system volume.

Sodium hypochlorite and sodium bromide are added to the cooling towers periodically to provide an oxidizing biocide to control biological growth. If necessary, sulfuric acid is added to lower pH. A polyacrylate dispersant may be added to minimize solids deposition from the lakewater.

Normal oxidant additions range from every other day to once per week based on seasonal conditions. During biocidal treatment, the blowdown line to Outfall 001 is secured. During those times when blowdown is necessary to prevent scaling and control algae growth, if chlorine concentrations exceed discharge specifications, sodium sulfite or sodium nitrite can be added to the cooling towers in stoichiometric proportions for dechlorination.

As an enhancement to chlorine, organic biocides may be added for biofouling control. Currently approved biocides include Calgon H64O, Drew Biosperse 288, Drew Biosperse 216, Betz Slimicide C79, Buckman Bulab 6002, and Calgon H-130. Only one biocide would be used at a time. Multiple approvals have been obtained for bidding purposes from different chemical manufacturers.

Quarterly, sections of the Nuclear Service Water systems, which are kept in wet lay-up, are drained to the condenser circulating water system. Water in these sections contain corrosion inhibitors and chemicals to control pH. These chemicals are discharged at concentrations that would not exhibit toxicity.

The cooling tower blowdown is aligned to the Low Pressure Service Water and discharges through internal Outfall 005 then to Lake Wylie through Outfall 001. During unit outages, part or all of the Condenser Circulating Cooling System can be drained to Outfall 00l and/or the Conventional Wastewater Treatment System, Outfall 002.

3.1.4 Nuclear Service Water

The Nuclear Service Water System is a once-through, non-contact plant cooling water system. This system supplies cooling water to various heat loads in the Auxiliary and Reactor Buildings other than the secondary (steam) side of the station. This system is served by two bodies of water - Lake Wylie and the Standby Nuclear Service Water Pond - but contains only one pump structure.

As a result of macroinvertebrates (Corbicula: Asiatic clams), microbiologically influenced corrosion (MIC), and siltation, a chemical methodology is necessary. Polyacrylate solution is added to the system to control deposition. The discharge of the polyacrylate solution is maintained well below the No Observable Effect Concentration. Sodium hypochlorite and sodium bromide are added to the system (starting in November 2000) for up to two hours per day to better control corrosion and clam growth. During biocide addition, grab samples are collected and analyzed every 20 minutes until chlorine is no longer present. The total residual chlorine concentration at Outfall 001 will vary over the two hour discharge period. The average daily discharge concentration is less than the permit limit of 0.019 mg/l. The station performs a time-weighted average calculation to determine chlorine concentration for each 24-hour period as follows (example calculation):

1 hour at 0.3 mg/l, 1 hour at 0.1 mg/l, 22 hours at 0 mg/l
Sum of 24 hr total = 0.4 mg/l
24 hour average: $0.4 \div 24 \equiv 0.0167$ mg/l daily maximum

Corrosion inhibitors are used in several system heat exchangers and piping sections during wet lay-up conditions. Products used to perform the lay-up consist of carbohydrazide, nitrites, polysilicates, polyphosphates, phosphates, borates 3-MPA, and DMA. These formulations are used in conjunction with a dispersant and penetrant for deposit control and a biocide for biofouling control. These products are used such that discharge concentrations do not exhibit toxicity.

The closed cooling system for the containment building can be automatically discharged through Outfall 001 if all power is lost to the system chiller unit. The automatic release will only occur during a loss of power to the system, which is a very infrequent event. The system uses a carbohydrazide corrosion inhibitor. The concentrations of layup chemicals within the system are maintained such that no toxicity is exhibited at the Outfalls.

Products used for wet lay-up and to control clam growth in the safety related nuclear service water system could be discharged to the Standby Nuclear Service Water Pond during required system testing. Also, low concentrations of these products may be discharged to the pond if the discharge path to Lake Wylie automatically swaps the discharge to the pond. However, product biodegradation and system demand would minimize the discharge concentration.

3.2 Flows

	5 Year Average (mgd)	5 Year Maximum (mgd)
Low Pressure Service Water and Nuclear Service Water	59.14	93.58
Liquid Radioactive Waste	0.02	0.04
Cooling Tower Blowdown	11.04	31.68
Total Flow Outfall 001	70.2	125.32

3.3 Chemicals & Characteristics Of Discharge

This Outfall consists primarily of raw water from Lake Wylie, which is used for plant cooling and receives no treatment prior to discharge. This stream is used primarily as cooling water for plant equipment and as such discharges some degree of a heat load to Lake Wylie. Because of this, the temperature is continuously monitored by in line instruments which input to the Operator Aid Computer. The temperature change as well as total flow are also measured in this manner. The computer is programmed to provide the operators an alarm when the delta temperature begins to approach the permitted limit. This allows the operators time to adjust plant operations to maintain the discharge temperature within the permit limits. At times when the temperature and flow monitoring devices are out of service for calibration or the computer is down, temperatures are measured once per day and flows are estimated at least once per day.

4.0 Outfall 002

4.1 Description of Discharge

Outfall 002 discharges flow from the Conventional Wastewater Treatment System through a Parshall flume into the Big Allison Creek arm of Lake Wylie. This system consists of the following:

1 Initial Holdup Pond	Concrete	300,000 gallons
2 Settling Ponds	Earthen	5,000,000 gals each
1 Final Holdup Pond	Earthen	1.5 million gallons

Normally, inputs are received in the Initial Holdup Pond (IHP) which serves a surge-dampening function to the settling ponds and also allows heavy solids to settle for periodic removal. Solids removed from the IHP are dewatered and disposed in a licensed landfill. Inputs can bypass the IHP and be directed to the in-service settling pond or Final Holdup Pond if necessary.

From the Initial Holdup Pond flow is directed to the in-service settling pond where chemical treatment, mixing, and aeration take place. Sulfuric acid and sodium hydroxide are added for pH control. Coagulants can also be added to facilitate the settling of small particles. Additionally, it may be necessary infrequently to oxidize persistent chemicals with the use of hypochlorite (sodium or calcium) or hydrogen peroxide.

The settling ponds can discharge directly to Lake Wylie via Outfall 002, or be directed to the FHP for additional treatment or holdup capacity. Treatment in the WC System is on a batch basis. Discharge flowrates can range between 800 and 1760 gpm. Recirculation capability is available for recirculation intra- or inter-basin.

The WC System receives inputs directly from the service building sump, turbine building sumps, diesel generator catchment sumps, step-up transformer base drainage sumps, sulfuric acid tank containment drainage sump, secondary containment sumps, and rainwater from various sources.

4.1.1 Service Building Sump

The service building sump receives inputs from the water treatment room and reverse osmosis unit, diesel generator room sumps, and the service building floor drains. The sump has an approximate holding volume of 26,500 gallons and two pumps, each with a capacity of 1350 gpm. Normal alignment is to the Conventional Wastewater Treatment System directly, but can be through the turbine building sump.

The service building floor drains receive miscellaneous leakage and drainage. Chemical inputs include:

hydrazine	trisodium phosphate	ammonia
morpholine	sodium hydroxide	sulfuric acid
cationic polyelectrolytes	alum	ethylene glycol
Commercial prepared sodium nitrite/borax/ sodium benzotriazole (BZT) corrosion inhibitor or similar	tolytriazole (TTA)	biocides (Calgon H-550, Calgon H-510, or similar products)
industrial cleaning products	laboratory chemicals	citric acid
hydrogen peroxide	oils	coagualants
chlorine or hypochlorite	anti-scaling agents	sulfamic acid
dispersants	biocides	surfactants
boric acid	DMA	carbohydrazide
3-MPA		

4.1.2 Water Treatment Room

The Water Treatment Room produces filtered water and demineralized water. All chemicals used, all leakage and drainage, and all wastes produced go directly to the service building sump.

Filtered water is made by taking lake water, adding a coagulant, filtering up through one of two gravel-to-sand beds and chlorinating to approximately 1.5 mg/l FAC. The beds are flushed on pressure buildup with high velocity lake water.

Approximately quarterly or when necessary, each bed is cleaned with approximately 200 gallons of hydrogen peroxide and a surfactant. The peroxide and surfactant are added, the bed is air mixed, allowed to soak, and then flushed. The peroxide/surfactant cleaning dissolves mud balls that may have formed. Yearly, approximately 1000 pounds of sand are replaced in each bed as a result of normal losses from backwash carryover.

Demineralized water is made by passing filtered water through a carbon bed, a reverse osmosis unit, and then through a regenerative resin bed. There are two carbon beds, one reverse osmosis unit, and two resin beds. Each carbon bed contains 270 ft^3 and is replaced as needed. Each resin bed contains 510 ft^3 and is replaced as needed. To regenerate the resin, sulfuric acid and sodium hydroxide are flushed through the bed.

Each regeneration takes approximately 98 gallons of 93% sulfuric acid and 330 gallons of 50% sodium hydroxide. Regeneration occurs approximately once a month. The amounts of required acid and caustic will vary as dictated by operational requirements.

Approximately quarterly, each demineralizer bed is surfactant cleaned to remove organic film on the resin. Several times each year the reverse osmosis membranes are cleaned with a combination of acids, bases, and polymeric cleaning solutions.

4.1.3 Diesel Generator Room Sumps

The diesel generator room sumps receive inputs from leakage or draining the diesel generator engine cooling water system. Each of the four sumps has a volume of approximately 470 gallons and two pumps, each with a capacity of 50 gallons per minute.

The diesel generator engine cooling water systems have a volume of 2240 gallons each. The systems are treated with a mixture of sodium nitrite, borax (sodium tetraborate), and sodium mercaptobenzothiazole (MBT). To control bacteria, an approved biocide is added.

For incidental oil spills, an oil coalescing unit is installed between the diesel sumps and the service building sump.

4.1.4 Turbine Building Sumps

The turbine building sumps receive inputs from steam generator wet lay-up chemicals, cooling tower drainage (unwatering), auxiliary building floor drain sumps, and the turbine building floor drains. Each of two sumps has an approximate capacity of 12,000 gallons and three pumps, each with a capacity of 1350 gallons per minute. Normal alignment is directly to the Conventional Wastewater Treatment System. However, hose connections on the discharge of the pumps allow rerouting to other sumps for unusual circumstances. Chemical inputs include:

hydrazine	trisodium phosphate	ammonia
Morpholine	sodium hydroxide	sulfuric acid
cationic polyelectrolytes	alum	ethylene glycol
Commercial prepared sodium nitrite/borax/ sodium benzotriazole (BZT) corrosion inhibitor or similar	tolytriazole (TTA)	biocides (Calgon H-550, Calgon H-510, or similar products)
industrial cleaning products	laboratory chemicals	citric acid
hydrogen peroxide	oils	coagulants
chlorine or hypochlorite	anti-scaling agents	sulfamic acid
Dispersants	biocides	surfactants
boric acid	DMA	carbohydrazide
3-MPA		
Bromine	powdered or bead resin	

4.1.5 Auxiliary Building Floor Drain Sumps

Auxiliary building floor drain sumps can be diverted to the turbine building sumps. Each sump has an approximate capacity of 500 gallons and two pumps, each with a capacity of 50 gallons per minute. Inputs consist of equipment drainage, air handling unit condensate, sample line purge, floor wash water and lab drains. Chemicals that may be present include:

boric acid	borax	nitrate
ammonia	morpholine	lithium hydroxide
ethylene glycol	tolytriazone (TTA)	nitrite/borax corrosion inhibitor
sodium bicarbonate	dispersant	hydrazine
carbohydrazide	chlorine or hypochlorite	hydrogen peroxide
ethylene diamine tetracetic acid (EDTA)	3-MPA, or DMA as amines in the secondary system	organic phosphonates used in heat exchanger lay-up
pump bearing cleaning chemicals	laboratory chemicals	surfactants
polyelectrolytes	industrial cleaning products	degreasers
sodium metasilicate	sodium hydroxide	phosphate
detergents	defoamer	biocides

4.1.6 Diesel Generator Catchment Sumps

The diesel generator catchment sumps receive inputs from the fuel oil unloading pads, Containment Mechanical Equipment Building sumps, contaminated drum storage area sump, hydrogen/oxygen generator, Standby Shutdown Facility, hazardous waste storage building floor drain, and rainwater. The Unit 2 sump pumps to the Unit 1 sump with each sump having two pumps. Each pump has a capacity of 250/110 gpm, Unit 1 and 2, respectively. Unit 1 sump consists of two separate volumes - one to receive all flow and the other to house the pumps. A partial concrete wall separates the volumes, allowing flow under the wall only, which minimizes oil from getting to the pump suction.

Additional chemical inputs include a sodium nitrite/borax/sodium bicarbonate corrosion inhibitor from leakage or drainage, ethylene glycol and nitrite/borax/hydroxide corrosion inhibitor from the Standby Shutdown Facility cooling system, and residual biocide in the fuel oil. During unit outages, borated ice may be transferred to the diesel generator pad and allowed to melt into this sump.

4.1.7 Step-up Transformer Base Drainage Sumps

The step-up transformer base drainage sumps receive rainwater and oil leakage from the curbed bases under the main step-up, auxiliary step-up, and auxiliary electric boiler transformers, and water from floor drains in the adjacent high-rise office building. Each sump consists of two separate volumes, one to receive all flow and the other to house the pumps. A partial concrete wall separates the volumes, allowing flow under the wall only which should minimize the possibility of oil getting to the suction of the pumps.

The capacity of the oil holdup section is 12,716 gallons. The capacity of the water pump section is 6,358 gallons. Each sump has two pumps with a capacity of 800 gpm each.

4.1.8 Sulfuric Acid Tank Containment Drainage Sump

The sulfuric acid tank containment drainage sump receives inputs from rainwater, laboratory drains, industrial strength cleaning chemicals, and tank containments. The approximate holding capacity is 225 gallons with pump capacity of 35 gpm.

Tank containments include:

50% sodium hydroxide	1,500 gallons
biocide	3,800 gallons
dispersant	7,600 gallons
93% sulfuric acid	30,000 gallons

Curbing provides secondary containment for each of these tanks. This curbing is sufficient to contain the entire contents of each tank in case of a leak.

4.1.9 Secondary Containment Sumps

Secondary containment sumps receive input from the yard drains. Three 10,000 gallon sumps are available for spills or rainfalls less than 10,000 gallons. The sumps can pump to the initial or final holdup ponds. By design, rainfalls greater than 10,000 gallons will overflow directly to Lake Wylie.

Other than spills or rainfall, actuation or testing of the chlorinated fire protection system in the yard could overflow a sump. The groundwater drainage system from the plant discharges to the yard drains. Additionally, the switchyard for the site contains two oil trap tanks. Rainfall collected from the switchyard flows through these tanks. These tanks will contain any oil spilled or leaked in the switchyard.

4.1.10 Miscellaneous

There are approximately 25 to 30 closed cooling systems within the station. The largest system has a volume of approximately 44,000 gallons. The main portions of these systems are constructed of carbon steel, with some of the systems having copper/nickel heat exchangers. Corrosion inhibitors consisting of carbohydrazide, glycol, nitrites, borax, tolytriazole (TTA) are added for corrosion control. An organic biocide and a dispersant are added to control biofouling.

4.2 Flows

The settling ponds can discharge directly to Lake Wylie via Outfall 002, or be directed to the Final Holdup Pond for additional treatment or holdup capacity. Discharge flowrates can range between 800 and 1760 gallons per minute. Recirculation capability is available for recirculation intra- or inter-basin.

Flows are measured at Outfall 002 for each discharge from the treatment system. The following flows are from the previous five years of operation.

	5 Year Average (MGD)	Design Maximum (MGD)	5 Year Maximum (MGD)
Total Flow Outfall 002	1.41	2.88	2.50

4.3 Chemicals & Characteristics of Discharge

The expected chemical inputs to this Outfall are described above. The discharge is controlled and treated to yield a very low impact release to Lake Wylie. All chemical constituents are released as limited by the NPDES permit and such that they do not exhibit toxicity in the discharge.

4.4 Treatment

Treatment in the WC System is on a batch basis.

4.4.1 Initial Holdup Pond

The Initial Holdup Pond allows heavy solids to settle for periodic removal and allows neutralization of wastes.

4.4.2 Settling Ponds A & B

From the Initial Holdup Pond flow is directed to the in-service settling pond where chemical treatment, mixing, and aeration take place. Sulfuric acid and sodium hydroxide may be added for pH control. Coagulants can also be added to facilitate the settling of small particles. Additionally, it may be necessary infrequently to oxidize persistent chemicals, with the use of hypochlorite (sodium or calcium) or hydrogen peroxide.

5. Outfall 003

5.1 Description of Discharge

Outfall 003 discharges flow from the Sanitary Waste Treatment System into the Big Allison Creek arm of Lake Wylie. The sewage treatment system consists of a 1.28 million gallon aeration basin that is divided into four sections and a 0.525 million gallon effluent polishing basin.

5.2 Flows

Discharge from Outfall 003 is continuous. The following flows are from the previous five years of operation. Design flow is 0.080 MGD.

	5 Year Average (MGD)	5 Year Maximum (MGD)
Total Flow Outfall 003	0.028	0.128

5.3 Chemicals & Characteristics of Discharge

The Sanitary Waste Treatment System receives raw sewage from Catawba Nuclear Station, the Catawba Training Center, sink drains, shower drains, and drinking water fountains. Soaps and industrial cleaning supplies are expected inputs to this system.

This system also receives flow from the oil/water separator and drains located at the on-site transportation garage. The grease trap located at the site cafeteria also flows to this treatment system. Waste glutaraldehyde solution from cleaning respirators is also routed to the Sanitary Waste Treatment System.

Small amounts of photographic waste (developer and rinse) are disposed of in the WT system. The components of these substances include:

acetic acid	potassium sulfite	potassium hydroxide
hydroquinone	l-phenyl-3-pyrazolidinone	glutaraldehyde bisulfite
glutaraldehyde		

If necessary to remove sludge from the system, it will either be tanked to a municipal sewage treatment system or dewatered and disposed in a State licensed landfill or landfarm.

5.4 Treatment

Inputs to the sewage treatment system initially pass through a comminutor which cuts and shreds large solids into smaller particles. From the comminutor, the waste passes through a bar screen then enters the aeration lagoon where the sewage is decomposed by aerobic bacteria. Settleable solids and excessive activated sludge collect in the bottom of the lagoon where they undergo further reduction.

Aeration is provided by blowers/compressors. Under normal alignment, waste from the fourth cell enters the effluent polishing basin. When necessary, the effluent polishing basin can be bypassed and flow can be directly discharged to Lake Wylie through Outfall 003 if of acceptable quality. The effluent polishing basin is also aerated by blowers which reduce suspended solids, nitrogen, and phosphorous levels. Soda ash or citric acid solutions are added to the effluent of the polishing pond as necessary for pH control.

The effluent flows through a parshall flume to record discharge flow. After the parshall flume, flow passes through a tablet chlorinator and a chlorine contact chamber. The flow then enters a tablet dechlorinator system and a dechlorinator contact chamber before being discharged to Lake Wylie. The chlorinator system is not used unless necessary to meet the fecal coliform limits imposed by the permit.

6.0 Outfall 004

This Outfall is described with Outfall 001 (See Section 3.1.2) since it is an internal outfall which discharges to Lake Wylie through Outfall 001.

7.0 Outfall 005

This Outfall is described with Outfall 001 (See Section 3.1.3) since it is an internal outfall which discharges to Lake Wylie through Outfall 001.

8.0 Miscellaneous Operations

8.1 Fire System

Water supply for fire protection is provided by three full capacity (250 gpm) fire pumps. In addition, two 25 gpm and one 200 gpm jockey pump (supplied by the Filtered Water System) are provided to prevent frequent starting of the main fire pumps to maintain pressure in the yard mains. If system needs cannot be met with the jockey pumps, the main fire pumps start in sequence as the pressure in the yard mains drop.

The system is chlorinated periodically to prevent the survival and growth of Corbicula clams within the system. Alternate chemicals to chlorine are being evaluated as a chlorine replacement. If it is determined that a chemical other than chlorine shall be used, the system will be operated in such a way to prevent the discharge of toxic quantities of the chemical to receiving waters. Prior to implementing use, appropriate permission will be obtained.

8.2 Drinking Water System

Potable water is supplied to the station by York County. A municipal drinking water connection to the site occurred in 1993.

Periodically, when new lines are disinfected or repairs are made to existing lines, the lines are flushed as required by the State drinking water regulations. Where possible, these discharges will be routed to a treatment system or flushed across the ground to eliminate any chlorine before reaching the lake.

8.3 Cooling Tower Drainage

The Condenser Circulating Cooling system (which includes the cooling towers) is initially drained through permitted Outfalls 005 and 001 for system maintenance. Any in-leakage of raw lake water during the maintenance activity is pumped into the yard drain system which discharges directly to Lake Wylie.

8.4 Miscellaneous System and Component Cleanings

8.4.1 Mechanical Cleanings

Heat exchanger and cooling water pipes are periodically mechanically cleaned with brushes, rods, high pressure water, hydrolasing, and other physical means. No chemicals are used during these cleanings, solids are trapped or filtered at the source, and the water flow typically discharges to the various station's sumps described above.

8.4.2 Chemical Cleanings

Systems may need to be cleaned periodically because of scaling or plugging. Other components will be cleaned as necessary for various fouling problems. Solutions utilized will be standard chemical cleaning methodologies. Chemicals utilized by these methodologies, alone or in combination, include the following:

Alkaline Boilout Solutions		
non-ionic surfactants	cationic surfactants	sodium hydroxide
anionic surfactants	trisodium phosphate	sodium metasilicate
soda ash	monosodium phosphate	sodium bicarbonate
disodium phosphate		

Acid Solutions & Additives		
hydrochloric acid	sulfuric acid	phosphoric acid
formic acid	hydroxyacetic acid	sulfamic acid
citric acid	nitric acid	oxalic acid
ammonium bifluoride	thiourea	

EDTA Compounds and HEDTA		
pH adjusted tetra-ammonium EDTA	tetra-ammonium EDTA	di-ammonium EDTA
Hydroxyethylenediamine triacetic acid	tetra-sodium EDTA	

Miscellaneous Compounds		
sodium chloride	chlorine (hypochlorite)	potassium permanganate
aqua ammonia	ammonium persulfate	sodium nitrite
antifoam	sodium sulfite	corrosion inhibitors (e.g., phosphates, borax-nitrite, silicates, etc.)
organic biocides	chlorothene	

The spent solvents from these cleanings will be treated in the Conventional Waste System or the Radioactive Waste System. The acid/alkaline compounds will be neutralized; the other compounds will be mixed, oxidized, and/or precipitated as necessary for treatment.

8.5 Storm Water Discharges

A secondary containment system collects storm water drainage from the powerhouse yard drains. This secondary containment system consists of 10,000 gallon collection sumps for each of the three (3) containment areas. The powerhouse yard drains connect to the collection sumps via a passive intercept/trap system. Spills and minor volumes from rain storms will flow into the sumps, while significant rainfall flows will still be discharged directly to Lake Wylie and the Standby Nuclear Service Water Pond. Storm water is pumped from the sumps to the Conventional Wastewater Treatment System. The pumps continue to operate until (1) the sump is emptied or (2) an overflow condition results from the rainfall. A rainfall of approximately 0.016 inches in one hour will fill the sumps. Allowing significant rain water flow to continue to discharge to the Standby Pond and Lake Wylie will prevent overloading of the WC System.

Areas outside the powerhouse yard are not connected to the secondary containment system and drain directly to Lake Wylie or the Standby Nuclear Service Water Pond. These areas include the cooling tower yard, wastewater treatment yard, construction laydown area northwest of the powerhouse, areas bordering the Standby Nuclear Service Water Pond, the Security Practice Range, Recreation Area, and permitted industrial waste landfill # IWP 463303-1601.

