Union Electric

One Ameren Plaza
1901 Chouteau Avenue
PO Box 66149
St. Louis, MO 63166-6149
314.621.3222

October 27, 2000

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Gentlemen:

ULNRC-4333

DOCKET NUMBER 50-483
CALLAWAY PLANT
NPDES PERMIT RENEWAL APPLICATION

Please find enclosed the NPDES Permit Renewal Application for the Callaway Plant. This application is submitted in accordance with Callaway Plant Operating License NPF-30, Appendix B, Section 3.2.

Very truly yours,

A. C. Passwater
Manager, Corporate Nuclear Services

PMB/mlo
Attachment

C001

cc: M. H. Fletcher
Professional Nuclear Consulting, Inc.
19041 Raines Drive
Derwood, MD 20855-2432

Regional Administrator w/a
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Suite 400
Arlington, TX 76011-8064

Senior Resident Inspector w/a
Callaway Resident Office
U.S. Nuclear Regulatory Commission
8201 NRC Road
Steedman, MO 65077

Mr. Jack Donohew (2)- **OPEN BY ADDRESSEE ONLY** w/a
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
1 White Flint, North, Mail Stop OWFN 4D3
11555 Rockville Pike
Rockville, MD 20852-2738

Manager, Electric Department
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

Nuclear Energy Institute
1776 I Street N. W.
Suite 400
Washington, DC 20006-3708

Ameren Services
Environmental, Safety & Health
314.554.3652 (Phone)
314.554.4182 (Facsimile)
mfbollinger@ameren.com

One Ameren Plaza
1901 Chouteau Avenue
PO Box 66149
St. Louis, MO 63166-6149
314.621.3222

October 26, 2000

Mr. Richard J. Laux
Department of Natural Resources
Water Pollution Control Program
Permit Section
P. O. Box 176
Jefferson City, MO 65102-0176

Dear Mr. Laux:

Re: Callaway Plant NPDES Permit Renewal Application

In accordance with State and Federal regulations, enclosed is the renewal application for the AmerenUE Callaway Power Plant, MO-0098001. We believe the application is complete, with all required forms, signatures and drawings.

The application includes a set of Attachments. These provide additional details regarding information required in the application forms and contain a number of specific requests regarding permit conditions. We appreciate your consideration of these requests.

Please contact me if you have any questions.

Sincerely,

Michael F. Bollinger

Michael F. Bollinger
Consulting Environmental Scientist

bcc: C. A. Riggs
N. G. Slaten (9 copies)
MLM/JCP
MJS
WQ-3.1.1

CALLAWAY NPDES PERMIT REAPPLICATION

CONTENTS

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
WATER POLLUTION CONTROL PROGRAM
P. O. BOX 176, JEFFERSON CITY, MO 65102

FORM A -- APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY

APPLICATION NUMBER

DATE RECEIVED FEE SUBMITTED

NOTE PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1.00 This application is for:

- ☐ a construction permit
- ☐ an operating permit for a new or unpermitted facility
- ☒ an operating permit renewal: permit #MO0098001
- ☐ a site specific storm water permit

(See instructions for appropriate fee to be submitted with application.)

2.00 FACILITY

Name		Telephone Number	
AMERENUE CALLAWAY PLANT		573-676-8763	
Address	City	State	Zip
P.O. Box 620	Fulton	MO	65251

2.10 Is this a new facility constructed under a Missouri Construction Permit? ☐ YES ☒ NO

If YES, please provide Missouri Construction Permit Number:

3.00 OWNER

Name		Telephone Number	
Union Electric Company d/b/a AmerenUE		314-554-2637	
Address	City	State	Zip
P. O. Box 66149 (MC-602)	St. Louis	MO	63166-6149

4.00 OPERATING AUTHORITY: the legal name and address of the operating authority (person or company retained to oversee day-to-day business activities) if different from the owner. (If same, write same.)

Name		Telephone Number	
Union Electric Company d/b/a AmerenUE		314-554-2637	
Address	City	State	Zip
P.O.Box 66149 (MC-602)	St. Louis	MO	63166-6149

5.00 CONTINUING AUTHORITY

Name		Telephone Number	
Union Electric Company d/b/a AmerenUE		314-554-2637	
Address	City	State	Zip
P.O.Box 66149 (MC-602)	St. Louis	MO	63166-6149

6.00 FACILITY CONTACT

Name		Telephone Number	
Warren A. Witt, Manager - Callaway Plant		573-676-8763	
Address	City	State	Zip
P. O. Box 620	Fulton	MO	65251

7.00 ADDITIONAL FACILITY INFORMATION

7.10 Legal Description of Outfalls (Attach additional sheets if necessary)

See Attached Table

REISSUE

7.10 Legal Description of Outfalls						
001	NE ¼	NE ¼	Sec 14	T 46N	R 8W	Callaway County
002	NW ¼	NW ¼	Sec 13	T 46N	R 8W	Callaway County
003	SW ¼	SW ¼	Sec 13	T 46N	R 8W	Callaway County
007	SW ¼	SW ¼	Sec 13	T 46N	R 8W	Callaway County
009	NW ¼	NW ¼	Sec 5	T 45N	R 7W	Callaway County
010	SW ¼	SW ¼	Sec 12	T 46N	R 8W	Callaway County
011	NW ¼	SE ¼	Sec 12	T 46N	R 8W	Callaway County
012	NE ¼	SE ¼	Sec 14	T 46N	R 8W	Callaway County
013	NE ¼	SE ¼	Sec 14	T 46N	R 8W	Callaway County
014	NW ¼	SE ¼	Sec 11	T 46N	R 8W	Callaway County
015	SE ¼	NE ¼	Sec 11	T 46N	R 8W	Callaway County
016	NW ¼	NW ¼	Sec 13	T 46N	R 8W	Callaway County
017	SE ¼	NE ¼	Sec 14	T46N	R8W	Callaway County

NOTE: The location of Outfalls 001, 002, and 016 is described at the connection to the discharge line.

7.20	Primary Standard Industrial Classification (SIC) Code: 4911

8.00 ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION (Complete all forms that are applicable)

A. Is your facility a manufacturing, commercial, mining, or silviculture waste treatment facility?
☒ YES ☐ NO If YES, complete Form C.

B. Is your facility considered a "Primary Industry" under US EPA guidelines?
☒ YES ☐ NO If YES, complete Forms C and D.

C. Is application for storm water discharges only?
☐ YES ☒ NO If YES, complete US EPA Form 2F.

D. Attach a map showing all outfalls and the receiving stream at 1" = 2000' scale.

9.00 DOWNSTREAM LANDOWNER (PLEASE SHOW LOCATION ON MAP, SEE 8.00 D ABOVE.)

Name		Telephone Number	
Steven M. Garrett et al,parties to the Beneficiary Deed for Louis Garrett		314-423-3119	
Address	**City**	**State**	**Zip**
Steven Garrett	Portland	MO	65067
Doris K Pew, 821 McDonough	St. Charles	MO	63301-2938

10.00 I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

Name and Official Title (Type or Print)	Phone Number (Area Code & No.)
Garry L. Randolph, Senior Vice President & Chief Nuclear Officer	573-676-8245
Signature: Garry L Randolph	Date Signed: 10/24/2000

MO 780-1479 (9-97)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

HAVE YOU INCLUDED:

- ☐ Appropriate Fees?
- ☐ Map at 1" = 2000' scale?
- ☐ Signature?
- ☐ Form C, if applicable?
- ☐ Form D, if applicable?
- ☐ Form 2F, if applicable?

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
WATER POLLUTION CONTROL PROGRAM
P.O. BOX 176, JEFFERSON CITY, MO 65102-0176
FORM C -- APPLICATION FOR DISCHARGE PERMIT -- MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS

FOR AGENCY USE ONLY
APPLICATION NO.
MO -
DATE RECEIVED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

AmerenUE Callaway Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO-0098001

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MO CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST **4911**
B. SECOND
C. THIRD
D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION

OUTFALL	¼	¼	SEC	T	R	COUNTY
See Attached Table						

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL	RECEIVING WATER
001, 002, 003, 007, 009, 016	Missouri River
010, 011, 012, 013, 014, 015	Tributaries to the Missouri River

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Steam Electric Power Plant (Nuclear)

2.40

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, public sewers 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 Number	2. Operation(s) contributing flow		3. Treatment	
	a. Operation	b. Average flow MGD (maximum flow)	a. Description	b. List codes from Table A
001	**Radwaste Treatment System**	**0.082 (0.298)**	**Discharge***	**4A**
	Subsystems:			
	◆ Boron Recycle	0.0025		
	◆ Liquid Radwaste:	0.009		
	◆ Train A	0.003		
	◆ Train B	0.006		
	◆ Laundry/Hot Shower	0.0005		
	◆ Secondary Liquid Waste	0.070		
	◆ Condensate Regen.	0.050		
	◆ Floor Drains	0.020		
	◆ Steam Generator Blowdown	0**		
002	**Cooling Tower Blowdown**	**4.84 (14.40)**	**Discharge**	**4A**
003	**Water Treatment Plant Wastes**	**0.421 (1.645)***	**Sedimentation**	**1U**
			Discharge	**4A**
	Subsystems:		**Recycle**	**4C**
	◆ Clarifier Blowdown	**0.330**		
	◆ Carbon Filter Backwash	**0.030**		
	◆ Oily Waste System	**0.001**		
	◆ Demineralizer Systems		**Neutralization**	**2K**
	➢ Cation Regen.	**0.018**		
	➢ Anion Regen	**0.018**		
	➢ Mixed Bed Regen	**0.018**		
	➢ Building Sumps	**0.006**		

*** Treatment - Other wastewater treatment systems are used as required to treat this wastestream for recycle or discharge in compliance with NRC requirements and may be used to treat this discharge to meet NPDES permit limitations.**

**** Flow normally recycled**

NOTE: **Solid waste from the radwaste treatment system is disposed of in accordance with NRC regulations.**

*** These flows represent wastewater discharged to the treatment lagoon. Actual outfall discharge may vary from 0, with total recycle to the maximum listed above, with direct discharge.**

1. Outfall Number	2. Operation(s) contributing flow		3. Treatment	
	a. Operation	b. Average flow MGD (maximum flow)	a. Description	b. List codes from Table A
007	Sanitary Wastewater	0.027 (0.040)*	Stabilization Ponds (3) Wetlands Discharge Recycle	3G NA 4A 4C
* These flows represent wastewater discharged to the stabilization ponds. Actual outfall discharge may vary from 0 with total recycle to the maximum listed above, with direct discharge. The stabilization ponds are designed for significant accumulation of solids without need for routine removal and off-site disposal.				
009	Intake Electric Heaters	0 (0.006)	Neutralization Discharge	2K 4A
010	Storm Water Runoff	0.082 (14)	Sedimentation Discharge	1U 4A
011	Storm Water Runoff	0.36 (63)	Sedimentation Discharge	1U 4A
012	Storm Water Runoff	0.12 (15)	Sedimentation Discharge	1U 4A
013	Storm Water Runoff	0.032 (6.0)	Sedimentation Discharge	1U 4A
014	Storm Water Runoff	0.087 (15)	Sedimentation Discharge	1U 4A
015	Storm Water Runoff	0.050 (9.0)	Sedimentation Discharge	1U 4A
NOTE: Average flows for Storm Water Runoff outfalls are based on daily equivalent of average annual rainfall ($\approx$ 0.1 inch/day). Maximum flows are based on a 10-year 24-hour storm event (5.52 inches)				
016	Cooling Tower Bypass	3.32 (14.40)	Discharge	4A
017	Ultimate Heat Sink	0 (0)	No Discharge	NA

2.40 continued

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

☒ **YES** *(complete the following table)* ☐ **NO** *(go to Section 2.50)*

1. OUTFALL NUMBER	2. OPERATION(S) CONTRIBUTING FLOW	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in MGD)*		b. TOTAL VOLUME *(specify units)*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	
See Attachment C, Description of Intermittent Flows								

2.50 MAXIMUM PRODUCTION

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

☒ **YES** *(complete B)* ☐ **NO** *(go to Section 2.60)*

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

☐ **YES** *(complete C)* ☒ **NO** *(go to Section 2.60)*

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

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

2.60 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 3.00)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NUMBER	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL - You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may effect 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.**

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A & B. See instructions before proceeding - Complete one table for each outfall - Annotate the outfall number in the space provided. NOTE: Table 1 is included on separate sheets numbered 6 through 7.

C. Use the space below to list any of the pollutants listed in Table B 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
Other than trace concentrations which may be present in the raw water supply (the Missouri River), none of these pollutants are believed to be present in Outfall 003 or 007 effluent.			
Asbestos	**Asbestos cement board is used for cooling tower fill. Tower fill deterioration is minimized by controlling cooling tower chemistry.**		
Monoethylamine	**Used as a reagent in plant instrumentation. It would be released to Outfall 001.**		
Strontium, Zirconium	**Several isotopes of Strontium and Zirconium are produced in the reactor by fission and activation processes. Calculations indicate that trace quantities of these isotopes (approximately 1E-10 mg/day) may be released from Outfall 001.**		

3.10 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 purposes below)* ☐ **NO** *(go to 3.20)* ***None on Outfall 003***

Annual Whole Effluent Toxicity (WET) tests are conducted in accordance with permit conditions. The last test was conducted and a report issued in July 2000.

3.20 CONTRACT ANALYSIS INFORMATION

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

☒ **YES** *(list the name, address, and telephone number of and pollutants analyzed, by each such laboratory or firm below)*
☐ **NO** *(go to 3.30)*

A. Name	B. Address	C. Telephone (area code & No.)	D. Pollutants Analyzed
Severn-Trent Laboratories, Inc.	**13715 Rider Trail North Earth City, MO 63045**	314-298-8566	See Attachment E, NPDES Sampling & Analysis
Engineering Surveys and Services	1113 Fay Street Columbia, MO 65201	573-449-2646	

3.30 CERTIFICATION

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 individuals immediately responsible for obtaining the information, 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	B. Phone Number (area code & No.)
Garry L. Randolph, Senior Vice President and Chief Nuclear Officer	573-676-8245

C. Signature (see instructions)	D. Date Signed
Garry L Randolph	10/24/2000

Form C
TABLE I for 3.00 Item A & B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 001

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	20.6	16.3					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	9	7					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	12.1	9.58					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	3.7	2.9	11	7.7	6.4	3.3	1	mg/l	lbs/d			
e. Ammonia (as N)	3.69	2.92					1	mg/l	lbs/d			
f. Flow	VALUE 0.095		VALUE **0.084**		VALUE 0.061		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE **28**		VALUE		VALUE		1	°C		VALUE		
I. pH	MINIMUM **6.75**	MAXIMUM	MINIMUM **6.0**	MAXIMUM **9.0**			1	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)	X		<0.25	<0.20					1	mg/l	lbs/d			
b. Chlorine, Total Residual	X		<0.1	<0.08					1	mg/l	lbs/d			
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate - Nitrite (as N)	X		<0.02	<0.02					1	mg/l	lbs/d			

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		5.2	4.1					1	mg/l	lbs/d			
h. Oil and Grease	X		0.7	0.6	3	2.1	<0.7	<0.04	1	mg/l	lbs/d			
i. Phosphorus (as P) Total (7723-14-0)	X		<50	<0.04					1	ug/l	lbs/d			
j. Radioactivity														
(1) Alpha, Total	X		<20						1	pCi/l				
(2) Beta, Total	X		2500						1	pCi/l				
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO4) (14808-79-8)	X		300	238					1	mg/l	lbs/d			
l. Sulfide (as S)	X		<1	<0.8					1	mg/l	lbs/d			
m. Sulfite (as SO3) (14265-45-3)		X												
n. Surfactants	X		*											
o. Aluminum, Total (7429-90-5)	X		<200	<0.2					1	ug/l	lbs/d			
p. Barium, Total (7440-39-3)	X		<200	<0.2					1	ug/l	lbs/d			
q. Boron, Total (7440-42-8)	X		1.3	1.0					1	mg/l	lbs/d			
r. Cobalt, Total (7440-48-4)	X		<50	<0.04					1	ug/l	lbs/d			
s. Iron, Total (7439-89-6)	X		742	0.588					1	ug/l	lbs/d			
t. Magnesium, Total (7439-95-4)	X		<5	<4					2	mg/l	lbs/d			
u. Molybdenum, Total (7439-98-7)	X		<50	<0.04					1	ug/l	lbs/d			
v. Manganese, Total (7439-96-5)	X		<5	<0.004					1	ug/l	lbs/d			
w. Tin, Total (7440-31-5)	X		<100	<0.08					1	ug/l	lbs/d			
X/ Titanium Total (7440-32-6)	X		<50	<0.04					1	ug/l	lbs/d			

*** We were unable to locate a commercial laboratory equipped to analyze for surfactants in a radiologically contaminated sample. If surfactant data is considered essential, at DNR's request, we will attempt to arrange for a customized protocol. Note that testing conducted for the 1995 reapplication revealed no detectable surfactants (<0.025 mg/l).**

Form C
TABLE I for 3.00 Item A & B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)* — Outfall No. 002

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

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	1.87	67.0					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	48	1700					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	25	900					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	50	1800	58	3900	58	1900	1	mg/l	lbs/d			
e. Ammonia (as N)	65.6	2.35					1	ug/l	lbs/d			
f. Flow	VALUE 4.3		VALUE 5.4		VALUE 4.0		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE 27.2		VALUE		1	°C		VALUE		
h. Temperature (summer)	VALUE 33		VALUE 34.4		VALUE			°C		VALUE		
i. pH	MINIMUM 8.34	MAXIMUM 8.54	MINIMUM	MAXIMUM			8	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG VALUE (if available) (2) MASS	3. EFFLUENT d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO OF ANALYSES
a. Bromide (24959-67-9)	X		*											
b. Chlorine, Total Residual	X		0.092	3.3					1	mg/l	lbs/d			
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate - Nitrite (as N)	X		3.9	140					1	mg/l	lbs/d			

* Test parameter inadvertently omitted. At DNR's request, another sample can be collected and analyzed for Bromide.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		*											
h. Oil and Grease	X		1.72	61.7	2.5	110	1.1	37	1	mg/l	lbs/d			
i. Phosphorus (as P) Total (7723-14-0)	X		1.95	69.9					1	mg/l	lbs/d			
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO4) (14808-79-8)	X		1502	53,840					1	mg/l	lbs/d			
l. Sulfide (as S)		X												
m. Sulfite (as SO3) (14265-45-3)		X												
n. Surfactants	X		0.097	3.5					1	mg/l	lbs/d			
o. Aluminum, Total (7429-90-5)	X		2.44	87.5					1	mg/l	lbs/d			
p. Barium, Total (7440-39-3)	X		448	16.1					1	ug/l	lbs/d			
q. Boron, Total (7440-42-8)	X		10.5	376					1	mg/l	lbs/d			
r. Cobalt, Total (7440-48-4)	X		<50	<2					1	ug/l	lbs/d			
s. Iron, Total (7439-89-6)	X		2.02	72.4					1	mg/l	lbs/d			
t. Magnesium, Total (7439-95-4)	X		97.3	3490					1	mg/l	lbs/d			
u. Molybdenum, Total (7439-98-7)	X		<50	<2					1	ug/l	lbs/d			
v. Manganese, Total (7439-96-5)	X		93.6	3.36					1	ug/l	lbs/d			
w. Tin, Total (7440-31-5)	X		<100	<4					1	ug/l	lbs/d			
X. Titanium, Total (7440-32-6)	X		<50	<2					1	ug/l	lbs/d			

* Test parameter inadvertently omitted. At DNR's request, another sample can be collected and analyzed for Nitrogen, Total Organic (as N).

