AMERICAN ELECTRIC POWER

American Electric Power
1 Riverside Plaza
Columbus, OH 43215-2373
AEP.com

RECEIVED
NOV 24 2008
DEQ

Mr. Kirk A. Batsel
Senior Environmental Engineer
Virginia Department of Environmental Quality
South Central Regional Office
7705 Timberlake Road
Lynchburg, Virginia 24502

November 21, 2008

Re: Appalachian Power Company
Leesville Hydroelectric Plant VPDES Permit Renewal Application
VPDES Permit No. VA0087106

Dear Mr. Batsel:

Please find enclosed, one (1) original and three (3) copies of a completed VPDES permit renewal application for the above referenced facility and permit. Contained within the application packages are the following:

- Public Notice Billing Information Form
- EPA General Form 1
- EPA Form 2C for Outfalls 001, 002, 003, 004, 005 and 006
- Figure 1 – USGS Site Location Map
- Figure 2 – VPDES Water Balance Diagram
- Appendix A – Notes
- Appendix B – Outfall Descriptions
- Appendix C – Request for 8-Hour Composite Sampling during Renewal
- Appendix D – Summary of Discharge Monitoring Reports

If you have any questions or need additional information, please contact Jon Magalski of my staff at (614) 716-2240 or at jmmagalski@aep.com.

Sincerely,

Alan R. Wood, P.E.
Manager, Water & Ecological Resource Services

Enclosures

	Date	Initials
Received in CEDS	NA	pb
To Permit Writer	11-24-08	pb
Reviewed & entered in CEDS	11-25-08	VB
Complete date entered in CEDS	11-26-08	KD
Forwarded for filing		
Filed		

APPALACHIAN POWER COMPANY

Leesville Hydroelectric Plant
Campbell County, Virginia

VPDES Permit Renewal Application

Virginia Department of Environmental Quality
VPDES Permit No. VA0087106

Prepared by:

American Electric Power Service Corporation
Environmental Services
1 Riverside Plaza
Columbus, Ohio 43215

Prepared for:

Appalachian Power Company
Leesville Hydroelectric Plant
State Route 754
Hurt, Virginia 24019

November 2008

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Public Notice Billing Information Form

PUBLIC NOTICE BILLING INFORMATION FORM

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the Agent/Department shown below. The public notice will be published once a week for two consecutive weeks in accordance with 9 VAC 25-31-290. C. 2.

Agent/Department to be billed: Alan R. Wood, P.E.

Owner: c/o American Electric Power

Applicant's Address: 1 Riverside Plaza

Columbus, Ohio 43125

Agent's Telephone No: 614-716-1233

Authorizing Agent: _____ (signature)

Facility Name: APCo-Leesville Hydroelectric Plant
Permit No. VA0087106

Please return to: Kirk Batsel
Virginia Department of Environmental Quality
South Central Regional Office
7705 Timberlake Road
Lynchburg, Virginia 24502
Phone: 434-582-6204
Fax: 434-582-5125

EPA General Form 1

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	VAD988204236

S		T/A	C
F			D
1	2 13	14	15

LABEL ITEMS	
EPA I.D. NUMBER	VAD988204236
III. FACILITY NAME	Leesville Hydroelectric Plant
V. FACILITY MAILING ADDRESS	c/o American Electric Power 1 Riverside Plaza Columbus, Ohio 43215
VI. FACILITY LOCATION	State Route 754 Hurt, Virginia 24019

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	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		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	
	16	17	18		19	20	21
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	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	
	22	23	24		25	26	27
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		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	
	28	29	30		31	32	33
G. 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		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	
	34	35	36		37	38	39
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		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	
	40	41	42		43	44	45

III. NAME OF FACILITY

C 1 SKIP LEESVILLE HYDROELECTRIC PLANT
15 16 - 29 30 69

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*		
C 2 WOOD, ALAN R. MANAGER, WATER & ECOLOGICAL RESOURCE SERVICES	614	716	1233
15 16 45	46 - 48	49 - 51	52 - 55

V. FACILITY MAILING ADDRESS

A. STREET OR P. O. BOX

C 3 1 RIVERSIDE PLAZA
15 16 45

B. CITY OR TOWN	C. STATE	D. ZIP CODE
C 4 COLUMBUS	OH	43215
15 16 40	41 42	47 51

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

C 5 STATE ROUTE 754
15 16 45

B. COUNTY NAME

CAMPBELL
70

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
C 6 HURT	VA	24019	
15 16 40	41 42	47 - 51	52 - 54

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

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

A. FIRST	B. SECOND
C 7 4911 (specify) ELECTRIC SERVICE	C 7 (specify) N/A
C. THIRD	**D. FOURTH**
C 7 (specify) N/A	C 7 (specify) N/A

VIII. OPERATOR INFORMATION

A. NAME: C 8 APPALACHIAN POWER COMPANY dba AMERICAN ELECTRIC POWER

B. Is the name listed in Item VIII-A also the owner? ☒ 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)*: C A 614 716 1233

E. STREET OR P. O. BOX: 1 RIVERSIDE PLAZA

F. CITY OR TOWN: C B COLUMBUS

G. STATE: OH

H. ZIP CODE: 43215

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	C T 1 9 N VA0087106	D. PSD *(Air Emissions from Proposed Sources)*	C T 1 9 P N/A
B. UIC *(Underground Injection of Fluids)*	C T 1 9 U N/A	E. OTHER *(specify)*	C T 1 9 (specify)
C. RCRA *(Hazardous Wastes)*	C T 1 9 R VAD988204236	E. OTHER *(specify)*	C T 1 9 (specify)

XI. 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 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)***

The Company is involved in the generation and distribution of electric power. The Leesville Hydroelectric Plant consists of two generating units with a total generating capacity of 40 megawatts.

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
John M. McManus Vice President, Environmental Services	John M. McManus	11/20/08

COMMENTS FOR OFFICIAL USE ONLY

EPA Form 2C for Outfalls 001, 002, 003, 004 and 005

Please print or type in the unshaded areas only.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*
VAD988204236

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

Form 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT 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. LONGITITUDE			D. RECEIVING WATER (name)		
	1. DEG	2. MIN	3. SEC	1. DEG	2. MIN	3. SEC			
001	37	05	36	79	24	09	Roanoke River		
002	37	05	36	79	24	09	Roanoke River		
003	37	05	36	79	24	09	Roanoke River		
004	37	05	36	79	24	09	Roanoke River		

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. OUTFALL (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	
001	Unit 1 Thrust Bearing Outlet	0.495	MGD	Discharge to surface waters	4-A	
	Sources:					
	Generator coolers	0.72	MGD	See Appendix A, Note 1		
	Thrust bearing coolers	0.066	MGD	See Appendix A, Note 1		
	Max. Flow	0.786	MGD	See Appendix A, Note 1		
002	Unit 2 Thrust Bearing Outlet	0.461	MGD	Discharge to surface waters	4-A	
	Sources:					
	Generator coolers	0.72	MGD	See Appendix A, Note 1		
	Thrust bearing coolers	0.066	MGD	See Appendix A, Note 1		
	Max. Flow	0.786	MGD	See Appendix A, Note 1		
003	Unit 1 Packing Box Seal Water	0.012	MGD	Discharge to surface waters	4-A	
	Max. Flow	0.017	MGD	See Appendix A, Note 1		
004	Unit 2 Packing Box Seal Water	0.012	MGD	Discharge to surface waters	4-A	
	Max. Flow	0.017	MGD	See Appendix A, Note 1		

OFFICIAL USE ONLY (effluent guidelines sub-categories)

Please print or type in the unshaded areas only.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*
VAD988204236

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

Form 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT 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. LONGITITUDE			D. RECEIVING WATER (name)		
	1. DEG	2. MIN	3. SEC	1. DEG	2. MIN	3. SEC			
005	37	05	36	79	24	09	Roanoke River		

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. OUTFALL (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	
005	Sump	0.042	MGD	Discharge to surface waters	4-A	
	Sources:					
	#1 packing box seal water	0.005	MGD	See Appendix A, Note 1		
	#2 packing box seal water	0.005	MGD	See Appendix A, Note 1		
	Draft tube dewatering	0.015	MGD	See Appendix A, Note 1		
	Floor drains	Negligible		See Appendix A, Note 1		
	Leakage	0.0132	MGD	See Appendix A, Note 1		
	Max. Flow	10.1	MGD	See Appendix A, Note 1		

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?

☐ Yes *(complete the following table)* ☒ No *(go to Section III)*

1. OUTFALL NUMBER *(list)* N/A	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)*	4. FLOW b. TOTAL VOLUME *(specify with units)*	4. FLOW c. DURATION *(in days)*

III. PRODUCTION

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

☐ 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)* ☐ 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)* ☒ 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 PRODUCT	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**

 CONTINUE ON PAGE 3

CONTINUED FROM PAGE 2

EPA I. D. NUMBER *(copy from Item 1 of Form1)*
VAD988204236

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.

D. 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
N/A	N/A	N/A	N/A

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 c byproduct?

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

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?