Storm Water discharges are regulated under the current NPDES permit. The storm water outfall at the permitted landfill is the only storm water point monitored per the current NPDES permit.

Catawba has developed a Pollution Prevention Plan with Best Management Practices to proactively reduce and eventually eliminate pollutants entering the environment. For example, we are currently looking at the lead coated copper lightening arrestors on site. The Plan is revised whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the air, ground, or waters of the United States.

9.0 Other Environmental Permits

9.1 Landfill

Permit #463303-1601 issued by South Carolina Department of Health and Environmental Control.

9.2 Air Permit

Permit #2440-0070 issued by South Carolina Department of Health and Environmental Control.

9.3 RCRA Hazardous Waste

EPA ID #SCD070619796

9.4 Underground Storage Tank Permits

Site Identification numbers 09242 and 09244 issued by South Carolina Department of Health and Environmental Control.

9.5 Asbestos

Permit #8044 issued by South Carolina Department of Health and Environmental Control.

9.6 Laboratory Certification

Certification #46002 issued to Catawba Nuclear Station by South Carolina Department of Health and Environmental Control. Certification includes the following parameters: Hydrogen ion concentration (pH), dissolved oxygen, non-filterable residue (TSS), residual chlorine (TRC), and temperature.

Off-site laboratories that perform analyses for Catawba include:
Duke Power Company Laboratory Services, #99005 and #99046
ETT Environmental, #23104
Pace Analytical, #99066

10.0 Hazardous Substances

10.1 Hazardous and Toxic Substances, Table 2c-3

At Catawba Nuclear Station the projected concentration level and potential for toxic and hazardous substances being in a discharge is very low. With reference to Item V-D of Form 2-C, the substances identified under Table 2c-3 that may be in a discharge are as follows:

a. Formaldehyde - is present in the laboratory in the pH buffers, turbidity standards, and reference electrode filling solutions. It potentially can be discharged via Outfalls 002 and 004 in very small concentrations.

b. Dicamba - is a herbicide that is 2.82 percent of the product. The product is diluted prior to application. Dicamba could be present in Outfall 002 and storm water in very low concentrations.

c. Asbestos – can potentially be present in Outfalls 001, 002, 003, and 004 due to removal of asbestos materials. If present it will be at very low concentrations.

d. Other – During the course of the year products such as commercial cleaners and laboratory reagents may be purchased which contain very low levels of a susbstance found in Table 2c-3. It is not anticipated that these products will impact toxicity at Outfalls 001 and 002 since their concentrations are extremely low.

10.2 Hazardous Substances Under 40 CFR 117 and CERCLA

The following are hazardous substances located at Catawba Nuclear Station that could be released in the event of a spill in quantities equal to or greater than the reportable quantity (RQ) levels as referenced in 40 CFR 117.12(a)(2) and 355. This list is being provided in order to qualify for the reportablity exemption provided under 40 CFR 117 and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

The values below represent the maximum quantities on site that could be released at one time. They do not reflect quantities that are discharged through typical use. The spill reportability exemption is requested for the substances identified below.

Substance	Quantity (Gal)	Source	Discharge
Sodium hypochlorite	5,400	Cooling Tower Treatment	Outfall 002
Sodium bromide	5,400	Cooling Tower Treatment	Outfall 002
Sodium hydroxide	1,500	Water Treatment	Outfall 002
Biocide	3,800	Cooling Tower Treatment	Outfall 002
Dispersant	7,000	Cooling Tower Treatment	Outfall 002
Sodium hydroxide	5,000	Demin Regen., Water Treatment,	Outfall 002
Hydrazine	340	Water Treatment	Outfall 002 Outfall 004
Sulfuric acid	30,000	Cooling Tower Treatment, Water Treatment, Demin Regen	Outfall 002

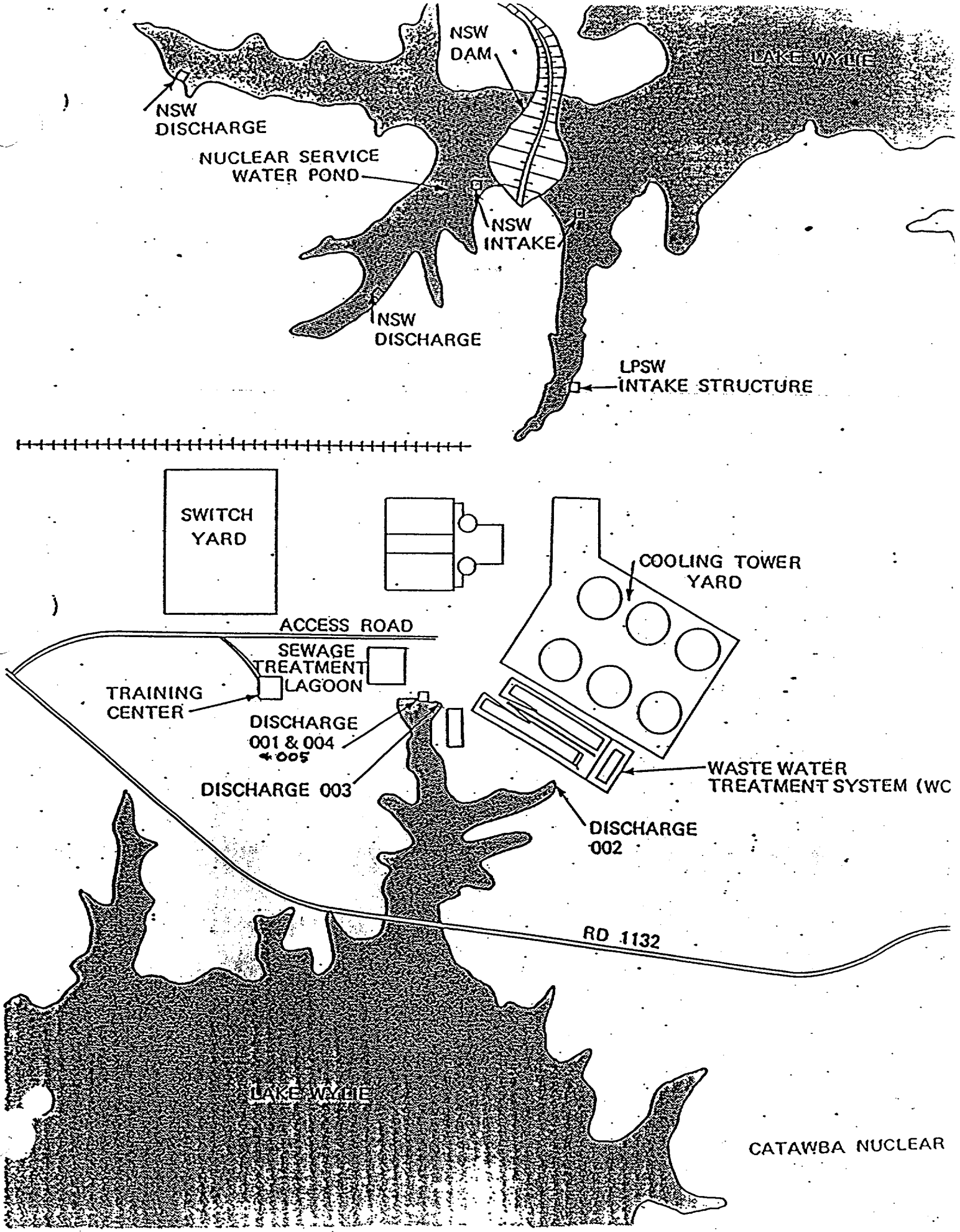
11.0 Thermal 316(a) and Impingement/Entrainment 316(b) Demonstrations

During the initial operation of Catawba Nuclear Station (CNS), studies were conducted to address potential thermal and impingement/entrainment concerns, as required by the licensing of CNS. These studies indicated that operation of CNS had no adverse impact to the balanced indigenous aquatic community of Lake Wylie. The 316(a) demonstration report submitted to SCDHEC in March 1997 continues to demonstrate no adverse impact to the water quality and the aquatic community of Lake Wylie.

Duke Energy requests a continued 316(a) variance and renewal of the current thermal limits.

12.0 Site Layout/Drawing

General Site Layout and Identification of Outfall Locations


NSW DAM
LAKE WYLIE
NSW DISCHARGE
NUCLEAR SERVICE WATER POND
NSW INTAKE
NSW DISCHARGE
LPSW INTAKE STRUCTURE
SWITCH YARD
COOLING TOWER YARD
ACCESS ROAD
SEWAGE TREATMENT LAGOON
TRAINING CENTER
DISCHARGE 001 & 004 ◄005
DISCHARGE 003
WASTE WATER TREATMENT SYSTEM (WC
DISCHARGE 002
RD 1132
LAKE WYLIE
CATAWBA NUCLEAR

Please print or type in the unshaded areas only.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: SC0004278

Form Approved
OMB No. 2040-0086
Approval expires 5-31-92

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER *(list)*	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER *(name)*
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	35	03	05	81	04	10	Lake Wylie
002	35	03	05	81	04	10	Lake Wylie
003	35	03	05	81	04	10	Lake Wylie
004	35	03	05	81	04	10	Lake Wylie via Outfall 001
005	35	03	05	81	04	10	Lake Wylie via Outfall 001

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g., for certain mining activities)*, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALLING *(list)*	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION *(list)*	b. AVERAGE FLOW *(include units)*	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
	Service Water	59.14 MGD	Discharge to Surface Water	4-A	
	Liquid Radioactive		See Outfall 004		
	Cooling Tower Blowdown		See Outfall 005		
	Conventional Wastewater	1.41 MGD	Grit Removal, Mixing	1-M	1-O
	Storm Water Runoff		Sedimentation, Chemical Oxidation	1-U	2-B
			Chem. Precipitation, Neutralization	2-C	2-K
002			Discharge to Surface Water	4-A	
	Sanitary Waste	0.028 MGD	Grit Removal, Screening	1-M	1-T
			Disinfection (Cl2), Dechlorination	2-F	2-E
			Aerated Lagoons, Stabilization Pond	3-B	3-G
003			Discharge to Surface Water	4-A	
	Liquid Radwaste	.02 MGD	Mixing, Multimedia Filtration	1-O	1-Q
			Chemical Oxidation, Coagulation	2-B	2-D
			Ion Exchange	2-J	
004			Discharge to Surface Water	4-A	
	Cooling Tower Blowdown	11.04	Discharge to Surface Water	4-A	
005					

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

[X] YES *(complete the following table)* [ ] NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY a. DAYS PER WEEK *(specify average)*	3. FREQUENCY b. MONTHS PER YEAR *(specify average)*	4. FLOW a. FLOW RATE *(in mgd)* 1. LONG TERM AVERAGE	4. FLOW a. FLOW RATE *(in mgd)* 2. MAXIMUM DAILY	4. FLOW b. TOTAL VOLUME *(specify with units)* 1. LONG TERM AVERAGE	4. FLOW b. TOTAL VOLUME *(specify with units)* 2. MAXIMUM DAILY	4. FLOW c. DURATION *(in days)*
002	Water filter, equipment drainage, plant sumps, cooling system drains, stormwater containment, system flush for maintenance.	2-3	12	1.47	2.12	1.4e6 gal	2.1e6 gal	150
004	Radioactive system maintenance, laundry operation, decon operation, floor drains, various sumps.	1-2	12	0.02	0.02	2e4 gal	2e4 gal	100
005	Cooling tower blowdown	3-5	12	14.4	14.4	14e6 gal	14e6 gal	250

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

[X] YES *(complete Item III-B)* [ ] NO *(go to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

[ ] YES *(complete Item III-C)* [X] NO *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	2. AFFECTED OUTFALLS *(list outfall numbers)*
N/A			

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions. [ ] YES *(complete the following table)* [X] NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS a. NO.	2. AFFECTED OUTFALLS b. SOURCE OF DISCHARGE	3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE a. REQUIRED	4. FINAL COMPLIANCE DATE b. PROJECTED
N/A					

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. [ ] MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1.POLLUTANT	2. SOURCE
For identification of substances, see the attached supplemental information, Section 10.			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES *(list all such pollutants below)* ☒ NO *(go to Item VI-B)*

V-C parameters were analyzed, except the pesticides, as required under Table 2C-2. The pesticides listed in V-C are not expected to be present in the discharge.

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

[X] YES *(identify the test(s) and describe their purposes below)* [ ] NO *(go to Section VIII)*

alls 001 and 002 are subject to quarterly Ceriodaphnia dubia 7 day chronic testing under NPDES permit SC0004278. These tests were performed quarterly pursuant to the current NPDES permit. Results indicate that the discharge of Outfalls 001 and 002 is not toxic.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

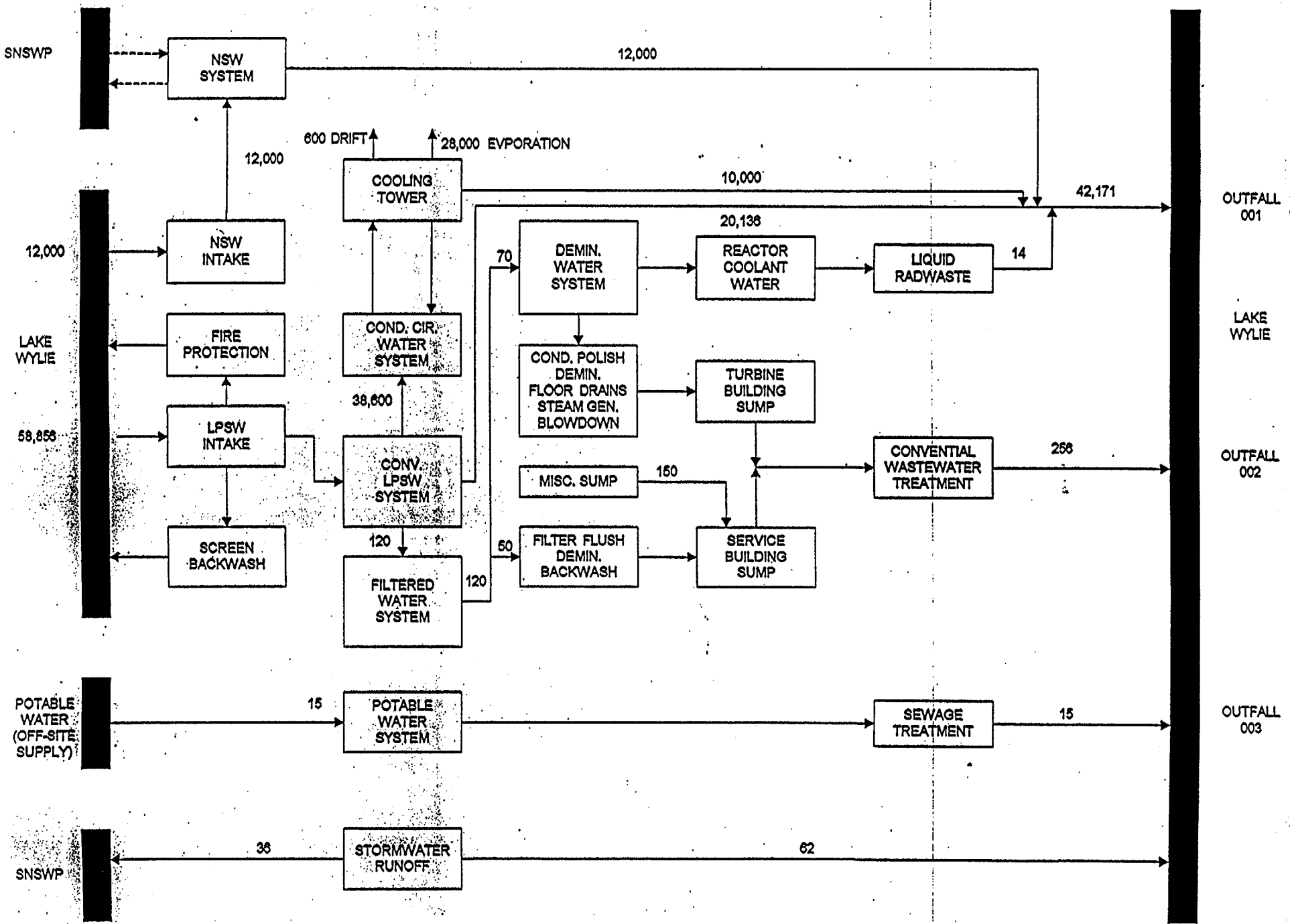
[X] YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* [ ] NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
Duke Power Co. Laboratory Services Lab ID # 99005	13339 Hagers Ferry Road Huntersville, NC 28078	704-875-5209	All except as noted below.
Catawba Nuclear Station #46003	4800 Concord Road, York SC 29745	803-831-3370	pH, Chlorine, & TSS
Pace Analytical Services, Inc. Lab ID #99006	9800 Kincey Av., Suite 100 Huntersville, NC 28078	704-875-9092	Color, Bromide, Phenol Cyanide, Sulfite, TOC Sulfide, Surfactants
Florida Radiochemistry Services, Inc Lab ID #12709	5456 Hoffner Rd., Suite 201 Orlando, FL 32812	407-382-7733	Alpha, Beta, Total Radium, Radium 226
General Engineering Lab ID # GEL 10120, EPI 10582	P.O. Box 30712 Charleston, SC 29417		Outfall 004 - all analyses.

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
ly E. Davis, VP Group Environment, Health & Safety	704-373-4355
C. SIGNATURE BE Davis	**D. DATE SIGNED** 3/21/00



CATAWBA NUCLEAR STATION
WATER FLOW SCHEMATIC

NOTE: ALL FLOWS ARE IN GPM
FOR AVERAGED CONDITIONS

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.
SEE INSTRUCTIONS

EPA I.D. NUMBER (copy from Item 1 of Form 1): SC0004278

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OMB No. 2040-0086
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OUTFALL NO. 001

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	3. UNITS a. Concentration	3. UNITS b. Mass	4. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	4. INTAKE (optional) a. LONG TERM AVG. VALUE (2) Mass	4. INTAKE (optional) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	< 2	< 1561.9					1	mg/l	lb/Day	< 2	< 1415.312	1
b. Chemical Oxygen Demand (COD)	< 20	< 15618.5					1	mg/l	lb/Day	< 20	< 14153.12	1
c. Total Organic Carbon (TOC)	6.4	4997.9					1	mg/l	lb/Day	3.5	2476.796	1
d. Total Suspended Solids (TSS)	9	7028.3					1	mg/l	lb/Day	< 4	< 2830.624	1
e. Ammonia (as N)	1.4	1093.3					1	mg/l	lb/Day	0.04	28.30624	1
f. Flow	VALUE 93.58		VALUE 93.6		VALUE 62.6		365	MGD	X	VALUE 84.8		
g. Temperature (winter)	VALUE 24.7		VALUE 30.5		VALUE 18		181	DEGREES CELSIUS		VALUE 25.9		181
h. Temperature (summer)	VALUE 35.1		VALUE 35.1		VALUE 29.5		184	DEGREES CELSIUS		VALUE 33.2		184
i. pH	MINIMUM 7	MAXIMUM 8.3	MINIMUM	MAXIMUM			52	STANDARD UNITS				

PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly or indirectly but expressly in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. present	2. MARK "X" b. absent	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	3. UNITS a. Concentration	3. UNITS b. Mass	4. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	4. INTAKE (optional) a. LONG TERM AVG. VALUE (2) Mass	4. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		< 1	< 780.9					1	mg/l	lb/Day	< 1	< 707.656	1
b. Chlorine, Total Residual	X		0	0	0	0	0	0	50	mg/l	lb/Day			
c. Color	X		45						1	Std. Units	X	20		1
d. Fecal Coliform		X								Colonies /100 ml	X			
e. Flouride (16984-48-8)	X		0.29	226.5					1	mg/l	lb/Day	0.13	91.99528	1
f. Nitrate-Nitrite (as N)	X		0.55	429.5					1	mg/l	lb/Day	0.23	162.76088	1

EPA I.D. NUMBER (copy from item 1 of Form 1): SC0004278

OUTFALL NUMBER: 001

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ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. pre-sent	b. ab-sent	a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE (1) Concentration	a. LONG TERM AVG. VALUE (2) Mass	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	X		1.4	1093.3					1	mg/l	lb/Day	0.16	113.22496	1
h. Oil and Grease	X		< 1	< 780.9					1	mg/l	lb/Day	< 1	< 707.656	1
i. Phosphorous (as P), Total (7723-14-0)	X		0.042	32.8					1	mg/l	lb/Day	0.02	14.15312	1
j. Radioactivity														
(1) Alpha, Total	X		2.4 +/- 0.8	X					1	pCi/l		1.3 +/- 1.1		1
(2) Beta, Total	X		9.5 +/- 1.0	X					1	pCi/l		3.5 +/- 1.3		1
(3) Radium, Total	X		< 0.9 +/- 0.6	< X					1	pCi/l		< 0.9 +/- 0.6		1
(4) Radium 226, Total	X		< 0.3 +/- 0.2	< X					1	pCi/l		< 0.3 +/- 0.2		1
k. Sulfate (as SO4) (14808-79-8)	X		41	32017.9					1	mg/l	lb/Day	20	14153.12	1
l. Sulfide (as S)	X		< 0.05	< 39.0					1	mg/l	lb/Day	< 0.05	< 35.3828	1
m. Sulfite (as SO3) (14265-45-3)	X		< 2	< 1561.9					1	mg/l	lb/Day	< 2	< 1415.312	1
n. Surfactants	X		< 0.1	< 78.1					1	mg/l	lb/Day	< 0.1	< 70.7656	1
o. Aluminum, Total (7429-90-5)	X		0.3	234.3					1	mg/l	lb/Day	0.14	99.07184	1
p. Barium, Total (7440-39-3)	X		0.04	31.2					1	mg/l	lb/Day	0.02	14.15312	1
q. Boron, Total (7440-42-8)	X		0.17	132.8					1	mg/l	lb/Day	< 0.1	< 70.7656	1
r. Cobalt, Total (7440-48-4)	X		< 0.06	< 46.9					1	mg/l	lb/Day	< 0.06	< 42.45936	1
s. Iron, Total (7439-89-6)	X		0.39	304.6					1	mg/l	lb/Day	0.2	141.5312	1
t. Magnesium, Total (7439-95-4)	X		4	3123.7					1	mg/l	lb/Day	1.9	1344.5464	1
u. Molybdenum, Total (7439-98-7)	X		< 0.04	< 31.2					1	mg/l	lb/Day	<.04	19646.133	1
v. Manganese, Total (7439-96-5)	X		0.03	23.4					1	mg/l	lb/Day	0.01	7.07656	1
w. Tin, Total (7440-31-5)	X		< 0.05	< 39.0					1	mg/l	lb/Day	< 0.05	< 35.3828	1
x. Titanium, Total (7440-32-6)	X		0.01	7.8					1	mg/l	lb/Day	< 0.01	< 7.07656	1