Form C
TABLE I for 3.00 Item A & B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 003

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	8.6	30					1	mg/l	lbs/d	2.2	7.7	1
b. Chemical Oxygen Demand (COD)	42	150					1	mg/l	lbs/d	<5	<20	1
c. Total Organic Carbon (TOC)	20.6	72.3					1	mg/l	lbs/d	6.2	22	1
d. Total Suspended Solids (TSS)	33	116					1	mg/l	lbs/d	31	110	1
e. Ammonia (as N)	50.1	0.176					1	ug/l	lbs/d	<50	<0.2	1
f. Flow	VALUE NA		VALUE NA		VALUE					VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 28.2		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 7.92	MAXIMUM 8.66	MINIMUM	MAXIMUM			8	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)	X		<0.25	<0.88					1	mg/l	lbs/d	0.3	1	1
b. Chlorine, Total Residual	X		0.48	1.7					1	mg/l	lbs/d			
c. Color		X												
d. Fecal Coliform	X		50	-----					1	#/100 ml	-----			
e. Fluoride (16984-48-8)		X												
f. Nitrate - Nitrite (as N)	X		<0.02	<0.07					1	mg/l	lbs/d	0.11	0.39	1

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease	X		0.7	2					1	mg/l	lbs/d	0.5	2	1
i. Phosphorus (as P) Total (7723-14-0)	X		527	1.85					1	ug/l	lbs/d	184	0.646	1
j. Radioactivity														
(1) Alpha, Total		X									pCi/l	<70		1
(2) Beta, Total		X									pCi/l	593		1
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO4) (14808-79-8)	X		460	1600					1	mg/l	lbs/d	312	1100	1
l. Sulfide (as S)		X												
m. Sulfite (as SO3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)	X		895	3.14					1	ug/l	lbs/d	879	3.08	1
p. Barium, Total (7440-39-3)	X		<200	<0.7					1	ug/l	lbs/d	<200	<0.7	1
q. Boron, Total (7440-42-8)	X		8.4	29					1	mg/l	lbs/d	2.3	8.1	1
r. Cobalt, Total (7440-48-4)	X		<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
s. Iron, Total (7439-89-6)	X		1000	3.5					1	ug/l	lbs/d	765	2.68	1
t. Magnesium, Total (7439-95-4)	X		31	110					1	mg/l	lbs/d	23.4	82.1	1
u. Molybdenum, Total (7439-98-7)	X		<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
v. Manganese, Total (7439-96-5)	X		1.26	4.42					1	mg/l	lbs/d	0.099	0.35	1
w. Tin, Total (7440-31-5)	X		<100	<0.4					1	ug/l	lbs/d	<100	<0.4	1
x. Titanium, Total (7440-32-6)	X													

Form C
TABLE I for 3.00 Item A & B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 007

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	12.4	0.331	17	8.9	8.3	1.6	1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	77	2.0					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	6.6	0.18					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	22	0.59	37	19	13	2.5	1	mg/l	lbs/d			
e. Ammonia (as N)	119	0.00317					1	ug/l	lbs/d			
f. Flow	VALUE 0.0032		VALUE 0.063		VALUE 0.023		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 26		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 7.31	MAXIMUM	MINIMUM 7.24	MAXIMUM 8.1			1	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform	X		20						1	#/100 ml				
e. Fluoride (16984-48-8)		X												
f. Nitrate - Nitrite (as N)	X		<0.02	<0.0005					1	mg/l	lbs/d			

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		*											
h. Oil and Grease	X		4.6	0.12					1	mg/l	lbs/d			
i. Phosphorus (as P) Total (7723-14-0)	X		1.27	0.0339					1	mg/l	lbs/d			
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total	X		249						1	pCi/l				
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO4) (14808-79-8)	X		<0.1	<0.03					1	mg/l	lbs/d			
l. Sulfide (as S)		X												
m. Sulfite (as SO3) (14265-45-3)		X												
n. Surfactants	X		0.11	0.0029					1	mg/l	lbs/d			
o. Aluminum, Total (7429-90-5)	X		<200	<0.005					1	ug/l	lbs/d			
p. Barium, Total (7440-39-3)	X		330	0.0088					1	ug/l	lbs/d			
q. Boron, Total (7440-42-8)	X		4.6	0.12					1	mg/l	lbs/d			
r. Cobalt, Total (7440-48-4)	X		<50	<0.001						ug/l	lbs/d			
s. Iron, Total (7439-89-6)	X		1.01	0.0269					1	mg/l	lbs/d			
t. Magnesium, Total (7439-95-4)	X		22.7	0.606					1	mg/l	lbs/d			
u. Molybdenum, Total (7439-98-7)	X		<50	<0.001					1	ug/l	lbs/d			
v. Manganese, Total (7439-96-5)	X		1.94	0.05					1	mg/l	lbs/d			
w. Tin, Total (7440-31-5)	X		<100	<0.003					1	ug/l	lbs/d			
x. Titanium, Total (7440-32-6)		X												

***Test parameter inadvertently omitted. At DNR's request, another sample can be collected and analyzed for Nitrogen, Total Organic (as N).**

Form C
TABLE I for 3.00 Item A & B

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 010

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	2.81	10.2					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	17	62					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	9.6	35					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	5	20	53	40	22	7.0	1	mg/l	lbs/d			
e. Ammonia (as N)	<0.05	<0.2					1	mg/l	lbs/d			
f. Flow	VALUE 0.435		VALUE 0.09		VALUE 0.038		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 19		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 8.68	MAXIMUM	MINIMUM 8.1	MAXIMUM 9.1			1	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate - Nitrite (as N)														

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 011

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	3	40					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	67	980					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	12.96	190					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	14.4	211	230	790	52	83	1	mg/l	lbs/d			
e. Ammonia (as N)	<0.05	<0.7					1	mg/l	lbs/d			
f. Flow	VALUE 1.76		VALUE 0.414		VALUE 0.191		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 30		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 8.66	MAXIMUM	MINIMUM 7.5	MAXIMUM 8.1			1	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate - Nitrite (as N)														

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 012

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	5.57	7.15					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	35	45					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	13	17					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	87	110	55	15	34	5.4	1	mg/l	lbs/d			
e. Ammonia (as N)	0.228	0.293					1	mg/l	lbs/d			
f. Flow	VALUE 0.154		VALUE 0.032		VALUE 0.019		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 21		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 7.89	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate - Nitrite (as N)														

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 013

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	3.8	4.9					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	61	79					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	9.36	12.1					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	70.8	91.5	208	64.2	102	12.8	1	mg/l	lbs/d			
e. Ammonia (as N)	0.118	0.152					1	mg/l	lbs/d			
f. Flow	VALUE 0.155		VALUE 0.037		VALUE 0.015		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 31		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 7.98	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate - Nitrite (as N)														

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 014

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	2	10					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	44	230					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	12.2	64.0					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	14	73	386	483	96	68	1	mg/l	lbs/d			
e. Ammonia (as N)	<0.05	<0.3					1	mg/l	lbs/d			
f. Flow	VALUE 0.629		VALUE 0.150		VALUE 0.085		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 32		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 8.53	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate - Nitrite (as N)														

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 015

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

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS (specify if blank) b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	5.3	57					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	43	470					1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	15.9	172					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	32.3	350	32	16	18	3.9	1	mg/l	lbs/d			
e. Ammonia (as N)	<0.05	<0.5					1	mg/l	lbs/d			
f. Flow	VALUE 1.3		VALUE 0.060		VALUE 0.025		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 21		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 9.83	MAXIMUM	MINIMUM 8.1	MAXIMUM 9.8				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG VALUE (if available) (2) MASS	3. EFFLUENT d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO OF ANALYSES
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate - Nitrite (as N)														

INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form C)*

Outfall No. 016

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

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	1.33	13.3					1	mg/l	lbs/d			
b. Chemical Oxygen Demand (COD)	25	250	19	250	11	110	1	mg/l	lbs/d			
c. Total Organic Carbon (TOC)	7.1	71					1	mg/l	lbs/d			
d. Total Suspended Solids (TSS)	7	70					1	mg/l	lbs/d			
e. Ammonia (as N)	<50	<0.5					1	ug/l	lbs/d			
f. Flow	VALUE 1.2		VALUE 1.6		VALUE 1.24		1	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE 28.3		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 8.22	MAXIMUM 8.33	MINIMUM 7.7	MAXIMUM 8.2			8	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)	X		<0.25	<2.5					1	mg/l	lbs.d			
b. Chlorine, Total Residual	X		0.039	0.39					1	mg/l	lbs.d			
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate - Nitrite (as N)	X		0.68	6.8					1	mg/l	lbs/d			

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		*											
h. Oil and Grease	X		0.7	7	10.3	137	2.7	28	1	mg/l	lbs/d			
i. Phosphorus (as P) Total (7723-14-0)	X		191	1.91					1	ug/l	lbs/d			
j. Radioactivity														
(1) Alpha, Total	X		<26						1	pCi/l				
(2) Beta, Total	X		345						1	pCi/l				
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO4) (14808-79-8)	X		240	2400					1	mg/l	lbs/d			
l. Sulfide (as S)		X												
m. Sulfite (as SO3) (14265-45-3)		X												
n. Surfactants	X		<0.1	<1					1	mg/l	lbs/d			
o. Aluminum, Total (7429-90-5)	X		549	5.49					1	ug/l	lbs/d			
p. Barium, Total (7440-39-3)	X		<200	<2					1	ug/l	lbs/d			
q. Boron, Total (7440-42-8)	X		8.6	86					1	mg/l	lbs/d			
r. Cobalt, Total (7440-48-4)	X		<50	<0.5						ug/l	lbs/d			
s. Iron, Total (7439-89-6)	X		547	5.47					1	mg/l	lbs/d			
t. Magnesium, Total (7439-95-4)	X		23.5	235					1	mg/l	lbs/d			
u. Molybdenum, Total (7439-98-7)	X		<50	<0.5					1	ug/l	lbs/d			
v. Manganese, Total (7439-96-5)	X		39.3	0.393					1	mg/l	lbs/d			
w. Tin, Total (7440-31-5)	X		<100	<1					1	ug/l	lbs/d			
x. Titanium, Total (7440-32-6)	X		<50	<0.5					1	ug/l	lbs/d			

*Test parameter inadvertently omitted. At DNR's request, another sample can be collected and analyzed for Nitrogen, Total Organic (as N).

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
WATER POLLUTION CONTROL PROGRAM
P.O. BOX 176, JEFFERSON CITY, MO 65102-0176

FORM D -- APPLICATION FOR DISCHARGE PERMIT -- PRIMARY INDUSTRIES

FOR AGENCY USE ONLY
APPLICATION NO. MO -
DATE RECEIVED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

AmerenUE Callaway Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO-0098001

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MO CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Primary Indusstries listed below:

INDUSTRY CATEGORY

Adhesives and sealants	Ore mining
Aluminum forming	Organic chemicals manufacturing
Auto and other laundries	Paint and ink formulation
Battery manufacturing	pesticides
Coal mining	Petroleum refining
Coil coating	Pharmaceutical preparations
Copper forming	Photographic equipment and supplies
Electric and electronic compounds	Plastic and synthetic materials manufacturing
Electroplating	Plastic processing
Explosives manufacturing	Porcelain enameling
Foundries	Printing and publishing
Gum and wood chemicals	Pulp and paperboard mills
Inorganic chemicals manufacturing	Rubber processing
Iron and steel manufacturing	Soap and detergent manufacturing
Leather tanning and finishing	Steam electric power plants
Mechanical products manufacturing	Textile mills
Nonferrous metals manufacturing	Timber products processing

APPLICATION FOR DISCHARGE PERMIT

Form D - Primary Industries

Table II

NPDES # MO-0098001	OUTFALL # 001

1.30If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT						d. NO OF ANALYSES	4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M, Antimony, Total (7440-36-0)	X			<10	<0.008					1	ug/l	lbs/d			
2M, Arsenic, Total (7440-38-2)	X			<10	<0.008					1	ug/l	lbs/d			
3M, Beryllium, Total (7440-41-7)	X			<5	<0.004					1	ug/l	lbs/d			
4M, Cadmium, Total (7440-43-9)	X			<5	<0.004					1	ug/l	lbs/d			
5M, Chromium, Total (7440-47-3)	X			<10	<0.008					1	ug/l	lbs/d			
6M, Copper, Total (7550-50-8)	X			60	0.05					1	ug/l	lbs/d			
7M, Lead, Total (7439-97-6)	X			<3	<0.002					1	ug/l	lbs/d			
8M, Mercury, Total (7439-97-6)	X			<0.2	<0.0002					1	ug/l	lbs/d			
9M, Nickel, Total (7440-02-0)	X			<40	<0.03					1	ug/l	lbs/d			
10M, Selenium, Total (7782-49-2)	X			<5	<0.004					1	ug/l	lbs/d			
11M, Silver, Total (7440-22-4)	X			<10	<0.008					1	ug/l	lbs/d			
12M, Thallium, Total (7740-28-0)	X			<10	<0.008					1	ug/l	lbs/d			
13M, Zinc, Total (7440-66-6)	X			22.1	0.0175					1	ug/l	lbs/d			
14M, Cyanide, Total (57-12-5)	X			<5	<0.004					1	ug/l	lbs/d			
15M, Phenols, Total	X			<50	<0.04					1	ug/l	lbs/d			
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS:											

NPDES # MO-0098001 | OUTFALL # 001

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V, Acrolein (107-02-08)	X			<100	<0.08					1	ug/l	lbs/d			
2V, Acrylonitrite (107-13-1)	X			<5	<0.004					1	ug/l	lbs/d			
3V, Benzene (71-43-2)	X			<5	<0.004					1	ug/l	lbs/d			
4V, Bis(*Chloromethyl*) Ether (542-88-1)				*											
5V, Bromoform (75-25-2)	X			<5	<0.004					1	ug/l	lbs/d			
6V, Carbon Tetrachloride (56-23-5)	X			<5	<0.004					1	ug/l	lbs/d			
7V, Chlorobenzene (108-90-7)	X			<5	<0.004					1	ug/l	lbs/d			
8V, Chlorodibromomethane (124-48-1)	X			<5	<0.004					1	ug/l	lbs/d			
9V, Chloroethane (75-00-3)	X			11	0.009					1	ug/l	lbs/d			
10V, 2-Chloroethylvinyl Ether (110-75-8)	X			<50	<0.004					1	ug/l	lbs/d			
11V, Chloroform (67-66-3)	X			<5	<0.004					1	ug/l	lbs/d			
12V, Dichlorobromo-methane (75-27-4)	X			<5	<0.004					1	ug/l	lbs/d			
13V, Dichlorodifluoro-methane (75-71-8)				*											
14V, 1,1-Dichloroethane (75-34-3)	X			<5	<0.004					1	ug/l	lbs/d			
15V, 1,2-Dichloroethane (107-06-2)	X			<5	<0.004					1	ug/l	lbs/d			
16V, 1,1-Dichloroethylene (75-35-4)	X			<5	<0.004					1	ug/l	lbs/d			
17V, 1,2-Dichloropropane (78-87-5)	X			<5	<0.004					1	ug/l	lbs/d			
18V, 1,2-Dichloropropylene (542-75-6) **	X			<5	<0.004					1	ug/l	lbs/d			
19V, Ethylbenzene (100-41-4)	X			<5	<0.004					1	ug/l	lbs/d			
20V,Methyl Bromide (74-83-9)	X			<10	<0.008					1	ug/l	lbs/d			
21V, Methyl Chloride (74-87-3)	X			<10	<0.008					1	ug/l	lbs/d			

* These parameters deleted per 40 CFR, Part 122, Appendix D.