☐ Yes *(identify the test(s) and describe their purpose below)* ☒ No (go to Section VIII)

VIII. CONTRACT ANALYSIS INFORMATION

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

☒ YES *(list the name, address, and telephone number of, and plooutants analytized 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)*
Water Chemistry, Inc.	3404 Aerial Way Drive, SW Roanoke, Virginia 24018	(540) 343-3618	BOD_5 COD TOC TSS Ammonia Oil & Grease Total Copper Hardness pH Temperature Total Residual Chlorine Fecal Coliform

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 this information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant pealties 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.)*
John M. McManus Vice President, Environmental Services	(614) 716-1268
C. SIGNATURE	**D. DATE SIGNED**
John M McManus	11/20/08

EPA I.D. NUMBER
VAD988204236

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART A

1. POLLUTANT	2. EFFLUENT								3. UNITS (specify if blank)		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses				a. LONG TERM AVRG. VALUE		b. No. of Analyses
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			a. Concentration	b. Mass	(1) Concentration	(2) Mass	
a. BOD	<5	<8.18					1		mg/l	kg/d	<5.0		1
b. COD	<10	<16.4					1		mg/l	kg/d	<10		1
c. TOC	2.4	3.92					1		mg/l	kg/d	2.6		1
d. TSS	<1	<1.64					1		mg/l	kg/d	2		1
e. Ammonia *(as N)*	<0.2	<0.327					1		mg/l	kg/d	<0.2		1
f. Flow	VALUE:	0.695	VALUE:		VALUE:	0.509	22		MGD		VALUE:		
g. Temperature *(winter)*	VALUE:	25.0	VALUE:		VALUE:	20.2	13		° C		VALUE:		
h. Temperature *(summer)*	VALUE:	24.9	VALUE:		VALUE:	20.2	9		° C		VALUE:	19.6	4
i. pH	Minimum 7.6	Maximum 7.80	Minimum	Maximum			4		Standard Units				

PART B

1. POLLUTANT	2. Mark 'X'		3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
a. Bromide		X												
b. Chlorine, Tot. Residual		X	0.19	0.31					4	mg/l	kg/d	0.17		4
c. Color		X	VALUE:		VALUE:		VALUE:					VALUE:		
d. Fecal Coliform		X	VALUE:	133	VALUE:		VALUE:		1	#/100 mL		VALUE:	119	1
e. Fluoride		X												
f. Nitrate/Nitrite		X												

EPA I.D. NUMBER
VAD988204236

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART B (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
		a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
g. TON			X												
h. O&G		x		<5.0	<8.18					1	mg/l	kg/d	<5.0		1
i. Phosphorus			X												
j. Radioactivity															
(1) Total Alpha			X	VALUE:		VALUE:		VALUE:					VALUE:		
(2) Total Beta			X	VALUE:		VALUE:		VALUE:					VALUE:		
(3) Total Radium			X	VALUE:		VALUE:		VALUE:					VALUE:		
(4) Radium 226			X	VALUE:		VALUE:		VALUE:					VALUE:		
k. Sulfate			X												
l. Sulfide			X												
m. Sulfite			X												
n. Surfactants			X												
o. Aluminum			X												
p. Barium			X												
q. Boron			X												
r. Cobalt			X												
s. Iron			X												
t. Magnesium			X												
u. Molybdenum			X												
v. Manganese			X												
w. Tin			X												
x. Titanium			X												

EPA I.D. NUMBER
VAD988204236

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony			X												
2M. Arsenic			X												
3M. Beryllium			X												
4M. Cadmium			X												
5M. Chromium			X												
6M. Copper		X		<5	<8.18					1	ug/l	g/d	<5		1
7M. Lead			X												
8M. Mercury			X												
9M. Nickel			X												
10M. Selenium			X												
11M. Silver			X												
12M. Thallium			X												
13M. Zinc			X												
14M. Cyanide			X												
15M. Phenols			X												
DIOXIN															
2,3,7,8-tetrachlorodibenzo-P-dioxin			X	Describe Results:											

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- VOLATILE COMPOUNDS															
1V. Acrolein			X												
2V. Acrylonitrile			X												
3V. Benzene			X												
4V. Bis (Chloromethyl) Ether			X												
5V. Bromoform			X												
6V. Carbon Tetrachloride			X												
7V. Chlorobenzene			X												
8V. Chlorodibromomethane			X												
9V. Chloroethane			X												
10V. 2-Chloroethylvinyl Ether			X												
11V. Chloroform			X												
12V. Dichlorobromomethane			X												
13V. Dichlorodifluoromethane			X												
14V. 1,1-Dichloroethane			X												
15V. 1,2-Dichloroethane			X												
16V. 1,1-Dichloroethylene			X												
17V. 1,2-Dichloropropane			X												
18V. 1,3-Dichloropropylene			X												
19V. Ethylbenzene			X												
20V. Methyl Bromide			X												
21V. Methyl Chloride			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride			X												
23V. 1,1,2,2-Tetrachloroethane			X												
24V. Tetrachloroethylene			X												
25V. Toluene			X												
26V. 1,2-Trans Dichloroethylene			X												
27V. 1,1,1-trichloroethane			X												
28V. 1,1,2-trichloroethane			X												
29V. Trichloroethylene			X												
30V. Trichlorofluoromethane			X												
31V. Vinyl Chloride			X												
GC/MS FRACTION -- ACID COMPOUNDS															
1A. 2-Chlorophenol			X												
2A. 2,4-Dichlorophenol			X												
3A. 2,4-Dimethylphenol			X												
4A. 4,6-Dinitro-O-Cresol			X												
5A. 2,4-Dinitrophenol			X												
6A. 2-Nitrophenol			X												
7A. 4-Nitrophenol			X												
8A. P-Chloro-M-Cresol			X												
9A. Pentachlorophenol			X												
10A. Phenol			X												
11A. 2,4,6-Trichlorophenol			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene			X												
2B. Acenaphtylene			X												
3B. Anthracene			X												
4B. Benzidine			X												
5B. Benzo(a)Anthracene			X												
6B. Benzo(a)Pyrene			X												
7B. 3,4-Benzofluoranthene			X												
8B. Benzo(ghi)perylene			X												
9B. Benzo(k)fluoranthene			X												
10B. Bis(2-chloroethoxy)methane			X												
11B. Bis(2-chloroethyl)ether			X												
12B. Bis(2-chloroisopropyl)ether			X												
13B. Bis(2-ethylhexyl)phthalate			X												
14B. 4-bromophenyl Phenyl Ether			X												
15B. Butyl Benzyl Phthalate			X												
16B. 2-Chloronaphthalene			X												
17B. 4-chlorophenyl Phenyl Ether			X												
18B. Chrysene			X												
19B. Dibenzo(a,h)anthracene			X												
20B. 1,2-dichlorobenzene			X												
21B. 1,3-dichlorobenzene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-dichlorobenzene			X												
23B. 3,3-dichlorobenzidine			X												
24B. diethylphthalate			X												
25B. Dimethylphthalate			X												
26B. di-N-Butylphthalate			X												
27B. 2,4-Dinitrotoluene			X												
28B. 2,6-dinitrotoluene			X												
29B. di-N-Octyl Phthalate			X												
30B. 1,2-Diphenylhydrazine			X												
31B. Fluoranthene			X												
32B. Fluorene			X												
33B. Hexachlorobenzene			X												
34B. Hexachlorobutadiene			X												
35B. Hexachlorocyclopentadiene			X												
36B. Hexachloroethane			X												
37B. Indeno(1,2,3-cd)Pyrene			X												
38B. Isophorone			X												
39B. Naphthalene			X												
40B. Nitrobenzene			X												
41B. N-Nitrosodimethylamine			X												
42B. N-Nitrosodi-N-Propylamine			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine			X												
44B. Phenanthrene			X												
45B. Pyrene			X												
46B. 1,2,4-trichlorobenzene			X												
GC/MS FRACTION -- PESTICIDES															
1P. Aldrin			X												
2P. a-BHC			X												
3P. b-BHC			X												
4P. g-BHC			X												
5P. d-BHC			X												
6P. Chlordane			X												
7P. 4,4-DDT			X												
8P. 4,4-DDE			X												
9P. 4,4-DDD			X												
10P. Dieldrin			X												
11P. a-Endosulfan			X												
12P. b-Endosulfan			X												
13P. Endosulfan sulfate			X												
14P. Endrin			X												
15P. Endrin Aldehyde			X												
16P. Heptachlor			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide			X												
18P. PCB-1242			X												
19P. PCB-1254			X												
20P. PCB-1221			X												
21P. PCB-1232			X												
22P. PCB-1248			X												
23P. PCB-1260			X												
24P. PCB-1016			X												
25P. Toxaphene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

PART A

1. POLLUTANT	2. EFFLUENT								3. UNITS (specify if blank)		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses				a. LONG TERM AVRG. VALUE		b. No. of Analyses
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			a. Concentration	b. Mass	(1) Concentration	(2) Mass	
a. BOD	<5.0	<8.18					1		mg/l	kg/d	<5.0		1
b. COD	<10	<16.4					1		mg/l	kg/d	<10		1
c. TOC	2.3	3.92					1		mg/l	kg/d	2.6		1
d. TSS	4	<1.64					1		mg/l	kg/d	2		1
e. Ammonia *(as N)*	<0.2	<0.327					1		mg/l	kg/d	<0.2		1
f. Flow	VALUE:	0.717	VALUE:		VALUE:	0.468	22		MGD		VALUE:		
g. Temperature *(winter)*	VALUE:	24.4	VALUE:		VALUE:	19.0	13		° C		VALUE:		
h. Temperature *(summer)*	VALUE:	24.4	VALUE:		VALUE:	20.4	9		° C		VALUE:	19.6	4
i. pH	Minimum 7.6	Maximum 7.80	Minimum	Maximum			4		Standard Units				