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CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2, 4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quired	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (If available)		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVG. VALUE (If available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			< 3	< 2.34					1	ug/l	lb/Day	< 3	< 2.12	1
2M. Arsenic, Total (7440-38-2)	X			< 2	< 1.56					1	ug/l	lb/Day	< 2	< 1.42	1
3M. Beryllium, Total (7440-41-7)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
4M. Cadmium, Total (7440-43-9)	X			< 0.5	< 0.39					1	ug/l	lb/Day	< 0.5	< 0.35	1
5M. Chromium, Total (7440-47-3)	X			< 1	< 0.78					1	ug/l	lb/Day	1.1	0.78	1
6M. Copper, Total (7440-50-8)	X			0.01	7.81					1	mg/l	lb/Day	< 0.005	< 3.54	1
7M. Lead, Total (7439-92-1)	X			< 2	< 1.56					1	ug/l	lb/Day	< 2	< 1.42	1
8M. Mercury, Total (7439-97-6)	X			< 0.1	< 0.08					1	ug/l	lb/Day	< 0.1	< 0.07	1
9M. Nickel, Total (7440-02-0)	X			< 2	< 1.56					1	ug/l	lb/Day	< 2	< 1.42	1
10M. Selenium, Total (7782-49-2)	X			< 2	< 1.56					1	ug/l	lb/Day	< 2	< 1.42	1
11M. Silver, Total (7440-22-4)	X			< 0.5	< 0.39					1	ug/l	lb/Day	< 0.5	< 0.35	1
12M. Thallium, Total (7440-28-0)	X			< 0.002	< 1.6					1	mg/l	lb/Day	< 0.002	< 1.42	1
13M. Zinc, Total (7440-66-6)	X			0.005	3.90					1	mg/l	lb/Day	< 0.005	< 3.54	1
14M. Cyanide, Total (57-12-5)	X			0.002	1.56					1	mg/l	lb/Day	< 0.002	< 1.42	1
15M. Phenols, Total	X			0.007	5.5					1	mg/l	lb/Day	0.02	14.15	1
DIOXIN															
2,3,7,8 Tetra chlorodibenzo P Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM PAGE V-3

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1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	X			< 50	< 39.05					1	ug/l	lb/Day	< 50	< 35.38	1
2V. Acrylonitrile (107-13-1)	X			< 50	< 39.05					1	ug/l	lb/Day	< 50	< 35.38	1
3V. Benzene (71-43-2)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
4V. Bis (Chloro-methyl) Ether (542-88-1)			X								ug/l	lb/Day			
5V. Bromoform (75-25-2)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
6V. Carbon Tetrachloride (56-23-5)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
7V. Chlorobenzene (108-90-7)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
8V. Chlorodi-bromomethane (124-48-1)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
9V. Chloroethane (75-00-3)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
11V. Chloroform (67-66-3)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
12V. Dichloro-bromomethane (75-27-4)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
13V. Dichloro-difluoromethane (75-51-8)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
14V. 1,1-Dichloro-ethane (75-34-3)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
15V. 1,2-Dichloro-ethane (107-06-2)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
16V. 1,1-Dichloro-ethylene (75-35-4)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
17V. 1,2-Dichloro-propane (78-87-5)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
18V. 1,3-Dichloro-propylene (542-75-6)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
19V. Ethylbenzene (100-41-4)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
20V. Methyl Bromide (74-83-9)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
21V. Methyl Chloride (74-87-3)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. re-quired	b. pre-sent	c. ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concentration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
24V. Tetrachloroethylene (127-18-4)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
25V. Toluene (108-88-3)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
27V. 1,1,1-Trichloroethane (71-55-6)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
28V. 1,1,2-Trichloroethane (79-00-5)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
29V. Trichloroethylene (79-01-6)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
30V. Trichlorofluoromethane (75-69-4)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
31V. Vinyl Chloride (75-01-4)	X			< 5	< 3.90					1	ug/l	lb/Day	< 5	< 3.54	1
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
2A. 2,4-Dichlorophenol (120-83-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
3A. 2,4-Dimethylphenol (105-67-9)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
5A. 2,4-Dinitrophenol (51-28-5)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
6A. 2-Nitrophenol (88-75-5)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
7A. 4-Nitrophenol (100-02-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
8A. P-Chloro-M-Cresol (59-50-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
9A. Pentachlorophenol (87-86-5)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
10A. Phenol (108-95-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
11A. 2,4,6-Trichlorophenol (88-06-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a.re-quir-ed	b.pre-sent	c.ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concen-tration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
2B. Acenaphtylene (208-96-8)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
3B. Anthracene (120-12-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
4B. Benzidine (92-87-5)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
5B. Benzo (a) Anthracene (56-55-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
6B. Benzo (a) Pyrene (50-32-8)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
7B. 3,4-Benzo-fluoranthene (205-99-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
8B. Benzo (ghi) Perylene (191-24-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
9B. Benzo (k) Fluoranthene (207-08-9)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
10B. Bis (2-Chloro-ethoxyl) Methane (111-91-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
12B. Bis (2-Chloroiso-propyl) Ether (102-60-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
15B. Butyl Benzyl Phthalate (85-68-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
16B. 2-Chloro-naphthalene (91-58-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
18B. Chrysene (218-01-9)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
19B. Dibenzo (a,h) Anthracene (53-70-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
20B. 1,2-Dichloro-benzene (95-50-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
21B. 1,3-Dichloro-benzene (541-73-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichloro-benzene (106-46-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
23B. 3,3-Dichloro-benzidine (91-94-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
24B. Diethyl Phthalate (84-66-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
25B. Dimethyl Phthalate (131-11-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
26B. Di-N-Butyl Phthalate (84-74-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
27B. 2,4-Dinitro-toluene (121-14-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
28B. 2,6-Dinitro-toluene (606-20-2)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
29B. Di-N-Octyl Phthalate (117-84-0)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
30B. 1,2-Diphenyl-hydrazine (as Azo-benzene) (122-66-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
31B. Fluoranthene (206-44-0)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
32B. Fluorene (86-73-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
33B. Hexachloro-benzene (118-74-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
34B. Hexa-chlorobutadiene (87-68-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
35B. Hexachloro-cyclopentadiene (77-47-4)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
36B. Hexachloro-ethane (67-72-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
38B. Isophorone (78-59-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
39B. Naphthalene (91-20-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
40B. Nitrobenzene (98-95-3)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
41B. N-Nitro-sodimethylamine (62-75-9)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
42B. N-Nitrosodi-N-Propylamine (621-64-7)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. re-quir-ed	b. pre-sent	c. ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concen-tration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitro-sodiphenylamine (86-30-6)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
44B. Phenanthrene (85-01-8)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
45B. Pyrene (129-00-0)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
46B. 1,2,4-Tri-chlorobenzene (120-82-1)	X			< 10	< 7.81					1	ug/l	lb/Day	< 10	< 7.08	1
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X								ug/l	lb/Day			
2P. alpha-BHC (319-84-6)			X								ug/l	lb/Day			
3P. beta-BHC (315-85-7)			X								ug/l	lb/Day			
4P. gamma-BHC (58-89-9)			X								ug/l	lb/Day			
5P. delta-BHC (319-86-8)			X								ug/l	lb/Day			
6P. Chlordane (57-74-9)			X								ug/l	lb/Day			
7P. 4,4'-DDT (50-29-3)			X								ug/l	lb/Day			
8P. 4,4'-DDE (72-55-9)			X								ug/l	lb/Day			
9P. 4,4'-DDD (72-54-8)			X								ug/l	lb/Day			
10P. Dieldrin (60-57-1)			X								ug/l	lb/Day			
11P.alpha-Endosulfan (115-29-7)			X								ug/l	lb/Day			
12P. beta-Endosulfan (115-29-7)			X								ug/l	lb/Day			
13P. Endosulfan Sulfate (1031-07-8)			X								ug/l				
14P. Endrin (72-20-8)			X								ug/l	lb/Day			
15P. Endrin Aldehyde (7421-93-4)			X								ug/l				
16P. Heptachlor (76-44-8)			X								ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quired	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X								ug/l	lb/Day			
18P. PCB-1242 (53469-21-9)			X								ug/l	lb/Day			
19P. PCB-1254 (11097-69-1)			X								ug/l	lb/Day			
20P. PCB-1221 (11104-28-2)			X								ug/l	lb/Day			
21P. PCB-1232 (11141-16-5)			X								ug/l	lb/Day			
22P. PCB-1248 (12672-29-6)			X								ug/l	lb/Day			
23P. PCB-1260 (11096-82-5)			X								ug/l	lb/Day			
24P. PCB-1016 (12674-11-2)			X								ug/l	lb/Day			
25P. Toxaphene (8001-35-2)			X								ug/l	lb/Day			

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.
SEE INSTRUCTIONS

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V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

OUTFALL NO. 002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	3. UNITS a. Concentration	3. UNITS b. Mass	4. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	a. LONG TERM AVG. VALUE (2) Mass	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	6.2	109.7			3.9	47.8	13	mg/l	lb/Day			
b. Chemical Oxygen Demand (COD)	< 20	< 353.8					1	mg/l	lb/Day			
c. Total Organic Carbon (TOC)	5.1	90.2					1	mg/l	lb/Day			
d. Total Suspended Solids (TSS)	17.4	307.8			6.4	78.5	24	mg/l	lb/Day			
e. Ammonia (as N)	0.12	2.1					1	mg/l	lb/Day			
f. Flow	VALUE 2.12		VALUE		VALUE 1.47		94	MGD	X	VALUE		
g. Temperature (winter)	VALUE 22.6		VALUE		VALUE 13.8		16	DEGREES CELSIUS		VALUE		
h. Temperature (summer)	VALUE 30.1		VALUE		VALUE 24.6		25	DEGREES CELSIUS		VALUE		
i. pH	MINIMUM 6.1	MAXIMUM 8.5	MINIMUM	MAXIMUM			37	STANDARD UNITS				

PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly or indirectly but expressly in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. pre-sent	2. MARK "X" b. ab-sent	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	3. UNITS a. Concentration	3. UNITS b. Mass	4. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	a. LONG TERM AVG. VALUE (2) Mass	b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		< 1	< 17.7					1	mg/l	lb/Day			
b. Chlorine, Total Residual	X		0	0			0	0	8	mg/l	lb/Day			
c. Color	X		30	X					1	Std. Units	X			
d. Fecal Coliform		X								Colonies /100 ml	X			
e. Flouride (16984-48-8)	X		0.62	11.0					1	mg/l	lb/Day			
f. Nitrate-Nitrite (as N)	X		1	17.7					1	mg/l	lb/Day			

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ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. pre-sent	b. ab-sent	a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE (1) Concentration	a. LONG TERM AVG. VALUE (2) Mass	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	X		1.6	28.3					1	mg/l	lb/Day			
h. Oil and Grease	X		2.7	47.8	2.7	47.8	1	12.3	24	mg/l	lb/Day			
i. Phosphorous (as P), Total (7723-14-0)	X		0.02	0.4					1	mg/l	lb/Day			
j. Radioactivity														
(1) Alpha, Total	X		< 1.1 +/- 0.7						1	pCi/l				
(2) Beta, Total	X		4.0 +/- 0.9						1	pCi/l				
(3) Radium, Total	X		< 0.9 +/- 0.6						1	pCi/l				
(4) Radium 226, Total	X		< 0.3 +/- 0.2						1	pCi/l				
k. Sulfate (as SO4) (14808-79-8)	X		83	1468.4					1	mg/l	lb/Day			
l. Sulfide (as S)	X		< 0.05	< 0.9					1	mg/l	lb/Day			
m. Sulfite (as SO3) (14265-45-3)	X		< 2	< 35.4					1	mg/l	lb/Day			
n. Surfactants	X		< 0.1	< 1.8					1	mg/l	lb/Day			
o. Aluminum, Total (7429-90-5)	X		0.17	3.0					1	mg/l	lb/Day			
p. Barium, Total (7440-39-3)	X		0.03	0.5					1	mg/l	lb/Day			
q. Boron, Total (7440-42-8)	X		0.12	2.1					1	mg/l	lb/Day			
r. Cobalt, Total (7440-48-4)	X		< 0.06	< 1.1					1	mg/l	lb/Day			
s. Iron, Total (7439-89-6)	X		0.15	2.7					1	mg/l	lb/Day			
t. Magnesium, Total (7439-95-4)	X		3.8	67.2					1	mg/l	lb/Day			
u. Molybdenum, Total (7439-98-7)	X		< 0.04	< 0.7					1	mg/l	lb/Day			
v. Manganese, Total (7439-96-5)	X		0.01	0.2					1	mg/l	lb/Day			
w. Tin, Total (7440-31-5)	X		< 0.05	< 0.9					1	mg/l	lb/Day			
x. Titanium, Total (7440-32-6)	X		< 0.01	< 0.2					1	mg/l	lb/Day			

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2, 4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quired	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			< 3	< 0.05					1	ug/l	lb/Day			
2M. Arsenic, Total (7440-38-2)	X			< 2	< 0.04					1	ug/l	lb/Day			
3M. Beryllium, Total (7440-41-7)	X			< 5	< 0.09					1	ug/l	lb/Day			
4M. Cadmium, Total (7440-43-9)	X			< 0.5	< 0.01					1	ug/l	lb/Day			
5M. Chromium, Total (7440-47-3)	X			< 1	< 0.02					1	ug/l	lb/Day			
6M. Copper, Total (7440-50-8)	X			0.006	0.11					1	mg/l	lb/Day			
7M. Lead, Total (7439-92-1)	X			2.6	0.05					1	ug/l	lb/Day			
8M. Mercury, Total (7439-97-6)	X			< 0.1	< 0.00					1	ug/l	lb/Day			
9M. Nickel, Total (7440-02-0)	X			< 2	< 0.04					1	ug/l	lb/Day			
10M. Selenium, Total (7782-49-2)	X			< 2	< 0.04					1	ug/l	lb/Day			
11M. Silver, Total (7440-22-4)	X			< 0.5	< 0.01					1	ug/l	lb/Day			
12M. Thallium, Total (7440-28-0)	X			< 0.002	< 0.0					1	mg/l	lb/Day			
13M. Zinc, Total (7440-66-6)	X			0.04	0.71					1	mg/l	lb/Day			
14M. Cyanide, Total (57-12-5)	X			< 0.002	< 0.04					1	mg/l	lb/Day			
15M. Phenols, Total	X			0.01	0.2					1	mg/l	lb/Day			
DIOXIN															
2,3,7,8 Tetra chlorodibenzo P Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

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Form Approved
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Approval expires 7-31-88

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	X			< 50	< 0.88					1	ug/l	lb/Day			
2V. Acrylonitrile (107-13-1)	X			< 50	< 0.88					1	ug/l	lb/Day			
3V. Benzene (71-43-2)	X			< 5	< 0.09					1	ug/l	lb/Day			
4V. Bis (Chloro-methyl) Ether (542-88-1)			X								ug/l	lb/Day			
5V. Bromoform (75-25-2)	X			< 5	< 0.09					1	ug/l	lb/Day			
6V. Carbon Tetrachloride (56-23-5)	X			< 5	< 0.09					1	ug/l	lb/Day			
7V. Chlorobenzene (108-90-7)	X			< 5	< 0.09					1	ug/l	lb/Day			
8V. Chlorodi-bromomethane (124-48-1)	X			< 5	< 0.09					1	ug/l	lb/Day			
9V. Chloroethane (75-00-3)	X			< 5	< 0.09					1	ug/l	lb/Day			
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	X			< 5	< 0.09					1	ug/l	lb/Day			
11V. Chloroform (67-66-3)	X			< 5	< 0.09					1	ug/l	lb/Day			
12V. Dichloro-bromomethane (75-27-4)	X			< 5	< 0.09					1	ug/l	lb/Day			
13V. Dichloro-difluoromethane (75-51-8)	X			< 5	< 0.09					1	ug/l	lb/Day			
14V. 1,1-Dichloro-ethane (75-34-3)	X			< 5	< 0.09					1	ug/l	lb/Day			
15V. 1,2-Dichloro-ethane (107-06-2)	X			< 5	< 0.09					1	ug/l	lb/Day			
16V. 1,1-Dichloro-ethylene (75-35-4)	X			< 5	< 0.09					1	ug/l	lb/Day			
17V. 1,2-Dichloro-propane (78-87-5)	X			< 5	< 0.09					1	ug/l	lb/Day			
18V. 1,3-Dichloro-propylene (542-75-6)	X			< 5	< 0.09					1	ug/l	lb/Day			
19V. Ethylbenzene (100-41-4)	X			< 5	< 0.09					1	ug/l	lb/Day			
20V. Methyl Bromide (74-83-9)	X			< 5	< 0.09					1	ug/l	lb/Day			
21V. Methyl Chloride (74-87-3)	X			< 5	< 0.09					1	ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. required	b. present	c. absent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	X			< 5	< 0.09					1	ug/l	lb/Day			
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			< 5	< 0.09					1	ug/l	lb/Day			
24V. Tetrachloroethylene (127-18-4)	X			< 5	< 0.09					1	ug/l	lb/Day			
25V. Toluene (108-88-3)	X			< 5	< 0.09					1	ug/l	lb/Day			
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			< 5	< 0.09					1	ug/l	lb/Day			
27V. 1,1,1-Trichloroethane (71-55-6)	X			< 5	< 0.09					1	ug/l	lb/Day			
28V. 1,1,2-Trichloroethane (79-00-5)	X			< 5	< 0.09					1	ug/l	lb/Day			
29V. Trichloroethylene (79-01-6)	X			< 5	< 0.09					1	ug/l	lb/Day			
30V. Trichlorofluoromethane (75-69-4)	X			< 5	< 0.09					1	ug/l	lb/Day			
31V. Vinyl Chloride (75-01-4)	X			< 5	< 0.09					1	ug/l	lb/Day			
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	X			< 10	< 0.18					1	ug/l	lb/Day			
2A. 2,4-Dichlorophenol (120-83-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
3A. 2,4-Dimethylphenol (105-67-9)	X			< 10	< 0.18					1	ug/l	lb/Day			
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
5A. 2,4-Dinitrophenol (51-28-5)	X			< 10	< 0.18					1	ug/l	lb/Day			
6A. 2-Nitrophenol (88-75-5)	X			< 10	< 0.18					1	ug/l	lb/Day			
7A. 4-Nitrophenol (100-02-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
8A. P-Chloro-M-Cresol (59-50-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
9A. Pentachlorophenol (87-86-5)	X			< 10	< 0.18					1	ug/l	lb/Day			
10A. Phenol (108-95-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
11A. 2,4,6-Trichlorophenol (88-06-2)	X			< 10	< 0.18					1	ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. re-quir-ed	b. pre-sent	c. ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concentration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X			< 10	< 0.18					1	ug/l	lb/Day			
2B. Acenaphtylene (208-96-8)	X			< 10	< 0.18					1	ug/l	lb/Day			
3B. Anthracene (120-12-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
4B. Benzidine (92-87-5)	X			< 10	< 0.18					1	ug/l	lb/Day			
5B. Benzo (a) Anthracene (56-55-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
6B. Benzo (a) Pyrene (50-32-8)	X			< 10	< 0.18					1	ug/l	lb/Day			
7B. 3,4-Benzo-fluoranthene (205-99-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
8B. Benzo (ghi) Perylene (191-24-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
9B. Benzo (k) Fluoranthene (207-08-9)	X			< 10	< 0.18					1	ug/l	lb/Day			
10B. Bis (2-Chloro-ethoxyl) Methane (111-91-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	X			< 10	< 0.18					1	ug/l	lb/Day			
12B. Bis (2-Chloroiso-propyl) Ether (102-60-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
13B. Bis (2-Ethyl-hexyl) Phehalate (117-81-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
15B. Butyl Benzyl Phthalate (85-68-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
16B. 2-Chloro-naphthalene (91-58-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
18B. Chrysene (218-01-9)	X			< 10	< 0.18					1	ug/l	lb/Day			
19B. Dbenzo (a,h) Anthracene (53-70-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
20B. 1,2-Dichloro-benzene (95-50-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
21B. 1,3-Dichloro-benzene (541-73-1)	X			< 10	< 0.18					1	ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. requir-ed	b. pres-ent	c. ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concentration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
23B. 3,3-Dichlorobenzidine (91-94-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
24B. Diethyl Phthalate (84-66-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
25B. Dimethyl Phthalate (131-11-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
26B. Di-N-Butyl Phthalate (84-74-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
27B. 2,4-Dinitrotoluene (121-14-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
28B. 2,6-Dinitrotoluene (606-20-2)	X			< 10	< 0.18					1	ug/l	lb/Day			
29B. Di-N-Octyl Phthalate (117-84-0)	X			< 10	< 0.18					1	ug/l	lb/Day			
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
31B. Fluoranthene (206-44-0)	X			< 10	< 0.18					1	ug/l	lb/Day			
32B. Fluorene (86-73-7)	X			< 10	< 0.18					1	ug/l	lb/Day			
33B. Hexachlorobenzene (118-74-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
34B. Hexachlorobutadiene (87-68-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
35B. Hexachlorocyclopentadiene (77-47-4)	X			< 10	< 0.18					1	ug/l	lb/Day			
36B. Hexachloroethane (67-72-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X			< 10	< 0.18					1	ug/l	lb/Day			
38B. Isophorone (78-59-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
39B. Naphthalene (91-20-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
40B. Nitrobenzene (98-95-3)	X			< 10	< 0.18					1	ug/l	lb/Day			
41B. N-Nitrosodimethylamine (62-75-9)	X			< 10	< 0.18					1	ug/l	lb/Day			
42B. N-Nitrosodi-N-Propylamine (621-64-7)	X			< 10	< 0.18					1	ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. re-quir-ed	b. pre-sent	c. ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concen-tration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitro-sodiphenylamine (86-30-6)	X			< 10	< 0.18					1	ug/l	lb/Day			
44B. Phenanthrene (85-01-8)	X			< 10	< 0.18					1	ug/l	lb/Day			
45B. Pyrene (129-00-0)	X			< 10	< 0.18					1	ug/l	lb/Day			
46B. 1,2,4-Tri-chlorobenzene (120-82-1)	X			< 10	< 0.18					1	ug/l	lb/Day			
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X								ug/l	lb/Day			
2P. alpha-BHC (319-84-6)			X								ug/l	lb/Day			
3P. beta-BHC (315-85-7)			X								ug/l	lb/Day			
4P. gamma-BHC (58-89-9)			X								ug/l	lb/Day			
5P. delta-BHC (319-86-8)			X								ug/l	lb/Day			
6P. Chlordane (57-74-9)			X								ug/l	lb/Day			
7P. 4,4'-DDT (50-29-3)			X								ug/l	lb/Day			
8P. 4,4'-DDE (72-55-9)			X								ug/l	lb/Day			
9P. 4,4'-DDD (72-54-8)			X								ug/l	lb/Day			
10P. Dieldrin (60-57-1)			X								ug/l	lb/Day			
11P.alpha-Endosulfan (115-29-7)			X								ug/l	lb/Day			
12P. beta-Endosulfan (115-29-7)			X								ug/l	lb/Day			
13P. Endosulfan Sulfate (1031-07-8)			X								ug/l				
14P. Endrin (72-20-8)			X								ug/l	lb/Day			
15P. Endrin Aldehyde (7421-93-4)			X								ug/l				
16P. Heptachlor (76-44-8)			X								ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X								ug/l	lb/Day			
18P. PCB-1242 (53469-21-9)			X								ug/l	lb/Day			
19P. PCB-1254 (11097-69-1)			X								ug/l	lb/Day			
20P. PCB-1221 (11104-28-2)			X								ug/l	lb/Day			
21P. PCB-1232 (11141-16-5)			X								ug/l	lb/Day			
22P. PCB-1248 (12672-29-6)			X								ug/l	lb/Day			
23P. PCB-1260 (11096-82-5)			X								ug/l	lb/Day			
24P. PCB-1016 (12674-11-2)			X								ug/l	lb/Day			
25P. Toxaphene (8001-35-2)			X								ug/l	lb/Day			

Please print or type in unshaded areas only	EPA ID Number (copy from Item 1 Form 1) SC0004278	Form Approved. OMB No. 2040-0086 Approval expires 5-31-92

Form 2E NPDES

EPA Facilities Which Do Not Discharge Process Wastewater

Receiving Waters

For this outfall, list the latitude and longitude, and name of the receiving water(s).