** This parameter is 1,3 Dichloropropylene per 40 CFR, Part 122, Appendix D.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V, METHYLENE Chloride (75-09-2)	X			<5	<0.004					1	ug/l	lbs/d			
23V, 1,1,2,2-Tetra-chloroethane (79-34-5)	X			<5	<0.004					1	ug/l	lbs/d			
24V, Tetrachloro-ethylene (127-18-4)	X			<5	<0.004					1	ug/l	lbs/d			
25V, Toluene (108-88-3)	X			<5	<0.004					1	ug/l	lbs/d			
26V, 1,2-Trans-Dichloroethylene (156-60-5)	X			<5	<0.004					1	ug/l	lbs/d			
27V, 1,1,1-Trichloroethane (71-55-6)	X			<5	<0.004					1	ug/l	lbs/d			
28V, 1,1,2-Trichloroethene (79-00-5)	X			<5	<0.004					1	ug/l	lbs/d			
29V, Trichloroethylene (79-01-6)	X			<5	<0.004					1	ug/l	lbs/d			
30V, Trichloro-fluoromethane (75-69-4)				*											
31V, Vinyl Chloride (75-01-4)	X			<10	<0.008					1	ug/l	lbs/d			
GC/MS FRACTION - ACID COMPOUNDS															
1A, 2-Chlorophenol (95-57-8)	X			<10	<0.008					1	ug/l	lbs/d			
2A, 2,4-Dichlorophenol (120-83-2)	X			<10	<0.008					1	ug/l	lbs/d			
3A, 2,4-Dimethyl-phenol (105-67-9)	X			<10	<0.008					1	ug/l	lbs/d			
4A, 4,6-Dinitro-0-Cresol (534-52-1)	X			<50	<0.04					1	ug/l	lbs/d			
5A, 2,4-Dinitrophenol (51-28-5)	X			<50	<0.04					1	ug/l	lbs/d			
6A, 2-Nitrophenol (88-75-5)	X			<10	<0.008					1	ug/l	lbs/d			
7A, 4-Nitrophenol (100-02-7)	X			<50	<0.04					1	ug/l	lbs/d			
8A, P-Chloro-M-Cresol (59-50-7)	X			<10	<0.008					1	ug/l	lbs/d			
9A, Pentachlorophenol (87-86-5)	X			<50	<0.04					1	ug/l	lbs/d			
10A, Phenol (108-95-2)	X			<10	<0.008					1	ug/l	lbs/d			
11A, 2,4,6-Tri-chlorophenol (88-06-2)	X			<10	<0.008					1	ug/l	lbs/d			

* This parameter deleted per 40 CFR, Part 122,Appendix D.

Outfall 001

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B, Acenaphthene (83-32-9)			X												
2B, Acenaphtylene (208-96-8)			X												
3B, Anthracene (120-12-7)			X												
4B, Benzidine (92-87-5)			X												
5B, Benzo(a) Anthracene (56-55-3)			X												
6B, Benzo(a) Pyrene (50-32-8)			X												
7B, 3,4-Benzofluoranthene (205-99-2)			X												
8B, Benzo (ghi) Perylene (191-24-2)			X												
9B, Benzo(k) Fluoranthene (207-08-9)			X												
10B, Bis(2-Chloroethoxy) Methane (111-91-1)			X												
11B, Bis(2-Chloroethyl) Ether (111-44-4)			X												
12B, Bis(2-Chloroisopropyl) Ether (108-60-1)			X												
13B, Bis(2-Ethylhexyl) Phthalate (117-81-7)			X												
14B, 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B, Butyl Benzyl Phthalate (85-68-7)			X												
16B, 2-Chloronaphthalene (91-58-7)			X												
17B, 4-Chlorophenyl Phenyl Ether (7005-72-3)			X												
18B, Chrysene (218-01-9)			X												
19B, Dibenzo(a,h) Anthracene (53-70-3)			X												
20B, 1,2-Dichlorobenzene (95-50-1)			X												
21B, 1,3-Dichlorobenzene (541-73-1)			X												

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT						d. NO OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS *(continued)*															
22B, 1,4-Dichlorobenzene (106-46-7)			X												
23B, 3,3-Dichlorobenzidine (91-94-1)			X												
24B, Diethyl Phthalate (84-66-2)			X												
25B, Dimethyl Phthalate (131-11-3)			X												
26B, Di-N-Butyl Phthalate (84-74-2)			X												
27B, 2,4-Dinitrotoluene (121-14-2)			X												
28B, 2,6-Dinitrotoluene (606-20-2)			X												
29B, Di-N-Octyl Phthalate (117-84-0)			X												
30B, 1,2-Diphenyl-hydrazine (as Azobenzene)(122-66-7)			X												
31B, Fluoranthene (206-44-0)			X												
32B, Fluorene (86-73-7)			X												
33B, Hexachlorobenzene (118-74-1)			X												
34B, Hexachlorobutadiene (87-68-3)			X												
35B, Hexachloro-cyclopentadiene (77-47-4)			X												
36B, Hexachloroethane (67-72-1)			X												
37B, Indeno (123 c-d) Pyrene (193-39-5)			X												
38B, Isophorone (78-59-1)			X												
39B, Naphthalene (91-20-3)			X												
40B, Nitrobenzene (98-95-3)			X												
41B, N-Nitro-sodimethylamine (62-75-9)			X												
42B, N-Nitrosodi-N-Propylamine (621-64-7)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT						d. NO OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B, N-Nitro-sodiphenylamine (86-30-6)			X												
44B, Phenanthrene (85-01-8)			X												
45B, Pyrene (129-00-0)			X												
46B, 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P, Aldrin (309-00-2)			X												
2P, "-BHC (319-84-6)			X												
3P, $-BHC (319-85-7)			X												
4P, (-BHC (58-89-9)			X												
5P, *-BHC (319-86-8)			X												
6P, Chlordane (57-74-9)			X												
7P, 4,4'-DDT (50-29-3)			X												
8P, 4,4'-DDE (72-55-9)			X												
9P, 4,4'-DDD (72-54-8)			X												
10P, Dieldrin (60-57-1)			X												
11P, "-Endosulfan (115-29-7)			X												
12P, $-Endosulfan (115-29-7)			X												
13P, Endosulfan Sulfate (1031-07-8)			X												
14P, Endrin (72-20-8)			X												
15P, Endrin Aldehyde (7421-93-4)			X												
16P, Heptachlor (76-44-8)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P, Heptachlor Epoxide (1024-57-3)			X												
18P, PCB-1242 (53469-21-9)			X												
19P, PCB-1254 (11097-69-1)			X												
20P, PCB-1221 (11104-28-2)			X												
21P, PCB-1232 (11141-16-5)			X												
22P, PCB-1248 (12672-29-6)			X												
23P, PCB-1260 (11096-82-5)			X												
24P, PCB-1016 (12674-11-2)			X												
25P, Toxaphene (8001-35-2)			X												

APPLICATION FOR DISCHARGE PERMIT

Form D - Primary Industries

Table II

NPDES # MO-0098001	OUTFALL # 002

1.30If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M, Antimony, Total (7440-36-0)			X												
2M, Arsenic, Total (7440-38-2)		X		15.5	0.556					1	ug/l	lbs/d			
3M, Beryllium, Total (7440-41-7)			X												
4M, Cadmium, Total (7440-43-9)			X												
5M, Chromium, Total (7440-47-3)			X												
6M, Copper, Total (7550-50-8)			X	<25	<0.90					1	ug/l	lbs/d			
7M, Lead, Total (7439-97-6)			X												
8M, Mercury, Total (7439-97-6)			X												
9M, Nickel, Total (7440-02-0)			X	<40	<1.4					1	ug/l	lbs/d			
10M, Selenium, Total (7782-49-2)		X		12.8	0.459					1	ug/l	lbs/d			
11M, Silver, Total (7440-22-4)			X												
12M, Thallium, Total (7740-28-0)			X												
13M, Zinc, Total (7440-66-6)		X		24.5	0.878					1	ug/l	lbs/d			
14M, Cyanide, Total (57-12-5)			X												
15M, Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS:											

NPDES # MO-0098001	OUTFALL # 002

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V, Acrolein (107-02-08)			X												
2V, Acrylonitrite (107-13-1)			X												
3V, Benzene (71-43-2)			X												
4V, Bis(*Chloromethyl*) Ether (542-88-1)			X												
5V, Bromoform (75-25-2)			X												
6V, Carbon Tetrachloride (56-23-5)			X												
7V, Chlorobenzene (108-90-7)			X												
8V, Chlorodibromomethane (124-48-1)			X												
9V, Chloroethane (75-00-3)			X												
10V, 2-Chloroethylvinyl Ether (110-75-8)			X												
11V, Chloroform (67-66-3)			X												
12V, Dichlorobromo-methane (75-27-4)			X												
13V, Dichlorodifluoro-methane (75-71-8)			X												
14V, 1,1-Dichloroethane (75-34-3)			X												
15V, 1,2-Dichloroethane (107-06-2)			X												
16V, 1,1-Dichloroethylene (75-35-4)			X												
17V, 1,2-Dichloropropane (78-87-5)			X												
18V, 1,2-Dichloropropylene (542-75-6)			X												
19V, Ethylbenzene (100-41-4)			X												
20V,Methyl Bromide (74-83-9)			X												
21V, Methyl Chloride (74-87-3)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V, METHYLENE Chloride (75-09-2)			X												
23V, 1,1,2,2-Tetra-chloroethane (79-34-5)			X												
24V, Tetrachloro-ethylene (127-18-4)			X												
25V, Toluene (108-88-3)			X												
26V, 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V, 1,1,1-Trichloroethane (71-55-6)			X												
28V, 1,1,2-Trichloroethene (79-00-5)			X												
29V, Trichloroethylene (79-01-6)			X												
30V, Trichloro-fluoromethane (75-69-4)			X												
31V, Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A, 2-Chlorophenol (95-57-8)			X												
2A, 2,4-Dichlorophenol (120-83-2)			X												
3A, 2,4-Dimethyl-phenol (105-67-9)			X												
4A, 4,6-Dinitro-0-Cresol (534-52-1)			X												
5A, 2,4-Dinitrophenol (51-28-5)			X												
6A, 2-Nitrophenol (88-75-5)			X												
7A, 4-Nitrophenol (100-02-7)			X												
8A, P-Chloro-M-Cresol (59-50-7)			X												
9A, Pentachlorophenol (87-86-5)			X												
10A, Phenol (108-95-2)			X												
11A, 2,4,6-Tri-chlorophenol (88-06-2)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B, Acenaphthene (83-32-9)			X												
2B, Acenaphtylene (208-96-8)			X												
3B, Anthracene (120-12-7)			X												
4B, Benzidine (92-87-5)			X												
5B, Benzo(a) Anthracene (56-55-3)			X												
6B, Benzo(a) Pyrene (50-32-8)			X												
7B, 3,4-Benzofluoranthene (205-99-2)			X												
8B, Benzo (ghi) Perylene (191-24-2)			X												
9B, Benzo(k) Fluoranthene (207-08-9)			X												
10B, Bis(2-*Chloroethoxy*) Methane (111-91-1)			X												
11B, Bis(2-*Chloroethyl*) Ether (111-44-4)			X												
12B, Bis(2-*Chloroisopropyl*) Ether (108-60-1)			X												
13B, Bis(2-*Ethylhexyl*) Phthalate (117-81-7)			X												
14B, 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B, Butyl Benzyl Phthalate (85-68-7)			X												
16B, 2-Chloronaphthalene (91-58-7)			X												
17B, 4-Chlorophenyl Phenyl Ether (7005-72-3)			X												
18B, Chrysene (218-01-9)			X												
19B, Dibenzo(a,h) Anthracene (53-70-3)			X												
20B, 1,2-Dichlorobenzene (95-50-1)			X												
21B, 1,3-Dichlorobenzene (541-73-1)			X												

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS *(continued)*															
22B, 1,4-Dichlorobenzene (106-46-7)			X												
23B, 3,3-Dichlorobenzidine (91-94-1)			X												
24B, Diethyl Phthalate (84-66-2)			X												
25B, Dimethyl Phthalate (131-11-3)			X												
26B, Di-N-Butyl Phthalate (84-74-2)			X												
27B, 2,4-Dinitrotoluene (121-14-2)			X												
28B, 2,6-Dinitrotoluene (606-20-2)			X												
29B, Di-N-Octyl Phthalate (117-84-0)			X												
30B, 1,2-Diphenyl-hydrazine (as Azobenzene)(122-66-7)			X												
31B, Fluoranthene (206-44-0)			X												
32B, Fluorene (86-73-7)			X												
33B, Hexachlorobenzene (118-74-1)			X												
34B, Hexachlorobutadiene (87-68-3)			X												
35B, Hexachloro-cyclopentadiene (77-47-4)			X												
36B, Hexachloroethane (67-72-1)			X												
37B, Indeno (123 c-d) Pyrene (193-39-5)			X												
38B, Isophorone (78-59-1)			X												
39B, Naphthalene (91-20-3)			X												
40B, Nitrobenzene (98-95-3)			X												
41B, N-Nitro-sodimethylamine (62-75-9)			X												
42B, N-Nitrosodi-N-Propylamine (621-64-7)			X												

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B, N-Nitro-sodiphenylamine (86-30-6)			X												
44B, Phenanthrene (85-01-8)			X												
45B, Pyrene (129-00-0)			X												
46B, 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P, Aldrin (309-00-2)			X												
2P, "-BHC (319-84-6)			X												
3P, $-BHC (319-85-7)			X												
4P, (-BHC (58-89-9)			X												
5P, *-BHC (319-86-8)			X												
6P, Chlordane (57-74-9)		X											X		
7P, 4,4'-DDT (50-29-3)			X												
8P, 4,4'-DDE (72-55-9)			X												
9P, 4,4'-DDD (72-54-8)			X												
10P, Dieldrin (60-57-1)			X												
11P, "-Endosulfan (115-29-7)			X												
12P, $-Endosulfan (115-29-7)			X												
13P, Endosulfan Sulfate (1031-07-8)			X												
14P, Endrin (72-20-8)			X												
15P, Endrin Aldehyde (7421-93-4)			X												
16P, Heptachlor (76-44-8)			X												

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT						d. NO OF ANALYSES	4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P, Heptachlor Epoxide (1024-57-3)			X												
18P, PCB-1242 (53469-21-9)			X												
19P, PCB-1254 (11097-69-1)			X												
20P, PCB-1221 (11104-28-2)			X												
21P, PCB-1232 (11141-16-5)			X												
22P, PCB-1248 (12672-29-6)			X												
23P, PCB-1260 (11096-82-5)			X												
24P, PCB-1016 (12674-11-2)			X												
25P, Toxaphene (8001-35-2)			X												

APPLICATION FOR DISCHARGE PERMIT

Form D - Primary Industries

Table II

NPDES # MO-0098001	OUTFALL # 003

1.30If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M, Antimony, Total (7440-36-0)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
2M, Arsenic, Total (7440-38-2)	X			13.3	0.0467					1	ug/l	lbs/d	<10	<0.04	1
3M, Beryllium, Total (7440-41-7)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
4M, Cadmium, Total (7440-43-9)	X			<2	<0.007					1	ug/l	lbs/d	<5	<0.02	1
5M, Chromium, Total (7440-47-3)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
6M, Copper, Total (7550-50-8)	X			<25	<0.088					1	ug/l	lbs/d	<25	<0.088	1
7M, Lead, Total (7439-97-6)	X			<3	<0.01					1	ug/l	lbs/d	<3	<0.01	1
8M, Mercury, Total (7439-97-6)	X			<0.2	<0.0007					1	ug/l	lbs/d	<0.2	<0.0007	1
9M, Nickel, Total (7440-02-0)	X			<40	<0.1					1	ug/l	lbs/d	<40	<0.1	1
10M, Selenium, Total (7782-49-2)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
11M, Silver, Total (7440-22-4)	X			<5	<0.02					1	ug/l	lbs/d	<10	<0.04	1
12M, Thallium, Total (7740-28-0)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
13M, Zinc, Total (7440-66-6)	X			22.8	0.0800					1	ug/l	lbs/d	<20	<0.07	1
14M, Cyanide, Total (57-12-5)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
15M, Phenols, Total	X			<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS:											

NPDES # MO-0098001	OUTFALL # 003

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V, Acrolein (107-02-08)	X			<100	<0.4					1	ug/l	lbs/d	<100	<0.4	1
2V, Acrylonitrite (107-13-1)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
3V, Benzene (71-43-2)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
4V, Bis(*Chloromethyl*) Ether (542-88-1)				*									*		
5V, Bromoform (75-25-2)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
6V, Carbon Tetrachloride (56-23-5)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
7V, Chlorobenzene (108-90-7)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
8V, Chlorodibromomethane (124-48-1)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
9V, Chloroethane (75-00-3)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
10V, 2-Chloroethylvinyl Ether (110-75-8)	X			<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
11V, Chloroform (67-66-3)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
12V, Dichlorobromo-methane (75-27-4)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
13V, Dichlorodifluoro-methane (75-71-8)				*									*		
14V, 1,1-Dichloroethane (75-34-3)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
15V, 1,2-Dichloroethane (107-06-2)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
16V, 1,1-Dichloroethylene (75-35-4)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
17V, 1,2-Dichloropropane (78-87-5)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
18V, 1,2-Dichloropropylene (542-75-6) **	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
19V, Ethylbenzene (100-41-4)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
20V, Methyl Bromide (74-83-9)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
21V, Methyl Chloride (74-87-3)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1

* These parameters deleted per 40 CFR, Part 122, Appendix D.

** This parameter is 1,3 Dichloropropylene per 40 CFR, Part 122, Appendix D.

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V, METHYLENE Chloride (75-09-2)	X			18**	0.063					1	ug/l	lbs/d	<5	<0.02	1
23V, 1,1,2,2-Tetra-chloroethane (79-34-5)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
24V, Tetrachloro-ethylene (127-18-4)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
25V, Toluene (108-88-3)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
26V, 1,2-Trans-Dichloroethylene (156-60-5)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
27V, 1,1,1-Trichloroethane (71-55-6)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
28V, 1,1,2-Trichloroethene (79-00-5)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
29V, Trichloroethylene (79-01-6)	X			<5	<0.02					1	ug/l	lbs/d	<5	<0.02	1
30V, Trichloro-fluoromethane (75-69-4)				*											
31V, Vinyl Chloride (75-01-4)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
GC/MS FRACTION - ACID COMPOUNDS															
1A, 2-Chlorophenol (95-57-8)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
2A, 2,4-Dichlorophenol (120-83-2)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
3A, 2,4-Dimethyl-phenol (105-67-9)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
4A, 4,6-Dinitro-0-Cresol (534-52-1)	X			<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
5A, 2,4-Dinitrophenol (51-28-5)	X			<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
6A, 2-Nitrophenol (88-75-5)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
7A, 4-Nitrophenol (100-02-7)	X			<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
8A, P-Chloro-M-Cresol (59-50-7)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
9A, Pentachlorophenol (87-86-5)	X			<50	<0.2					1	ug/l	lbs/d	<50	<0.2	1
10A, Phenol (108-95-2)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1
11A, 2,4,6-Tri-chlorophenol (88-06-2)	X			<10	<0.04					1	ug/l	lbs/d	<10	<0.04	1

* This parameter deleted per 40 CFR, Part 122,Appendix D.