PART B

1. POLLUTANT	2. Mark 'X'		3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
a. Bromide		X												
b. Chlorine, Tot. Residual		X	0.23	0.38					4	mg/l	kg/d	0.17		4
c. Color		X	VALUE:		VALUE:		VALUE:					VALUE:		
d. Fecal Coliform		X	VALUE:	133	VALUE:		VALUE:		1	#/100 mL		VALUE:	119	1
e. Fluoride		X												
f. Nitrate/Nitrite		X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

PART B (CONTINUED)

1. POLLUTANT	2. Mark 'X'		3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
g. TON		X												
h. O&G	X		<5.0	<0.82					1	mg/l	kg/d	<5.0		1
i. Phosphorus		X												
j. Radioactivity														
(1) Total Alpha		X	VALUE:		VALUE:		VALUE:					VALUE:		
(2) Total Beta		X	VALUE:		VALUE:		VALUE:					VALUE:		
(3) Total Radium		X	VALUE:		VALUE:		VALUE:					VALUE:		
(4) Radium 226		X	VALUE:		VALUE:		VALUE:					VALUE:		
k. Sulfate		X												
l. Sulfide		X												
m. Sulfite		X												
n. Surfactants		X												
o. Aluminum		X												
p. Barium		X												
q. Boron		X												
r. Cobalt		X												
s. Iron		X												
t. Magnesium		X												
u. Molybdenum		X												
v. Manganese		X												
w. Tin		X												
x. Titanium		X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony			X												
2M. Arsenic			X												
3M. Beryllium			X												
4M. Cadmium			X												
5M. Chromium			X												
6M. Copper		X		18	29.4					1	ug/l	g/d	<5		1
7M. Lead			X												
8M. Mercury			X												
9M. Nickel			X												
10M. Selenium			X												
11M. Silver			X												
12M. Thallium			X												
13M. Zinc			X												
14M. Cyanide			X												
15M. Phenols			X												
DIOXIN															
2,3,7,8-tetrachlorodibenzo-P-dioxin			X	Describe Results:											

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- VOLATILE COMPOUNDS															
1V. Acrolein			X												
2V. Acrylonitrile			X												
3V. Benzene			X												
4V. Bis (Chloromethyl) Ether			X												
5V. Bromoform			X												
6V. Carbon Tetrachloride			X												
7V. Chlorobenzene			X												
8V. Chlorodibromomethane			X												
9V. Chloroethane			X												
10V. 2-Chloroethylvinyl Ether			X												
11V. Chloroform			X												
12V. Dichlorobromomethane			X												
13V. Dichlorodifluoromethane			X												
14V. 1,1-Dichloroethane			X												
15V. 1,2-Dichloroethane			X												
16V. 1,1-Dichloroethylene			X												
17V. 1,2-Dichloropropane			X												
18V. 1,3-Dichloropropylene			X												
19V. Ethylbenzene			X												
20V. Methyl Bromide			X												
21V. Methyl Chloride			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride			X												
23V. 1,1,2,2-Tetrachloroethane			X												
24V. Tetrachloroethylene			X												
25V. Toluene			X												
26V. 1,2-Trans Dichloroethylene			X												
27V. 1,1,1-trichloroethane			X												
28V. 1,1,2-trichloroethane			X												
29V. Trichloroethylene			X												
30V. Trichlorofluoromethane			X												
31V. Vinyl Chloride			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol			X												
2A. 2,4-Dichlorophenol			X												
3A. 2,4-Dimethylphenol			X												
4A. 4,6-Dinitro-O-Cresol			X												
5A. 2,4-Dinitrophenol			X												
6A. 2-Nitrophenol			X												
7A. 4-Nitrophenol			X												
8A. P-Chloro-M-Cresol			X												
9A. Pentachlorophenol			X												
10A. Phenol			X												
11A. 2,4,6-Trichlorophenol			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene			X												
2B. Acenaphtylene			X												
3B. Anthracene			X												
4B. Benzidine			X												
5B. Benzo(a)Anthracene			X												
6B. Benzo(a)Pyrene			X												
7B. 3,4-Benzofluoranthene			X												
8B. Benzo(ghi)perylene			X												
9B. Benzo(k)fluoranthene			X												
10B. Bis(2-chloroethoxy)methane			X												
11B. Bis(2-chloroethyl)ether			X												
12B. Bis(2-chloroisopropyl)ether			X												
13B. Bis(2-ethylhexyl)phthalate			X												
14B. 4-bromophenyl Phenyl Ether			X												
15B. Butyl Benzyl Phthalate			X												
16B. 2-Chloronaphthalene			X												
17B. 4-chlorophenyl Phenyl Ether			X												
18B. Chrysene			X												
19B. Dibenzo(a,h)anthracene			X												
20B. 1,2-dichlorobenzene			X												
21B. 1,3-dichlorobenzene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-dichlorobenzene			X												
23B. 3,3-dichlorobenzidine			X												
24B. diethylphthalate			X												
25B. Dimethylphthalate			X												
26B. di-N-Butylphthalate			X												
27B. 2,4-Dinitrotoluene			X												
28B. 2,6-dinitrotoluene			X												
29B. di-N-Octyl Phthalate			X												
30B. 1,2-Diphenylhydrazine			X												
31B. Fluoranthene			X												
32B. Fluorene			X												
33B. Hexachlorobenzene			X												
34B. Hexachlorobutadiene			X												
35B. Hexachlorocyclopentadiene			X												
36B. Hexachloroethane			X												
37B. Indeno(1,2,3-cd)Pyrene			X												
38B. Isophorone			X												
39B. Naphthalene			X												
40B. Nitrobenzene			X												
41B. N-Nitrosodimethylamine			X												
42B. N-Nitrosodi-N-Propylamine			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine			X												
44B. Phenanthrene			X												
45B. Pyrene			X												
46B. 1,2,4-trichlorobenzene			X												
GC/MS FRACTION -- PESTICIDES															
1P. Aldrin			X												
2P. a-BHC			X												
3P. b-BHC			X												
4P. g-BHC			X												
5P. d-BHC			X												
6P. Chlordane			X												
7P. 4,4-DDT			X												
8P. 4,4-DDE			X												
9P. 4,4-DDD			X												
10P. Dieldrin			X												
11P. a-Endosulfan			X												
12P. b-Endosulfan			X												
13P. Endosulfan sulfate			X												
14P. Endrin			X												
15P. Endrin Aldehyde			X												
16P. Heptachlor			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 002

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- PESTICIDES (continued)															
17P. Heptachlor Epoxide			X												
18P. PCB-1242			X												
19P. PCB-1254			X												
20P. PCB-1221			X												
21P. PCB-1232			X												
22P. PCB-1248			X												
23P. PCB-1260			X												
24P. PCB-1016			X												
25P. Toxaphene			X												

EPA I.D. NUMBER
VAD988204236

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART A

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (1) Concentration	(2) Mass	c. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	d. No. of Analyses	3. UNITS (specify if blank) a. Concentration	b. Mass	4. INTAKE (optional) a. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	b. No. of Analyses
a. BOD	<5.0	<0.409					Est.*	mg/l	kg/d	<5.0		1
b. COD	<10	<0.818					Est.*	mg/l	kg/d	<10		1
c. TOC	2.6	0.213					Est.*	mg/l	kg/d	2.6		1
d. TSS	2	0.164					Est.*	mg/l	kg/d	2		1
e. Ammonia *(as N)*	<0.2	<0.016					Est.*	mg/l	kg/d	<0.2		1
f. Flow	VALUE:	0.0216	VALUE:		VALUE:	0.0216	Est.*	MGD		VALUE:		
g. Temperature *(winter)*	VALUE:	22.2	VALUE:		VALUE:		Est.*	° C		VALUE:		
h. Temperature *(summer)*	VALUE:		VALUE:		VALUE:			° C		VALUE:	19.6	4
i. pH	Minimum 7.6	Maximum 7.80	Minimum	Maximum			Est.*	Standard Units				

PART B

1. POLLUTANT	2. Mark 'X' a. Believed Present	b. Believed Absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (1) Concentration	(2) Mass	c. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	d. No. of Analyses	4. UNITS (specify if blank) a. Concentration	b. Mass	5. INTAKE (optional) a. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	d. No. of Analyses
a. Bromide		X												
b. Chlorine, Tot. Residual		X	0.19	0.016					Est.*	mg/l	kg/d	0.17		4
c. Color		X	VALUE:		VALUE:		VALUE:					VALUE:		
d. Fecal Coliform		X	VALUE:	119	VALUE:		VALUE:		Est.*	#/100 mL		VALUE:	119	1
e. Fluoride		X												
f. Nitrate/Nitrite		X												

*See Appendix 3, Note 4

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART B (CONTINUED)