Outfall Number (003)	Latitude			Longitude			Receiving Water (name)
	Deg	Min	Sec	Deg	Min	Sec	
	35	3	5	81	4	10	Lake Wylie

II. Discharge Date (If a new discharger, the date you expect to begin discharging)

NA

Type of Waste

Check the box(es) indicating the general type(s) of wastes discharged

X Sanitary Wastes ___ Restaurant or Cafeterial Wastes ___ Noncontact Cooling ___ Other Nonprocess Wastewater (Identify)

If any cooling water additives are used, list them here. Briefly describe thir composition if this information is available.

Effluent Charteristics

A. Existing Sources – Provide measurements for the parameters listed in the left-hand column below, tuless waived by the permitting authority (see instructions)

B. New Dischargers – Provide estimates for the parameters listed in the left-hand column below, unless waived by the permitting authority. Instead of the number of measurements taken, provide the source of estimated values (see instructions).

Pollutant or Parameter	(1) Maximum Daily Value (include units)		(2) Average Daily Value (last year) (include units)		(3) (or) Number of Measurements Taken (last year)	(4) Source of Estimate (if new discharger)
	Mass	Concentration	Mass	Concentration		
Carbonaceous Biochemical Oxygen Demand (CBOD)	6.5 lbs/day	9.4 mg/l	0.8 lbs/day	4.8 mg/l	16	
Total Suspended Solids (TSS)	14.1 lbs/day	20.3mg/l	1.5 lbs/day	8.7mg/l	14	
Fecal coliform (if believed present or if sanitary waste is discharged)		170/100 ml		29/100 ml	15	
Total Residual Chlorine (if Chlorine is used)	<.03 lbs/day	<.05 mg/l	<.008 lbs/day	<.05 mg/l	48	
Oil and Grease	<0.7 lbs/day	<1.0 mg/l	<0.2 lbs/day	<1.0 mg/l	1	
*Chemical oxygen demand (COD)						
*Total organic carbon (TOC)						
Ammonia (as N)	0.1 lbs/day	0.18 mg/l	.03 lbs/day	0.18 mg/l	1	
Discharge Flow	Value 0.0832 MGD		.0202 MGD		365	
pH (give range)	Value 6.4 - 7.8 S.U.		6.6 - 7.2 S.U.		53	
Temperature (Winter)	21 C		12.4 C		22	
Temperature (Summer)	28.6 C		22.4 C		26	

* If noncontact colling water is discharged

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.
SEE INSTRUCTIONS

EPA I.D. NUMBER (copy from Item 1 of Form 1)
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V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

OUTFALL NO. 004

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Biochemical Oxygen Demand (BOD)	29	4.8					1	mg/l	lb/Day			
b. Chemical Oxygen Demand (COD)								mg/l	lb/Day			
c. Total Organic Carbon (TOC)	43	7.2					1	mg/l	lb/Day			
d. Total Suspended Solids (TSS)	< 5	< 0.8					1	mg/l	lb/Day			
e. Ammonia (as N)	1.9	0.3					1	mg/l	lb/Day			
f. Flow	VALUE 0.02		VALUE		VALUE		1	MGD	X	VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			DEGREES CELSIUS		VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			DEGREES CELSIUS		VALUE		
i. pH	MINIMUM	MAXIMUM 6.5	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly or indirectly but expressly in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		2. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. pre-sent	b. ab-sent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Bromide (24959-67-9)		X								mg/l	lb/Day			
b. Chlorine, Total Residual		X								mg/l	lb/Day			
c. Color	X		< 10						1	Std. Units				
d. Fecal Coliform		X								Colonies /100 ml				
e. Flouride (16984-48-8)	X		0.24	0.04					1	mg/l	lb/Day			
f. Nitrate-Nitrite (as N)	X		< 0.05	0.01					1	mg/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							3. UNITS		4. INTAKE (optional)		
			a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
	a. pre-sent	b. ab-sent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
g. Nitrogen, Total Organic (as N)	X		0.67	0.1					1	mg/l	lb/Day			
h. Oil and Grease	X		< 5	< 0.8					1	mg/l	lb/Day			
i. Phosphorous (as P), Total (7723-14-0)	X		< 0.05	< 0.01					1	mg/l	lb/Day			
j. Radioactivity														
(1) Alpha, Total	X		< 5.1 +/- 2.7						1	pCi/l				
(2) Beta, Total	X		4900 +/- 37.3						1	pCi/l				
(3) Radium, Total	X		< 0.6 +/- 0.4						1	pCi/l				
(4) Radium 226, Total	X		< 1.0 +/- 0.48						1	pCi/l				
k. Sulfate (as SO4) (14808-79-8)	X		< 0.2	< 0.03					1	mg/l	lb/Day			
l. Sulfide (as S)	X		< 0.1	< 0.02					1	mg/l	lb/Day			
m. Sulfite (as SO3) (14265-45-3)	X		< 5	< 0.8					1	mg/l	lb/Day			
n. Surfactants		X								mg/l	lb/Day			
o. Aluminum, Total (7429-90-5)	X		< 0.05	0.01					1	mg/l	lb/Day			
p. Barium, Total (7440-39-3)	X		< 0.005	0.0					1	mg/l	lb/Day			
q. Boron, Total (7440-42-8)	X		432	72.1					1	mg/l	lb/Day			
r. Cobalt, Total (7440-48-4)	X		< 0.005	0.0					1	mg/l	lb/Day			
s. Iron, Total (7439-89-6)	X		< 0.05	< 0.01					1	mg/l	lb/Day			
t. Magnesium, Total (7439-95-4)	X		< 0.01	0.0					1	mg/l	lb/Day			
u. Molybdenum, Total (7439-98-7)	X		< 0.01	0.0					1	mg/l	lb/Day			
v. Manganese, Total (7439-96-5)	X		< 0.01	0.0					1	mg/l	lb/Day			
w. Tin, Total (7440-31-5)	X		< 0.07	< 0.01					1	mg/l	lb/Day			
x. Titanium, Total (7440-32-6)	X		< 0.005	0.0					1	mg/l	lb/Day			

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2, 4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X			< 10	0.00					1	ug/l	lb/Day			
2M. Arsenic, Total (7440-38-2)	X			< 5	0.00					1	ug/l	lb/Day			
3M. Beryllium, Total (7440-41-7)	X			< 5	0.00					1	ug/l	lb/Day			
4M. Cadmium, Total (7440-43-9)	X			< 5	0.00					1	ug/l	lb/Day			
5M. Chromium, Total (7440-47-3)	X			< 5	0.00					1	ug/l	lb/Day			
6M. Copper, Total (7440-50-8)	X			< 0.005	0.00					1	mg/l	lb/Day			
7M. Lead, Total (7439-92-1)	X			< 5	0.00					1	ug/l	lb/Day			
8M. Mercury, Total (7439-97-6)	X			< 0.5	0.00					1	ug/l	lb/Day			
9M. Nickel, Total (7440-02-0)	X			< 5	0.00					1	ug/l	lb/Day			
10M. Selenium, Total (7782-49-2)	X			< 5	0.00					1	ug/l	lb/Day			
11M. Silver, Total (7440-22-4)	X			< 5	0.00					1	ug/l	lb/Day			
12M. Thallium, Total (7440-28-0)	X			< 0.01	0.00					1	mg/l	lb/Day			
13M. Zinc, Total (7440-66-6)	X			0.008	0.00					1	mg/l	lb/Day			
14M. Cyanide, Total (57-12-5)	X			< 0.01	0.00					1	mg/l	lb/Day			
15M. Phenols, Total	X			< 0.005	0.0					1	mg/l	lb/Day			
DIOXIN															
2,3,7,8 Tetra chlorodibenzo P Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X								ug/l	lb/Day			
2V. Acrylonitrile (107-13-1)			X								ug/l	lb/Day			
3V. Benzene (71-43-2)			X								ug/l	lb/Day			
4V. Bis (Chloro-methyl) Ether (542-88-1)			X								ug/l	lb/Day			
5V. Bromoform (75-25-2)			X								ug/l	lb/Day			
6V. Carbon Tetrachloride (56-23-5)			X								ug/l	lb/Day			
7V. Chlorobenzene (108-90-7)			X								ug/l	lb/Day			
8V. Chlorodi-bromomethane (124-48-1)			X								ug/l	lb/Day			
9V. Chloroethane (75-00-3)			X								ug/l	lb/Day			
10V. 2-Chloro-ethylvinyl Ether (110-75-8)			X								ug/l	lb/Day			
11V. Chloroform (67-66-3)			X								ug/l	lb/Day			
12V. Dichloro-bromomethane (75-27-4)			X								ug/l	lb/Day			
13V. Dichloro-difluoromethane (75-51-8)			X								ug/l	lb/Day			
14V. 1,1-Dichloro-ethane (75-34-3)			X								ug/l	lb/Day			
15V. 1,2-Dichloro-ethane (107-06-2)			X								ug/l	lb/Day			
16V. 1,1-Dichloro-ethylene (75-35-4)			X								ug/l	lb/Day			
17V. 1,2-Dichloro-propane (78-87-5)			X								ug/l	lb/Day			
18V. 1,3-Dichloro-propylene (542-75-6)			X								ug/l	lb/Day			
19V. Ethybenzene (100-41-4)			X								ug/l	lb/Day			
20V. Methyl Bromide (74-83-9)			X								ug/l	lb/Day			
21V. Methyl Chloride (74-87-3)			X								ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X								ug/l	lb/Day			
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X								ug/l	lb/Day			
24V. Tetrachloro-ethylene (127-18-4)			X								ug/l	lb/Day			
25V. Toluene (108-88-3)			X								ug/l	lb/Day			
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X								ug/l	lb/Day			
27V. 1,1,1-Tri-chloroethane (71-55-6)			X								ug/l	lb/Day			
28V. 1,1,2-Tri-chloroethane (79-00-5)			X								ug/l	lb/Day			
29V. Trichloro-ethylene (79-01-6)			X								ug/l	lb/Day			
30V. Trichloro-fluoromethane (75-69-4)			X								ug/l	lb/Day			
31V. Vinyl Chloride (75-01-4)			X								ug/l	lb/Day			
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X								ug/l	lb/Day			
2A. 2,4-Dichloro-phenol (120-83-2)			X								ug/l	lb/Day			
3A. 2,4-Dimethyl-phenol (105-67-9)			X								ug/l	lb/Day			
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X								ug/l	lb/Day			
5A. 2,4-Dinitro-phenol (51-28-5)			X								ug/l	lb/Day			
6A. 2-Nitrophenol (88-75-5)			X								ug/l	lb/Day			
7A. 4-Nitrophenol (100-02-7)			X								ug/l	lb/Day			
8A. P-Chloro-M-Cresol (59-50-7)			X								ug/l	lb/Day			
9A. Pentachloro-phenol (87-86-5)			X								ug/l	lb/Day			
10A. Phenol (108-95-2)			X								ug/l	lb/Day			
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X								ug/l	lb/Day			

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X								ug/l	lb/Day			
2B. Acenaphtylene (208-96-8)			X								ug/l	lb/Day			
3B. Anthracene (120-12-7)			X								ug/l	lb/Day			
4B. Benzidine (92-87-5)			X								ug/l	lb/Day			
5B. Benzo (a) Anthracene (56-55-3)			X								ug/l	lb/Day			
6B. Benzo (a) Pyrene (50-32-8)			X								ug/l	lb/Day			
7B. 3,4-Benzo-fluoranthene (205-99-2)			X								ug/l	lb/Day			
8B. Benzo (ghi) Perylene (191-24-2)			X								ug/l	lb/Day			
9B. Benzo (k) Fluoranthene (207-08-9)			X								ug/l	lb/Day			
10B. Bis (2-Chloro-ethoxyl) Methane (111-91-1)			X								ug/l	lb/Day			
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)			X								ug/l	lb/Day			
12B. Bis (2-Chloroiso-propyl) Ether (102-60-1)			X								ug/l	lb/Day			
13B. Bis (2-Ethyl-hexyl) Phehalate (117-81-7)			X								ug/l	lb/Day			
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X								ug/l	lb/Day			
15B. Butyl Benzyl Phthalate (85-68-7)			X								ug/l	lb/Day			
16B. 2-Chloro-naphthalene (91-58-7)			X								ug/l	lb/Day			
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X								ug/l	lb/Day			
18B. Chrysene (218-01-9)			X								ug/l	lb/Day			
19B. Dibenzo (a,h) Anthracene (53-70-3)			X								ug/l	lb/Day			
20B. 1,2-Dichloro-benzene (95-50-1)			X								ug/l	lb/Day			
21B. 1,3-Dichloro-benzene (541-73-1)			X								ug/l	lb/Day			

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichloro-benzene (106-46-7)			X								ug/l	lb/Day			
23B. 3,3-Dichloro-benzidine (91-94-1)			X								ug/l	lb/Day			
24B. Diethyl Phthalate (84-66-2)			X								ug/l	lb/Day			
25B. Dimethyl Phthalate (131-11-3)			X								ug/l	lb/Day			
26B. Di-N-Butyl Phthalate (84-74-2)			X								ug/l	lb/Day			
27B. 2,4-Dinitro-toluene (121-14-2)			X								ug/l	lb/Day			
28B. 2,6-Dinitro-toluene (606-20-2)			X								ug/l	lb/Day			
29B. Di-N-Octyl Phthalate (117-84-0)			X								ug/l	lb/Day			
30B. 1,2-Diphenyl-hydrazine (as Azo-benzene) (122-66-7)			X								ug/l	lb/Day			
31B. Fluoranthene (206-44-0)			X								ug/l	lb/Day			
32B. Fluorene (86-73-7)			X								ug/l	lb/Day			
33B. Hexachloro-benzene (118-74-1)			X								ug/l	lb/Day			
34B. Hexa-chlorobutadiene (87-68-3)			X								ug/l	lb/Day			
35B. Hexachloro-cyclopentadiene (77-47-4)			X								ug/l	lb/Day			
36B. Hexachloro-ethane (67-72-1)			X								ug/l	lb/Day			
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X								ug/l	lb/Day			
38B. Isophorone (78-59-1)			X								ug/l	lb/Day			
39B. Naphthalene (91-20-3)			X								ug/l	lb/Day			
40B. Nitrobenzene (98-95-3)			X								ug/l	lb/Day			
41B. N-Nitro-sodimethylamine (62-75-9)			X								ug/l	lb/Day			
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X								ug/l	lb/Day			

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitro-sodiphenylamine (86-30-6)			X								ug/l	lb/Day			
44B. Phenanthrene (85-01-8)			X								ug/l	lb/Day			
45B. Pyrene (129-00-0)			X								ug/l	lb/Day			
46B. 1,2,4-Tri-chlorobenzene (120-82-1)			X								ug/l	lb/Day			
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X								ug/l	lb/Day			
2P. alpha-BHC (319-84-6)			X								ug/l	lb/Day			
3P. beta-BHC (315-85-7)			X								ug/l	lb/Day			
4P. gamma-BHC (58-89-9)			X								ug/l	lb/Day			
5P. delta-BHC (319-86-8)			X								ug/l	lb/Day			
6P. Chlordane (57-74-9)			X								ug/l	lb/Day			
7P. 4,4'-DDT (50-29-3)			X								ug/l	lb/Day			
8P. 4,4'-DDE (72-55-9)			X								ug/l	lb/Day			
9P. 4,4'-DDD (72-54-8)			X								ug/l	lb/Day			
10P. Dieldrin (60-57-1)			X								ug/l	lb/Day			
11P.alpha-Endosulfan (115-29-7)			X								ug/l	lb/Day			
12P. beta-Endosulfan (115-29-7)			X								ug/l	lb/Day			
13P. Endosulfan Sulfate (1031-07-8)			X								ug/l				
14P. Endrin (72-20-8)			X								ug/l	lb/Day			
15P. Endrin Aldehyde (7421-93-4)			X								ug/l				
16P. Heptachlor (76-44-8)			X								ug/l	lb/Day			

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X								ug/l	lb/Day			
18P. PCB-1242 (53469-21-9)			X								ug/l	lb/Day			
19P. PCB-1254 (11097-69-1)			X								ug/l	lb/Day			
20P. PCB-1221 (11104-28-2)			X								ug/l	lb/Day			
21P. PCB-1232 (11141-16-5)			X								ug/l	lb/Day			
22P. PCB-1248 (12672-29-6)			X								ug/l	lb/Day			
23P. PCB-1260 (11096-82-5)			X								ug/l	lb/Day			
24P. PCB-1016 (12674-11-2)			X								ug/l	lb/Day			
25P. Toxaphene (8001-35-2)			X								ug/l	lb/Day			

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.
SEE INSTRUCTIONS

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005

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Biochemical Oxygen Demand (BOD)	5.7	685.0					1	mg/l	lb/Day			
b. Chemical Oxygen Demand (COD)	36	4326.0					1	mg/l	lb/Day			
c. Total Organic Carbon (TOC)	13	1562.2					1	mg/l	lb/Day			
d. Total Suspended Solids (TSS)	16	1922.7					1	mg/l	lb/Day			
e. Ammonia (as N)	0.05	6.0					1	mg/l	lb/Day			
f. Flow	VALUE 14.4		VALUE		VALUE 14.4		47	MGD	X	VALUE		
g. Temperature (winter)	VALUE 22.2		VALUE		VALUE 15.4		24	DEGREES CELSIUS		VALUE		
h. Temperature (summer)	VALUE 28.2		VALUE		VALUE 23.2		24	DEGREES CELSIUS		VALUE		
i. pH	MINIMUM 7.8	MAXIMUM 8.6	MINIMUM	MAXIMUM			48	STANDARD UNITS				

PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly or indirectly but expressly in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		2. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. pre-sent	b. ab-sent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Bromide (24959-67-9)	X		2.5	300.4					1	mg/l	lb/Day			
b. Chlorine, Total Residual	X		<.05	<6	<.05	<6	<.05	<6	48	mg/l	lb/Day			
c. Color		X								Std. Units	X			
d. Fecal Coliform		X								Colonies /100 ml	X			
e. Flouride (16984-48-8)		X								mg/l	lb/Day			
f. Nitrate-Nitrite (as N)		X								mg/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							3. UNITS		4. INTAKE (optional)		
	a. pre-sent	b. ab-sent	a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE (1) Concentration	a. LONG TERM AVG. VALUE (2) Mass	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X								mg/l	lb/Day			
h. Oil and Grease	X		< 1	< 120.2					1	mg/l	lb/Day			
i. Phosphorous (as P), Total (7723-14-0)		X								mg/l	lb/Day			
j. Radioactivity														
(1) Alpha, Total		X								pCi/l	X			
(2) Beta, Total		X								pCi/l	X			
(3) Radium, Total		X								pCi/l	X			
(4) Radium 226, Total		X								pCi/l	X			
k. Sulfate (as SO4) (14808-79-8)	X		94	11295.8					1	mg/l	lb/Day			
l. Sulfide (as S)	X		< 0.05	< 6.0					1	mg/l	lb/Day			
m. Sulfite (as SO3) (14265-45-3)	X		< 2	< 240.3					1	mg/l	lb/Day			
n. Surfactants		X								mg/l	lb/Day			
o. Aluminum, Total (7429-90-5)		X								mg/l	lb/Day			
p. Barium, Total (7440-39-3)		X								mg/l	lb/Day			
q. Boron, Total (7440-42-8)		X								mg/l	lb/Day			
r. Cobalt, Total (7440-48-4)		X								mg/l	lb/Day			
s. Iron, Total (7439-89-6)		X								mg/l	lb/Day			
t. Magnesium, Total (7439-95-4)		X								mg/l	lb/Day			
u. Molybdenum, Total (7439-98-7)		X								mg/l	lb/Day			
v. Manganese, Total (7439-96-5)		X								mg/l	lb/Day			
w. Tin, Total (7440-31-5)		X								mg/l	lb/Day			
x. Titanium, Total (7440-32-6)		X								mg/l	lb/Day			

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2, 4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X								ug/l	lb/Day			
2M. Arsenic, Total (7440-38-2)			X								ug/l	lb/Day			
3M. Beryllium, Total (7440-41-7)			X								ug/l	lb/Day			
4M. Cadmium, Total (7440-43-9)			X								ug/l	lb/Day			
5M. Chromium, Total (7440-47-3)			X								ug/l	lb/Day			
6M. Copper, Total (7440-50-8)			X								mg/l	lb/Day			
7M. Lead, Total (7439-92-1)			X								ug/l	lb/Day			
8M. Mercury, Total (7439-97-6)			X								ug/l	lb/Day			
9M. Nickel, Total (7440-02-0)			X								ug/l	lb/Day			
10M. Selenium, Total (7782-49-2)			X								ug/l	lb/Day			
11M. Silver, Total (7440-22-4)			X								ug/l	lb/Day			
12M. Thallium, Total (7440-28-0)			X								mg/l	lb/Day			
13M. Zinc, Total (7440-66-6)			X								mg/l	lb/Day			
14M. Cyanide, Total (57-12-5)			X								mg/l	lb/Day			
15M. Phenols, Total			X								mg/l	lb/Day			
DIOXIN															
2,3,7,8 Tetra chlorodibenzo P Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X								ug/l	lb/Day			
2V. Acrylonitrile (107-13-1)			X								ug/l	lb/Day			
3V. Benzene (71-43-2)			X								ug/l	lb/Day			
4V. Bis (Chloro-methyl) Ether (542-88-1)			X								ug/l	lb/Day			
5V. Bromoform (75-25-2)			X								ug/l	lb/Day			
6V. Carbon Tetrachloride (56-23-5)			X								ug/l	lb/Day			
7V. Chlorobenzene (108-90-7)			X								ug/l	lb/Day			
8V. Chlorodi-bromomethane (124-48-1)			X								ug/l	lb/Day			
9V. Chloroethane (75-00-3)			X								ug/l	lb/Day			
10V. 2-Chloro-ethylvinyl Ether (110-75-8)			X								ug/l	lb/Day			
11V. Chloroform (67-66-3)			X								ug/l	lb/Day			
12V. Dichloro-bromomethane (75-27-4)			X								ug/l	lb/Day			
13V. Dichloro-difluoromethane (75-51-8)			X								ug/l	lb/Day			
14V. 1,1-Dichloro-ethane (75-34-3)			X								ug/l	lb/Day			
15V. 1,2-Dichloro-ethane (107-06-2)			X								ug/l	lb/Day			
16V. 1,1-Dichloro-ethylene (75-35-4)			X								ug/l	lb/Day			
17V. 1,2-Dichloro-propane (78-87-5)			X								ug/l	lb/Day			
18V. 1,3-Dichloro-propylene (542-75-6)			X								ug/l	lb/Day			
19V. Ethylbenzene (100-41-4)			X								ug/l	lb/Day			
20V. Methyl Bromide (74-83-9)			X								ug/l	lb/Day			
21V. Methyl Chloride (74-87-3)			X								ug/l	lb/Day			

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1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. re-quir-ed	b. pre-sent	c. ab-sent	3. EFFLUENT a. MAXIMUM DAILY VALUE (if available) (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	(2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	(2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concen-tration	b. Mass	5. INTAKE (optional) a. LONG TERM AVG. VALUE (1) Concentration	(2) Mass	d. NO. OF ANALYSES
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X								ug/l	lb/Day			
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X								ug/l	lb/Day			
24V. Tetrachloro-ethylene (127-18-4)			X								ug/l	lb/Day			
25V. Toluene (108-88-3)			X								ug/l	lb/Day			
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X								ug/l	lb/Day			
27V. 1,1,1-Tri-chloroethane (71-55-6)			X								ug/l	lb/Day			
28V. 1,1,2-Tri-chloroethane (79-00-5)			X								ug/l	lb/Day			
29V. Trichloro-ethylene (79-01-6)			X								ug/l	lb/Day			
30V. Trichloro-fluoromethane (75-69-4)			X								ug/l	lb/Day			
31V. Vinyl Chloride (75-01-4)			X								ug/l	lb/Day			
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X								ug/l	lb/Day			
2A. 2,4-Dichloro-phenol (120-83-2)			X								ug/l	lb/Day			
3A. 2,4-Dimethyl-phenol (105-67-9)			X								ug/l	lb/Day			
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X								ug/l	lb/Day			
5A. 2,4-Dinitro-phenol (51-28-5)			X								ug/l	lb/Day			
6A. 2-Nitrophenol (88-75-5)			X								ug/l	lb/Day			
7A. 4-Nitrophenol (100-02-7)			X								ug/l	lb/Day			
8A. P-Chloro-M-Cresol (59-50-7)			X								ug/l	lb/Day			
9A. Pentachloro-phenol (87-86-5)			X								ug/l	lb/Day			
10A. Phenol (108-95-2)			X								ug/l	lb/Day			
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X								ug/l	lb/Day			