** Present in method blank.

Outfall 003

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B, Acenaphthene (83-32-9)			X												
2B, Acenaphtylene (208-96-8)			X												
3B, Anthracene (120-12-7)			X												
4B, Benzidine (92-87-5)			X												
5B, Benzo(a) Anthracene (56-55-3)			X												
6B, Benzo(a) Pyrene (50-32-8)			X												
7B, 3,4-Benzofluoranthene (205-99-2)			X												
8B, Benzo (ghi) Perylene (191-24-2)			X												
9B, Benzo(k) Fluoranthene (207-08-9)			X												
10B, Bis(2-*Chloroethoxy*) Methane (111-91-1)			X												
11B, Bis(2-*Chloroethyl*) Ether (111-44-4)			X												
12B, Bis(2-*Chloroisopropyl*) Ether (108-60-1)			X												
13B, Bis(2-*Ethythexyl*) Phthalate (117-81-7)			X												
14B, 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B, Butyl Benzyl Phthalate (85-68-7)			X												
16B, 2-Chloronaphthalene (91-58-7)			X												
17B, 4-Chlorophenyl Phenyl Ether (7005-72-3)			X												
18B, Chrysene (218-01-9)			X												
19B, Dibenzo(a,h) Anthracene (53-70-3)			X												
20B, 1,2-Dichlorobenzene (95-50-1)			X												
21B, 1,3-Dichlorobenzene (541-73-1)			X												

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS *(continued)*															
22B, 1,4-Dichlorobenzene (106-46-7)			X												
23B, 3,3-Dichlorobenzidine (91-94-1)			X												
24B, Diethyl Phthalate (84-66-2)			X												
25B, Dimethyl Phthalate (131-11-3)			X												
26B, Di-N-Butyl Phthalate (84-74-2)			X												
27B, 2,4-Dinitrotoluene (121-14-2)			X												
28B, 2,6-Dinitrotoluene (606-20-2)			X												
29B, Di-N-Octyl Phthalate (117-84-0)			X												
30B, 1,2-Diphenyl-hydrazine (as Azobenzene)(122-66-7)			X												
31B, Fluoranthene (206-44-0)			X												
32B, Fluorene (86-73-7)			X												
33B, Hexachlorobenzene (118-74-1)			X												
34B, Hexachlorobutadiene (87-68-3)			X												
35B, Hexachloro-cyclopentadiene (77-47-4)			X												
36B, Hexachloroethane (67-72-1)			X												
37B, Indeno (123 c-d) Pyrene (193-39-5)			X												
38B, Isophorone (78-59-1)			X												
39B, Naphthalene (91-20-3)			X												
40B, Nitrobenzene (98-95-3)			X												
41B, N-Nitro-sodimethylamine (62-75-9)			X												
42B, N-Nitrosodi-N-Propylamine (621-64-7)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B, N-Nitro-sodiphenylamine (86-30-6)			X												
44B, Phenanthrene (85-01-8)			X												
45B, Pyrene (129-00-0)			X												
46B, 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P, Aldrin (309-00-2)			X												
2P, "-BHC (319-84-6)			X												
3P, $-BHC (319-85-7)			X												
4P, (-BHC (58-89-9)			X												
5P, *-BHC (319-86-8)			X												
6P, Chlordane (57-74-9)			X										X		
7P, 4,4'-DDT (50-29-3)			X												
8P, 4,4'-DDE (72-55-9)			X												
9P, 4,4'-DDD (72-54-8)			X												
10P, Dieldrin (60-57-1)			X												
11P, "-Endosulfan (115-29-7)			X												
12P, $-Endosulfan (115-29-7)			X												
13P, Endosulfan Sulfate (1031-07-8)			X												
14P, Endrin (72-20-8)			X												
15P, Endrin Aldehyde (7421-93-4)			X												
16P, Heptachlor (76-44-8)			X												

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P, Heptachlor Epoxide (1024-57-3)			X												
18P, PCB-1242 (53469-21-9)			X												
19P, PCB-1254 (11097-69-1)			X												
20P, PCB-1221 (11104-28-2)			X												
21P, PCB-1232 (11141-16-5)			X												
22P, PCB-1248 (12672-29-6)			X												
23P, PCB-1260 (11096-82-5)			X												
24P, PCB-1016 (12674-11-2)			X												
25P, Toxaphene (8001-35-2)			X												

APPLICATION FOR DISCHARGE PERMIT

Form D - Primary Industries

Table II

NPDES # MO-0098001	OUTFALL # 007

1.30If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M, Antimony, Total (7440-36-0)			X												
2M, Arsenic, Total (7440-38-2)			X												
3M, Beryllium, Total (7440-41-7)			X												
4M, Cadmium, Total (7440-43-9)			X												
5M, Chromium, Total (7440-47-3)			X												
6M, Copper, Total (7550-50-8)			X												
7M, Lead, Total (7439-97-6)			X												
8M, Mercury, Total (7439-97-6)			X												
9M, Nickel, Total (7440-02-0)			X												
10M, Selenium, Total (7782-49-2)			X												
11M, Silver, Total (7440-22-4)			X												
12M, Thallium, Total (7740-28-0)			X												
13M, Zinc, Total (7440-66-6)			X												
14M, Cyanide, Total (57-12-5)			X												
15M, Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS:											

NPDES # MO-0098001	OUTFALL # 007

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V, Acrolein (107-02-08)			X												
2V, Acrylonitrite (107-13-1)			X												
3V, Benzene (71-43-2)			X												
4V, Bis(*Chloromethyl*) Ether (542-88-1)			X												
5V, Bromoform (75-25-2)			X												
6V, Carbon Tetrachloride (56-23-5)			X												
7V, Chlorobenzene (108-90-7)			X												
8V, Chlorodibromomethane (124-48-1)			X												
9V, Chloroethane (75-00-3)			X												
10V, 2-Chloroethylvinyl Ether (110-75-8)			X												
11V, Chloroform (67-66-3)			X												
12V, Dichlorobromo-methane (75-27-4)			X												
13V, Dichlorodifluoro-methane (75-71-8)			X												
14V, 1,1-Dichloroethane (75-34-3)			X												
15V, 1,2-Dichloroethane (107-06-2)			X												
16V, 1,1-Dichloroethylene (75-35-4)			X												
17V, 1,2-Dichloropropane (78-87-5)			X												
18V, 1,2-Dichloropropylene (542-75-6)			X												
19V, Ethylbenzene (100-41-4)			X												
20V, Methyl Bromide (74-83-9)			X												
21V, Methyl Chloride (74-87-3)			X												

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V, METHYLENE Chloride (75-09-2)			X												
23V, 1,1,2,2-Tetra-chloroethane (79-34-5)			X												
24V, Tetrachloro-ethylene (127-18-4)			X												
25V, Toluene (108-88-3)			X												
26V, 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V, 1,1,1-Trichloroethane (71-55-6)			X												
28V, 1,1,2-Trichloroethene (79-00-5)			X												
29V, Trichloroethylene (79-01-6)			X												
30V, Trichloro-fluoromethane (75-69-4)			X												
31V, Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A, 2-Chlorophenol (95-57-8)			X												
2A, 2,4-Dichlorophenol (120-83-2)			X												
3A, 2,4-Dimethyl-phenol (105-67-9)			X												
4A, 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A, 2,4-Dinitrophenol (51-28-5)			X												
6A, 2-Nitrophenol (88-75-5)			X												
7A, 4-Nitrophenol (100-02-7)			X												
8A, P-Chloro-M-Cresol (59-50-7)			X												
9A, Pentachlorophenol (87-86-5)			X												
10A, Phenol (108-95-2)			X												
11A, 2,4,6-Tri-chlorophenol (88-06-2)			X												

Outfall 007

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B, Acenaphthene (83-32-9)			X												
2B, Acenaphtylene (208-96-8)			X												
3B, Anthracene (120-12-7)			X												
4B, Benzidine (92-87-5)			X												
5B, Benzo(a) Anthracene (56-55-3)			X												
6B, Benzo(a) Pyrene (50-32-8)			X												
7B, 3,4-Benzofluoranthene (205-99-2)			X												
8B, Benzo (ghi) Perylene (191-24-2)			X												
9B, Benzo(k) Fluoranthene (207-08-9)			X												
10B, Bis*(2-Chloroethoxy)* Methane (111-91-1)			X												
11B, Bis*(2-Chloroethyl)* Ether (111-44-4)			X												
12B, Bis*(2-Chloroisopropyl)* Ether (108-60-1)			X												
13B, Bis*(2-Ethylhexyl)* Phthalate (117-81-7)			X												
14B, 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B, Butyl Benzyl Phthalate (85-68-7)			X												
16B, 2-Chloronaphthalene (91-58-7)			X												
17B, 4-Chlorophenyl Phenyl Ether (7005-72-3)			X												
18B, Chrysene (218-01-9)			X												
19B, Dibenzo(a,h) Anthracene (53-70-3)			X												
20B, 1,2-Dichlorobenzene (95-50-1)			X												
21B, 1,3-Dichlorobenzene (541-73-1)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT						d. NO OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS *(continued)*															
22B, 1,4-Dichlorobenzene (106-46-7)			X												
23B, 3,3-Dichlorobenzidine (91-94-1)			X												
24B, Diethyl Phthalate (84-66-2)			X												
25B, Dimethyl Phthalate (131-11-3)			X												
26B, Di-N-Butyl Phthalate (84-74-2)			X												
27B, 2,4-Dinitrotoluene (121-14-2)			X												
28B, 2,6-Dinitrotoluene (606-20-2)			X												
29B, Di-N-Octyl Phthalate (117-84-0)			X												
30B, 1,2-Diphenyl-hydrazine (as Azobenzene)(122-66-7)			X												
31B, Fluoranthene (206-44-0)			X												
32B, Fluorene (86-73-7)			X												
33B, Hexachlorobenzene (118-74-1)			X												
34B, Hexachlorobutadiene (87-68-3)			X												
35B, Hexachloro-cyclopentadiene (77-47-4)			X												
36B, Hexachloroethane (67-72-1)			X												
37B, Indeno (123 c-d) Pyrene (193-39-5)			X												
38B, Isophorone (78-59-1)			X												
39B, Naphthalene (91-20-3)			X												
40B, Nitrobenzene (98-95-3)			X												
41B, N-Nitro-sodimethylamine (62-75-9)			X												
42B, N-Nitrosodi-N-Propylamine (621-64-7)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B, N-Nitro-sodiphenylamine (86-30-6)			X												
44B, Phenanthrene (85-01-8)			X												
45B, Pyrene (129-00-0)			X												
46B, 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P, Aldrin (309-00-2)			X												
2P, "-BHC (319-84-6)			X												
3P, $-BHC (319-85-7)			X												
4P, (-BHC (58-89-9)			X												
5P, *-BHC (319-86-8)			X												
6P, Chlordane (57-74-9)		X											X		
7P, 4,4'-DDT (50-29-3)			X												
8P, 4,4'-DDE (72-55-9)			X												
9P, 4,4'-DDD (72-54-8)			X												
10P, Dieldrin (60-57-1)			X												
11P, "-Endosulfan (115-29-7)			X												
12P, $-Endosulfan (115-29-7)			X												
13P, Endosulfan Sulfate (1031-07-8)			X												
14P, Endrin (72-20-8)			X												
15P, Endrin Aldehyde (7421-93-4)			X												
16P, Heptachlor (76-44-8)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P, Heptachlor Epoxide (1024-57-3)			X												
18P, PCB-1242 (53469-21-9)			X												
19P, PCB-1254 (11097-69-1)			X												
20P, PCB-1221 (11104-28-2)			X												
21P, PCB-1232 (11141-16-5)			X												
22P, PCB-1248 (12672-29-6)			X												
23P, PCB-1260 (11096-82-5)			X												
24P, PCB-1016 (12674-11-2)			X												
25P, Toxaphene (8001-35-2)			X												

APPLICATION FOR DISCHARGE PERMIT
Form D - Primary Industries
Table II

NPDES # MO-0098001	OUTFALL # 016

1.30If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-b for each pollutant you know or have reaso believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M, Antimony, Total (7440-36-0)	X			<10	<0.1					1	ug/l	lbs/d			
2M, Arsenic, Total (7440-38-2)	X			<10	<0.1					1	ug/l	lbs/d			
3M, Beryllium, Total (7440-41-7)	X			<5	<0.05					1	ug/l	lbs/d			
4M, Cadmium, Total (7440-43-9)	X			<2	<0.02					1	ug/l	lbs/d			
5M, Chromium, Total (7440-47-3)	X			<5	<0.05					1	ug/l	lbs/d			
6M, Copper, Total (7550-50-8)	X			<25	<0.25					1	ug/l	lbs/d			
7M, Lead, Total (7439-97-6)	X			<3	<0.03					1	ug/l	lbs/d			
8M, Mercury, Total (7439-97-6)	X			<0.2	<0.002					1	ug/l	lbs/d			
9M, Nickel, Total (7440-02-0)	X			<40	<0.4					1	ug/l	lbs/d			
10M, Selenium, Total (7782-49-2)	X			<5	<0.005					1	ug/l	lbs/d			
11M, Silver, Total (7440-22-4)	X			<5	<0.005					1	ug/l	lbs/d			
12M, Thallium, Total (7740-28-0)	X			<10	<0.1					1	ug/l	lbs/d			
13M, Zinc, Total (7440-66-6)	X			23.8	0.238					1	ug/l	lbs/d			
14M, Cyanide, Total (57-12-5)	X			<5	<0.05					1	ug/l	lbs/d			
15M, Phenols, Total	X			<50	<0.5					1	ug/l	lbs/d			
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS:											

NPDES # MO-0098001 | OUTFALL # 016

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V, Acrolein (107-02-08)	X			<100	<1					1	ug/l	lbs/d			
2V, Acrylonitrite (107-13-1)	X			<5	<0.05					1	ug/l	lbs/d			
3V, Benzene (71-43-2)	X			<5	<0.05					1	ug/l	lbs/d			
4V, Bis(*Chloromethyl*) Ether (542-88-1)				*											
5V, Bromoform (75-25-2)	X			<5	<0.05					1	ug/l	lbs/d			
6V, Carbon Tetrachloride (56-23-5)	X			<5	<0.05					1	ug/l	lbs/d			
7V, Chlorobenzene (108-90-7)	X			<5	<0.05					1	ug/l	lbs/d			
8V, Chlorodibromomethane (124-48-1)	X			<5	<0.05					1	ug/l	lbs/d			
9V, Chloroethane (75-00-3)	X			<10	<0.1					1	ug/l	lbs/d			
10V, 2-Chloroethylvinyl Ether (110-75-8)	X			<50	<0.5					1	ug/l	lbs/d			
11V, Chloroform (67-66-3)	X			<5	<0.05					1	ug/l	lbs/d			
12V, Dichlorobromo-methane (75-27-4)	X			<5	<0.05					1	ug/l	lbs/d			
13V, Dichlorodifluoro-methane (75-71-8)				*											
14V, 1,1-Dichloroethane (75-34-3)	X			<5	<0.05					1	ug/l	lbs/d			
15V, 1,2-Dichloroethane (107-06-2)	X			<5	<0.05					1	ug/l	lbs/d			
16V, 1,1-Dichloroethylene (75-35-4)	X			<5	<0.05					1	ug/l	lbs/d			
17V, 1,2-Dichloropropane (78-87-5)	X			<5	<0.05					1	ug/l	lbs/d			
18V, 1,2-Dichloropropylene (542-75-6) **	X			<5	<0.05					1	ug/l	lbs/d			
19V, Ethylbenzene (100-41-4)	X			<5	<0.05					1	ug/l	lbs/d			
20V, Methyl Bromide (74-83-9)	X			<10	<0.1					1	ug/l	lbs/d			
21V, Methyl Chloride (74-87-3)	X			<10	<0.1					1	ug/l	lbs/d			

* These parameters deleted per 40 CFR, Part 122, Appendix D.

** This parameter is 1,3 Dichloropropylene per 40 CFR, Part 122, Appendix D.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT						d. NO OF ANALYSES	4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS *(continued)*															
22V, METHYLENE Chloride (75-09-2)	X			21**	0.21					1	ug/l	lbs/d			
23V, 1,1,2,2-Tetra-chloroethane (79-34-5)	X			<5	<0.05					1	ug/l	lbs/d			
24V, Tetrachloro-ethylene (127-18-4)	X			<5	<0.05					1	ug/l	lbs/d			
25V, Toluene (108-88-3)	X			<5	<0.05					1	ug/l	lbs/d			
26V, 1,2-Trans-Dichloroethylene (156-60-5)	X			<5	<0.05					1	ug/l	lbs/d			
27V, 1,1,1-Trichloroethane (71-55-6)	X			<5	<0.05					1	ug/l	lbs/d			
28V, 1,1,2-Trichloroethene (79-00-5)	X			<5	<0.05					1	ug/l	lbs/d			
29V, Trichloroethylene (79-01-6)	X			<5	<0.05					1	ug/l	lbs/d			
30V, Trichloro-fluoromethane (75-69-4)				*											
31V, Vinyl Chloride (75-01-4)	X			<10	<0.1					1	ug/l	lbs/d			
GC/MS FRACTION - ACID COMPOUNDS															
1A, 2-Chlorophenol (95-57-8)	X			<10	<0.1					1	ug/l	lbs/d			
2A, 2,4-Dichlorophenol (120-83-2)	X			<10	<0.1					1	ug/l	lbs/d			
3A, 2,4-Dimethyl-phenol (105-67-9)	X			<10	<0.1					1	ug/l	lbs/d			
4A, 4,6-Dinitro-0-Cresol (534-52-1)	X			<50	<0.5					1	ug/l	lbs/d			
5A, 2,4-Dinitrophenol (51-28-5)	X			<50	<0.5					1	ug/l	lbs/d			
6A, 2-Nitrophenol (88-75-5)	X			<10	<0.1					1	ug/l	lbs/d			
7A, 4-Nitrophenol (100-02-7)	X			<50	<0.5					1	ug/l	lbs/d			
8A, P-Chloro-M-Cresol (59-50-7)	X			<10	<0.1					1	ug/l	lbs/d			
9A, Pentachlorophenol (87-86-5)	X			<50	<0.5					1	ug/l	lbs/d			
10A, Phenol (108-95-2)	X			<10	<0.1					1	ug/l	lbs/d			
11A, 2,4,6-Tri-chlorophenol (88-06-2)	X			<10	<0.1					1	ug/l	lbs/d			

* This parameter deleted per 40 CFR, Part 122,Appendix D.