1. POLLUTANT	2. Mark 'X' a. Believed Present	2. Mark 'X' b. Believed Absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (1) Concentration	b. MAXIMUM 30 DAY VALUE (2) Mass	c. LONG TERM AVRG. VALUE (1) Concentration	c. LONG TERM AVRG. VALUE (2) Mass	d. No. of Analyses	4. UNITS (specify if blank) a. Concentration	4. UNITS b. Mass	5. INTAKE (optional) a. LONG TERM AVRG. VALUE (1) Concentration	a. LONG TERM AVRG. VALUE (2) Mass	d. No. of Analyses
g. TON		X												
h. O&G		X	<5	0.409					Est.*	mg/l	kg/d	<5		1
i. Phosphorus		X												
j. Radioactivity														
(1) Total Alpha		X	VALUE:		VALUE:		VALUE:					VALUE:		
(2) Total Beta		X	VALUE:		VALUE:		VALUE:					VALUE:		
(3) Total Radium		X	VALUE:		VALUE:		VALUE:					VALUE:		
(4) Radium 226		X	VALUE:		VALUE:		VALUE:					VALUE:		
k. Sulfate		X												
l. Sulfide		X												
m. Sulfite		X												
n. Surfactants		X												
o. Aluminum		X												
p. Barium		X												
q. Boron		X												
r. Cobalt		X												
s. Iron		X												
t. Magnesium		X												
u. Molybdenum		X												
v. Manganese		X												
w. Tin		X												
x. Titanium		X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony			X												
2M. Arsenic			X												
3M. Beryllium			X												
4M. Cadmium			X												
5M. Chromium			X												
6M. Copper			X	<5	0.409					Est.*	ug/l	g/d	<5		1
7M. Lead			X												
8M. Mercury			X												
9M. Nickel			X												
10M. Selenium			X												
11M. Silver			X												
12M. Thallium			X												
13M. Zinc			X												
14M. Cyanide			X												
15M. Phenols			X												
DIOXIN															
2,3,7,8-tetrachlorodibenzo-P-dioxin			X	Describe Results:											

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein			X												
2V. Acrylonitrile			X												
3V. Benzene			X												
4V. Bis (Chloromethyl) Ether			X												
5V. Bromoform			X												
6V. Carbon Tetrachloride			X												
7V. Chlorobenzene			X												
8V. Chlorodibromomethane			X												
9V. Chloroethane			X												
10V. 2-Chloroethylvinyl Ether			X												
11V. Chloroform			X												
12V. Dichlorobromomethane			X												
13V. Dichlorodifluoromethane			X												
14V. 1,1-Dichloroethane			X												
15V. 1,2-Dichloroethane			X												
16V. 1,1-Dichloroethylene			X												
17V. 1,2-Dichloropropane			X												
18V. 1,3-Dichloropropylene			X												
19V. Ethylbenzene			X												
20V. Methyl Bromide			X												
21V. Methyl Chloride			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride			X												
23V. 1,1,2,2-Tetrachloroethane			X												
24V. Tetrachloroethylene			X												
25V. Toluene			X												
26V. 1,2-Trans Dichloroethylene			X												
27V. 1,1,1-trichloroethane			X												
28V. 1,1,2-trichloroethane			X												
29V. Trichloroethylene			X												
30V. Trichlorofluoromethane			X												
31V. Vinyl Chloride			X												
GC/MS FRACTION -- ACID COMPOUNDS															
1A. 2-Chlorophenol			X												
2A. 2,4-Dichlorophenol			X												
3A. 2,4-Dimethylphenol			X												
4A. 4,6-Dinitro-O-Cresol			X												
5A. 2,4-Dinitrophenol			X												
6A. 2-Nitrophenol			X												
7A. 4-Nitrophenol			X												
8A. P-Chloro-M-Cresol			X												
9A. Pentachlorophenol			X												
10A. Phenol			X												
11A. 2,4,6-Trichlorophenol			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene			X												
2B. Acenaphtylene			X												
3B. Anthracene			X												
4B. Benzidine			X												
5B. Benzo(a)Anthracene			X												
6B. Benzo(a)Pyrene			X												
7B. 3,4-Benzofluoranthene			X												
8B. Benzo(ghi)perylene			X												
9B. Benzo(k)fluoranthene			X												
10B. Bis(2-chloroethoxy)methane			X												
11B. Bis(2-chloroethyl)ether			X												
12B. Bis(2-chloroisopropyl)ether			X												
13B. Bis(2-ethylhexyl)phthalate			X												
14B. 4-bromophenyl Phenyl Ether			X												
15B. Butyl Benzyl Phthalate			X												
16B. 2-Chloronaphthalene			X												
17B. 4-chlorophenyl Phenyl Ether			X												
18B. Chrysene			X												
19B. Dibenzo(a,h)anthracene			X												
20B. 1,2-dichlorobenzene			X												
21B. 1,3-dichlorobenzene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-dichlorobenzene			X												
23B. 3,3-dichlorobenzidine			X												
24B. diethylphthalate			X												
25B. Dimethylphthalate			X												
26B. di-N-Butylphthalate			X												
27B. 2,4-Dinitrotoluene			X												
28B. 2,6-dinitrotoluene			X												
29B. di-N-Octyl Phthalate			X												
30B. 1,2-Diphenylhydrazine			X												
31B. Fluoranthene			X												
32B. Fluorene			X												
33B. Hexachlorobenzene			X												
34B. Hexachlorobutadiene			X												
35B. Hexachlorocyclopentadiene			X												
36B. Hexachloroethane			X												
37B. Indeno(1,2,3-cd)Pyrene			X												
38B. Isophorone			X												
39B. Naphthalene			X												
40B. Nitrobenzene			X												
41B. N-Nitrosodimethylamine			X												
42B. N-Nitrosodi-N-Propylamine			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine			X												
44B. Phenanthrene			X												
45B. Pyrene			X												
46B. 1,2,4-trichlorobenzene			X												
GC/MS FRACTION -- PESTICIDES															
1P. Aldrin			X												
2P. a-BHC			X												
3P. b-BHC			X												
4P. g-BHC			X												
5P. d-BHC			X												
6P. Chlordane			X												
7P. 4,4-DDT			X												
8P. 4,4-DDE			X												
9P. 4,4-DDD			X												
10P. Dieldrin			X												
11P. a-Endosulfan			X												
12P. b-Endosulfan			X												
13P. Endosulfan sulfate			X												
14P. Endrin			X												
15P. Endrin Aldehyde			X												
16P. Heptachlor			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 003

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- PESTICIDES (continued)															
17P. Heptachlor Epoxide			X												
18P. PCB-1242			X												
19P. PCB-1254			X												
20P. PCB-1221			X												
21P. PCB-1232			X												
22P. PCB-1248			X												
23P. PCB-1260			X												
24P. PCB-1016			X												
25P. Toxaphene			X												

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VAD988204236

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART A

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (1) Concentration	(2) Mass	c. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	d. No. of Analyses	3. UNITS (specify if blank) a. Concentration	b. Mass	4. INTAKE (optional) a. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	b. No. of Analyses
a. BOD	<5.0	<0.409					Est.*	mg/l	kg/d	<5.0		1
b. COD	<10	<0.818					Est.*	mg/l	kg/d	<10		1
c. TOC	2.6	0.213					Est.*	mg/l	kg/d	2.6		1
d. TSS	2	0.164					Est.*	mg/l	kg/d	2		1
e. Ammonia *(as N)*	<0.2	<0.016					Est.*	mg/l	kg/d	<0.2		1
f. Flow	VALUE:	0.0216	VALUE:		VALUE:	0.0216	Est.*	MGD		VALUE:		
g. Temperature *(winter)*	VALUE:	22.2	VALUE:		VALUE:		Est.*	° C		VALUE:		
h. Temperature *(summer)*	VALUE:		VALUE:		VALUE:			° C		VALUE:	19.6	4
i. pH	Minimum 7.6	Maximum 7.80	Minimum	Maximum			Est.*	Standard Units				

PART B

1. POLLUTANT	2. Mark 'X' a. Believed Present	b. Believed Absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	(2) Mass	b. MAXIMUM 30 DAY VALUE (1) Concentration	(2) Mass	c. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	d. No. of Analyses	4. UNITS (specify if blank) a. Concentration	b. Mass	5. INTAKE (optional) a. LONG TERM AVRG. VALUE (1) Concentration	(2) Mass	d. No. of Analyses
a. Bromide		X												
b. Chlorine, Tot. Residual		X	0.19	0.016					Est.*	mg/l	kg/d	0.17		4
c. Color		X	VALUE:		VALUE:		VALUE:					VALUE:		
d. Fecal Coliform		X	VALUE:	119	VALUE:		VALUE:		Est.*	#/100 mL		VALUE:	119	1
e. Fluoride		X												
f. Nitrate/Nitrite		X												

*See Appendix 3, Note 4

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART B (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
		a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
g. TON			X												
h. O&G			X	<5	0.409					Est.*	mg/l	kg/d	<5		1
i. Phosphorus			X												
j. Radioactivity															
(1) Total Alpha			X	VALUE:		VALUE:		VALUE:					VALUE:		
(2) Total Beta			X	VALUE:		VALUE:		VALUE:					VALUE:		
(3) Total Radium			X	VALUE:		VALUE:		VALUE:					VALUE:		
(4) Radium 226			X	VALUE:		VALUE:		VALUE:					VALUE:		
k. Sulfate			X												
l. Sulfide			X												
m. Sulfite			X												
n. Surfactants			X												
o. Aluminum			X												
p. Barium			X												
q. Boron			X												
r. Cobalt			X												
s. Iron			X												
t. Magnesium			X												
u. Molybdenum			X												
v. Manganese			X												
w. Tin			X												
x. Titanium			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony			X												
2M. Arsenic			X												
3M. Beryllium			X												
4M. Cadmium			X												
5M. Chromium			X												
6M. Copper			X	<5	0.409					Est.*	ug/l	g/d	<5		1
7M. Lead			X												
8M. Mercury			X												
9M. Nickel			X												
10M. Selenium			X												
11M. Silver			X												
12M. Thallium			X												
13M. Zinc			X												
14M. Cyanide			X												
15M. Phenols			X												
DIOXIN															
2,3,7,8-tetrachlorodibenzo-P-dioxin			X	Describe Results:											