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	a. re-quired	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concentration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X								ug/l	lb/Day			
2B. Acenaphtylene (208-96-8)			X								ug/l	lb/Day			
3B. Anthracene (120-12-7)			X								ug/l	lb/Day			
4B. Benzidine (92-87-5)			X								ug/l	lb/Day			
5B. Benzo (a) Anthracene (56-55-3)			X								ug/l	lb/Day			
6B. Benzo (a) Pyrene (50-32-8)			X								ug/l	lb/Day			
7B. 3,4-Benzo-fluoranthene (205-99-2)			X								ug/l	lb/Day			
8B. Benzo (ghi) Perylene (191-24-2)			X								ug/l	lb/Day			
9B. Benzo (k) Fluoranthene (207-08-9)			X								ug/l	lb/Day			
10B. Bis (2-Chloro-ethoxyl) Methane (111-91-1)			X								ug/l	lb/Day			
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)			X								ug/l	lb/Day			
12B. Bis (2-Chloroiso-propyl) Ether (102-60-1)			X								ug/l	lb/Day			
13B. Bis (2-Ethyl-hexyl) Phehalate (117-81-7)			X								ug/l	lb/Day			
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X								ug/l	lb/Day			
15B. Butyl Benzyl Phthalate (85-68-7)			X								ug/l	lb/Day			
16B. 2-Chloro-naphthalene (91-58-7)			X								ug/l	lb/Day			
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X								ug/l	lb/Day			
18B. Chrysene (218-01-9)			X								ug/l	lb/Day			
19B. Dbenzo (a,h) Anthracene (53-70-3)			X								ug/l	lb/Day			
20B. 1,2-Dichloro-benzene (95-50-1)			X								ug/l	lb/Day			
21B. 1,3-Dichloro-benzene (541-73-1)			X								ug/l	lb/Day			

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	a. re-quired	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichloro-benzene (106-46-7)			X								ug/l	lb/Day			
23B. 3,3-Dichloro-benzidine (91-94-1)			X								ug/l	lb/Day			
24B. Diethyl Phthalate (84-66-2)			X								ug/l	lb/Day			
25B. Dimethyl Phthalate (131-11-3)			X								ug/l	lb/Day			
26B. Di-N-Butyl Phthalate (84-74-2)			X								ug/l	lb/Day			
27B. 2,4-Dinitro-toluene (121-14-2)			X								ug/l	lb/Day			
28B. 2,6-Dinitro-toluene (606-20-2)			X								ug/l	lb/Day			
29B. Di-N-Octyl Phthalate (117-84-0)			X								ug/l	lb/Day			
30B. 1,2-Diphenyl-hydrazine (as Azo-benzene) (122-66-7)			X								ug/l	lb/Day			
31B. Fluoranthene (206-44-0)			X								ug/l	lb/Day			
32B. Fluorene (86-73-7)			X								ug/l	lb/Day			
33B. Hexachloro-benzene (118-74-1)			X								ug/l	lb/Day			
34B. Hexa-chlorobutadiene (87-68-3)			X								ug/l	lb/Day			
35B. Hexachloro-cyclopentadiene (77-47-4)			X								ug/l	lb/Day			
36B. Hexachloro-ethane (67-72-1)			X								ug/l	lb/Day			
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X								ug/l	lb/Day			
38B. Isophorone (78-59-1)			X								ug/l	lb/Day			
39B. Naphthalene (91-20-3)			X								ug/l	lb/Day			
40B. Nitrobenzene (98-95-3)			X								ug/l	lb/Day			
41B. N-Nitro-sodimethylamine (62-75-9)			X								ug/l	lb/Day			
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X								ug/l	lb/Day			

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	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitro-sodiphenylamine (86-30-6)			X								ug/l	lb/Day			
44B. Phenanthrene (85-01-8)			X								ug/l	lb/Day			
45B. Pyrene (129-00-0)			X								ug/l	lb/Day			
46B. 1,2,4-Tri-chlorobenzene (120-82-1)			X								ug/l	lb/Day			
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X								ug/l	lb/Day			
2P. alpha-BHC (319-84-6)			X								ug/l	lb/Day			
3P. beta-BHC (315-85-7)			X								ug/l	lb/Day			
4P. gamma-BHC (58-89-9)			X								ug/l	lb/Day			
5P. delta-BHC (319-86-8)			X								ug/l	lb/Day			
6P. Chlordane (57-74-9)			X								ug/l	lb/Day			
7P. 4,4'-DDT (50-29-3)			X								ug/l	lb/Day			
8P. 4,4'-DDE (72-55-9)			X								ug/l	lb/Day			
9P. 4,4'-DDD (72-54-8)			X								ug/l	lb/Day			
10P. Dieldrin (60-57-1)			X								ug/l	lb/Day			
11P.alpha-Endosulfan (115-29-7)			X								ug/l	lb/Day			
12P. beta-Endosulfan (115-29-7)			X								ug/l	lb/Day			
13P. Endosulfan Sulfate (1031-07-8)			X								ug/l				
14P. Endrin (72-20-8)			X								ug/l	lb/Day			
15P. Endrin Aldehyde (7421-93-4)			X								ug/l				
16P. Heptachlor (76-44-8)			X								ug/l	lb/Day			

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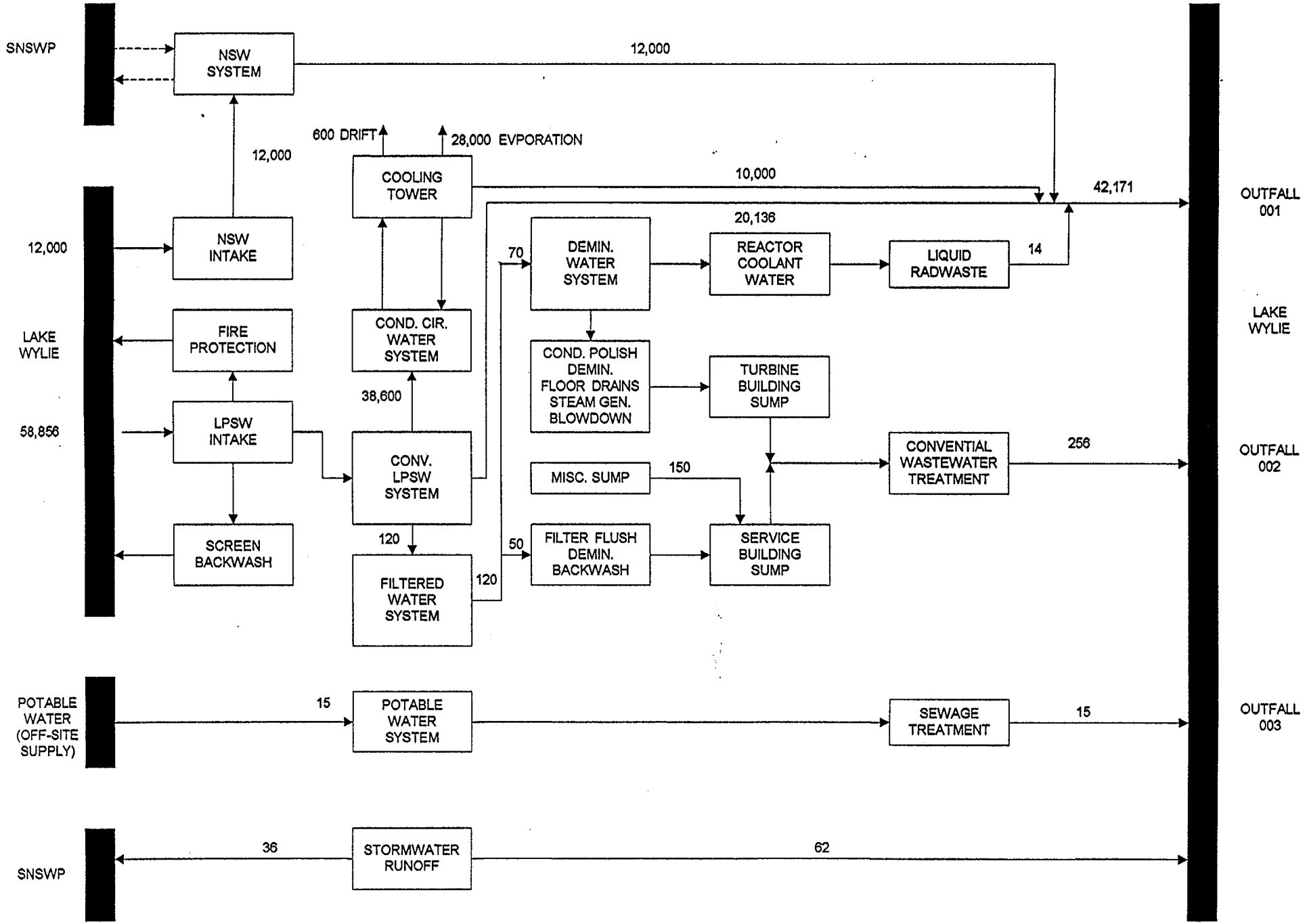
EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
SC0004278	005

Form Approved
OMB No. 2040-0086
Approval expires 7-31-88

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. re-quir-ed	b. pre-sent	c. ab-sent	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. Concen-tration	b. Mass	a. LONG TERM AVG. VALUE		d. NO. OF ANALYSES
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION - PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X								ug/l	lb/Day			
18P. PCB-1242 (53469-21-9)			X								ug/l	lb/Day			
19P. PCB-1254 (11097-69-1)			X								ug/l	lb/Day			
20P. PCB-1221 (11104-28-2)			X								ug/l	lb/Day			
21P. PCB-1232 (11141-16-5)			X								ug/l	lb/Day			
22P. PCB-1248 (12672-29-6)			X								ug/l	lb/Day			
23P. PCB-1260 (11096-82-5)			X								ug/l	lb/Day			
24P. PCB-1016 (12674-11-2)			X								ug/l	lb/Day			
25P. Toxaphene (8001-35-2)			X								ug/l	lb/Day			



CATAWBA NUCLEAR STATION
WATER FLOW SCHEMATIC

NOTE: ALL FLOWS ARE IN GPM
FOR AVERAGED CONDITIONS

PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

BUREAU OF WATER
SLUDGE DISPOSAL SUPPLEMENT FOR NPDES AND ND PERMIT APPLICATIONS

Facility Name: Catawba Nuclear Station

Permit Number: SC00 04278 (leave blank for a new facility)

or ND00_____

Please check your proposed or current sludge disposal procedure:

I. Existing Facilities:

X Lagoon or other facility with no routine sludge disposal. Please attach a letter that addresses the approximate schedule for sludge removal and address the anticipated disposal method (note that the proposed sludge disposal method must be approved by the Department prior to initiation).

___ Sludge disposal at another wastewater treatment facility. Attached is a recent letter of acceptance dated_____. This letter must include the NPDES or ND number of the treatment facility accepting the sludge for disposal. If no previous SCDHEC approval has been granted on the disposal method, then please include a detailed report on the existing sludge disposal method. See the attached requirements for Sludge Disposal Report A. If a previous SCDHEC approval has been granted, then include a recent analysis that shows the non-hazardous nature of the sludge or a signed statement that the sludge characteristics have not changes since the last analysis.

X Sludge disposal at a landfill. If the landfill is SWAIP (special waste) approved, an recent acceptance letter from the landfill is acceptable. If the landfill is not SWAIP approved, attached is SCDHEC Solid and Hazardous Waste approval dated _____, or other SCDHEC approval dated _____. If no previous approval has been granted on the disposal method, then please include a detailed report on the existing sludge disposal method. See the attached requirements for Sludge Disposal Report B.

___ Sludge disposal by Beneficial Use of Sludge. Attached is SCDHEC approval letter or program approval dated _____. If no previous approval has been granted on the disposal method, then please include a detailed report on the existing sludge disposal method. See the attached requirements for Sludge Disposal Report C.

II. Proposed Facilities:

___ Lagoon or other facility with no routine sludge disposal. Please attach a letter that addresses the approximate schedule for sludge removal and address the anticipated disposal method (note that the proposed sludge disposal method must be approved by the Department prior to initiation).

___ Sludge disposal at another wastewater treatment facility. Please include a detailed report on the proposed sludge disposal method. See the attached requirements for Sludge Disposal Report A.

___ Sludge disposal at a landfill. Please include a detailed report on the proposed sludge disposal method. See the attached requirements for Sludge Disposal Report B.

___ Sludge disposal by Beneficial Use. Please include a detailed report on the proposed sludge disposal method. See the attached requirements for Sludge Disposal Report C.

Send this form and the appropriate disposal report (if applicable) with your NPDES or ND permit application.

ALSO SEE ATTACHED INSTRUCTIONS

Duke Energy Corporation
Catawba Nuclear Station
NPDES Permit Renewal

Sludge Disposal At A Landfill: Sludge Disposal Report B

A. Sludge Generator

1. Name – Duke Power Company, Catawba Nuclear Station

2. Address – 4800 Concord Road, York, SC 29745

3. Phone Number – 803-831-3000

4 County – York

5. NPDES Permit Number – SC0004278

6. Plant capacity (MGD)

   Conventional Waste System = Design Maximum of 2.88 MGD
   Sanitary Waste System = Design Base of 0.080 MGD

7. Amount of sludge generated per year (dry weight tons)

   Conventional Waste System = Varies with facility operation - average of 9000 pounds per year.
   Sanitary Waste System = 0

8. Size, description, and location of sludge storage

   Conventional Waste System - Sludge is not stored. When accumulated sludge within the system reaches a volume that requires processing, that portion of the system is isolated and the sludge removed. The removed sludge may require drying or processing to remove free water prior to disposal in the landfill. Immediately after processing or drying, the sludge is placed in the permitted landfill.
   Sanitary Waste System – Sludge is not stored.

9. Amount of stockpiled sludge and sludge age

   As stated above, sludge is not stored or stockpiled. Sludge depth is monitored in the treatment systems. When the accumulated sludge warrants removal from the Conventional Waste system, it is disposed in the permitted landfill immediately upon completion of drying or processing to remove the water.

10. Description of sludge treatment (sludge must be stabilized). Process to Significantly Reduce Pathogens (PSRP), if any. Process to Further Reduce Pathogens (PFRP), if any.

The Sanitary Waste System does not produce large amounts of sludge due to the process used for treatment. However, any treatment is not one hundred percent effective in eliminating sludge and at some point in the future it may be necessary to remove accumulated volumes in certain portions of the system. As approved in our Sludge Management Plan, which was submitted to SCDHEC on December 12, 1992, if this situation arises Duke Power will seek approval on a case by case basis for the proper treatment and disposal of this type sludge.

11. Current method of sludge disposal

The SCDHEC approved Sludge Management Plan is attached. This plan was required by the NPDES permit issued on September 15, 1992. The plan describes the routine sludge generation for the facility and the disposal methods. The permitted site landfill, IWP – 463303 – 1601 (formerly IWP – 192), is approved to accept the routine sludge generation from the conventional waste system generated at the facility (copy attached).

12. Letter of acceptance from an official of the landfill accepting the sludge for disposal

Approval has been sought and obtained from SCDHEC to dispose of sludge in the permitted site landfill. Catawba Nuclear Station has no arrangements with any other landfill to accept sludge generated at the facility.

13. Amount of sludge transported, reported in dry tons per year

Sludge removal from the Conventional Waste System occurs every 4 to 5 years. The sludge is dewatered on site and transported to the site landfill. The average dry weight of the sludge is 42,000 pounds.

14. Estimated percent solids and total liquid volume

A vendor using a SCDHEC approved water removal process presses sludge from the Conventional Waste System. The final waste product is subjected to the Paint Filter Test to ensure acceptable levels of free liquid prior to burial in the permitted landfill.

B. Sludge Analysis Information

1. TLCP toxicity results with acceptable ignitability, corrosivity, and reactivity lab report or rational to demonstrate the non-hazardous nature of the sludge. For existing facilities, a statement that no change in sludge constituents has occurred since the last EP or TCLP toxicity test and provide a copy of the latest test results.

   There has been no change in the sludge constituents since the last TCLP that was conducted during September 1995 (results attached).

2. Name, address, and phone number of the certified lab conducting the analysis

   General Engineering Laboratories
   PO Box 30712
   Charleston, SC 29417
   (803)556-8171

3. Other compounds required by NPDES or ND permit or present in effluent to treatment plant

   All chemical constituents are identified in the application narrative section attached to Form 1 and in the analysis results documented in Form 2C.

Duke Energy Corporation
Catawba Nuclear Station
NPDES Permit Renewal
Sludge Disposal At A Landfill: Sludge Disposal Report B

Attachment 1

Sludge Management Plan

Duke Power Company
Generation Services Department
13339 Hagers Ferry Road
Huntersville, NC 28078-7929

DUKE POWER

December 17, 1992

To: Mr. Robert Knauss
Enforcement Division
Bureau of Water Pollution Control
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subject: Catawba Nuclear Station
NPDES Permit No. SC0004278
Waste Water Treatment Systems
Sludge Management Plan
File: CN-702.13

Dear Mr. Knauss:

As required by Part III Item 10 page 29 of 31 of the subject NPDES permit, attached is the sludge management plan for Catawba Nuclear Station's NPDES waste water treatment facilities. If there are any changes to this plan Duke Power Company will notify you.

Please advise (704) 875-5970 if you have any questions or need additional information.

Sincerely,

Robert R. Wylie

Robert R. Wylie, Engineer
Environmental Division
Duke Power Company

cc: Timothy Eleazer - DHEC Columbia Office
Al Williams - DHEC Catawba District
Cheryl Peed - Catawba Nuclear Station

Printed on recycled paper

CATAWBA NUCLEAR STATION
SLUDGE MANAGEMENT PLAN

INTRODUCTION

This plan identifies the various sludges, mud and oils that are removed from NPDES treatment systems and are required to be disposed of by rules and regulations of the Bureau of Solid and Hazardous Waste Management. At Catawba Nuclear Station sludge and/or mud is removed from the conventional waste water treatment system, the cooling towers and miscellaneous sumps. Sludge may eventually be remove from the domestic sewage treatment system at which time appropriate DHEC approvals will be requested and the removal will occur in accordance with DHEC rules and regulations. Chemical metal cleaning sludge is presently not generated at Catawba Nuclear Station.

CONVENTIONAL WASTE WATER TREATMENT SYSTEM

Approximately every eighteen months dewatered sludge is removed from the conventional waste water treatment system. This sludge is dewatered by a vendor and disposed of in the on-site landfill in accordance with the vendor's construction permit and the landfill's permit (#IWP-192), respectively. Additionally if the sludge is determined to have measurable levels of radionuclides that are due to the facility's operation , then approval is also obtained from the DHEC Bureau of Radiological Health prior to the disposal operation.

COOLING TOWER SYSTEM

During refueling outages the cooling tower system is dewatered and mud is normally needed to be removed. This occurs approximately every fourteen months for each of the two units. This mud is primarily removed from distribution flumes. The disposal is conducted in accordance with the special conditions as outlined in the landfill permit (#IWP-192).

YARD DRAINAGE COLLECTION SYSTEM

The yard drainage collection system periodically needs sand and mud to be removed. This material is removed by use of a vacuum truck and placed upland in areas that will minimize any runoff to Lake Wylie.

MISCELLANEOUS

The potential exists for sludge to accumulate in various sumps at the site. This sludge may periodically need to be removed to prevent its buildup or if a special maintenance activity such as coating of the walls is to occur. Prior to the sludge being disposed of it will be characterized either by knowledge or analytically and then as appropriate approval for its disposal will be sought.

OIL COLLECTION

An oil coalescing unit is utilized to aid in preventing oil from entering the service building sump. The oil that is collected in the oil coalescing unit's collection tank is drained and sent off-site for fuel usage. If oil does reach a treatment system is it is removed with oil absorbent material and disposed of as approved by DHEC.

Duke Energy Corporation
Catawba Nuclear Station
NPDES Permit Renewal
Sludge Disposal At A Landfill – Sludge Disposal Report B

Attachment 2

Site Landfill Permit

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

Commissioner: Douglas E. Bryant

Board: Richard E. Jabbour, DDS, Chairman
Robert J. Stripling, Jr., Vice Chairman
Sandra J. Molander, Secretary

William E. Applegate, III,
John H. Burriss
Tony Graham, Jr., MD
John B. Pate, MD

Promoting Health, Protecting the Environment

OFFICE OF ENVIRONMENTAL QUALITY CONTROL
BUREAU OF SOLID AND HAZARDOUS WASTE MANAGEMENT
INDUSTRIAL WASTE PERMIT IWP-192

New SC # 463303-1601

Date of Reissue: November 1, 1993 Effective Date: December 1, 1993

Permission is hereby granted to:

Name of Facility:	Duke Power Company
Address:	P.O. Box 1007
	Charlotte, NC 28201-1007
Supervisor:	Chuck Denny
Phone:	(803) 831-3676

for the operation of an on-site industrial waste landfill located approximately seven (7) miles north of the city of Rock Hill on Road #1132.

This permit is issued pursuant to Sections 44-96-10 et seq., 48-1-10 et seq. and 44-1-140 (11) of the 1976 South Carolina Code of Laws, as amended, and South Carolina Rule(s) and Regulation(s) R. 61-70, including the Permitting Protocol approved by the SC DHEC Board on March 11, 1993. The authority granted hereunder is subject to the requirements of the aforementioned laws and regulations and the attached conditions.

William W. Culler

William W. Culler, P.E., Director
Division of Solid Waste Management
Bureau of Solid and Hazardous Waste Management

This permit is non-transferable and is the property of the Bureau of Solid and Hazardous Waste Management and must be surrendered on demand.

If the permit is appealed, the effective date of the permit will be revised as necessary. Any request for review or appeal of this permit must be served in person or by mail within fifteen (15) days of the date of issuance, on:

The Board of Health and Environmental Control
Office of the Commissioner
2600 Bull Street
Columbia, South Carolina 29201
(803) 734-4880

LATITUDE 35° 3' 10"
LONGITUDE 81° 5' 42"

recycled paper

Catawba Nuclear Station Landfill
IWP-192

A. General IWP Permit Conditions

1. The Permittee shall adhere to the approved design plans and specifications and operational plan, revised on June 27, 1988 and with revisions dated September 24, 1991, unless permit conditions state otherwise.

2. This permit is limited to the disposal of the following waste(s): inert construction debris, paper, cans, wood, plastic, dunnage, conventional industrial wastewater treatment sludge, cooling tower sludge, sanitary wastewater treatment sludge, asbestos material, non-hazardous oil and hydraulic oil materials spilled, such as rags, soil and absorbent, sandblasting material, alumina, non-radioactive carbon, slightly radioactive carbon, exhausted KG resin, boric acid, borax; acid, caustic and glycol spill clean-up materials; silica gel, powdered anion hydroxide resin, and powdered cation ammonia resin.

3. It is the Permittee's responsibility to ensure that no other waste is disposed at this site. If the Permittee determines the need to dispose of any waste other than that listed in permit condition two (2), prior written approval must be obtained from the Bureau of Solid and Hazardous Waste Management. Each request shall be made in writing to the attention of: Manager, Waste Assessment Section, cc: Director, Solid Waste Management.