** Present in method blank.

1. POLLUTANT AND CAS NO. (If available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG VALUE (If available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B, Acenaphthene (83-32-9)			X												
2B, Acenaphtylene (208-96-8)			X												
3B, Anthracene (120-12-7)			X												
4B, Benzidine (92-87-5)			X												
5B, Benzo(a) Anthracene (56-55-3)			X												
6B, Benzo(a) Pyrene (50-32-8)			X												
7B, 3,4-Benzofluoranthene (205-99-2)			X												
8B, Benzo (ghi) Perylene (191-24-2)			X												
9B, Benzo(k) Fluoranthene (207-08-9)			X												
10B, Bis(2-Chloroethoxy) Methane (111-91-1)			X												
11B, Bis(2-Chloroethyl) Ether (111-44-4)			X												
12B, Bis(2-Chloroisopropyl) Ether (108-60-1)			X												
13B, Bis(2-Ethylhexyl) Phthalate (117-81-7)			X												
14B, 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B, Butyl Benzyl Phthalate (85-68-7)			X												
16B, 2-Chloronaphthalene (91-58-7)			X												
17B, 4-Chlorophenyl Phenyl Ether (7005-72-3)			X												
18B, Chrysene (218-01-9)			X												
19B, Dibenzo(a,h) Anthracene (53-70-3)			X												
20B, 1,2-Dichlorobenzene (95-50-1)			X												
21B, 1,3-Dichlorobenzene (541-73-1)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE NEUTRAL COMPOUNDS *(continued)*															
22B, 1,4-Dichlorobenzene (106-46-7)			X												
23B, 3,3-Dichlorobenzidine (91-94-1)			X												
24B, Diethyl Phthalate (84-66-2)			X												
25B, Dimethyl Phthalate (131-11-3)			X												
26B, Di-N-Butyl Phthalate (84-74-2)			X												
27B, 2,4-Dinitrotoluene (121-14-2)			X												
28B, 2,6-Dinitrotoluene (606-20-2)			X												
29B, Di-N-Octyl Phthalate (117-84-0)			X												
30B, 1,2-Diphenyl-hydrazine (as Azobenzene)(122-66-7)			X												
31B, Fluoranthene (206-44-0)			X												
32B, Fluorene (86-73-7)			X												
33B, Hexachlorobenzene (118-74-1)			X												
34B, Hexachlorobutadiene (87-68-3)			X												
35B, Hexachloro-cyclopentadiene (77-47-4)			X												
36B, Hexachloroethane (67-72-1)			X												
37B, Indeno (123 c-d) Pyrene (193-39-5)			X												
38B, Isophorone (78-59-1)			X												
39B, Naphthalene (91-20-3)			X												
40B, Nitrobenzene (98-95-3)			X												
41B, N-Nitro-sodimethylamine (62-75-9)			X												
42B, N-Nitrosodi-N-Propylamine (621-64-7)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG VALUE (if available)		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B, N-Nitro-sodiphenylamine (86-30-6)			X												
44B, Phenanthrene (85-01-8)			X												
45B, Pyrene (129-00-0)			X												
46B, 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P, Aldrin (309-00-2)			X												
2P, "-BHC (319-84-6)			X												
3P, $-BHC (319-85-7)			X												
4P, (-BHC (58-89-9)			X												
5P, "-BHC (319-86-8)			X												
6P, Chlordane (57-74-9)		X											X		
7P, 4,4'-DDT (50-29-3)			X												
8P, 4,4'-DDE (72-55-9)			X												
9P, 4,4'-DDD (72-54-8)			X												
10P, Dieldrin (60-57-1)			X												
11P, "-Endosulfan (115-29-7)			X												
12P, $-Endosulfan (115-29-7)			X												
13P, Endosulfan Sulfate (1031-07-8)			X												
14P, Endrin (72-20-8)			X												
15P, Endrin Aldehyde (7421-93-4)			X												
16P, Heptachlor (76-44-8)			X												

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG VALUE *(if available)*		d. NO OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - PESTICIDES *(continued)*															
17P, Heptachlor Epoxide (1024-57-3)			X												
18P, PCB-1242 (53469-21-9)			X												
19P, PCB-1254 (11097-69-1)			X												
20P, PCB-1221 (11104-28-2)			X												
21P, PCB-1232 (11141-16-5)			X												
22P, PCB-1248 (12672-29-6)			X												
23P, PCB-1260 (11096-82-5)			X												
24P, PCB-1016 (12674-11-2)			X												
25P, Toxaphene (8001-35-2)			X												

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. Is any pollutant listed in Item 1.30 a substance or a component of a substance which you do or expect that you will over the next 5 years use or manufacture as an intermediate or final product or byproduct?
☒ YES *(list all such pollutants)* ☐ NO *(go to B)*

The following substances are used in our laboratories and might be present in trace quantities in our discharges; Antimony, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Phenols, Selenium, and Silver.

The following solvents are used on the plant site but are not believed present in our discharges: Trichloroethane, Trichloroethene, Tetrachloroethene, Toluene, Xylene, Acetone, and Methyl ethyl ketone.

The following metals are produced as a by-product of the fission and/or activation process and trace quantities may be present as radioisotopes in Outfall 001: Antimony, chromium, Nickel, Silver, and Zinc.

B. Are your operations such that your raw materials, processes, or products can reasonably be expected to vary so that you discharges of pollutants may during the next 5 years exceed two times the maximum values reported in item 1.30?
☒ YES *(complete C below)* ☐ NO *(go to Section 3.00)*

C. If you answered **YES** to Item B, explain below and describe in detail the sources and expected levels of such pollutants which you anticipate will be discharged from each outfall over the next 5 years, to the b your ability at this time. Continue on additional sheets if you need more space.

Waste streams can be expected to exhibit variability as the result of varying influent water quality. Variability in intake water quality due to the effects of rainfall, runoff and upstream pollution discharges might cause the discharge value on a gross basis to exceed two times the maximum values reported in Item 1.30.

3.00 CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in 1.30 performed by a contract laboratory or consulting firm?
☒ YES *(list the name, address, and telephone number of and analyzed by, each such laboratory or firm below)*
☐ NO *(go to 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANTS ANALYZED
Severn-Trent Laboratories, Inc.	13715 Rider Trail North Earth City, MO 63045	314-298-8566	See Attachment E, NPDES Sampling Analysis

4.00 CERTIFICATION

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 individuals immediately responsible for obtaining the information, 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 f and imprisonment.

A. NAME AND OFFICIAL TITLE	B. PHONE NO. *(area code & no.)*
Garry L. Randolph, Senior Vice President & Chief Nuclear Officer	573-676-8245
C. SIGNATURE Garry L Randolph	**D. DATE SIGNED** 10/24/2000

ATTACHMENT A
Description of Outfalls

001 - Radwaste Treatment System

This system serves to collect, process, store, recycle, and dispose of liquid radioactive waste generated at Callaway. Five general sub-systems can be defined as described below:

The **Boron Recycle System** receives reactor coolant for the purpose of processing this wastestream for discharge. Boric acid is used as a neutron absorber in the primary loop.

The **Liquid Radwaste System** collects and processes floor and equipment drains from the containment, auxiliary building, fuel building, and radwaste buildings during normal operation. However, during outages, non-radioactive drainage from equipment in these buildings may be treated by the Oily Waste System as described in Attachment C.

The **Laundry and Hot Shower** system collects waste generated from washing radioactively contaminated protective gear and clothing and personnel decontamination shower wastewater. These wastes are then transferred to the liquid Radwaste system for treatment.

The **Secondary Liquid Waste** system is used to process condensate demineralizer regeneration wastes and potentially radioactive liquid waste collected from the turbine building. The condensate demineralizer regeneration waste is divided into two wastestreams; High TDS waste from the acid and caustic rinses used when chemically regenerating spent resin, and low TDS waste which results from the initial back-flushing of the unregenerated resin and the final rinsing of the regenerated resin to remove acid and caustic.

Steam Generator Blowdown is normally recycled to the main condenser for reuse in the secondary cycle. Provisions also exist to discharge the treated blowdown via 001 although this has not been done in the last fifteen years.

It should be noted that the radwaste treatment system is specifically designed for flexibility to achieve Nuclear Regulatory Commission (NRC) limitations. Actual treatment for any given batch of wastewater is dictated by the following criteria.

1. The level of radiological contamination and the corresponding NRC mandated discharge criteria.

2. The NPDES permit discharge limitations.

3. The most effective waste treatment scheme that will give the smallest volume of solid radwaste.

4. Overall wastestream management - processing and holdup rates, volumes of other wastestreams requiring treatment or storage, etc.

5. The need, feasibility, and economics of the recycle versus discharge options.

The following wastewater treatment systems are used as required to treat this wastestream for recycle or discharge in compliance with NRC requirements and are also available as auxiliary or backup treatment systems to treat this discharge for compliance with NPDES permit limitations: Evaporation and/or Mixing and/or Filtration and/or Carbon Adsorption and/or Ion Exchange and/or Neutralization and/or Reuse/Recycle or Treated Effluent. All processing in the Radwaste Treatment System is done on a batch basis except steam generator blowdown. After monitoring for radioactive content, release rates are controlled administratively to ensure that radioactive discharge criteria are met.

002 - Cooling Tower Blowdown

A cooling tower is utilized to dissipate excess heat to the atmosphere from the Circulating and Service Water Systems. Outfall 002 is designated as the cooling tower blowdown discharge. Blowdown from the cooling tower is necessary to maintain dissolved solids concentration in the recirculating water within acceptable operating limits.

003 - Water Treatment Plant Wastes

The water treatment plant (WTP) supplies clarified river water for cooling tower makeup and various other plant systems. The suspended material that is removed from the river water is drawn from the bottom of the clarifiers as sludge. This sludge is routed (in series) through two sedimentation lagoons for solids removal. Previously, a single sedimentation lagoon was utilized; another lagoon was constructed in the fall of 2000 (construction permit # MO-26-3351). The demineralizer system wastestreams and oil separator discharges are also routed to these sedimentation lagoons. The demineralizer system wastestream (previously a separate discharge point, Outfall 004, which was eliminated in the last round of permitting) consists of wastes generated from resin regeneration, sand & carbon filter backwash, miscellaneous wastes from floor drainage, and wet well overflows. Note finally, that these lagoons also receive effluent from the Oily Waste Processing System (which also receives effluent from an oil recovery well used to remediate a historic on-site release).

The supernatant from the second sedimentation lagoon is designated as Outfall 003. Outfall 003 is normally recycled by routing it back to the head of the water treatment plant via a supernatant pump station.

007 - Sanitary Treatment Lagoons

Outfall 007 is defined as the sanitary wastewater treatment system discharge. Primary treatment is provided in a conventional three-cell stabilization pond. Effluent from the final cell is

routed (in series) to two wetland basins. Both are "artificial" (constructed) wetlands created by conversion of filled WTP (sludge) sedimentation lagoons.

The supernatant from the second wetland basin is designated as Outfall 007. Outfall 007 is normally recycled by routing it back to the head of the water treatment plant via the WTP supernatant pump station. Diversion of this effluent through the second wetland (and its connection to the supernatant pump station) was made recently, in conjunction with the construction of the new WTP sedimentation lagoon (as described in the construction permit application).

Outfall 009 - Intake Heater Blowdown

The river intake structure contains two recirculating electric heaters, which are used to prevent ice formation on the intake bar screens during the winter months. Outfall 009 consists of discharges from the infrequent blowdown or drainage of these boilers. We have not discharged from this outfall in the past fifteen years. The boilers are currently kept in a dry lay up condition.

Outfall 010 - Storm Water Runoff Settling Pond

The drainage area for the Outfall 010 Settling Pond encompasses a total of 95 acres. Only three percent of the drainage area consists of impervious plant site area. These areas include the cooling water chemical control building, the quality control office, and an area plant west of the radwaste building. The remaining drainage area consists of grassy areas within the plant boundary and areas leased to the Missouri Department of Conservation (MDC). The pond has a retention time greater than 24 hours. Two 36-inch diameter standpipes are located at the north side of the settling pond. Flow enters this pipe and goes under the earthen pond dam to the actual sampling location. Outfall 010 discharges to Logan Creek.

Outfall 011 - Storm Water Runoff Settling Pond

The drainage area for the Outfall 011 Settling Pond encompasses a total of 425 acres. Only two percent of the drainage area consists of impervious area on the plant site. These areas include the water treatment plant, radwaste building, maintenance training annex, demineralizer potable water building and the circulating and service water pumphouse. The remaining drainage area consists of grassy areas, excavation surplus storage, and areas leased to the MDC. The pond has retention time less than 24 hours. Two 36-inch diameter standpipes with 48-inch diameter skimmer pipes around them are located on the north side of the settling pond. Flow enters this pipe and goes under the earthen pond dam to the actual sampling location. Outfall 011 discharges to Logan Creek.

Outfall 012 - Storm Water Runoff Settling Pond

The drainage area for the Outfall 012 Settling Pond encompasses a total of 100 acres. Approximately one fourth of the total drainage area consists of impervious area on the plant site. This outfall collects storm water runoff from most of the plant area including the parking lots,

office buildings, part of the switchyard, the turbine building, the Stores I building, and the periodic drainage of storm water collected in the Unit Two basin. The remaining areas consist of grassy areas. The pond has a retention time of less than 24 hours. A concrete spillway has been constructed at the south side of the settling pond where the actual sampling point is located. Outfall 012 discharges to Mud Creek.

Outfall 013 - Storm Water Runoff Settling Pond

The drainage area for the Outfall 013 Settling Pond encompasses a total of 40 acres. No impervious area is included in the total. The drainage area includes half of the switchyard and various grassy areas. The pond has a retention time of less than 24 hours. A spillway exists at the south side of this settling pond where the actual sampling point is located. Outfall 013 discharges to Mud Creek.

Outfall 014 - Storm Water Runoff Settling Pond

The drainage area for the Outfall 014 Settling Pond encompasses a total of 100 acres. Only four percent of the drainage area consists of impervious areas on the plant site. These areas include, half of the construction parking lot, the Stores II building and the maintenance shop annex. The remaining drainage area consists of grassy areas and land leased to the MDC. The pond has a retention time of less than 24 hours. A concrete spillway has been constructed on the north side of the pond where the actual sampling point is located. Outfall 014 discharges to Auxvasse Creek.

Outfall 015 - Storm Water Runoff Settling Pond

The drainage area for the Outfall 015 Settling Pond encompasses a total of 60 acres. Only one percent of the drainage area consists of impervious areas, which are paved roadways. The remaining area consists of grassy areas and land leased to MDC. The pond has a retention time greater than 24 hours. A concrete spillway has been constructed on the north side of the pond where the actual sampling point is located. Outfall 015 discharges to Auxvasse Creek.

NOTE: The MDC uses a minor portion of the leased land for farming and the remaining land is left in its native state for wildlife habitat.

Outfall 016 - Cooling Tower Bypass

This outfall consists of clarified river water and wastewater that has been recycled through the water treatment plant. It is used to moderate flow through the water treatment plant and to provide carrier water in the discharge line when discharging from Outfall 001.

Outfall 017 - Ultimate Heat Sink

The Ultimate Heat Sink is a cooling pond that can provide cooling water to various plant systems during other than normal conditions. Outfall 017 is the overflow from the Ultimate Heat Sink, to local runoff. It is a no discharge outfall.

ATTACHMENT B
Return of River Water

The Callaway Plant has four points at which river water is returned back to the river; none are designated as outfalls.

1. Intake Structure Stilling Basin - The stilling basin at the intake structure predominately receives water from the excess flow of the intake pumps via the free discharge valve and returns this flow to the river. Other minor contributions include the intake sump discharge and a well used to supply lube water. As this flow is not contaminated with process waste, we believe it constitutes a return of river water.

2. Intake Line Drainage - The plant has a 48" diameter line that carries Missouri River water from the intake structure to the plant, which is about five miles away. Infrequently, it is necessary to drain this line. Usually, this only occurs about two or three times a year. The line is drained by opening the free discharge valve and/or the discharge valves for the intake pumps. This allows the water in the line to flow back to the river through the free discharge value and the de-energized intake pumps. The drainage rate is about the same as the intake rate when the pumps are operating, so it should not pick up any additional solids that may have settled out in the line. Therefore, we believe this intake line drain back flow constitutes a return of river water.

3. Raw Water Bypass - This line diverts untreated water from the head of the water treatment plant to the plant discharge line. It is used to release excess water that is pumped from the river. The flow through this line can vary from 0 to 10,000 gallons per minute based on operating requirements. Since the line diverts and returns untreated river water, we believe it constitutes a return of river water.

4. Downstream River Sampler - Approximately 1.5 miles downstream of the intake structure is an automatic river water sampler. The sampler pumps from 1 to 2.5 GPM continuously from the river and returns it to the river. No pollutants are added to this flow so it is our position that this discharge flow is a return of river water.

ATTACHMENT C
Description of Intermittent Flows

Four of the six conventional outfalls defined in this application can be considered to include intermittent discharges since they process and/or release wastewater intermittently. Each is described below.

ROUTINE RELEASES:

001 - Radwaste Treatment - All of the subsystems described in Attachment A, except Steam Generator Blowdown (SGB), process or release discrete batches of wastewater. The frequency and magnitude of each is variable. The flows from the subsystems accumulate in the Discharge Monitor Tanks (DMTs). The discharge flow rate from the DMTs is relative constant for each batch. The current system typically produces discharges flows of approximately 250gpm. Approximately one tank is discharged per day.