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein			X												
2V. Acrylonitrile			X												
3V. Benzene			X												
4V. Bis (Chloromethyl) Ether			X												
5V. Bromoform			X												
6V. Carbon Tetrachloride			X												
7V. Chlorobenzene			X												
8V. Chlorodibromomethane			X												
9V. Chloroethane			X												
10V. 2-Chloroethylvinyl Ether			X												
11V. Chloroform			X												
12V. Dichlorobromomethane			X												
13V. Dichlorodifluoromethane			X												
14V. 1,1-Dichloroethane			X												
15V. 1,2-Dichloroethane			X												
16V. 1,1-Dichloroethylene			X												
17V. 1,2-Dichloropropane			X												
18V. 1,3-Dichloropropylene			X												
19V. Ethylbenzene			X												
20V. Methyl Bromide			X												
21V. Methyl Chloride			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride			X												
23V. 1,1,2,2-Tetrachloroethane			X												
24V. Tetrachloroethylene			X												
25V. Toluene			X												
26V. 1,2-Trans Dichloroethylene			X												
27V. 1,1,1-trichloroethane			X												
28V. 1,1,2-trichloroethane			X												
29V. Trichloroethylene			X												
30V. Trichlorofluoromethane			X												
31V. Vinyl Chloride			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol			X												
2A. 2,4-Dichlorophenol			X												
3A. 2,4-Dimethylphenol			X												
4A. 4,6-Dinitro-O-Cresol			X												
5A. 2,4-Dinitrophenol			X												
6A. 2-Nitrophenol			X												
7A. 4-Nitrophenol			X												
8A. P-Chloro-M-Cresol			X												
9A. Pentachlorophenol			X												
10A. Phenol			X												
11A. 2,4,6-Trichlorophenol			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene			X												
2B. Acenaphtylene			X												
3B. Anthracene			X												
4B. Benzidine			X												
5B. Benzo(a)Anthracene			X												
6B. Benzo(a)Pyrene			X												
7B. 3,4-Benzofluoranthene			X												
8B. Benzo(ghi)perylene			X												
9B. Benzo(k)fluoranthene			X												
10B. Bis(2-chloroethoxy)methane			X												
11B. Bis(2-chloroethyl)ether			X												
12B. Bis(2-chloroisopropyl)ether			X												
13B. Bis(2-ethylhexyl)phthalate			X												
14B. 4-bromophenyl Phenyl Ether			X												
15B. Butyl Benzyl Phthalate			X												
16B. 2-Chloronaphthalene			X												
17B. 4-chlorophenyl Phenyl Ether			X												
18B. Chrysene			X												
19B. Dibenzo(a,h)anthracene			X												
20B. 1,2-dichlorobenzene			X												
21B. 1,3-dichlorobenzene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-dichlorobenzene			X												
23B. 3,3-dichlorobenzidine			X												
24B. diethylphthalate			X												
25B. Dimethylphthalate			X												
26B. di-N-Butylphthalate			X												
27B. 2,4-Dinitrotoluene			X												
28B. 2,6-dinitrotoluene			X												
29B. di-N-Octyl Phthalate			X												
30B. 1,2-Diphenylhydrazine			X												
31B. Fluoranthene			X												
32B. Fluorene			X												
33B. Hexachlorobenzene			X												
34B. Hexachlorobutadiene			X												
35B. Hexachlorocyclopentadiene			X												
36B. Hexachloroethane			X												
37B. Indeno(1,2,3-cd)Pyrene			X												
38B. Isophorone			X												
39B. Naphthalene			X												
40B. Nitrobenzene			X												
41B. N-Nitrosodimethylamine			X												
42B. N-Nitrosodi-N-Propylamine			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine			X												
44B. Phenanthrene			X												
45B. Pyrene			X												
46B. 1,2,4-trichlorobenzene			X												
GC/MS FRACTION -- PESTICIDES															
1P. Aldrin			X												
2P. a-BHC			X												
3P. b-BHC			X												
4P. g-BHC			X												
5P. d-BHC			X												
6P. Chlordane			X												
7P. 4,4-DDT			X												
8P. 4,4-DDE			X												
9P. 4,4-DDD			X												
10P. Dieldrin			X												
11P. a-Endosulfan			X												
12P. b-Endosulfan			X												
13P. Endosulfan sulfate			X												
14P. Endrin			X												
15P. Endrin Aldehyde			X												
16P. Heptachlor			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 004

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- PESTICIDES (continued)															
17P. Heptachlor Epoxide			X												
18P. PCB-1242			X												
19P. PCB-1254			X												
20P. PCB-1221			X												
21P. PCB-1232			X												
22P. PCB-1248			X												
23P. PCB-1260			X												
24P. PCB-1016			X												
25P. Toxaphene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART A

1. POLLUTANT	2. EFFLUENT								3. UNITS (specify if blank)		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses				a. LONG TERM AVRG. VALUE		b. No. of Analyses
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			a. Concentration	b. Mass	(1) Concentration	(2) Mass	
a. BOD	<5.0	<0.416					1		mg/l	kg/d	<5.0		1
b. COD	<10	<0.833					1		mg/l	kg/d	<10		1
c. TOC	1.6	0.133					1		mg/l	kg/d	2.6		1
d. TSS	4	0.333					1		mg/l	kg/d	2		1
e. Ammonia *(as N)*	<0.2	<0.017					1		mg/l	kg/d	<0.2		1
f. Flow	VALUE:	0.072	VALUE:		VALUE:	0.039	22		MGD		VALUE:		
g. Temperature *(winter)*	VALUE:	23.4	VALUE:		VALUE:	0.038	13		° C		VALUE:		
h. Temperature *(summer)*	VALUE:	22.3	VALUE:		VALUE:	0.040	9		° C		VALUE:	19.6	4
i. pH	Minimum 7.34	Maximum 8.38	Minimum	Maximum			22		Standard Units				

PART B

1. POLLUTANT	2. Mark 'X'		3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
a. Bromide		X												
b. Chlorine, Tot. Residual		X	0.26	0.022					4	mg/l	kg/d	0.17		4
c. Color		X	VALUE:		VALUE:		VALUE:					VALUE:		
d. Fecal Coliform		X	VALUE:	>2419	VALUE:		VALUE:		1	#/100 mL		VALUE:	119	1
e. Fluoride		X												
f. Nitrate/Nitrite		X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 005

PART B (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
		a. Believed Present	b. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
g. TON			X												
h. O&G		X		<5.0	<0.416					1	mg/l	kg/d	<1		1
i. Phosphorus			X												
j. Radioactivity															
(1) Total Alpha			X	VALUE:		VALUE:		VALUE:					VALUE:		
(2) Total Beta			X	VALUE:		VALUE:		VALUE:					VALUE:		
(3) Total Radium			X	VALUE:		VALUE:		VALUE:					VALUE:		
(4) Radium 226			X	VALUE:		VALUE:		VALUE:					VALUE:		
k. Sulfate			X												
l. Sulfide			X												
m. Sulfite			X												
n. Surfactants			X												
o. Aluminum			X												
p. Barium			X												
q. Boron			X												
r. Cobalt			X												
s. Iron			X												
t. Magnesium			X												
u. Molybdenum			X												
v. Manganese			X												
w. Tin			X												
x. Titanium			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony			X												
2M. Arsenic			X												
3M. Beryllium			X												
4M. Cadmium			X												
5M. Chromium			X												
6M. Copper		X		17	1.42					1	ug/l	g/d	<5		1
7M. Lead			X												
8M. Mercury			X												
9M. Nickel			X												
10M. Selenium			X												
11M. Silver			X												
12M. Thallium			X												
13M. Zinc			X												
14M. Cyanide			X												
15M. Phenols			X												
DIOXIN															
2,3,7,8-tetrachlorodibenzo-P-dioxin			X	Describe Results:											

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein			X												
2V. Acrylonitrile			X												
3V. Benzene			X												
4V. Bis (Chloromethyl) Ether			X												
5V. Bromoform			X												
6V. Carbon Tetrachloride			X												
7V. Chlorobenzene			X												
8V. Chlorodibromomethane			X												
9V. Chloroethane			X												
10V. 2-Chloroethylvinyl Ether			X												
11V. Chloroform			X												
12V. Dichlorobromomethane			X												
13V. Dichlorodifluoromethane			X												
14V. 1,1-Dichloroethane			X												
15V. 1,2-Dichloroethane			X												
16V. 1,1-Dichloroethylene			X												
17V. 1,2-Dichloropropane			X												
18V. 1,3-Dichloropropylene			X												
19V. Ethylbenzene			X												
20V. Methyl Bromide			X												
21V. Methyl Chloride			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 005

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride			X												
23V. 1,1,2,2-Tetrachloroethane			X												
24V. Tetrachloroethylene			X												
25V. Toluene			X												
26V. 1,2-Trans Dichloroethylene			X												
27V. 1,1,1-trichloroethane			X												
28V. 1,1,2-trichloroethane			X												
29V. Trichloroethylene			X												
30V. Trichlorofluoromethane			X												
31V. Vinyl Chloride			X												
GC/MS FRACTION -- ACID COMPOUNDS															
1A. 2-Chlorophenol			X												
2A. 2,4-Dichlorophenol			X												
3A. 2,4-Dimethylphenol			X												
4A. 4,6-Dinitro-O-Cresol			X												
5A. 2,4-Dinitrophenol			X												
6A. 2-Nitrophenol			X												
7A. 4-Nitrophenol			X												
8A. P-Chloro-M-Cresol			X												
9A. Pentachlorophenol			X												
10A. Phenol			X												
11A. 2,4,6-Trichlorophenol			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 005

PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene			X												
2B. Acenaphtylene			X												
3B. Anthracene			X												
4B. Benzidine			X												
5B. Benzo(a)Anthracene			X												
6B. Benzo(a)Pyrene			X												
7B. 3,4-Benzofluoranthene			X												
8B. Benzo(ghi)perylene			X												
9B. Benzo(k)fluoranthene			X												
10B. Bis(2-chloroethoxy)methane			X												
11B. Bis(2-chloroethyl)ether			X												
12B. Bis(2-chloroisopropyl)ether			X												
13B. Bis(2-ethylhexyl)phthalate			X												
14B. 4-bromophenyl Phenyl Ether			X												
15B. Butyl Benzyl Phthalate			X												
16B. 2-Chloronaphthalene			X												
17B. 4-chlorophenyl Phenyl Ether			X												
18B. Chrysene			X												
19B. Dibenzo(a,h)anthracene			X												
20B. 1,2-dichlorobenzene			X												
21B. 1,3-dichlorobenzene			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-dichlorobenzene			X												
23B. 3,3-dichlorobenzidine			X												
24B. diethylphthalate			X												
25B. Dimethylphthalate			X												
26B. di-N-Butylphthalate			X												
27B. 2,4-Dinitrotoluene			X												
28B. 2,6-dinitrotoluene			X												
29B. di-N-Octyl Phthalate			X												
30B. 1,2-Diphenylhydrazine			X												
31B. Fluoranthene			X												
32B. Fluorene			X												
33B. Hexachlorobenzene			X												
34B. Hexachlorobutadiene			X												
35B. Hexachlorocyclopentadiene			X												
36B. Hexachloroethane			X												
37B. Indeno(1,2,3-cd)Pyrene			X												
38B. Isophorone			X												
39B. Naphthalene			X												
40B. Nitrobenzene			X												
41B. N-Nitrosodimethylamine			X												
42B. N-Nitrosodi-N-Propylamine			X												

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V. INTAKE AND EFFLUENT CHARACTERISTICS

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PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine			X												
44B. Phenanthrene			X												
45B. Pyrene			X												
46B. 1,2,4-trichlorobenzene			X												
GC/MS FRACTION -- PESTICIDES															
1P. Aldrin			X												
2P. a-BHC			X												
3P. b-BHC			X												
4P. g-BHC			X												
5P. d-BHC			X												
6P. Chlordane			X												
7P. 4,4-DDT			X												
8P. 4,4-DDE			X												
9P. 4,4-DDD			X												
10P. Dieldrin			X												
11P. a-Endosulfan			X												
12P. b-Endosulfan			X												
13P. Endosulfan sulfate			X												
14P. Endrin			X												
15P. Endrin Aldehyde			X												
16P. Heptachlor			X												

EPA I.D. NUMBER
VAD988204236

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 005

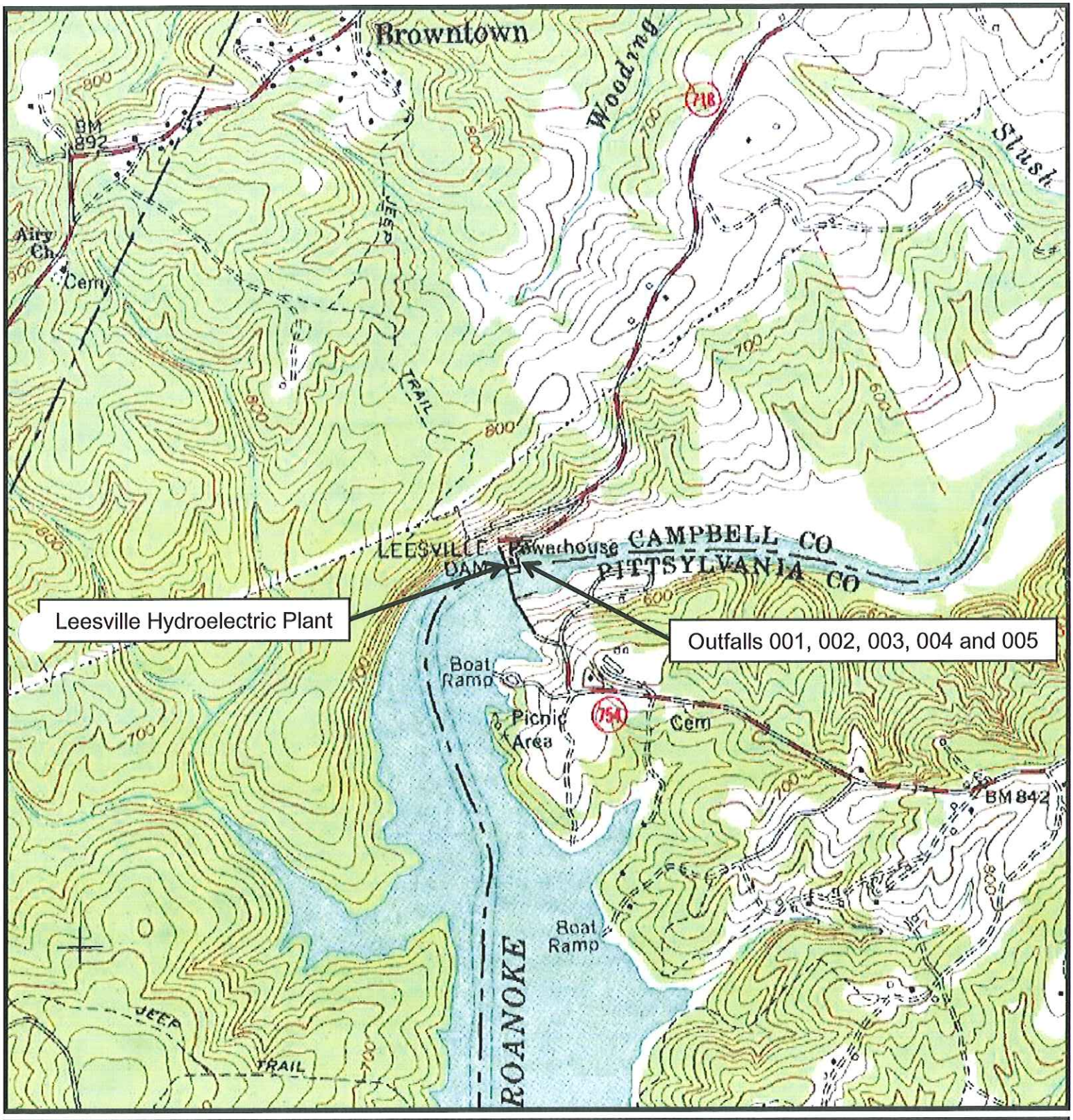
PART C (CONTINUED)

1. POLLUTANT	2. Mark 'X'			3. EFFLUENT							4. UNITS (specify if blank)		5. INTAKE (optional)		
	a. Testing Required	b. Believed Present	c. Believed Absent	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVRG. VALUE		d. No. of Analyses			a. LONG TERM AVRG. VALUE		d. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		a. Concentration	b. Mass	(1) Concentration	(2) Mass	
GC/MS FRACTION -- PESTICIDES (continued)															
17P. Heptachlor Epoxide			X												
18P. PCB-1242			X												
19P. PCB-1254			X												
20P. PCB-1221			X												
21P. PCB-1232			X												
22P. PCB-1248			X												
23P. PCB-1260			X												
24P. PCB-1016			X												
25P. Toxaphene			X												

Figure 1

USGS Site Location Map

Figure 1



Leesville, VA Quadrangle
USGS Topographic Map

11.12.08

0 ½ 1mi

Appalachian Power Company
Leesville Hydroelectric Plant
VPDES Permit VA0087106
USGS Site Topographic Map

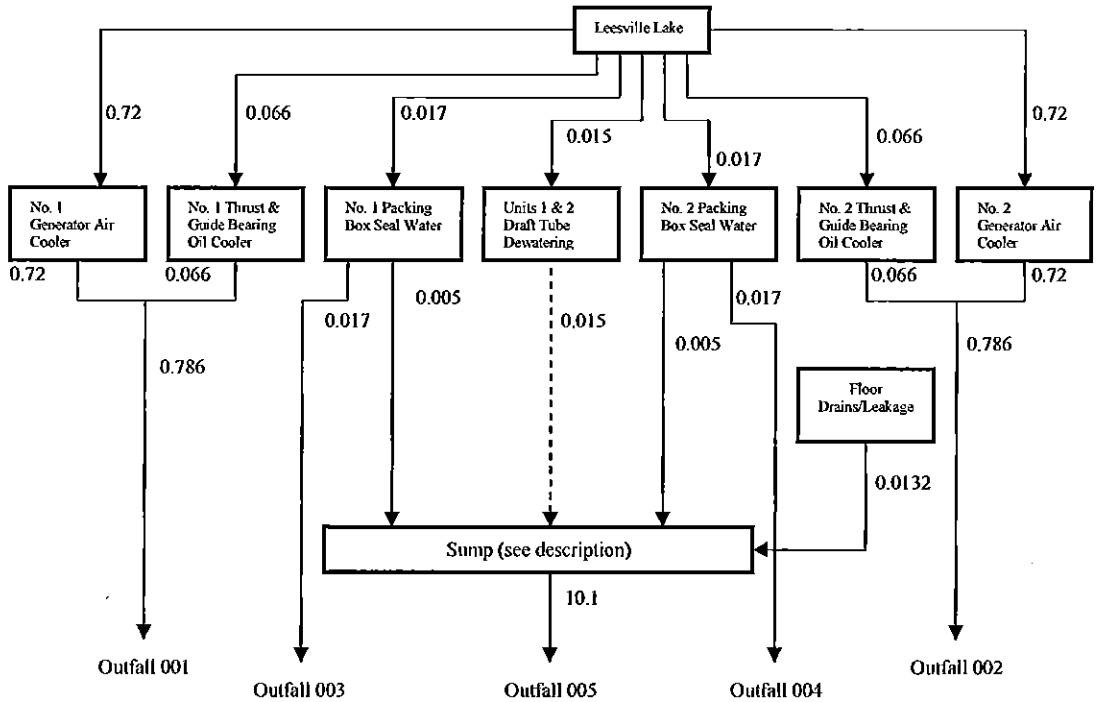
Plant Latitude 37° 05' 36"
Plant Longitude 79° 24' 09"