4. All waste shall be covered daily with a minimum of six (6) inches of clean soil with the exception of sandblasting material and cooling tower sludge. Cooling tower sludge shall be covered at a minimum of once a week.

5. Should a disposal area become inundated or have measurable water contained, steps must be taken to remove this water before continuing disposal of waste.

6. This permit will be subject to an environmental compliance review at least once every 5 years.

B. Groundwater Permit Conditions

1) GROUNDWATER DETECTION MONITORING SYSTEM
The Permittee shall maintain a groundwater detection monitoring system consisting of a sufficient number of wells, installed at appropriate locations and depths to yield representative groundwater samples from the hydrologic units underlying the site.

a) Monitoring well(s) shall be maintain hydraulically upgradient from the waste management area with numbers, locations, and depths sufficient to yield groundwater samples that are representative of background groundwater quality in the uppermost aquifer, and not affected by the facility.

b) Monitoring wells shall be maintain hydraulically downgradient from the waste management area with numbers, locations, and depths sufficient to promptly detect any statistically significant degradation of groundwater quality in the uppermost aquifer.

c) The monitoring system shall be continuously maintained in such a manner as to yield samples representative of the quality of groundwater immediately upgradient and downgradient of the waste management area.

d) The Permittee shall construct monitoring wells and maintain monitoring well integrity in accordance with R.61-71 and the well construction specifications in the permit application. In addition, each monitoring well shall be properly labeled with a permanent identification plate constructed of a durable material secured to the well casing or surface pad where it is readily visible.

e) The Permittee shall maintain groundwater monitoring wells designated MW-1A, MW-2, MW-3, and MW-4. If the Permittee determines or is notified by the Department that the groundwater monitoring system no longer satisfies the minimum requirements for the number, location, construction, or integrity of wells, pursuant to permit condition 1, (e.g., structurally damaged wells, dry wells, wells no longer upgradient or downgradient, etc.) the Permittee shall:

i) Notify the Department in writing within seven (7) days of evaluating data, but no later than sixty 60 days after collecting groundwater monitoring data, that the monitoring system no longer satisfies permit conditions;

ii) Submit to the Department in writing a complete proposal to upgrade the monitoring well network within thirty (30) days of notification from the Department, but no later than ninety (90) days after collecting groundwater monitoring data; and

iii) Complete installation of additional well(s) necessary to achieve compliance with permit conditions within 60 days of receiving approval from the Department.

2) ROUTINE GROUNDWATER MONITORING
The Permittee shall perform routine monitoring of groundwater quality and elevation conditions to determine if waste disposal activities are affecting groundwater quality at the waste management area.

a) The Permittee shall perform groundwater monitoring according to the constituents in attachment I for all wells that are determined to be components of the groundwater network and any other well(s) deemed necessary by the facility or the Department to uphold the intent of this permit. The permittee shall ensure that groundwater monitoring is conducted semi-annually in accordance with the schedule presented in section 6a of these permit conditions.

b) The Permittee must determine during each sampling event the elevation of the groundwater surface in each well. Elevations must be determined on the same day that samples are collected.

c) The Permittee shall collect, preserve, and analyze groundwater samples pursuant to a revised sampling and analysis plan to be submitted within 90 days of issuance of this permit and any subsequent modifications required by the Department.

3) DATA EVALUATION
The Permittee shall evaluate all groundwater quality and water level elevation data to determine if the waste management area is impacting groundwater.

a) The Permittee must submit a plan for statistically evaluating groundwater quality data generated by the facility. In addition, the plan should be capable of determining if a statistically significant impact to groundwater has already occurred. This plan must be submitted within 90 days of issuance of this permit.

b) The Permittee should ensure that the groundwater flow rate and direction are evaluated by a qualified groundwater professional each time samples are collected. This evaluation should be used to determine whether the groundwater monitoring requirements under permit condition 1 continue to be met. A summation of the results of this semi-annual evaluation must be supplied in the annual report specified in permit condition 6b.

4) ASSESSMENT OF GROUNDWATER IMPACT

a) If statistical evaluation of the monitoring data indicates that a statistically significant change in groundwater quality has occurred, and said significant change has not been or currently is not being addressed through a condition of this permit, the Permittee shall,

i) Notify the Department within seven (7) days of making the initial determination that a significant trend or significant difference over background exists.

ii) Submit to the Department within thirty (30) days of notification, a preliminary report which addresses the potential for detrimental impact to human health and the environment as a result of the statistically significant change. The report should indicate whether additional assessment and\or corrective actions are warranted.

b) If routine monitoring indicates that a constituent exceeds the standards established in R.61-68 (Water Classifications and Standards System), and said exceedance is not currently being addressed through a condition of this permit, the Permittee shall,

i) Notify the Department in writing within seven (7) days of making that determination.

ii) Immediately resample the monitoring well(s) in question to determine the validity of the data, and submit the results no later than sixty (60) days after the date of the resampling event.

c) If a statistically significant change indicates that further assessment is warranted, as outlined in section a) of this permit condition, or an exceedance of a standard or the detection of an attachment I parameter with no standard above background concentrations is confirmed, the Permittee shall,

.i) Submit to the Department within ninety (90) days of verification of possible groundwater impact, a plan prepared by a qualified groundwater professional, to conduct a groundwater quality assessment.

.ii) Within ninety (90) days of approval of the assessment plan, initiate the first phase of the plan; submit a preliminary report identifying the source, migration rate, extent, and severity of the contaminant plume; and submit a plan for any additional assessment work required.

.iii) Upon completion of the approved groundwater quality assessment, submit a report which details the findings of the groundwater quality assessment and makes recommendations toward further assessment and\or corrective action.

.5) CORRECTIVE ACTION
Upon completion of the groundwater quality assessment and verification of groundwater contamination, the Permittee must submit a corrective action plan to address groundwater quality.

.a) The Permittee must submit a plan for corrective action based on the findings of the groundwater quality assessment.

.b) The Permittee must implement the corrective action plan within 90 days of approval by the Department. Additionally, the Permittee must establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program.

.c) The Permittee must continue corrective action measures to the extent necessary to ensure that the groundwater standards are not exceeded for a period of at least three consecutive years.

.d) The Permittee must submit semi-annually to the Department a report which discusses the effectiveness of the corrective action program.

.e) If the Permittee or the SCDHEC determines that the corrective action program no longer satisfies the requirements of permit condition 5, the Permittee shall within 90 days of that determination submit a proposal to make appropriate changes to the program.

6) REPORTING

a) The Permittee shall analyze groundwater samples for the constituents in Attachment I and submit these groundwater data on a semi-annual basis in accordance with the following schedule:

Sampling Period	Submittal	Due Date
October-December	groundwater data	January 15
April-June	annual report with groundwater data	July 15

b) The Permittee shall submit an annual report signed by a qualified groundwater professional summarizing the semi-annual determinations of groundwater flow direction and rate as required by permit condition 3b. The annual report shall be submitted in accordance with the submittal schedule presented in Permit condition 6a. The annual report shall also include the groundwater monitoring data for both semi-annual monitoring events from the previous year and the semi-annual statistical analysis that has been performed on these data. In addition, the report shall make a determination as to whether the monitoring well network continues to meet requirements of Permit Condition 1.

c) The established background values and the data collected by the implementation of the groundwater monitoring program as specified by this Permit shall be submitted to the SCDHEC, Bureau of Solid and Hazardous Waste Management, Division of Hydrogeology, Solid Waste Section and to the Regional Hydrologist in the Catawba District Environmental Quality Control Office in Lancaster S.C..

C. Closure/Post Closure Care Permit Conditions

1. The Permittee is responsible for submitting a closure plan within ninety (90) days of reissuance of this permit, which outlines the activities necessary to close the landfill in a manner that minimizes the release of contaminants.

   Final cover must be applied during the closure period to any surface which represents the final grade of the landfill. Testing of the in-place compacted clayey cover material is required and a South Carolina Professional Engineer must certify that the required permeability has been achieved. The type of vegetation selected to be placed on the closed out areas needs to be documented for its erosion control properties. Final cover shall be placed over any completed section of the fill within one hundred eighty (180) days following the final placement of solid waste within that portion.

2. The Permittee is responsible for submitting a detailed Post Closure Care Plan, within ninety (90) days of reissuance of this permit, which outlines the activities necessary to maintain a properly closed out landfill. Post Closure Care shall be conducted for a period of thirty (30) years unless a variance is applied for and obtained by the Permittee.

   The Permittee is responsible for inspecting and maintaining an adequate cap, gas monitoring and drainage system for the Post Closure Care Period. This plan shall provide a schedule indicating when the cap, gas monitoring and drainage system will be inspected, a discussion about how each will be inspected, and a contingency plan that discusses what action will be taken if failure occurs at any one system.

3. The Permittee is responsible for submitting a detailed Post Closure Care Plan within ninety (90) days of reissuance of this permit, which outlines the activities to be performed to ensure that an adequate groundwater monitoring system is in place at the time of closure for post closure monitoring of the waste management area. Post Closure Care shall be conducted for a period of thirty (30) years unless a variance is applied for and obtained by the Permittee.

   The Permittee is responsible for inspecting and maintaining an adequate groundwater monitoring system for the Post Closure Care Period. This plan needs to describe in detail the activities to be performed to ensure that an adequate groundwater monitoring system is

in place at the time of closure for post-closure monitoring of the waste management area. This plan shall specify the wells to be monitored, and the parameters to be monitored.

D. Special Permit Conditions

1. The future renewal of this permit will be contingent upon the receipt of updated analysis on all appropriate waste streams. If any change occurs in any of Duke Power's waste generating processes within the duration of this permit, Duke Power Company must notify the Catawba EQC District Solid Waste manager Immediately.

2. Duke Power Company is granted approval to receive asbestos-containing waste materials, and shall comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 61.154; AND no waste containing or contaminated by friable asbestos materials shall be accepted for disposal without prior written approval of the Bureau of Air Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201.

3. Approval must be granted by the Department's Division of Radioactive Waste management for the disposal of any low level radioactive waste.

4. A minimum buffer zone of five (5) feet must be maintained between the seasonal high water table and/or bedrock and any waste considered radiologically contaminated.

5. Duke Power Company is responsible for routine maintenance of the drainage ditch if the buildup of siltation or debris deposits has occurred, i.e. yearly.

6. Sludges listed in General Permit Condition 2 must pass the Paint Filter Liquids Test prior to disposal in the landfill.

7. Spill clean-up materials listed in General Permit Condition two (2) must be contained, neutralized and solidified prior to disposal in separate areas of the landfill.

ATTACHMENT 1

Frequency	Parameter
Semi-Annually	•pH (field & lab) std.units; •specific conductance (field umhos/cm); xtotal organic carbon mg/l; •water level tenth/feet; •chloride mg/l; •sulfate mg/l; •total nitrate (N) mg/l; Gamma Spectroscopy tritium
Annually	•arsenic ug/l; •barium ug/l; •cadmium ug/l; •chromium ug/l; •lead ug/l; •mercury ug/l; •selenium ug/l; •silver ug/l

Duke Energy Corporation
Catawba Nuclear Station
NPDES Permit Renewal
Sludge Disposal At A Landfill – Sludge Disposal Report B

Attachment 3

TCLP Results

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	
VA	00151	
WI	99988779	

CERTIFICATE OF ANALYSIS

Client: Duke Power
1339 Hagers Ferry Road
Huntersville, North Carolina 28078
Contact: Ms. Penny Franklin

cc: DUPO00191 Report Date: September 29, 1995

Sample ID	: 34714
Lab ID	: 9509269-01
Matrix	: TCLP
Date Collected	: 09/12/95
Date Received	: 09/14/95
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Volatile Organics								
TCLP Volatile Compounds - 11 items								
1,1-Dichloroethylene	<	0.0700	mg/l	EPA 8240	RMB	09/20/95	1656	72924
1,2-Dichloroethane	<	0.0500	mg/l	EPA 8240				
1,4-Dichlorobenzene	<	0.750	mg/l	EPA 8240				
2-Butanone	<	20.0	mg/l	EPA 8240				
Benzene	<	0.0500	mg/l	EPA 8240				
Carbon Tetrachloride	<	0.0500	mg/l	EPA 8240				
Chlorobenzene	<	10.0	mg/l	EPA 8240				
Chloroform	<	0.600	mg/l	EPA 8240				
Tetrachloroethylene	<	0.0700	mg/l	EPA 8240				
Trichloroethylene	<	0.0500	mg/l	EPA 8240				
Vinyl chloride	<	0.0200	mg/l	EPA 8240				
Extractable Organics								
TCLP Acid Compounds - 5 items								
2,4,5-Trichlorophenol	<	40.0	mg/l	EPA 8270	HNM	09/21/95	1123	72874
2,4,6-Trichlorophenol	<	0.200	mg/l	EPA 8270				
Pentachlorophenol	<	10.0	mg/l	EPA 8270				
m,p-Cresol	<	20.0	mg/l	EPA 8270				
o-Cresol	<	20.0	mg/l	EPA 8270				
TCLP Base/Neutral Compounds - 6 items								
2,4-Dinitrotoluene	<	0.130	mg/l	EPA 8270				
Hexachlorobenzene	<	0.130	mg/l	EPA 8270				
Hexachlorobutadiene	<	0.100	mg/l	EPA 8270				
Hexachloroethane	<	0.300	mg/l	EPA 8270				
Nitrobenzene	<	0.200	mg/l	EPA 8270				
Pyridine	<	0.500	mg/l	EPA 8270				
TCLP Herbicides - 2 items								
2,4,5-TP	<	0.100	mg/l	EPA 8150 modified	JLS	09/25/95	1353	72903
2,4-D	<	1.00	mg/l	EPA 8150 modified				
TCLP Pesticides - 6 items								

Printed on recycled paper.

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	
VA	00151	
WI	99988779	

CERTIFICATE OF ANALYSIS

Client: Duke Power
1339 Hagers Ferry Road
Huntersville, North Carolina 28078
Contact: Ms. Penny Franklin

cc: DUPO00191 Report Date: September 29, 1995

Sample ID : 34714

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Chlordane	<	0.0125	mg/l	EPA 8080	MAA	09/22/95	0914	72902
Endrin	<	0.00300	mg/l	EPA 8080	MAA	09/22/95	0914	72902
Heptachlor & Hep. Epoxide	<	0.000800	mg/l	EPA 8080				
Methoxychlor	<	1.00	mg/l	EPA 8080				
Toxaphene	<	0.0500	mg/l	EPA 8080				
gamma-BHC	<	0.0400	mg/l	EPA 8080				
Metals Analysis								
Silver	<	0.500	mg/l	EPA 6010A	JSS	09/21/95	1323	72926
Arsenic	<	0.500	mg/l	EPA 6010A				
Barium	<	10.0	mg/l	EPA 6010A				
Cadmium	<	0.100	mg/l	EPA 6010A				
Chromium	<	0.500	mg/l	EPA 6010A				
Lead	<	0.500	mg/l	EPA 6010A				
Selenium	<	0.300	mg/l	EPA 6010A				
Mercury	<	0.0200	mg/l	EPA 7471	BBJ	09/22/95	1129	72921

The following prep procedures were performed:

GC/MS Acid Compounds	EPA 3500/3520	MBB	09/19/95	2300	72874
GC/MS Base/Neutral Compounds	EPA 3500/3520	MBB	09/19/95	2300	72874
Herbicides	EPA 8150	JHM	09/20/95	1545	72903
Pesticides	EPA 3500/3520	JHM	09/20/95	1540	72902
ICP	EPA 3005	FGD	09/20/95	1800	72926
Mercury	EPA 7470	KLM	09/20/95	1600	72921
TCLP Extraction - Semivolatiles	EPA 1311	JL	09/18/95	2045	72772
TCLP Extraction - Volatiles	EPA 1311	JL	09/18/95	2230	72773
TCLP Prep for Metals	EPA 1311	JL	09/18/95	2045	72774

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Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Rob Byrd at (803) 556-8171.

Analytical Report Specialist

Form 35226 (R6-9?)

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM *

7846

9509269

DUKE POWER COMPANY
Laboratory Services
MNS Bldg. # 7405 (MG03A1)
13339 Hagers Ferry Road
Huntersville, NC 28078

LS CLIENT CONTACT/PHONE[1]: _____

CLIENT[2]: WILLIE DAVIS (ENVIRONMENTAL CHEMISTRY)

Project Name[3]: CATAWBA NUCLEAR STATION (DUKE POWER)

Results to/Phone[4]: WILLIE DAVIS 803-831-3386 FAX-831-3497

Address and/or PROFS[5]: ~~PO BOX~~ 4800 CONCORD RD. YORK, S.C. 29745

Matrix (type of samples)/QC Level[6]: 1

SAM No.: _____

FRAC	~~SAMPLE CHEMPLOT~~ Number[9]	Sample Description or ID[10]	Collected using sampling instructions: Date	Time	Name	COMPLETE PROTOCOL TCLP	Herbicides	Pesticides									
20	34718	Initial Hold-up Pond Sludge	9/12/95	1035	Floyd Anderson	✓	✓	✓									

Sample Preserved ☐ Yes ☐ No
Name:

Total # of samples[15]: 4

ANALYSES REQUESTED by bottle type—MUST NOTE PRESERVATIVE[12]
(may note special DL or Method)[13]

Delivered by[16]:	Delivered by:	Delivered by:
Date/Time:	Date/Time:	Date/Time: 9/14/95 1710
Received by:	Received by:	Received by: Jim Kinard

Turnaround Requested[19]:
- ☐ Routing (3 weeks)
- ☑ Rush (2 weeks)
- ☐ Emergency Rush
- ☐ Date Results Requested _____

Comments[17]: _____

* See instructions on back of form.

White — LS Files Pink — Client Copy

Duke Energy Corporation
Catawba Nuclear Station
NPDES Permit Renewal
Summary of Requested NPDES Changes

1. Outfall 001

   1.1 Modify average flow from 73.6 MGD to 70.2 MGD based on 5-year data.

2. Outfall 002

   2.1 Delete the requirement to perform Biochemical Oxygen Demand testing. Data supporting this request is attached.
   2.2 Modify the Oil & Grease analysis from 2/month to 2/year. Data supporting this request is attached.
   2.3 Modify the Total Suspended Solids analysis from 2/month to 2/year. Data supporting this request is attached.
   2.4 Modify average flow from 1.29 MGD to 1.41 MGD based on 5-year data.

3. Outfall 003

   3.1 Modify the Total Residual Chlorine analysis from 1/week to 1/B, where B = 1/week when chlorine is in use.
   3.2 Modify the Total Suspended Solids analysis from 1/month to 2/quarter. Data supporting this request is attached.
   3.3 Modify the Carbonaceous Biochemical Oxygen Demand analysis from 1/month to 1/quarter. Data supporting this request is attached.
   3.4 Modify the Fecal Coliform analysis from 1/month to 1/quarter. Data supporting this request is attached.
   3.5 Modify the Dissolved Oxygen analysis from 1/week to 1/quarter. Data supporting this request is attached.
   3.6 Modify the average flow from 0.035 MGD to 0.028 MGD.

4. Part III. A. – Other Requirements

   4.1 Modify III.A.8 to delete the following waste stream from the maintenance chemical requirements: recirculating cooling water.

   4.2 Delete III.A.14 requirement to perform toxicity testing during the first two weeks of the quarterly monitoring period so that toxicity testing may be performed at any time during the quarter.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health
and Environmental Control

National Pollutant Discharge Elimination System Permit

for Discharge to Surface Waters

This Permit Certifies That

Duke Energy Corporation
Catawba Nuclear Plant

has been granted permission to discharge from a facility located at

Newport, South Carolina
York County

to receiving waters named

Lake Wylie

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof. This permit is issued in accordance with the provisions of the Pollution Control Act of South Carolina (S.C. Code Sections 48-1-10 *et seq.*, 1976), Regulation 61-9 and with the provisions of the Federal Clean Water Act (PL 92-500), as amended, 33 U.S.C. 1251 *et seq.*, the "Act."

Marion F. Sadler, Jr., Director
Industrial, Agricultural, and Storm Water Permitting Division
Bureau of Water

Issued: ***September 29, 1997***

Effective: ***November 1, 1997***

Expires: ***September 30, 2000***

Permit No.: ***SC0004278***

A. FLUENT LIMITATIONS AND MONITORING REQUI MENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 001: once through cooling water, nuclear service water, cooling tower blowdown (discharged via internal Outfall 005) and liquid radiological wastes (treated and discharged via internal Outfall 004) to Lake Wylie.

Such discharge shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS Other Units (Specify)				MONITORING REQUIREMENTS	
	Daily Average	Weekly Average	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow-m3/day (MGD)	-	-	MR	MR	Daily	Continuous[A]
Total Residual Chlorine (TRC)[B]	-	-	0.011 mg/l	0.019 mg/l	1/week	Multiple Grab
Nitrite (NO_2)	-	-	-	4.3 mg/l	1/occurrence	Grab
Intake Temperature °C(°F)	-	-	MR	MR	Daily	Continuous
Discharge Temperature °C(°F)	-	-	MR	MR	Daily	Continuous
Temperature rise (April-September)	-	-	5.6°C(10.0°F)	-	Daily	Calculation
Temperature rise (October-March)	-	-	7.8°C(14.0°F)	-	Daily	Calculation

[A]See Part III, Special Condition #15
[B]See Part III, Special Condition #16 & 17
[C]See Part III, Special Condition #18

MR = Monitor and Report
Based on ~~a~~ flow of ~~73.6 MGD~~ 70.2 MGD an average

No chromium and zinc based maintenance chemicals will be allowed in the cooling tower.

2. The pH shall be monitored and reported once per week by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts; nor, shall the effluent cause a visible sheen on the receiving waters.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): The intake temperature shall be monitored at or near the plant intake. All other parameters shall be monitored at or near the point of discharge from Outfall 001 prior to mixing with the receiving waters, unless otherwise specified above.

A. EFFLU[illegible] LIMITATIONS AND MONITORING REQUIREMENTS

1. [illegible]uring the period beginning on the effective date of this permit an[illegible]asting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 002: low volume wastes, miscellaneous dilute wastewater, and chemical metal cleaning wastes to Lake Wylie.

Such discharge shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day)		Other Units (Specify)		MONITORING REQUIREMENTS	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow-m3/day (MGD)	-	-	MR	MR	1/week	Instantaneous[A]
Total Residual Chlorine (TRC)[B]	-	-	0.011 mg/l	0.019 mg/l	1/[C]	Grab
~~Biochemical Oxygen Demand (5-day)~~	-	-	~~MR~~	~~MR~~	~~1/month~~	~~Grab~~
Oil and Grease	-	-	15 mg/l	20 mg/l	~~2/month~~ 2/yr	Grab
Total Suspended Solids	-	-	30 mg/l	100 mg/l	~~2/month~~ 2/yr	Grab
Copper, total	-	-	0.0125 mg/l	0.0125 mg/l	1/[D]	Grab
Iron, total	-	-	0.645 mg/l	0.645 mg/l	1/[D]	Grab
Hydrazine	-	-	-	0.077 mg/l	1/[E]	Grab
Nitrite (NO_2)	-	-	-	4.3 mg/l	1/[E]	Grab

[A]See Part III, Special Condition #15

[B]See Part III, Special Condition #16

[C]After treatment with hypochlorite has occurred in a WC pond, sampling for TRC shall be conducted once per day over a two day period during discharge from the WC pond.

[D]Sampling shall be conducted once per chemical metal cleaning occurrence of discharge of these substances through Outfall 002 but need not be more than twice per month.

[E]Sampling shall be conducted once per occurrence of discharge of these substances through Outfall 002 but need not be more than twice per month.