During recovery from major plant outages and other unusual transient conditions, it may be necessary to discharge SGB. The discharge flow rate varies up to 360gpm resulting in a maximum daily discharge flow of up to 518,400 gallons. Past operation has shown that such discharges occur very infrequently. Since this discharge occurs so infrequently, the SGB flow was not included in the maximum flows shown in Form C, Item 2.40. Previous testing of SGB indicates that this wastestream is of equal or higher quality than other, much more routine components of Radwaste Treatment, Outfall 001 effluent.

003 - Water Treatment Plant Wastes - This outfall is normally recycled so the expected discharge flow would be zero. However, conditions at some time over the five-year term of the permit may warrant this wastewater to be discharged instead of recycled. It is estimated that this would only happen at most, once per year.

007 - Sanitary Wastewater - This outfall is normally recycled so the expected discharge flow would be zero. However, conditions at some time over the five-year term of the permit may warrant this wastewater to be discharged instead of recycled. It is estimated that this would only happen at most, once per year.

009 - Intake Heater Blowdown - Discharges from this outfall would only be anticipated in the event of extremely cold weather are thus seasonal and intermittent. If these heaters were placed in service, it is estimated that blowdown would occur approximately once per week (and amount to less than 100 gallons). At the end of an operating season they would be drained, releasing approximately 6,000 gallons of wastewater.

016 - Cooling Tower Bypass - Discharges occur as needed to control Water Treatment Plant flow, and to provide additional water to the discharge line, during releases from Outfall 001 discharges. This outfall is used approximately six times per week.

DISCHARGES DURING PLANT OUTAGES:

It is necessary to drain many systems during plant outages for inspections and maintenance. In order to ensure that this water is of the same quality as water that is discharged during operation, some additional/alternate monitoring is performed.

When the cooling tower basin, and/or associated lines (between the basin and the power block) are drained, a single grab sample will be obtained and analyzed to verify compliance with Outfall 002 permit limits prior to discharge. This alternate monitoring will be performed since continuous monitoring will not be possible at all times during the draining of these systems.

Various non-radioactive systems in the Auxiliary Building have been drained in the past to floor drains in the Auxiliary Building to allow for inspection and maintenance. The floor drains from the Auxiliary Building are normally routed to the Radwaste System for processing and treatment. Since it is not necessary to process these non-radioactive liquid wastes through the Radwaste System, at times we divert these non-radioactive drains to the Oily Waste Processing System for treatment prior to being recycled. Recycling of this water also results in trace amounts of chemical in Outfalls 002, 003, and 016, Attachment D, Chemical Usage, Table I, list these chemicals.

ATTACHMENT D
Chemical Usage

The various chemical compounds that may occur in the discharges from Callaway Plant during normal operation fall into three usage categories.

Bulk Usage

This group of compounds describes chemicals that are added directly to specific water systems for treatment at some regular rate or interval. Table 1 lists these chemicals along with their predominant function and potential discharge points.

Laboratory Reagents

This category consists of a group of compounds stored and used in the four on-site plant laboratories. The predominant characteristic of this group is the relatively low usage, which would result in negligible levels in the effluent. Laboratory reagents may be discharged through the radwaste treatment Outfall 001, and sanitary wastewater in Outfall 007. At the request of the Department, AmerenUE will provide an inventory of these chemical compounds.

Other Chemical Compounds

This grouping includes other chemical compounds that may be discharged and are not included in the previous lists. General housekeeping and maintenance chemicals, and erosion/corrosion products or byproducts from the Plant's infrastructure or fuel materials are not individually assessed. However, the Form C and D analytical data should reflect any contributions from routine use of these compounds. Note that 12% sodium hypochlorite identified in Table 1 is also used to clean the intake well periodically. At times, we use 20% hydrochloric acid to clean scale in the well. Less than 1000 gallons of 12% sodium hypochlorite or 20% hydrochloric acid are used annually for intake well cleaning.

TABLE 1
BULK CHEMICAL USAGE - CALLAWAY

1.	**Ammonium hydroxide** (Reboiler/Aux. boiler) - used for pH control in recirculating water systems; Outfalls 001 and 003.
2.	**Boric acid** - used as a neutron absorber to provide reactivity control and corrosion inhibitor; Outfall 001.
3.	**Dispersants** - (organic sulfonated copolymers) used to reduce solids deposition in process tanks and plant water systems; Outfalls 001, 002, and 003.
4.	**Ethylene Glycol** - used as freeze protection in recirculating water systems; Outfalls 001, 003, and 007.
5.	**Hydrazine** - used for dissolved oxygen control in recirculating water systems; Outfalls 001 and 003.
6.	**Hydrogen Peroxide** - used as a chemical shock and biocide treatment in water systems; Outfall 001 and 003.
7.	**Lithium hydroxide** - used for pH control in the primary loop; Outfall 001.
8.	**Nitrite/borate products (solutions)** - used as corrosion inhibitors in recirculating water systems; Outfalls 001 and 003.
9.	**Coagulants** - proprietary organic polymers are used as coagulants in the water treatment plant; Outfalls 001, 002, and 003.
10.	**Sodium hydroxide** - used for regenerating demineralizer resins and for pH control in various plant and wastewater systems; Outfalls 001, 003, and 009.
11.	**Sodium hypochlorite** - used as a biocide in the circulating, service, water treatment, ultimate heat sink, clarifiers, and potable water systems; Outfalls 001, 002, 003, and 016.
12.	**Sodium molybdate** - used as a corrosion inhibitor in closed water systems; Outfalls 001 and 003.
13.	**Sodium sulfite** - used as an oxygen scavenger and for conductivity control in the intake structure heaters; Outfall 009.
14.	**Sodium tolytriazole** - used as a copper corrosion inhibitor; Outfalls 001, 002, and 003.
15.	**Sulfuric acid** - used for regenerating demineralizer resins and for pH control in various water and wastewater systems; Outfalls 001, 002, 003, and 009.
16.	**Monoethanolamine** - used as a pH control in closed water systems; Outfalls 001 and 003.
17.	**Sodium bromide** - used in conjunction with sodium hypochlorite as a biocide in water systems; Outfalls 001, 002, and 003.
18.	**Titanium dioxide** - used to inhibit corrosion in steam generators; Outfalls 001 and 003.
19.	**(1-Hydroxyethylidene) diphosphonic acid, Potassium hydroxide (HEDP)** - used to inhibit calcium carbonate scale formation in water systems and the ultimate heat sink; Outfalls 001, 002, and 003.
20.	**Dimethylamide (DMAD)** - used as a biopenetrant to improve the efficiency of biocides in controlling bacteria that exist under deposits in piping systems; Outfalls 001, 002, and 003.
21.	**Phosphoric Acid** - used as a corrosion inhibitor for mild steel in recirculating water systems; Outfalls 001, 002, and 003.
22.	**Gluteraldhyde** - used as a biocide in low flow areas of plant water systems; Outfalls 001, 002, and 003.
23.	**Diethylhydroxylamine (DEHA)** - oxygen scavenger and pH control used in service water system for control of microbiological induced corrosion; Outfalls 001, 002, and 003.
24.	**Proprietary Methylene Bis based biocide** - used in plant water systems; Outfalls 001, 002, and 003.
25.	**Proprietary Quatenary ammonium compound** - used as a biostat in plant water systems; Outfalls 001, 002 and 003.

ATTACHMENT E
NPDES Sampling and Analysis

The chemical analysis of the various wastestreams reported in this application came from two principal sources: 1) a special sampling and analytical project conducted in the year 2000, and 2) discharge monitoring data as required by our existing NPDES permit

Plant personnel conducted the reapplication sampling effort. Power generation at the plant averaged in excess of 90% of capacity during the main sampling period.

Note that some special sampling techniques were used. As effluent from some outfalls is released intermittently and in batches, it was necessary to modify the default sampling requirements listed in application instructions for selected outfalls. Each sample location is discussed below to clarify these details and to allow the data to be interpreted correctly.

For the sampling project, analyses were performed by the plant laboratories, and two commercial laboratories: Severn-Trent Laboratories (St. Louis) and Engineering Surveys and Services (Columbia, MO). All analyses were conducted in accordance with Standard Methods and/or EPA methodology. Specific test methods or additional details on other aspects of the sampling or analysis program are available upon request.

Outfall 001

As previously defined, routine discharges from this outfall are from one of five sources: the Boron Recycle System, the Liquid Radwaste System, the Laundry and Hot Shower system, the Secondary Liquid Waste system, and (less frequently) the Steam Generator Blowdown system. While processed separately, these waste streams, are normally commingled and retained in various tanks prior to discharge (excluding Steam Generator Blowdown). Thus, discrete samples of each subsystem were not obtained. Further, Steam Generator Blowdown was recycled without discharge during our sampling project schedule. See Attachment C concerning Blowdown water quality.

In view of the above conditions and the necessity that plant operations not be excessively constrained by the testing program, the following approach was utilized. Each sampling event consisted of a single grab sample, taken from one of the well-mixed Discharged Monitor Tanks (under recirculating conditions) prior to its batch release. All of the data shown under the "Maximum Daily Value" columns in Forms C and D is from a sample taken from Liquid Radwaste Discharge Monitor Tank A on August 15, 2000. The flow monitored during this sampling event is also shown here and used to calculate the mass discharges under this heading.

Data under the "Maximum 30 Day and Long Term Average" values are based on DMR data for the two-year period, July 1998 through June 2000. Mass discharges under these headings were calculated using the appropriate long-term average flow rates.

Outfall 002

Cooling Tower Blowdown was sampled over a 24-hour period on July 26 and 27, 2000. The discharge was maintained at a constant flow rate. Flow proportional composite and multiple grab samples were taken as appropriate. Other than the exceptions listed below, all of the data shown under the "Maximum Daily Value" columns in Forms C and D is from this sampling event. The flow monitored during this sampling event is also shown here and used to calculate the mass discharges under this heading.

Data under the "Maximum 30 Day and Long Term Average" values are based on DMR data for the two-year period, July 1998 through June 2000. Mass discharges under these headings were calculated using the appropriate long-term average flow rates.

A separate composite sample was taken on 17 August 2000 for surfactants. This sample was necessary because of difficulty in finding a laboratory to analyze the initial sample.

Outfall 003

Water treatment plant wastes are routed to a sedimentation lagoon before being recycled or discharged. Effluent from the Demineralizer System wastes, the old outfall 004, is now part of Outfall 003. A 24-hour flow composite and multiple grab samples were taken from this wastewater flow on July 26 and 27, 2000 while it was being recycled. Although we were not discharging at the time, the water quality at the sample point would be the same as the quality of the wastewater if we had been discharging. All of the data shown under the "Maximum Daily Value" columns in Forms C and D is from this sampling event. Note that mass discharge values were calculated based on the estimated average discharge flow rate, even though the effluent was being recycled at the time.

No data were reported under the "Maximum 30 Day" and "Long Term Average" columns for this outfall since it is normally recycled and thus there is not any historical monitoring data from DMRs.

Outfall 007

As described in Attachment A, effluent from the (sanitary waste) stabilization lagoons is now routed through two artificial (constructed) wetlands. At the time this sample was collected, on July 27, 2000, the second wetland was not yet in service. For this reapplication project, a sample was collected from the effluent weir, at the point of discharge from the existing wetland into the plant discharge line. As the detention time within the lagoons and the wetland, both exceed 24 hours, a single grab sample was collected. Data from this sampling event is shown under the "Maximum Daily Value" column in Form C.

Data under the "Maximum 30 Day and Long Term Average" values are based on DMR data for the two-year period, July 1998 through June 2000. Mass discharges under these headings were calculated using the appropriate long-term average flow rates.

Outfall 009

The intake electric boilers are currently in a dry lay-up condition as they have been for many years, and so it was not possible to obtain a sample from them. The last discharge from this system occurred in early 1985, so recent past discharge data are not available. We want to keep this outfall permitted in order to preserve the authorization to discharge from the electric boilers, should extreme weather or other conditions warrant their use.

Outfalls 010-015

As described previously, storm water runoff from all plant areas is diverted to settling ponds, prior to discharge to waters of the state via the outfalls specified in the existing permit. These outfalls are described in Attachment A and are shown on the attached site maps. All six outfalls were sampled for the permit reapplication, as described below.

The DNR approved of our request for a simplified sampling protocol, during this round of permitting (see attached letters). Consistent with our proposal, we analyzed SWR effluent for the following parameters:

- pH
- Biochemical oxygen demand
- Chemical oxygen demand
- Total suspended solids
- Total organic carbon
- Ammonia – N
- Temperature
- Flow rate

Grab samples were taken of the storm water runoff ponds on the following dates:

Date	Outfalls Sampled	Rainfall Amount (inches)	Time Since Prior Rainfall Event (hours)
4/20/00	010 & 012	0.94	305
5/24/00	011, 013, & 014	0.82	354
5/26/00	015	4.2	48

These sampling dates were selected based on rainfall events that were expected to result in pond discharges. The discharges were evident, but not typically over the weirs. Leakage under the weirs of ponds 12 – 15 prevented the accumulation of sufficient water behind the weirs to produce flow over the weirs. As the spring rainy season began to close, the necessity to obtain

permit reapplication samples resulted in these under the weir discharge samples. The flow rates for all outfalls are based on calculated runoff (using appropriate runoff coefficients) from rainfall measurements.

All of the data shown under the "Maximum Daily Value" columns in Form C are from these sampling events. The flow, calculated for the rainfall event triggering each of these discharges, is also shown here and used to calculate the mass discharges under this heading.

Data under the "Maximum 30 Day and Long Term Average" values are based on DMR data for the two-year period, July 1998 through June 2000. Mass discharges under these headings were calculated using the appropriate long-term average flow rates, although it should be noted that we routinely report DMR SWR flow data, as daily averages for the entire month in which a sample is collected. Thus, the DMR SWR flow values are considerably lower than the values reported here.

Outfall 016

The cooling tower bypass was sampled over a 24-hour period on July 26 and 27, 2000. The discharge was maintained at a constant flow rate during this period. Flow proportional composite and multiple grab samples were taken as appropriate. Other than the exceptions listed below, all of the data shown under the "Maximum Daily Value" columns in Forms C and D is from this sampling event. The flow monitored during this sampling event is also shown here and used to calculate the mass discharges under this heading.

Data under the "Maximum 30 Day and Long Term Average" values are based on DMR data for the two-year period, July 1998 through June 2000. Mass discharges under these headings were calculated using the appropriate long-term average flow rates.

A separate composite sample was taken on 17 August 2000 for surfactants. This sample was necessary because of difficulty in finding a laboratory to analyze the initial sample.

Outfall 017

This is by definition a no discharge outfall; therefore it was not sampled.

Missouri River

A modified composite sample (consisting of 4 aliquots, each collected at least 2 hours apart) was taken of Missouri River water being pumped to the head of the water treatment plant. It is believed that this modified composite sample is representative of the river over a normal 24-hour period. Data available on the Missouri River indicate substantial variability over longer periods. This data is provided under the "Intake" column in Forms C and D, forOutfall 003. Other than the following exception, all of the data shown is from this sampling event.

A single grab sample was taken on August 17, 2000 for surfactants. This sample was necessary because of difficulty in finding a laboratory to analyze the initial sample.

General Notes

Important note on mass discharge calculation: *As described previously, mass discharges listed under the Maximum Daily Value heading, represent values calculated from the analytical data and the measured flows during the special re-application, sampling event. Consequently, the values shown do not necessarily represent an actual maximum mass discharge value.*

Severn-Trent Laboratories, Inc analyzed the following parameters:

Nitrate
Nitrite
Total Phosphorus
Phenols
Cyanide
COD
Ammonia (an N)
Total Organic Nitrogen
Bromide
Sulfide
GC/MS Volatiles
GC/MS Semi-Volatiles

Total Metals
- Silver
- Aluminum
- Arsenic
- Barium
- Beryllium
- Cadmium
- Cobalt
- Chromium
- Copper
- Iron
- Mercury
- Magnesium
- Manganese
- Molybdenum
- Nickel
- Lead
- Antimony
- Selenium
- Tin
- Thallium
- Zinc

Fecal Coliform and Surfactants were analyzed by Engineering Surveys and Services Testing Lab.

Ameren, UE Callaway PP
MO-0098001, Callaway County

STATE OF MISSOURI
Mel Carnahan, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

March 22, 2000

Mr. Michael Bollinger
Ameren Services
One Ameren Plaza
P.O. Box 66149
St. Louis, MO 63166-6149

Dear Mr. Bollinger:

We received your letter dated March 13, 2000 concerning storm water sampling at the Callaway Plant, Permit No. MO-0098001. We concur with your reasoning and approve the sampling plan as outlined in your letter.

If you have questions, please contact Tim Stallman at (573) 751-7625.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

Philip A. Schroeder, Chief
Permit Section

PAS:tsv

c: DNR, Jefferson City Regional Office
U.S. Environmental Protection Agency, Region VII

Ameren Services
Environmental, Safety & Health
314.554.3652 (Phone)
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PO Box 66149
St. Louis, MO 63166-6149
314.621.3222

March 13, 2000

Mr. Philip A. Schroeder
Department of Natural Resources
Water Pollution Control Program
Permit Section
P.O. Box 176
Jefferson City, MO 65102-0176

Ameren

Dear Mr. Schoeder:

Re: Callaway Plant NPDES Permit #MO-0098001
Re-application Monitoring Program

As the application for renewal of our Callaway Plant NPDES operating permit is due this fall (at the end of November), we have just initiated the project to compile the necessary information. One of the first tasks is to arrange for the sample collection and analysis. On Friday, March 10, I spoke with Richard Laux regarding details of the Storm Water Runoff (SWR) monitoring, in order to resolve certain questions and ensure an appropriate approach for this round of permitting. He suggested that we present our specific requests to you in writing, to facilitate their review.

Storm Water Runoff (SWR) Outfalls 010 through 015

In the initial round of sampling, in order to characterize storm water runoff from industrial facilities subject to EPA's "Phase I" storm water regulations, we attempted to comply with the rigorous criteria which defined both qualifying storm events and sample procedures (both first flush and flow-proportional composite samples). Such sampling efforts are very complex and costly, yet despite our efforts they proved infeasible for a few of the storm water settling pond outfalls at Callaway Plant. We believe an alternative sampling program is appropriate for this round of permitting in light of the historical data and site specific circumstances. We are confident that the approach described below will ensure representative samples of effluent from the storm water settling ponds.