Figure 2

VPDES Water Balance Diagram

Figure 2

Leesville Hydroelectric Plant
VPDES Flow Diagram



Outfall #	Avg. Flow (MGD)	Max. Flow (MGD)	Receiving Water
001	0.495*	0.786	Roanoke River
002	0.461*	0.786	Roanoke River
003	0.012	0.017	Roanoke River
004	0.012	0.017	Roanoke River
005	0.039*	10.1	Roanoke River

*Long-term measured averages. All other values are calculated.

All Flows MGD
Date: 11/08

Appendix A

Notes

<u>Note 1:</u> ITEM II, A, B – DISCUSSION OF FLOW FIGURES FROM ITEM II-A (FLOW DIAGRAM) AND ITEM II-B (DESCRIPTION, TREATMENT, SOURCES, ETC.)

The generating scheme at this and other Company hydroelectric plants is determined by a number of factors, the most important of which are availability of water and the system availability of generating units. Therefore, a large number of variables directly impacting these two factors can affect the generating schedule, making it difficult to accurately predict the operating schedule, and thus the flow scheme for a hydroelectric unit based on historical records. Because of this, the average flow values included on Form 2C, Item II-B, Column 2b, under Sources, represent the flows that would be expected on any given day when all units are operating at full capacity. The use of flow data determined by any other method would restrict the Company's ability to operate the plant at full capacity, thereby derating the capacity of the plant. These figures do not represent maximum design flows, in that, such factors as redundancy and extraordinary operations were not used in the calculation of listed flows, as these are atypical of normal operation. As such, these flows represent the volume of water necessary to operate this plant under normal conditions at full capacity. The Company contends that figures based on any other method of calculation would be misleading and not in keeping with the intent of Form 2C. The flows ascribed to these outfalls were calculated using a combination of intake measurements and engineering estimates based on available system data, as described below.

The flow measurements for Outfalls 001 and 002 (generator air coolers/thrust bearing coolers) represent the maximum intake demands required by these systems for normal operation. The nature of the closed loop system precludes the possibility of the intrusion of water from outside sources or the escape of water by means other than the designated discharge. Consequently, it can be concluded that the measurement of water entering such a system is an accurate reflection of the quantity of water being discharged from the system.

Outfall 003 and 004 (packing box seal water) flows were also derived from intake flow measurements, since this water is also supplied and discharged by a closed system. These flows are representative of water discharged from the packing box at times when the unit is condensing (see Appendix B, Part I). When operating in this mode, the water injected into the packing box passes through the headcover, and is discharged through the turbine blades to the tailrace. There is no means of measuring flow at the discharge. When the unit is generating, this discharge is pumped to the sump and discharged through Outfall 005. The average flow was determined using a generation rate of 18 minutes per hour (Appendix B, Part II). Maximum flow was calculated based on the unit operating in the condensing mode on a 24-hour day basis.

Discharge measurements of Outfall 005 (plant sump) were calculated using a combination of run times measured by hour meters and the rated pump capacity

(1,000 gpm). Run times were measured over a 24-hour period, and then multiplied by pump capacity to arrive at the gallons per day discharged. No unusual circumstances existed during the measurement period, such that it may be concluded that this measurement is representative of the average sump discharge. Maximum flow was calculated by using the pump capabilities of the sump pump and two dewatering pumps (3,000 gpm each) operating continuously over 24 hours, and adding the volume of the packing water if the unit was generating continuously over the same period.

Note 2: STORMWATER

In addition to the outfalls listed in Parts 1A and 1B of this application, there are at this facility a number of pipes, culverts, etc. which carry uncontaminated stormwater collected from roof and deck drains, yard areas, employee parking lots, and other areas not directly associated with the production functions of the plant. The Company submits that these drains do not fit the definition of "discharges associated with industrial activities", therefore, should not be included in this permit. For this reason, these drains were not sampled during permit application preparation, and have not been specifically identified in this application.

Note 3: DRAFT TUBE DEWATERING

Annual equipment outages are normally scheduled at the Leesville Plant once per year per unit. During these outages, inspections are made of the draft tube water passages and the operating equipment for signs of deterioration or erosion. Performance of such inspections requires the removal of the water that is typically present in the penstock and draft tube areas. Dewatering is performed by closing the intake and exit gates that allow passage of water through the turbine when it is generating, and then pumping the remaining water trapped in the draft tubes to the plant sump (Outfall 005).

Two 3,000 gpm pumps are employed to transport the resulting water out of the sump to prevent an overflow situation. When dewatering begins, both pumps are put into service. As the amount of water entering the sump decreases, one of the pumps is shut off, allowing the second pump to complete the dewatering process. Once the level of the sump has returned to normal, regular daily operation is resumed as described in Appendix B, Part II.

The quantity of water held by the penstock and draft tube is approximately 15,000 gallons per unit; therefore, the retention time of this water in the sump subsequent to dewatering is negligible.

Note 4: ESTIMATION OF DATA IN PART V-A, B, AND C FOR OUTFALLS 003 AND 004

During generation, Outfalls 003 and 004 discharge through the turbine blades into

the tailrace. As a result, these discharge points are inaccessible for obtaining effluent samples. The packing box seal water contacts only the shaft and plastic packing. It does not come into contact with any other plant processes or process water. There is no reason to believe that any contaminants are present in these discharges other than those in the influent. Consequently, the estimates of chemical concentrations in Part V-A, B, and C are derived directly from concentrations found in the intake water when application sampling was performed.

Note 5: REQUEST FOR REDUCED MONITORING FREQUENCY

Under the present VPDES permit, the Company monitors Outfalls 001, 002, and 005 once per quarter. Data collected to date during the term of this permit are provided in Appendix D.

The Company submits that the temperature data for these three discharges demonstrate a contribution of negligible warming to the Roanoke River downstream of the facility, and have no reasonable potential to cause an exceedance of the Roanoke River temperature standard of 31 °C. The highest measured temperatures at Outfalls 001, 002, and 005 over the term of Leesville Hydro's present permit were 25.0, 24.4, and 23.4 °C, respectively. At the Roanoke River 7Q10 flow at the plant of 235 MGD, the combined maximum flow of 11.672 MGD would have to undergo a temperature rise of about 33 C° to produce a change of 0.1 C° in the ambient river temperature. The actual rise in temperature from the intake to outfall is on the order of 1-2 C° for each of these discharges. Based on this discussion, the Company requests that the monitoring frequency for Outfalls 001, 002, and 005 be reduced to once per year in the next permit.

Similarly, the pH monitoring data for Outfall 005 have demonstrated consistent compliance with the 6.0 – 9.0 s.u. acceptable range. The actual range measured in quarterly samples over the term of the present permit was 7.34 – 8.38 s.u. Note 6 of this appendix is a request to eliminate the pH monitoring requirement during the next permit term.

Note 6: REQUEST FOR ELIMINATION OF pH MONITORING ON OUTFALL 005

Part I.A of the VPDES permit for this facility includes a pH limit of 6.0 – 9.0 standard units on Outfall 005, with a monitoring frequency of once per quarter. The Company submits that the monitoring for pH on this discharge is no longer warranted, and we request that it be eliminated, for the following reasons:

- There are no chemical additives to the plant sump, the overflow from which comprises Outfall 005, nor to any of the sources to the sump.

- The sources to the plant sump are cooling water discharges, floor drains, and leakage. The configurations of the cooling systems are designed such that there is no reasonable potential that an equipment failure or leakage at the Leesville Plant would result in a change in pH of the cooling water.

- Since the permit's effective date (May 27, 1994), the discharge has had no violations of pH effluent limitations.

- Years of pH compliance data collected at similar sump discharges at the Company's other Virginia hydroelectric plants affirm that violations of pH water quality standards are not likely to occur from these discharges.

Note 7: SUPPLEMENTARY ADDENDUM ITEMS B.5 AND B.6

Because the facility is located at the Leesville Dam, where water levels are controlled by the Smith Mountain/Leesville pumped storage project, the historical 25-year and 100-year flood elevations relative to the facility elevation are meaningless. Operational estimates indicate that in the unlikely event of a 100-year flood combined with maximum operation of all five units at Smith Mountain Dam, the elevation of Leesville Lake could potentially reach 620 feet. The Leesville Dam elevation is 615 feet.

Appendix B

Outfall Descriptions

I. LIKE-OUTFALLS

The Leesville Hydroelectric Plant is made up of two 25 megawatt units that were placed into commercial service in 1964. The units are identical in both design and materials of construction. Neither of the units is run more often or more consistently than the other.