Based on an average flow of ~~1.29 MGD~~ 1.41 MGD MR = Monitor and Report

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored and reported once per week by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts; nor, shall the effluent cause a visible sheen on the receiving waters.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the point of discharge from the conventional waste treatment (WC) system but prior to mixing with the receiving waters.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 003: treated sanitary sewerage to Lake Wylie.

Such discharge shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day) Monthly Average	(lbs/day) Daily Maximum	Other Units (Specify) Monthly Average	Other Units (Specify) Daily Maximum	MONITORING REQUIREMENTS Measurement Frequency	Sample Type
Flow-m3/day (MGD)	-	-	MR	MR	1/month	Instantaneous[A]
Total Residual Chlorine (TRC)	-	-	0.5 mg/l	1.0 mg/l	~~1/week~~ 1/B	Grab
Total Suspended Solids	-	-	90 mg/l	135 mg/l	~~1/month~~ 1/qtr.	24Hr. Composite
Carbonaceous Biochemical Oxygen Demand (5-day)	-	-	25 mg/l	50 mg/l	~~1/month~~ 1/qtr.	24Hr. Composite
Fecal Coliform	-	-	200/100 ml	400/100ml	~~1/month~~ 1/qtr.	Grab
Dissolved Oxygen	-	-	at a minimum of 1.0 mg/l		~~1/week~~ 1/qtr.	Grab

[A]See Part III, Special Condition #15
B once per week when chlorine is in use. 0.028
MR = Monitor and Report Based on an average flow of ~~0.035~~ MGD

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored and reported once per week by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts; nor, shall the effluent cause a visible sheen on the receiving waters.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the point of discharge from the sewage treatment plant prior to mixing with the receiving waters.

A. EFF(ENT LIMITATIONS AND MONITORING REQUIRE(NTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall(s) serial number(s) 005: cooling tower blowdown via Outfall 001 to Lake Wylie.

Such discharge shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day)		Other Units (Specify)		MONITORING REQUIREMENTS	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow-m3/day (MGD)	-	-	MR	MR	Weekly	Estimate[A]
Free Available Chlorine (FAC)	-	-	0.2 mg/l	0.5 mg/l	1/week	Multiple Grabs[B]

[A]See Part III, Special Condition #15
[B]See Part III, Special Condition #18

MR = Monitor and Report

No chromium and zinc based maintenance chemicals will be allowed in the cooling tower.

2. The Permittee shall annually, through monitoring or engineering calculations, certify that the other 124 priority pollutants (besides chromium and zinc) are present at no detectable amount in the cooling tower blowdown discharge as a result of the addition of cooling tower maintenance chemicals.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored and reported once per week by grab sample.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the point of discharge from the cooling towers prior to mixing with wastewaters at Outfall 001.

C. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedules:

   Not Applicable

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to State Environmental Laboratory Certification Regulation 61-81 and Section 304(h) of the Act, as amended. (Federal Register, October 16, 1973; Title 40, Chapter I, Sub-chapter D, Part 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants." Amended by Federal Register, December 1, 1976, and any other amendments that may be promulgated).

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. the exact place, date and time of sampling;

b. the dates and times the analyses were performed;

c. the person(s) who performed the analyses and the laboratory certification number where applicable;

d. the analytical techniques or methods used; and

e. the results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified herein, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (EPA-3320-1). Such increased frequency shall also be indicated. Additional or accelerated monitoring may be required to determine the nature and impact of a non-complying discharge on the environment or to determine if a single non-complying sample is representative of the long term condition (monthly average).

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analysis performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Department. The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

(1) An influent or effluent portion collected continuously over a specified period of time at a rate proportional to the flow.

(2) A combination of not less than eight (8) influent or effluent grab samples collected at regular (equal) intervals over a specified period of time, properly preserved, (See Part I.D.4.) and composited by increasing the volume of each aliquot in proportion to flow. If continuous flow measurement is not used to composite in proportion to flow, the following method will be used: Take an instantaneous flow measurement each time a grab sample is collected. At the end of the sampling period, sum the instantaneous flow measurements to obtain a total flow to determine the partial amount (percentage) of each grab sample to be combined to obtain the composite sample.

(3) A combination of not less than eight (8) influent or effluent grab samples of equal volume but at variable time intervals that are inversely proportional to the volume of the flow. That is, the time interval between aliquots is reduced as the volume of flow increases.

(4) A combination of not less than eight (8) influent or effluent grab samples of constant (equal) volume collected at regular (equal) time intervals over a specified period of time, while being properly preserved.

Continuous flow or the sum of instantaneous flows measured and averaged for the specified compositing time period shall be used with composite sample results to calculate quantity.

9. **Right of Entry**

The permittee shall allow the Commissioner of the Department of Health and Environmental Control, the Regional Administrator of EPA, and/or their authorized representatives:

a. To enter upon the permittee's premises where a regulated facility or activity and effluent source is located in which any records are required to be kept under the terms and conditions of this permit, and,

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit and sample or monitor any substances or parameters at any location for the purposes of assuring permit compliance.

Toxic Pollutants

Notwithstanding Part II.A.4. above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitations for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and permittee so notified.

6. **State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

7. **Property Rights**

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

8. **Severability**

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

9. **Onshore and Offshore Construction**

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

4. Transfer of Ownership or Control

A permit may be transferred to another party under the following conditions:

a. The permittee notifies the Department of the proposed transfer at least thirty (30) days in advance of the proposed transfer date;

b. A written agreement is submitted to the Department between the existing and new permittee containing a specific date for the transfer of permit responsibility, coverage, and liability for violations up to that date and thereafter.

Transfers are not effective if, within 30 days of receipt of proposal, the Department disagrees and notifies the current permittee and the new permittee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed.

5. Expiration of Permit

The permittee is not authorized to discharge after the expiration date of this permit, unless a completed application for reissuance is submitted no later than 180 days prior to the expiration date. Permission may be granted to submit an application later than this, but not later than the expiration date of the permit. In accordance with Section 1-23-370 of the code of laws of South Carolina, if a timely and sufficient application is made for any activity of a continuing nature, the existing permit does not expire until a final determination is made to renew or deny renewal of the existing permit.

6. Signatory Requirements

All applications, reports or information submitted to the Department shall be signed and certified.

a. All permit applications shall be signed as follows:

1. For a corporation: by a principal executive officer of at least the level of vice-president or by a duly authorized representative;

2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or,

3. For a municipality, State, Federal or other public agency: by either a principal executive officer or ranking elected official.

b. All reports required by the permit and other information requested by the Department shall be signed by a person described above or by duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Department;

C.
OPERATION AND MAINTENANCE

1. Facilities Operation

a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance based on design facility removals, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls as determined by the laboratory certification program of the Department. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. Maintenance of facilities, which necessitates unavoidable interruption of operation and degradation of effluent quality shall be scheduled during non-critical water quality periods and carried out in a manner approved by the Department.

b. The permittee shall provide for an operator, as certified by the South Carolina Board of Certification for Environmental Systems Operators, with a grade equal to or higher than the classification designated in Part III.A.3. The name and grade of the operator of record shall be submitted to the Department prior to placing the facility into operation. A roster of operators associated with the facility's operation and their certification grades shall also be submitted with the name of the "operator-in-charge". Any changes in operator or operators shall be submitted to the Department as they occur.

2. Bypassing

Any intentional diversion from or bypass of waste streams from any portion of wastewater collection and treatment facilities which is not a designed or established operating mode for the facility is prohibited except (a) where unavoidable to prevent loss of life, personal injury or severe property damage, or (b) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit and there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or retention of untreated wastes. "Severe property damage" does not mean economic loss caused by delays in production.

3. Duty to Mitigate, Halt or Reduce Activity

The permittee shall take all reasonable steps to prevent, minimize or correct any adverse impact on public health or the environment, resulting from non-compliance with this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with this permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided.

PART III

OTHER REQUIREMENTS

1. The Permittee shall maintain at the permitted facility a complete Operations and Maintenance (O & M) Manual for the waste treatment plant. The manual shall be made available for on-site review during normal working hours. The manual shall contain operation and maintenance instructions for all equipment and appurtenances associated with the waste treatment plant. The manual shall contain a general description of the treatment process(es), operating characteristics that will produce maximum treatment efficiency, and corrective action to be taken should operating difficulties be encountered.

2. The Permittee shall provide for the performance of routine daily treatment plant inspections. These inspections are the responsibility of a certified operator of the appropriate grade as defined in Part II.C.1. The inspection shall include, but is not limited to, areas which require a visual observation to determine efficient operations and for which immediate corrective measures can be taken using the O & M manual as a guide. All inspections shall be recorded and shall include the date, time and name of the person making the inspection, corrective measures taken, and routine equipment maintenance, repair, or replacement performed. The Permittee shall maintain all records of inspections at the permitted facility as required by Part I.C.7., and the records shall be made available for on-site review during normal working hours.

3. The wastewater treatment plant has been assigned a classification of Group II-B in the Permits to Construct which are issued by the Department. This classification corresponds to an operator with a Grade of C-B or higher.

4. The Permittee shall maintain an all weather access road to the wastewater treatment plant and appurtenances at all times.

5. The Permittee shall continue to maintain a Best Management Practices (BMP) plan to identify and control the discharge of significant amounts of oils and the hazardous and toxic substances listed in 40 CFR Part 117 and Tables II and III of Appendix D to 40 CFR Part 122. The plan shall include a listing of all potential sources of spills or leaks of these materials, a method for containment, a description of training, inspection and security procedures, and emergency response measures to be taken in the event of a discharge to surface waters or plans and/or procedures which constitute an equivalent BMP. Sources of such discharges may include materials storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; plant site runoff; and sludge and waste disposal areas. The BMP plan shall be developed in accordance with good engineering practices, shall be documented in narrative form, and shall include any necessary plot plans, drawings, or maps. The BMP plan shall be maintained at the plant site and shall be available for inspection by EPA and Department personnel.

6. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for ransformer fluid.

9. The company shall notify the South Carolina Department of Health and Environmental Control in writing no later than sixty (60) days prior to instituting use of any additional maintenance chemicals in the systems identified in Part III.A.8. Such notification shall include:

   - Name and general composition of the maintenance chemical
   - Quantities to be used
   - Frequency of use
   - Proposed discharge concentration
   - EPA registration number, if applicable
   - Aquatic toxicity information

10. All sludges, waste oil and solid and hazardous waste shall be properly disposed of in accordance with the rules and regulations of the SC DHEC Bureau of Land and Waste Management.

11. The South Carolina Department of Health and Environmental Control has determined that pursuant to Section 316(a) of the Act that the thermal component of the discharge controlled by the temperature criteria on page 2 of this permit assures the protection and propagation of a balanced, indigenous population of fish, shellfish, and wildlife.

12. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day, and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the permittee can demonstrate to SC DHEC that the units in a particular location cannot operate at or below this level of oxidation.

13. (a) On a quarterly basis, a three-brood chronic toxicity test shall be conducted using a control and the instream waste concentration (IWC) of 100 % at Outfalls 001 and 002. The test shall be conducted using *Ceriodaphnia dubia* as the test organism and in accordance with the most recent Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms 3rd ed. (EPA/600/4-91/002) and South Carolina Procedures for Pass/Fail Modifications of the *Ceriodaphnia* 48 hour Acute Toxicity Test and *Ceriodaphnia* Survival and Reproduction Test (SCDHEC, May 1989) or test protocol approved by the Department. The raw data and results shall be submitted in accordance with Part I.(C)(3) of the permit for each quarterly test. The test must be performed by a SC DHEC certified laboratory.

   (b) Test results shall be analyzed according to statistical methods in Section 13.13 in USEPA (1989) or the most recent edition of this document. The toxicity test shall be deemed a failure if survival and/or reproduction of the test group is lower than that of the control group and this difference is significant at the $\alpha = 0.05$ level.

   (c) The permittee must indicate on the discharge monitoring report forms whether the test passes or fails. If the test fails, the number "1" shall be placed on the form, if the test passes, the number "0" shall be placed on the form.

18. Multiple grabs shall consist of grab samples collected at the approximate beginning of the period of Total Residual Chlorine (TRC) and/or Free Available Chlorine (FAC) discharge and once every twenty (20) minutes until TRC or FAC is no longer present.

19. Intake screen wash water, pump strainer backwash water, fire protection water, and potable water systems may be discharged without limitations or monitoring requirements. Appropriate measures shall be taken to minimize any impact to the environmental.

20. The permittee shall not store coal, soil nor other similar erodible materials in a manner in which runoff is uncontrolled, nor conduct construction activities in a manner which produces uncontrolled runoff unless such uncontrolled runoff has been specifically approved by SCDHEC. "Uncontrolled" shall mean without sedimentation basin or other controls approved by SCDHEC.

21. Upset - (1) Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(2) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitation if the requirements of paragraph (3) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(3) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An upset occurred and that the permittee can identify the cause(s) of the upset;

(ii) The permitted facility was at the time being properly operated; and

(iii) The permittee submitted notice of the upset as required in paragraph Part II.B.2 of this permit (24 hour notice).

(iv) The permittee complied with any remedial measures required by Part II.C.3 of this permit (duty to mitigate).

(4) Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

C. Contents of Plan. The plan shall include, at a minimum, the following items:

1. Pollution Prevention Team - Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

2. Description of Potential Pollutant Sources. Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials which may potentially be significant pollutant sources. Each plan shall include, at a minimum:

a. Drainage

(1) A site map indicating an outline of the portions of the drainage area of each storm water outfall that are within the facility boundaries, each existing structural control measure to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, locations where major spills or leaks have occurred, and the locations of the following activities where such activities are exposed to precipitation: fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for the treatment, storage or disposal of wastes, liquid storage tanks, processing areas and storage areas.

(2) For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants which are likely to be present in storm water discharges associated with industrial activity. Factors to consider include the toxicity of chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

b. Inventory of Exposed Materials An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of three years prior to the date of the issuance of this permit and the present; method and location of on-site storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of three years prior to the date of the issuance of this permit and the present; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

- Use containment curbs in unloading areas;

- During deliveries station personnel familiar with spill prevention and response procedures must be present to ensure that any leaks or spills are immediately contained and cleaned up; and

- Use spill and overflow protection (drip pans, drip diapers, and/or other containment devices shall be placed beneath fuel oil connectors to contain any spillage that may occur during deliveries or due to leaks at such connectors).

(iv) Chemical Loading/Unloading Areas - The plan must describe measures that prevent or minimize the contamination of storm water runoff from chemical loading/unloading areas. At a minimum the permittee must use the following measures or their equivalent:

- Use containment curbs at chemical loading/unloading areas to contain spills; and

- During deliveries station personnel familiar with spill prevention and response procedures must be present to ensure that any leaks or spills are immediately contained and cleaned up.

Where practicable, chemical loading/unloading areas should be covered, and chemicals should be stored indoors.

(v) Miscellaneous Loading/Unloading Areas - The plan must describe measures that prevent or minimizes the contamination of storm water runoff from loading and unloading areas. The facility may consider covering the loading area, minimizing storm water run on to the loading area by grading, berming, or curbing the area around the loading area to direct storm water away from the area, or locate the loading/unloading equipment and vehicles so that leaks can be contained in existing containment and flow diversion systems.

(vi) Liquid Storage Tanks - The plan must describe measures that prevent or minimize contamination of storm water runoff from above ground liquid storage tanks. At a minimum the facility must employ the following measures or their equivalent:

- Use protective guards around tanks;

- Use containment curbs;

- Use spill and overflow protection (drip pans, drip diapers, and/or other containment devices shall be placed beneath chemical connectors to contain any spillage that may occur during deliveries or due to leaks at such connectors); and

- Use dry cleanup methods.

material handling procedures, storage requirements, and use of equipment such as diversion valves n the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.

d. Inspections - In addition to or as part of the comprehensive site evaluation required under Part III.24.C.4 (comprehensive site compliance evaluation) of this permit, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility at appropriate intervals specified in the plan. A set of tracking or follow up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained.

e. Employee Training - Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. A pollution prevention plan shall identify the frequency for such training.

f. Record Keeping and Internal Reporting Procedures - A description of incidents such as spills, or other discharges, along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance ictivities shall be documented and records of such activities shall be incorporated into the plan.

g. Sediment and Erosion Control - The plan shall identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

h. Management of Runoff - The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures determined to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity (see description of potential pollutant sources) shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.

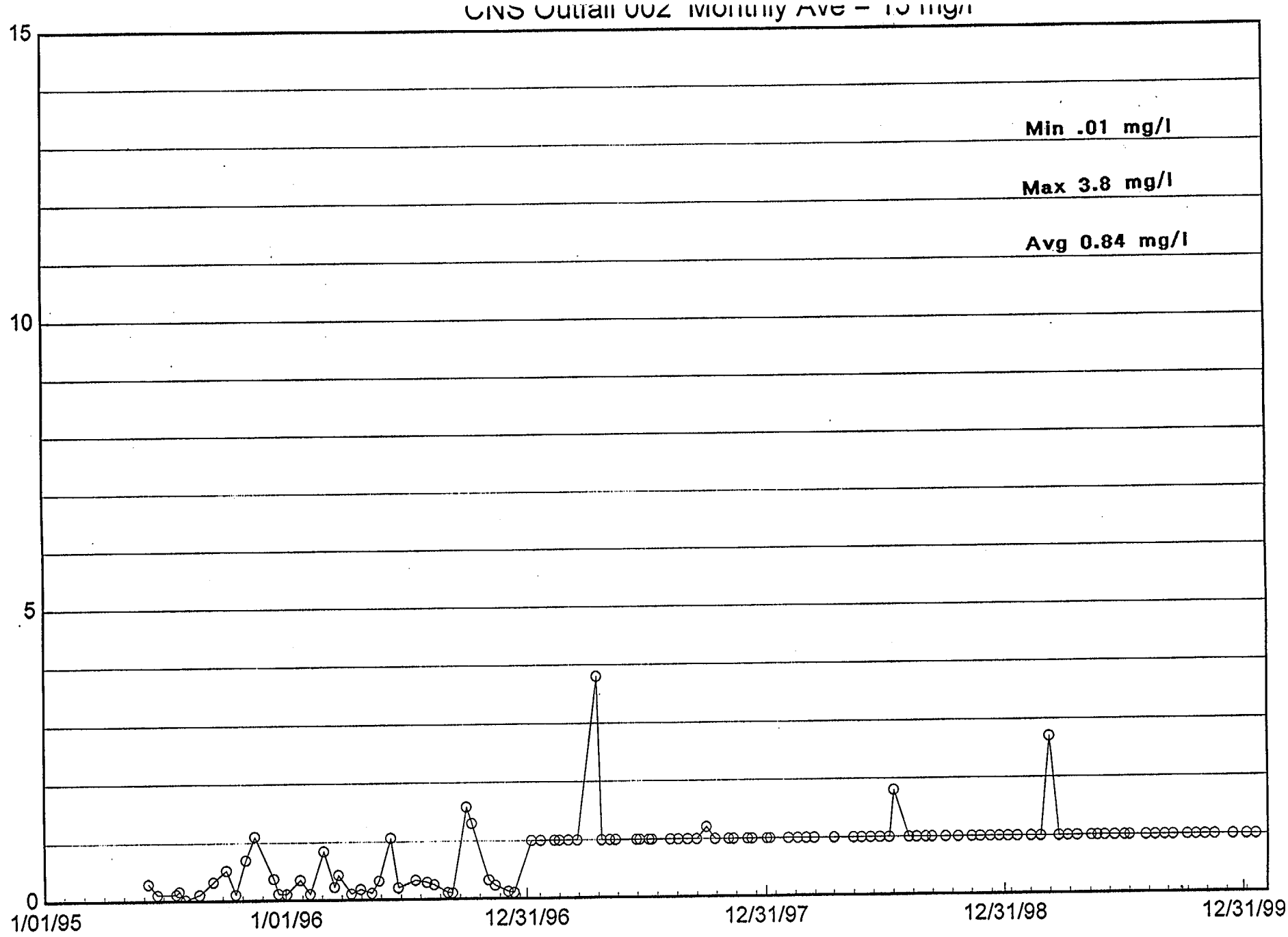
4. Comprehensive Site Compliance Evaluation Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but, except as provided in Part III.24.C.4.d (below), in no case less than once a year. Such evaluations shall provide:

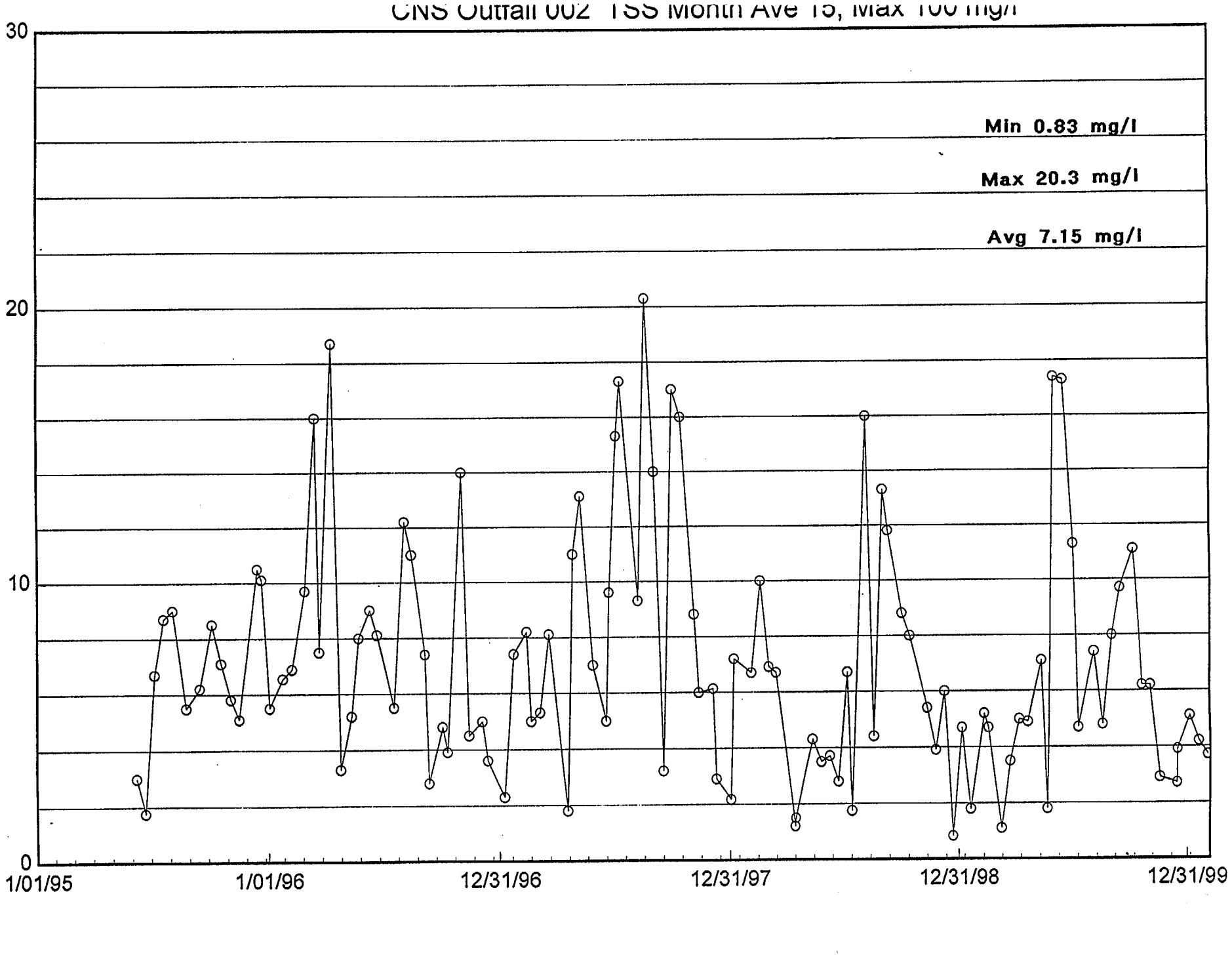
6 Sampling Waiver When a discharger is unable to collect samples due to adverse climatic conditions, the discharger must submit in lieu of sampling data a description of why samples could not be collected, including available documentation of the event. Adverse climatic conditions which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.). Dischargers are precluded from exercising this waiver more than once during a two year period.