For this round of permitting, we plan to collect grab samples of effluent from the storm water settling ponds (Outfalls 010-015), as soon as practical following initiation of discharge after a rainfall event. We will analyze samples collected after events of at least 0.1 inch of rain. We plan to monitor rainfall continuously throughout the sampling project, in order to characterize the event (as well as the effluent), however we see no benefit to apply other event selection criteria. We believe the configuration of the existing settling ponds and the condition of their spillways/discharge structures support the use of alternative techniques. The discharge of these ponds following a rainfall event is substantially moderated by both the highly absorptive off site drainage areas and the detention/retention capacity of the ponds. Clearly, initial effluent quality from a settling pond does not exhibit the elevated contaminant concentrations typical in first flush samples of unimpeded runoff from direct storm water conveyances. As well, we see little benefit despite considerable additional effort and cost, to justify composite sampling.

In our last application, we analyzed the SWR samples for 26 parameters, again based on generic EPA criteria. These included parameters listed in EPA Form 2F, plus all other parameters listed in our permit (for which analysis was required for any outfall), and PCBs (due to the EPA's Steam Electric categorical prohibition against discharge of PCBs). Data on most of these parameters provides little relevant information regarding plant operations. For example, nitrogen and phosphorus may be present in runoff (due to the agricultural lands, managed by the Missouri Department of Conservation, which also drain to some of these ponds) but it is highly unlikely that these contaminants would be present from Plant operations. Likewise, we previously monitored for PCBs (and found none) due to the generic limit, despite the fact that electrical oils used at Callaway are and have always been PCB-free. We believe the quality of SWR from these outfalls can be sufficiently characterized by analyzing the "standard" list of parameters in Part A of Missouri Form C, and thus plan to limit our analysis to these in this re-application.

Outfalls 009 (Intake Heater Blowdown) and 017 (Ultimate Heat Sink)

In addition, with your concurrence, we do not plan to sample these two outfalls for the reapplication.

Outfall 009, which would be used to discharge blowdown from electric heaters (installed in the intake, to heat water to de-ice the intake screens and/or bar racks), has never been used, although the equipment is in place in case of critical need. We have previously characterized the probable quality of this effluent. And we would conduct a special sampling and analysis program before any discharge would be made, if these heaters were to be placed in service. Nonetheless, we value the existing outfall designation, as it provides a mechanism to expeditiously authorize potential future discharges, without modification of the permit.

Outfall 017 is classified as a no discharge outfall. We could attempt to characterize the quality of water within the Ultimate Heat Sink, but since discharges are neither anticipated nor authorized we see no benefit to collect such information.

Conclusions

In order to ensure that SWR sampling data can be compiled for this fall's reapplication, we want to attempt to sample during spring rains. Thus, we would appreciate your timely response to this memo, which will allow us to modify and/or finalize our sampling program without delay. If you have any questions regarding this proposal, please contact me.

Sincerely,

Michael F. Bollinger

Michael F. Bollinger
Staff Environmental Scientist

bcc: C. Riggs
J. C. Pozzo
T. E. Siedhoff / File WQ-3.1.1

ATTACHMENT F
Section 311 and CERCLA Exemptions

The chemicals listed below are used in water treatment processes and may be discharged in amounts exceeding their "reportable quantities" under 40 CFR 117 and 302 (1989).

Chemical	Anticipated Usage (Avg lbs/day)	Reportable Quantity (lbs/day)	Typical Quantity On-Site (lbs)	Outfalls
Sodium Hydroxide	1,160	1,000	173,000	001, 003, and 009*
Sodium Hypochlorite	1,880	100	104,850	001, 002, 003, and 016
Sulfuric Acid	31,000	1,000	702,920	001, 002, 003, and 009*
Hydrazine	100	1	24,200	001 and 003*

* Recycling of Outfall 003 (as described in Attachment A) may also result in trace amounts of these chemicals in Outfalls 002 and/or 016.

AmerenUE requests exclusion under the NPDES exemptions from Section 311 and Superfund reporting for these four compounds and all others that are, as reported in this application, present in continuous or anticipated intermittent discharges (See Attachment D). These and other discharges for which exclusion are requested are exempt from Section 311 liability by 40 CFR 117.12(a)(1) if they are in compliance with the permit and 117.12(a)(2) or (3) if they are not. Discharges that are excluded from 311 reporting are also excluded from Superfund reporting. Any discharges other than those resulting from on-site spills would either result from circumstances identified in this application and be subject to neutralization treatment (see 117.12(c)) or would be continuous or anticipated intermittent discharge originating within the operating or treatment systems at the plant (see 117.12(d)). These discharges are, therefore, excluded from Section 311 and Superfund reporting requirements.

ATTACHMENT G
General Comments on Standards Setting

In anticipation of conditions that may be set in this permit renewal,AmerenUE requests the consideration of the following comments.

1. **Mass Limits** - The Steam Electric Effluent Guidelines (at 40 CFR Part 423.13(g)) specifically allow the permitting authority to express the quantity of pollutants allowed to be discharged as a concentration limitation instead of a mass-based limitation. Fixed numerical mass discharge limitations necessarily impose implicit flow restrictions at the allowable concentration levels. The flow restrictions are too inflexible to cope with the flow variability conditions and the electrical reliability imperatives placed on steam electric power plants. Unlike some industries in which wastestream flow variability is the result of a single factor, like production, Callaway Plant has no such single parameter indicative of flow. Further, as a utility whose production is dictated by public consumption, the plant must be capable of attaining and maintaining full power production for as long as necessary.

   Since we feel that the concentration-based limits are sufficient and more appropriate for regulation of power plant discharges, we request that you do not impose any mass limitations when reissuing this permit.

2. **Net Credits** - In a situation whereby a limitation might be set on the discharge of a priority pollutant, AmerenUE feels it should reflect an adjustment credit for pollutants in the intake water, because discharges are returned to the Missouri River. As complete removal of compounds in this category would not be achieved by the water treatment systems at the Callaway Power Plant, we hereby request an appropriate net limitation be applied as necessary. We anticipate not adverse water quality effect form net limitations.

3. **Elimination of the Groundwater Sampling Provisions (under the Radiological Monitoring Requirements)** – Item 4 of Section D ("Other Requirements") of our current permit contains numerous radiological monitoring requirements. Subpart B of this section requires "quarterly sampling of the groundwater from test wells F05, F15 and the Portland drinking water supply." Based on the information listed below, we request that this requirement (for groundwater and drinking water supply) be deleted in the renewed permit.

   It is important to note the proximity of these wells (relative to the approximate center of the plant) and their depth. Wells F05 and F15 were installed for monitoring, prior to plant construction. Well F05 is located 0.9 miles south-southeast of the plant; it was bored to a depth of 405 feet and a typical groundwater elevation is 278 feet below the surface. Well F15 is located 0.4 miles north-northeast of the plant; it was bored to a depth of 385 feet and a typical groundwater elevation is 296 feet below the surface. We do not have detailed information regarding the well(s) used to provide the Portland drinking water supply. We collect our routine samples at Holzhouser's Grocery, which is located approximately 5 miles from the plant.

Plant staff recently reviewed the analytical data from the period April 1982 through December 1999, including both tritium and gamma isotopic analyses. With a single exception, all analyses were below background levels established during pre-operational monitoring. The sole exception was a detectable tritium measurement, which was well within the statistical range of variability for the dataset. Furthermore, no fission byproducts have ever been detected in either of these wells or the Portland drinking water supply.

Based on the record to date, clearly there is little value in ongoing monitoring. Furthermore, there are at least three valid reasons why monitoring at these locations is a poor choice, for assessing impacts from the Callaway Plant.

First, using permeability rates of the site geologic units (as documented in the Plant's Environmental Report, Operating License Stage), it would take a minimum of 230 years for leakage to pass through the 100 feet of shale, which separates the ground surface and the groundwater elevation within these wells. Using conservative assumptions, even after passing through the shale layer, it would take an additional 20 years for water to travel the remaining 180 feet of depth to reach the groundwater level within the well.

Secondly, when radionuclides are transported by water through geologic units, the chemical processes such as sorption, retards the rate of movement of the radionuclides relative to rate of water movement. The magnitude of this effect depends on the type of soil media and the specific nuclide. In any event, the net result is a significant increase it the "transport" time, making it ever greater than the estimate above.

Finally, it should be noted that radioactive leakage to the environment would not be allowed to contact the ground long enough to begin seeping to a well. Any leakage 'to the environment' from the Plant would be quickly detected (due to extensive monitoring requirements imposed by the Nuclear Regulatory Commission), and all contaminated soil would be removed for proper disposal.

4. **Radiological Monitoring Requirement Corrections** – It should be noted that the current permit contains two out-dated references to reports required by the Plant's Technical Specifications; these are found in Section D, Other Requirements, item 4 e. The corrections are as follows: a) the Annual Radiological Environmental Operating Report is compiled in accordance with Technical Specification 5.6.2 (the existing reference to 6.9.1.6 is no longer valid) and b) the Annual Radioactive Effluent Release Report is compiled in accordance with Technical Specification 5.6.3 (not 6.9.1.7). These updated references should be included in the re-issued permit.

5. **WET Test Scheduling** – In accordance with permit conditions (Section D, Other Requirements, item 6), Callaway Plant conducts annual Whole Effluent Toxicity testing on a composite sample of all wastestreams that discharge to the plant blowdown line (i.e. Outfalls 001, 002, and 016, plus 003, 007, and/or 009, if discharging). When attempting to collect this special composite sample, it simplifies the sampling procedure considerably to maintain

the Cooling Tower Blowdown (Outfall 002) at a constant flow rate over the 24-hour sampling period. This eliminates the need to adjust sample aliquots proportionally with flow. Unfortunately, we are required to conduct the WET test in July, one of the hottest summer months. During hot weather it is operationally difficult to maintain constant cooling tower blowdown and still maximize plant efficiency. Yet, efficiency needs to be maximized in the summer in order to meet the high electrical demand. We hereby request that the designated WET testing month be revised to April or May in order to reduce the sampling complexity and resulting burden. We are not aware of any specific basis for the timing in the current permit and believe alternatively, that testing in April or May might be preferential in order to assess impacts during the spring season, a critical period for developing aquatic organisms.

ATTACHMENT H
Section 316(b) Demonstration Status

The Callaway 316(b) demonstration consists of two parts, an impingement study and an entrainment study. Part one, the impingement study, was started during the spring of 1984 and was successfully completed in the fall of 1984. Part two, theentrainment study, was completed and submitted in June 1986. DNR correspondence dated April 15, 1987, approved the 316(b) study and agreed with the conclusions of the study that the impacts from the use of the intake structure at Callaway are minimal.

There have been no significant modifications or changes in the construction, design, location or capacity of the cooling water intake structure. Accordingly,AmerenUE hereby incorporates by reference the results and conclusion s of these prior studies and requests renewal of the 316(b) approval at Callaway.

ATTACHMENT I
Macroinvertebrate Controls

Asiatic Clams

Asiatic clams, Corbicula fluminea, are a prolific nuisance macroinvertebrate with the potential to severely impact plant operations, if their population is not held in check. The Callaway Plant Water Treatment Plant (WTP) clarifiers and clearwell are considered particularly vulnerable systems. In 1996, the Plant instituted a monthly monitoring program to facilitate effective controls. Two methods are employed to control Asiatic clams: chlorination for control of juvenile clam (prior to shell development) and molluscicides to control adults. {See sections below and our attached letter of May 7, 1997, which describes the treatment process.} To increase the effectiveness of these treatments, water temperatures are monitored in order to determine when the temperature is suitable for the clams to spawn.

A molluscicide, Bulab 6086, is added to the WTP clarifier effluent from one to four times per year, at a target concentration of 13 mg/l (as product, in theclearwell). The treated water is allowed to soak for approximately 12 hours to provide maximum effectiveness. This procedure is usually performed during a plant intake outage, or during periods of low flow (<5000gpm) through the WTP. During this treatment, the cooling tower makeup bypass valve (Outfall 016) is closed to prevent the release of this product directly to the plant discharge line. This bypass valve remains closed for 3 hours following the restoration of the WTP flow. The treated water in the clearwell is then routed to the cooling tower for use as makeup. Suspended solids in the tower will absorb the residual active molluscicide. Therefore, there is no detectable free active product released from Outfall 002.

The chlorination treatment is similar to that used with themolluscicide as described above, except that sodium hypochlorite is added upstream of the WTP clarifiers. Otherwise, the treatment follows the same basic procedure, i.e., the cooling tower makeup bypass valve is closed until the chlorine is reacted or dissipates and thus undetectable in discharges into the plant blowdown line.

Zebra Mussels

Callaway Plant has a monitoring program to detect the settlement and growth of zebra mussels within systems vulnerable to macroinvertebrate fouling. Thus far, monitoring has not revealed any significant threats to Plant systems from this organism thus treatment programs have not been initiated. Even so, we anticipate that treatments may be required at some point.

We have identified two systems that are particularly vulnerable to fouling if zebra mussels become established in the vicinity of the plant. The first system is the intake structure, which contains vulnerable equipment including screen wells, pump bays, vertical traveling screens, pumps, and trash racks. The other system, which might need treatment, is the 5-mile pipeline from the intake structure to the plant.

The following treatments will not be implemented until monitoring indicates that zebra mussel fouling is imminent.

Intake Structure - We plan to treat isolated intake bays with a molluscicide as follows. An individual intake bay will be isolated by closing all gate openings to adjacent cells and the river. The discharge valve on the intake pump in the isolated bay will be closed to prevent backflow from operating pumps in adjacent bays. The molluscicide product will be injected into the isolated bay to achieve the manufacturers recommended concentration. The product concentration will be maintained for the specified time limit for effective treatment. After the treatment, the treated water will be pumped to the plant for use. This method is similar to others approved by DNR for AmerenUE facilities on the Mississippi River. Once zebra mussels become established in the vicinity of the Callaway intake, treatments to control fouling in the intake bays will be conducted 3 to 4 times per year. We would most likely use Bulab 6086 at a target dosage of 13 mg/l as product and allow approximately 12 hours per treatment.

Intake Pipeline - Once zebra mussels become established, the intake pipeline will also be treated with a molluscicide product. We plan to inject the product into the combined pump discharge header at the intake. In this application, we would use a lower concentration for a longer period of time. Again assuming the use of Bulab 6086, we would feed the product to achieve approximately 2 mg/l in the pipeline and maintain this concentration for a period of four weeks. Two treatments would be anticipated per year; one in the spring and one in the fall.

In the event that alternative zebra mussel control strategies are developed for Callaway Plant, we will notify DNR to present detailed plans and seek required authorizations, prior to their implementation.

Post [illegible]
St. Louis, [illegible]
314 621 [illegible]

UNION ELECTRIC

May 7, 1997

Mr. Jerry Croy
Missouri Department of Natural Resources
Central Regional Office
1511 Christy Drive, P O Box 176
Jefferson City, MO 65102-0176

Dear Mr. Croy,

Re: Callaway Plant NPDES Permit No. MO-0098001

This letter is to inform you of a change in discharge of our cooling tower blowdown, Outfall 002. The change is due to the use of a molluscicide, BULAB 6086 to control Asiatic clams, *Corbicula sp.* in sections of the water treatment plant and associated piping. BULAB 6086 is a quaternary ammonium amine based molluscicide similar to the Betz Clam-Trol product that was described in Attachment M, Macroinvertebrate Control, in our last permit reapplication.

The target treatment concentration in the systems being treated will be 13 ppm as product. This concentration will be maintained for about 12 hours. Flow through the systems being treated will be minimized to reduce the use of the treatment chemical. The water from the treatment process will be routed to the cooling tower for use as makeup water.

The active chemical in the molluscicide is adsorbed by clay and other suspended solids in water. This process detoxifies the molluscicide and makes it unavailable to aquatic organisms. The residual treatment chemical in the cooling tower water will be detoxified by the suspended solids in the water. We do not believe that there will be any detectable free active chemical in Outfall 002 due to the detoxification and volume of water in the cooling tower basin. A material data safety sheet and aquatic toxicity profile are attached for BULAB 6086.

We plan to start treating systems associated with the water treatment plant in early June . It is estimated that we will need to perform from one to four treatments per year depending on infestation levels. If you have any questions or need further information, please call me at 314-554-3065.

Sincerely,

Patrick M. Bell
Sr. Environmental Chemist
Environmental Safety and Health Department

Attachment

PMB/bb

bcc: CAR
G. P. Gary
JCP/TES/PMB
file P-3.2.11.1

ATTACHMENT J
Activities, Materials and Management Practices with the Potential to Impact Storm Water Quality

As describe in Attachment E, reduced monitoring of storm water outfalls was authorized by DNR for this application (acknowledging the adequacy of prior characterization of these discharges). This data was entered into Missouri Form C, eliminating the need to complete EPA Form 2F (which we have used previously), nonetheless, we believe this Attachment and the referenced drawings provide all of the required data.

Routine/Permanent Significant Materials Storage

The following significant materials have been identified at the Callaway Plant, as being in contact with storm water currently or in the last three years. They are shown on drawing NPDES-001, NPDES Storm Water Information Outfalls 010-015 and described below. Note that compass direction references are relative to "Plant North" a standardized reference designation, which is depicted on the drawing. Where possible, each item description listed below includes a number in brackets "{}" which corresponds to the drawing legend listing.