The number of discharges designated as outfalls for the purpose of this permit are the same for both Units 1 and 2. The quantity of water discharged from like systems serving an identical function for each unit should be very similar due to the common water source and unit design.

Consequently, the Company requests that, for the purposes of this permit, the following groups of outfalls be designated as like-outfalls.

Group 1: Generator Air Coolers/Thrust Bearing Oil Coolers

Designated as Outfalls 001 and 002 for Units 1 and 2, respectively, these discharges are comprised of non-contact cooling water used to dissipate the heat from the generator and the thrust and guide bearings. The discharges from these two systems on their respective units are combined and discharged through a single discharge pipe.

Group 2: Packing Box Seal Water

The packing box seal water is water that is pumped into the packing box to form a seal around the shaft, thus separating the dry side of the turbine from the turbine cavity. This water, pulled by means of the turbine's vacuum through the headcover and into the tailrace when the unit is condensing, provides lubrication between the packing and the turbine shaft. The discharge of this water into the tailrace has been designated Outfall 003 for Unit 1 and Outfall 004 for Unit 2. Analytical information for these outfalls was estimated directly from intake values (see Appendix A, Note 4).

II. FURTHER DESCRIPTION OF OUTFALLS

Outfalls 001 & 002: Combined Generator Coolers & Thrust Bearing Coolers

As the rotor of a hydroelectric generator turns and creates a current in the surrounding coils, waste heat is generated as a by-product. The generator coolers are situated on the side of the generator to absorb this waste heat and to maintain a cooler air temperature. The generator coolers are radiator-like devices made up of a series of small copper tubes. Service water taken from Leesville Lake is passed through these tubes and, as warm air from the generator passes across the outside surface of the tubes, heat is absorbed by the cooler water within.

The thrust bearings are located at the point where the turbine generator rests on its support structure, allowing for unencumbered rotation of the shaft. The purpose of the thrust bearing coolers is to lower elevated lubricating oil temperatures caused by friction between the thrust bearing and the spinning rotor. The transfer of heat is accomplished by passing the heated oil over a series of cooling coils containing non-contact cooling water from Leesville Lake.

Water leaving the generator coolers and thrust bearing coolers combines to form a single discharge from each unit. These discharge points are designated Outfalls 001 and 002, for Units 1 and 2, respectively.

Outfalls 003 & 004: Packing Box Seal Water

The packing box is a chamber surrounding the rotating turbine shaft that contains pliable sealing material to prevent the influx of water from the turbine pit to the headcover. Water is supplied to this box to both cool and lubricate the packing materials. The water is subsequently discharged from the unit in one of two ways, depending on the unit's mode of operation.

When a unit is condensing electricity, a vacuum is created within the unit by the pressure differential caused by the difference in forebay and tailrace elevations. This vacuum causes the packing box seal water to be sucked out of the unit through the small aperture between the packing box and the shaft, where it then enters the tailrace. These discharges are designated Outfalls 003 and 004 for Units 1 and 2, respectively.

When the unit is generating, the wicket gates that allow water to enter the turbine cavity are open; therefore, no vacuum exists. Consequently, the water being fed to the packing box must be pumped out of the headcover area to the sump. This water is combined with the other sump influents and discharged through Outfall 005.

Under normal conditions, the Leesville Plant operates one of the units to generate electricity for 18 minutes of every hour. The unit being operated is frequently switched to equalize the run times and prevent excessive wear on an individual unit.

Outfall 005: Sump

The sump at Leesville Hydro collects water from throughout the plant and discharges it to the tailrace through a single outlet pipe. Sources of influent to the sump include any water collected by the floor drain system, water removed from the draft tubes and penstocks when dewatered, and packing box seal water when the unit is condensing. In addition, forebay seepage collected from throughout the plant is directed to the sump.

Under normal conditions, water is discharged from the sump to the tailrace by a 1,000 gpm pump. Pump operation is automatically triggered by a float switch in the sump. Once per year the draft tubes and penstocks of each unit are dewatered to perform inspections and necessary maintenance (see Appendix A, Note 3). When dewatering the draft tubes on each unit, an additional 15,000 gallons of water is drained to the sump. At this time, two 3,000 gpm pumps are used to remove the influx of water. Because of its short retention time and infrequent occurrence, the dewatering process has little impact on the overall sump operation, and only a short term effect on effluent volume.

Appendix C

Request for 8-Hour Composite Sampling during Renewal

Request for 8-Hour Composite Sampling during Renewal

Per Item V.B (Sampling) of Form 2C Instructions (Page 2C-2), American Electric Power Service Corporation (AEPSC) requests a waiver to the 24-hour composite sampling requirement for BOD_5, Total Suspended Solids, Chemical Oxygen Demand, Total Organic Carbon, Ammonia, Total Recoverable Copper and Hardness (not a required parameter by Form 2C). Instead of 24-hour composite sampling and subsequent analysis for the aforementioned parameters, 8-hour composite sampling was conducted for the VPDES renewal sampling. Due to the inability to install an automatic sampler, logistics of sampling over a 24-hour period and nature of the discharges as discussed in Appendices A and B, it is believed an 8-hour composite would adequately characterize the effluent at Outfalls 001, 002 and 005. All sampling, preservation, hold-times and analyses were performed in accordance with 40CFR136. As a result, AEPSC respectfully requests that the 8-hour composite sampling be acceptable for this VPDES permit renewal application in lieu of 24-hour composite sampling. This is the same method accepted for permit renewal sampling at other Company hydroelectric facilities in Virginia.

Appendix D

Summary of Discharge Monitoring Reports

Summary of Discharge Monitoring Reports at Outfalls 001 and 002 from July 2004 through December 2008 Monitoring Periods

Summary of DMR Data Collected at Outfall 001

Monitoring Period	Flow (MGD)	Temperature (C°)
07/01/2004 - 09/30/2004	0.633	24.0
10/01/2004 - 12/31/2004	0.685	22.3
01/01/2005 - 03/31/2005	0.316	16.0
04/01/2005 - 06/30/2005	0.318	15.5
07/01/2005 - 09/30/2005	0.695	22.2
10/01/2005 - 12/31/2005	0.633	22.5
01/01/2006 - 03/31/2006	0.296	13.5
04/01/2006 - 06/30/2006	0.330	16.4
07/01/2006 - 09/30/2006	0.640	23.9
10/01/2006 - 12/31/2006	0.681	21.0
01/01/2007 - 03/31/2007	0.352	14.3
04/01/2007 - 06/30/2007	0.352	15.7
07/01/2007 - 09/30/2007	0.633	24.9
10/01/2007 - 12/31/2007	0.635	24.9
01/01/2008 - 03/31/2008	0.352	12.0
04/01/2008 - 06/30/2008	0.339	15
07/01/2008 - 09/30/2008	0.648	24
10/01/2008 - 12/31/2008	0.626	25

Summary of DMR Data Collected at Outfall 002

Monitoring Period	Flow (MGD)	Temperature (C°)
07/01/2004 - 09/30/2004	0.662	24.3
10/01/2004 - 12/31/2004	0.345	22.6
01/01/2005 - 03/31/2005	0.321	15.2
04/01/2005 - 06/30/2005	0.351	16.0
07/01/2005 - 09/30/2005	0.717	22.4
10/01/2005 - 12/31/2005	0.662	22.1
01/01/2006 - 03/31/2006	0.336	12.7
04/01/2006 - 06/30/2006	0.310	16.7
07/01/2006 - 09/30/2006	0.520	23.3
10/01/2006 - 12/31/2006	0.362	21.9
01/01/2007 - 03/31/2007	0.357	15.3
04/01/2007 - 06/30/2007	0.374	16.8
07/01/2007 - 09/30/2007	0.655	24.4
10/01/2007 - 12/31/2007	0.648	24.4
01/01/2008 - 03/31/2008	0.378	13.0
04/01/2008 - 06/30/2008	0.357	16
07/01/2008 - 09/30/2008	0.676	24
10/01/2008 - 12/31/2008	0.393	24

Summary of Discharge Monitoring Reports at Outfall 005 from July 2004 through December 2008 Monitoring Periods

Summary of DMR Data Collected at Outfall 005

Monitoring Period	Flow (MGD)	pH (SU)	Temperature (C°)
07/01/2004 - 09/30/2004	0.036	7.34	22.3
10/01/2004 - 12/31/2004	0.048	7.47	20.5
01/01/2005 - 03/31/2005	0.072	8.21	9.3
04/01/2005 - 06/30/2005	0.048	7.65	10.5
07/01/2005 - 09/30/2005	0.036	7.92	20.5
10/01/2005 - 12/31/2005	0.018	7.54	21.5
01/01/2006 - 03/31/2006	0.036	7.96	9.8
04/01/2006 - 06/30/2006	0.036	8.38	12.5
07/01/2006 - 09/30/2006	0.042	7.73	21.8
10/01/2006 - 12/31/2006	0.042	8.30	19.7
01/01/2007 - 03/31/2007	0.054	7.99	11.0
04/01/2007 - 06/30/2007	0.042	8.10	13.0
07/01/2007 - 09/30/2007	0.042	8.30	21.0
10/01/2007 - 12/31/2007	0.042	7.70	23.4
01/01/2008 - 03/31/2008	0.042	8.30	10.0
04/01/2008 - 06/30/2008	0.042	7.4	12
07/01/2008 - 09/30/2008	0.036	7.6	22
10/01/2008 - 12/31/2008	0.054	7.6	22