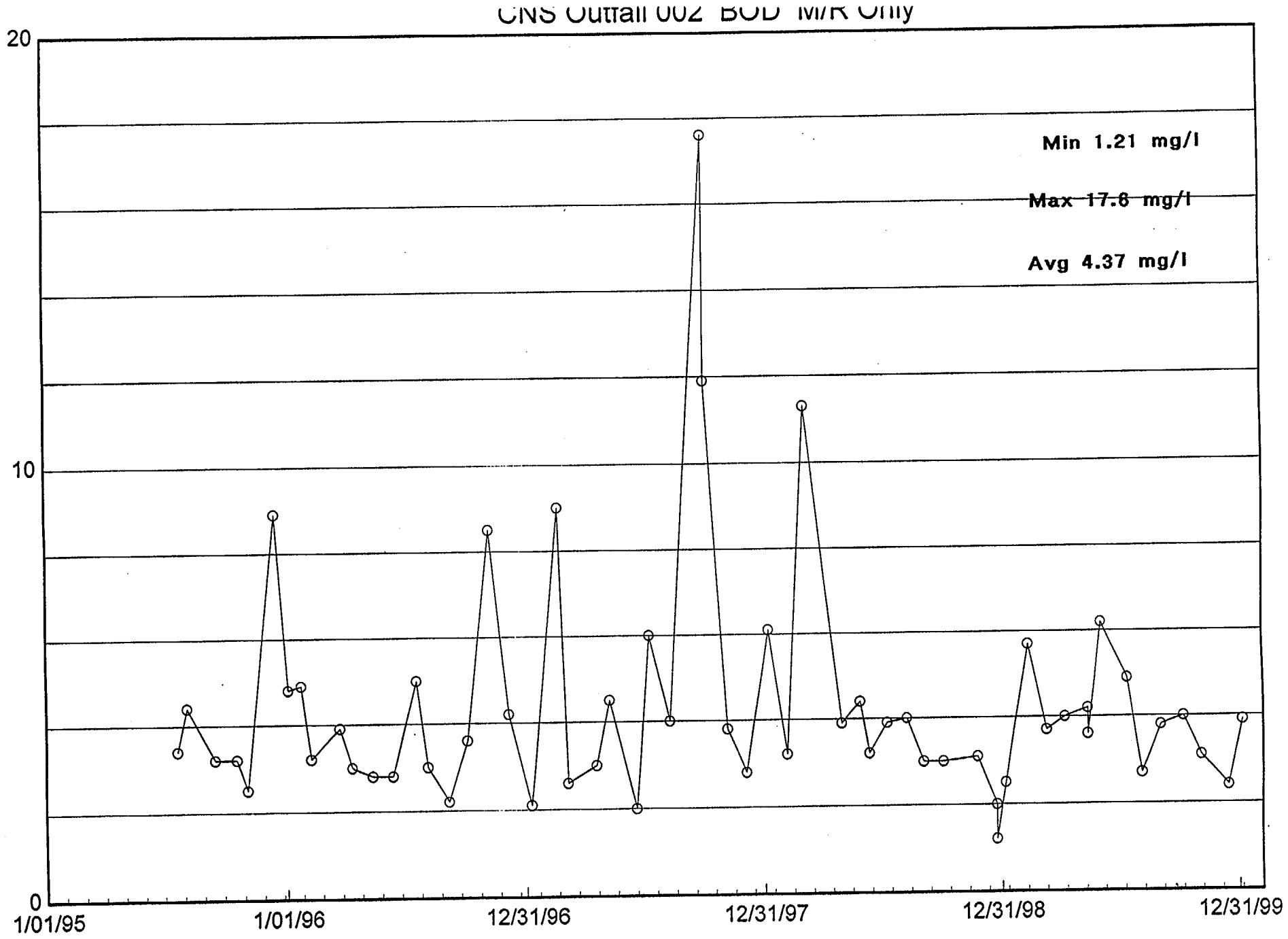
7. Representative Discharge When a facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfalls. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area (e.g. low (under 40 percent), medium (40 to 65 percent) or high (above 65 percent)) shall be provided in the plan. Catawba has been monitoring from a single storm water outfall. The discharge is from a storm water collection basin and is considered to be the worst case storm water discharge for the site.

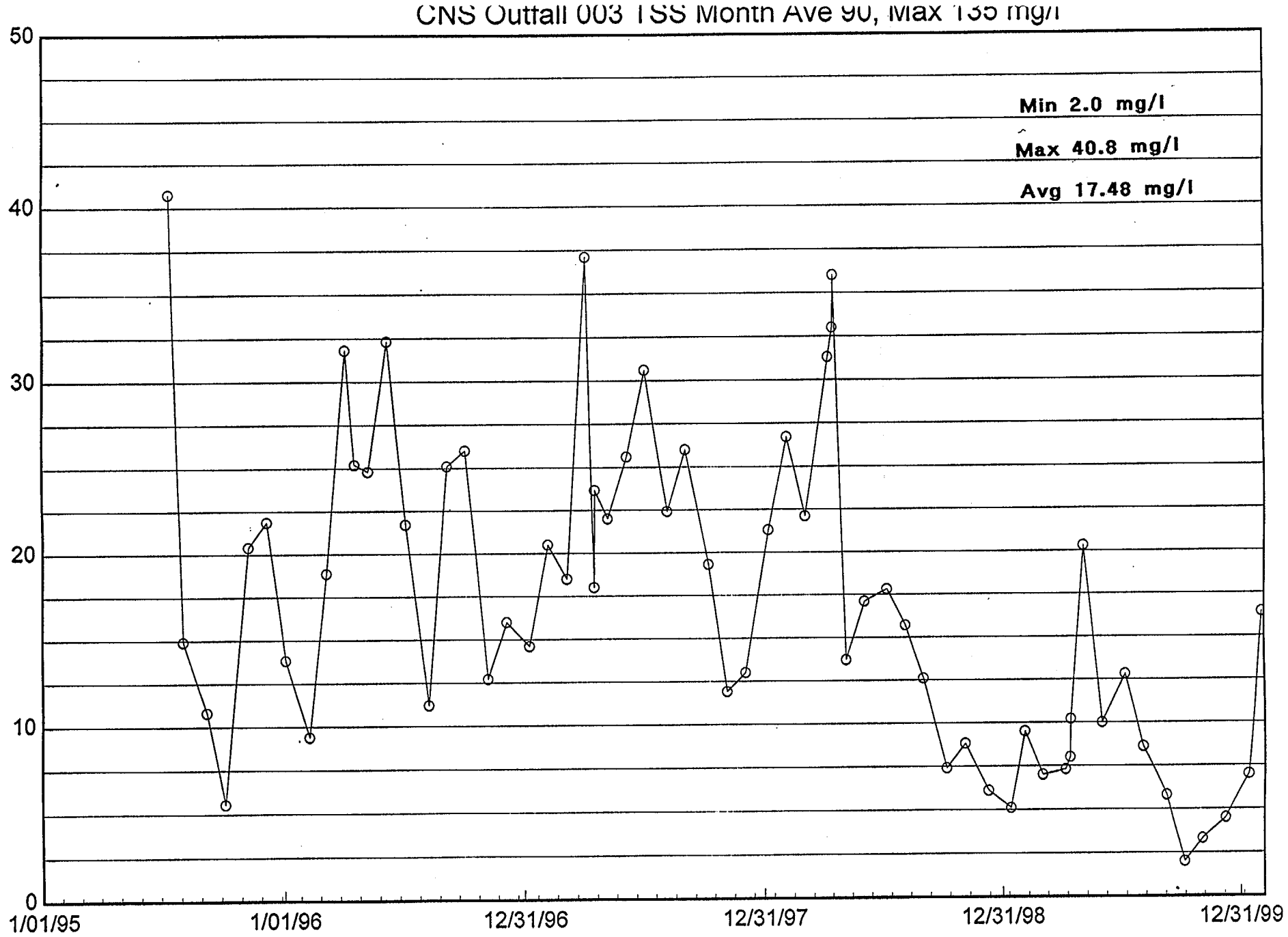
8. Consistency with other plans Storm water pollution prevention plans may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans developed for the facility under section 311 of the CWA or Best Management Practices (BMP) Programs otherwise required by an NPDES permit for the facility as long as such requirement is incorporated into the storm water pollution prevention plan.

9. Monitoring Requirements
For any storm water from the facility discharged from any other point source, the permittee is required to monitor for: oil and grease (mg/l), pH, total suspended solids (mg/l), total recoverable copper (mg/l), total recoverable nickel (mg/l), and total recoverable zinc (mg/l). The monitoring shall be performed on an annual basis.

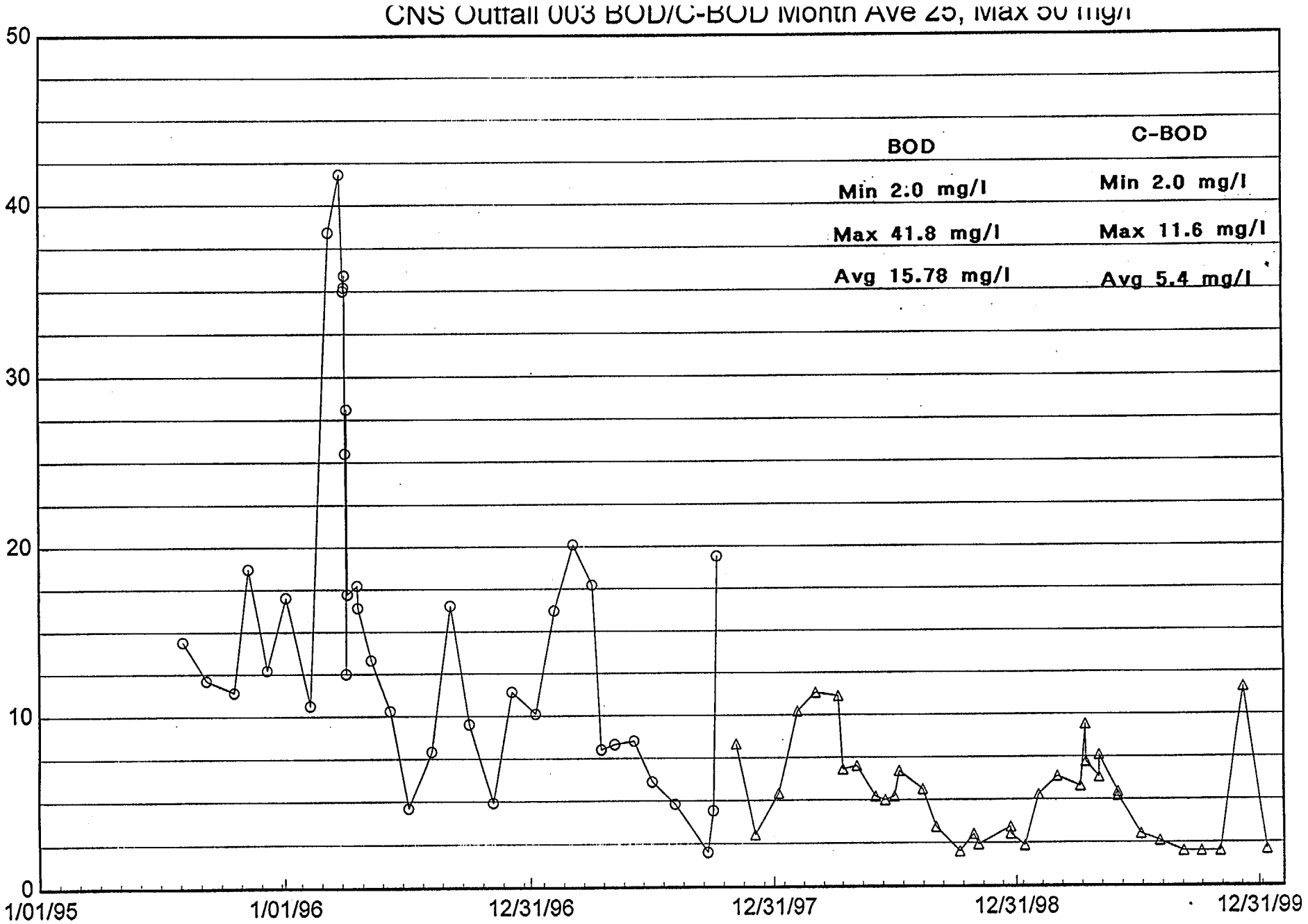

CNS Outfall 002 Monthly Ave = 15 mg/l
15
10
5
0
Min .01 mg/l
Max 3.8 mg/l
Avg 0.84 mg/l
1/01/95
1/01/96
12/31/96
12/31/97
12/31/98
12/31/99
00 WC WC DIS 002 OIL & GREASE ASC PPM

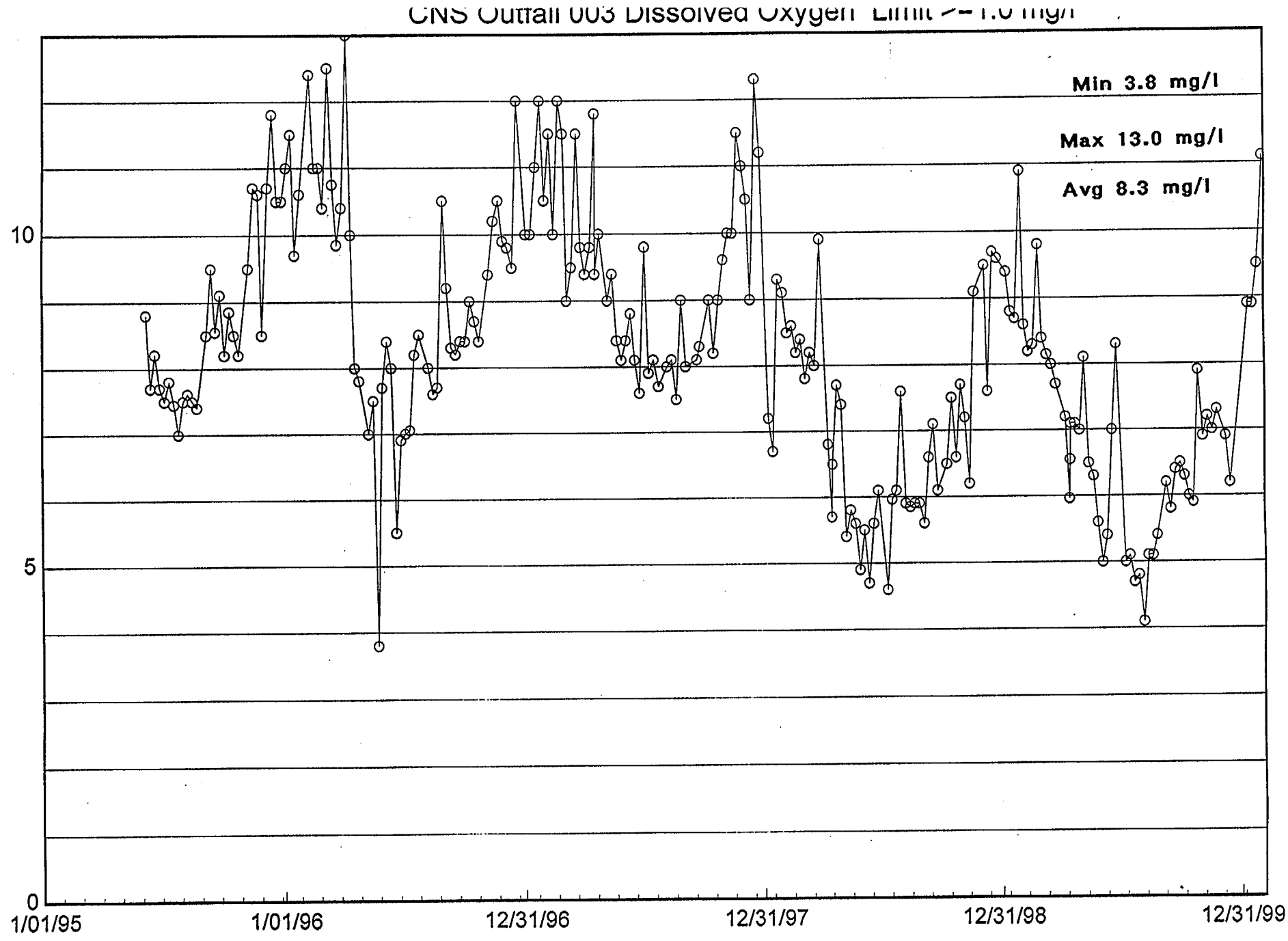

CNS Outfall 002 TSS Month Ave 15, Max 100 mg/l
Min 0.83 mg/l
Max 20.3 mg/l
Avg 7.15 mg/l
30
20
10
0
1/01/95
1/01/96
12/31/96
12/31/97
12/31/98
12/31/99
00 WC WC DIS 002 TOTAL SUS SOLIDS GRAVIMETRIC mg

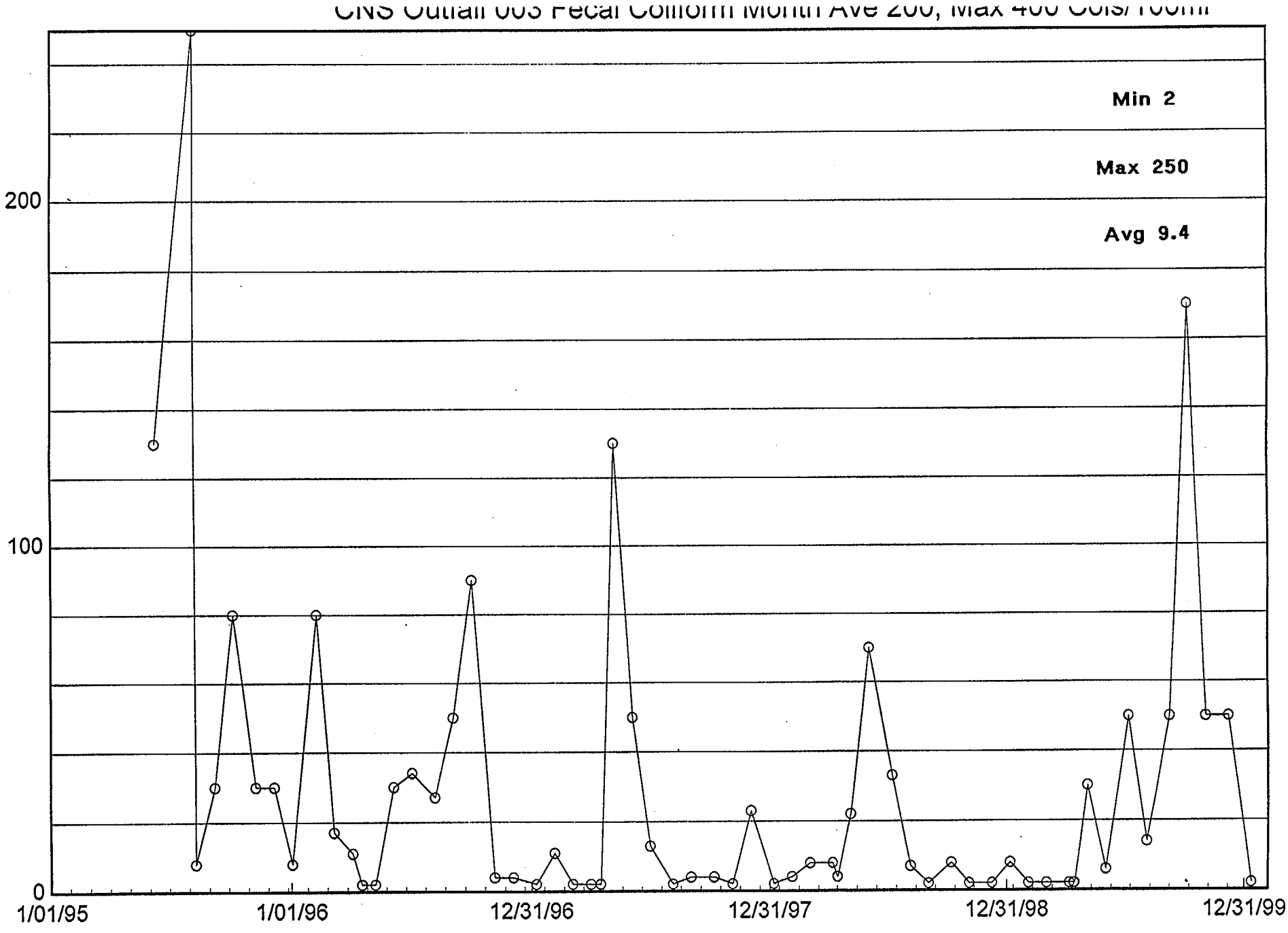

CNS Outfall 002 BOD M/R Only
20
10
0
Min 1.21 mg/l
Max 17.6 mg/l
Avg 4.37 mg/l
1/01/95
1/01/96
12/31/96
12/31/97
12/31/98
12/31/99
00 WC WC DIS 002 BOD MG/L



00 WT WT DIS 003 TOTAL SUS SOLIDS GRAVIMETRIC mg


CNS Outfall 003 BOD/C-BOD Month Ave 25, Max 50 mg/l
50
40
30
20
10
0
1/01/95
1/01/96
12/31/96
12/31/97
12/31/98
12/31/99
BOD
Min 2.0 mg/l
Max 41.8 mg/l
Avg 15.78 mg/l
C-BOD
Min 2.0 mg/l
Max 11.6 mg/l
Avg 5.4 mg/l
00 WT WT DIS 003 BOD MG/L
00 WT WT DIS 003 C-BOD MG/L
BOD changed to C-BOD Nov. 7


CNS Outfall 003 Dissolved Oxygen Limit >= 1.0 mg/l
Min 3.8 mg/l
Max 13.0 mg/l
Avg 8.3 mg/l
10
5
0
1/01/95
1/01/96
12/31/96
12/31/97
12/31/98
12/31/99
00 WT WT DIS 003 Dissolved Oxygen


CNS Outfall 003 Fecal Coliform Month Ave 200, Max 400 Cols/100ml
Min 2
Max 250
Avg 9.4
200
100
0
1/01/95
1/01/96
12/31/96
12/31/97
12/31/98
12/31/99
00 WT WT DIS 003 Fecal Coliform A S C 100 ML

Duke Power Company
Catawba Nuclear Station
NPDES Permit Renewal
Best Management Plan

Catawba has developed a Pollution Prevention Plan with Best Management Practices to proactively reduce and eventually eliminate pollutants entering the environment. The Pollution Prevention Plan is maintained on site and is available for review. The Plan is revised whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the air, ground, or waters of the United States. The Plan's Table of Contents is attached as a summary of the Plan.

CATAWBA NUCLEAR SITE

STORM WATER

POLLUTION PREVENTION PLAN

WITH

BEST MANAGEMENT PRACTICES

Catawba

Committed to the Environment

PLAN REVIEW CERTIFICATION

I, Gary R. Peterson, Vice President, Catawba Nuclear Site, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Certified By: Gary R. Peterson Date: 10/26/99
Gary R. Peterson, Vice President
Catawba Nuclear Site

Plan Prepared By: Margt Rott Date: 9/28/99
M. A. Rott, Scientist

Plan Reviewed By: J. T. Harris Date: 10/19/99
J. T. Harris, Scientist

Plan Approved By: Cheryl D. Peed Date: 10/25/99
C. T. Peed, Supervising Scientist

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