1. Amine Storage Tank - A 6,000-gallon tank containing monoethanolamine is located northeast of the turbine building. A lined trough is below the tank capable of holding 110% of the tank contents. Monoethanolamine is unloaded from tank trucks using air pressure. {827}

2. Caustic Storage Tank - A 10,000-gallon storage tank containing sodium hydroxide is located plant northeast of the turbine building. A lined trough is below the tank capable of holding 110% of the tank contents. Caustic is unloaded from tank trucks using air pressure. {829}

3. Demineralizer Caustic Storage Tank - A 16,000-gallon storage tank containing sodium hydroxide is located plant north of the demineralizer building. A concrete dike surrounds the tank capable of holding 110% of the tank contents. Caustic is unloaded from tank trucks using air pressure. {853}

4. Sulfuric Acid Storage Tank - A 10,000-gallon storage tank containing sulfuric acid is located plant northeast of the turbine building. A lined trough is below the tank capable of holding 110% of the tank contents. Acid is unloaded from tank trucks using air pressure. {828}

5. Circulating Water Sulfuric Acid Tank - A 2,500-gallon storage tank containing sulfuric acid is located near the circulating and service water pump house. Containment consists of a concrete trough capable of holding 110% of the tank contents. The tank can be automatically or manually filled through underground pipelines from the bulk storage tank at the circulating water chemical control system building or directly from a tanker truck. {844}

6. Bulk Sulfuric Acid Tank - A 25,000-gallon storage tank containing sulfuric acid is located south of the circulating water chemical control system building. Containment consists of a concrete dike capable of holding 110% of the tank contents. Acid is unloaded from tank trucks using air pressure. {818A}

7. Demineralizer Sulfuric Acid Storage Tank - A 10,000-gallon storage tank containing sulfuric acid is located plant north of the demineralizer building. A concrete dike surrounds the tank capable of holding 110% of the tank contents. Acid is unloaded from tank trucks using air pressure. {854}

8. Gasoline Storage Tanks - The above ground gasoline storage tank located plant wet of the Stores I building has a capacity of 2,000 gallons. A prefabricated metal containment exists around the tank of sufficient size to contain approximately 110% of tank capacity. Gasoline is unloaded from tank truck using onboard truck pumps. {865}

9. Security Diesel Storage Tank - A 3,000 gallon underground tank containing diesel fuel is located by the Main Access Facility. Diesel fuel oil is unloaded from tank trucks using onboard truck pumps. {814}

10. Emergency Diesel Fuel Tanks - There are two 100,000 gallon underground diesel fuel oil storage tanks located plant south of the Emergency Diesel building. Diesel fuel oil is unloaded from tank trucks using onboard truck pumps. These tanks are used to power the emergency diesel generators during testing and as needed to supply plant power. {838}

11. Vehicle Diesel Fuel Storage Tanks -Two above ground vehicle diesel storage tanks are located plant west of the Stores I building. There is a 300 gallon tank used to store #1 diesel and a 700 gallon tank used to store #2 diesel fuel oil. A prefabricated metal containment exists around the tank of sufficient size to contain approximately 110% of tank capacity. Diesel fuel oil is unloaded from tank trucks using onboard truck pumps. A gas station type dispenser is used to fill diesel-powered vehicles from these tanks. {886}

12. Auxiliary Fuel Oil Storage Tank - The auxiliary fuel oil storage tank is a 300,000-gallon carbon steel tank located plant west of the demineralizer building. An earthen berm capable of containing 110% of the tank contents surrounds the tank. An underground transfer line from the auxiliary fuel oil transfer system fills the tank. This tank is used to supply diesel fuel oil to the auxiliary boiler and the fire protection diesel pumps. {869}

13. Circulating Water Chemical Control System Salt Storage - Two salt storage tanks (full of rock salt) are located plant north of the circulating water chemical control system building. They have been retired in place. {F}

14. Transformer Oil - Nine large power transformers are located on site. They are the main transformers (3 at 8,000 gallons), the Unit Auxiliary transformer (8,000 gallons), the Start Up transformer (9,700 gallons), the Station Service transformers (2 at 2,770 gallons), and the Engineered Safety Features transformers (9,700 and 11,500 gallons). Most outside oil filled electrical transformers are situated on top of a concrete lined pit, which is filled with gravel. The exception to this is the Training Annex transformer and the eight 300 series site power loop transformers which do not have any containment. Any spills from these transformers would have to be contained in the drainage ditches adjacent to the transformers.

15. Demineralized Water Tank - A 150,000-gallon stainless steel demineralized water tank is located plant southeast of the turbine building. No containment exists around this tank. The tank is filled from the makeup demineralizers through underground piping. {14}

16. Condensate Water Tank - A 466,000 gallon stainless steel condensate water tank is located plant southeast of the turbine building. No containment exists around this tank. The tank is filled from the demineralized water storage tank through underground piping. It is used to supply water to the steam generators when the plant is shutdown and during transients. During transients the tank can also be supplied by firewater. {831}

17. Refueling Water Tank - A 419,000-gallon stainless steel refueling water tank is located plant southwest of the containment building. No containment exists around this tank. The tank is filled from the reactor makeup system through underground piping. It is used to supply water to the refueling pool during outages and to the reactor system during transients. The tank contains radioactive demineralized water with 2,350 to 2,500 mg/l of boron. {839}

18. Reactor Makeup Water Tank - A 153,000-gallon stainless steel reactor makeup water tank is located plant southwest of the containment building. No containment exists around this tank. The tank is filled from the demineralized water tank through underground piping. It is used to supply demineralized water to the reactor system and associated support systems. {840}

19. Demineralized Water Clear Well - The demineralized water clear well consists of a 50,000-gallon carbon steel tank located plant northwest of the demineralizer building. No containment exists around this tank. Deep well water is pumped underground to the demineralized water clear well, which is then transferred underground to supply water to the makeup demineralizers. {855}

20. Fire Water Storage Tanks - Two 300,000-gallon carbon steel firewater tanks are located plant southeast of the demineralizer building. No containment exists around these tanks. These tanks are filled from the demineralizer clear well through underground piping. They are used to supply firewater to the plant for testing and fire response. {859}

21. Neutralization Tank - The neutralization tank is a 150,000-gallon open carbon steel tank with an inner protective coating. No containment exists around this tank. It receives regeneration wastewater from the makeup demineralizer system through underground transfer lines. The water is pH adjusted with sulfuric acid and or caustic and then sent to the WTP sedimentation lagoons. {862}

22. Discharge Monitor Tanks - Two above ground 100,000-gallon stainless steel discharge monitor tanks are located plant south of the radwaste building. The tanks are used to store plant radioactive wastewater prior to discharge. A single concrete diked area capable of holding 110% of the contents of one tank provides spill containment. {879}

23. Water Treatment Plant Sodium Hypochlorite Storage Tank - A 6,000-gallon plastic sodium hypochlorite tank is located plant south of the water treatment plant. No containment exists around this tank. It is in service from approximately April to October each year. The contents are used to chlorinate the water treatment plant clarifiers.

24. Gaseous Chemical Storage

    a) Carbon Dioxide (CO_2): The CO_2 storage tank is located in the plant gas yard, which is plant south of the radwaste building. The primary use of CO_2 is to degas the main generator of hydrogen during outages. The tank has a capacity of 6 tons of liquid CO_2, a maximum pressure of 350 psig at 125°F. It is constructed per section 8 of the ASME pressure vessel code. {832}
    b) Hydrogen (H_2): There are 12 tubes for storage of H_2 with a total capacity of 83,232 cubic feet at 2,300 psig located in the plant gas yard. Hydrogen is primarily used as a cover gas for the main turbine generator and to maintain oxygen control in the reactor coolant system. The tubes are constructed per ASME UPV code 8, Code Case 1205 of a material that meets ASME SA372 Class 4. {833}
    c) Oxygen (O_2): There are 8 O_2. They each contain 330 standard cubic feet of O_2 at 2,640 psig. They are constructed to meet DOT specification 3AA2400. The primary use of O_2 at the plant is in radwaste systems, in the evolution of hydrogen recombination. {841}

d) Nitrogen (N_2): Callaway has both high and low pressure N_2 with storage tanks located in the plant gas yard. The low pressure N_2 storage tank has a capacity of 1569 cubic feet. It is constructed with an inner vessel of 5083 aluminum and an outer carbon steel vessel. The primary use of low-pressure nitrogen for the plant is to purge and blanket systems to exclude oxygen. High-pressure nitrogen is stored in 3 tubes with a total capacity of 24,280 cubic feet at 2,300 psig. They are designed and constructed to meet ASME code for pressure vessels. The primary use of high-pressure nitrogen is to provide a backup gas supply to rapidly close plant valves during transients. {892}

25. Reclaimed Oil Storage Tank - The reclaim oil tank has a capacity of 10,000 gallons. It is an aboveground tank located within an earthen dike of sufficient size to contain 110% of the tank contents. The tank is filled through underground lines from the oily wastewater separator. Used oil is removed for recycle from the tank to tanker trucks by vacuum created within the trucks. {861}

26. Oily Waste Treatment Area - This area is located plant southwest of the demineralizer building. The area consists of a building containing the oily wastewater separator and associated piping, the reclaimed oil storage tank, the equalization basin, and a 29,000-gallon carbon steel underground process surge tank that supplies plant oily wastewater to the separator. All oily waste system water and oil transfers in this area are underground. The separated water is transferred to the WTP sedimentation lagoons. {870}

27. Auxiliary Oil Transfer (Loading) Area - The auxiliary oil transfer loading area is located plant south of the auxiliary fuel oil storage tank. The area consists of a building containing pumps and piping to transfer diesel fuel oil to the auxiliary fuel oil storage tank. Diesel fuel oil is unloaded from tank trucks by pumps on the trucks or using the installed plant equipment pumps. Transfer lines to the auxiliary fuel oil storage tanks are underground. {864}

28. Loading Area at Stores II - The loading area at the Stores II building consists of a standard shipping/receiving dock. All chemicals and other products are unloaded from trucks in their own shipping containers. There are not facilities for unloading of any bulk chemicals, fuel oil, or gasoline through pipelines to plant bulk storage tanks. {801}

29. Misc. Materials Storage Areas - Three areas around the Stores II building exist for miscellaneous laydown areas for item such as metal, gravel piles, fill material and old concrete. One is a concrete pad and the other two are on grass/gravel covered areas. Another materials storage area exists near the outage maintenance facility. Materials stored are metal components such as pumps, and valves, structural materials made of items such as metal, wood or concrete, pipe made of materials such as carbons steel, PVC, and galvanized metal, empty portable tanks, and empty metal dumpsters. {801}

30. Excavation Surplus Storage - Two storage areas exist plant south of the water treatment plant sludge lagoons containing excess dirt, concrete, and asphalt from plant activities.

Note that Drawing NPDES-001 still depicts the mechanical (extended aeration) sewage treatment plant, with the identifier - 871. The mechanical plant was removed from service with diversion of sanitary wastewater to the newly constructed lagoons in March 1997 (as per the current description of Outfall 007 in Attachment A). The mechanical plant was physically removed in April 1997. While not technically a "significant material", these facilities are shown on the drawing since they were on site within the last three years.

Temporary Significant Materials Storage - During the Last Two Refueling Outages

The following significant materials were present on site temporarily within the last three years. Most were on site during the last refueling outage (Refuel 10). Most of these are also shown on attached drawing NPDES-003, NPDES Storm Water Information Outfalls 010-015 Refuels 10. Note that the Legend for this drawing is very similar to the one in drawing NPDES-001. The numbering assignments are identical, although drawing NPDES-003 lists only a subset of the previous list, and the temporary, refueling related items within its Legend. Numbered references are enclosed in brackets in each applicable description below. All items were removed at the end of the refueling outage unless otherwise noted.

During Refuel 10, October 1999 through November 1999, Callaway Plant repaired 60 steam generator tubes by using a new electrosleeve method approved by NRC. This method was performed by Framatome Technologies of Lynchburg, VA. The electrosleeve process involved three steps. First, a small section of the tubes were mechanically cleaned by a honing method. Second, the tubes were further cleaned by use of a chemical cleaning solution. Third, the tube flaw was repaired by depositing a nickel layer (electrosleeve) placed over the defect. A number of Framatome trailers were used to support the electrosleeve process. All are shown on drawing NPDES 003, and are listed under the heading "U". These include:

1. The watts sealand and chemical lab trailers {1009};

2. The EC & Electrosleeve trailers {1010}; and

3. The waste processing and waste drum storage area {1011}. , items 1012 and 1013 under V on drawing NPDES 003 were

   Two additional items were on site to provide chemical support equipment for steam generator maintenance and are listed under the heading "V".

4. An Ecolochem trailer (portable deoxygenation unit) {1012} and

5. A nitrogen trailer {1013}.

Finally, note that two additional 'significant materials' were stored on site during the last three years, although not associated with Refuel 10. Two 20,000 gal portable tanks were located in the yard area, plant east of the Radwaste Building, which is number 700 on NPDES 001 or 003. These tanks were on site from July 2000 through October 2000. They were located within a bermed area and used to store low-level radioactive water prior to reprocessing by plant systems.

Hazardous Wastes

Callaway Plant is a small quantity generator of hazardous waste generating between 200 and 2200 lb. of hazardous waste per month. The waste is stored in a prefabricated Hazardous Waste Storage Building (HWSB) with containment sumps, designed specifically for storage of hazardous waste. Waste is stored in the HWSB for up to 180 days prior to disposal via an off-site vendor. Typical wastes generated are Chromium, Lead, Mercury, Silver, and solvents. The plant also currently maintains an outside satellite accumulation area where waste paint and solvents are accumulated. These wastes are accumulated from work performed in the plant in two separate 55-gallon drums held in a prefabricated closed spill container capable of holding 110 percent of the volume in both drums.

Management Practices

A spill prevention, control and countermeasure (SPCC) plan and implementing procedure is in place at the Callaway Plant. The plan provides plant personnel with the necessary information regarding the types, locations and quantities of non-radioactive oil present at Callaway Plant and offers guidance on the containment and reporting of oil spills.

A chemical emergency response plan (CERP) and implementing procedure is also in place at the plant. This plan provides guidance and information for responding to hazardous chemical and/or oil spills.

Both plans describe various materials management practices employed to minimize contact by these materials with storm water runoff.

Outdoor Vehicle Maintenance and Cleaning Areas

No outdoor vehicle maintenance and cleaning areas exist on the plant site.

Fertilizers, Pesticides, Herbicides, and Soil Conditioners

Herbicides and pesticides are spray applied to various areas in and around the plant site as shown in drawing NPDES-001, Storm Water Information Outfalls 010-015.

The herbicides used for weed control are Carmex, Oust and Weedar (2,4-D). The pesticide used at the firing range for tick control is Dursban 4E with an active ingredient of Chlorpyrifos.

The annual amount of pesticide applied to the firing range area is approximately five pints of product, which equates to approximately 2.5 pounds of the active ingredient.

Note that fertilizers, herbicides and soil conditioners which are used by the Department of Conservation on lands leased to them (yet within the plant storm water drainage areas) are not included in this summary.

Authorization for Non-stormwater Components

In the last application, we described numerous releases to storm water conveyances from sources not associated with precipitation. We also discussed our justification for these releases with representatives from DNR's Jefferson City Regional Office, in meetings (and a during a plant inspection) preceding re-issuance of the permit. All were approved. As a result, testing was not conducted to evaluate the presence of non-storm water discharges (as they exist and have been previously characterized and evaluated). Thus, this application does not contain the typically applicable "non-storm water source certification" (per EPA Form 2F, Item V).

We hereby request continued allowance for releases from these sources (described below), consistent with DNR's earlier interpretation. The sources include:

1. Potable water - infrequent flushing and/or drainage of potable water lines for repairs or maintenance to the system.

2. Firewater - quarterly flushing from 40 connections required for testing and maintenance of the firewater system. Note that we treat the firewater system with a biostat, glutaraldehyde dimethylamide and a solids dispersant. This treatment program is designed to control microbiologically influenced corrosion to ensure integrity as required by American Nuclear Insurers and the Nuclear Regulatory Commission. Quarterly flushes will discharge less than 50,000 gallons total. Based on the expected concentrations and aquatic toxicity data, we do not believe there are any significant effects on the storm water runoff settling ponds from these releases. Once per three years, the entire system including the tanks, must be flushed, releasing 700-800,000 gallons. Treatment chemicals are not added for a time prior to these flushes in order to ensure that residuals are very low (due to consumption within the system).

3. Manhole Pump-Outs - numerous manholes (providing access to instrumentation, piping, cables, etc.) at the plant are periodically pumped out, to remove accumulated storm water. In order to address questions regarding possible contamination due to galvanized metal corrosion, a testing program was conducted and the analytical results shared with DNR. The testing indicated that zinc concentrations were reduced significantly by maintaining water levels below galvanized supports (i.e. routine pump-outs). Note that we do not pump to the storm water conveyance if there is an oil sheen or if the pH is not between 6 and 9 (which would be indicative of a spill or leak).

4. Eye wash / Safety Shower Discharges - Releases are made from routine testing and/or emergency use of these outdoor facilities.

5. Demineralizer Water / Essential Service Water (ESW) - during outages and other equipment maintenance activities, it is sometime necessary to provide temporary hoses to supply water to equipment. When these hoses are disassembled, residual water is released locally.

6. Air Conditioning Condensate - condensate from various building intake air cooling units is routed to building roof drains.

The following table compares these non-stormwater related sources to the average and maximum flows from conventional stormwater drainage.

Outfall	SWR Flow in MGD Average (Max)	Non-Stormwater Sources
010	0.082 (14)	• Fire water test (1000 gal/qtr) • Manhole discharges (10,000 gal/mo) • Eye wash/shower • ESW (<500 gal/event)
011	0.36 (63)	• Fire water test (24,000 gal/qtr) • Fire water tank drain (800,000 gal/3yrs • Manhole discharges (15,000 gal/mo) • Eye wash/shower • Air conditioning condensate • ESW (<500 gal/event)
012	0.12 (15)	• Fire water test (11,000 gal/qtr) • Manhole discharges (70,000 gal/mo) • Air conditioning condensate • Unit 2 Basin discharge - accumulated SWR (2.7 MG/dewatering event) • ESW (<500 gal/event)
013	0.032 (6.0)	None
014	0.087 (15)	• Fire water test (17,000 gal/qtr) • Air conditioning condensate
015	0.050 (9.0)	None

Significant Leaks and Spills

No significant spills (meeting the criteria set forth in the regulations) have occurred at Callaway Plant, in the last three years.

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FIGURE 1:
CALLAWAY NPDES FLOW DIAGRAM

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FIGURE 1

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